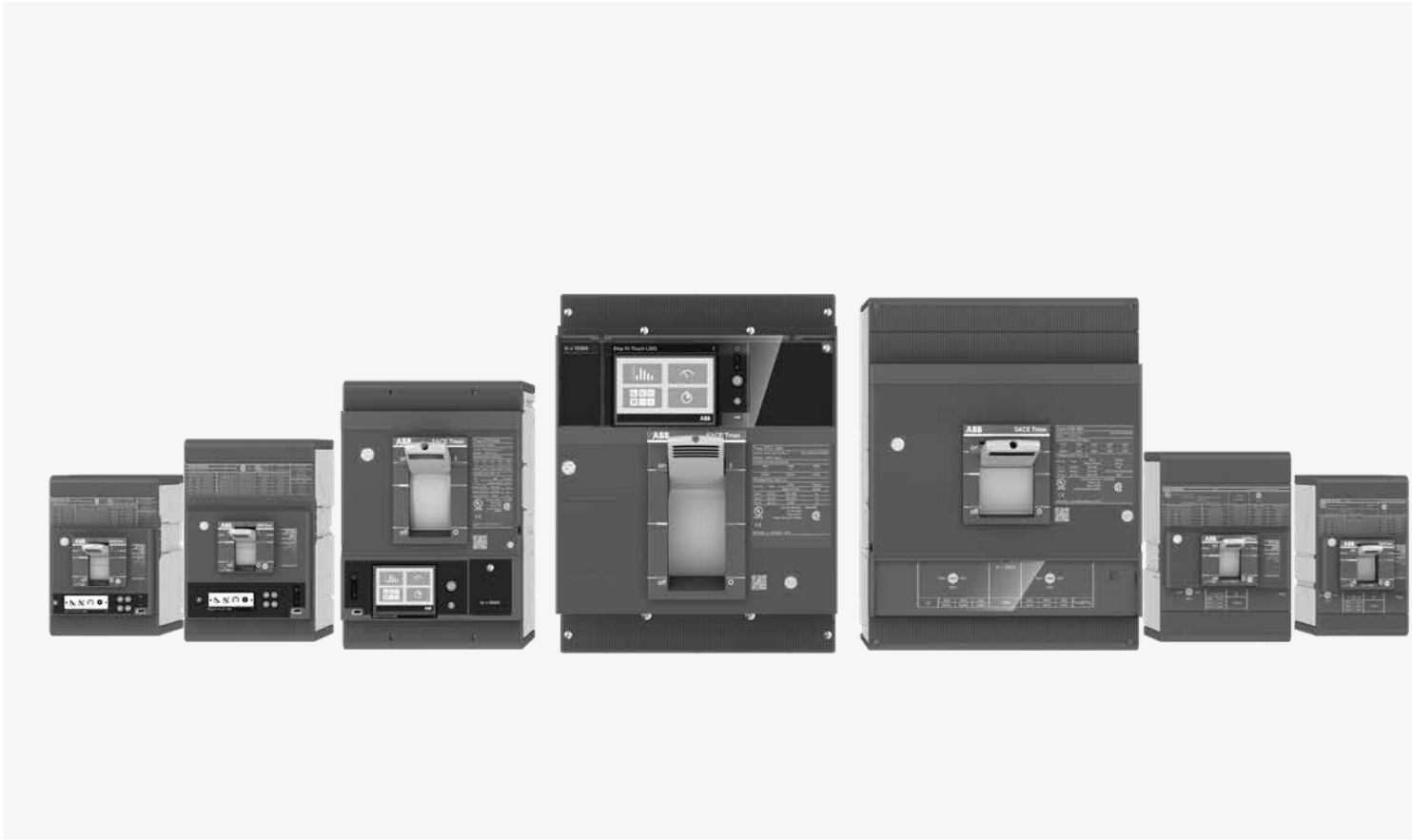
TECHNICAL CHARACTERISTICS

SACE Tmax XT UL/CSA

Low voltage molded case circuit breakers for UL489 and CSA C22.2 Standards



Break new ground

- Data and connectivity
- Ease of use and installation
- Performance and protection
- Safety and reliability

SACE Tmax XT
The complete offering

INSTALLATION

OVERALL DIMENSIONS

WIRING DIAGRAMS

01
02
03

Installation

Installation environment

1/3 Temperature
1/3 Environmental conditions
1/3 Electromagnetic compatibility
1/4 Degrees of protection
1/4 Installation position

Temperature performance

1/5 Circuit-breakers with thermal-magnetic trip units
1/8 Circuit-breaker with magnetic only or electronic trip units and switch-disconnectors
1/9 Power losses

Insulation distances

1/11 Enclosure dimensions
1/14 Minimum clearance between two side by side circuit-breakers
1/17 Minimum clearance between two superimposed circuit-breakers
1/18 The first insulated anchor

Special applications

1/20 Use of direct current apparatus

Characteristic curves

1/22 Example of curves reading
1/24 Trip curves with thermal-magnetic trip unit
1/32 Trip curves with electronic trip unit Ekip Dip
1/44 Trip curves with electronic trip unit Ekip Touch and Hi-Touch
1/54 Specific let-through energy curves
1/59 Limiting curves

Installation environment

Temperature

The Tmax XT circuit-breakers can be used in environmental conditions where the ambient air temperature varies between -25°C and +70°C, and can be stored at temperatures between -40 °C and +70 °C.
Circuit-breakers fitted with thermomagnetic trip units have their thermal element set for a reference temperature. For temperatures other than the reference, a trip threshold variation must be taken into account. Electronic trip units do not undergo any variations in performance as the temperature varies, but, in the case of temperatures exceeding +40°C, the maximum setting for protection L (protection against overloads) must be reduced, as indicated in the derating graph, to take into account the heating phenomena which occur in the copper parts of the circuit-breaker which the phase current passes through. For temperatures above +70°C the circuit-breaker performances are not guaranteed.

Environmental conditions

The Tmax XT circuit-breakers are designed to operate in environments with a pollution degree of 3 according to the IEC 60947-2 Standard classification.

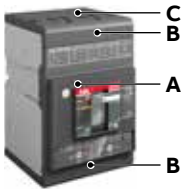
Altitude
Up to an altitude of 2000m/6561 ft, the Tmax XT circuit-breakers do not undergo any alteration in their rated performances. As the altitude increases, the atmospheric properties are altered in terms of composition, dielectric resistance, cooling capacity and pressure. Therefore, some performance aspects of the circuit-breaker (e.g. the maximum rated operating voltage and the rated uninterrupted current) undergo derating.

Altitude		**2000m/ 6561ft**	**3000m/ 9842ft**	**4000m/ 13123ft**	**5000m/ 16404ft**
Rated employ voltage, Ue	[V AC]	600	528	468	408
Rated uninterrupted current	%	100	98	93	90

Electromagnetic compatibility

Protection is guaranteed in the presence of interference caused by electronic apparatus, atmospheric disturbances or electrical discharges by using the electronic trip units and the electronic residual current releases. No interference with other electronic apparatus near the place of installation is generated either. This is in compliance with the IEC 60947-2 Annex B + Annex F Standards, European Directive No. 2014/30/EC regarding EMC - electromagnetic compatibility and UL489 Standard.

Installation environment



Degrees of protection

The IP degree of the circuit-breaker can vary depending on the area considered and on the presence of accessories such as a motor or terminal cover.
The following table indicates the degrees of protection guaranteed by Tmax XT circuit-breakers according to the prescriptions of the IEC 60529 Standard, in the different configurations. Furthermore, special kits are available to achieve IP54 with the MOE or RHD installed on the XT5, XT6 and XT7.

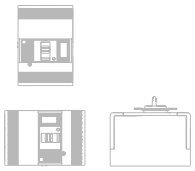
	With front	Without front	With FLD	With RHD	With RHE	Motor operator MOD, MOE or MOE-E	Residual current devices
A	IP40	IP20	IP40 (1)	IP40 (1)	IP40 (1)(2)	IP30	IP40

(1) XT5 W - XT6 W: IP30
(2) XT5-XT6-XT7: IP65

	Without TC	With HTC	With LTC
B	IP20	IP40	IP40
C	NC	IP40	IP30

Protection kits for	RHE	RHD	MOE
XT1 , XT2 XT3,XT4	IP54	-	-
XT5, XT6, XT7	-	IP54	IP54

	Residual current RCQ020	Automatic Transfer Switch ATS021, ATS022
On front	IP41	IP40



Installation position

It is possible to mount circuit-breakers in the fixed version in horizontal, vertical or lying down positions without any derating of the rated characteristics.

Temperature performance

Circuit-breakers with thermal-magnetic trip units

The circuit-breakers fitted with thermal-magnetic trip units have the thermal element set for a reference temperature of +40°C. With the same setting, for temperatures other than +40°C there is a variation in the thermal trip threshold as indicated in the tables below.

XT1 - TMF					
In [A]	**30°C**	**40°C**	**50°C**	**60°C**	**70°C**
15	16	15	14	13	12
20	21	20	19	18	16
25	26	25	23	22	20
30	32	30	28	26	24
35	37	35	33	31	29
40	42	40	38	35	33
45	48	45	42	40	37
50	53	50	47	44	41
60	63	60	56	52	49
70	74	70	66	61	57
80	84	80	75	70	65
90	95	90	85	79	73
100	105	100	94	88	81
110	115	110	103	96	90
125	131	125	117	109	102

XT2 - TMF					
In [A]	**30°C**	**40°C**	**50°C**	**60°C**	**70°C**
15	16	15	14	13	12
20	21	20	19	17	16
25	26	25	23	22	20
30	32	30	28	26	24
35	37	35	32	31	28
40	42	40	37	35	32
50	53	50	47	43	40
60	63	60	56	52	49
70	74	70	66	61	57

Temperature performance

XT3 - TMF					
In [A]	**30°C**	**40°C**	**50°C**	**60°C**	**70°C**
60	63	60	56	52	49
70	74	70	66	60	56
80	84	80	75	69	64
90	95	90	84	78	72
100	105	100	93	87	80
110	116	110	102	95	88
125	132	125	116	108	100
150	158	150	140	130	121
175	185	175	163	151	141
200	211	200	186	173	161
225	237	225	210	194	181

XT4 - TMF					
In [A]	**30°C**	**40°C**	**50°C**	**60°C**	**70°C**
25	27	25	23	21	19
30	34	30	25	23	20
35	37	35	32	30	26
40	43	40	37	34	30
50	54	50	46	42	39
60	64	60	56	51	45
70	75	70	65	58	51

XT2 - TMA										
	30°C		**40°C**		**50°C**		**60°C**		**70°C**	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
80	59	84	56	80	53	75	49	70	46	65
90	66	95	63	90	59	84	55	78	51	73
100	74	105	70	100	65	93	61	87	57	81
110	81	116	77	110	72	103	67	96	62	89
125	92	132	88	125	82	117	76	109	71	101

XT4 - TMA

	30°C		40°C		50°C		60°C		70°C	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
80	60	86	56	80	52	74	46	66	41	58
90	67	95	63	90	60	86	54	77	47	68
100	74	106	70	100	67	95	60	85	53	75
110	83	118	77	110	71	101	65	92	59	84
125	94	134	88	125	81	115	74	105	67	95
150	110	158	105	150	98	141	90	128	85	122
175	129	184	123	175	116	166	107	153	98	140
200	147	210	140	200	133	190	123	175	112	160
225	168	241	158	225	146	208	133	190	119	170
250	183	262	175	250	168	240	161	230	154	220

XT5 - TMA

	30°C		40°C		50°C		60°C		70°C	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
300	220	314	210	300	200	286	187	267	165	235
400	310	420	280	400	260	380	240	350	225	320
500	375	535	350	500	330	470	305	435	280	400
600	440	630	420	600	395	572	345	534	300	500

XT6 - TMA

	30°C		40°C		50°C		60°C		70°C	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
600	459	655	420	600	373	533	358	512	245	490
800	603	861	560	800	501	716	467	668	310	620

XT5 - TMG

	30°C		40°C		50°C		60°C		70°C	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
300	220	314	210	300	200	286	187	267	165	235
400	310	420	280	400	260	380	240	350	225	320
500	375	535	350	500	330	470	305	435	280	400
600	440	630	420	600	395	572	345	534	300	500

Temperature performance

Circuit-breaker with magnetic only or electronic trip units and switch-disconnectors

The electronic overcurrent trip units do not undergo any variations in performance as the temperature varies. However, even though heating does not affect the trip thresholds of the electronic trip units, in the case of temperatures exceeding +40°C it is advisable to reduce the maximum L (protection against overloads) setting to protect the copper parts of the circuit-breaker against high temperatures.
The same considerations can be made for the switch-disconnectors and magnetic only circuit-breakers.
The table below shows the maximum value at which, with terminals and lugs, the threshold of I1 of the overcurrent protection (L) must be set according to the ambient temperature.

			40°C	50°C	60°C	70°C
			Imax [A]	Imax [A]	Imax [A]	Imax [A]
XT1	F	M-MCS	125	112	97	79
	P	M-MCS	125	106	88	70
XT2	F	M-ELT-MCS	125	112	97	79
	P/W	M-ELT-MCS	125	106	88	70
XT3	F	M-MCS	225	201	174	142
	P	M-MCS	225	191	158	126
XT4	F	M-ELT-MCS	250	224	194	158
	P/W	M-ELT-MCS	250	213	177	140
XT5 400	F	M-ELT-MCS	400	400	362	319
	P/W	M-ELT-MCS	400	368	333	294
XT5 600	F	M-ELT-MCS	600	600	572	512
	P/W	M-ELT-MCS	600	497	453	405
XT6	F	ELT-MCS	800	800	724	638
	W	ELT-MCS	800	736	666	587
XT7 800	F	ELT-MCS	800	800	800	755
	W	ELT-MCS	800	800	800	716
XT7 1000	F	ELT-MCS	1000	1000	949	894
	W	ELT-MCS	1000	1000	953	853
XT7 1200	F	ELT-MCS	1200	1095	980	849
	W	ELT-MCS	1200	1095	980	849

Power losses

To ensure service continuity of the plants, careful assessment of how to keep temperatures within acceptable levels is necessary to guarantee operation of all devices (e.g. by using forced ventilation in switchboards and installation rooms).
The table below shows the dissipated power values per single pole at the rated current In for each fixed circuit-breaker used. The total maximum dissipated power for a circuit-breaker used at 50/60Hz is equal to the power per single pole multiplied by the number of poles.

Trip unit	In [A]	XT1 [W/pole]	XT2 [W/pole]	XT3 [W/pole]	XT4 [W/pole]	XT5 [W/pole]	XT6 [W/pole]
Thermomagnetic trip units: TMF. TMA. TMG	15	1.3	1.1	-	-		
	20	1.8	1.6	-	-		
	25	2.0	1.8	-	2.7		
	30	1.8	2.3	-	3.9		
	35	2.0	2.8	-	4.4		
	40	2.6	3.7	-	4.5		
	45	3.0	-	-	-		
	50	3.7	4.1	-	4.7		
	60	3.9	4.4	3.9	4.8		
	70	3.7	4.4	3.7	5.4		
	80	4.8	5.8	4.8	5.5		
	90	5.7	6.6	4.5	6.0		
	100	7.0	8.1	5.6	6.2		
	110	8.3	8.8	5.8	6.7		
	125	10.7	11.4	6.6	7.4		
	150	-	-	6.9	7.8		
	160	-	-	7.9	8.9		
	175	-	-	10.1	9.1		
	200	-	-	13.2	11.9		
	225	-	-	14.4	13.3		
	250	-	-	-	16.4		
	300					15.4	
	400					24.1	
	500					33.5	
	600					46.0	30.6
	800						54.2

Temperature performance

Trip unit	In [A]	XT1 [W/pole]	XT2 [W/pole]	XT3 [W/pole]	XT4 [W/pole]	XT5 [W/pole]	XT6 [W/pole]
Electronic trip units: Ekip Dip. Ekip Touch	10	-	0.1	-	-		
	25	-	0.8	-	-		
	40	-	0.7	-	0.6		
	60	-	1.5	-	1.3		
	100	-	4.2	-	3.5		
	125	-	6.6	-	-		
	150	-	-	-	7.8		
	200	-	-	-	10.5		
	225	-	-	-	13.3		
	250	-	-	-	16.4	8	
	300					10.8	
	400					19	
	600					43	30
	800						53.4
Magnetic only trip units: MA	3	1.4	3.7	-	-		
	7	3.2	9.3	-	-		
	15	1.1	6.4	-	-		
	25	-	-	-	2.6		
	30	2.3	3.8	-	-		
	50	3.1	5	-	6.8		
	70	5.3	5.5	-	-		
	80	5.3	6.8	-	5.5		
	100	6.6	8.1	4.5	6.2		
	110	-	-	3.3	6.7		
	125	10.3	14	4.1	7.4		
	150	-	-	6.5	7.8		
	175	-	-	-	9.1		
	200	-	-	8.6	11.9		
	225	-	-	-	13.3		
	250	-	-	-	16.4		
	300				15.4	15.4	
	400				24.1	24.1	
	500				33.5	33.5	

Trip unit	In [A]	XT7- XT7 M [W/Pole]
Electronic trip units: Ekip Dip, Ekip Touch	600	14
	800	24
	1000	37
	1200	53

Power losses give indication of the heat generated under specified conditions. Measurement of power losses is performed on new samples in free air (according to Annex G of IEC 60947-2).
The measurement of resistance cannot be directly related to the power loss of the device and it is not the proper parameter to assess poor performance of the poles.

Insulation distances

Enclosure dimensions

XT1, XT2, XT3, XT4 , XT5, XT6 and XT7 circuit breakers are available both as standard version and as 100% rated version. Because of the additional heat generated bringing 100% of continuous current rating the use of specific 90°C rated wires sized per 75°C ampacity may be required.

Circuit-breaker dimensions (HxWxD) in/mm				
XT1		5.12/130	3 (4 4p)/76.2 (101.6 4p)	2.75/70
XT2		5.12/130	3.54 (4.72 4p)/90 (120 4p)	3.25/82.5
XT3		5.9/150	4.13 (5.51 4p)/105 (140 4p)	2.75/70
XT4		6.3/160	4.13 (5.51 4p)/105 (140 4p)	3.25/82.5
XT5		8.07/205	5.51(7.32 4p)/140(186 4p)	4.05/103
XT6		10.55/268	8.27(11.02 4p)/210(280 4p)	4.07/103.5
XT7		10.55/268	8.27 (11.02 4p)/210 (280 4p)	6.57 (7.01) (3)/166 (178) (3)

(3) For XT7 M

Insulation distances

AC-DC Minimum enclosure sizes for 80% rated fixed circuit-breakers (HxWxD)

XT1	Cubicle dimension (in/mm) for 3p fixed version: 14.57x8.50x2.85/370x216x72.5 (with rear terminals: 15x9.84x9.84/380x250x250) Cubicle dimension (in/mm) for 4p fixed version: 14.57x9.50x2.85/370x241x72.5 (with rear terminals: 15x10.82x9.84/380x275x250)
XT2	Cubicle dimension (in/mm) for 3p fixed version: 12.2x7.09x3.29/310x180x83.5 (with rear terminals: 12.83x8.9x11.5/326x226x292) Cubicle dimension (in/mm) for 4p fixed version: 12.2x8.27x3.29/310x210x83.5 (with rear terminals: 12.83x10.08x11.5/326x256x292)
XT3	Cubicle dimension (in/mm) for 3p fixed version: 14.57x8.54x2.83/370x217x72 (with rear terminals: 15.28x10.47x11.81/388x266x300) Cubicle dimension (in/mm) for 4p fixed version: 14.57x9.84x2.83/370x250x72 (with rear terminals: 15.28x11.85x11.81/388x301x300)
XT4	Cubicle dimension (in/mm) for 3p fixed version: 14.96x7.68x3.29/380x195x83.5 (with rear terminals: 15.59x9.6x11.51/396x244x292.5) Cubicle dimension (in/mm) for 4p fixed version: 14.96x9.05x3.29/380x230x83.5 (with rear terminals: 15.59x10.98x11.51/396x279x292.5)
XT5	Cubicle dimension (in/mm) for 3p fixed version 19.92x15x6.02/506x381x153 (1) Cubicle dimension (in/mm) for 4p fixed version 19.92x16.83x6.02/506x427.5x153 (1)
XT6	Cubicle dimension (in/mm) for 3p fixed version: 20.47x16.53x7.87/520x420x200 (1) Cubicle dimension (in/mm) for 4p fixed version: 20.47x19.29x7.87/520x490x200 (1)
XT7	Cubicle dimension (in/mm) for 3p fixed version: 27.95x21.65x6.81/710x550x173 (1) Cubicle dimension (in/mm) for 4p fixed version: 27.95x24.4x6.81/710x620x173 (1)

(1) For installations with rear terminals please ask ABB

AC-DC Minimum enclosure sizes for 100% rated fixed circuit-breakers (HxWxD)

XT1	Suitable for continuous operation at 100-percent of rating up to 100A with 90°C wire. The wire size shall be based on the ampacity of 75°C rated wire	Cubicle dimension (in/mm) for 3p fixed version: 14.57x8.50x2.85/370x216x72.5 (with rear terminals: 15x9.84x9.84/380x250x250) Cubicle dimension (in/mm) for 4p fixed version: 14.57x9.50x2.85/370x241x72.5 (with rear terminals: 15x10.82x9.84/380x275x250)
XT2	Suitable for continuous operation at 100-percent of rating up to 100A with thermal magnetic trip unit and up to 125A with electronic trip unit	Cubicle dimension (in/mm) for 3p fixed version: 12.2x7.09x3.29/310x180x83.5 (with rear terminals: 12.83x8.9x11.5/326x226x292) Cubicle dimension (in/mm) for 4p fixed version: 12.2x8.27x3.29/310x210x83.5 (with rear terminals: 12.83x10.08x11.5/326x256x292)
XT3	Suitable for continuous operation at 100-percent of rating up to 225A with 90°C wire. The wire size shall be based on the ampacity of 75°C rated wire	Cubicle dimension (in/mm) for 3p fixed version: 14.57x8.54x2.83/370x217x72 (with rear terminals: 15.28x10.47x11.81/388x266x300) Cubicle dimension (in/mm) for 4p fixed version: 14.57x9.84x2.83/370x250x72 (with rear terminals: 15.28x11.85x11.81/388x301x300)
XT4	Suitable for continuous operation at 100-percent of rating up to 250A, with 90°C wire. The wire size shall be based on the ampacity of 75°C rated wire. With 75°C wire suitable for continuous operation at 100-percent of rating up to 200A with lugs FC CuAl only	Cubicle dimension (in/mm) for 3p fixed version: 14.96x7.68x3.29/380x195x83.5 (with rear terminals: 15.59x9.6x11.51/396x244x292.5) Cubicle dimension (in/mm) for 4p fixed version: 14.96x9.05x3.29/380x230x83.5 (with rear terminals: 15.59x10.98x11.51/396x279x292.5)
XT5 400	Suitable for continuous operation at 100-percent of rating up to 400A. For XT5 V-X 90°C wire needed, the wire size shall be based on the ampacity of 75°C rated wire	Cubicle dimension (in/mm) for 3p fixed version, with vents for V-X versions: 19.92x15x6.02/506x381x153, vents: 2 x (4.33x6.9/110x175) (1) Cubicle dimension (in/mm) for 4p fixed version, with vents for V-X versions: 19.92x16.83x6.02/506x427.5x153, vents: 2 x (4.33x8.66/110x220) (1) Cubicle dimension (in/mm) for 3p V-X fixed versions without vents: 20.47x16.54x7.87/520x420x200 (1) Cubicle dimension (in/mm) for 4p V-X fixed versions without vents: 20.47x18.37x7.87/520x466.5x200 (1)
XT5 600	N-S-H-L versions suitable for continuous operation at 100-percent of rating up to 600A with 90C wire. The wire size shall be based on the ampacity of 75°C rated wire	Cubicle dimension (in/mm) for 3p fixed version, with vents: 19.92x15x6.02/506x381x153, vents: 2 x (4.33x6.9/110x175) (1) Cubicle dimension (in/mm) for 4p fixed version, with vents: 19.92x16.83x6.02/506x427.5x153, vents: 2 x (4.33x8.66/110x220) (1) Cubicle dimension (in/mm) for 3p fixed version without vents: 20.47x16.54x7.87/520x420x200 (1) Cubicle dimension (in/mm) for 4p fixed version without vents: 20.47x18.37x7.87/520x466.5x200 (1)
XT6	Suitable for continuous operation at 100-percent of rating up to 800A with electronic trip unit and with 90°C wire. The wire size shall be based on the ampacity of 75°C rated wire	Cubicle dimension (in/mm) for 3p fixed version: 20.47x16.53x7.87/520x420x200 (1) Cubicle dimension (in/mm) for 4p fixed version: 20.47x19.29x7.87/520x490x200 (1)
XT7	Suitable for continuous operation at 100-percent of rating up to 1200A with 90°C wire. The wire size shall be based on the ampacity of 75°C rated wire	Cubicle dimension (in/mm) for 3p fixed version: 27.95x21.65x6.81/710x550x173 (1) Cubicle dimension (in/mm) for 4p fixed version: 27.95x24.4x6.81/710x620x173 (1)

(1) For installations with rear terminals please ask ABB

Insulation distances

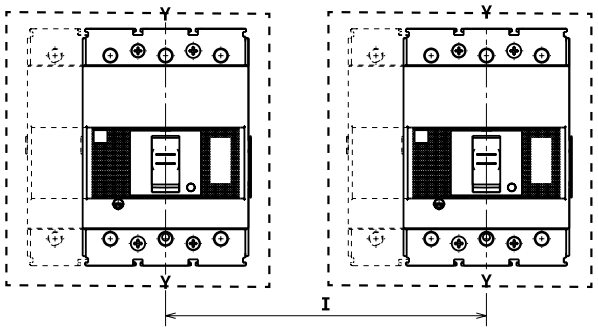
Minimum clearance between two side by side circuit-breakers

This section gives the clearances to be observed for side by side installation of SACE Tmax XT circuit- breakers in plants with voltages up to 600V. The following table shows the minimum center distance between two circuit-breakers of the same size mounted side by side. In case of XT2, XT3 and XT4 this installation is obtained by breaking the internal part of back insulating plate supplied with the breaker.
Moreover in case of Tmax XT1 up to XT5 (1), the values are valid only when they have an HTC or a phase separator is inserted in the slot formed when placing the two fixed circuit-breakers side by side (see Fig.1 and Fig.2).
For further details about installation, please see the related instructions provided with the circuit-breaker.

	Circuit-breaker width (in/mm)		**Centre distance I (in/mm)**	
	3 poles	**4 poles**	**3 poles**	**4 poles**
XT1	2.99/76	4.02/102	2.99/76	4.02/102
XT2	3.54/90	4.72/120	3.54/90	4.72/120
XT3	4.13/105	5.51/140	4.13/105	5.51/140
XT4	4.13/105	5.51/140	4.13/105	5.51/140
XT5	5.51/140	7.32/186	5.51/140	7.32/186
XT6	8.27/210	11.02/280	8.27/210	11.02/280
XT7	8.26/210	11.02/280	8.26/210 (2)	11.02/280 (2)

(1) XT5: HTC or phase separator requested for installation voltage values Ue≥500V only
(2) for installations with F terminals only. With other connections refer to distances fixed by dimensions of back insulating plates requested

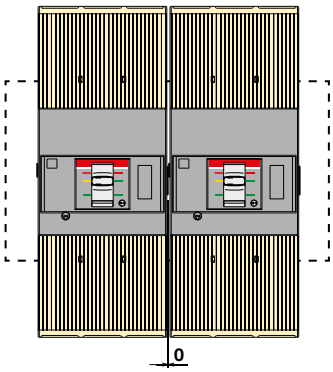
—
Note:
Back insulating plate
XT1...XT4 supplied
with the breaker

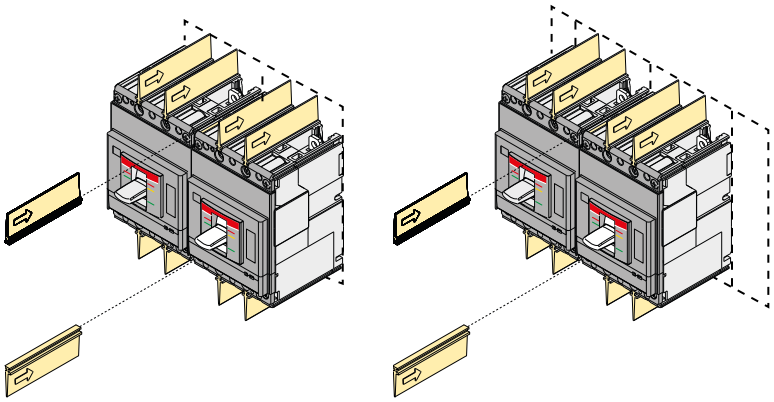


XT2 - XT4 (Ue>480V)

—
Fig. 1
Side by side XT1...XT5 (1)
with HTC

Fig. 2
Side by side XT1...XT5 (1)
with phase separators





—
Fig. 1

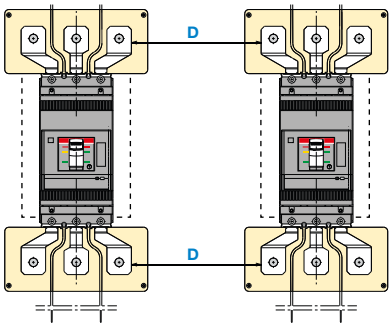
—
Fig. 2

Insulation distances

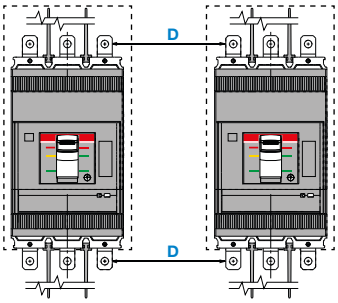
If the conditions written above are not fulfilled, SACE Tmax XT circuit-breakers can be installed side by side with a minimum clearance D as shown in the following table:

Circuit-breaker	Terminals	D [in/mm]
XT1-XT3 F-P	ES	1.37/35
	EF	1.37/35
	Other types of terminals	0.98/25
XT2-XT4 F-P-W	ES	4.72/120
	EF	1.37/35 (Ue≤480V) 1.97/50 (Ue>480V)
	Other types of terminals	0.98/25 (Ue≤480V) 1.57/40 (Ue>480V)
XT5 F-P-W	ES	4.72/120
	EF	5.9/150
	Other types of terminals	2/50
XT6 F-W	ES	4.72/120
	EF	5.9/150
	Other types of terminals	2/50
XT7 F-W	ES	5.9/150
	EF	2.75/70
	Other types of terminals	0 fixed - 2.75/70 withdrawable

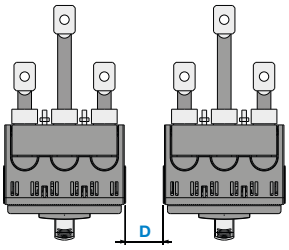
Circuit-breakers with front extended spread terminals ES



Circuit-breakers with front extended terminals EF



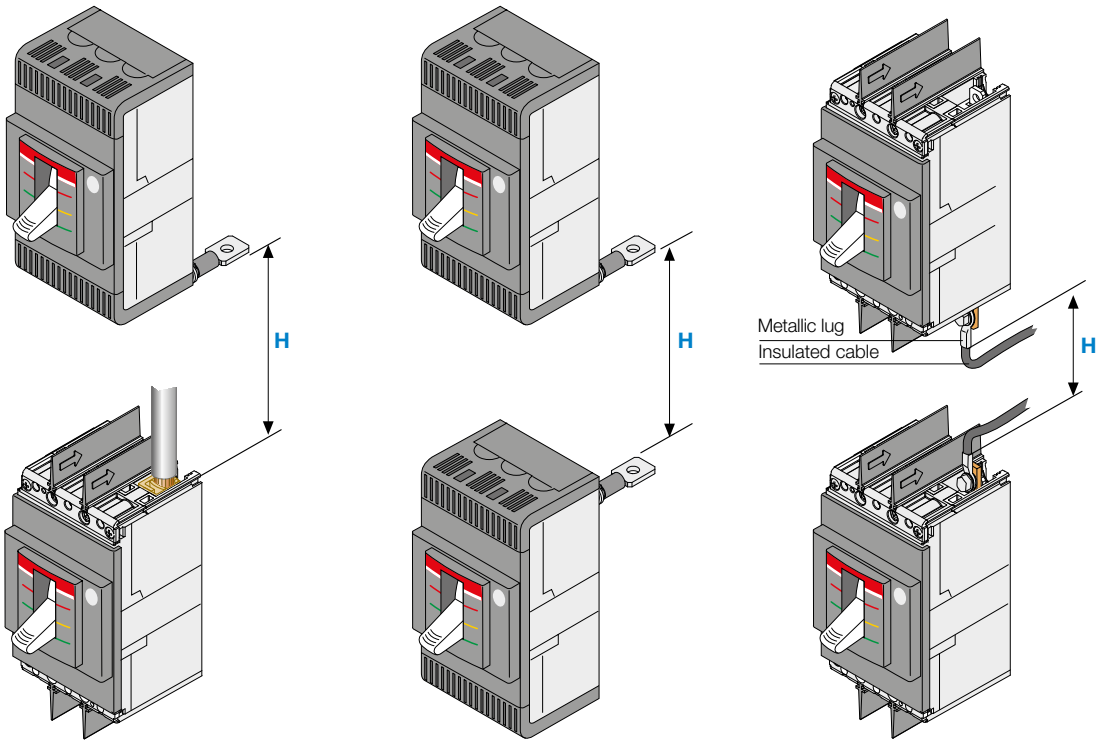
Adjustable rear terminals R and low terminal covers LTC



Minimum clearance between two superimposed circuit-breakers

This section gives the clearances H to meet for superimposed mounting of the SACE Tmax XT circuit-breakers in installations with voltages up to 600V. Verify that the bare bars or connection cables do not reduce the recommended clearances.
The distances given in the table refer to the maximum overall dimensions of the circuit-breakers in the different versions (F/W/P), with terminals and metallic lugs of insulated cables included, for example.
When superimposed circuit-breakers are different in size, the larger reference clearance should be considered.

Circuit-breaker	H [in/mm]
XT1	3.14/80
XT2	3.94/100
XT3	5.51/140
XT4	5.9/150
XT5	6.30/160
XT6	7.09/180
XT7	7.09/180



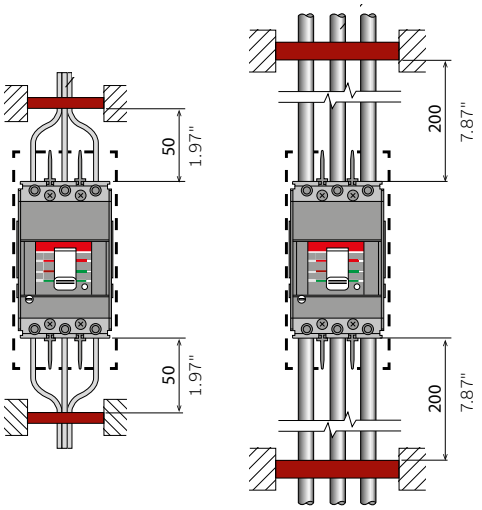
In case of cables with metallic lugs, an insulating screen behind the metallic lugs (on the rear of the circuit-breaker) or high terminal covers is mandatory.

Insulation distances

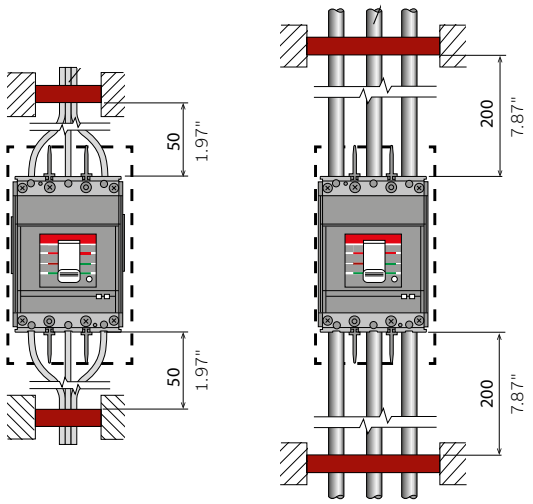
The first insulated anchor

For the Tmax XT molded-case circuit-breakers, the figure below gives an example of the maximum recommended distance (in mm) within which the first insulated anchor should be positioned according to the highest admissible peak current value of the circuit-breaker and according to the cross-sectional area of the cable. The maximum recommended distance is also valid for busbar connections. For further information and details circuit-breaker instruction manuals should be consulted.

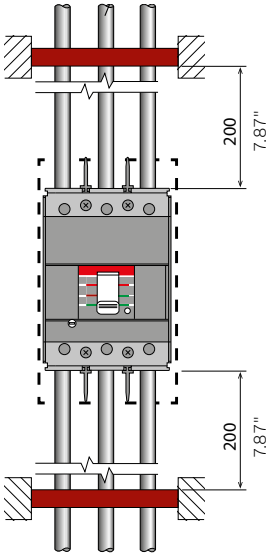
SACE Tmax XT1



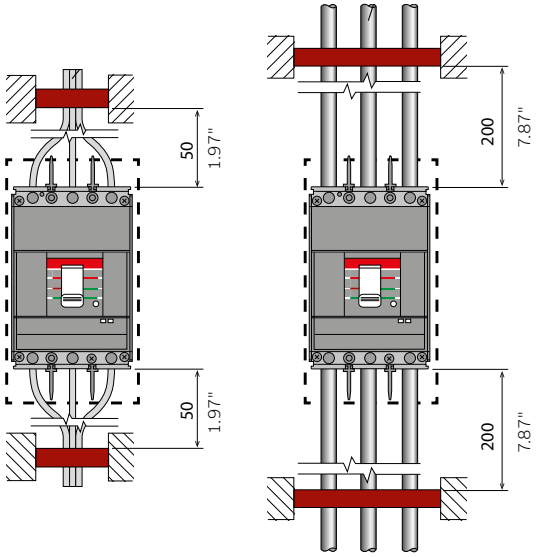
SACE Tmax XT2



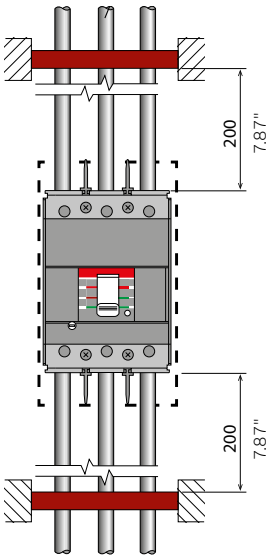
SACE Tmax XT3



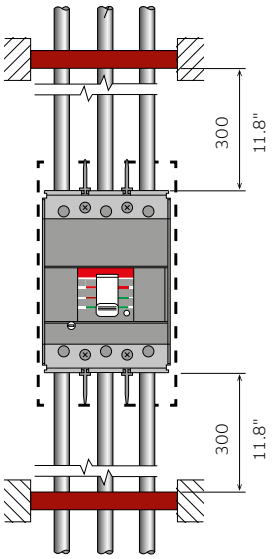
SACE Tmax XT4



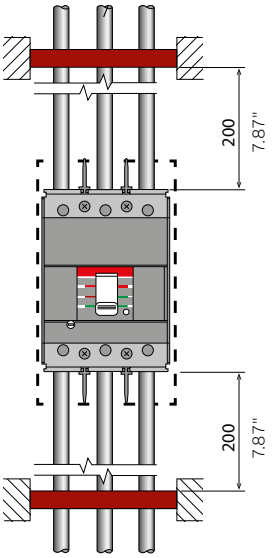
SACE Tmax XT5



SACE Tmax XT6



SACE Tmax XT7

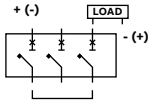
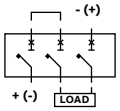
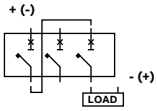
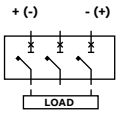
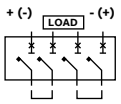


Special applications

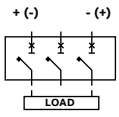
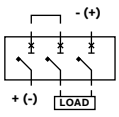
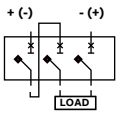
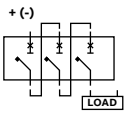
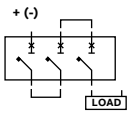
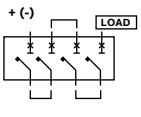
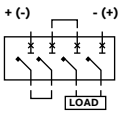
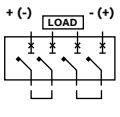
Use of direct current apparatus

The thermal-magnetic trip units of the SACE Tmax XT circuit-breakers are suitable for use in direct current applications and to obtain the number of poles in series needed to guarantee the required breaking capacity at the various operating voltages, following connection diagrams must be used.

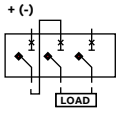
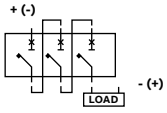
Connection diagrams of poles in a grounded/ungrounded network

Grounded/ungrounded network					
Un	**up to 250V DC**				
					
XT1	■	■		■ (1)	■
XT2			■	■ (1)	
XT3	■	■		■ (1)	
XT4			■	■	
XT5				■	
XT6				■	

(1) Ungrounded only

Un	**up to 500V DC**									
										
XT1					■			■ (1)		
XT2		■	■							
XT3		■ (1)			■	■		■ (1)		
XT4			■	■						
XT5	■									
XT6	■									

(1) Ungrounded only

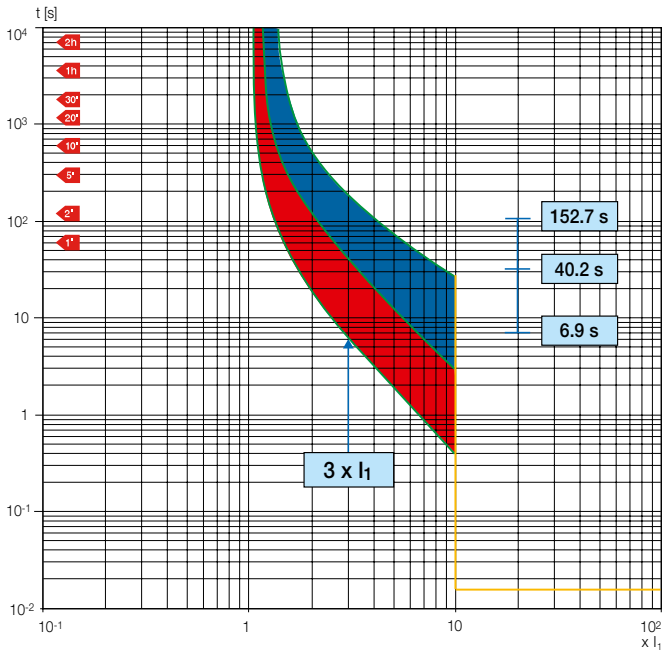
Un	up to 600V DC	
		
XT1		
XT2		
XT3		
XT4	■	■
XT5	■ (2)	
XT6	■	

(2) Grounded V-X versions only

Characteristic curves
Example of curves reading

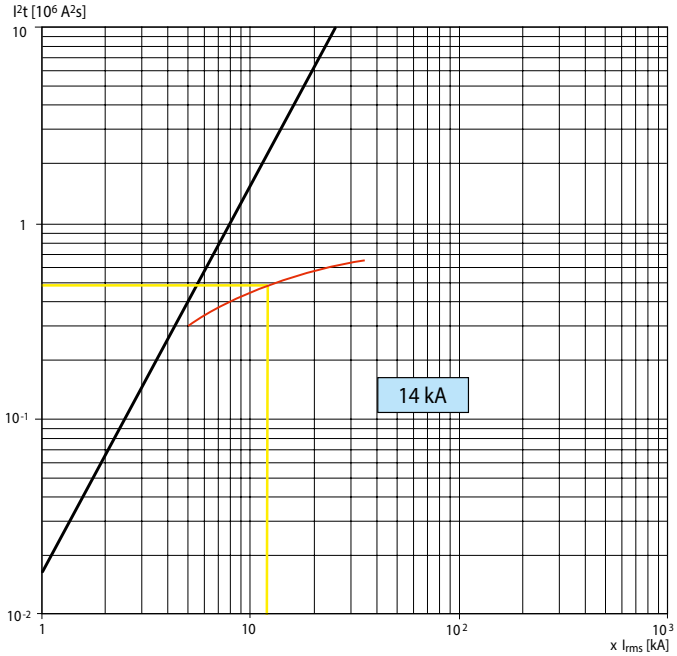
Example 1 – XT3N 225
Trip curves for distribution (thermal magnetic trip unit)

These curves provide information about the tripping time of the thermal magnetic trip units.The red band indicates the hot trip times, that is with the breaker already loaded with its rated current once the overload has occurred.
The blue band gives the cold trip times, that is with no current flowing into the breaker before the fault.
The curves are assumed at reference air ambient temperature of 40°C and considering three phase overload with symmetrical and equilibrated currents.
Let us consider an XT3N TMF In = 225A circuit-breaker.
Based on the occurrence of the overload, either with the circuit-breaker at thermal regime, or not, thermal protection tripping varies considerably.
For example, for an overload current 3xI1, the trip time is between 152.7s and 40.2s for cold tripping and between 40.2s and 6.9s for hot tripping.
For fault current values higher than 225A, the circuit- breaker trips with the instantaneous magnetic protection I3.



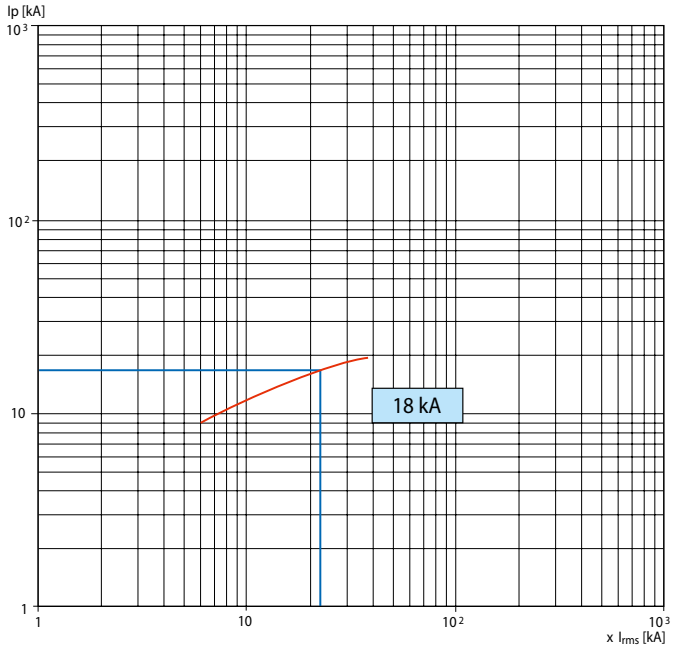
Example 2 – XT2H 125
Specific let-through energy curves

This figure figure shows a sample graph of the specific let-through energy of the XT2H 125 circuit-breaker at a voltage of 220/230V.
The prospective symmetrical short-circuit current is indicated on the x-axis, whereas the values of the specific let-through energy expressed in A2s are shown on the y-axis.
The circuit-breaker lets through a value of I2t equal to 0.42 · 10^6 · A2s relative to a short-circuit current of 14kA.



Example 3 – XT2L 125
Limitation curves

The figure at right gives the trend of the limitation curves of the XT2L 125 In = 125A circuit-breaker.
The effective value of the prospective symmetrical short-circuit current is given on the x-axis of the diagram, whereas the peak value corresponding to the prospective short-circuit current is indicated on the y-axis.
For a value current of 22kA, the XT2L 125 circuit breaker with a thermomagnetic trip unit In = 125A limits the peak prospective short-current current to 18kA at a voltage of 600V.

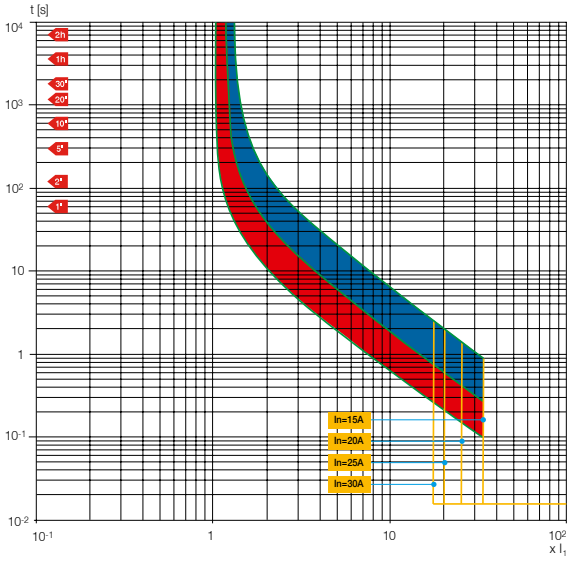


Characteristic curves

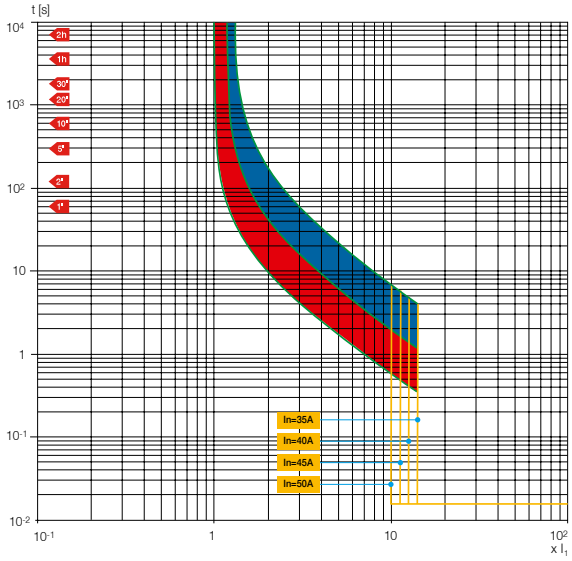
Trip curves with thermal magnetic trip unit

Trip curves for distribution

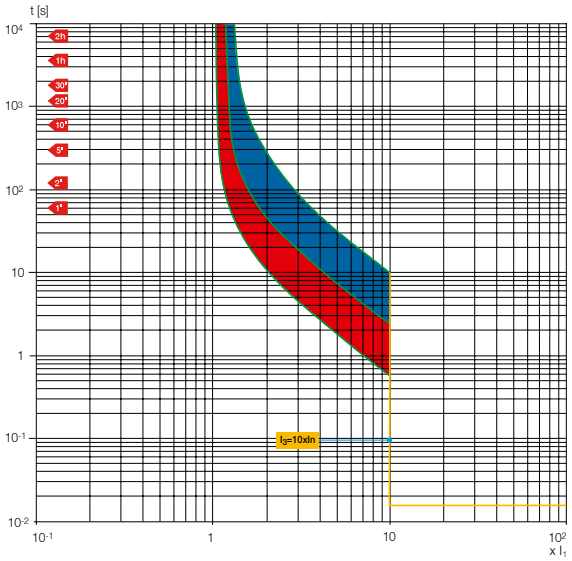
XT1 125 TMF In=15..30A



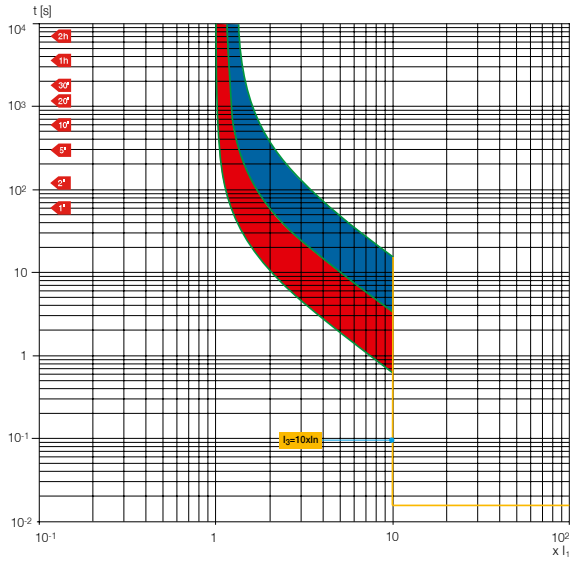
XT1 125 TMF In=35...50A



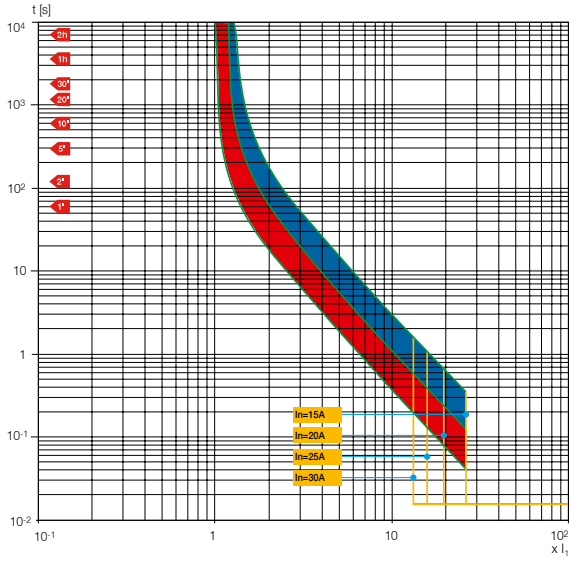
XT1 125 TMF In=60...110A



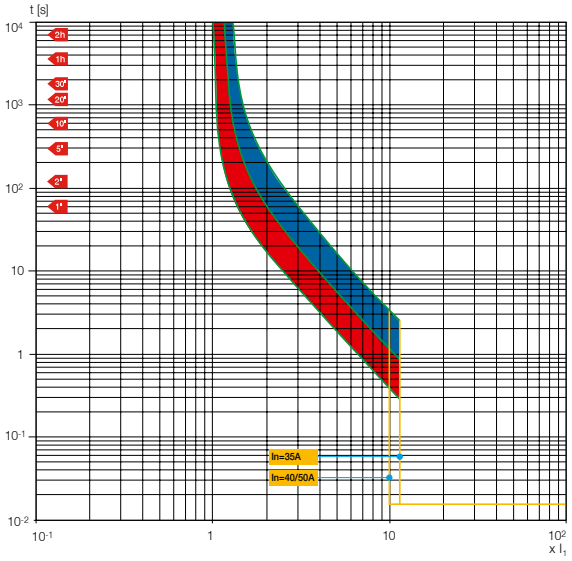
XT1 125 TMF In=125A



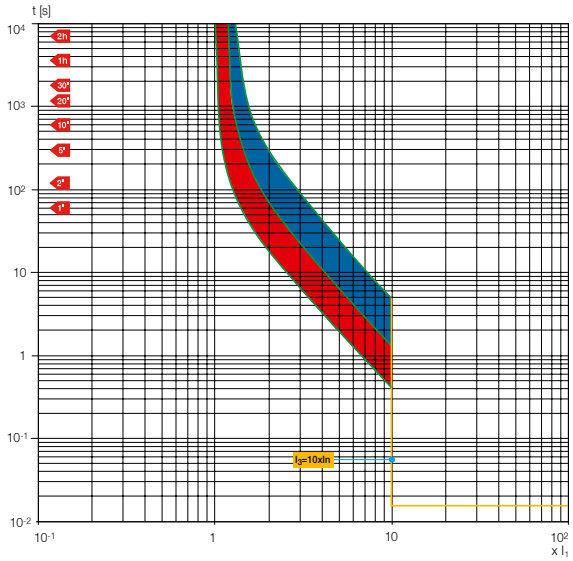
XT2 125 TMF In=15...30A



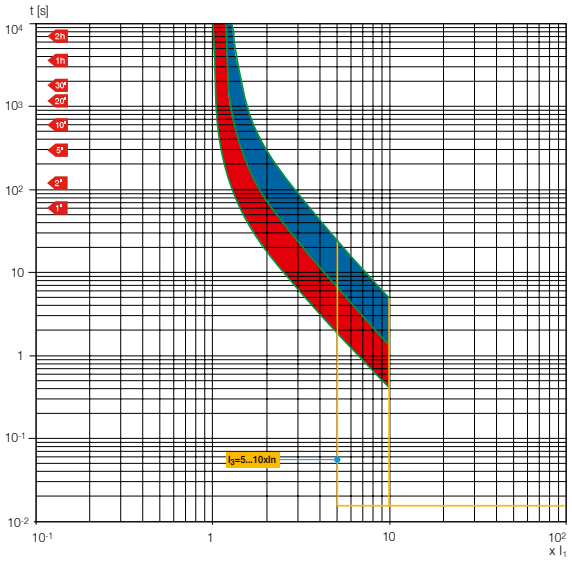
XT2 125 TMF In=35...50A



XT2 125 TMF In=60...70A



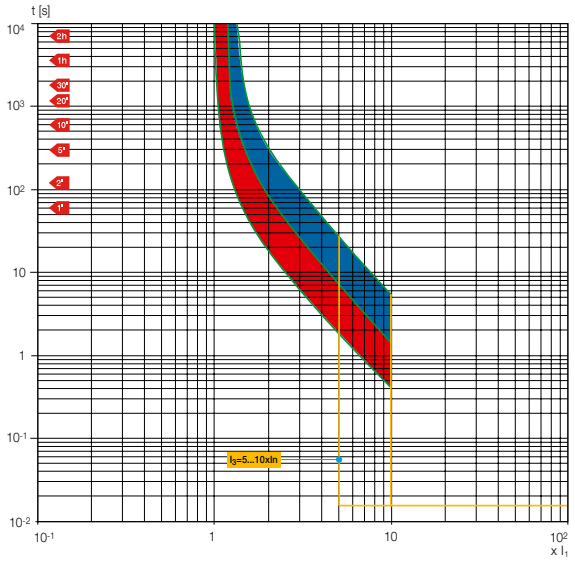
XT2 125 TMA In=80...100A



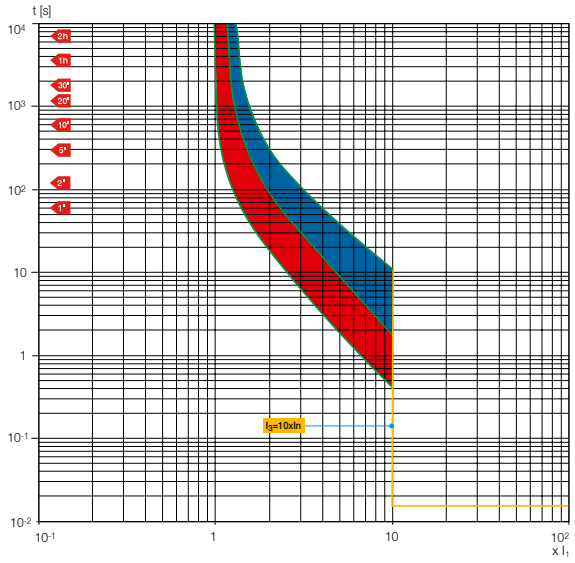
Characteristic curves

Trip curves with thermal magnetic trip unit

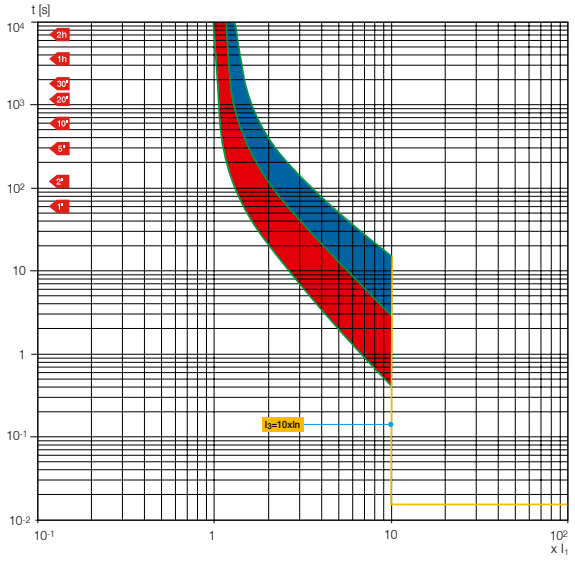
XT2 125 TMA In=110...125A



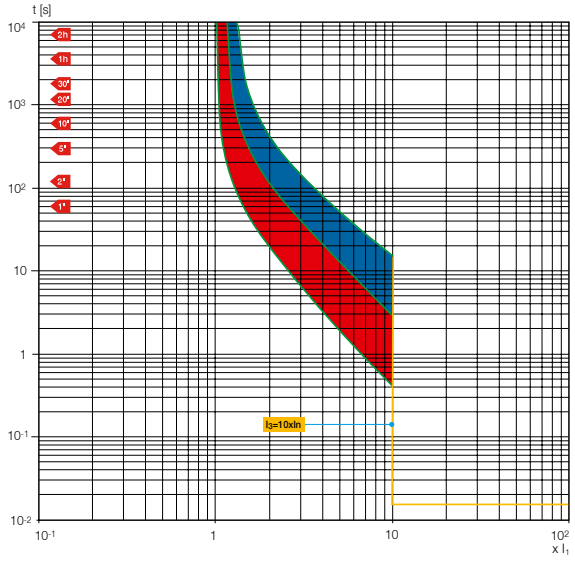
XT3 225 TMF In=60..100A



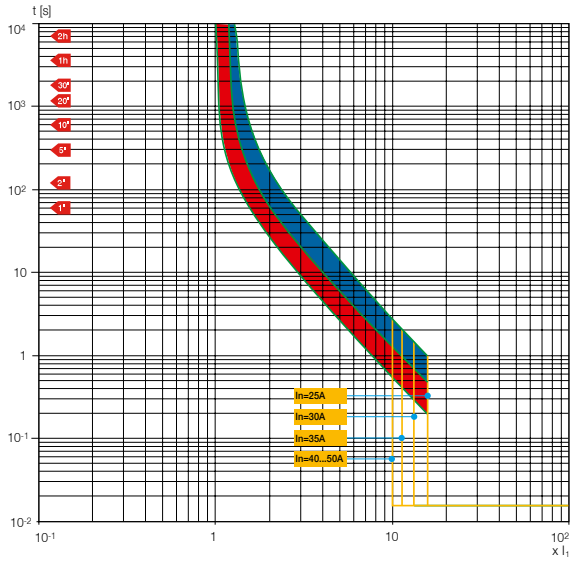
XT3 250 TMF In=110..150A



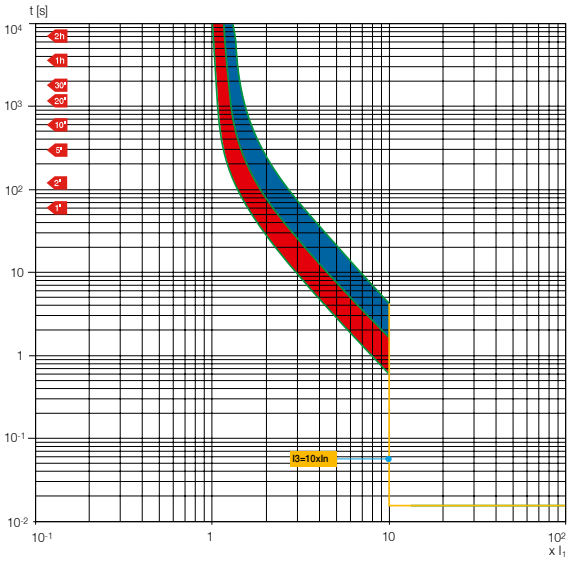
XT3 250 TMF In=175..225A



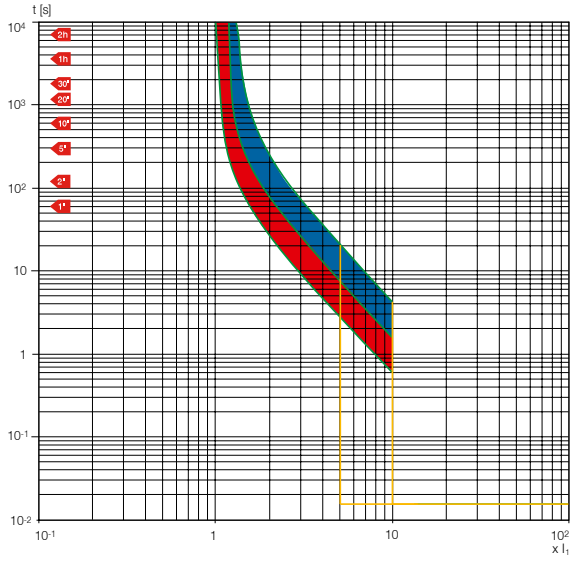
XT4 250 TMF In=25...50A



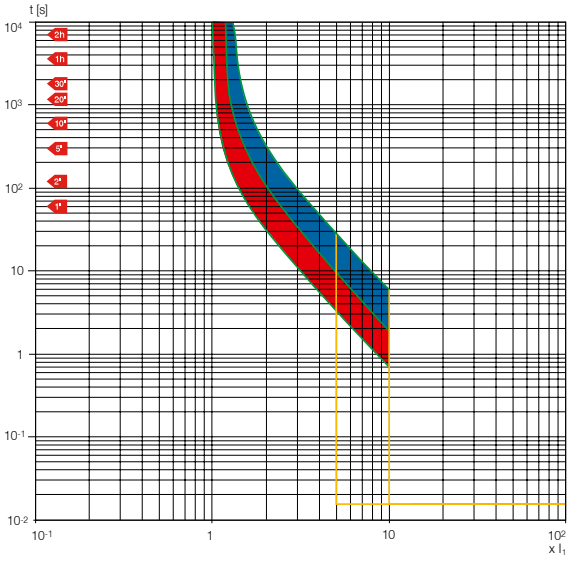
XT4 250 TMF In=60...70A



XT4 250 TMF In=80...100A



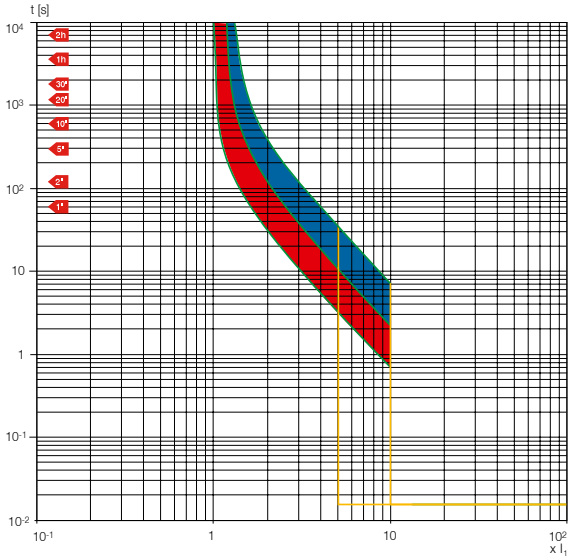
XT4 250 TMF In=110...150A



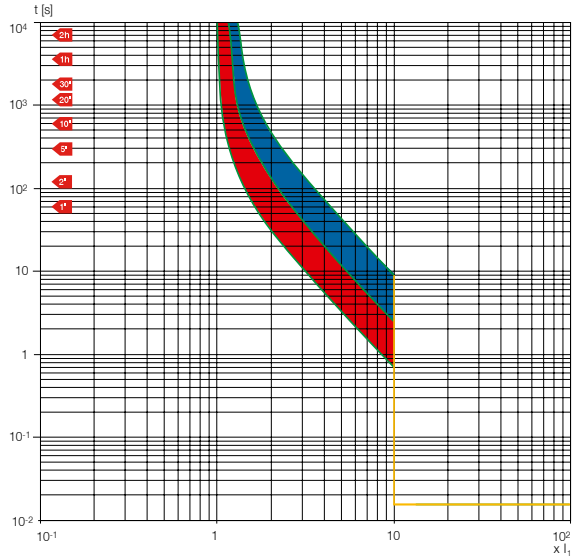
Characteristic curves

Trip curves with thermal magnetic trip unit

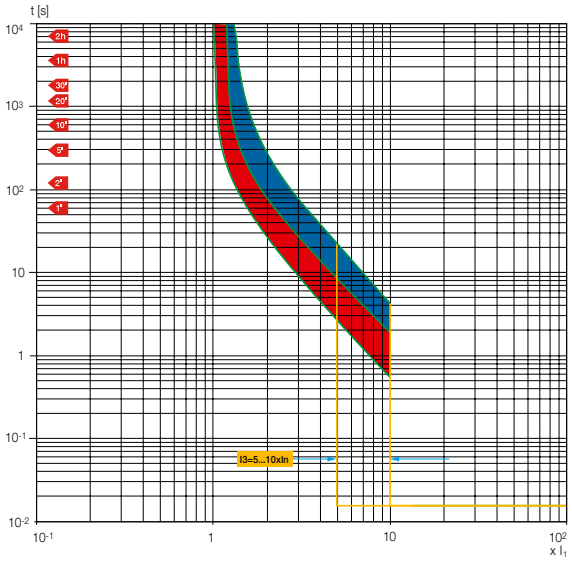
XT4 250 TMF In=175...225A



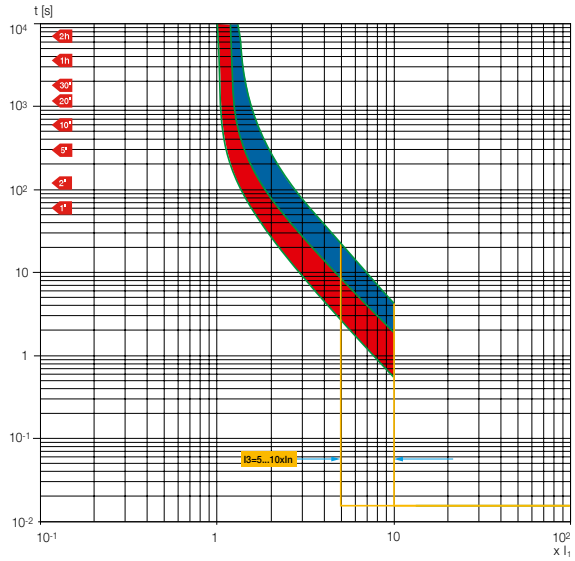
XT4 250 TMF In=250A



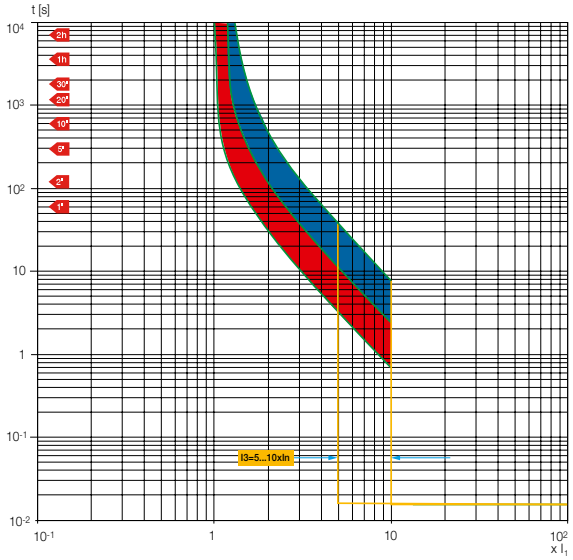
XT4 250 TMA In=80...100A



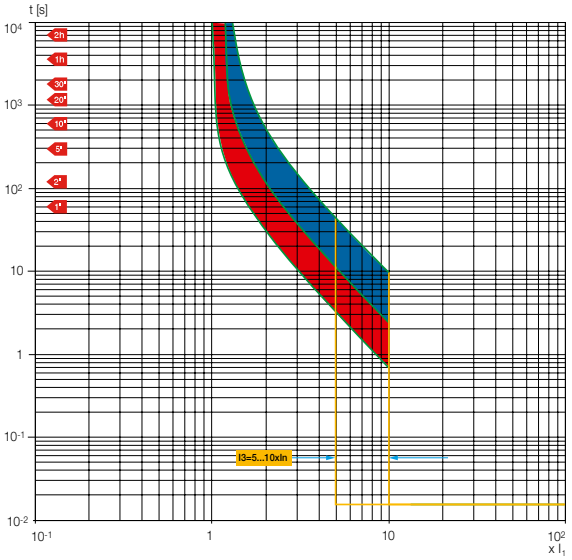
XT4 250 TMA In=110...150A



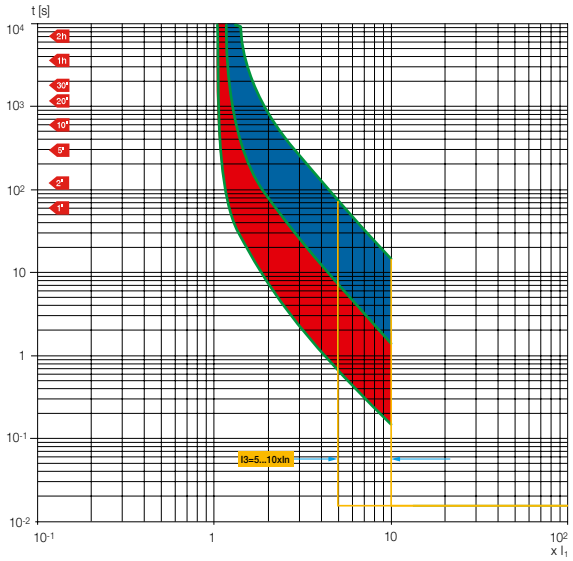
XT4 250 TMA In=175...225A



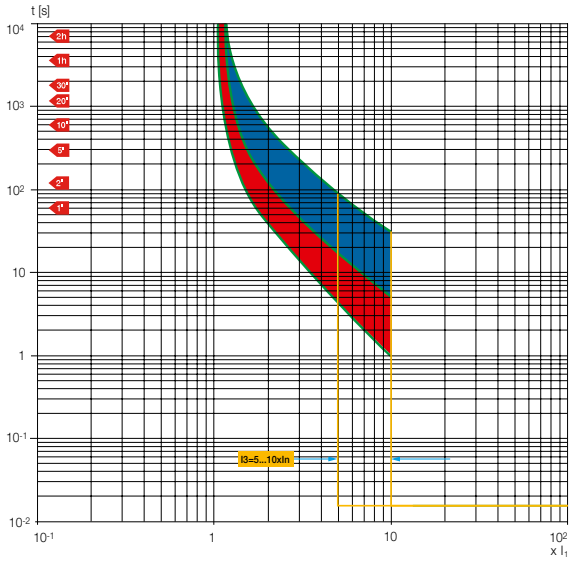
XT4 250 TMA In=250A



XT5 400/600 TMA In=300...600A



XT6 800 TMA In=600...800A

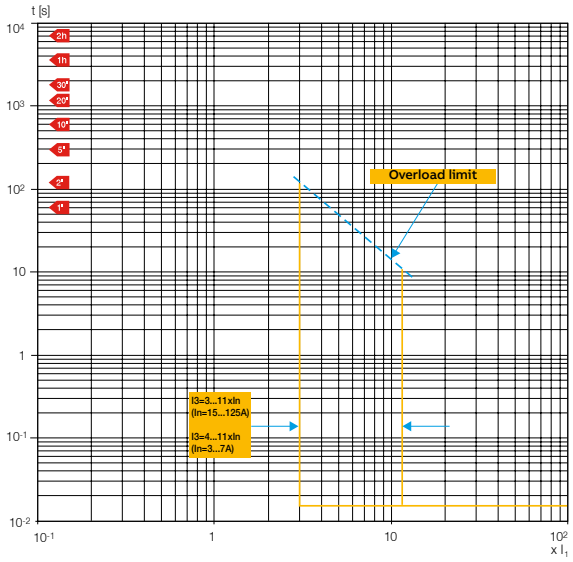


Characteristic curves

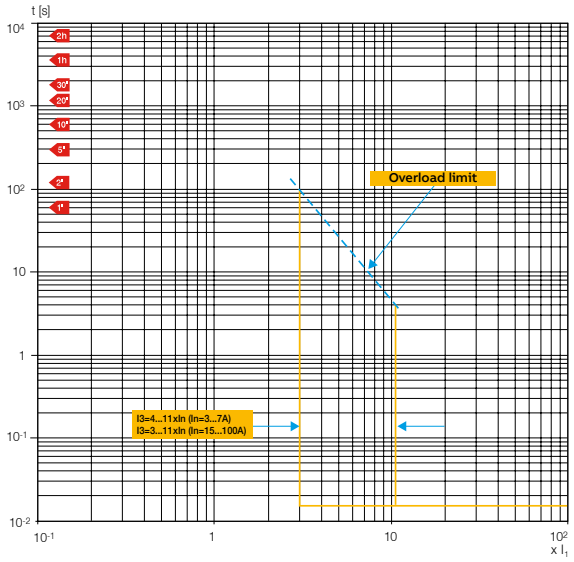
Trip curves with thermal magnetic trip unit

Trip curves for motor protection

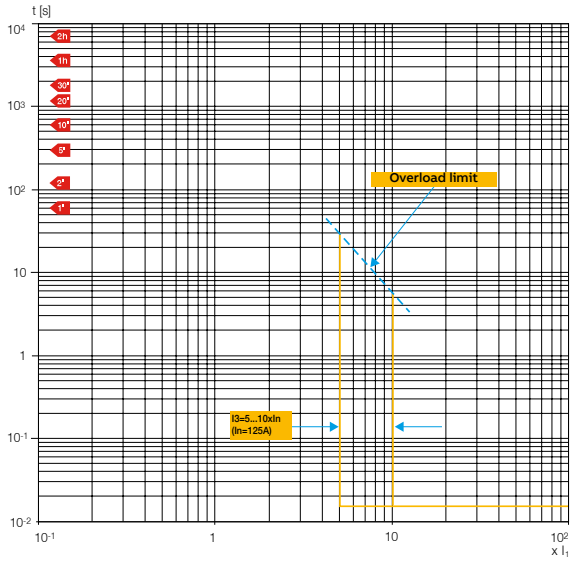
XT1 125 MA In=3...125A



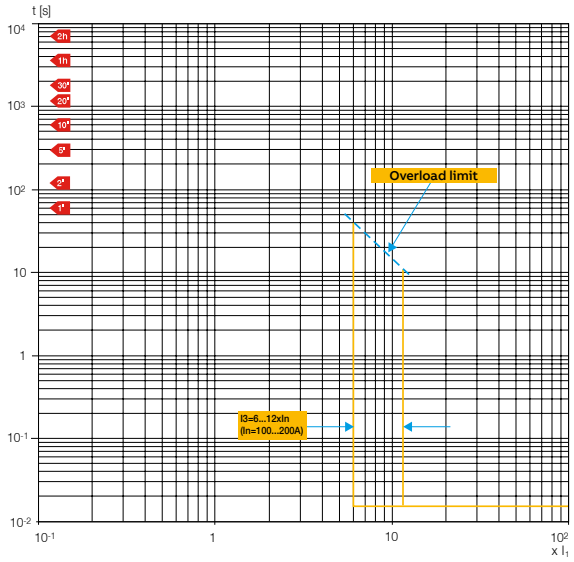
XT2 125 MA In=3...100A



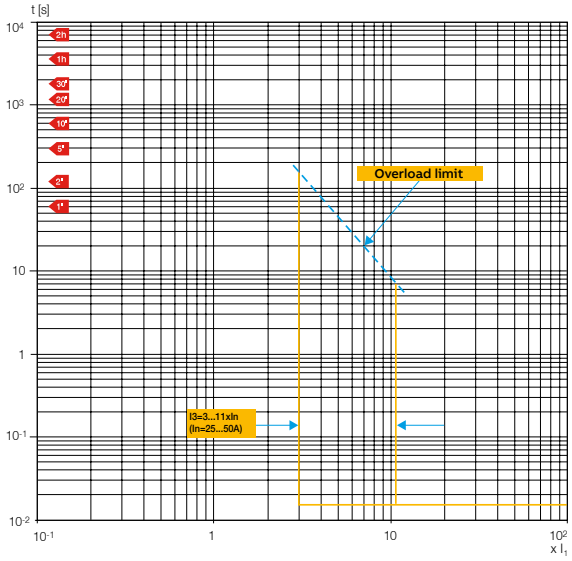
XT2 125 MA In=125A



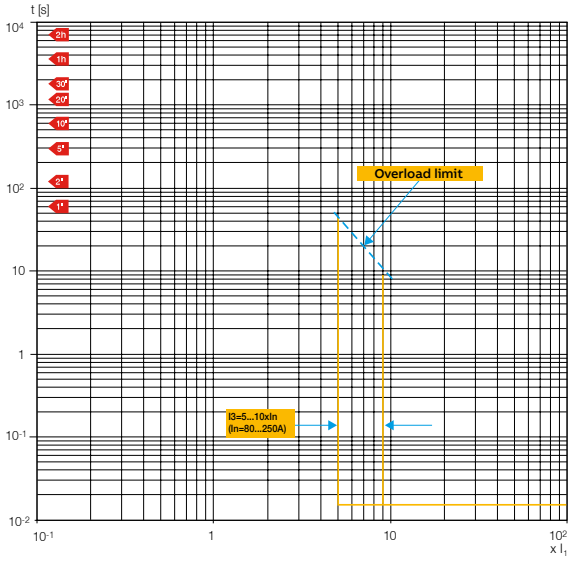
XT3 225 MA In=100...200A



XT4 250 MA 25...50A

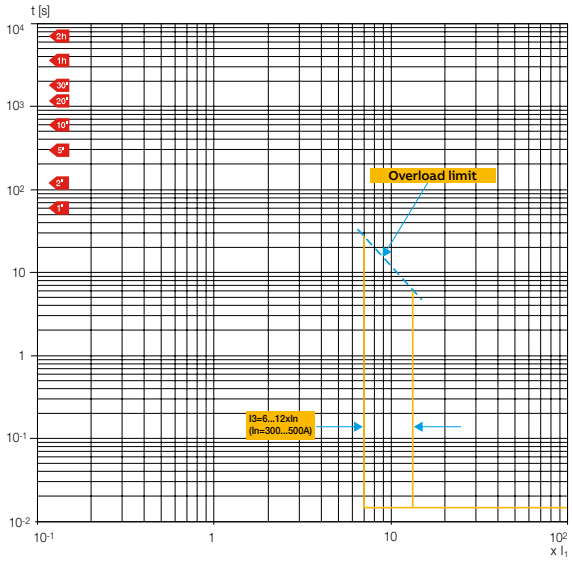


XT4 250 MA 80...250A

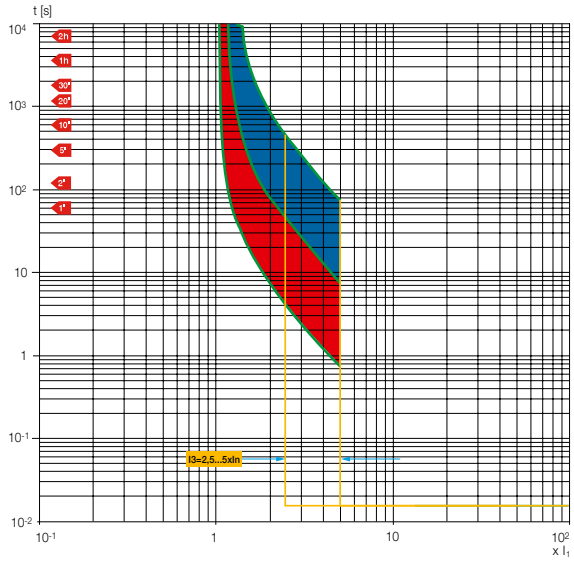


Trip curves for generator protection

XT5 250 MA 300...500A



XT5 TMG 300...600A

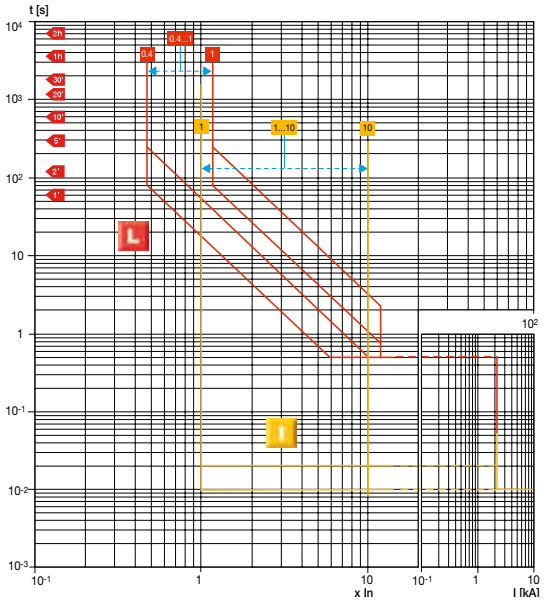


Characteristic curves

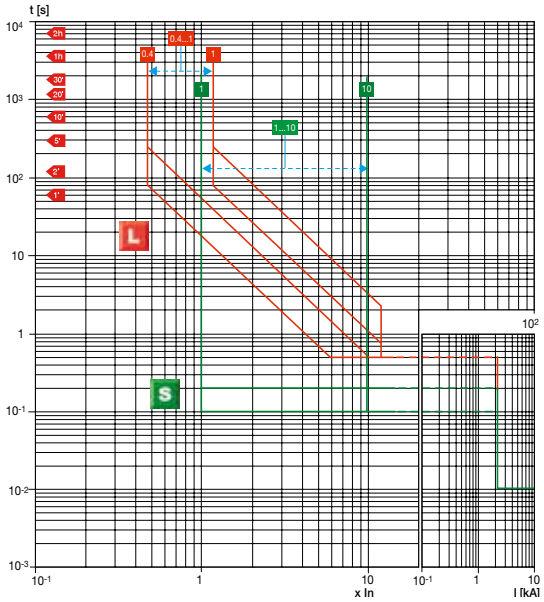
Trip curves with electronic trip unit Ekip Dip

Trip curves for distribution

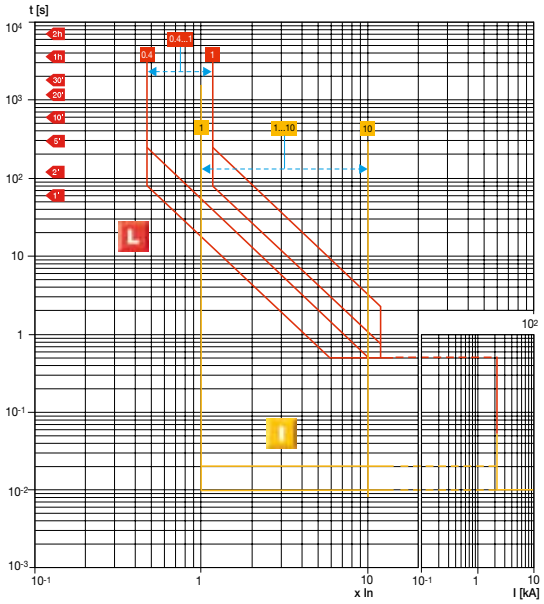
XT2 Ekip LS/I
L-I functions



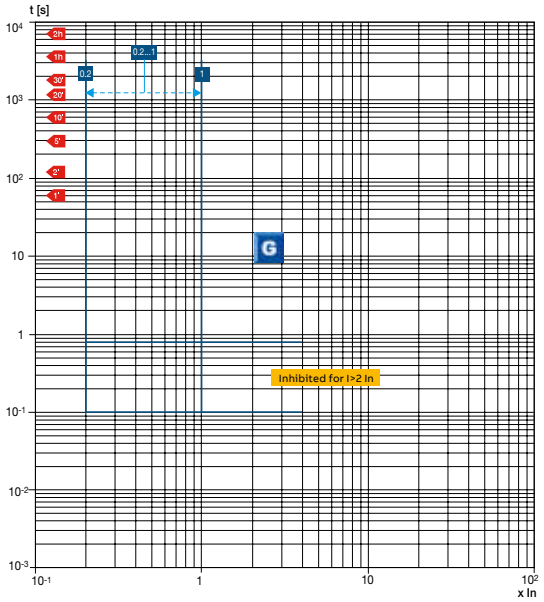
XT2 Ekip LS/I
L-S functions



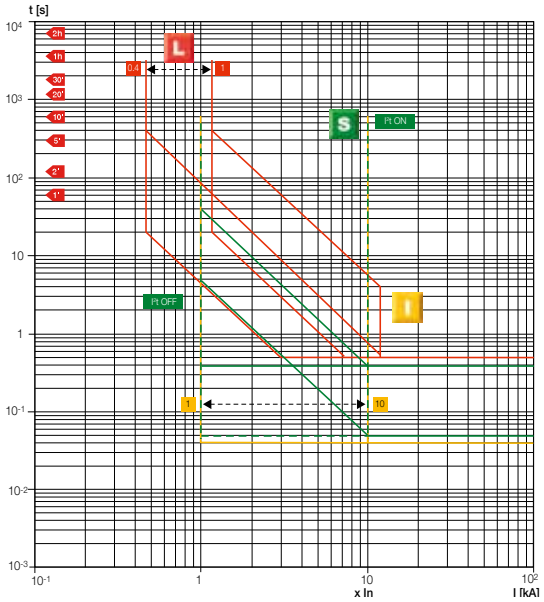
XT2 Ekip LIG
L-I functions



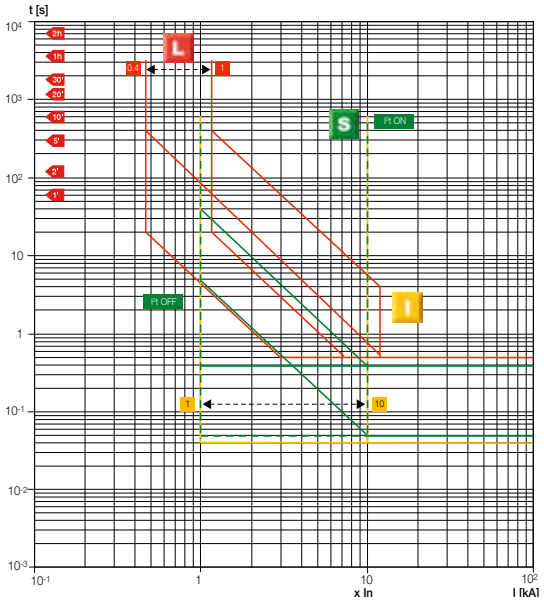
XT2 Ekip LIG
G function



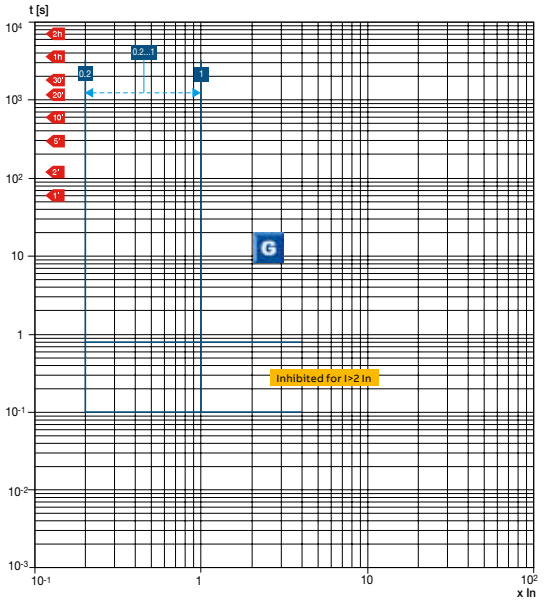
XT2 Ekip LSI
L-S-I functions



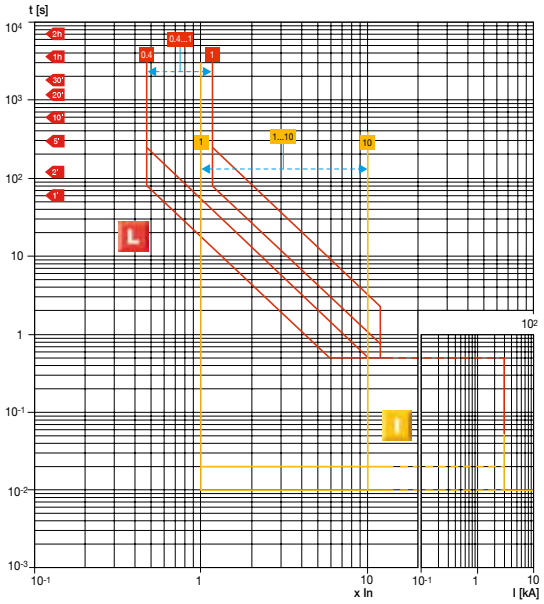
XT2 Ekip LSIG
L-S-I functions



XT2 Ekip LSIG
G function



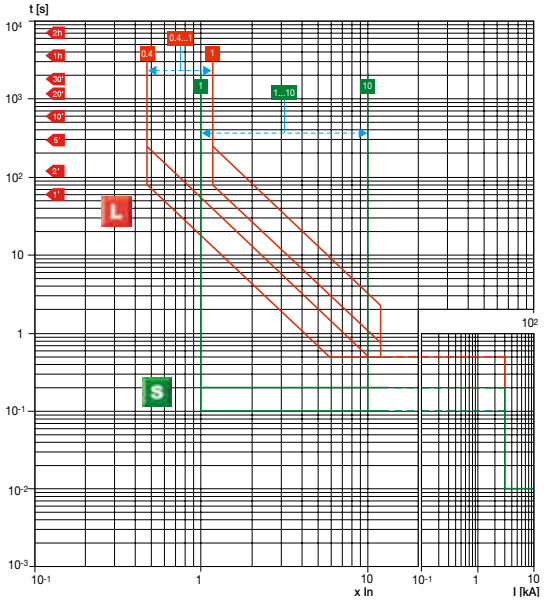
XT4 Ekip LS/I
L-I functions



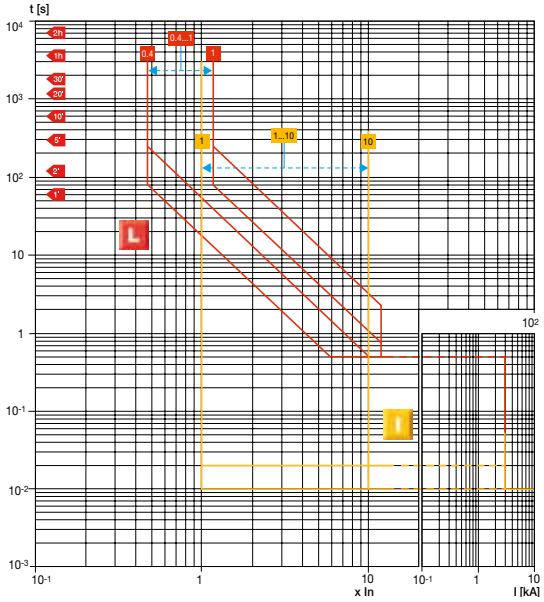
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

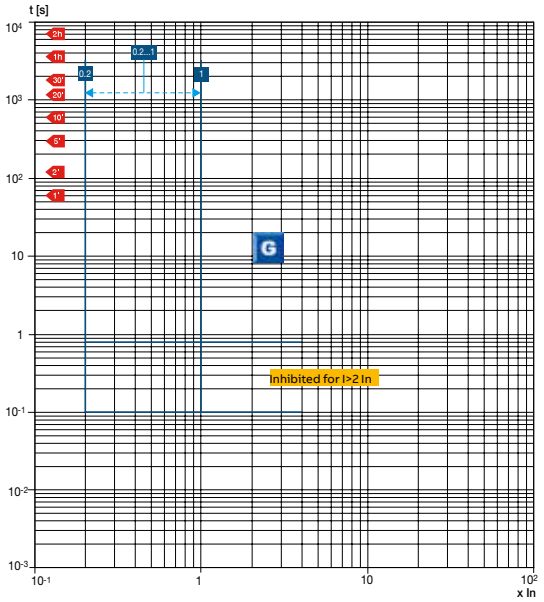
XT4 Ekip LS/I
L-S functions



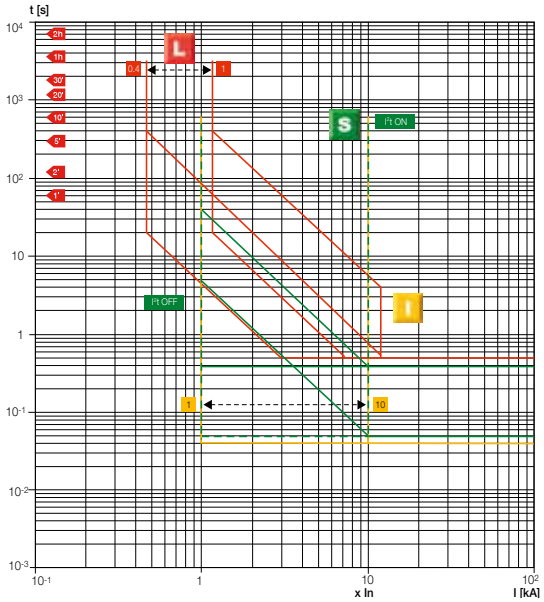
XT4 Ekip LIG
L-I functions



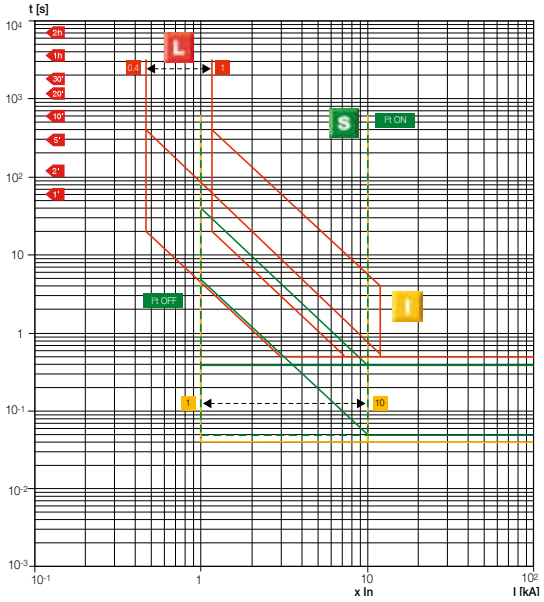
XT4 Ekip LIG
G function



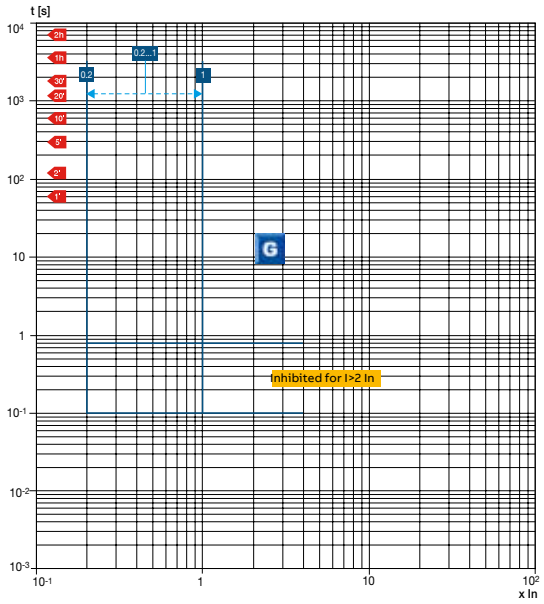
XT4 Ekip LSI
L-S-I functions



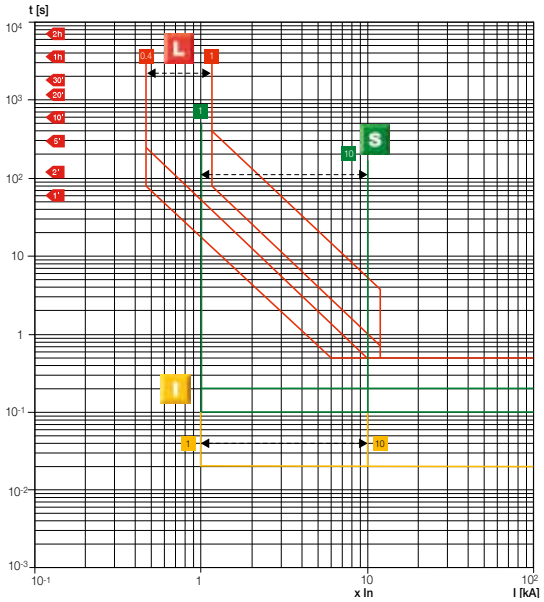
XT4 Ekip LSIG
L-S-I functions



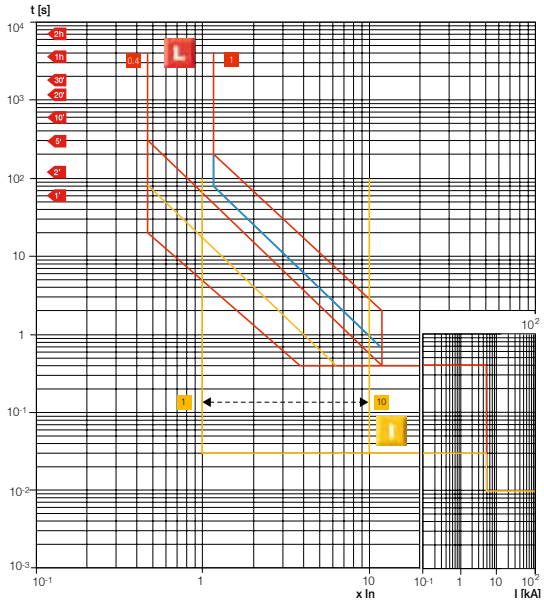
XT4 Ekip LSIG
G function



XT5-XT6 Ekip Dip LS/I
L-S-I functions



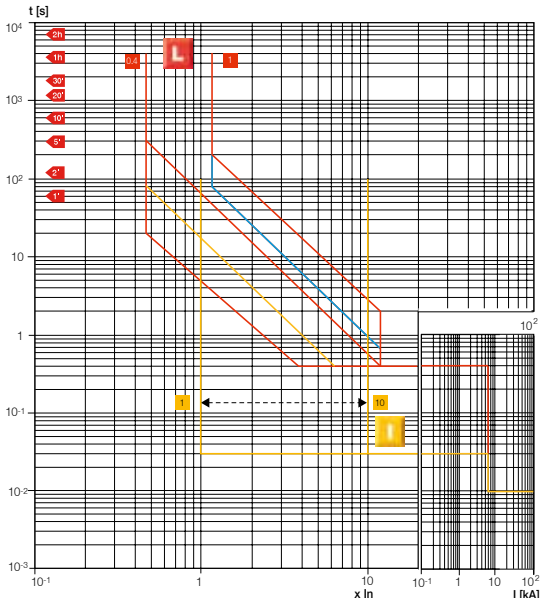
XT5 400 Ekip Dip LIG
L-I functions



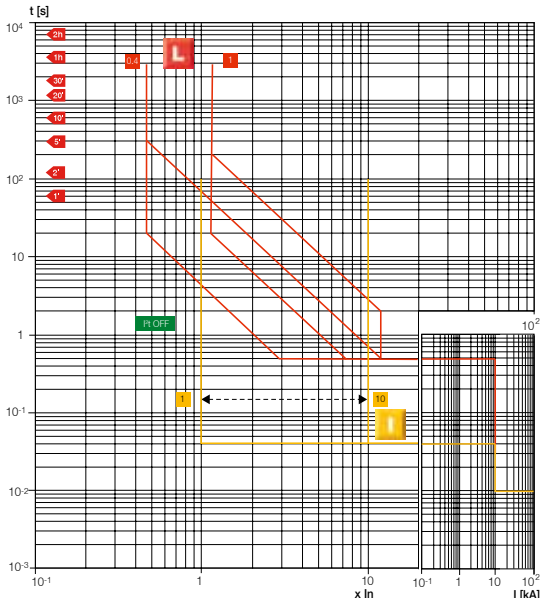
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

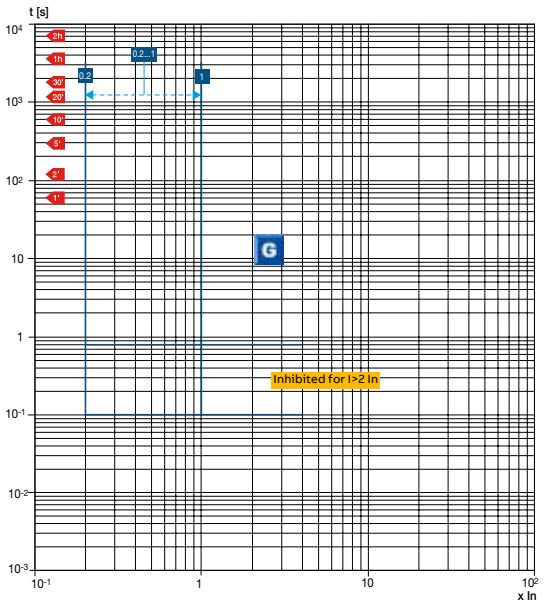
XT5 600 Ekip Dip LIG
L-I functions



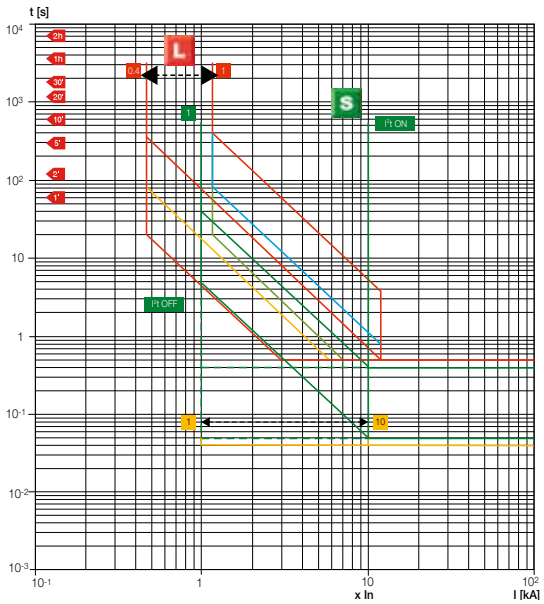
XT6 Ekip Dip LIG
L-I functions



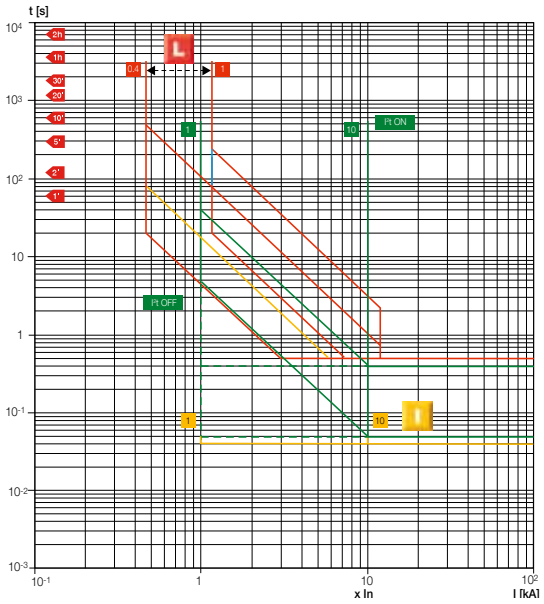
XT5-XT6 Ekip Dip LIG
G functions



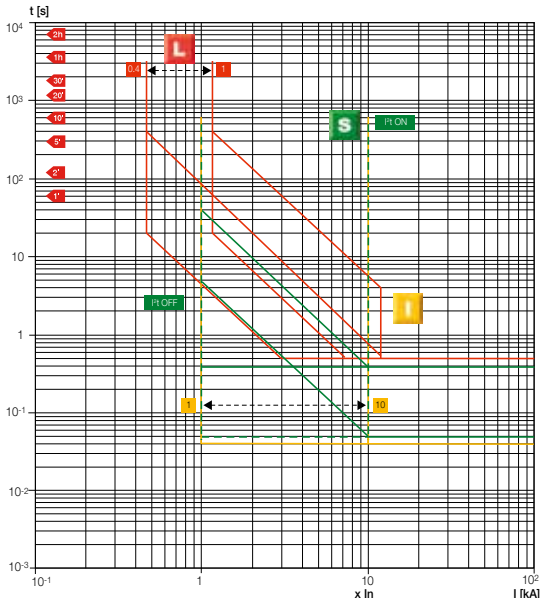
XT5 Ekip Dip LSI
L-S-I functions



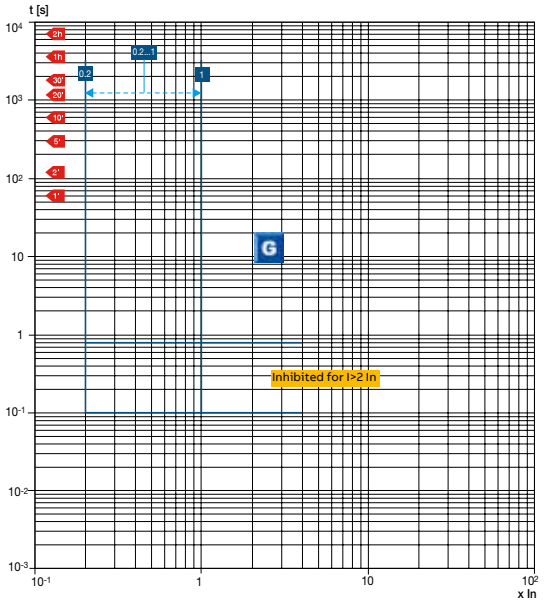
XT6 Ekip Dip LSI
L-S-I functions



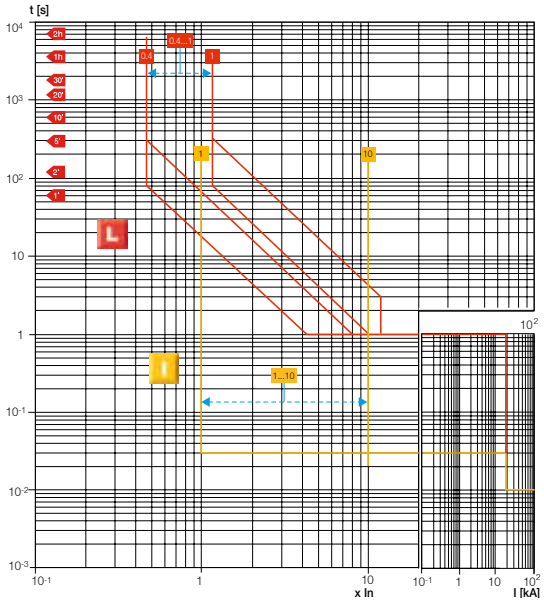
XT5-XT6 Ekip Dip LSIG
L-S-I functions



XT5-XT6 Ekip Dip LSIG
G function



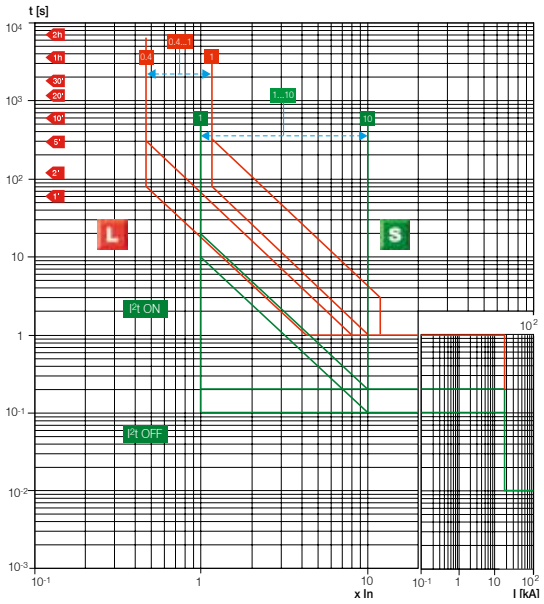
XT7 - XT7 M Ekip Dip LS/I
L-I functions



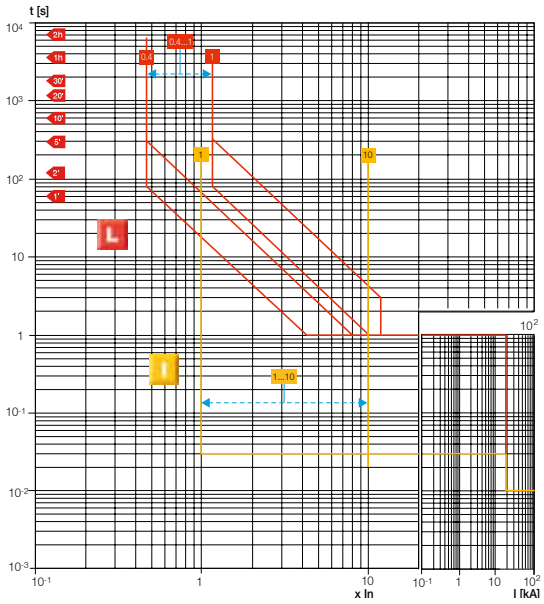
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

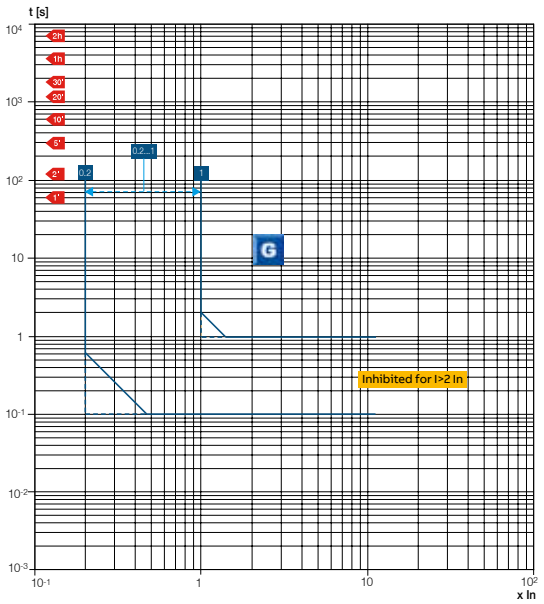
XT7 - XT7 M Ekip Dip LS/I
L-S functions



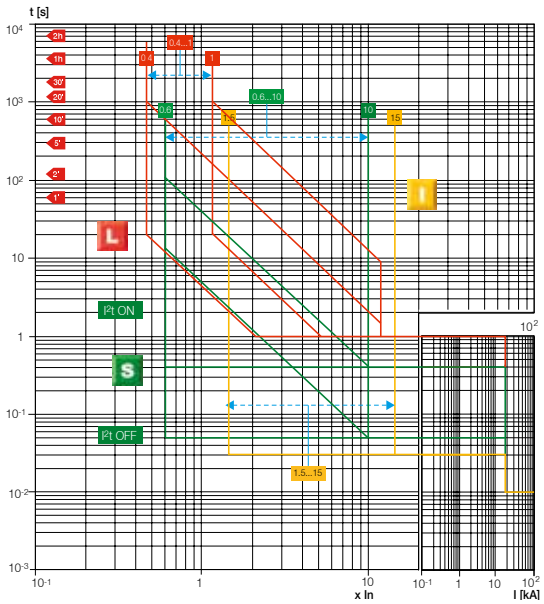
XT7 - XT7 M Ekip Dip LIG
L-I functions



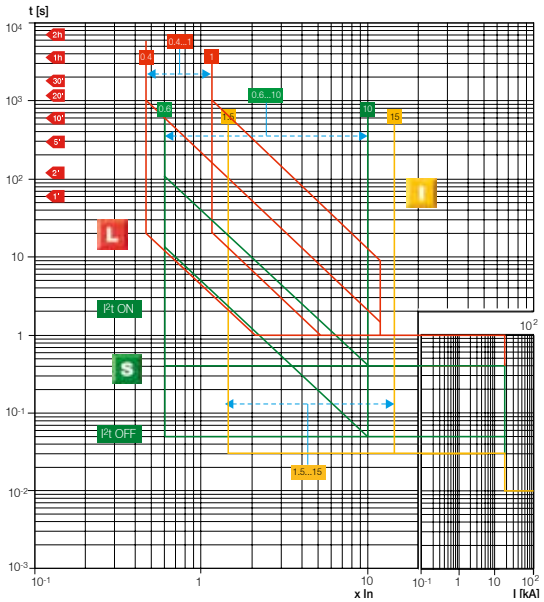
XT7 - XT7 M Ekip Dip LIG
G function



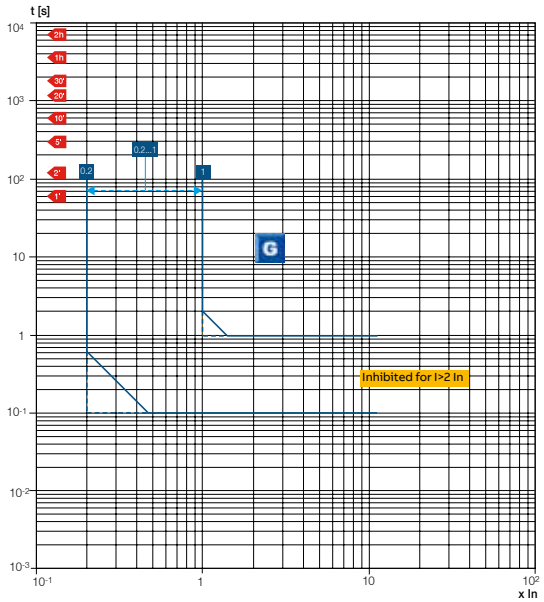
XT7 - XT7 M Ekip Dip LSI
L-S-I functions



XT7 - XT7 M Ekip Dip LSIG
L-S-I functions

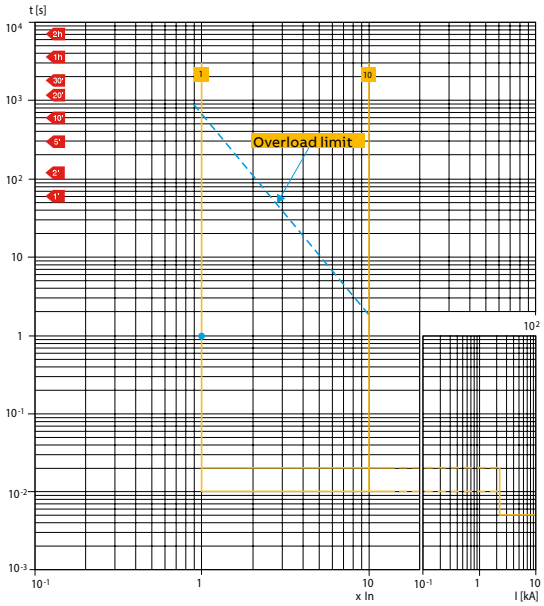


XT7 - XT7 M Ekip Dip LSIG
G function

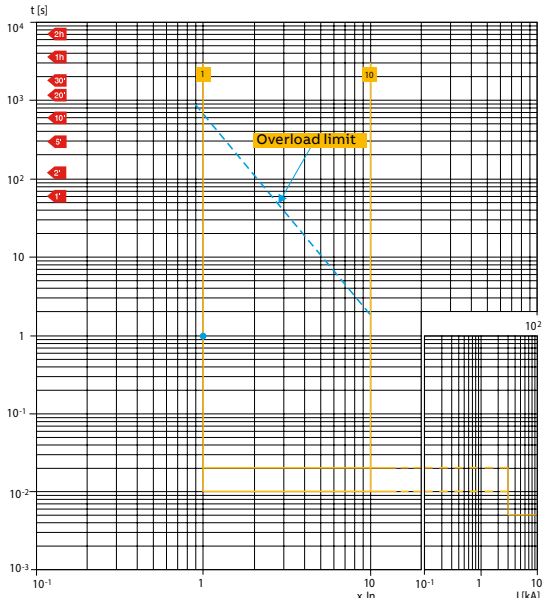


Trip curves for motor protection

XT2 Ekip I
I function



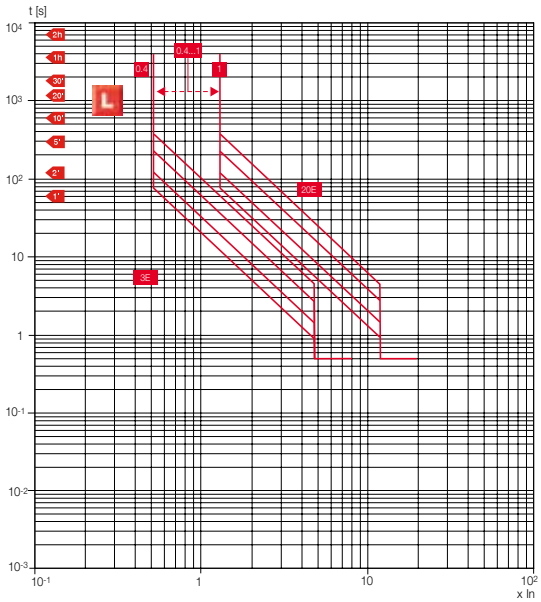
XT4 Ekip I
I function



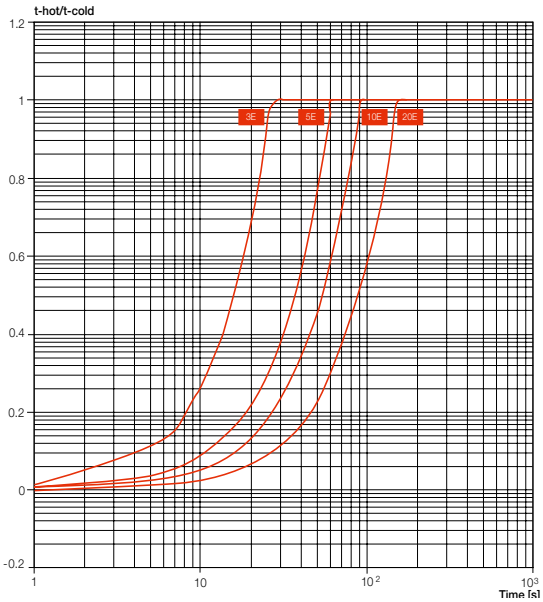
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

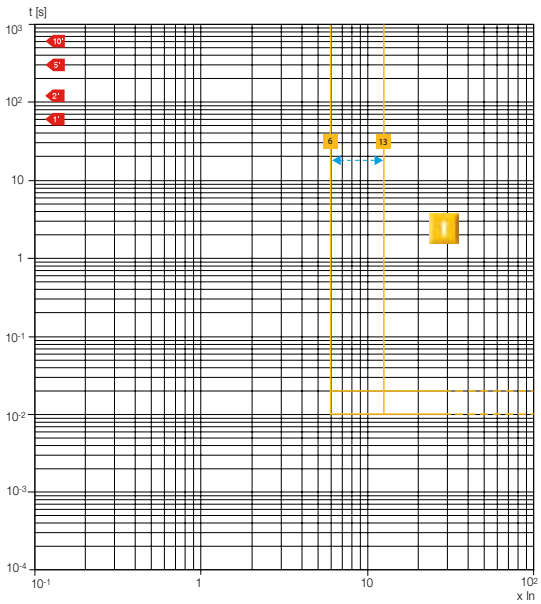
XT2 - XT4 Ekip M-LIU
L function (cold trip)



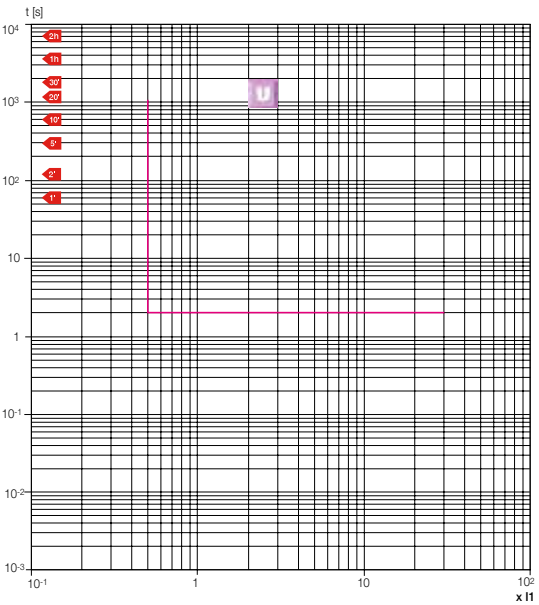
XT2 - XT4 Ekip M-LIU
(hot trip)



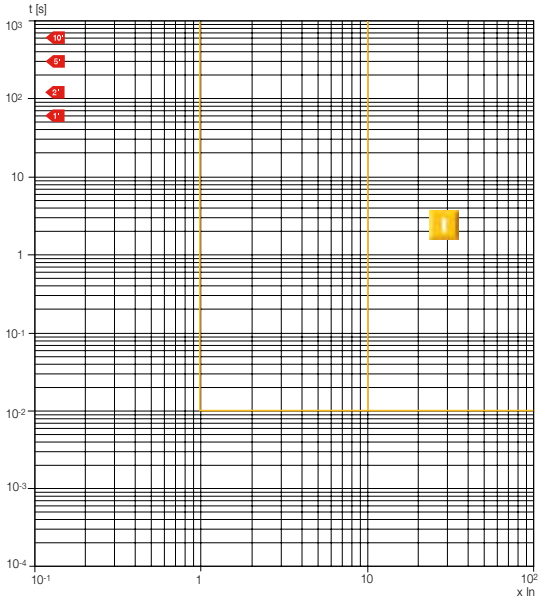
XT2 - XT4 Ekip M-LIU
I function



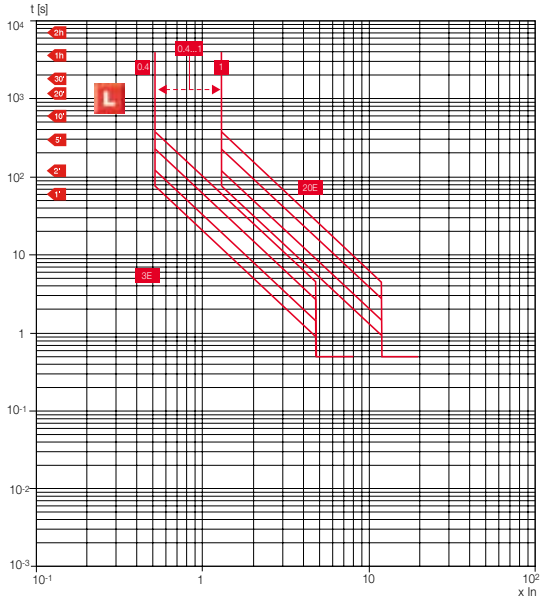
XT2 - XT4 Ekip M-LIU
U function



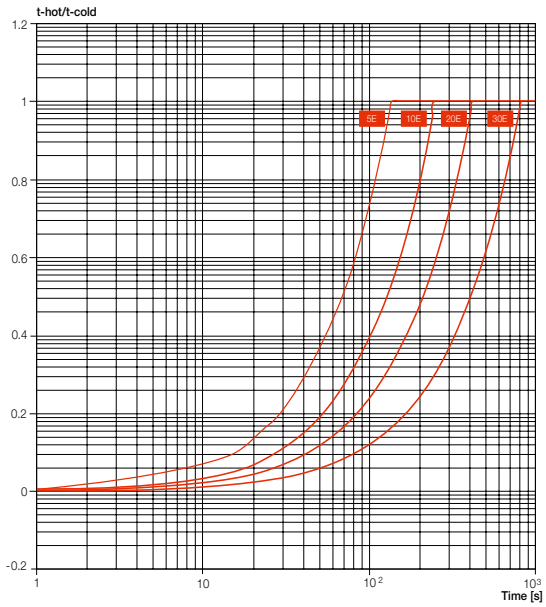
XT5-XT6 Ekip M Dip I
I function



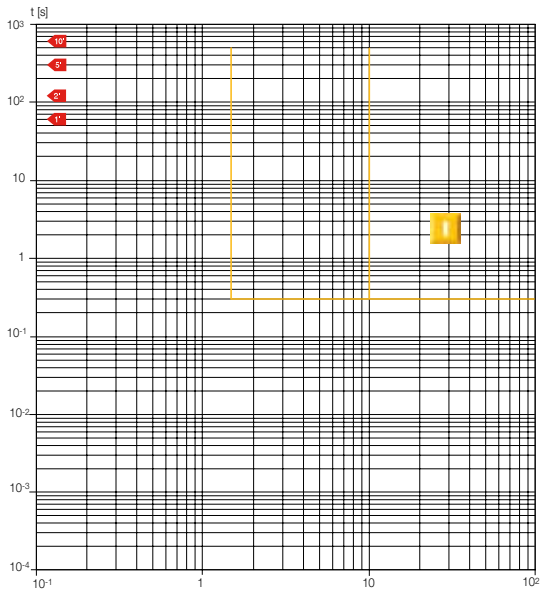
XT5-XT6 Ekip M Dip LIU
L function (cold trip)



XT5-XT6 Ekip M Dip LIU
(hot trip)



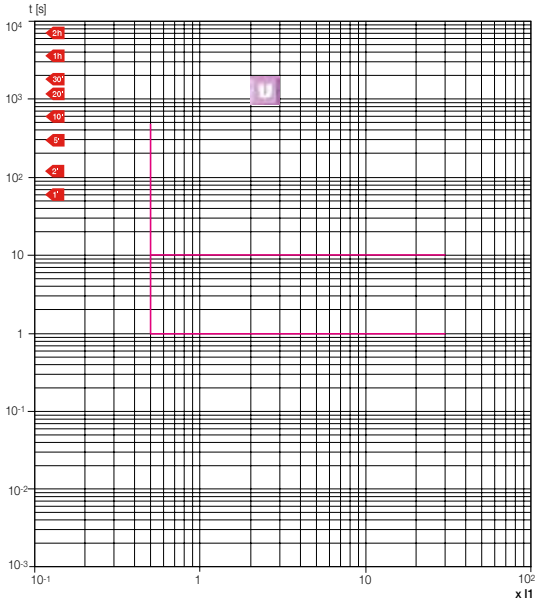
XT5-XT6 Ekip M Dip LIU
I function



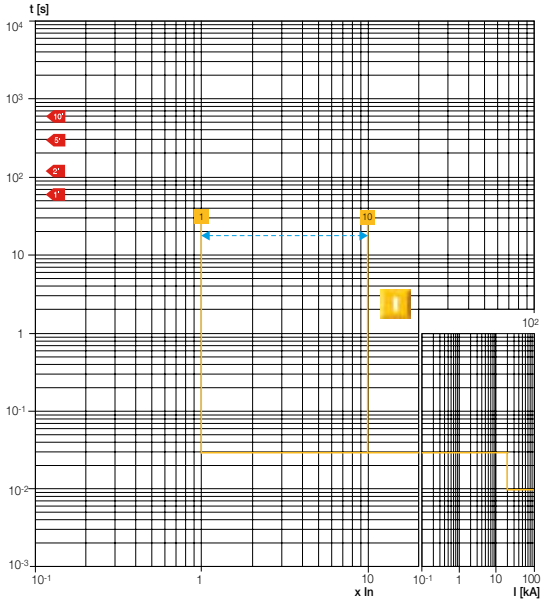
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

XT5-XT6 Ekip M Dip LIU
U function

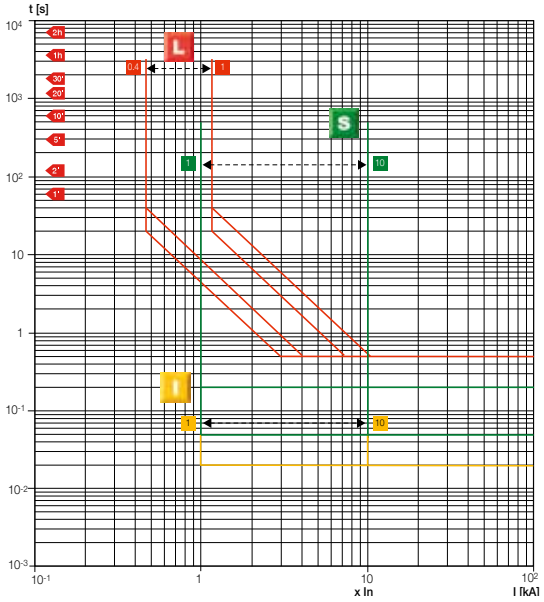


XT7 - XT7 M Ekip M Dip I
I function

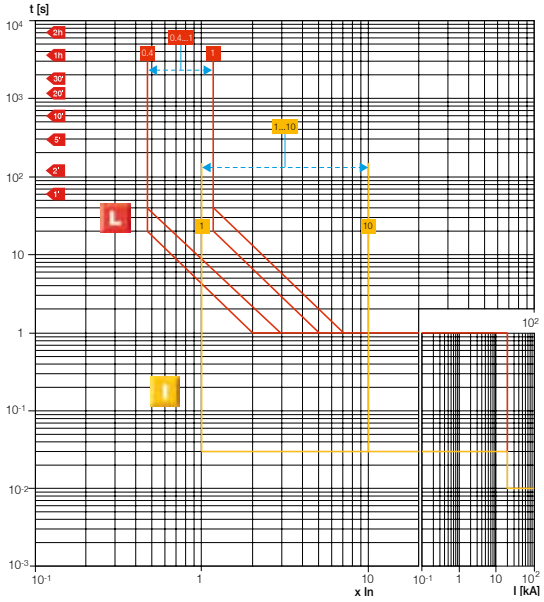


Trip curves for generator protection

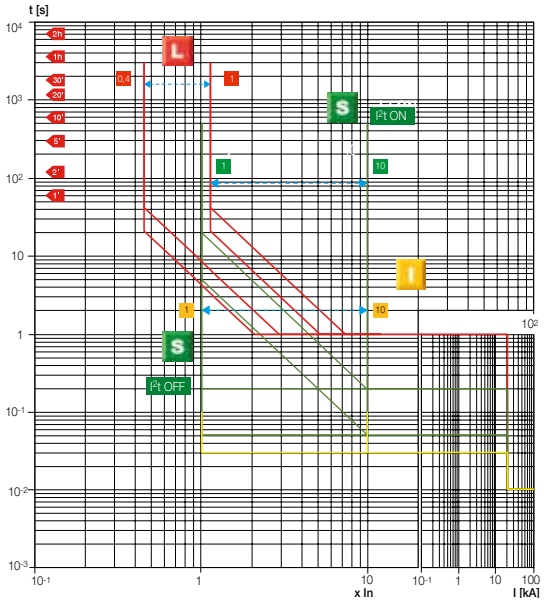
XT5-XT6 Ekip G Dip LS/I
L-S-I functions



XT7 - XT7 M Ekip G Dip LS/I
L-I functions



XT7 - XT7 M Ekip G Dip LS/I
L-S functions

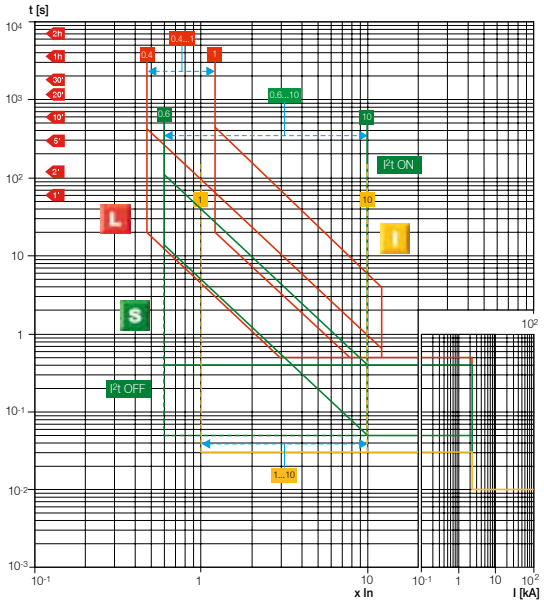


Characteristic curves

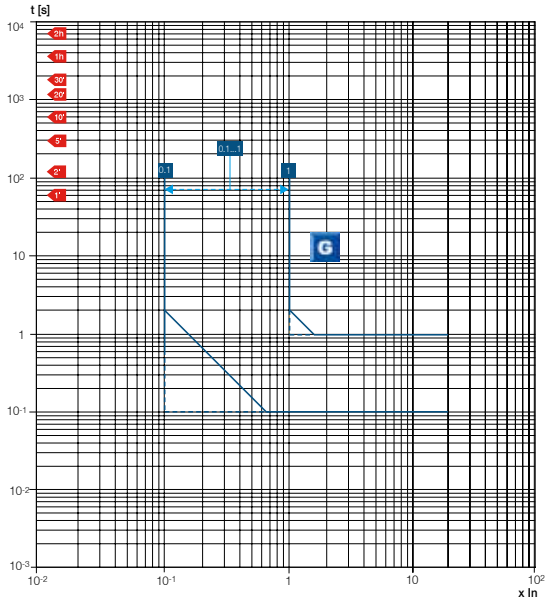
Trip curves with electronic trip unit Ekip Touch and Hi-Touch

Trip curves for distribution

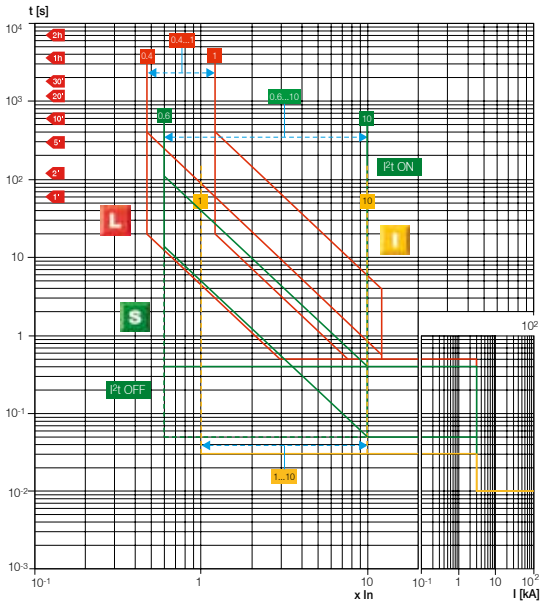
XT2
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI- Ekip Hi-Touch LSIG • L – S – I function



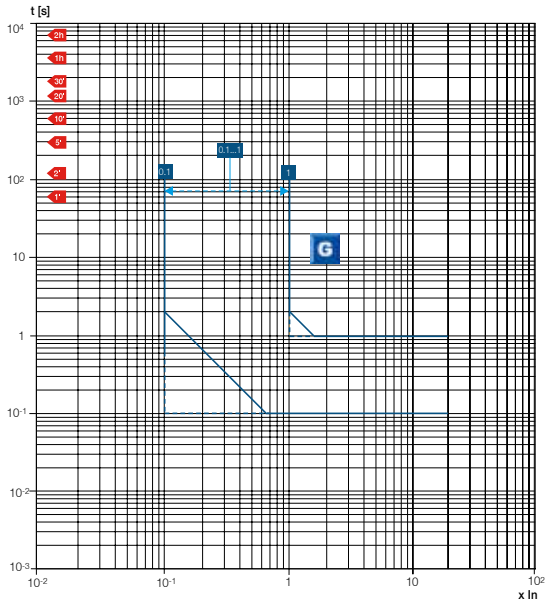
XT2
Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function



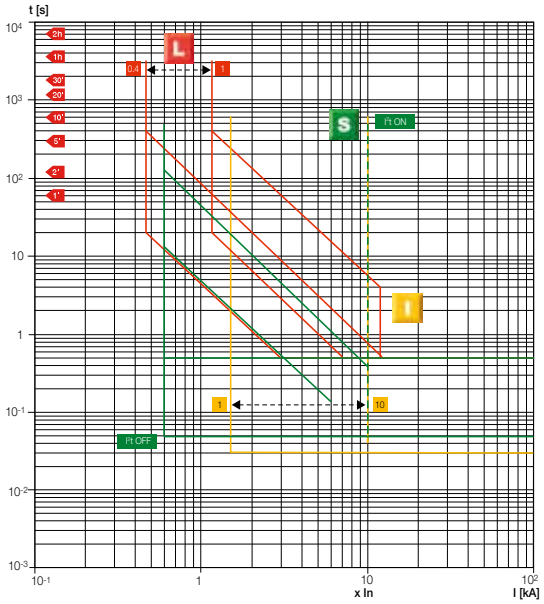
XT4
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • L – S – I function



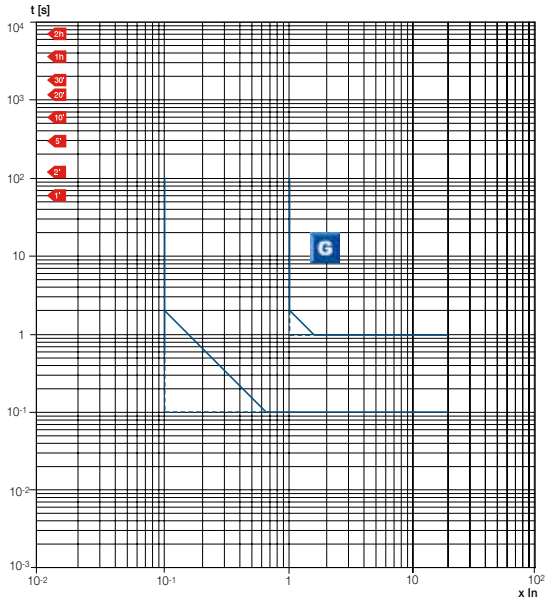
XT4
Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function



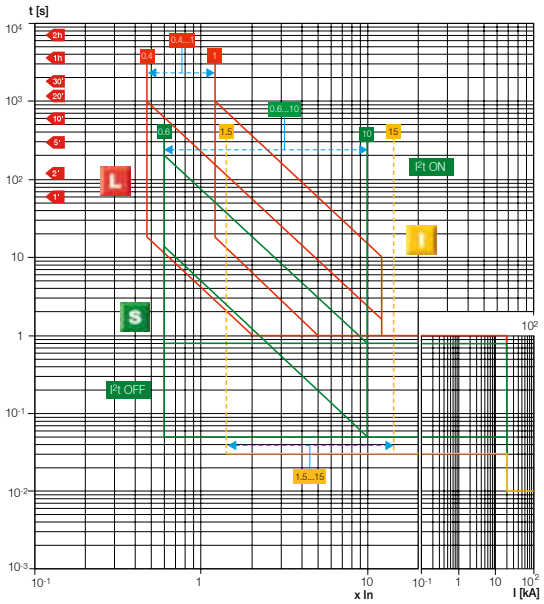
XT5
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • L – S – I function



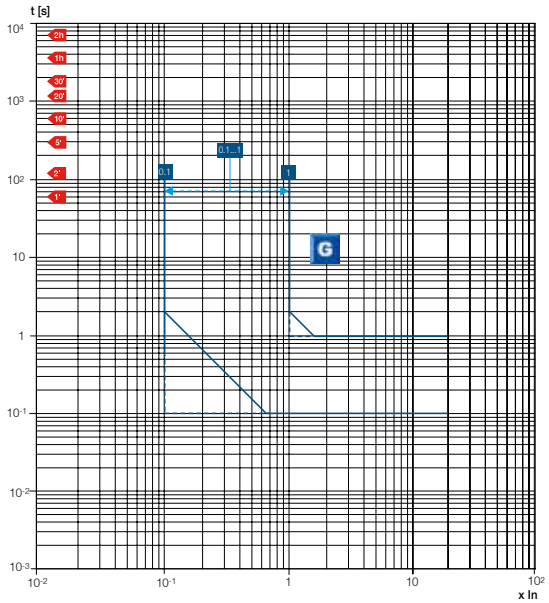
XT5
Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function



XT7 – XT7 M
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • L – S – I function



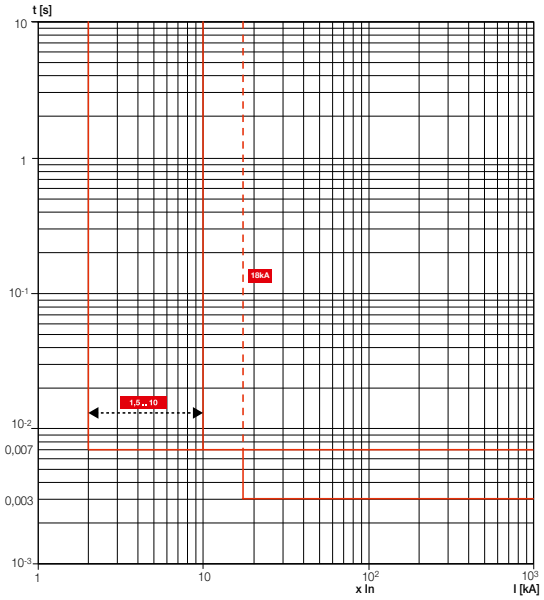
XT7 – XT7 M
Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function



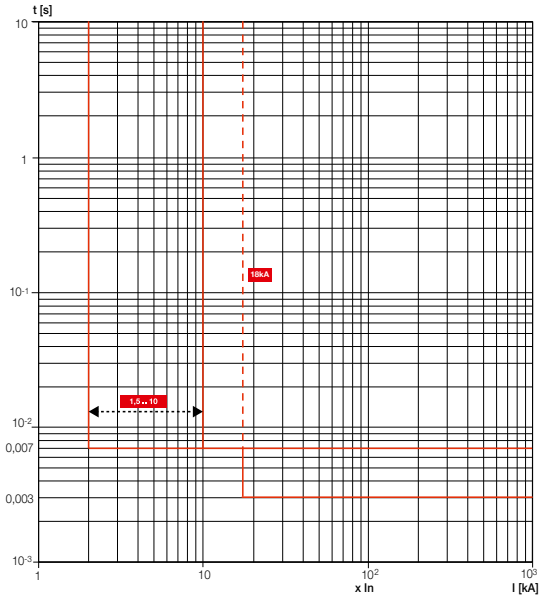
Characteristic curves

Trip curves with electronic trip unit Ekip Touch and Hi-Touch

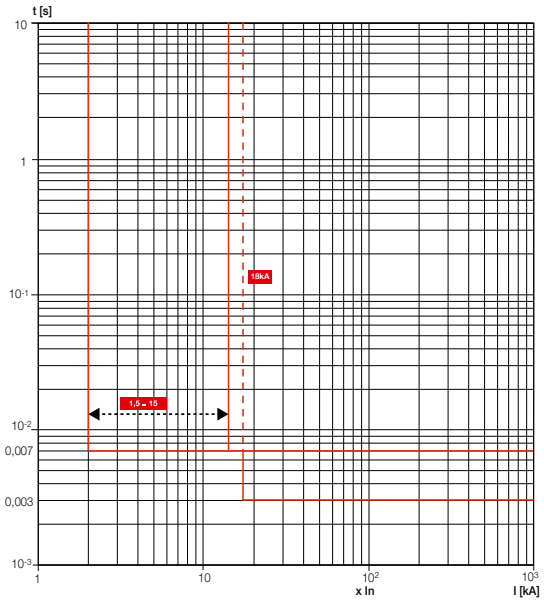
XT2
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • 2I function



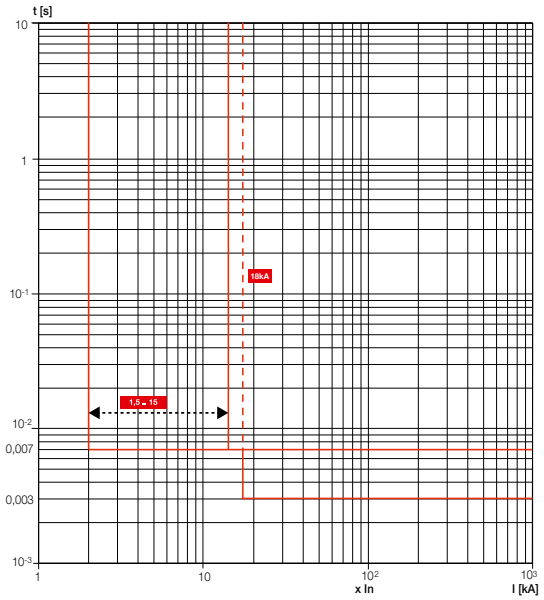
XT4
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • 2I function



XT5
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • 2I function

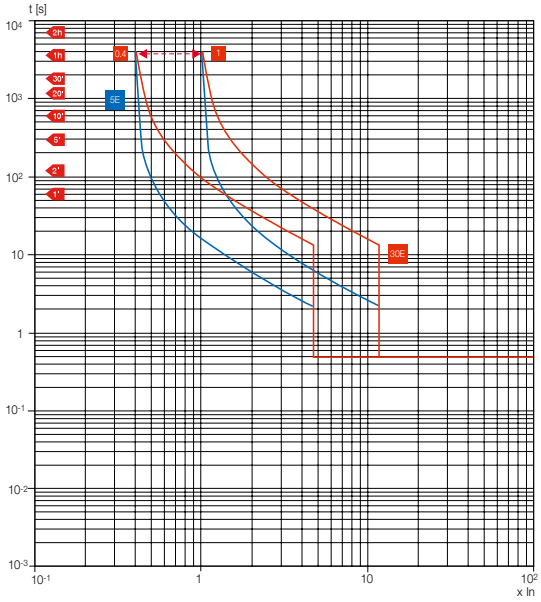


XT7 – XT7 M
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • 2I function

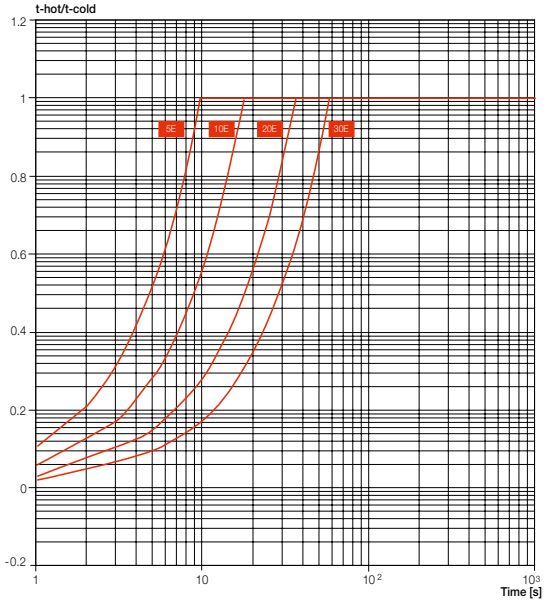


Trip curves for motor protection

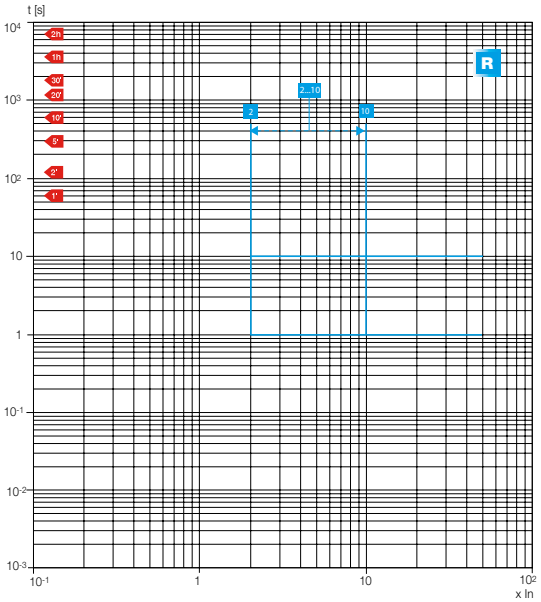
XT2 Ekip M Touch LRIU
L function (cold trip)



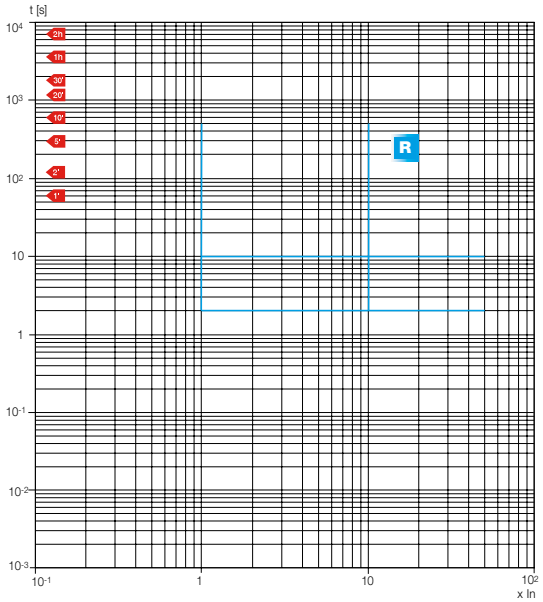
XT2 Ekip M Touch LRIU
(hot trip)



XT2 Ekip M Touch LRIU
R function - JAM



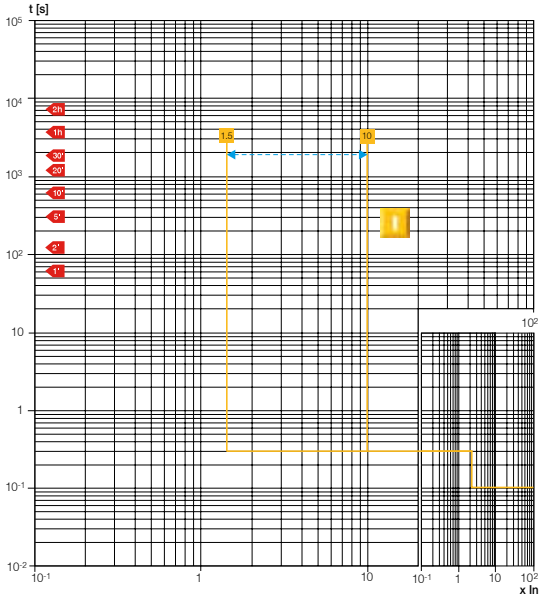
XT2 Ekip M Touch LRIU
R function - STALL



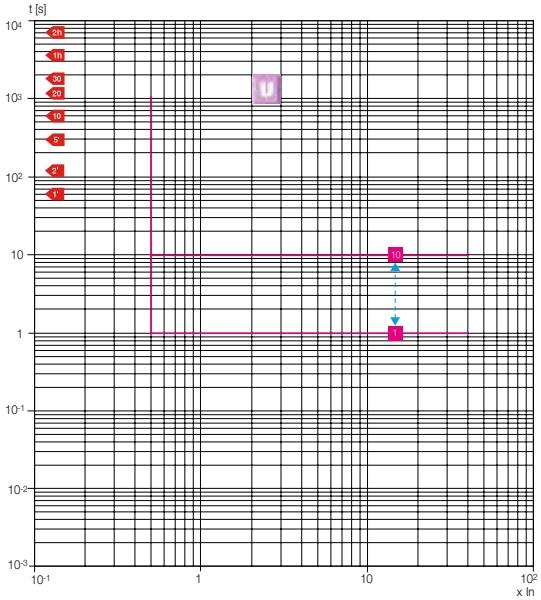
Characteristic curves

Trip curves with electronic trip unit Ekip Touch and Hi-Touch

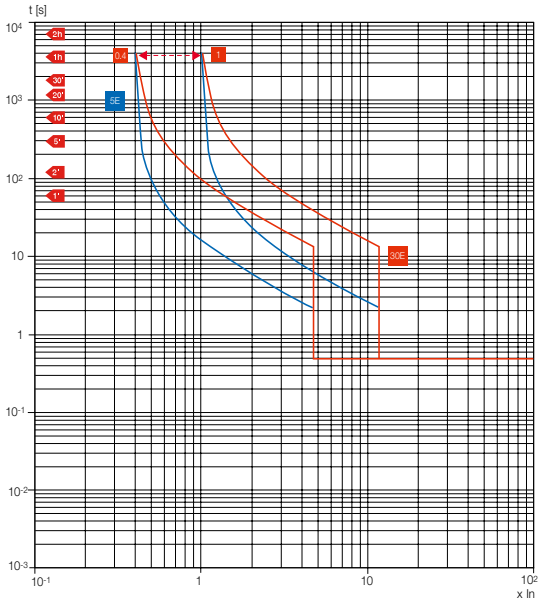
XT2 Ekip M Touch LRIU
I function



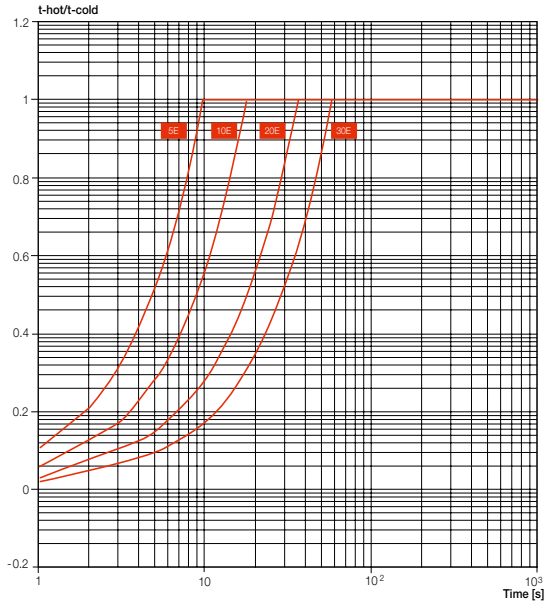
XT2 Ekip M Touch LRIU
U function



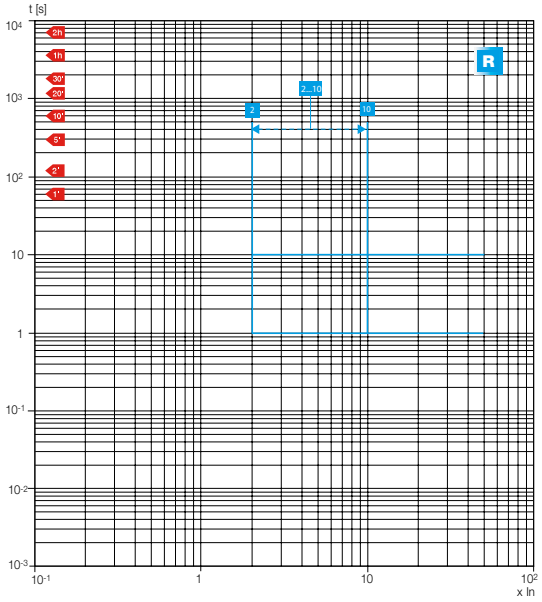
XT4 Ekip M Touch LRIU
L function (cold trip)



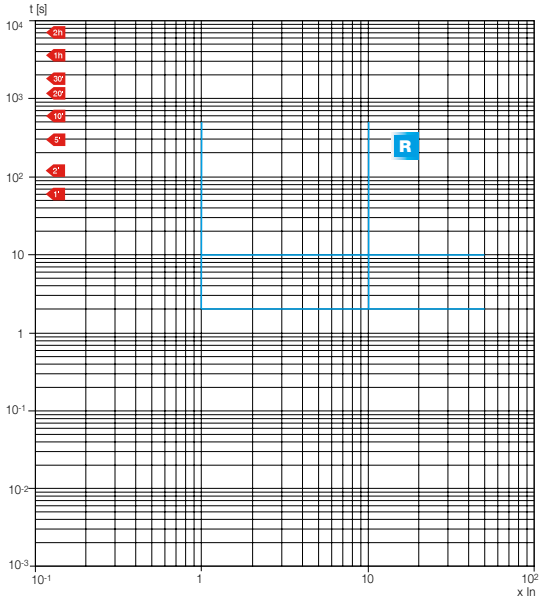
XT4 Ekip M Touch LRIU
(hot trip)



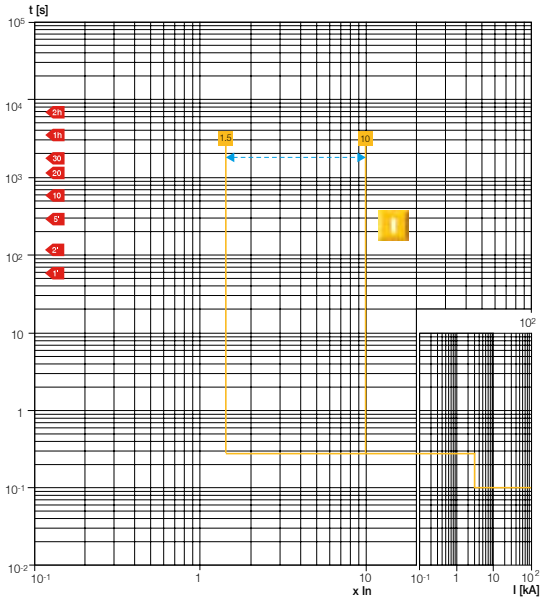
XT4 Ekip M Touch LRIU
R function - JAM



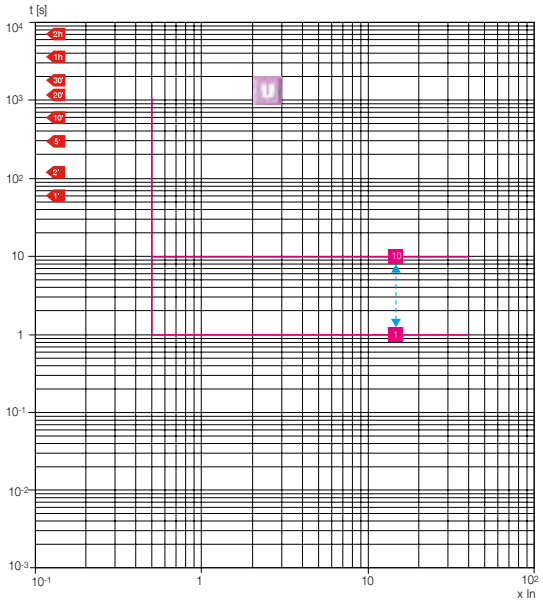
XT4 Ekip M Touch LRIU
R function - STALL



XT4 Ekip M Touch LRIU
I function



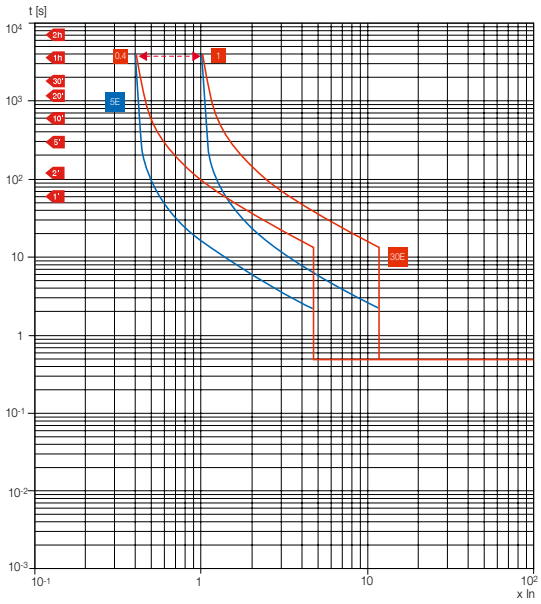
XT4 Ekip M Touch LRIU
U function



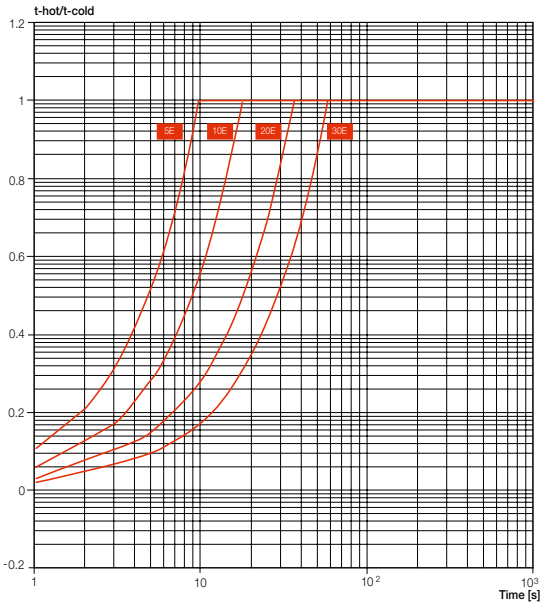
Characteristic curves

Trip curves with electronic trip unit Ekip Touch and Hi-Touch

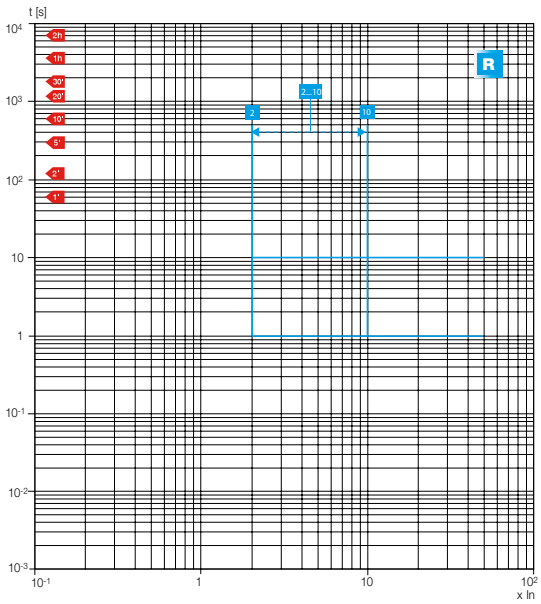
XT5 Ekip M Touch LRIU
L function (cold trip)



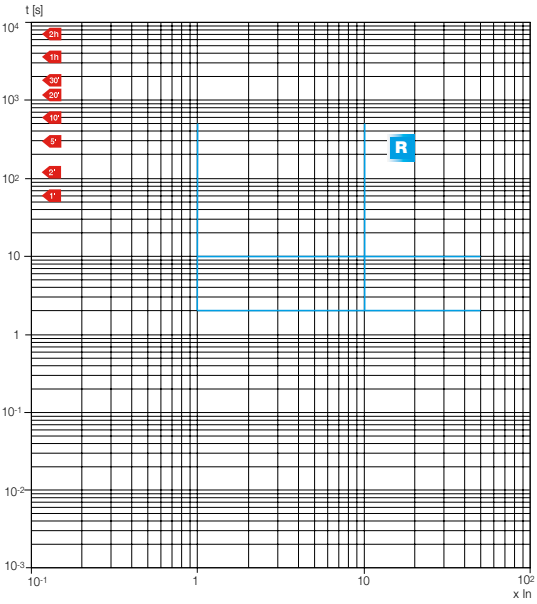
XT5 Ekip M Touch LRIU
(hot trip)



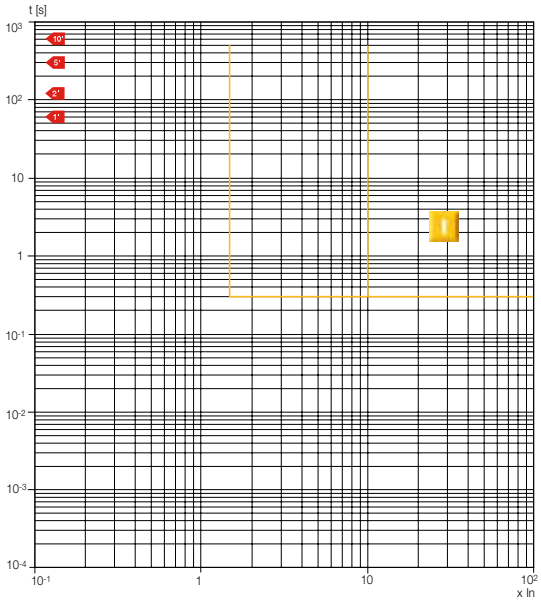
XT5 Ekip M Touch LRIU
R function - JAM



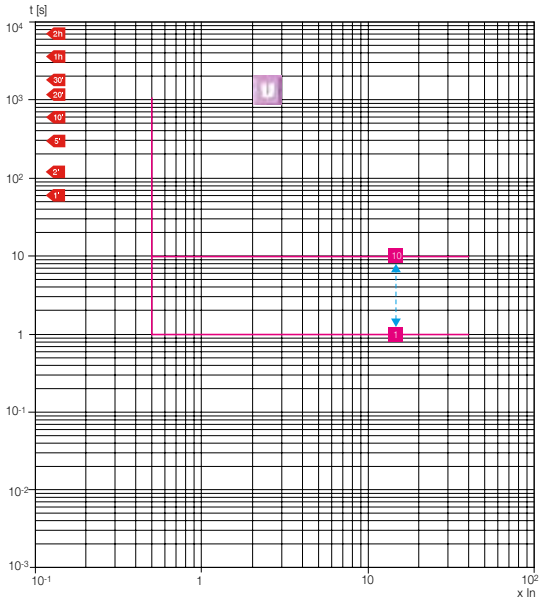
XT5 Ekip M Touch LRIU
R function - STALL



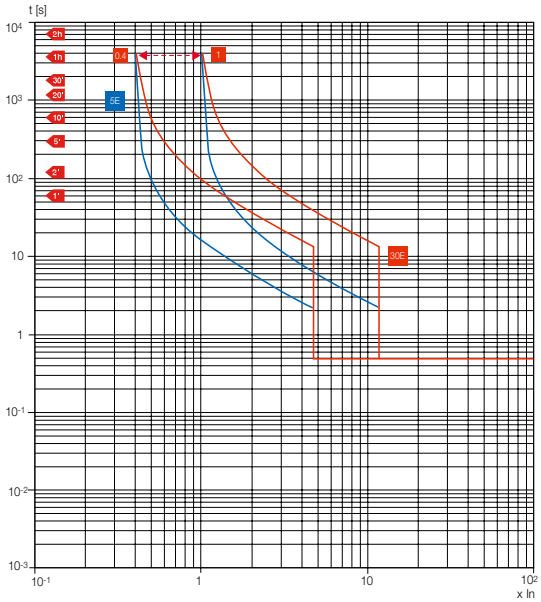
XT5 Ekip M Touch LRIU
I function



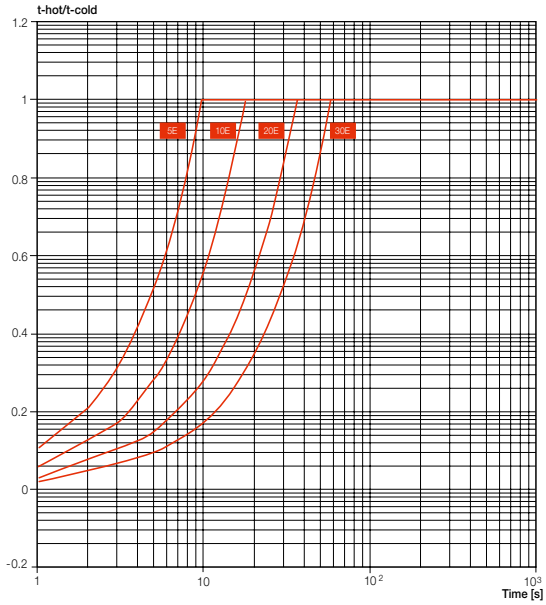
XT5 Ekip M Touch LRIU
U function



XT7 – XT7 M Ekip M Touch LRIU
L function (cold trip)



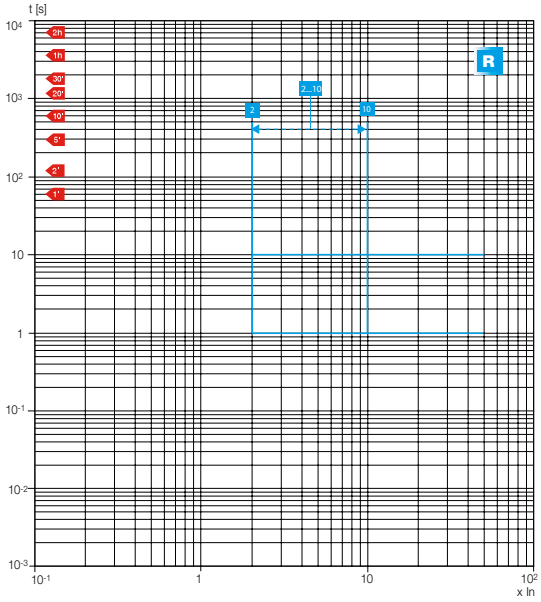
XT7-XT7M Ekip M Touch LRIU
(hot trip)



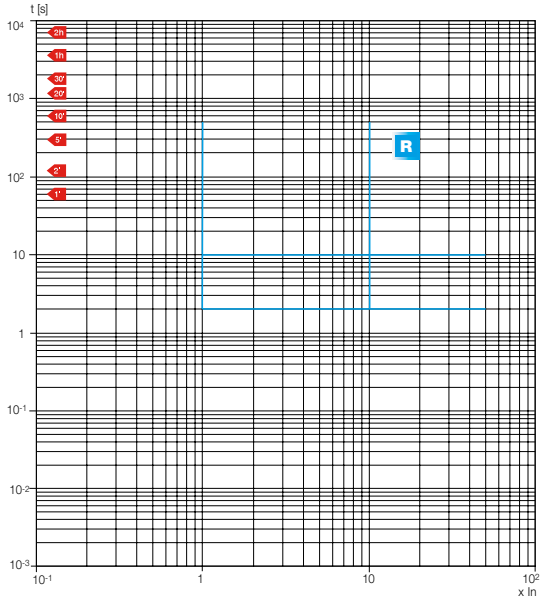
Characteristic curves

Trip curves with electronic trip unit Ekip Touch and Hi-Touch

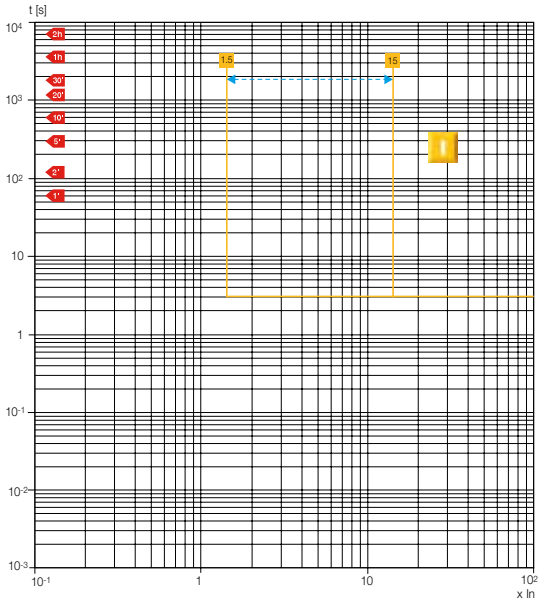
XT7 – XT7 M Ekip M Touch LRIU
R function - JAM



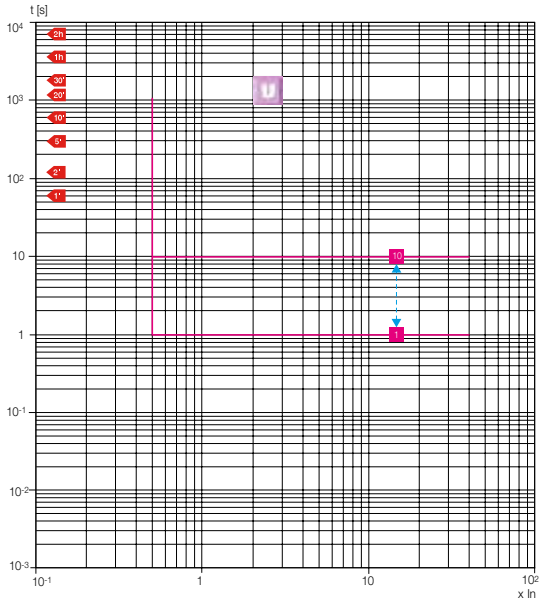
XT7-XT7 M Ekip M Touch LRIU
R function - STALL



XT7 – XT7 M Ekip M Touch LRIU
I function

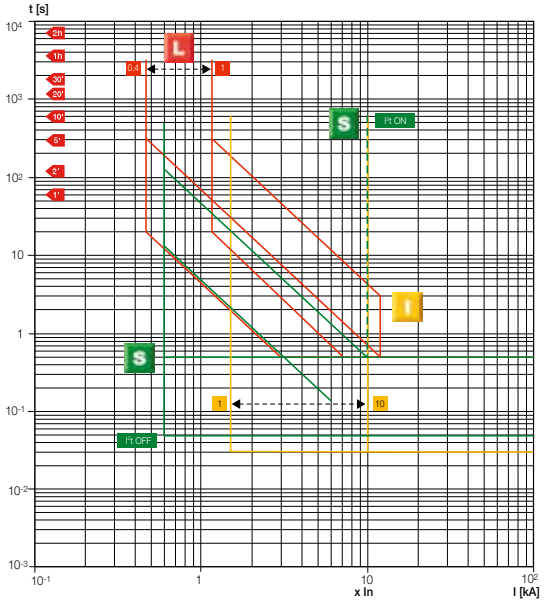


XT7 – XT7 M Ekip M Touch LRIU
U function

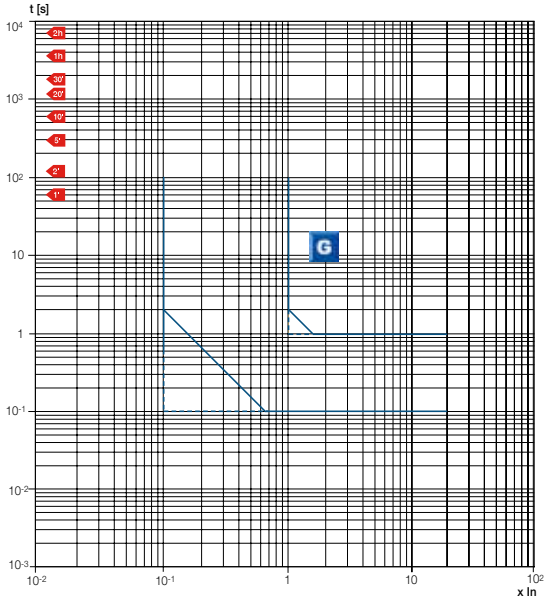


Trip curves for generator protection

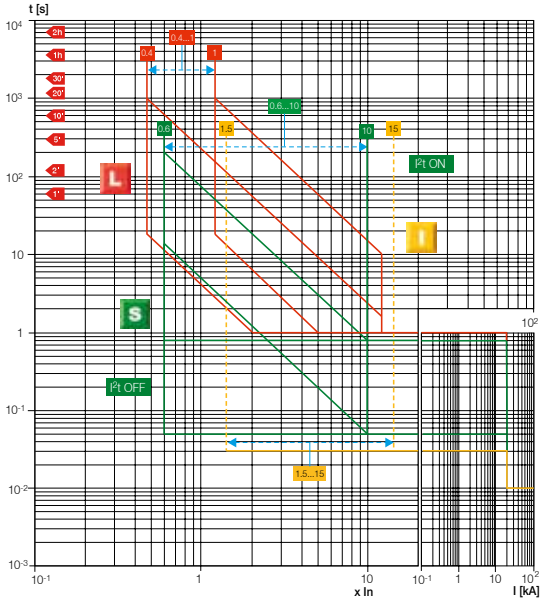
XT5 Ekip G Touch LSIG • Ekip G Hi-Touch LSIG
L-S-I functions



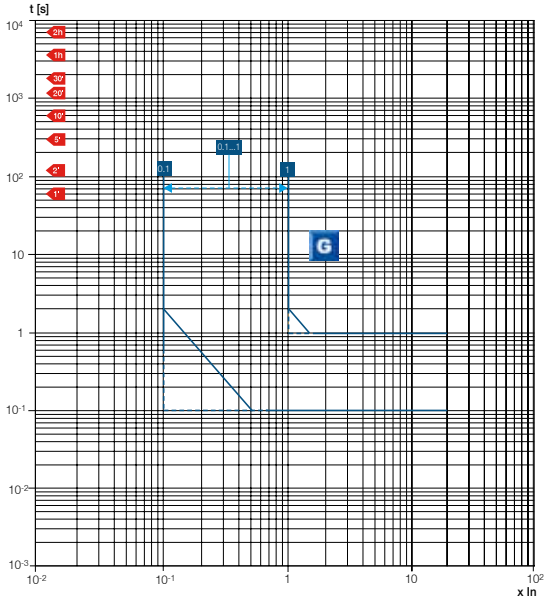
XT5 Ekip G Touch LSIG • Ekip G Hi-Touch LSIG
G function



XT7 – XT7 M Ekip G Touch LSIG • Ekip G Hi-Touch LSIG
L-S-I functions



XT7 – XT7 M Ekip G Touch LSIG • Ekip G Hi-Touch LSIG
G function

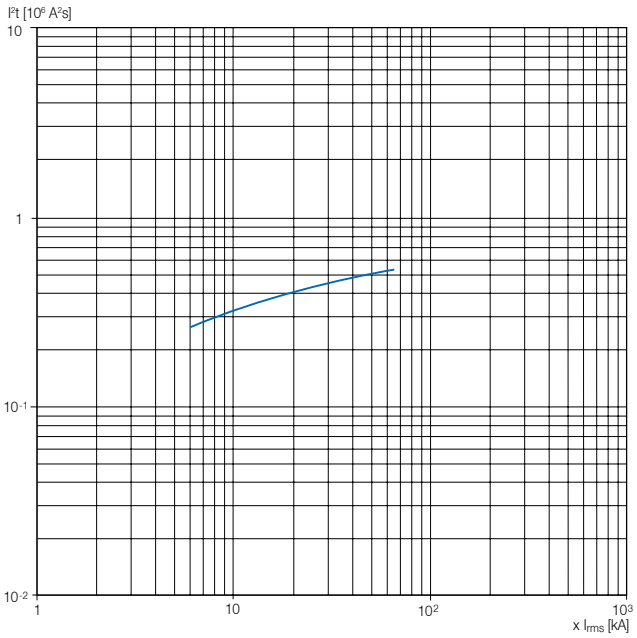


Characteristic curves

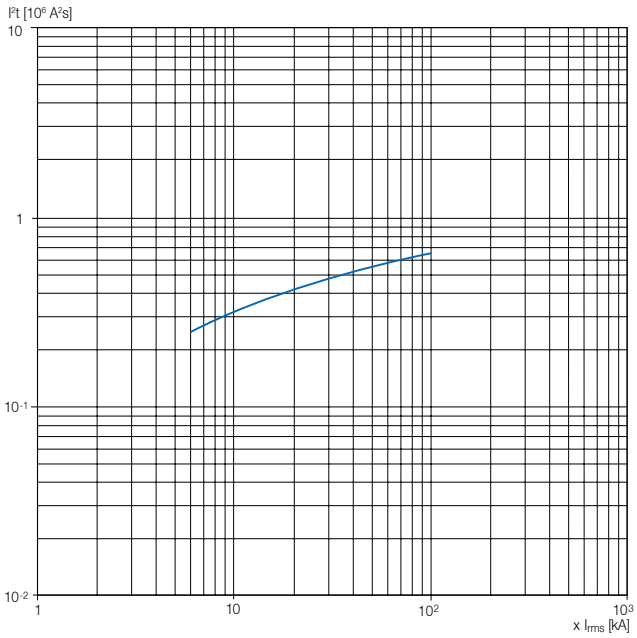
Specific let-through energy curves

480V

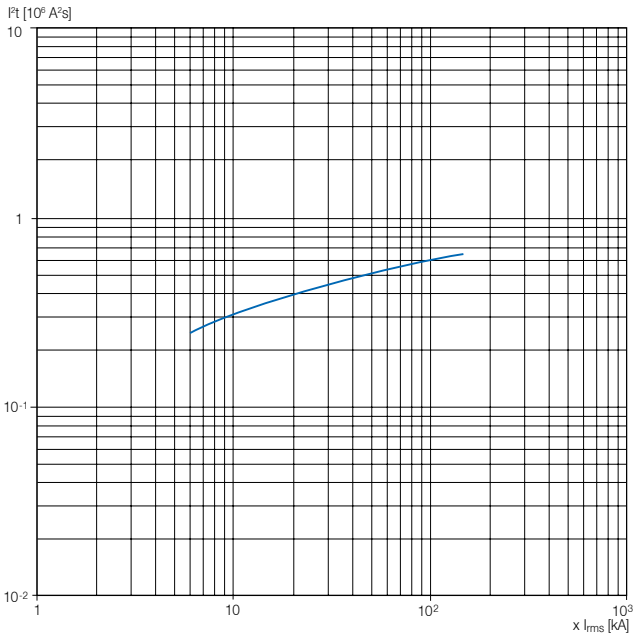
XT2H



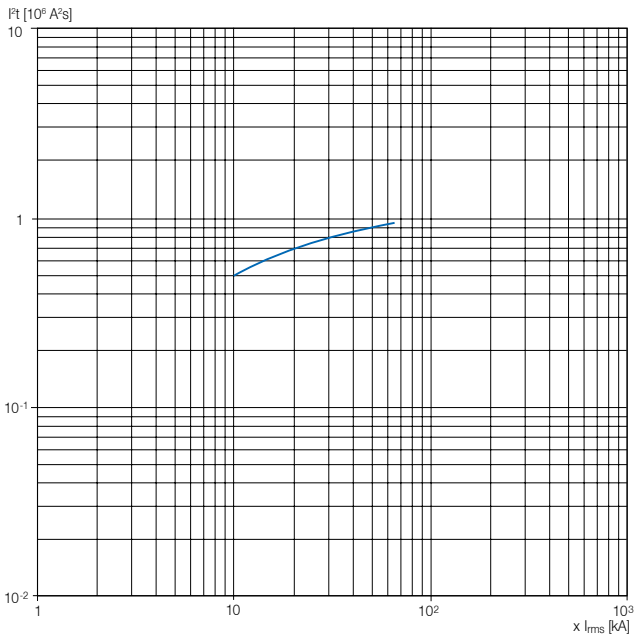
XT2L



XT2V

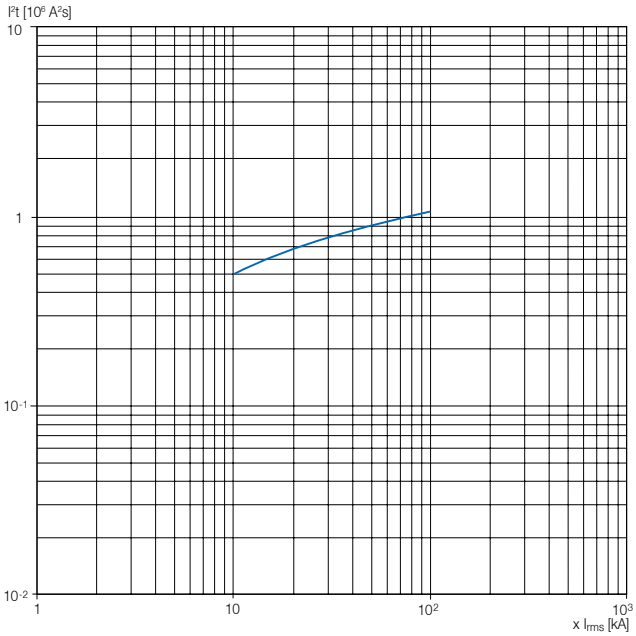


XT4H

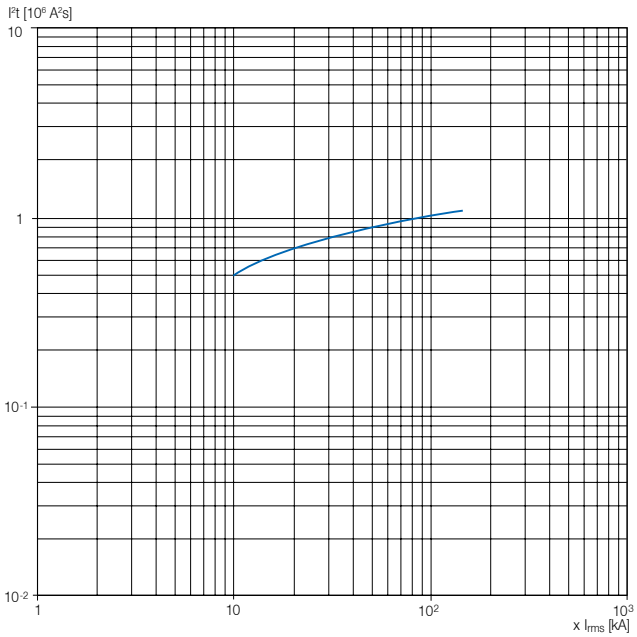


480V

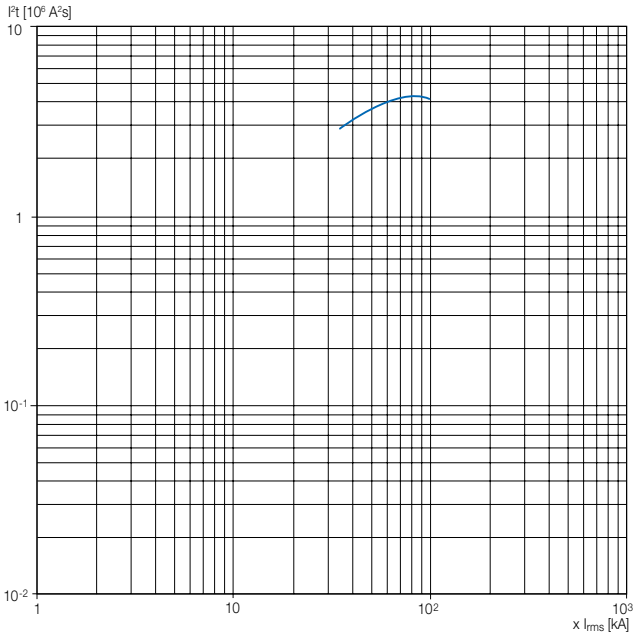
XT4L



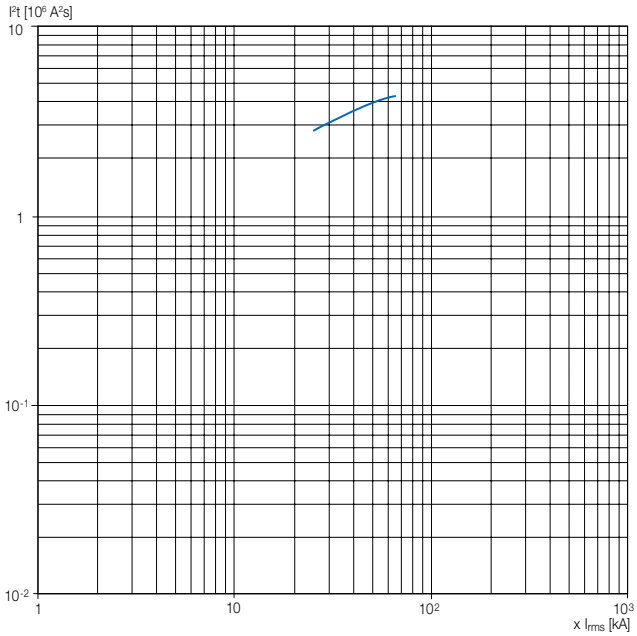
XT4V



XT5L



XT5H

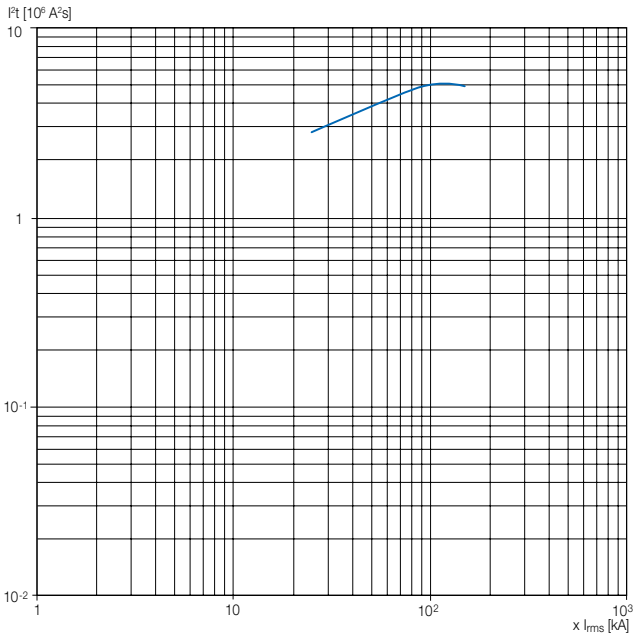


Characteristic curves

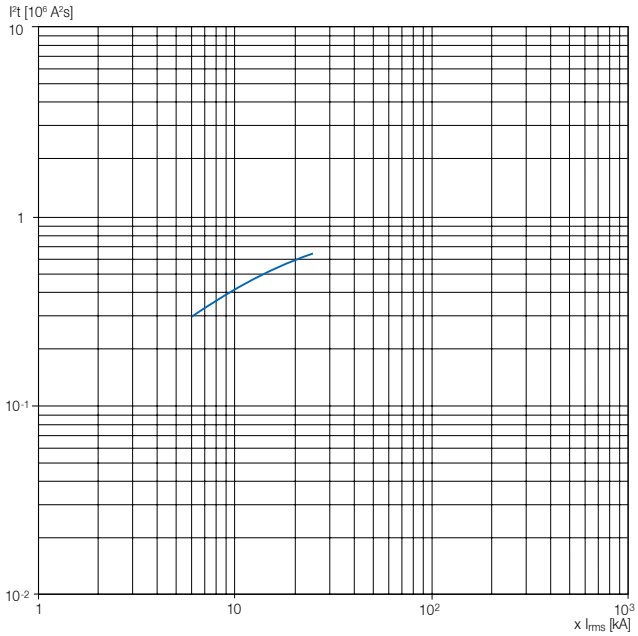
Specific let-through energy curves

600V

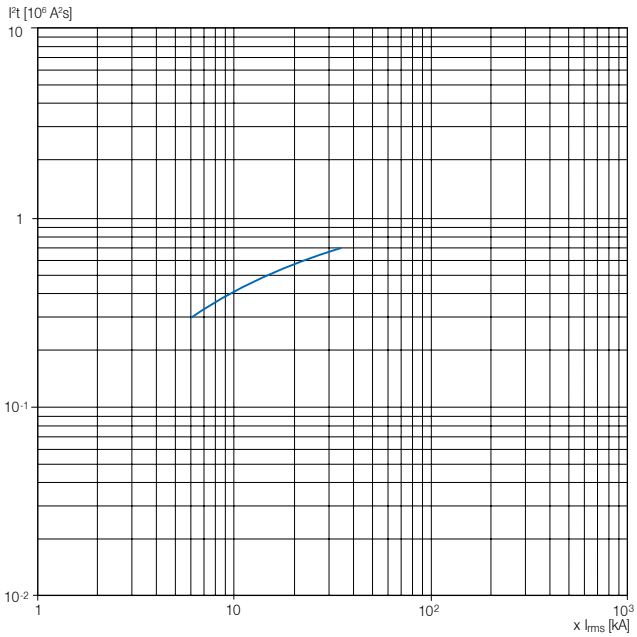
XT5V



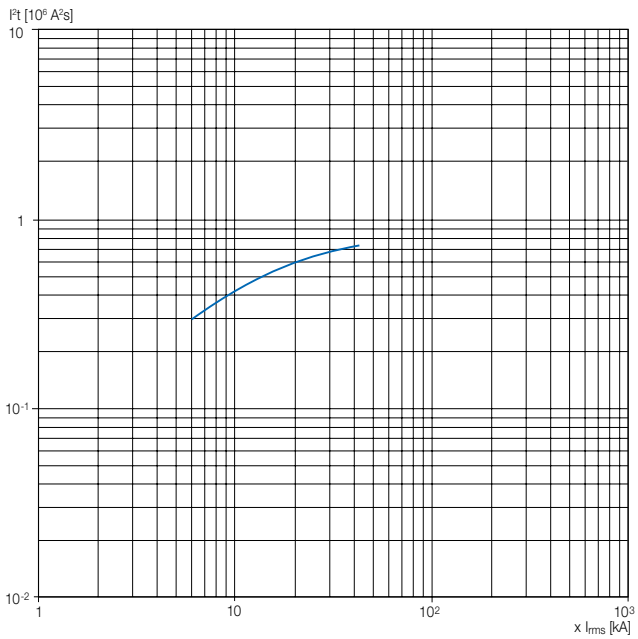
XT2H



XT2L

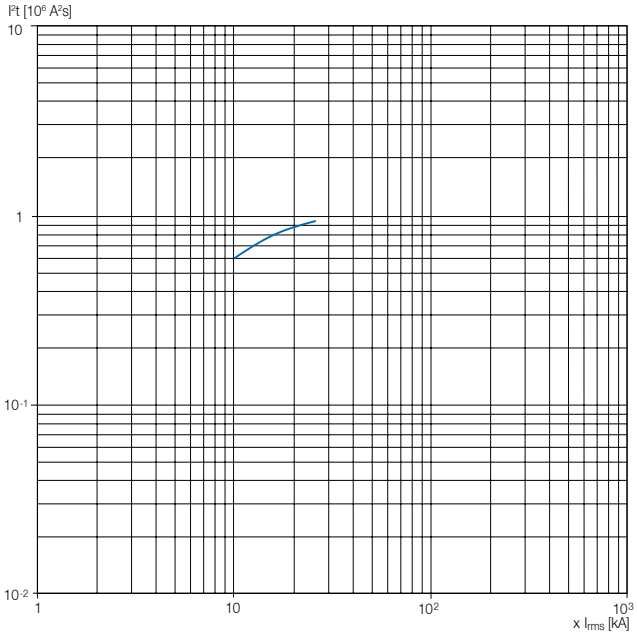


XT2V

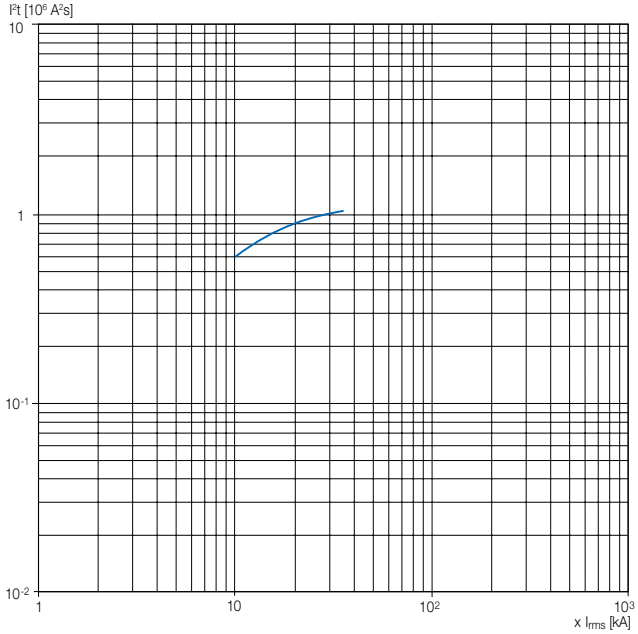


600V

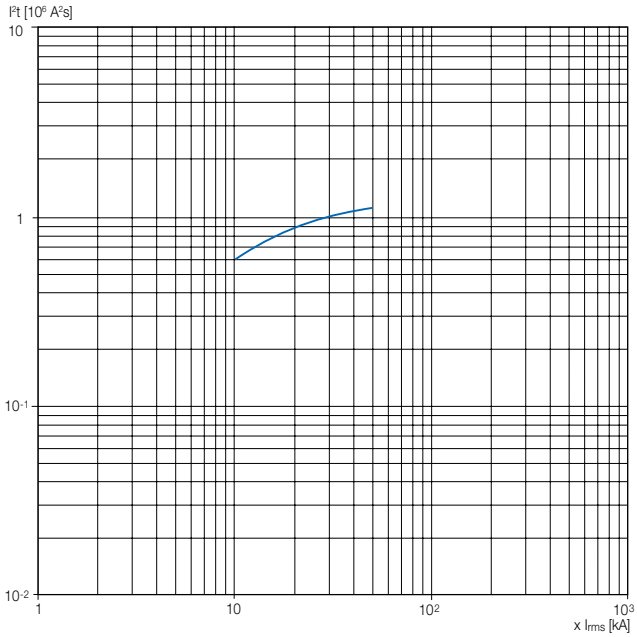
XT4H



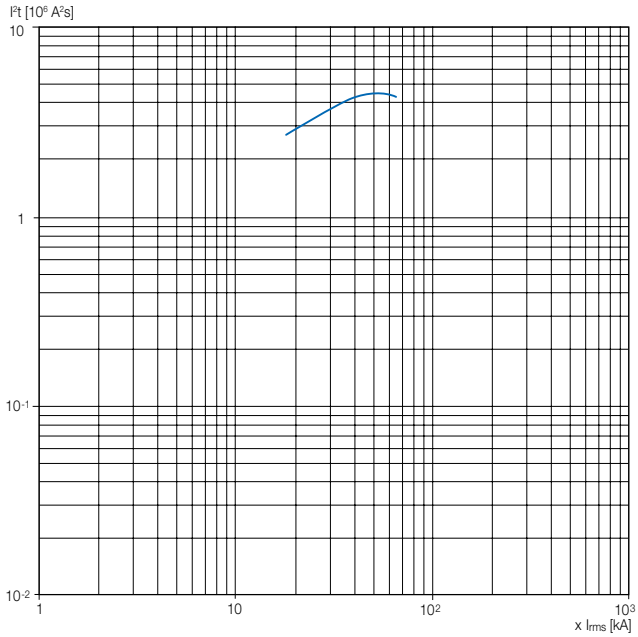
XT4L



XT4V



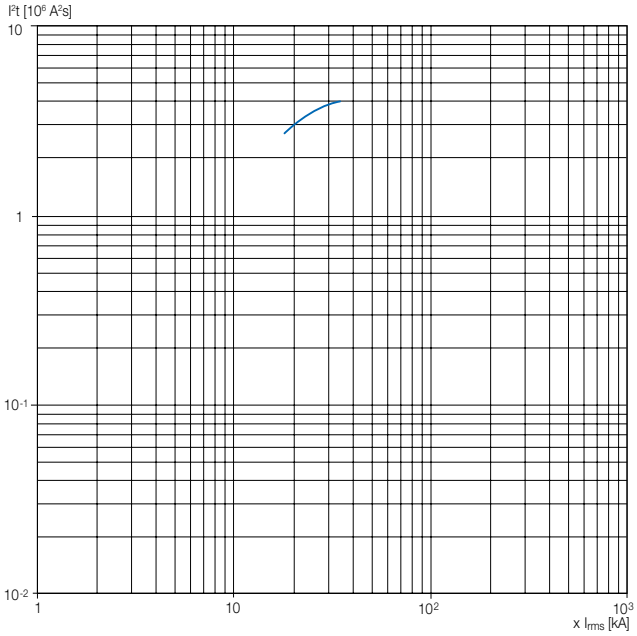
XT5L



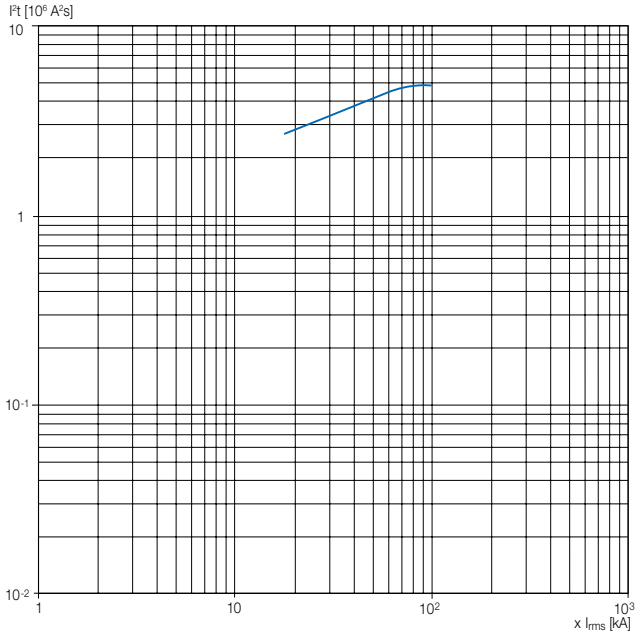
Characteristic curves

Specific let-through energy curves

XT5H



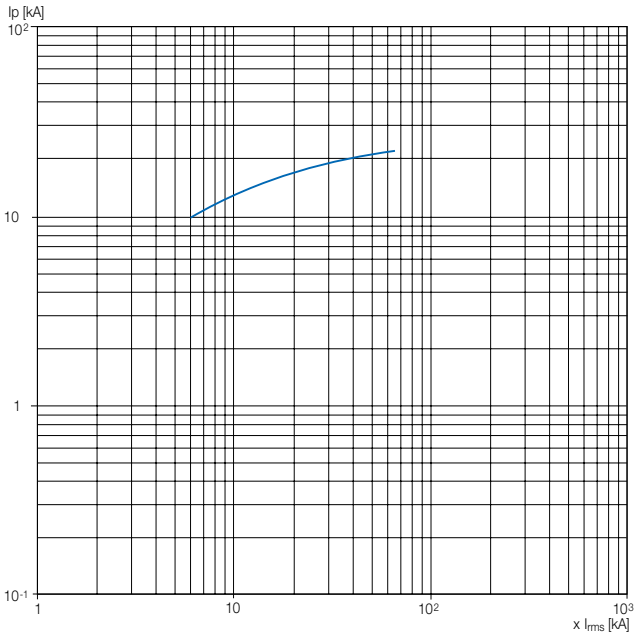
XT5V, X



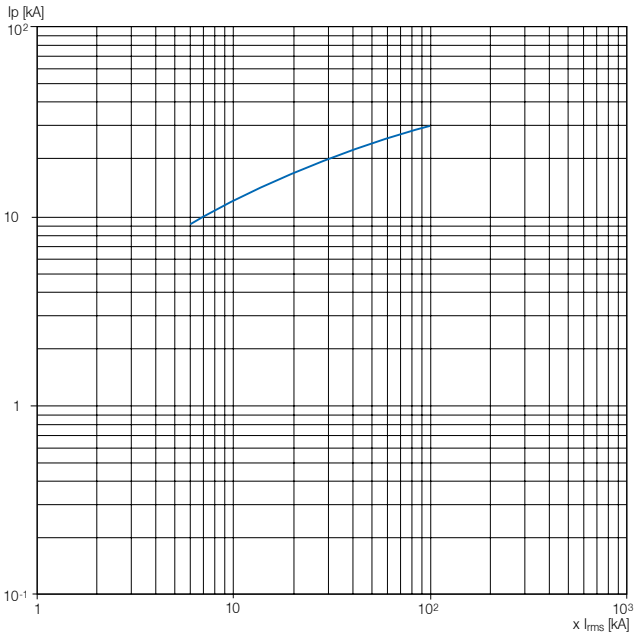
Characteristic curves
Limiting curves

480V

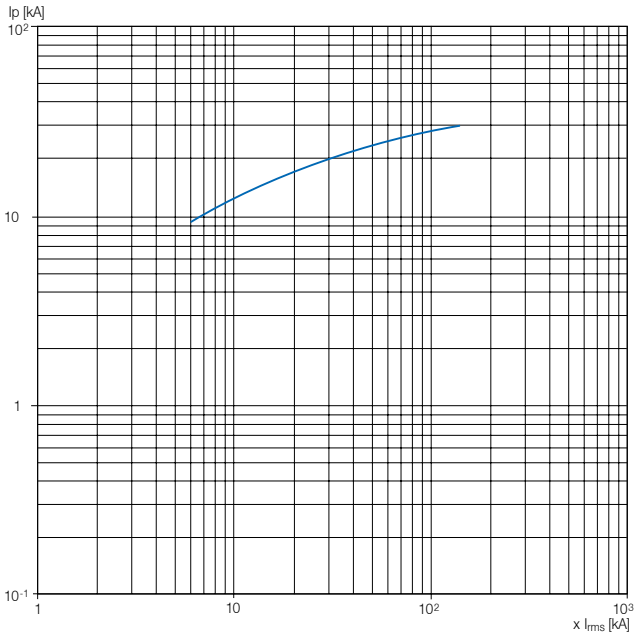
XT2H



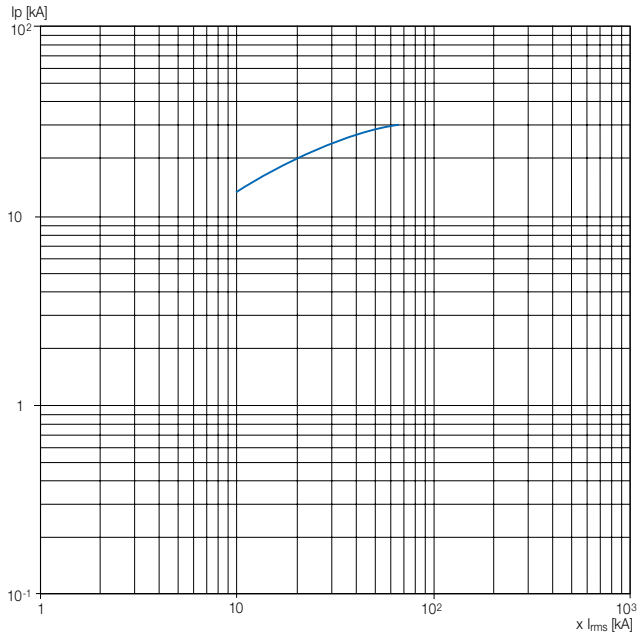
XT2L



XT2V

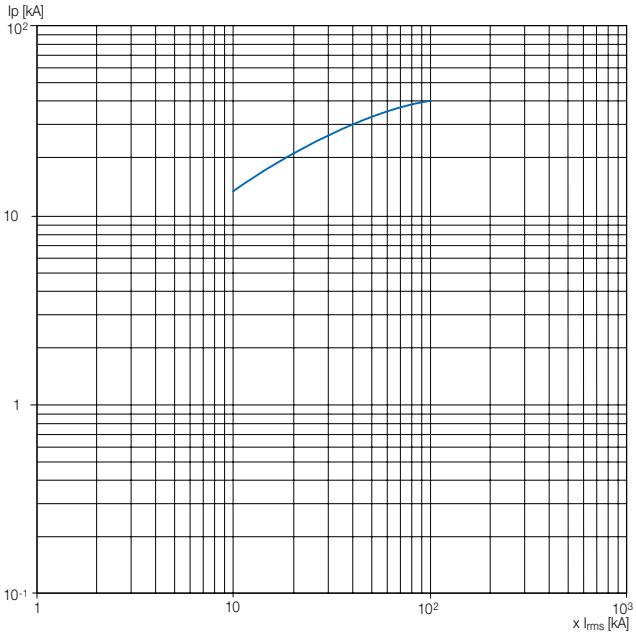


XT4H

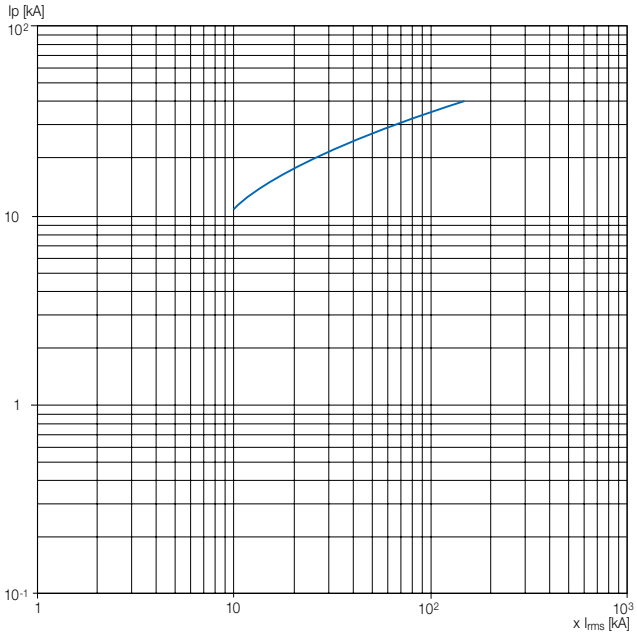


Characteristic curves
Limiting curves

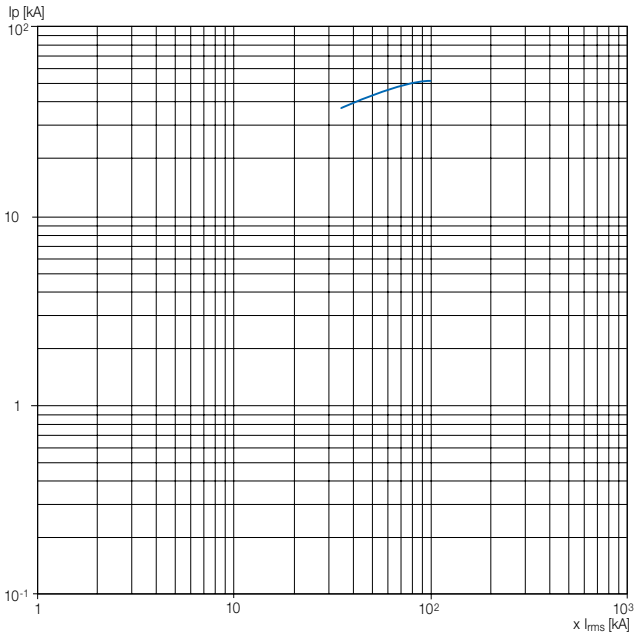
XT4L



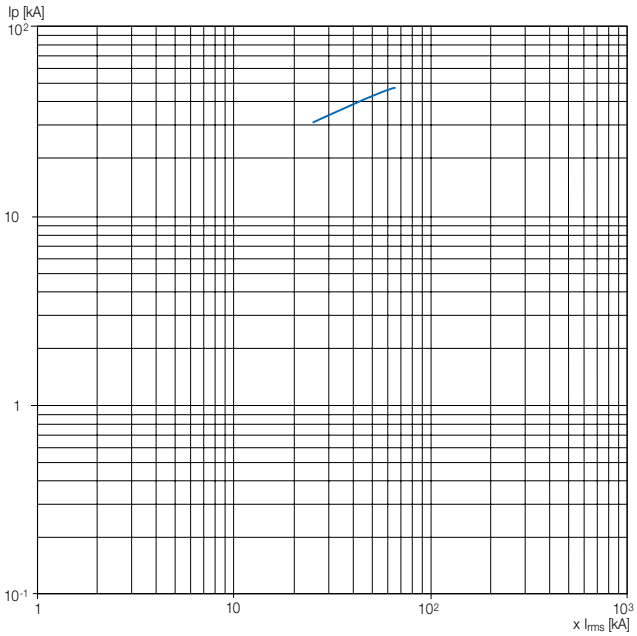
XT4V



XT5L

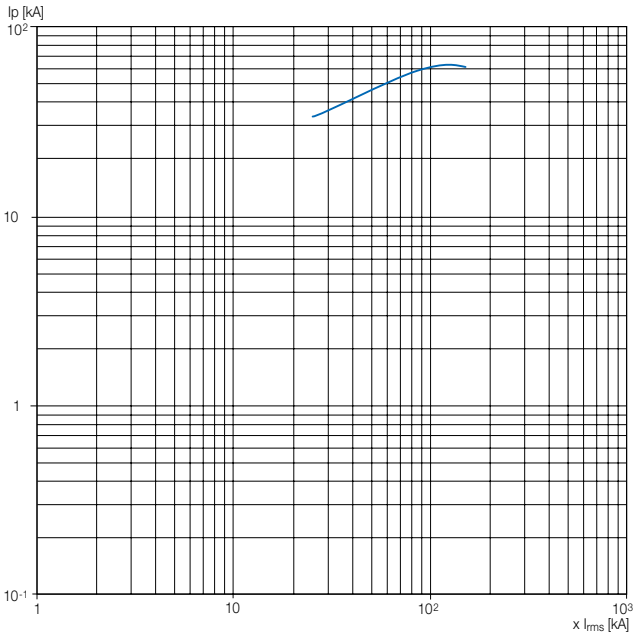


XT5H

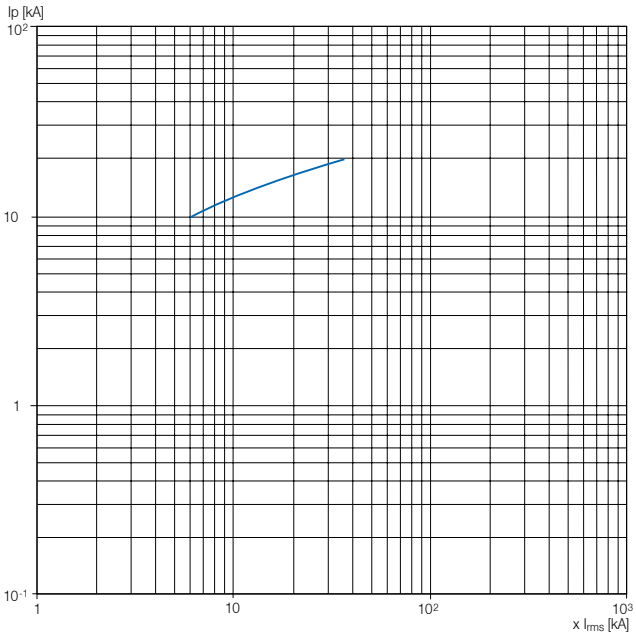


480V

XT5V

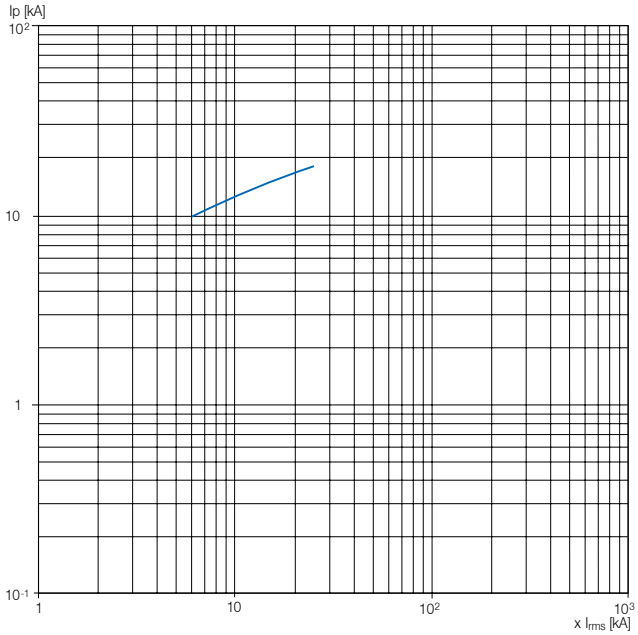


XT2L

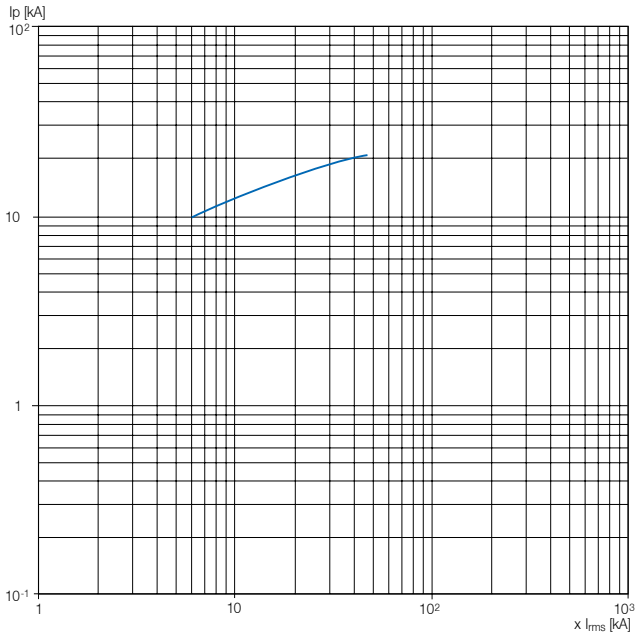


600V

XT2H

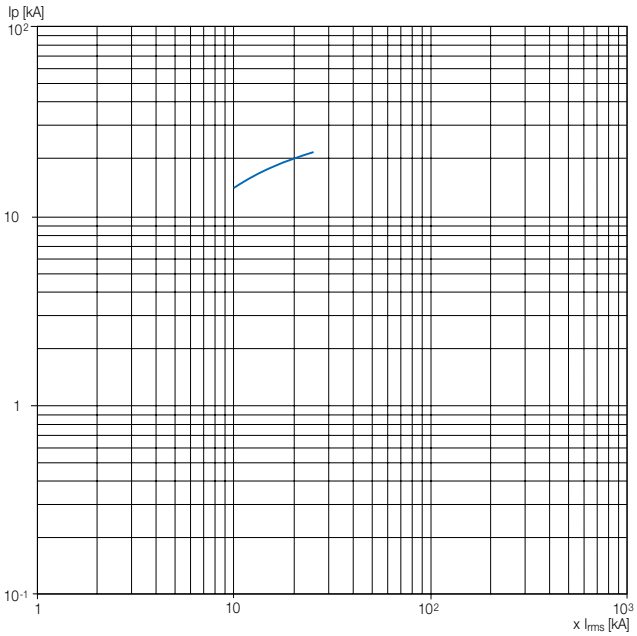


XT2V

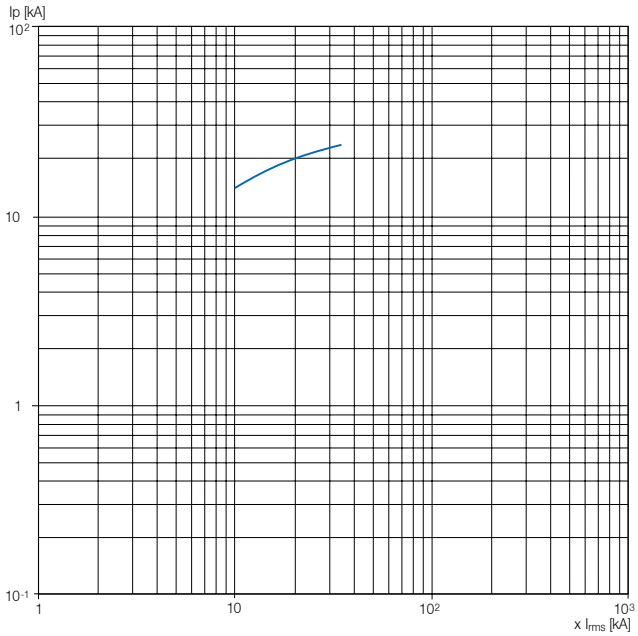


Characteristic curves
Limiting curves

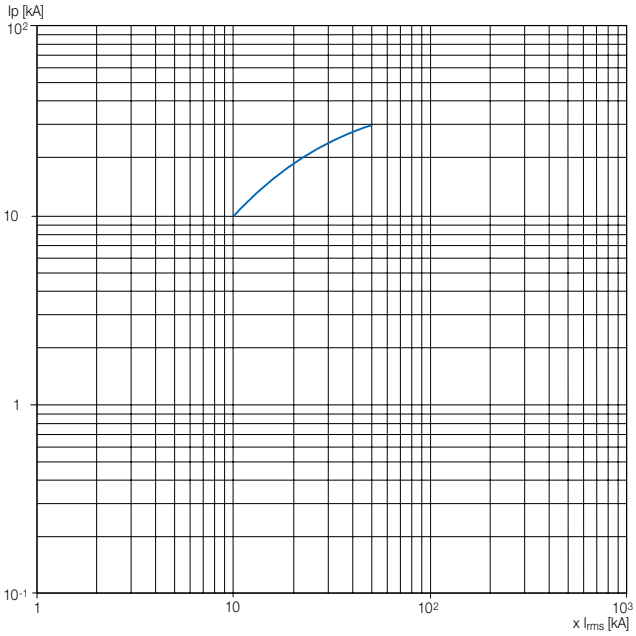
XT4H



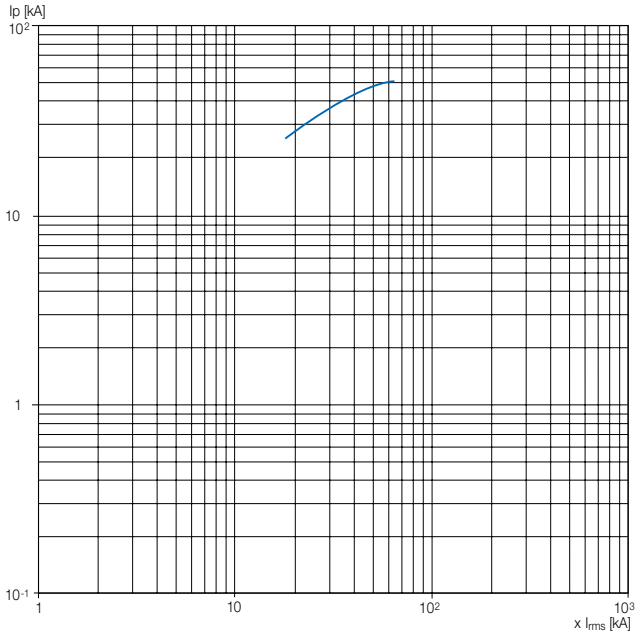
XT4L



XT4V

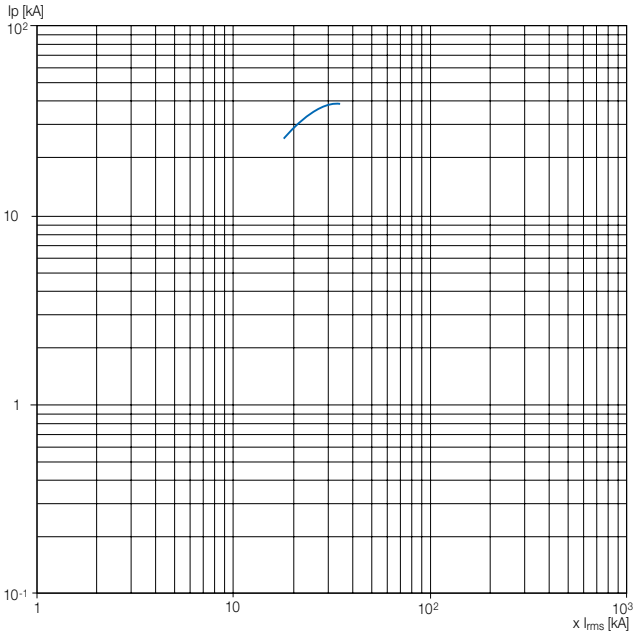


XT5L

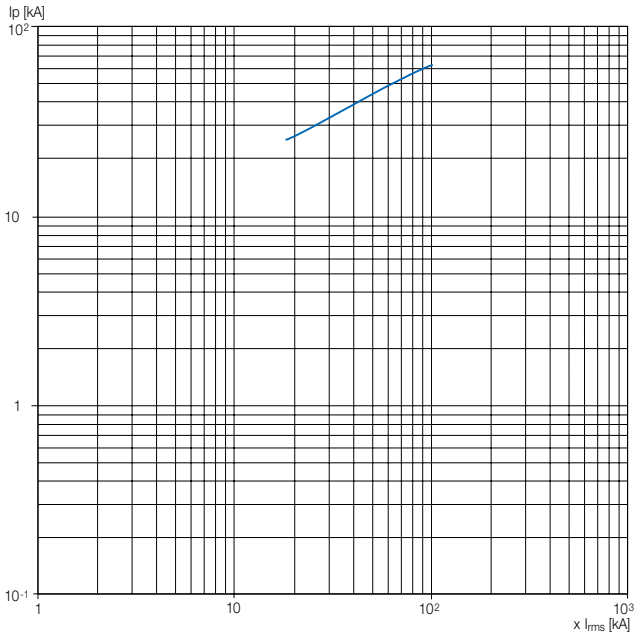


600V

XT5H



XT5V, X



Overall dimensions

Tmax XT1

2/4 Installation for fixed circuit-breaker
2/7 Terminals for fixed circuit-breaker
2/10 Accessories for fixed circuit-breaker
2/16 Installation for plug-in circuit-breaker
2/21 Terminals for plug-in circuit-breaker
2/24 Accessories for plug-in circuit-breaker

Tmax XT2

2/25 Installation for fixed circuit-breaker
2/29 Terminals for fixed circuit-breaker
2/33 Accessories for fixed circuit-breaker
2/39 Installation for plug-in circuit-breaker
2/43 Terminals for plug-in circuit-breaker
2/46 Accessories for plug-in circuit-breaker
2/50 Installation for withdrawable circuit-breaker
2/54 Terminals for withdrawable circuit- breaker
2/58 Accessories for withdrawable circuit-breaker

Tmax XT3

2/62 Installation for fixed circuit-breaker
2/65 Terminals for fixed circuit-breaker
2/69 Accessories for fixed circuit-breaker
2/75 Installation for plug-in circuit-breaker
2/78 Terminals for plug-in circuit-breaker
2/81 Accessories for plug-in circuit-breaker

Tmax XT4

2/82 Installation for fixed circuit-breaker
2/85 Terminals for fixed circuit-breaker
2/88 Accessories for fixed circuit-breaker
2/94 Installation for plug-in circuit-breaker

2/98 Terminals for plug-in circuit-breaker
2/102 Accessories for plug-in circuit-breaker
2/106 Installation for withdrawable circuit-breaker
2/110 Terminals for withdrawable circuit-breaker
2/114 Accessories for withdrawable circuit-breaker

Tmax XT5

2/119 Installation for fixed circuit-breaker
2/121 Terminals for fixed circuit-breaker
2/127 Accessories for fixed circuit-breaker
2/137 Installation for plug-in circuit-breaker 400A
2/139 Terminals for plug-in circuit-breaker 400A
2/142 Accessories for plug-in circuit-breaker 400A
2/152 Installation for plug-in circuit-breaker 600A
2/154 Terminals for plug-in circuit-breaker 600A
2/157 Accessories for plug-in circuit-breaker 600A
2/167 Installation for withdrawable circuit-breaker 400A
2/169 Terminals for withdrawable circuit-breaker 400A
2/174 Accessories for withdrawable circuit-breaker 400A
2/180 Installation for withdrawable circuit-breaker 600A
2/182 Terminals for withdrawable circuit-breaker 600A
2/187 Accessories for withdrawable circuit-breaker 600A

Tmax XT6 – Installation

2/193 Installation for fixed circuit-breaker
2/195 Terminals for fixed circuit-breaker
2/200 Accessories for fixed circuit-breaker
2/207 Installation for withdrawable circuit-breaker
2/209 Terminals for withdrawable circuit-breaker
2/210 Accessories for withdrawable circuit-breaker

Tmax XT7 – Installation

2/216 Installation for fixed circuit-breaker
2/217 Terminals for fixed circuit-breaker
2/222 Accessories for fixed circuit-breaker
2/224 Installation for withdrawable circuit-breaker
2/226 Terminals for withdrawable circuit-breaker
2/228 Accessories for withdrawable circuit-breaker

Tmax XT7 M – Installation

2/230 Installation for fixed circuit-breaker
2/231 Terminals for fixed circuit-breaker
2/236 Installation for withdrawable circuit-breaker
2/237 Terminals for withdrawable circuit-breaker

Tmax XT – Common accessories

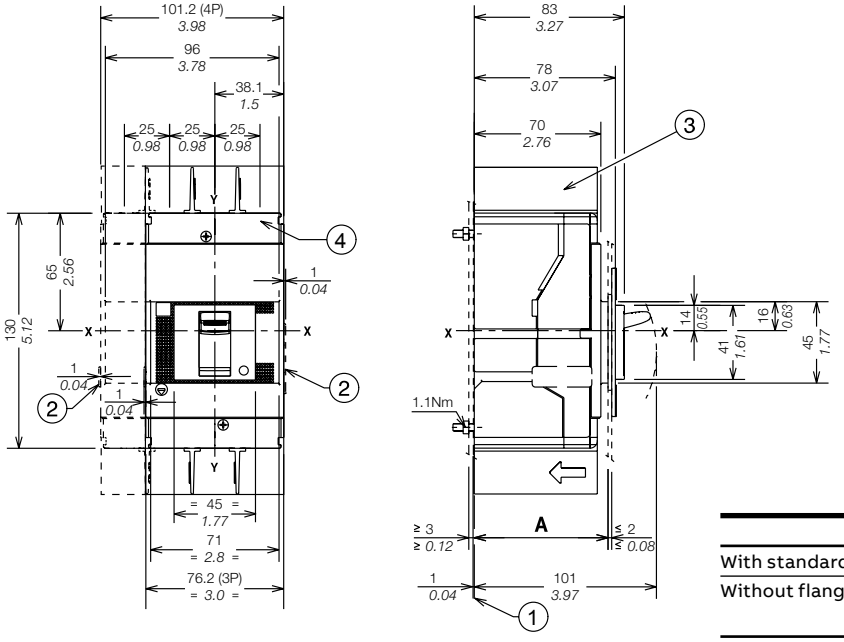
2/238 Horizontal interlock XT series
2/240 Vertical interlock XT series

Tmax XT1 - Installation

Installation for fixed circuit-breaker

Mounting on the backplate

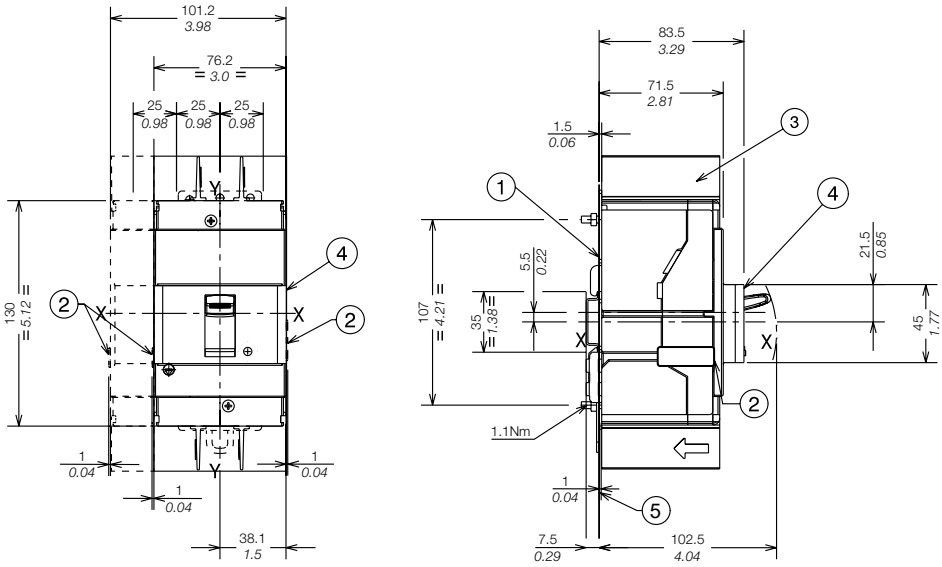
Key
1 Insulating plate
2 Overall dimension of optional wiring ducts 12.79"/325mm
3 Phase separators 0.98"/25mm
4 Front carter compulsory for panel door distance ≤ 0.98"/25mm



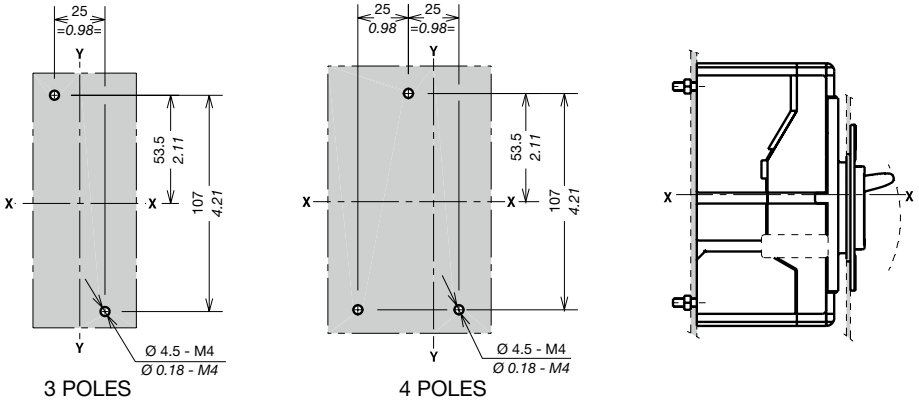
		A [in/mm]
With standard flange	3p-4p	2.91/74
Without flange	3p-4p	2.79/71
	3p-4p	3.11/79

Mounting on DIN 50022 rail

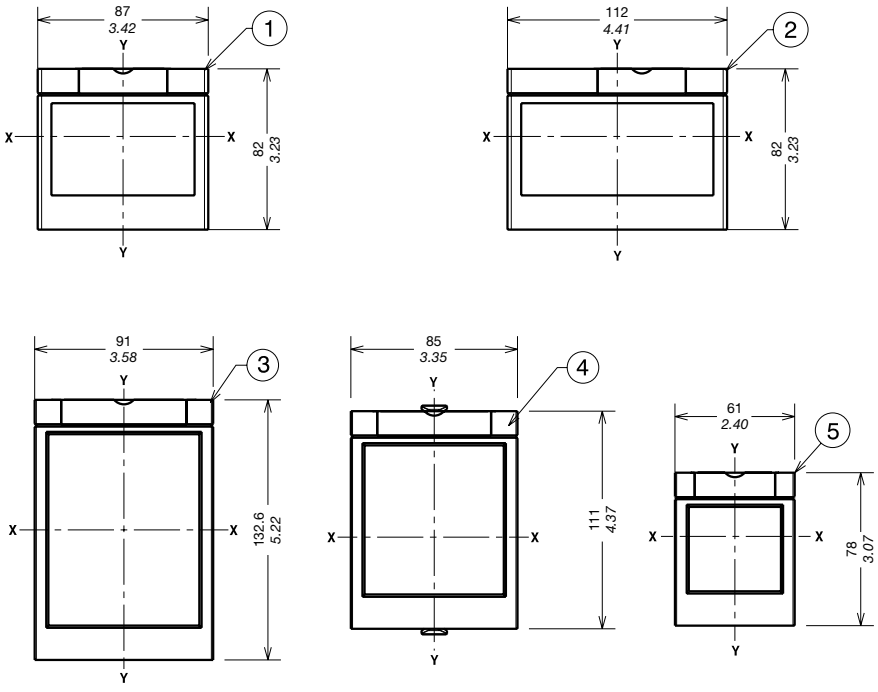
Key
1 Mounting bracket
2 Overall dimension of optional wiring ducts
3 Phase separators 0.98"/25mm
4 Optional front cover for DIN rail
5 Insulating plate



Drilling template for circuit-breaker mounting



Flanges



—

Key

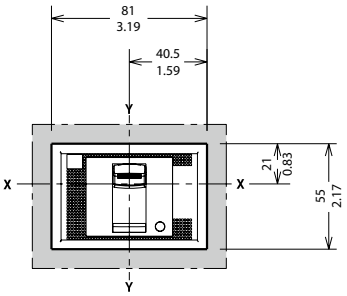
1 Flange for 3p circuit-breaker
2 Flange for 4p circuit-breaker
3 Flange for fixed 3P - 4P circuit-breakers with direct motor operator (MOD)
4 Flange for 3P - 4P circuit-breakers with direct rotary handle (RHD)
5 Optional flange

Tmax XT1 - Installation

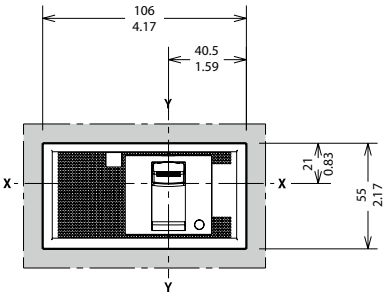
Installation for fixed circuit-breaker

Drilling templates for compartment door

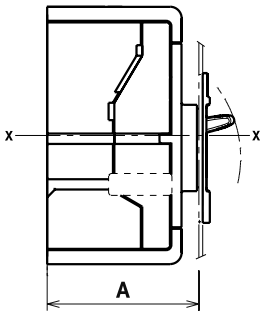
With standard flange



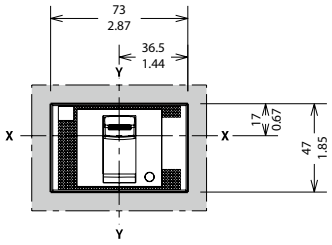
A=2.91/74
3 POLES



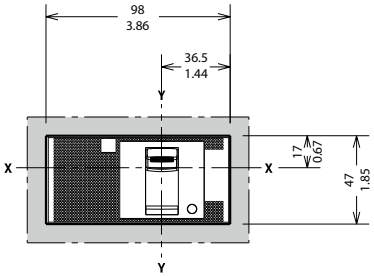
A=2.91/74
4 POLES



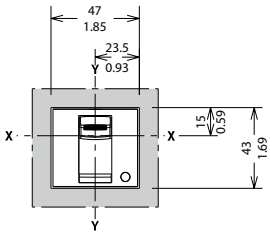
Without flange



A=2.79/71
3 POLES

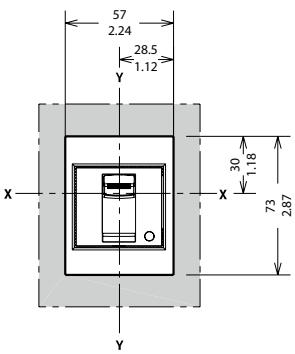


A=2.79/71
4 POLES

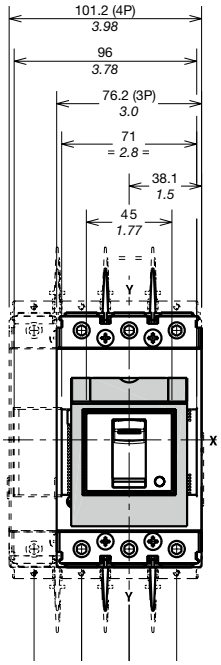


A=3.11/79
3-4 POLES

With optional flange



A=3.11/79
3-4 POLES

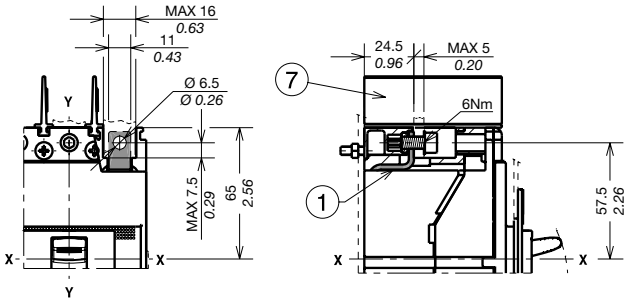


Tmax XT1 - Installation

Terminals for fixed circuit-breaker

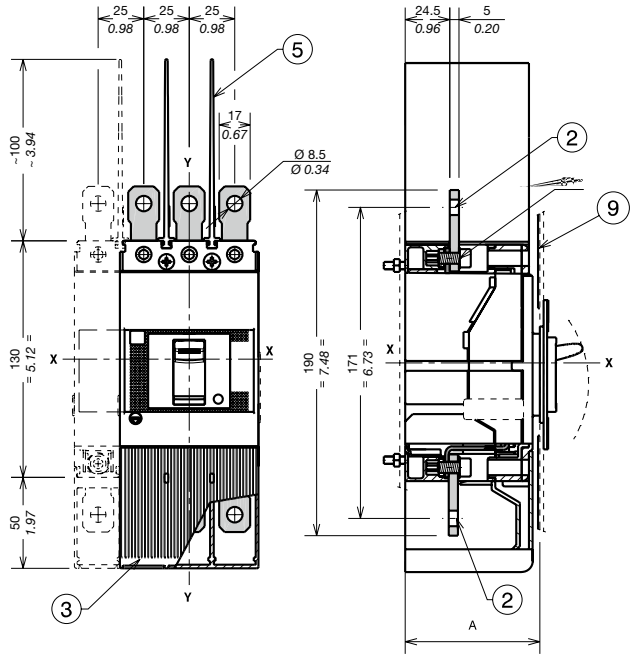
Terminals F

Key
1 Front terminals for busbar connection
7 Phase separators 0.98"/25mm



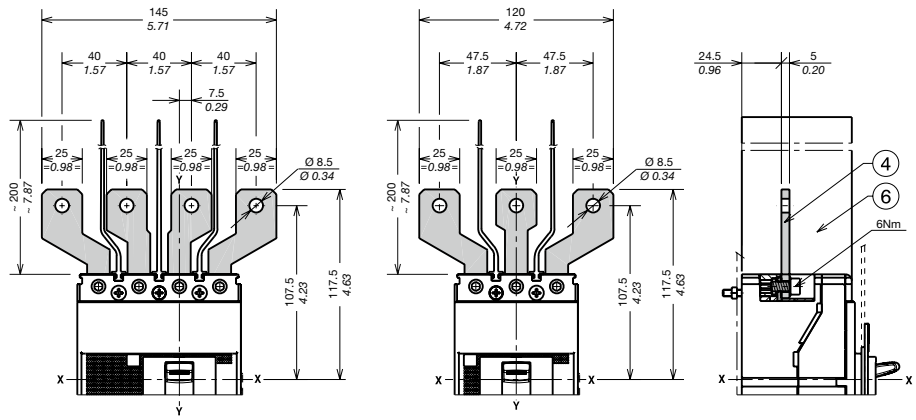
Terminals EF

Key
2 Front extended terminals
3 High terminal covers with degree of protection IP40
5 Phase separators 3.94"/100mm
9 Internal insulating plate compulsory with phase barriers



Terminals ES

Key
4 Front extended spread terminals for busbar connection
6 Phase separators 7.87"/200mm

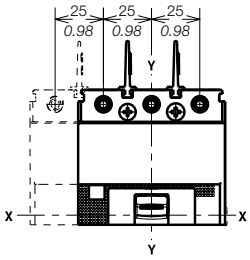


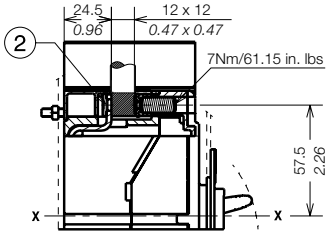
Tmax XT1 - Installation

Terminals for fixed circuit-breaker

Terminals FCCu

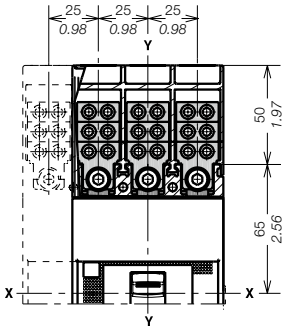
—
Key
2 Front terminal FCCu

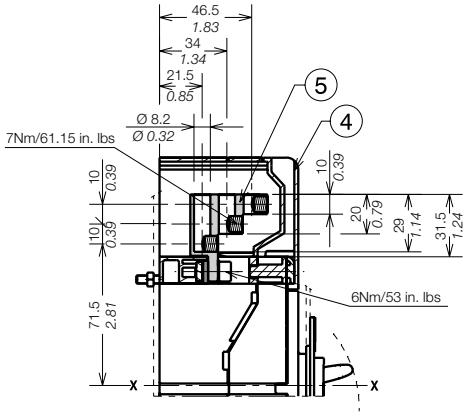




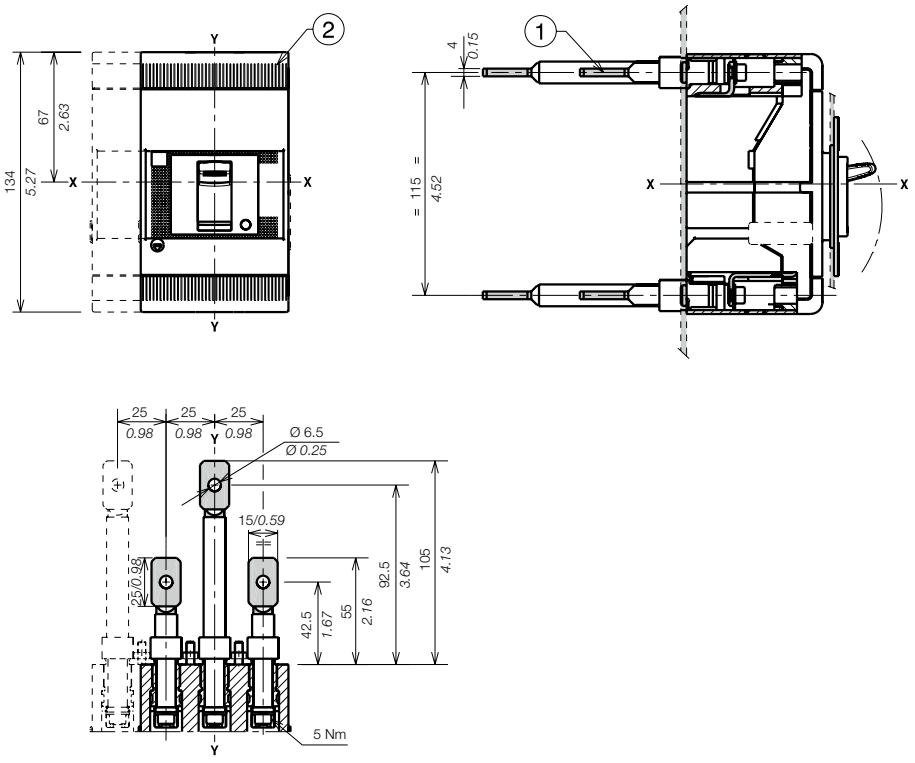
Terminals MC

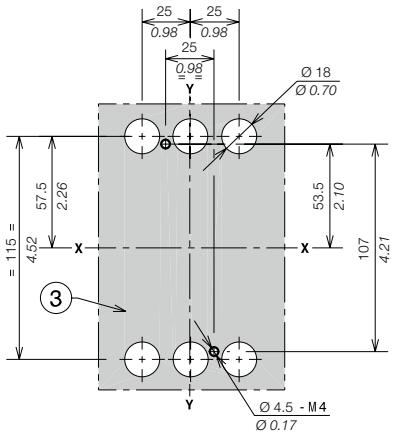
—
Key
4 Terminal covers with degree of protection IP40
5 Front terminal for multi-cable connection



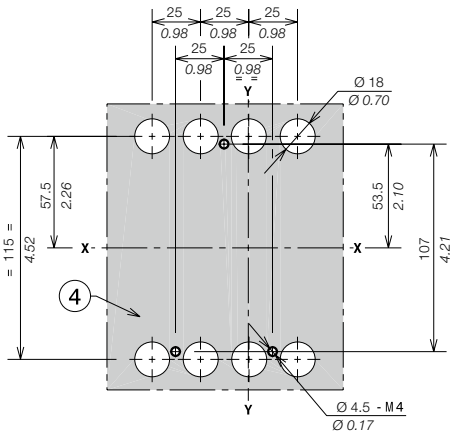


Terminals R





3 POLES



4 POLES

—

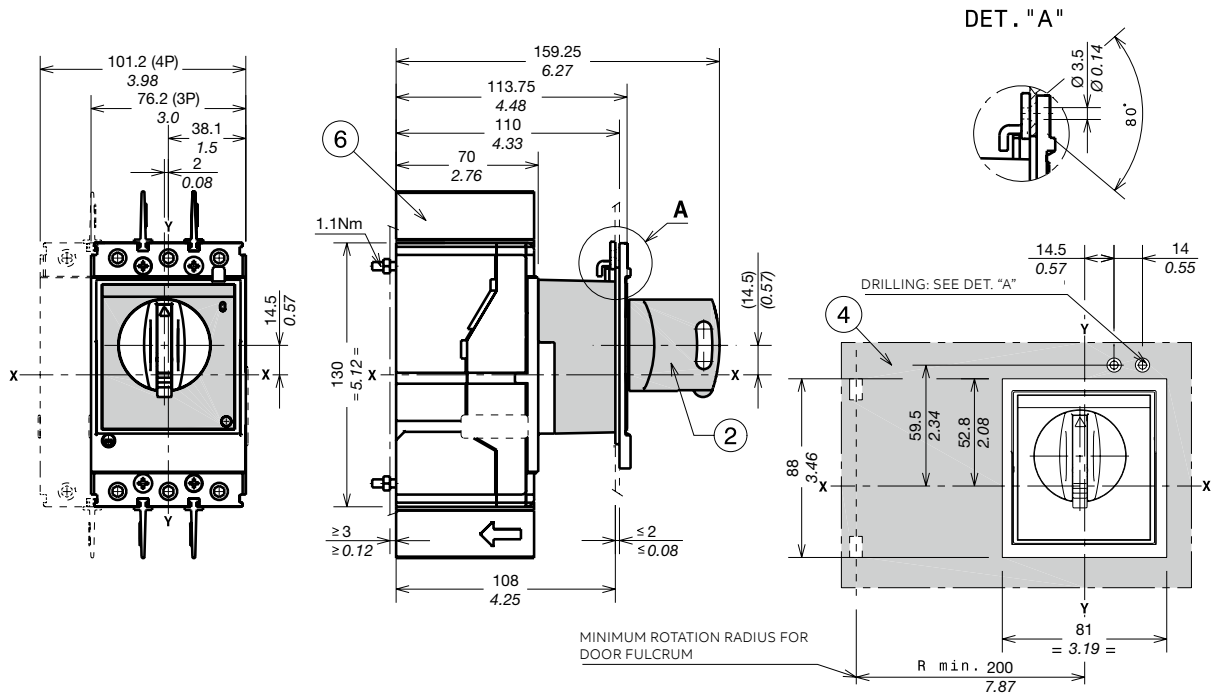
Key

1 Adjustable rear terminals
2 Bottom terminal covers with degree of protection IP30
3 Drilling template for mounting 3P circuit-breaker on sheet
4 Drilling template for mounting 4P circuit-breaker fixing on sheet

Tmax XT1 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breakers (RHD)



—

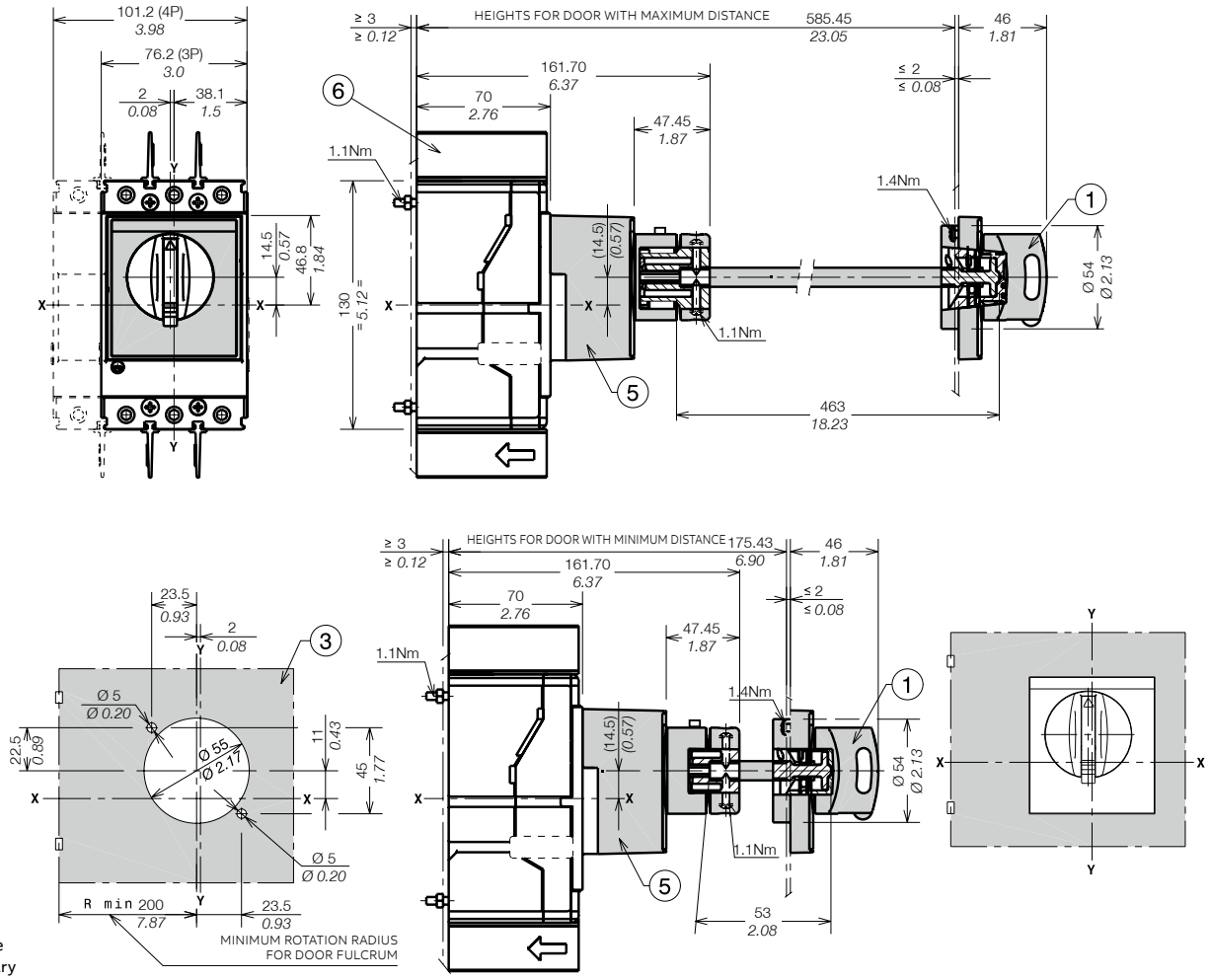
Key

2 Rotary handle operating mechanism on circuit-breaker RHD

4 Door drilling template with direct rotary handle

6 Phase separators 0.98"/25mm

Rotary handle operating mechanism with padlock on the compartment door (RHE-PL)



—

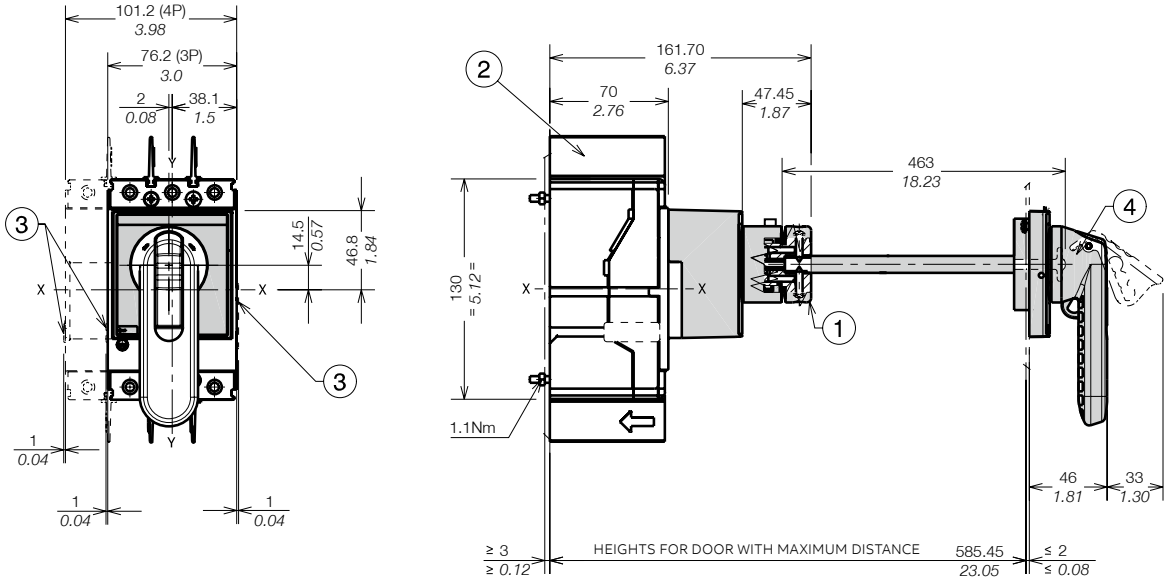
Key

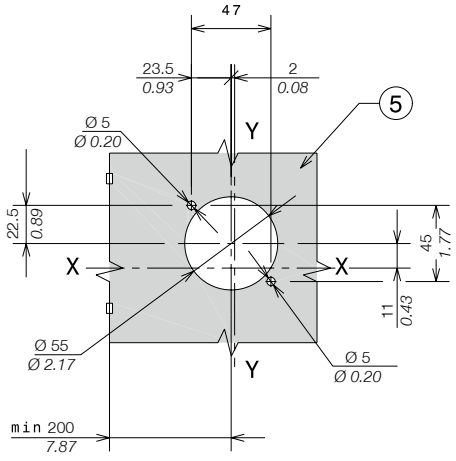
1 Transmitted rotary handle
3 Door drilling template with transmitted rotary handle
5 Transmission unit
6 Phase separators 0.98"/25mm

Tmax XT1 - Installation

Accessories for fixed circuit-breaker

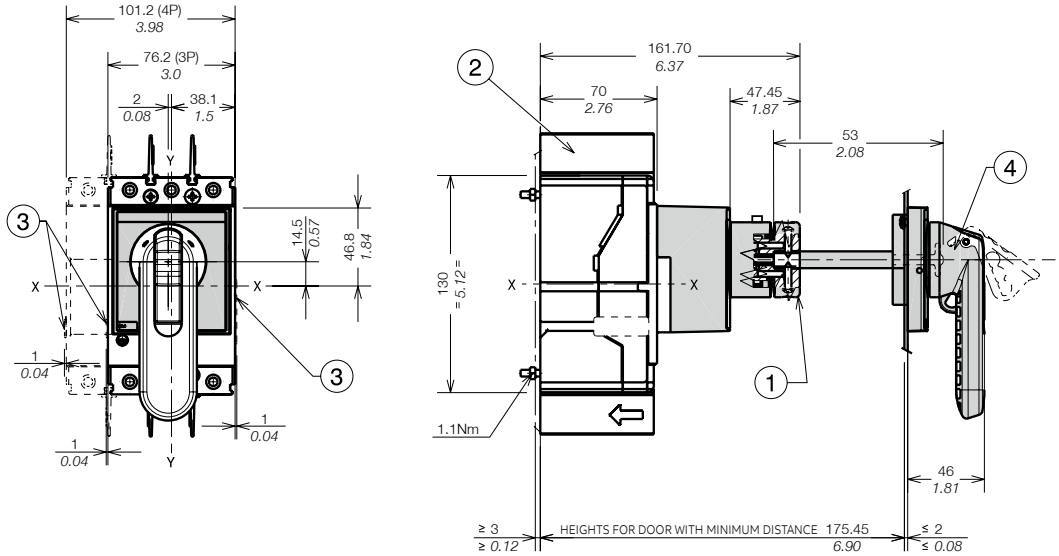
Large rotary handle operating mechanism with padlock on the compartment door (RHE-LH)





Key
1 Transmission unit
2 Phase separators 0.98"/25mm
3 Optional wiring ducts
4 Wide type rotary handle
5 Door drilling template with extended rotary handle

Large rotary handle operating mechanism with padlock on the compartment door (RHE-LH)



—

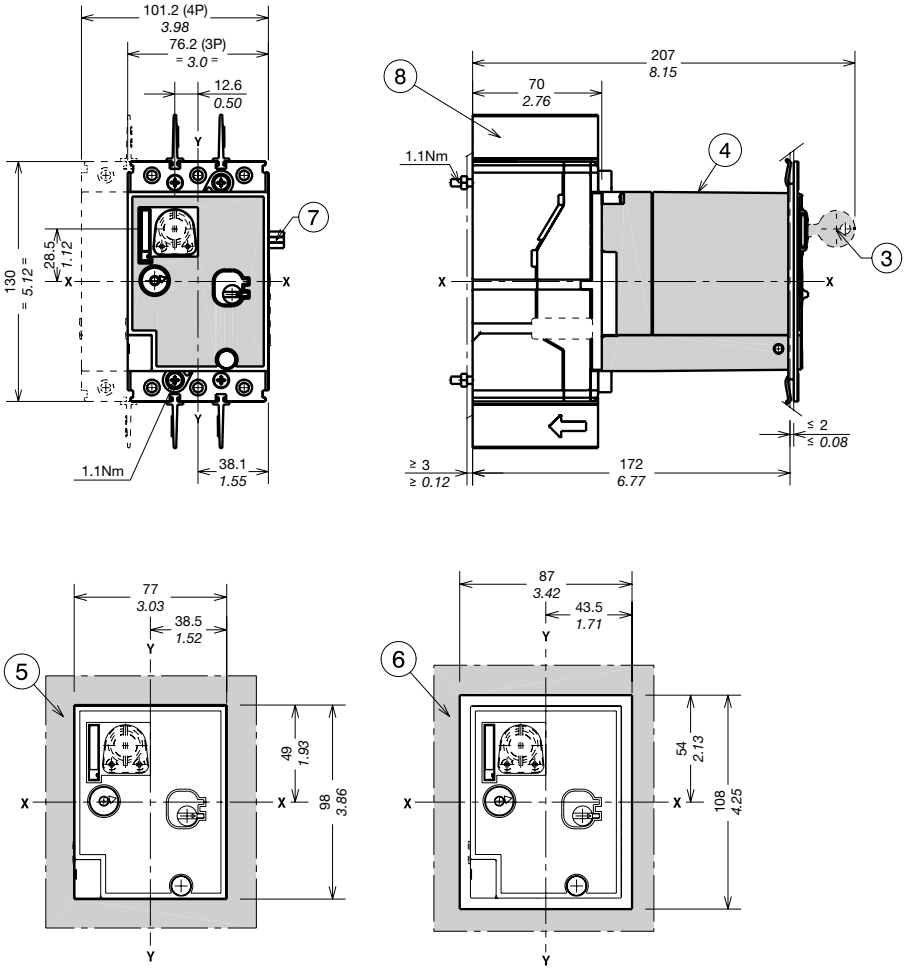
Key

1 Transmission unit
2 Phase separators
0.98"/25mm
3 Optional wiring ducts
4 Wide type rotary handle

Tmax XT1 - Installation

Accessories for fixed circuit-breaker

Direct motor operator (MOD)

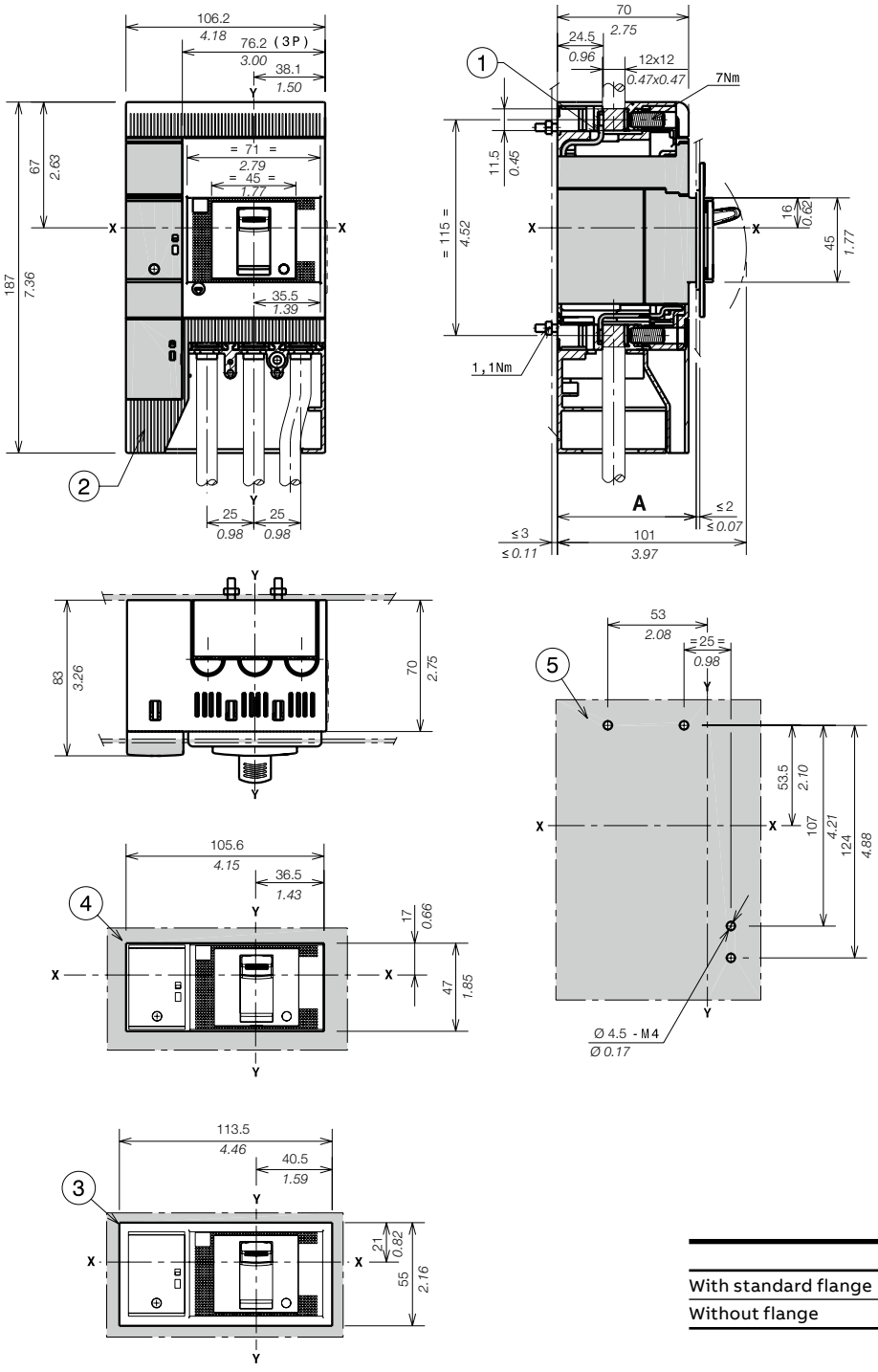


—

Key

3 Key lock
4 Direct motor operator (MOD)
5 Drilling template of door with MOD without flange
6 Drilling template of door with MOD with flange
7 Cable connections
8 Phase separators 0.98"/25mm

RC Inst and RC Sel residual current release for 3-pole circuit-breaker



—

Key

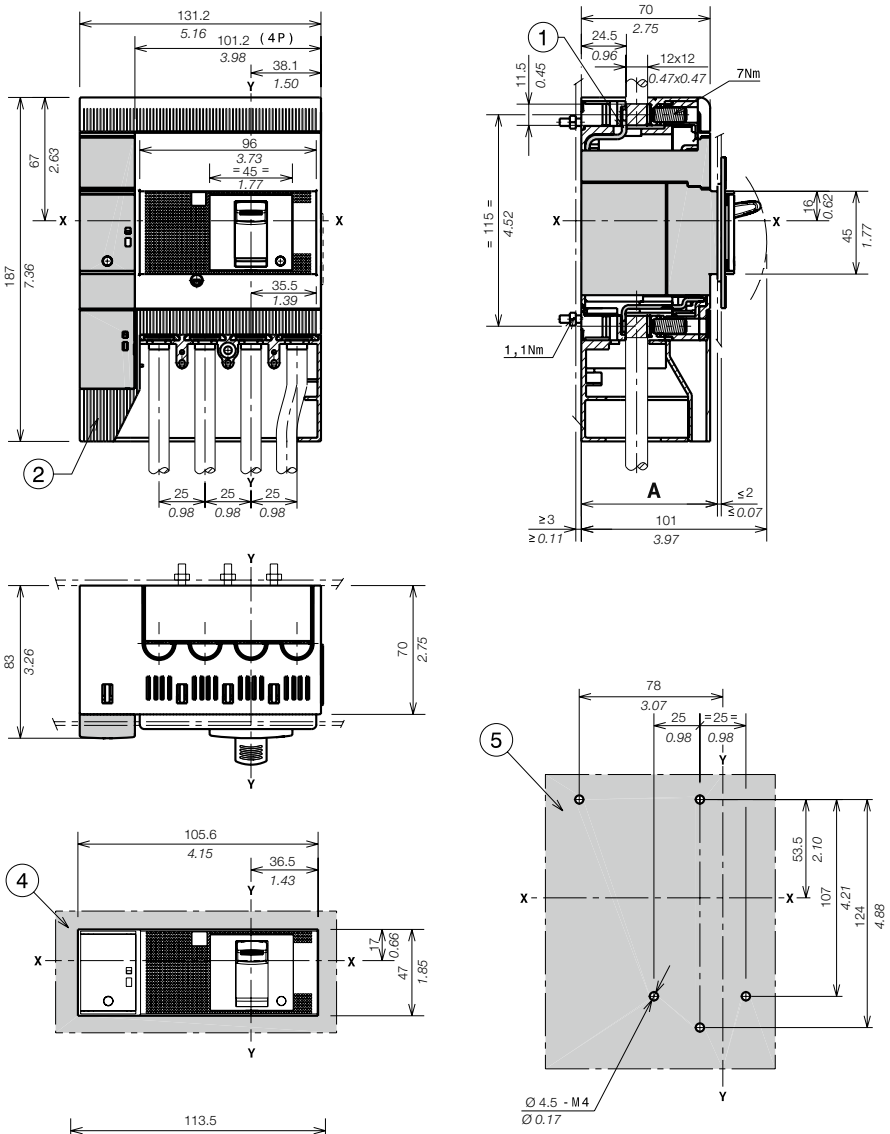
1 Front terminals for busbar connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for mounting circuit-breaker on sheet

		A [in/mm]
With standard flange	3p	2.91/74
Without flange	3p	2.79/71

Tmax XT1 - Installation

Accessories for fixed circuit-breaker

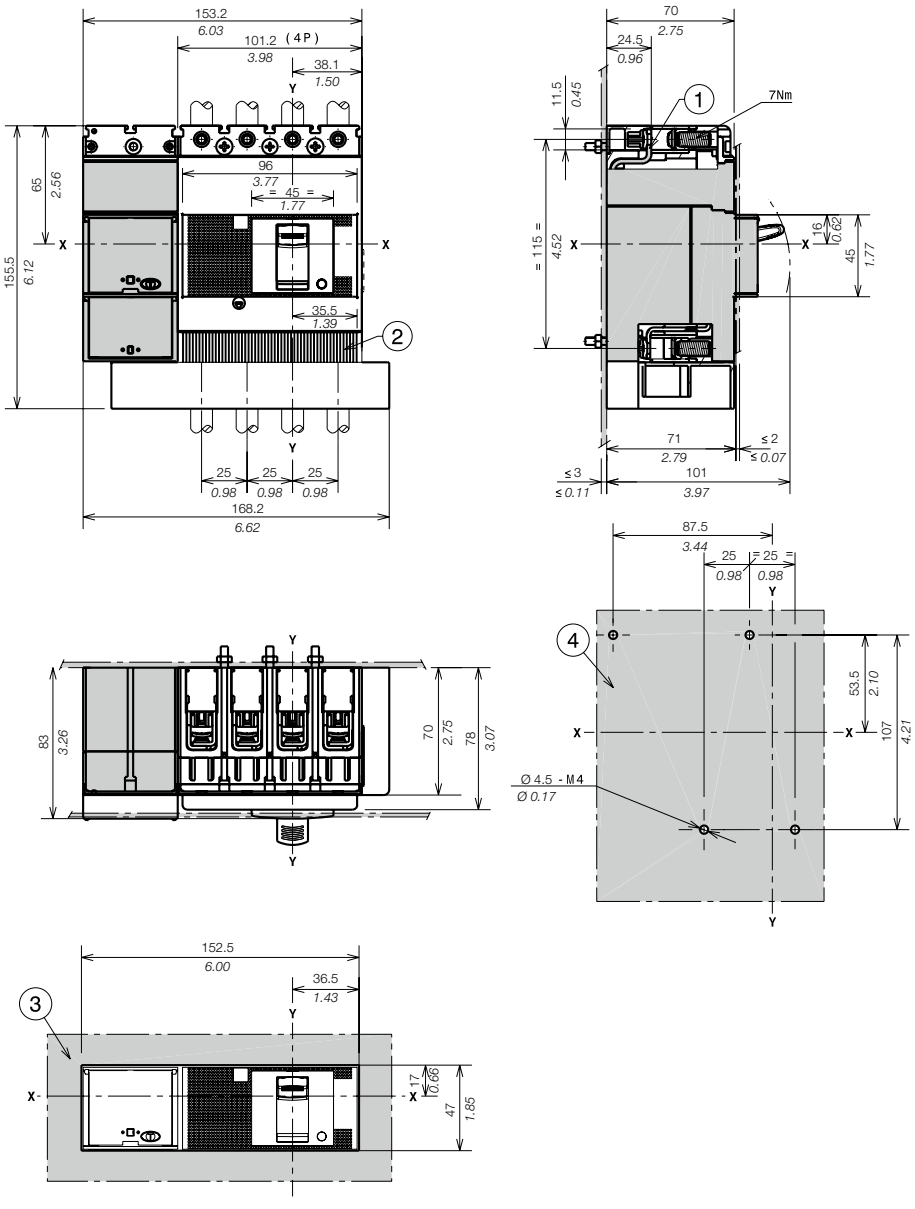
RC Inst and RC Sel residual current release for 4-pole circuit-breaker



Key
1 Front terminals for busbar connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for mounting circuit-breaker on sheet

		A [in/mm]
With standard flange	3p	2.91/74
Without flange	3p	2.79/71

RC Sel 200 4-pole residual current release



—

Key

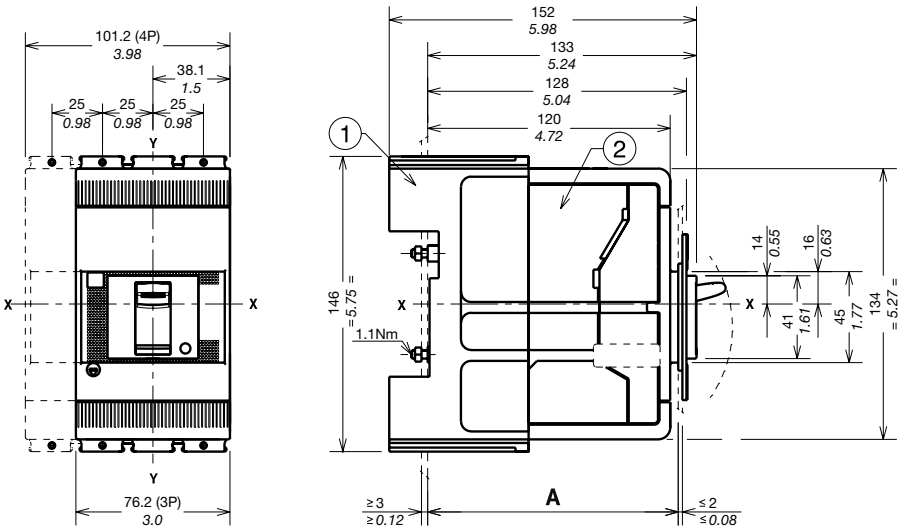
1 Front terminals for busbar connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle
4 Drilling template for mounting circuit-breaker on sheet

Tmax XT1 - Installation

Installation for plug-in circuit-breaker

Mounting on the backplate

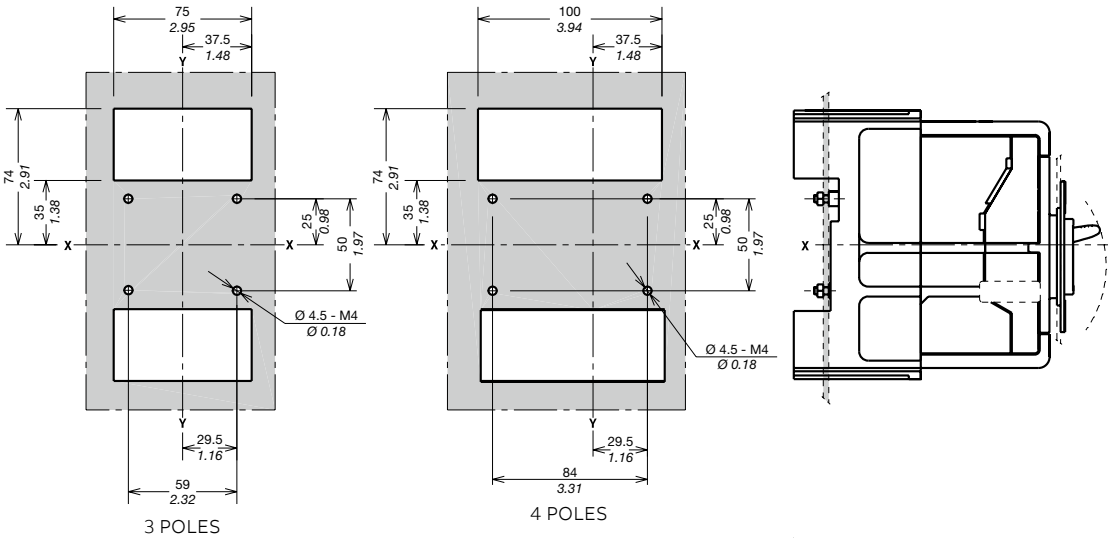
Key
1 Fixed part
2 Moving part

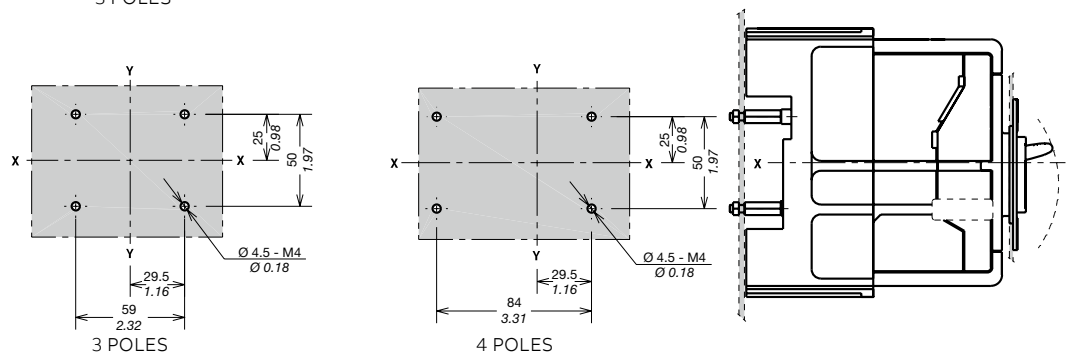


Fixing at 1.97"/50 mm		A [in/mm]
With standard flange	3p-4p	4.88/124
Without flange	3p-4p	4.76/121
	3p-4p	5.08/129

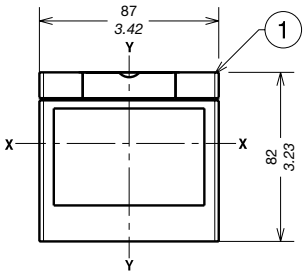
Fixing at 2.76"/70mm		A [in/mm]
With standard flange	3p-4p	5.67/144
Without flange	3p-4p	55/141
	3p-4p	5.87/149

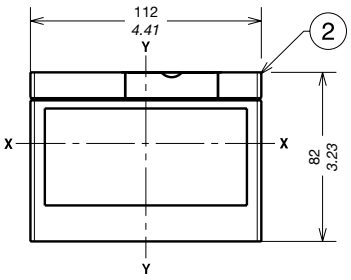
Drilling template for mounting circuit-breaker

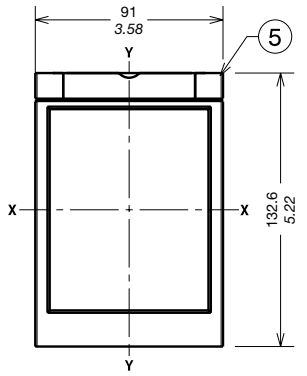


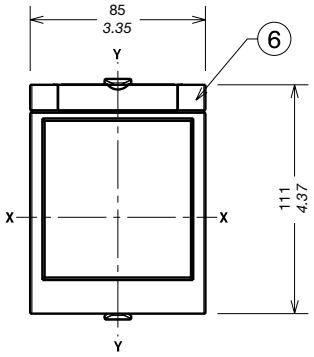


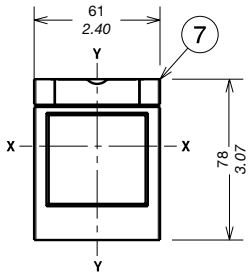
Flanges











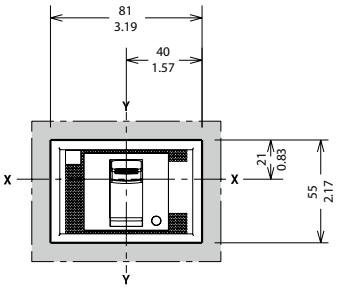
—
Key
1 Flange for plug-in 3P circuit-breaker
2 Flange for 4P circuit-breaker
5 Flange for plug-in 3P - 4P circuit-breakers with direct motor operator (MOD)
6 Flange for plug-in 3P - 4P circuit-breakers with direct rotary handle RHD
7 Optional flange

Tmax XT1 - Installation

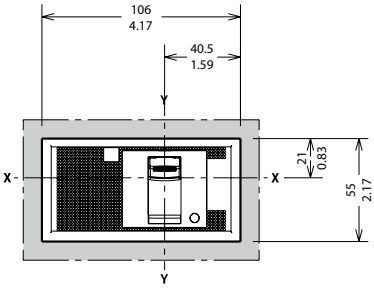
Installation for plug-in circuit-breaker

Drilling templates for compartment door

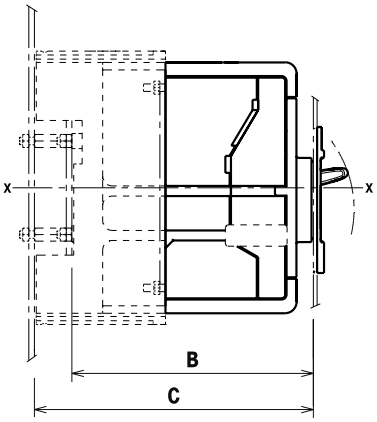
With standard flange



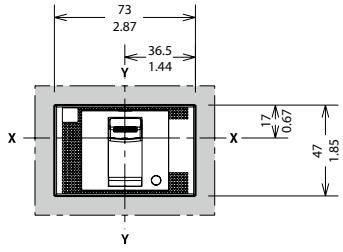
B=4.88/124 C=5.67/144
3 POLES



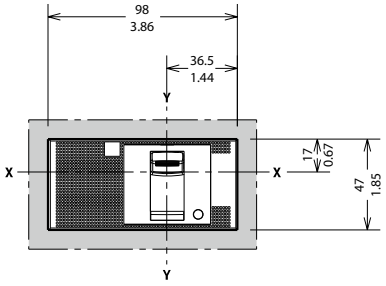
B=4.88/124 C=5.67/144
4 POLES



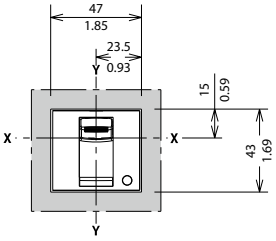
Without flange



B=4.76/121 C=5.55/141
3 POLES

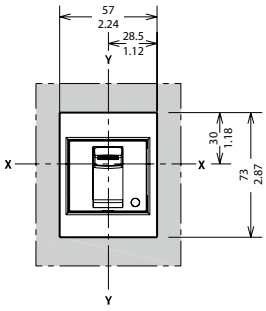


B=4.76/121 C=5.55/141
4 POLES

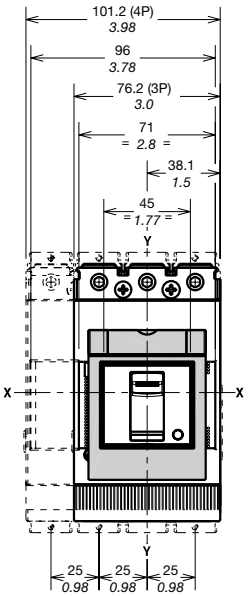


B=5.08/129 C=5.87/149
3-4 POLES

With optional flange



B=5.08/129 C=5.87/149
3-4 POLES

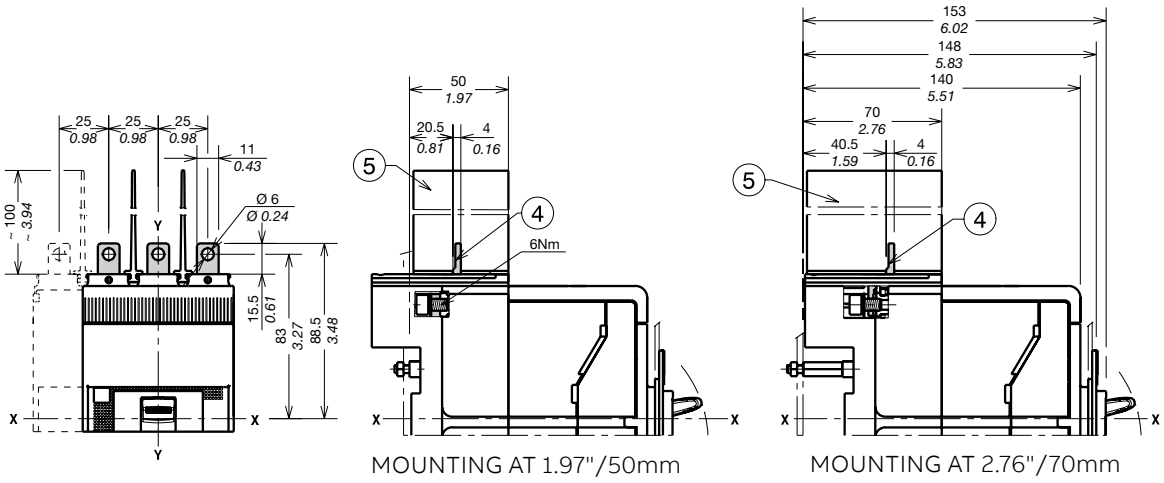


Tmax XT1 - Installation

Terminals for plug-in circuit-breaker

Terminals EF

Key
4 Front extended terminals
5 Phase separators 3.94"/100mm

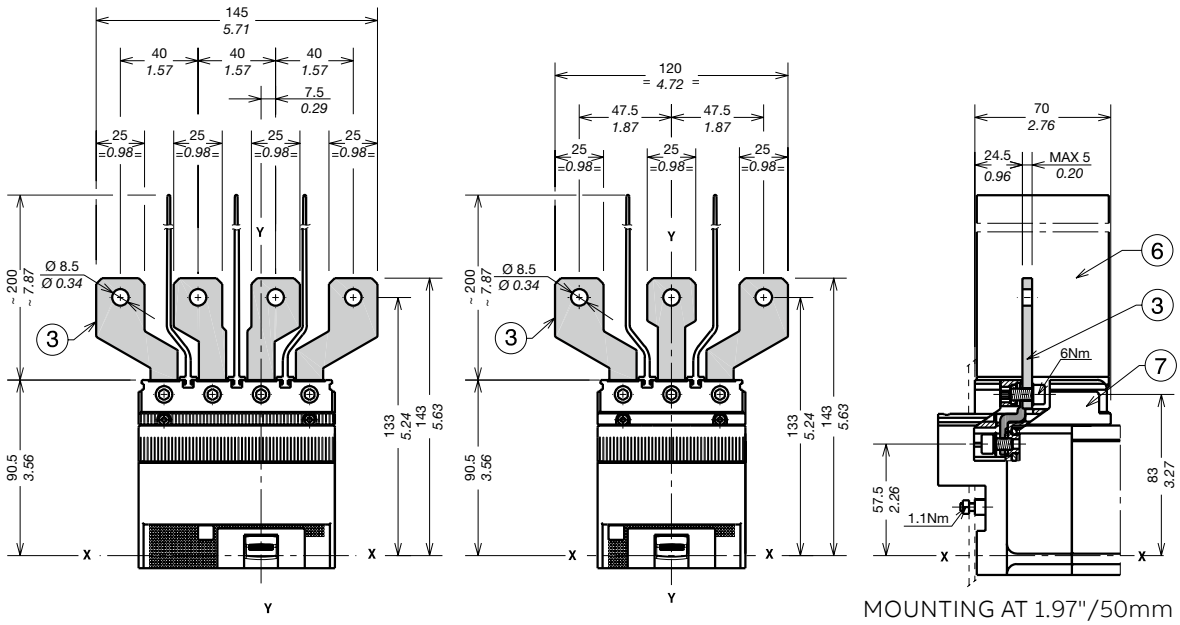


MOUNTING AT 1.97"/50mm

MOUNTING AT 2.76"/70mm

Terminals ES

Key
3 Front extended spread terminals
6 7.87"/200mm insulating barriers between phases
7 Adapter



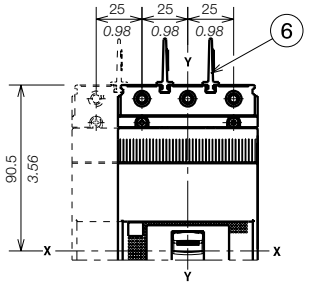
MOUNTING AT 1.97"/50mm

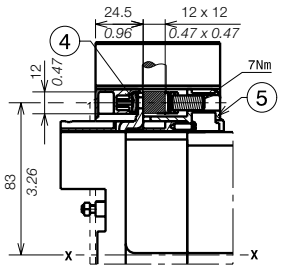
Tmax XT1 - Installation

Terminals for plug-in circuit-breaker

Terminals FCCu

—
Key
4 Terminals FCCu
5 Adapter
6 Phase separators 0.98"/25mm

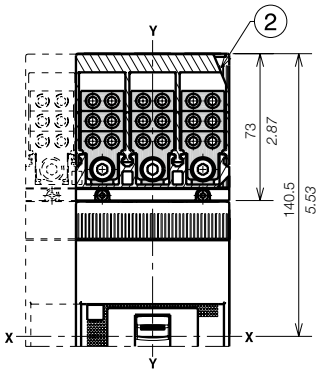


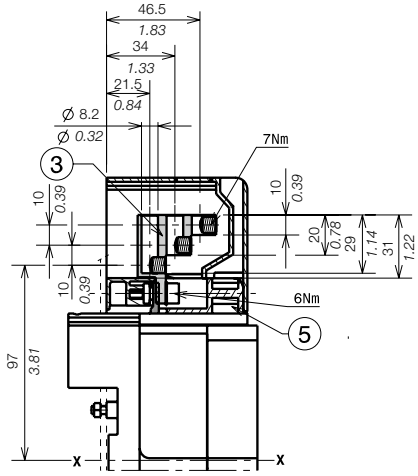


MOUNTING AT 1.97"/50mm

Terminals MC

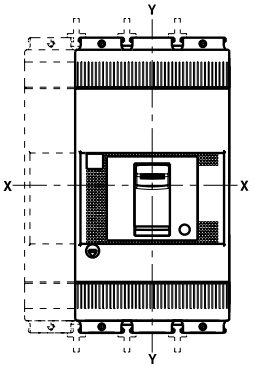
—
Key
2 Terminal covers with degree of protection IP40
3 Front terminal for multi-cable connection
5 Adapter

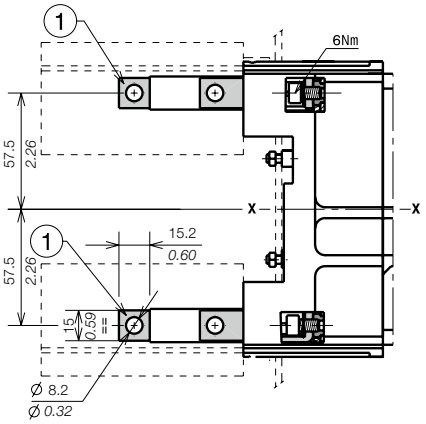




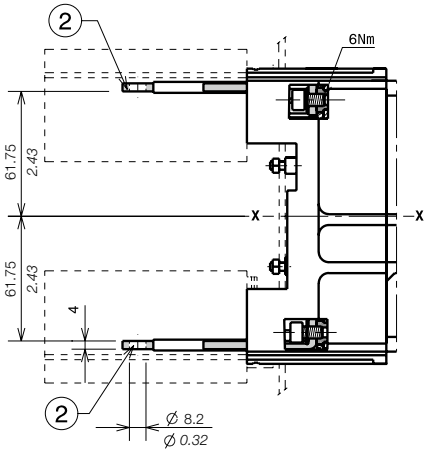
MOUNTING AT 1.97"/50mm

Terminals HR/VR

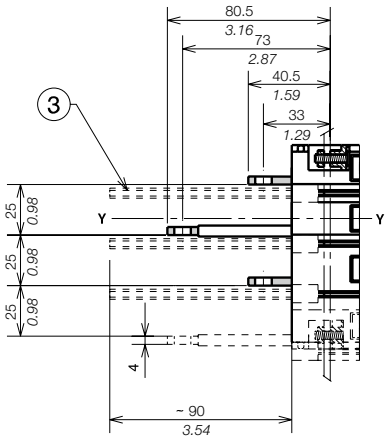


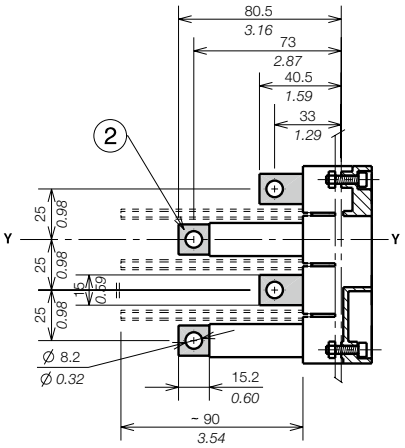


MOUNTING AT 1.97"/50mm



MOUNTING AT 1.97"/50mm





—

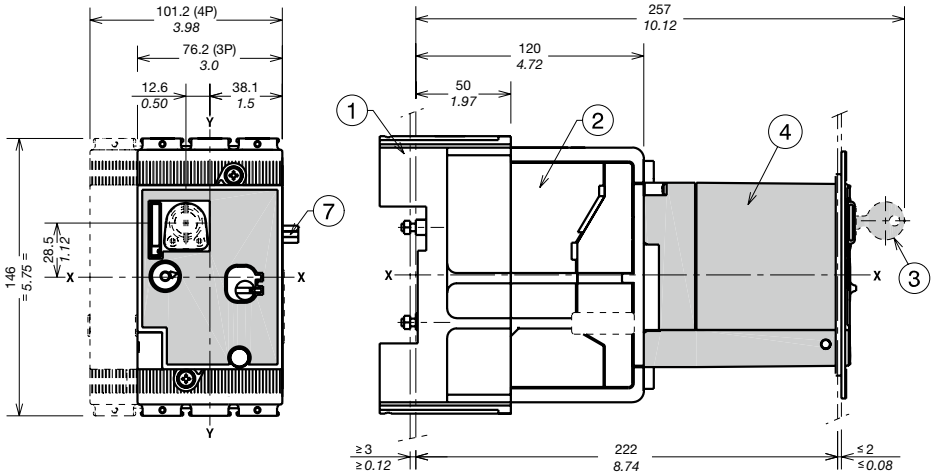
Key

1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 3.54"/90mm

Tmax XT1 - Installation

Accessories for plug-in circuit-breaker

Direct motor operator (MOD)



—

Key

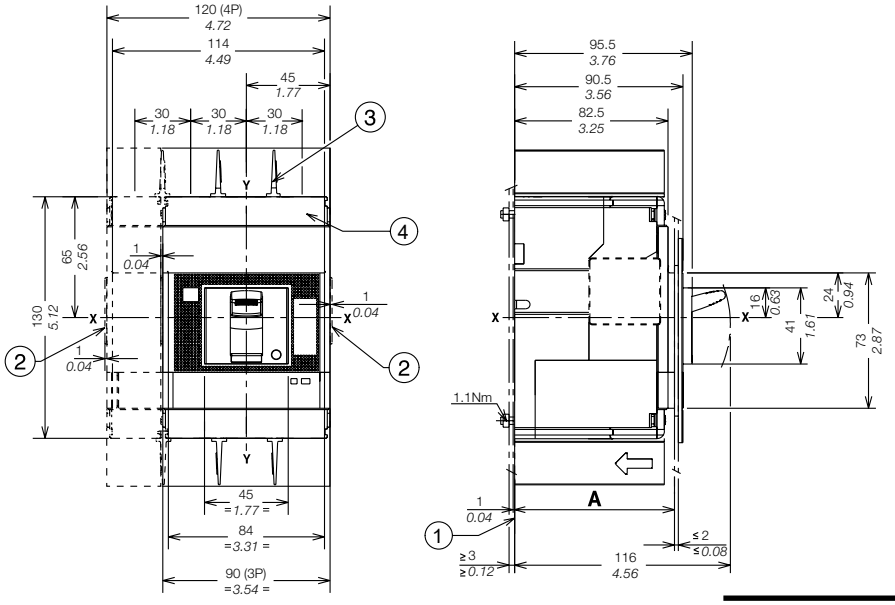
1 Fixed part
2 Moving part
3 Key lock
4 Direct motor operator (MOD)
5 Drilling template of door with MOD without flange
6 Drilling template of door with MOD with flange
7 Cable connection

Tmax XT2 - Installation

Installation for fixed circuit-breaker

Fixed circuit-breaker mounting on the backplate

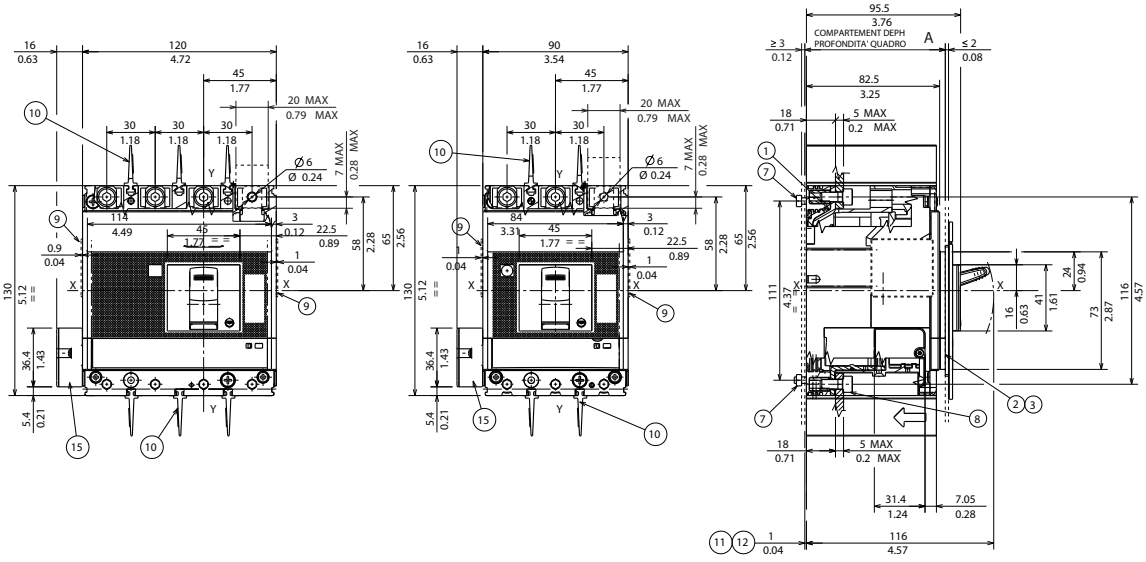
—
Key
1 Insulating plate compulsory
2 Optional wiring ducts
3 Phase separators 0.98"/25mm
4 Front carter compulsory for panel door distance ≤ 0.98"/25mm



		A [in/mm]
With standard flange	3p-4p	3.38/86
Without flange	3p-4p	3.29/83.5
	3p-4p	3.60/91.5

With side connector for Ekip Touch trip units

—
Key
1 Front terminals
2 Flange for 4p circuit-breaker
3 Flange for 3p circuit-breaker
7 Tightening torque 1.1 Nm
8 Tightening torque 6 Nm
9 Optional wiring duct
10 Phase separators 0.98"/25mm
11 Rear insulating plate for 3p version
12 Rear insulating plate for 4p version
15 Connection kit F/P IntBus/ExtNeut/Se

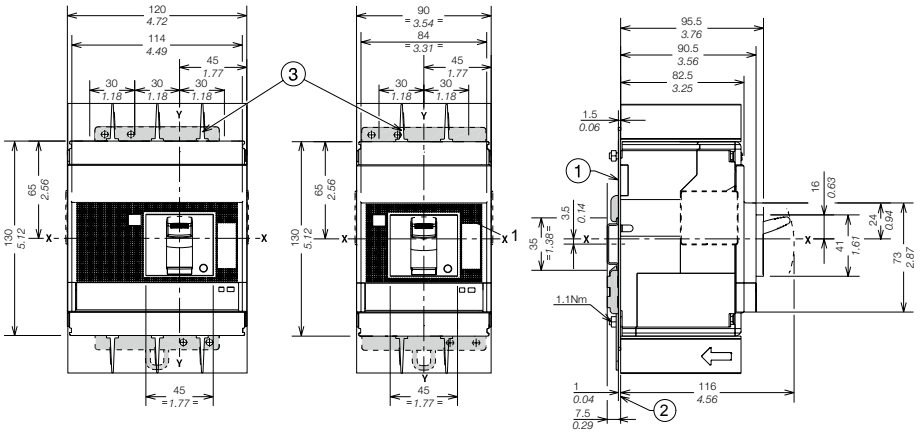


Tmax XT2 - Installation

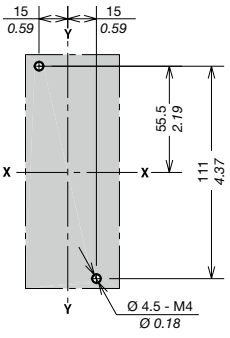
Installation for fixed circuit-breaker

Fixed circuit-breaker mounting on DIN EN 50022 rail

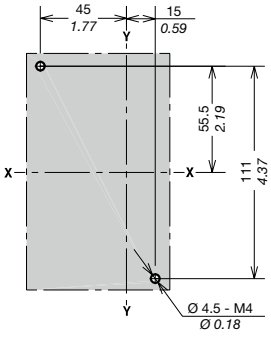
—
Key
1 Mounting bracket
2 Insulating plate
3 Phase separators
0.98"/25mm



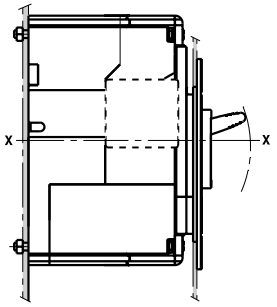
Drilling templates



3 POLES

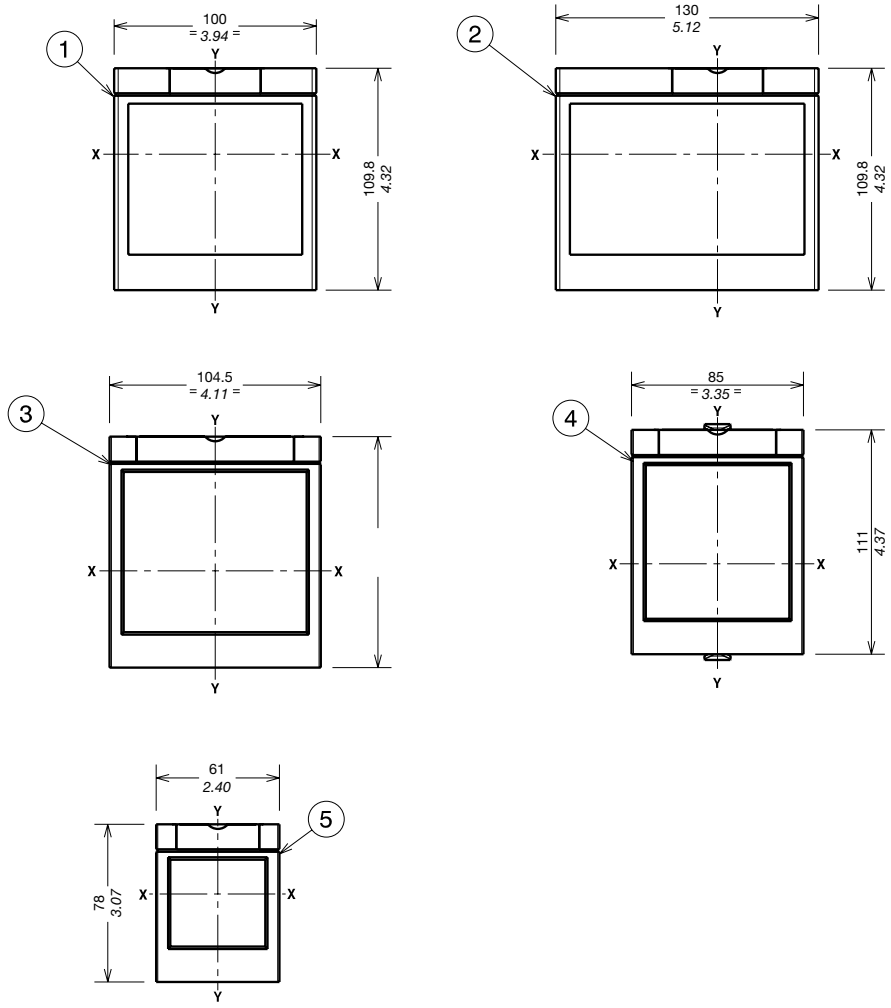


4 POLES



Flanges

—
Key
1 Flange for fixed 3p circuit-breaker
2 Flange for fixed 4p circuit-breaker
3 Flange for fixed 3p-4p circuit-breakers with MOE and FLD
4 Flange for 3p-4p circuit-breakers with direct rotary handle RHD
5 Optional flange

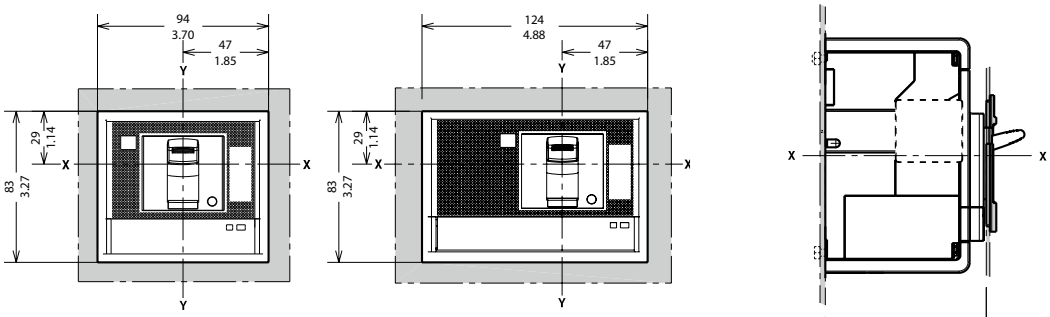


Tmax XT2 - Installation

Installation for fixed circuit-breaker

Drilling templates for compartment door

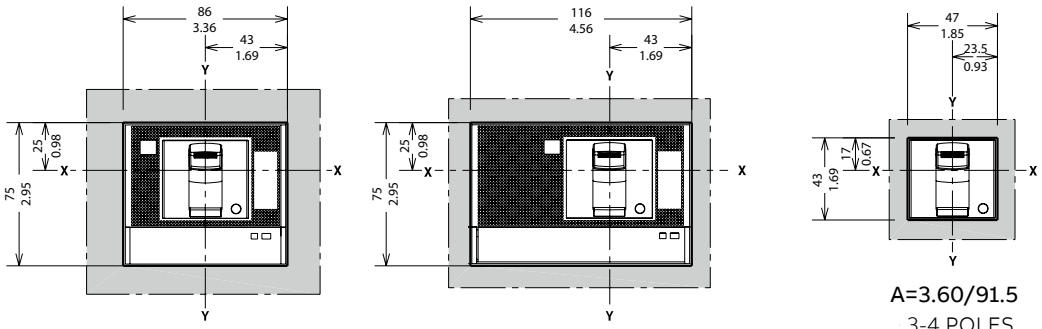
With standard flange



A=3.39/86
3 POLES

A=3.39/86
4 POLES

Without flange

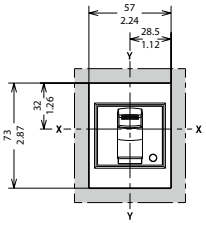


A=3.29/83.5
3 POLES

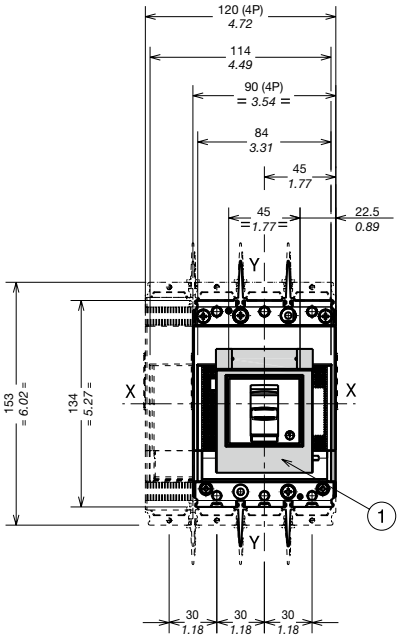
A=3.29/83.5
4 POLES

A=3.60/91.5
3-4 POLES

With optional flange



A=3.62/92
3-4 POLES



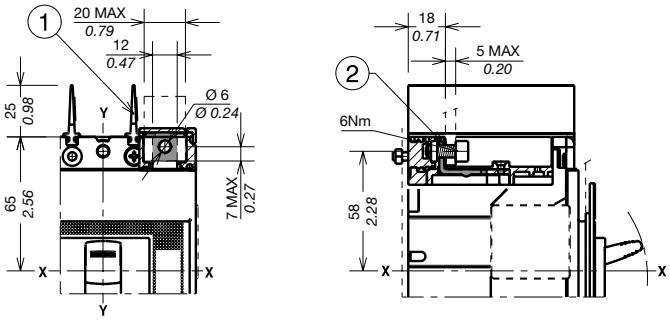
	Execution	A [in/ mm]	B [in/ mm]	C [in/ mm]	
With optional flange	fixed	3.62/ 92			3-4 poles
	plug-in, mounting at 1.97"/50mm		5.59/ 142		3-4 poles
	plug-in, mounting at 2.76"/70mm			6.38/ 162	3-4 poles

—
Key
1 Optional flange

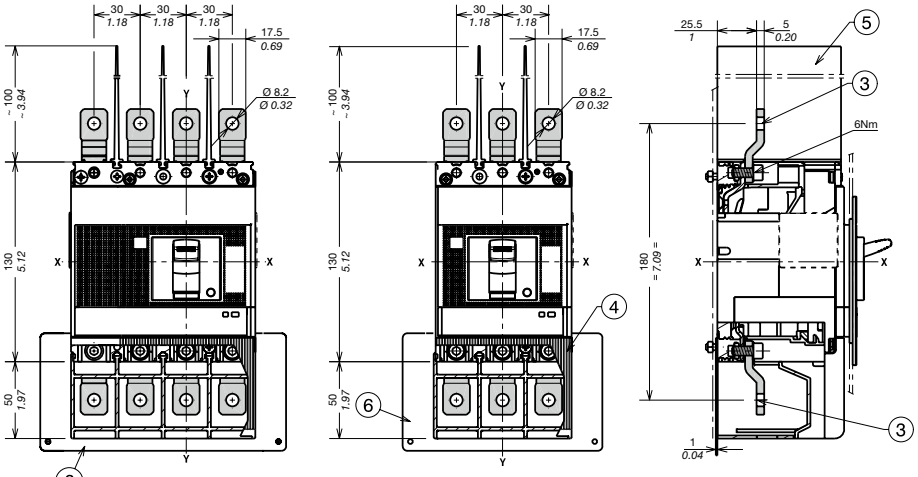
Tmax XT2 - Installation
Terminals for fixed circuit-breaker

Terminals F

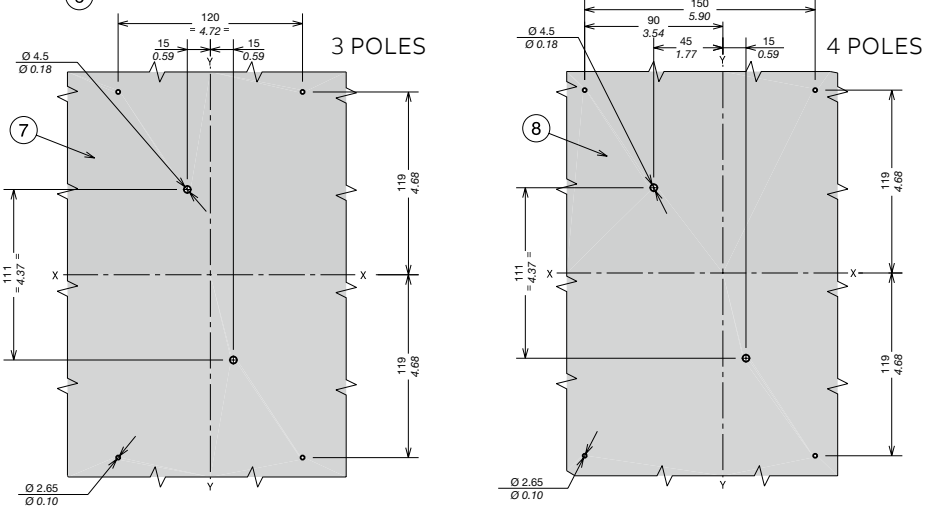
Key
1 Phase separators 0.98"/25mm
2 Front terminals for busbar connection



Terminals EF



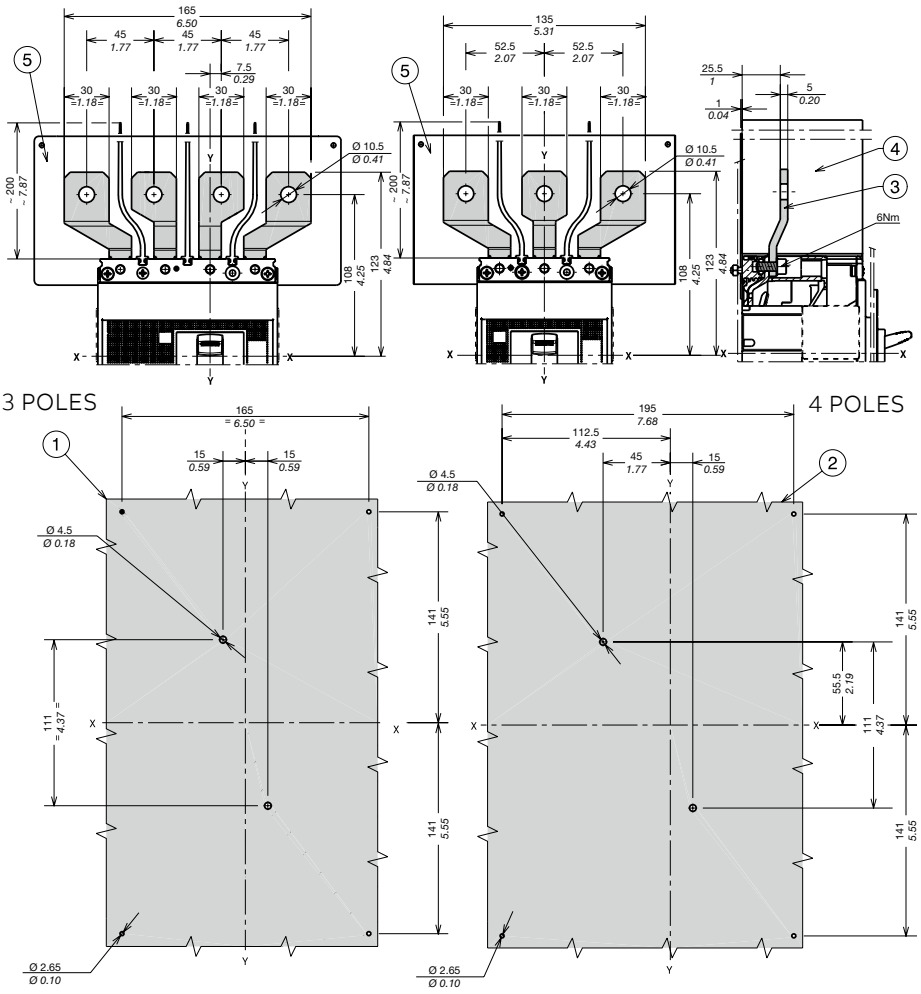
Key
3 Front extended terminals
4 Terminal covers with degree of protection IP40
5 Phase separators 3.94"/100mm
6 Insulated plate provided for XT2 Ue>440V
7 Drilling template for 3p circuit-breaker Ue>440V (compulsory)
8 Drilling template for 4p circuit-breaker Ue>440V (compulsory)



Tmax XT2 - Installation

Terminals for fixed circuit-breaker

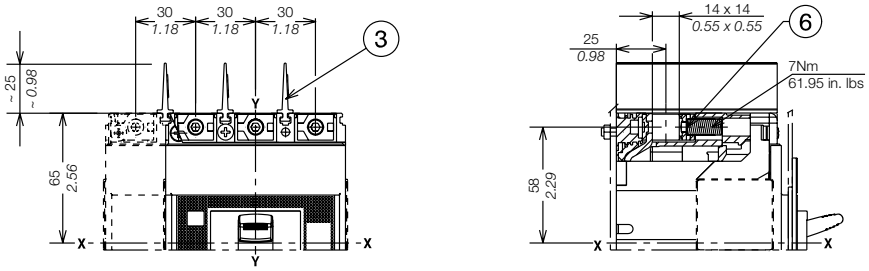
Terminals ES



Key
1 Drilling template for 3p circuit-breaker Ue>440V
2 Drilling template for 4p circuit-breaker Ue>440V
3 Front extended spread terminals
4 Phase separators 7.87"/200mm
5 Insulated plate provided for XT2 Ue>440V

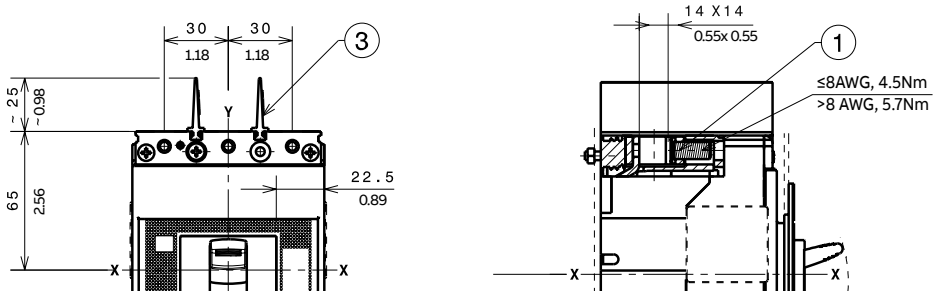
Terminals FCCu

Key
3 Phase separators 0.98"/25mm
6 Terminals FCCu



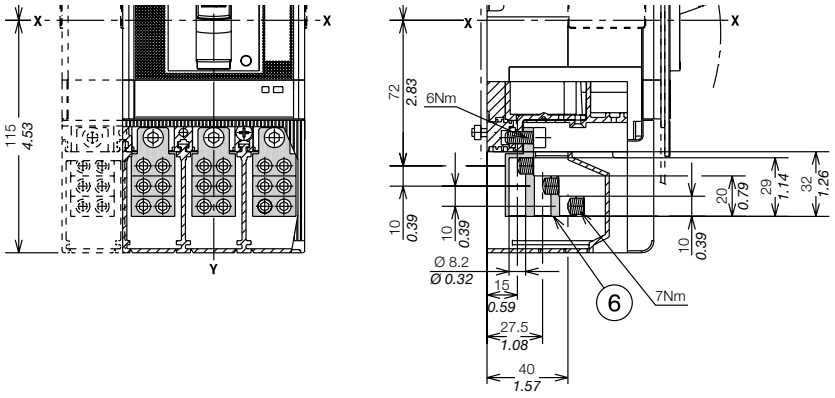
1x14...1/0AWG terminals FCCuAl

Key
1 1x14...1/0AWG terminals FCCuAl
3 Phase separators 0.98"/25mm



Terminals MC

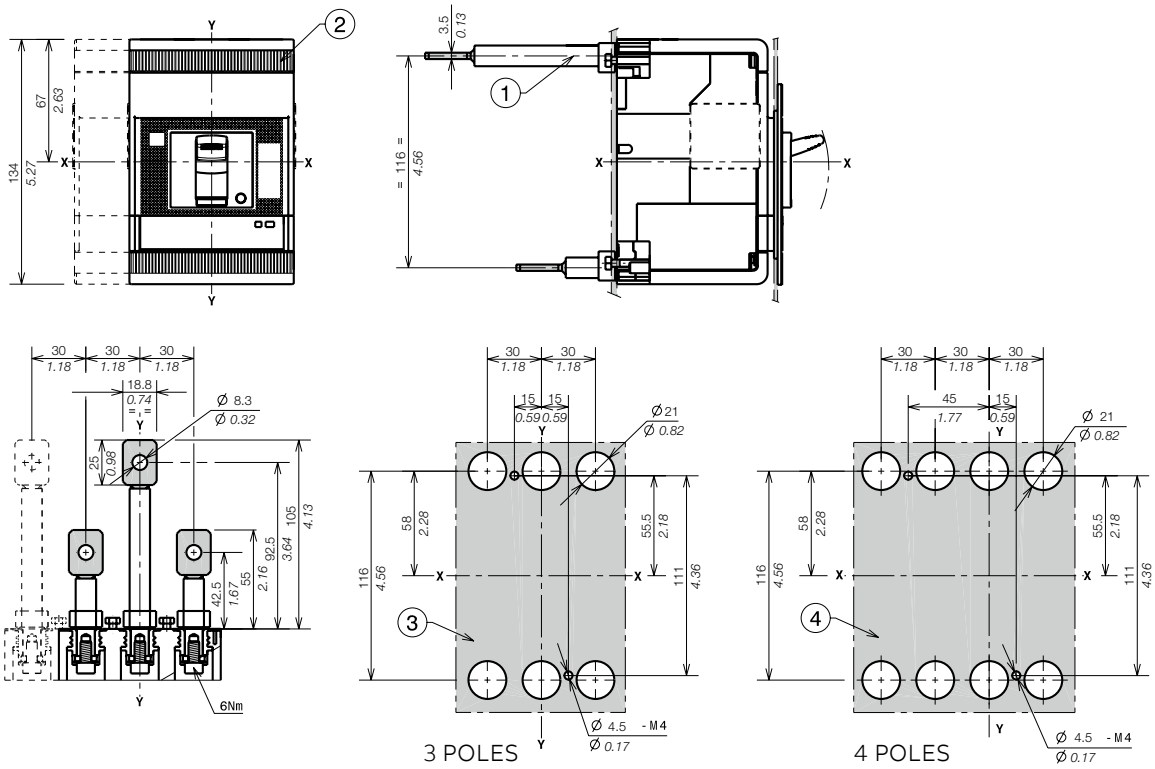
Key
6 Multi-cable terminals



Tmax XT2 - Installation

Terminals for fixed circuit-breaker

Terminals R



—

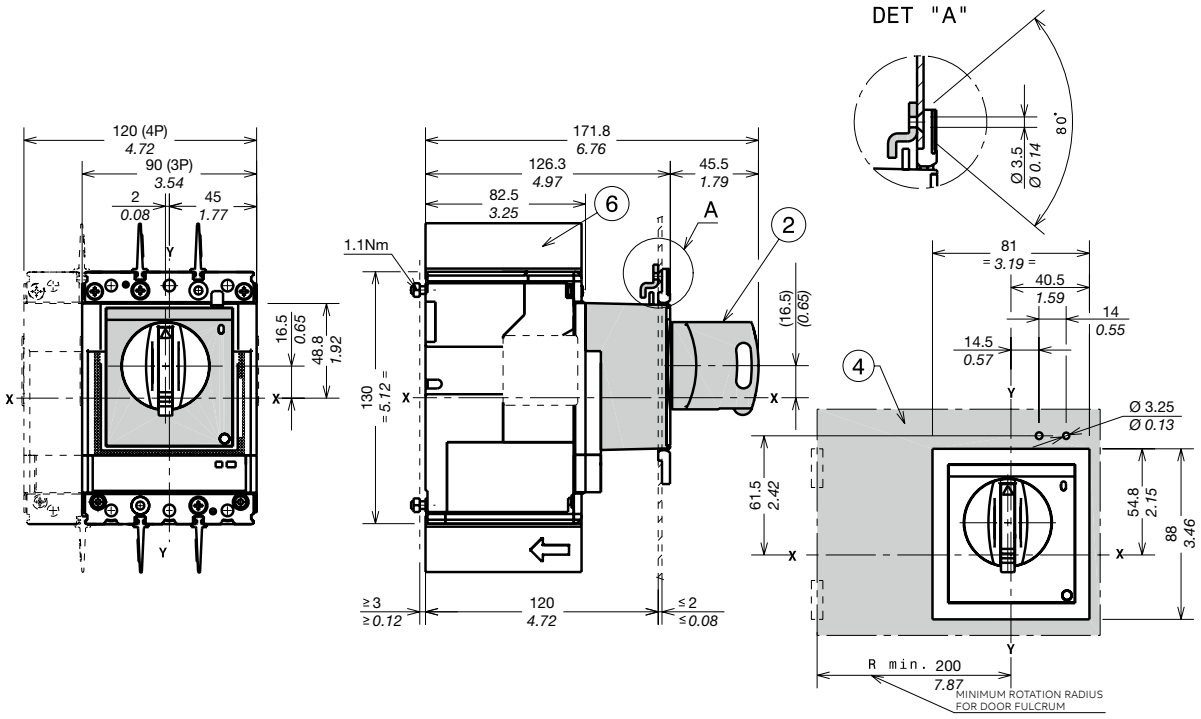
Key

1 Rear adjustable terminals
2 Bottom terminal covers with degree of protection IP30
3 Drilling template for mounting 3p circuit-breaker on sheet
4 Drilling template for mounting 4p circuit-breaker on sheet

Tmax XT2 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breaker (RHD)



—

Key

2 Rotary handle operating mechanism on circuit-breaker

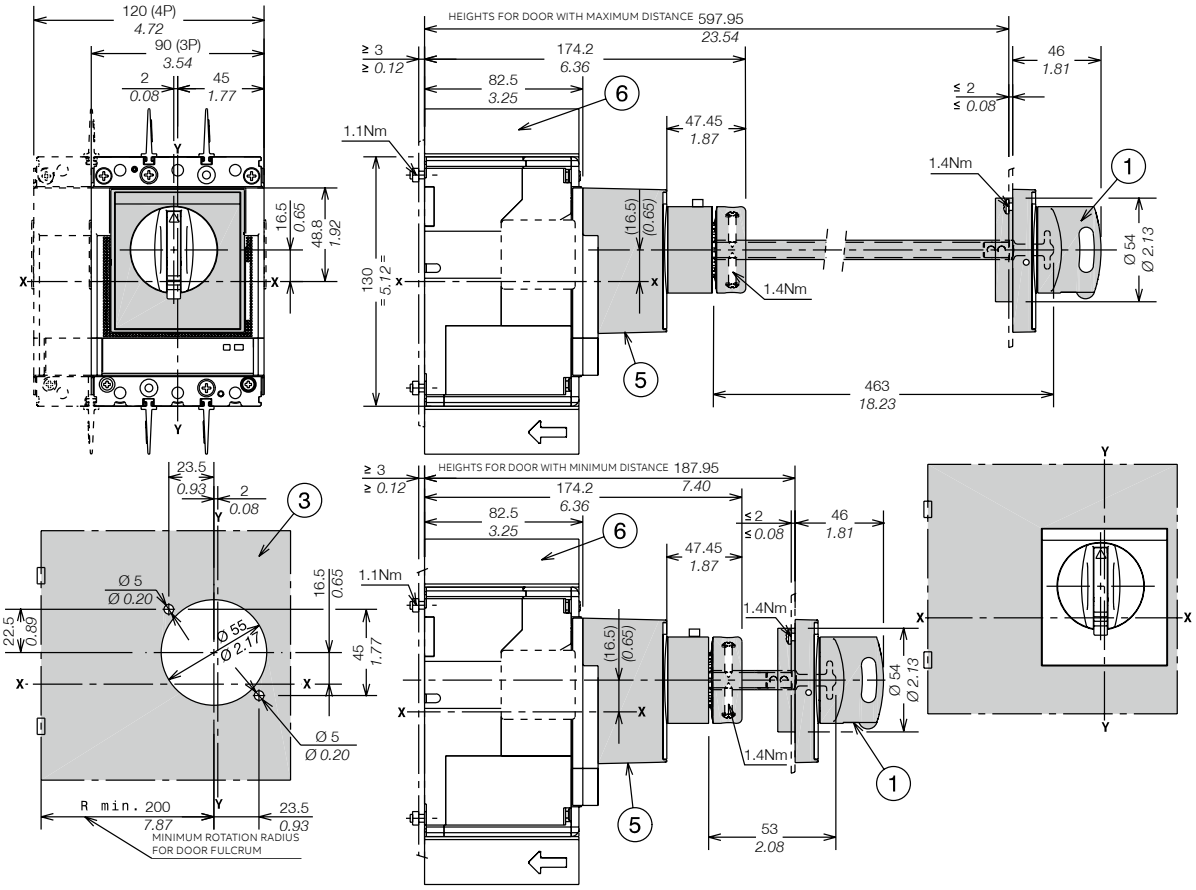
4 Drilling template of door with direct rotary handle

6 Phase separators 0.98"/25mm

Tmax XT2 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism with padlock on the compartment door (RHE-PL)

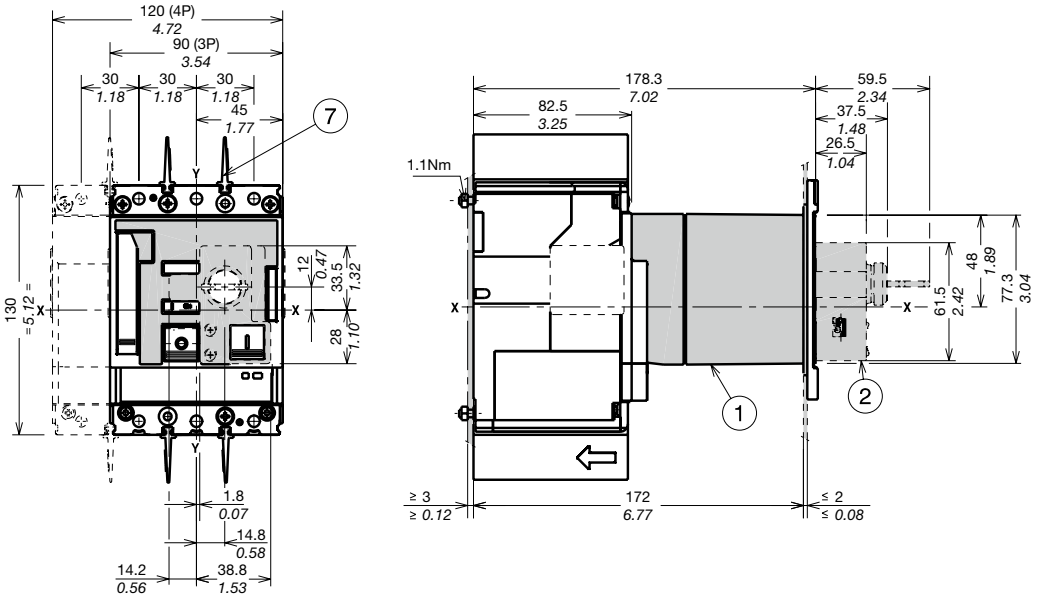


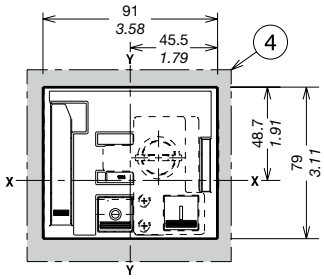
—

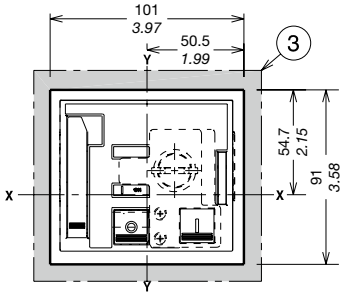
Key

1 Extended rotary handle operating mechanism
3 Door drilling template with extended rotary handle
5 Transmission unit
6 Phase separators 0.98"/25mm

Stored energy motor operator (MOE)





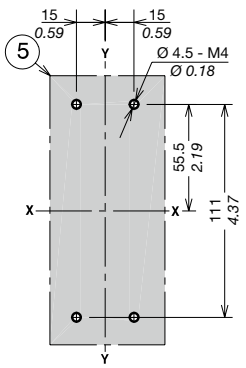


—

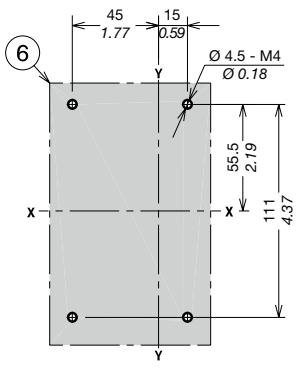
Key

1 Stored energy motor operator (MOE)
2 Key lock
3 Drilling template of door with MOE with flange
4 Door drilling template with MOE without flange
5 Drilling template for mounting 3p circuit-breaker on the backplate
6 Drilling template for mounting 4p circuit-breaker on the backplate
7 Phase separators 0.98"/25mm

3 POLES



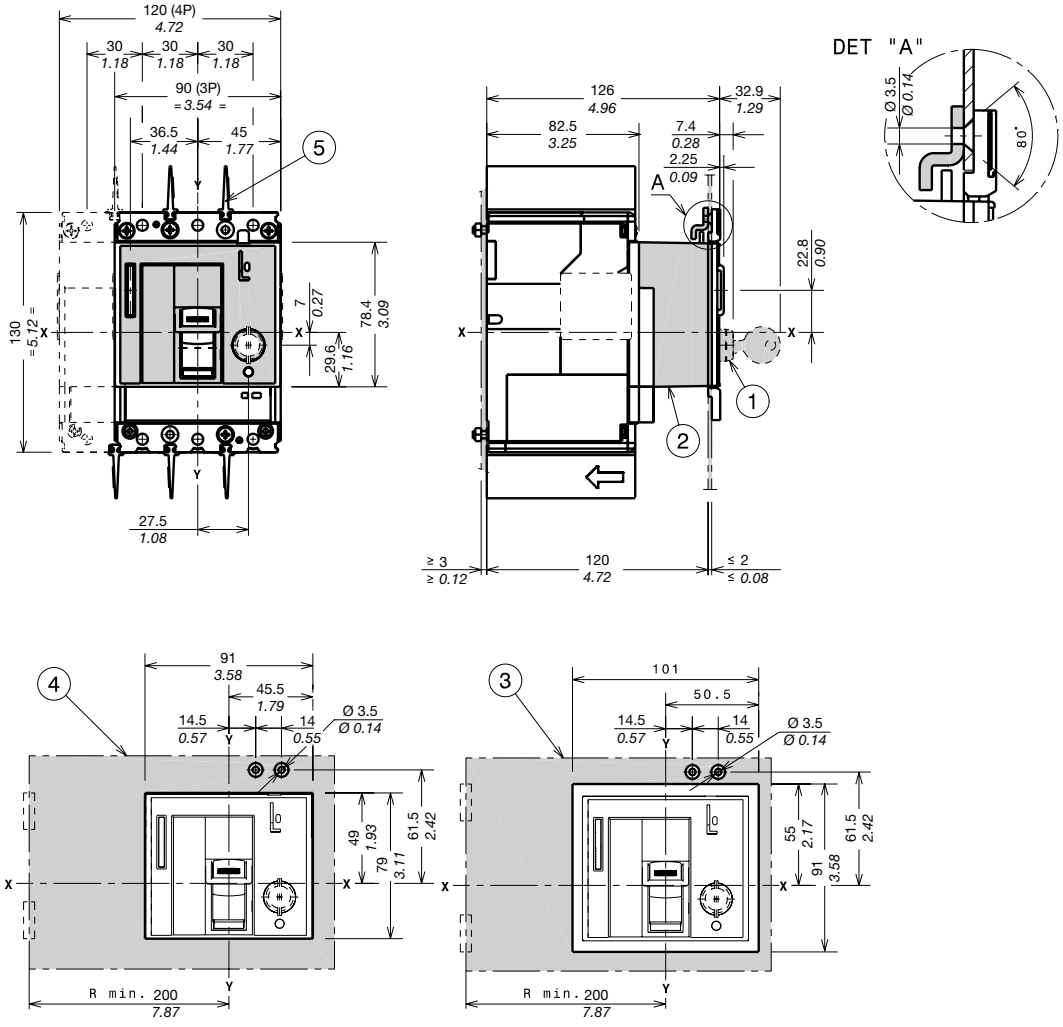
4 POLES



Tmax XT2 - Installation

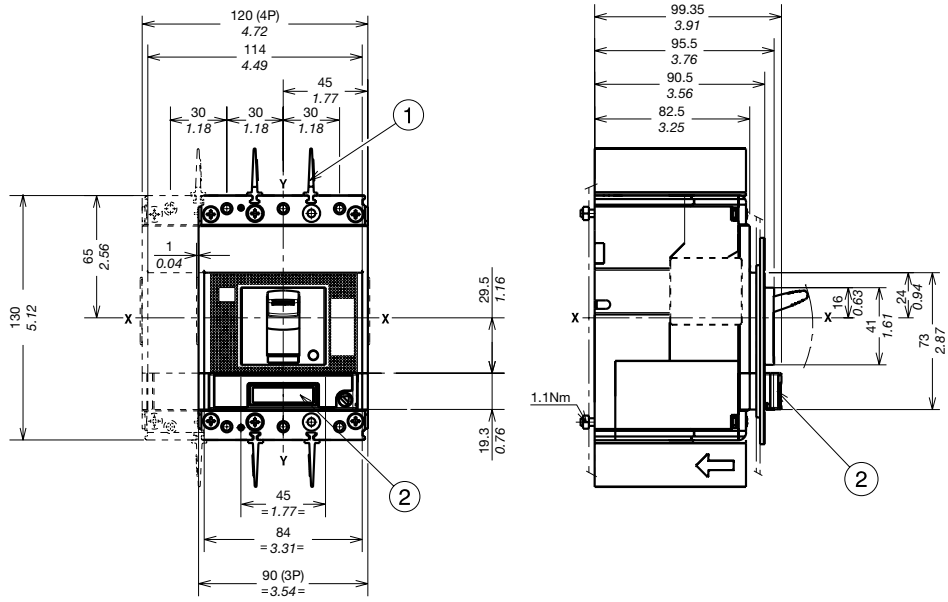
Accessories for fixed circuit-breaker

Front for lever operating mechanism (FLD)



Key
1 Key lock optional
2 Front for lever operating mechanism (FLD)
3 Drilling template of door with FLD with flange
4 Drilling template of door with FLD without flange
5 Phase separators 0.98"/25mm

Ekip Display or Ekip LED Meter



—

Key

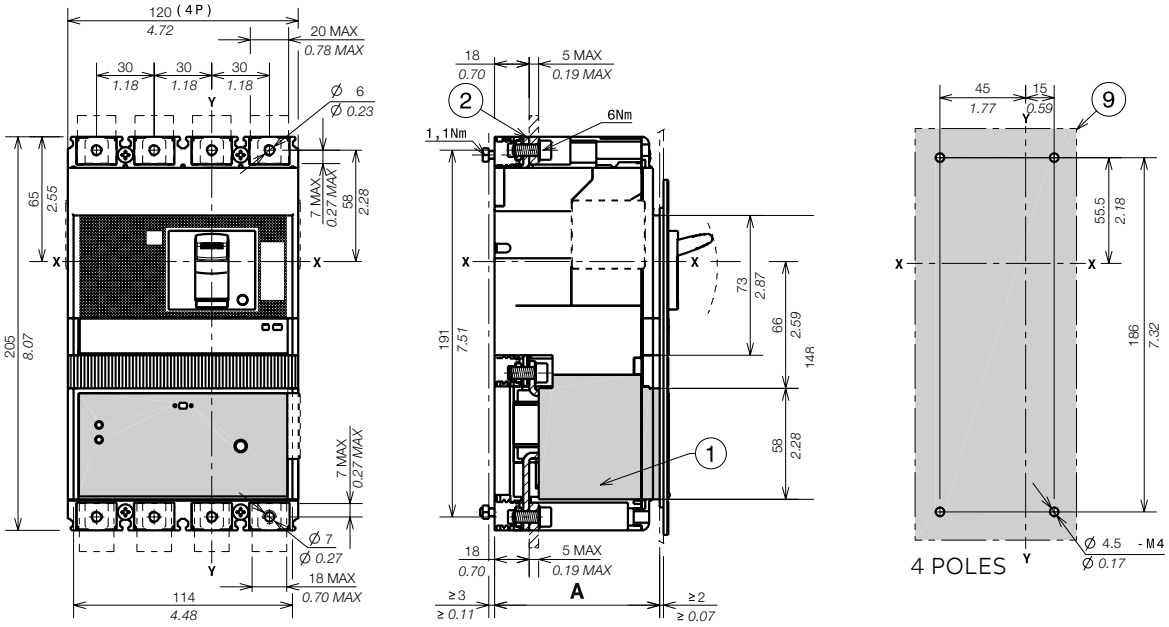
1 Phase separators 0.98"/25mm

2 Ekip Display or Ekip LED Meter

Tmax XT2 - Installation

Accessories for fixed circuit-breaker

Residual current RC Sel



Key
1 Residual current
2 Front terminals
7 Drilling template of door with direct rotary handle and mounting with flange
8 Drilling template of door with direct rotary handle and mounting without flange
9 Drilling template for mounting circuit-breaker on sheet

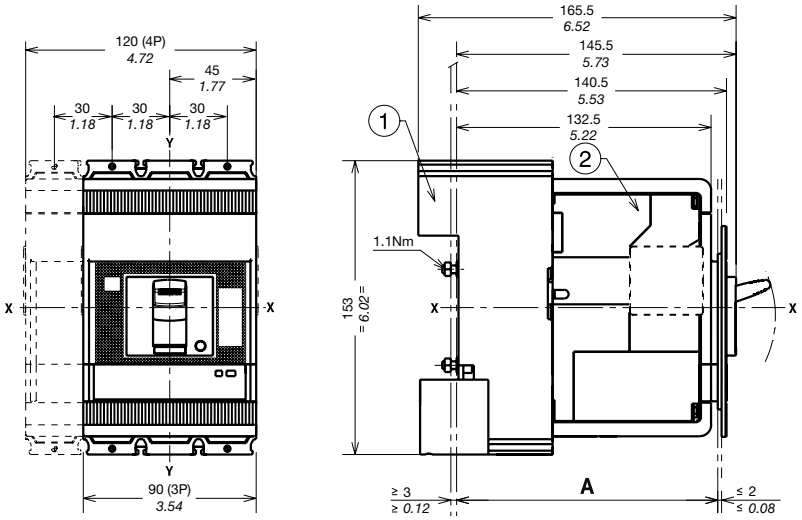
		A [in/mm]
With standard flange	4p	3.39/86
Without flange	4p	32.87/83.5

Tmax XT2 - Installation

Installation for plug-in circuit-breaker

Plug-in circuit-breaker mounting on sheet

—
Key
1 Fixed part
2 Moving part

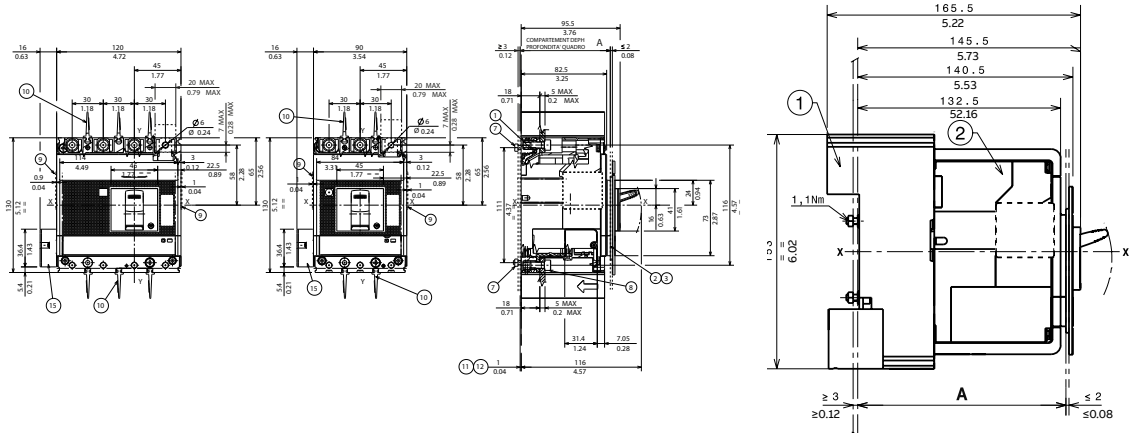


Fixing at 1.97"/50mm		A [in/mm]
With standard flange	3p-4p	5.35/136
Without flange	3p-4p	52.56/133.5
	3p-4p	55.71/141.5

Fixing at 2.76"/70mm for extended front terminals		A [in/mm]
With standard flange	3p-4p	6.14/156
Without flange	3p-4p	60.43/153.5
	3p-4p	63.68/161.5

—
Key
9 Optional wiring duct
10 Phase separators 0.98"/25mm
15 Connection kit F/P version (IntBus/ ExtNeut/Sel)

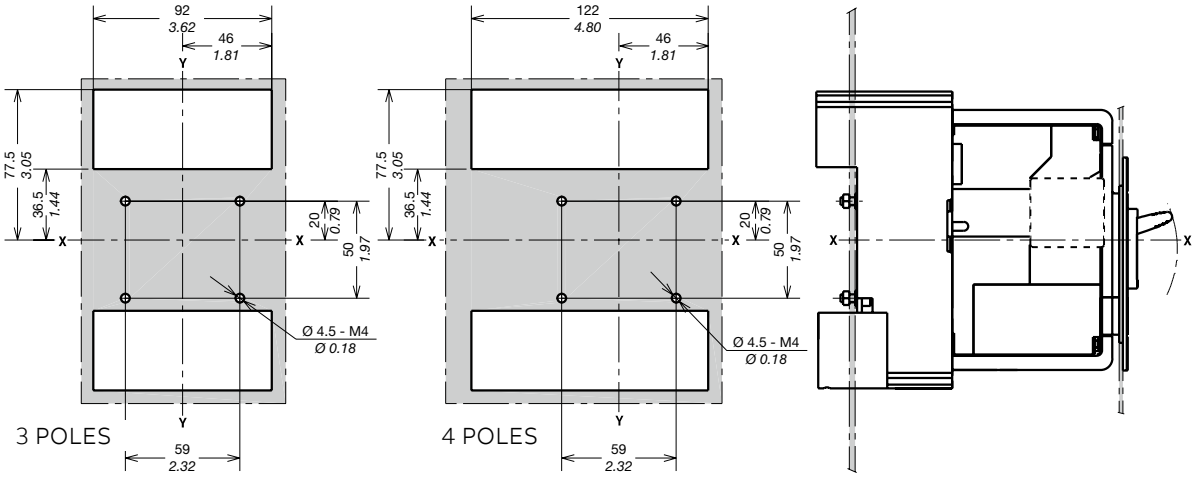
With side connector for Ekip Touch trip units

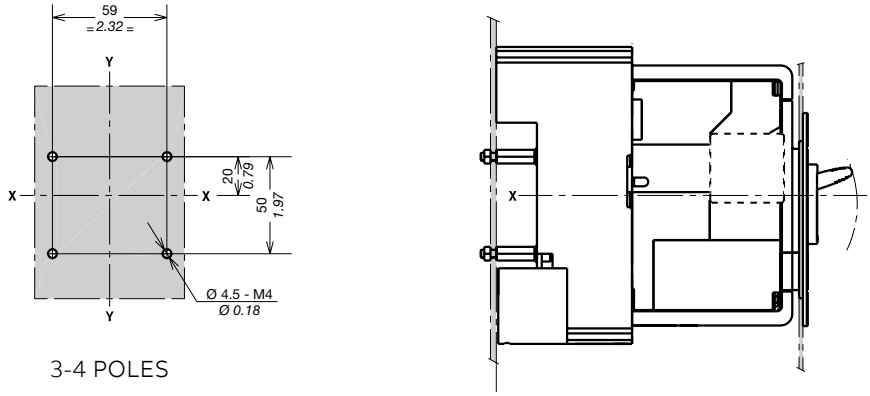


Tmax XT2 - Installation

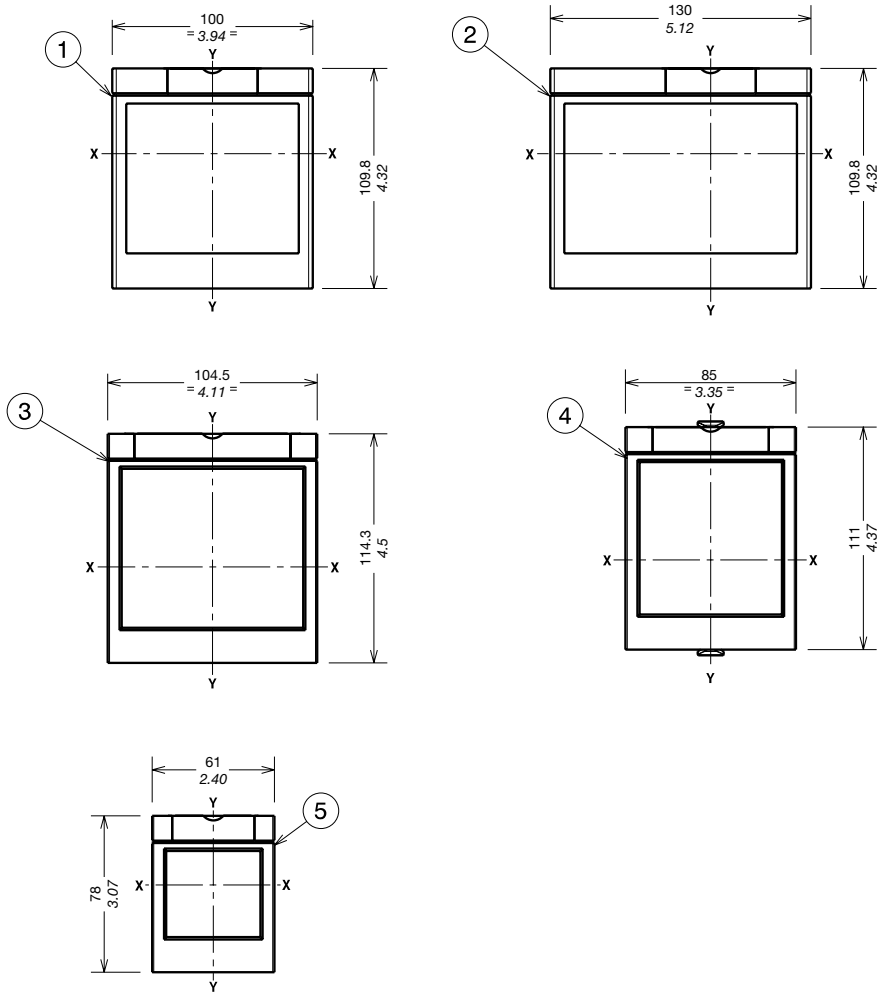
Installation for plug-in circuit-breaker

Drilling templates for the backplate





Flanges



—

Key

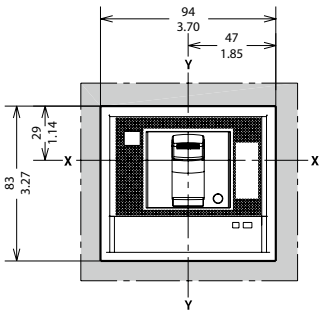
1 Flange for withdrawable 3p circuit-breaker
2 Flange for 4p circuit-breaker
3 Flange for plug-in 3p-4p circuit-breakers with MOE and FLD
4 Flange for 3p-4p circuit-breakers with direct rotary handle (RHD)
5 Optional flange

Tmax XT2 - Installation

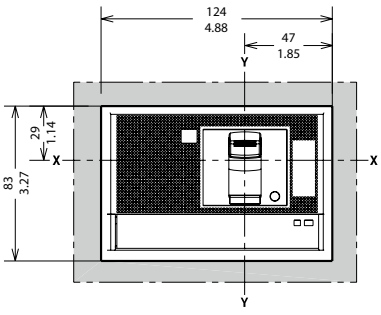
Installation for plug-in circuit-breaker

Drilling templates for compartment door

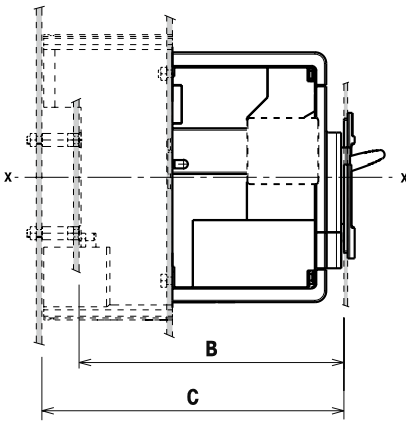
With standard flange



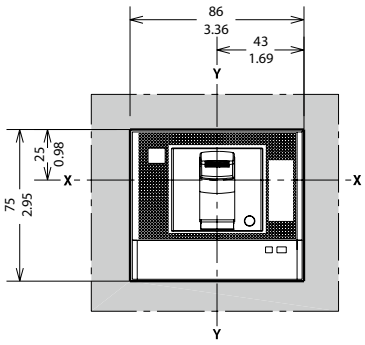
B=5.35/136 C=6.14/156
3 POLES



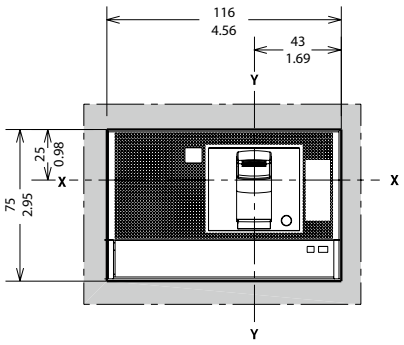
B=5.35/136 C=6.14/156
4 POLES



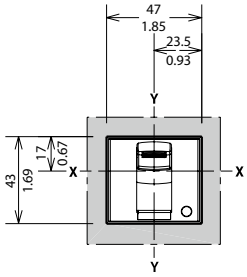
Without flange



B=5.26/133.5 C=6.12/155.5
3 POLES

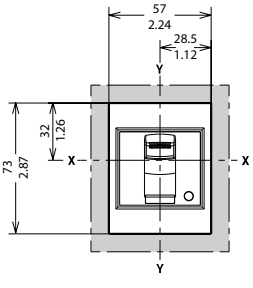


B=5.26/133.5 C=6.04/153.5
4 POLES

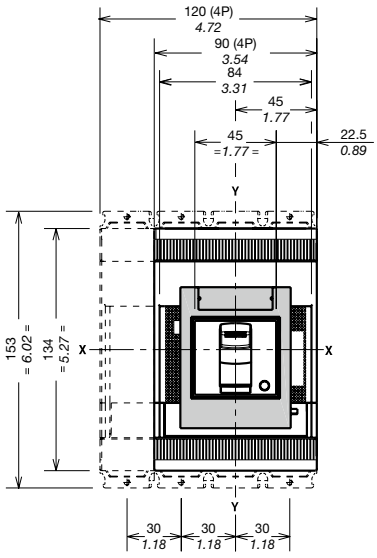


B=5.35/5.57 C=4.00/101.5
3-4 POLES

With optional flange



B=5.59/142 C=6.38/162
3-4 POLES

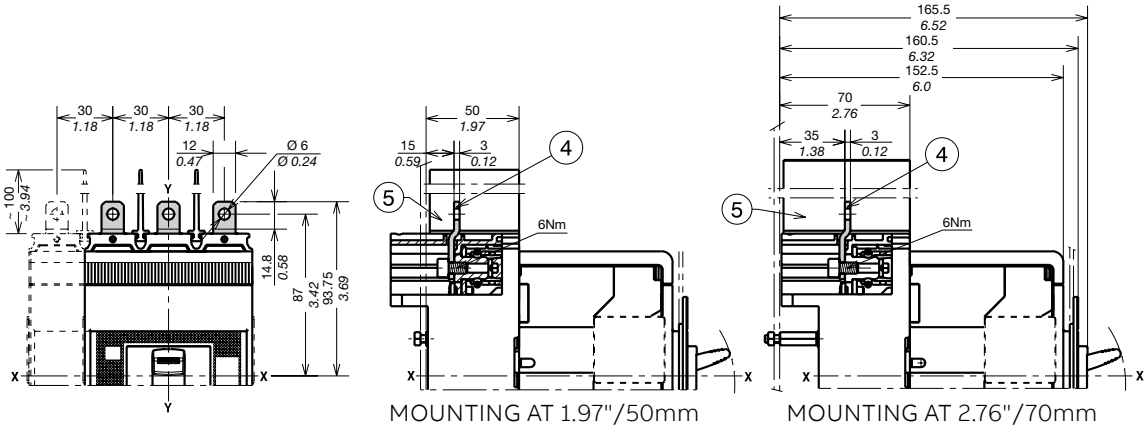


Tmax XT2 - Installation

Terminals for plug-in circuit-breaker

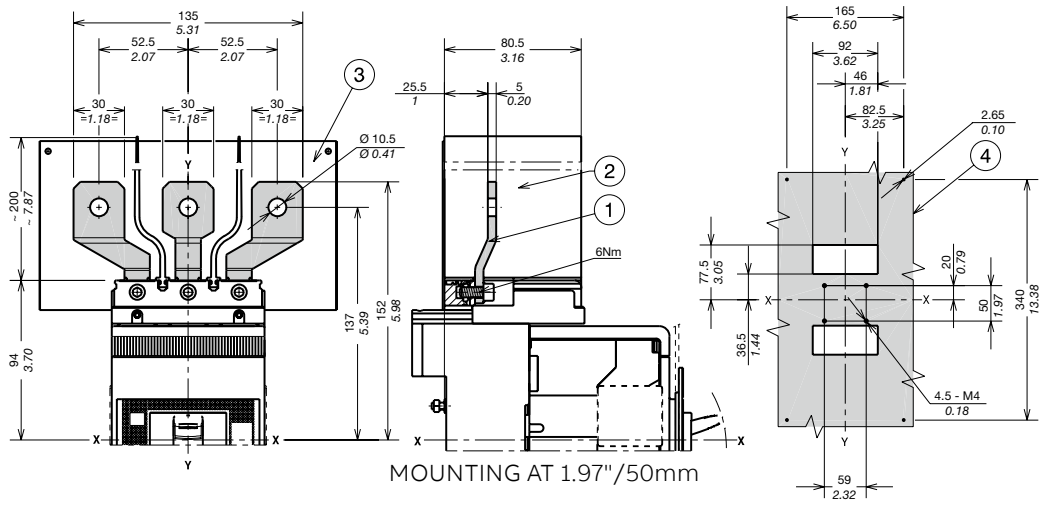
Terminals EF

—
Key
4 Front extended terminals
5 Phase separators 3.94"/100mm



Terminals ES

—
Key
1 Front extended spread terminals
2 Phase separators 7.87"/200mm
3 Insulated plate
4 Drilling template for 3p circuit-breaker Ue>440V
5 Drilling template for 4p circuit-breaker Ue>440V

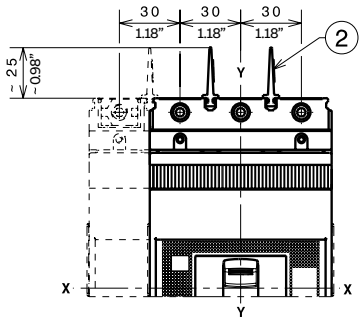


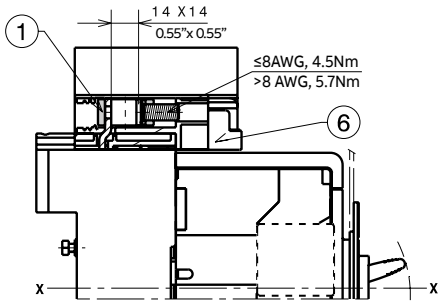
Tmax XT2 - Installation

Terminals for plug-in circuit-breaker

1x14...1/0AWG terminals FCCuAl

Key
1 1x14...1/0AWG front terminal FCCuAl
2 Phase separators 0.98"/25mm
6 Adaptor



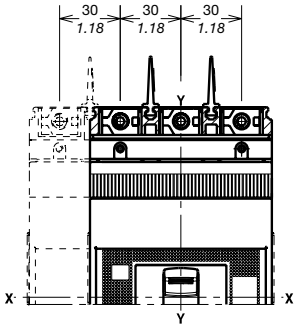


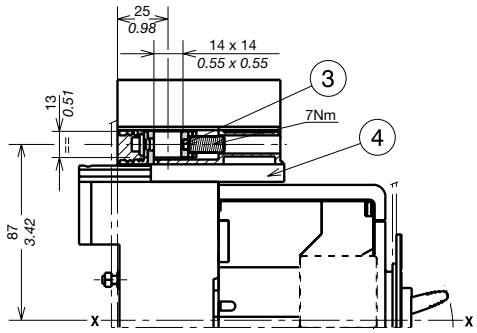
MOUNTING AT 1.97"/50mm

Terminals FCCu

Key
3 Terminals FCCu
4 Adapter

Note:
Phase separator 0.98"/25mm

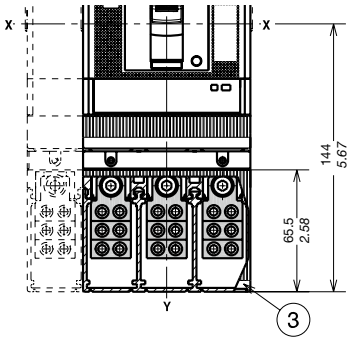


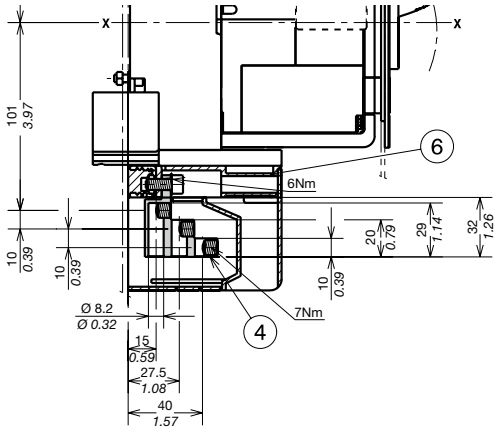


MOUNTING AT 1.97"/50mm

Terminals MC

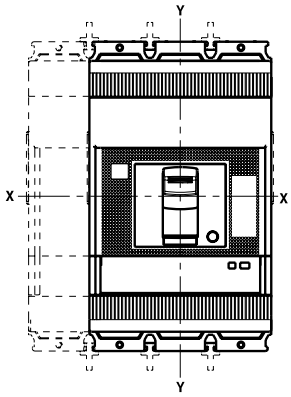
Key
3 High terminal covers with degree of protection IP40
4 Multi-cable terminals
6 Adapter

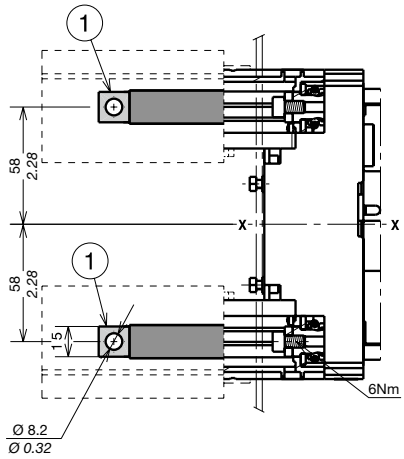




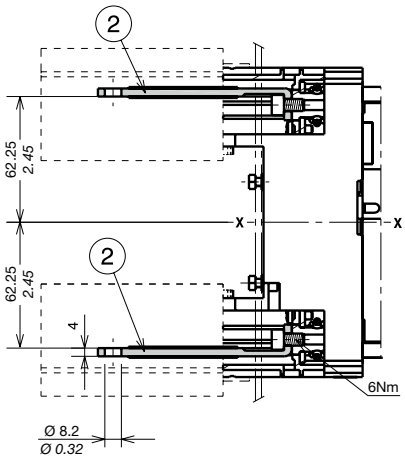
MOUNTING AT 1.97"/50mm

Terminals HR/VR

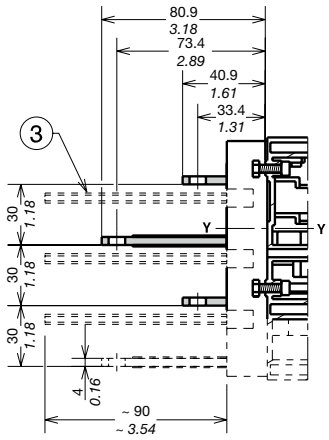


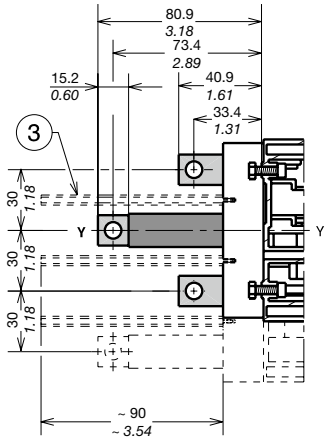


MOUNTING AT 1.97"/50mm



MOUNTING AT 1.97"/50mm





—

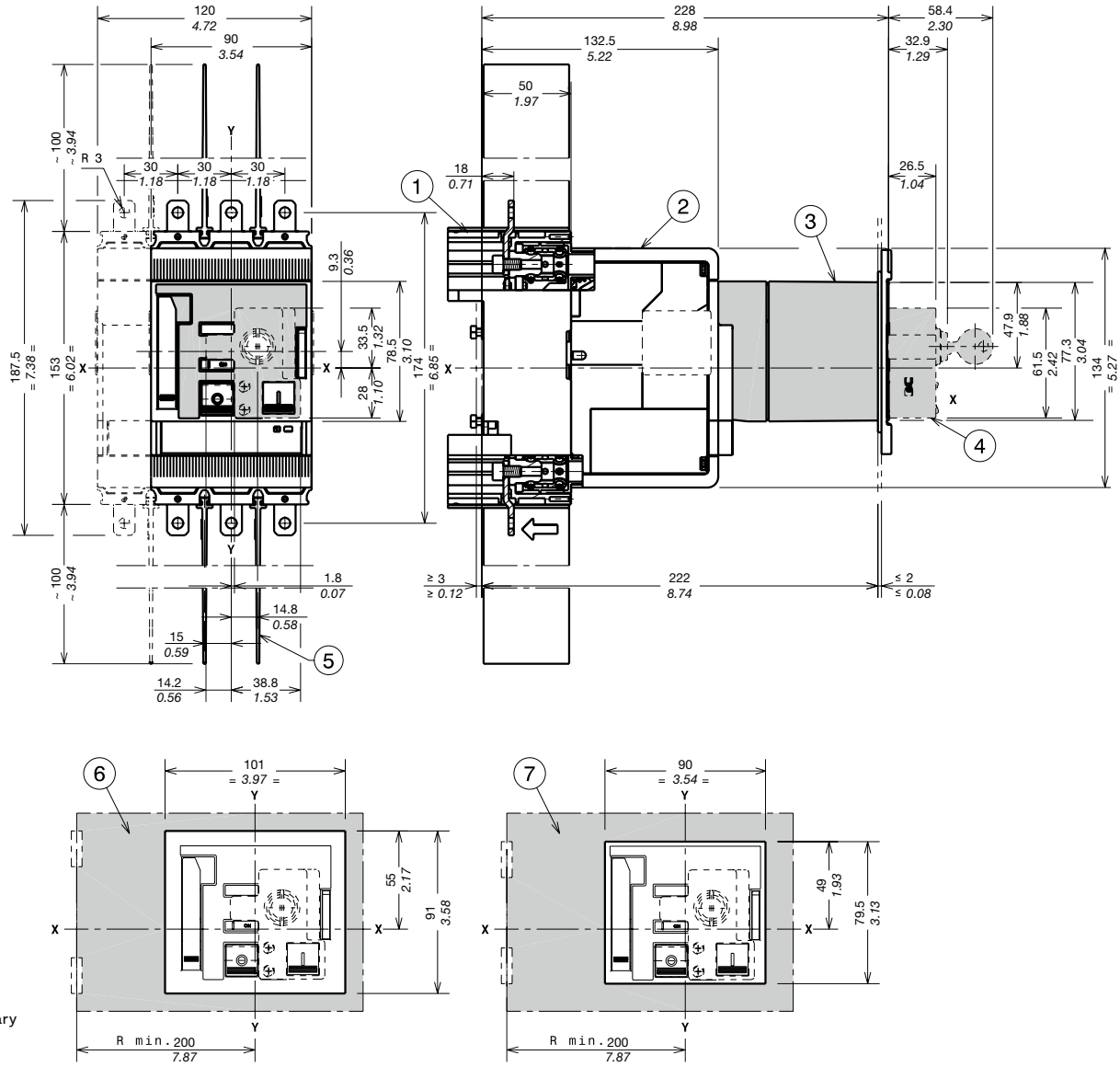
Key

1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 3.54"/90mm

Tmax XT2 - Installation

Accessories for plug-in circuit-breaker

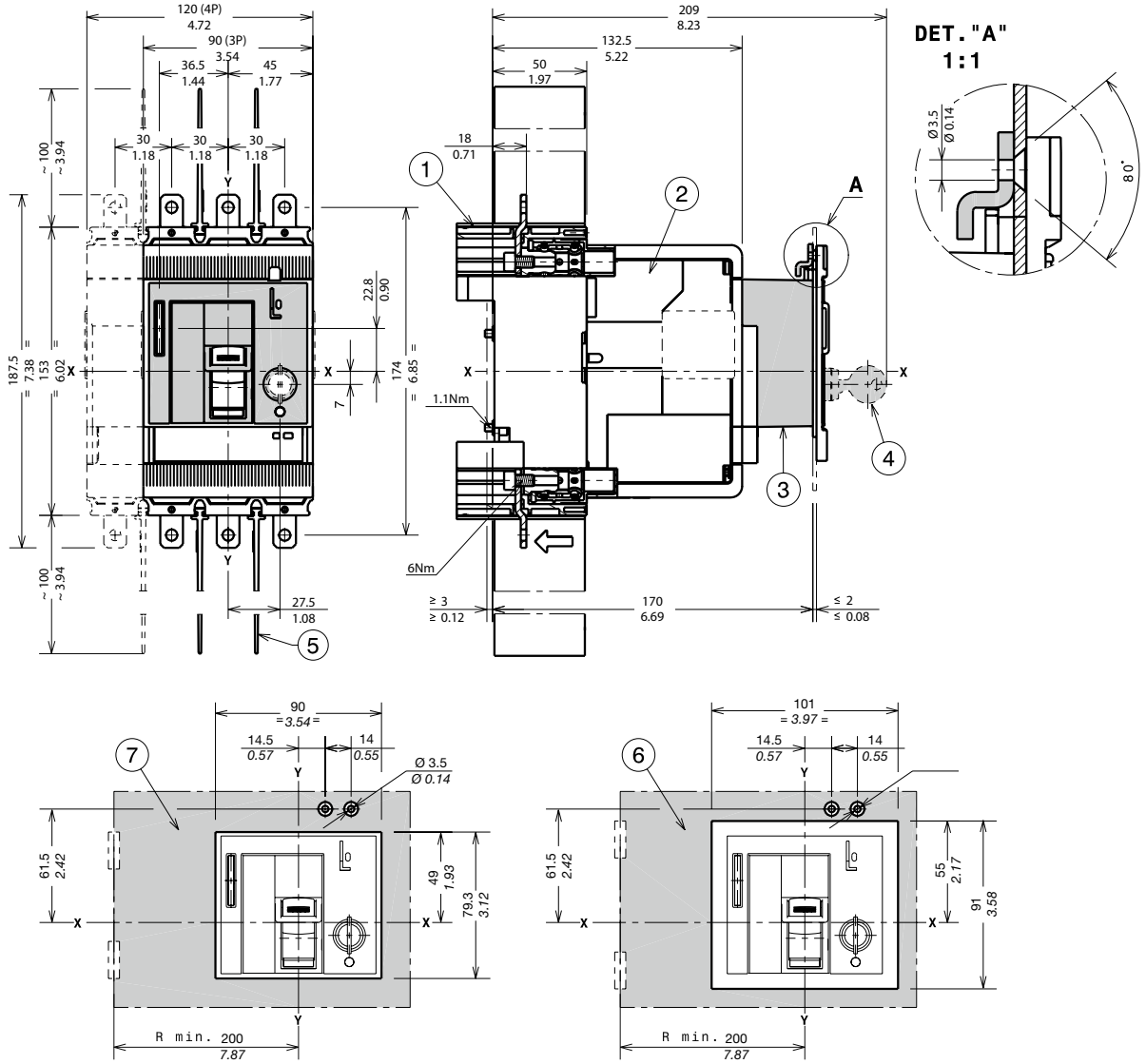
Stored energy motor operator (MOE)



Key

1 Fixed part
2 Moving part
3 MOE
4 Key lock
5 Phase separators 3.94"/100mm
6 Drilling template of door with direct rotary handle with flange
7 Drilling template of door with direct rotary handle without flange

Front for lever operating mechanism (FLD)



—

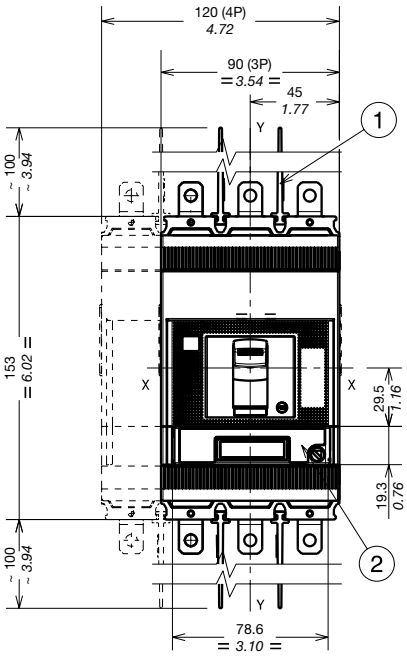
Key

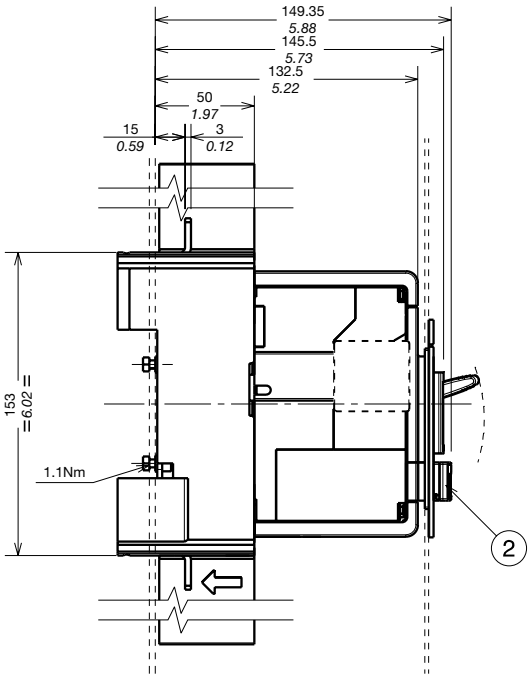
1 Fixed part
2 Moving part
3 Front for lever operating mechanism (FLD)
4 Key lock
5 Phase separators 3.94"/100mm
6 Drilling template of door with direct rotary handle with flange
7 Drilling template of door with direct rotary handle without flange

Tmax XT2 - Installation

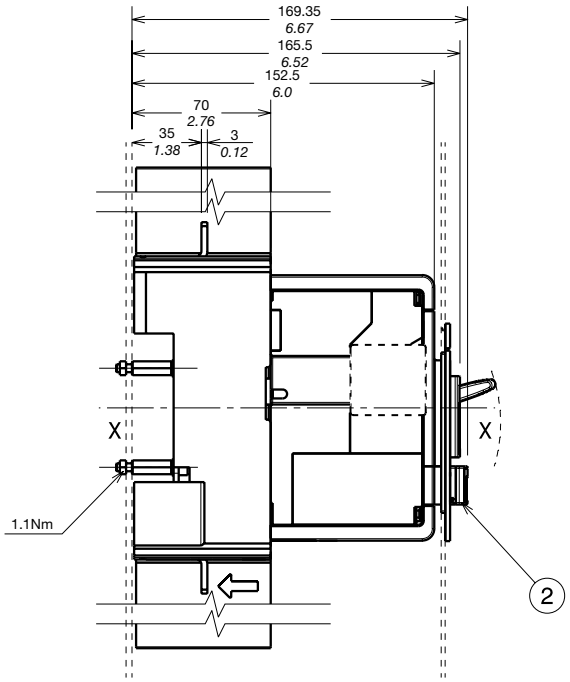
Accessories for plug-in circuit-breaker

Ekip Display or Ekip LED Meter





MOUNTING AT 1.97"/50mm



MOUNTING AT 1.97"/50mm

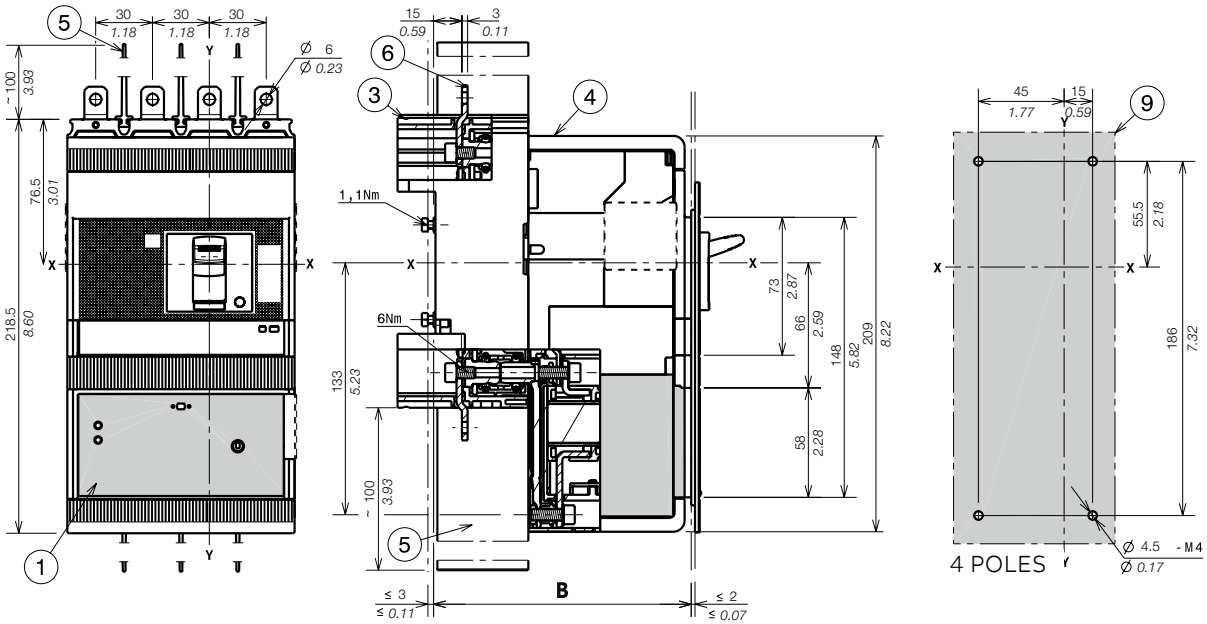
—

Key

1 Phase separators 3.94"/100mm

2 Ekip Display or Ekip LED Meter

Residual current RC Sel



—

Key

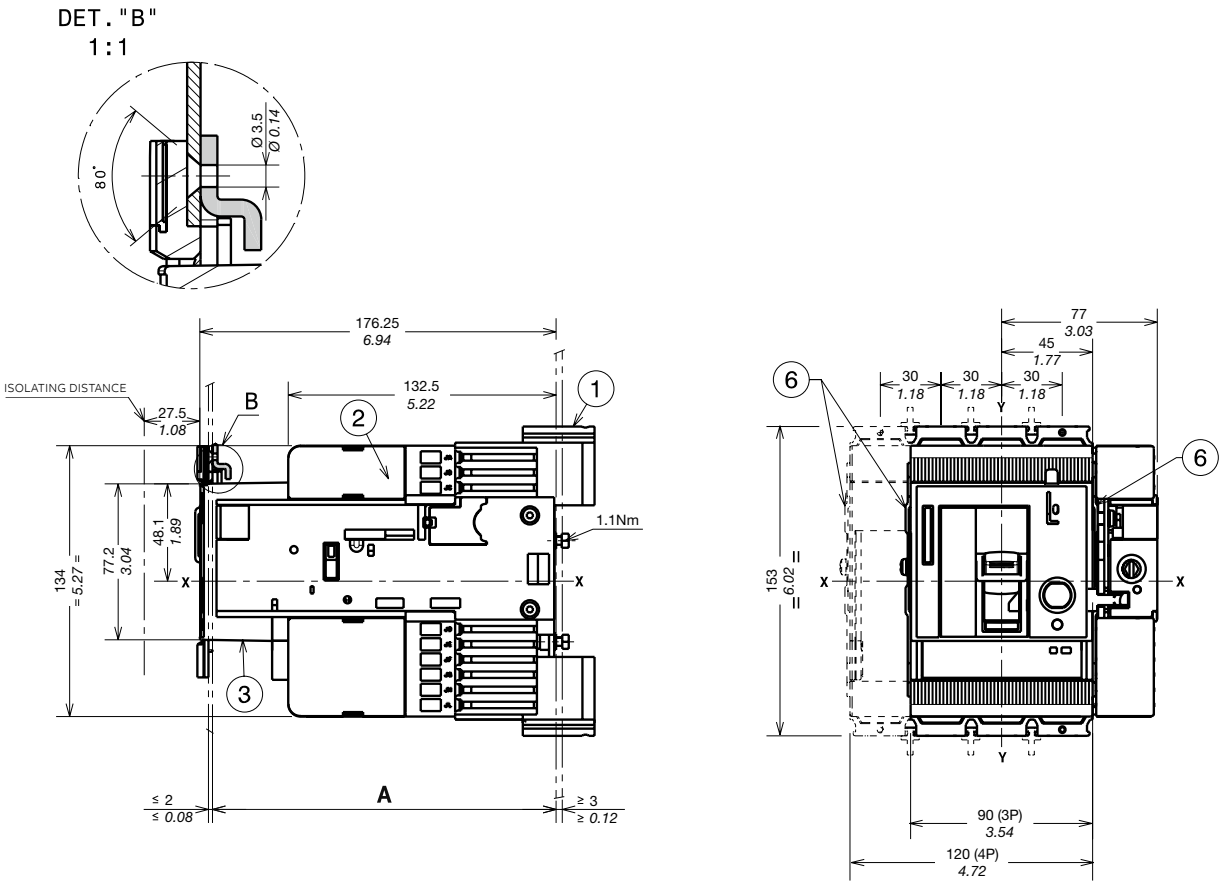
1 Residual current
3 Fixed part
4 Moving part
5 Phase separators 3.94"/100mm
6 Extended terminals
7 Drilling template of door with direct rotary handle and mounting with flange
8 Drilling template of door with direct rotary handle and mounting without flange
9 Drilling template for mounting circuit-breakerg on sheet

		B [in/mm]
With standard flange	4p	5.35/136
Without flange	4p	5.26/133.5

Tmax XT2 - Installation

Installation for withdrawable circuit-breaker

Fixing on the backplate



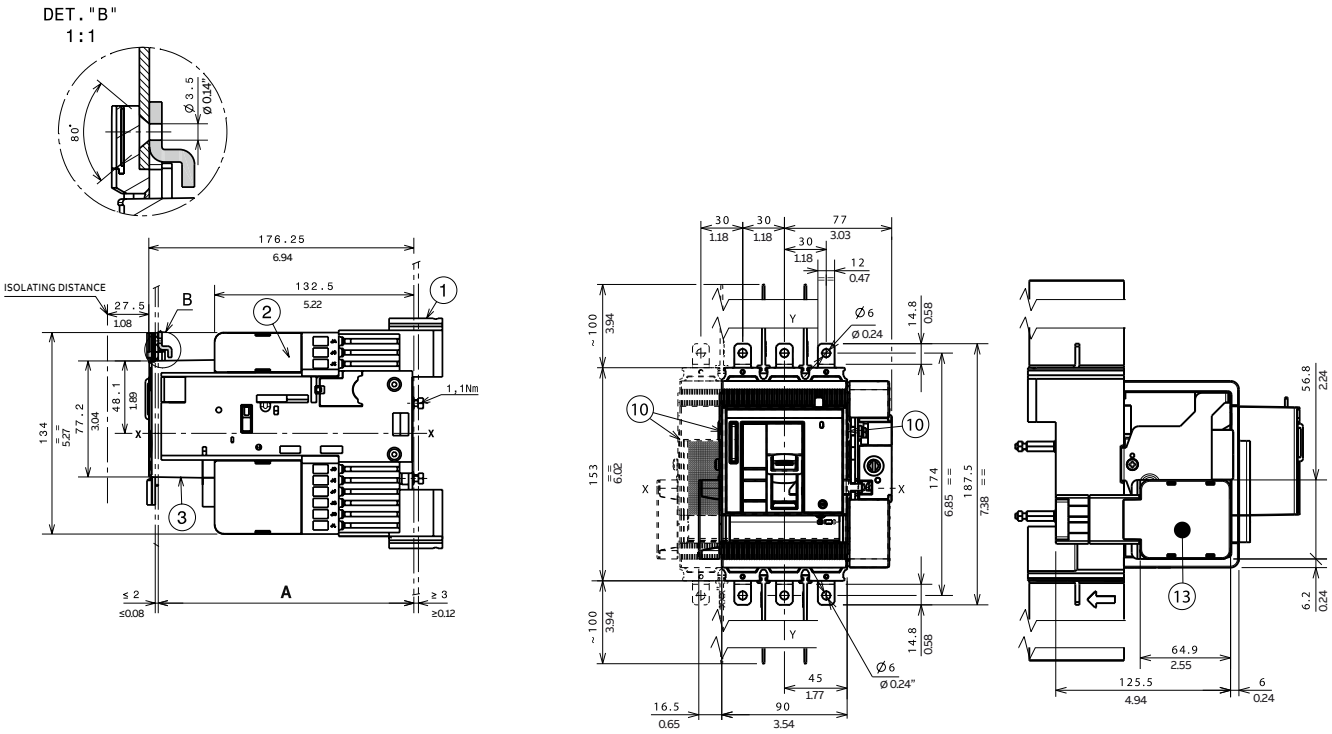
—

Key

1 Fixed part
2 Moving part
3 FLD (FLD or RHD or RHE or MOE) compulsory for withdrawable version
6 Optional wiring ducts

			A [in/mm]
With standard flange	3p-4p	Fixing at 1.97"/50mm	6.69/170
	3p-4p	Fixing at 2.76"/70mm for extended front terminals	7.48/190

With side connector for Ekip Touch trip units



			A [in/mm]
With standard flange	3p-4p	Fixing at 1.97"/50mm	6.69/170
	3p-4p	Fixing at 2.76"/70mm for extended front terminals	7.48/190

—

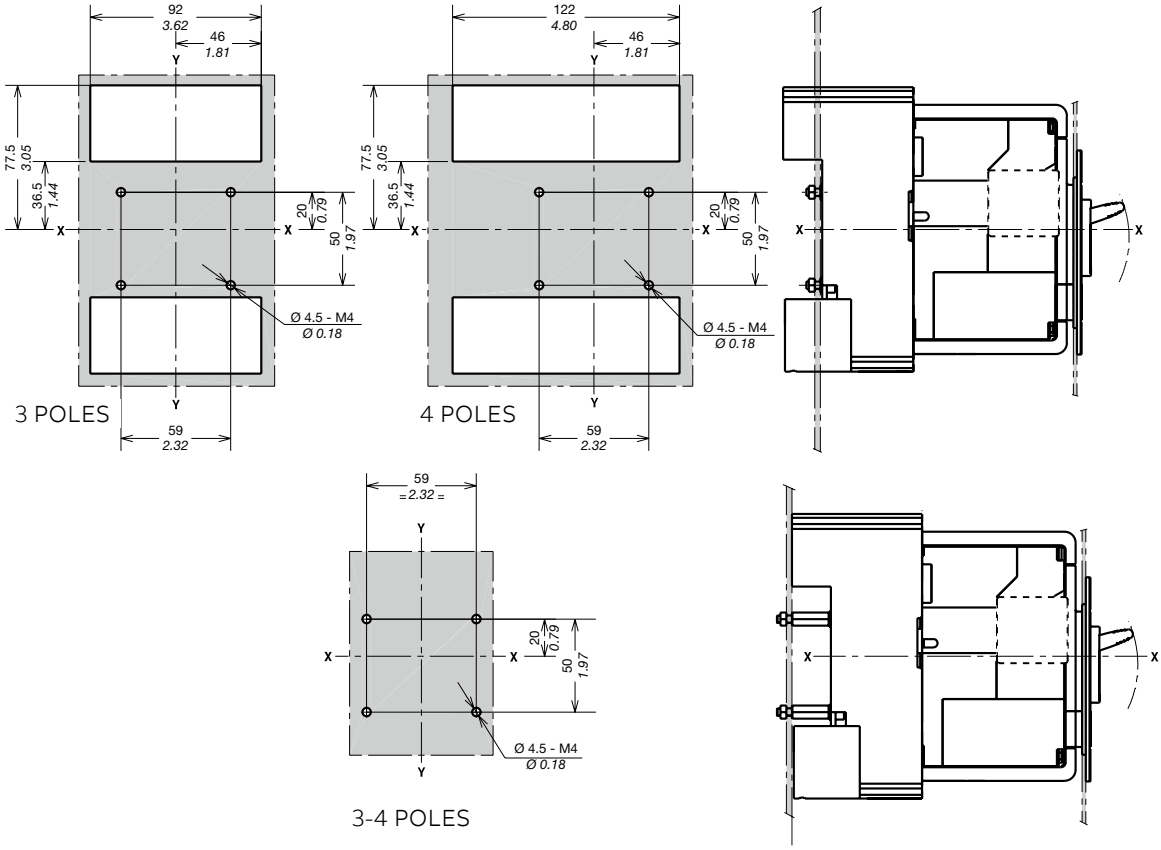
Key

1 Fixed part
2 Moving part
3 FLD (FLD o RHD o RHE o MOE) mandatory for withdrawable version
10 Optional Wiring Duct
13 Connection Kit W IntBus/ExtNeut/Sel

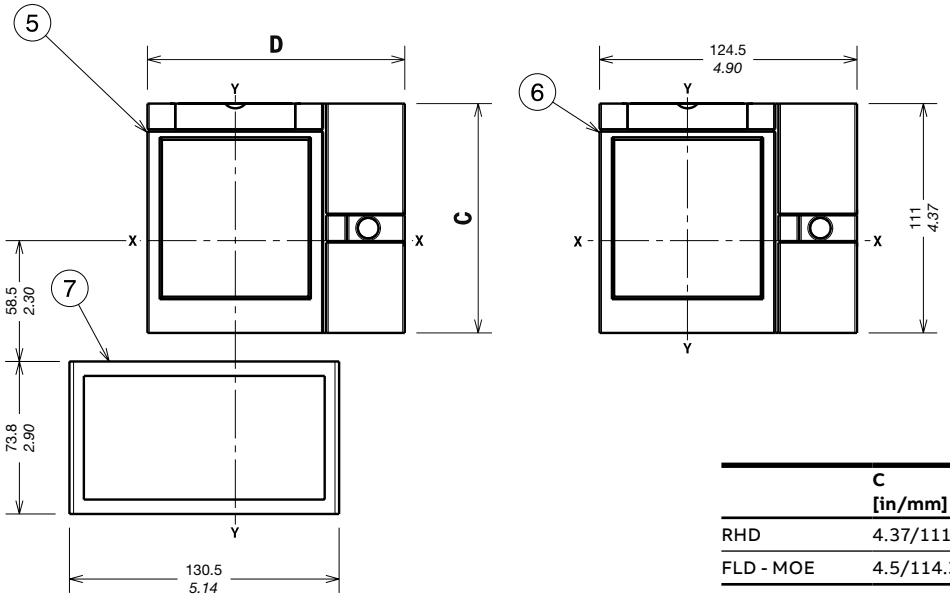
Tmax XT2 - Installation

Installation for withdrawable circuit-breaker

Drilling templates for the backplate



Flanges



Key

5 Flange for withdrawable 3p-4p circuit-breakers

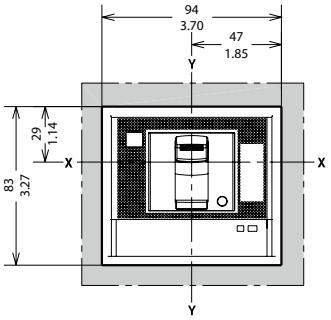
6 Flange for withdrawable 3p-4p circuit-breakers with direct rotary handle RHD

7 Flange for withdrawable 3p-4p circuit-breakers with front extended terminals

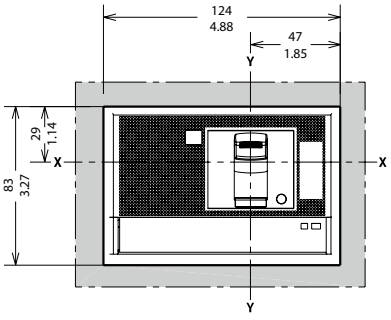
	C [in/mm]	D [in/mm]
RHD	4.37/111	4.90/124.5
FLD - MOE	4.5/114.3	5.29/134.5

Compartment door drilling templates

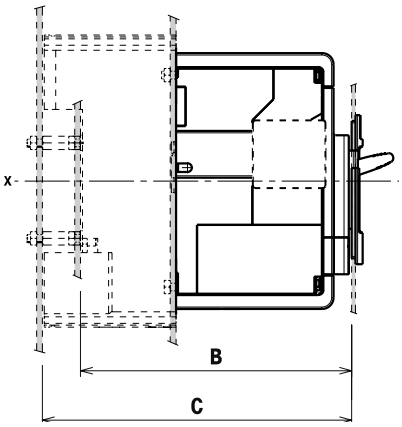
With standard flange



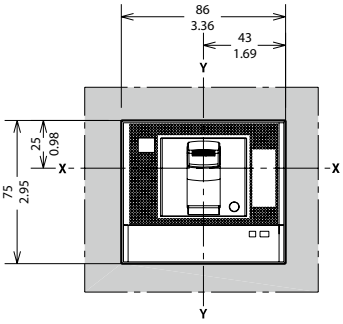
B=5.35/136 C=6.14/156
3 POLES



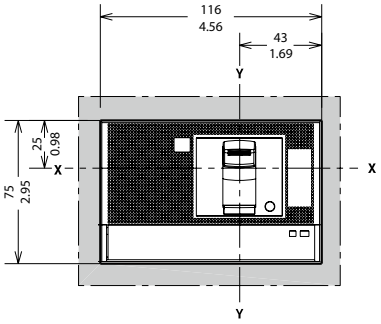
B=5.35/136 C=6.14/156
4 POLES



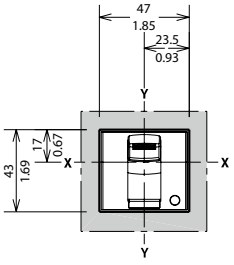
Without flange



B=5.26/133.5 C=6.12/155.5
3 POLES

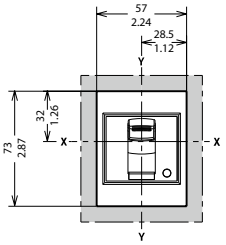


B=5.26/133.5 C=6.12/155.5
4 POLES

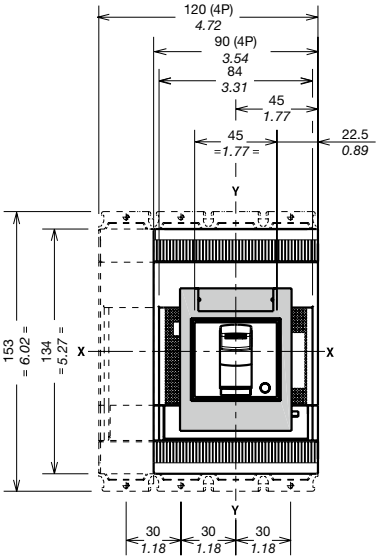


B=5.57/141.5 C=4.00/101.5
3-4 POLES

With optional flange



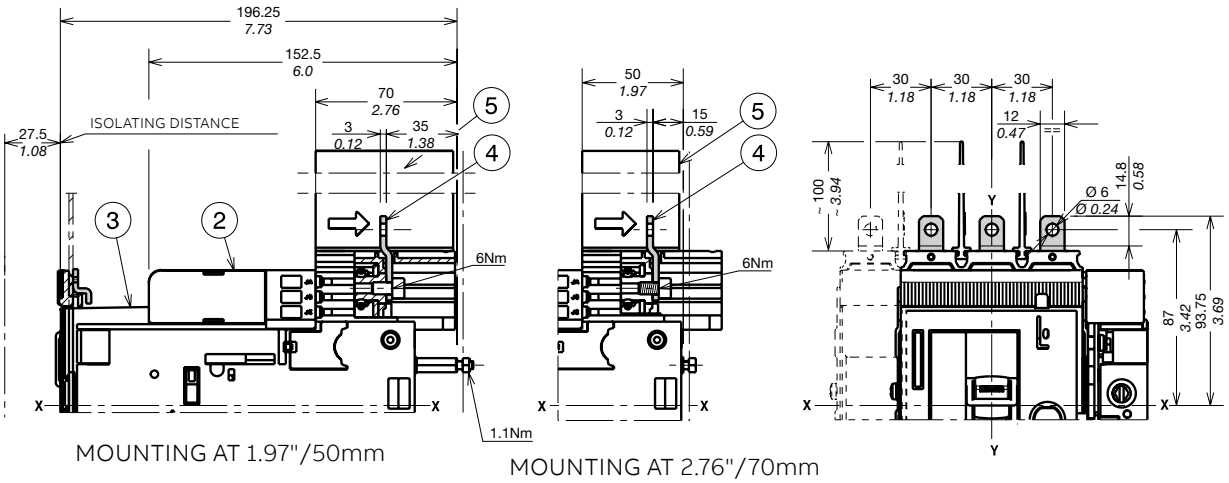
B=5.59/142 C=6.38/162
3-4 POLES



Tmax XT2 - Installation

Terminals for withdrawable circuit-breaker

Terminals EF



MOUNTING AT 1.97"/50mm

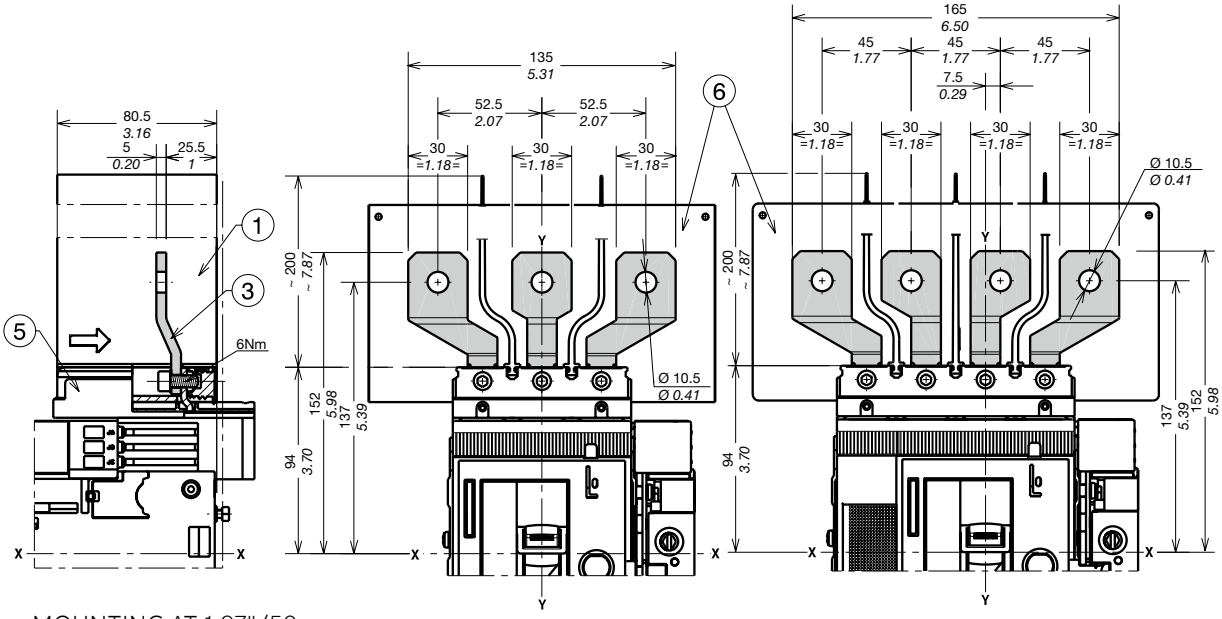
MOUNTING AT 2.76"/70mm

—

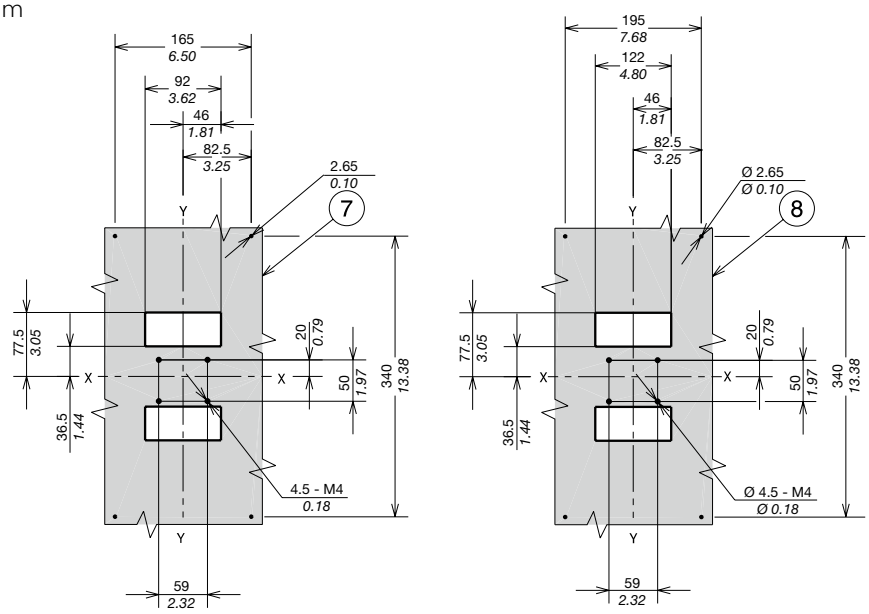
Key

2 Moving part
3 FLD (FLD or RHD or RHE or MOE) compulsory for withdrawable version
4 Front extended terminals
5 Phase separators 3.94"/100mm

Terminals ES



MOUNTING AT 1.97"/50mm



—

Key

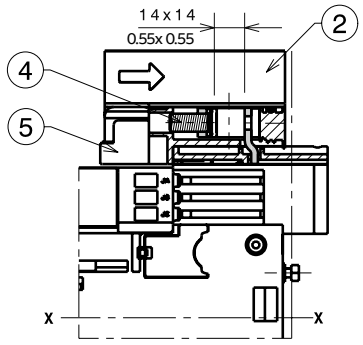
1 Phase separators 7.87"/200mm
3 Front extended spread terminals
5 Adapter
6 Insulated plate
7 Drilling template for 3p circuit-breaker Ue>440V
8 Drilling template for 4p circuit-breaker Ue>440V

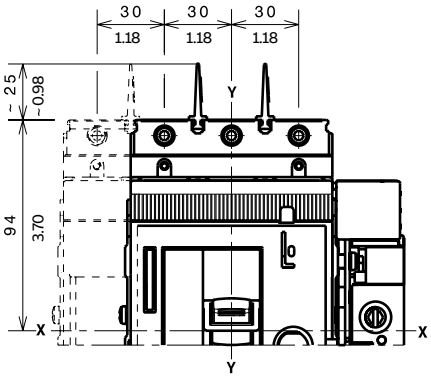
Tmax XT2 - Installation

Terminals for withdrawable circuit-breaker

1x14...1/0AWG terminals FC CuAl

Key
2 Phase separators 0.98"/25mm
4 1x14...1/0AWG front terminals FCCuAl
5 Adaptor

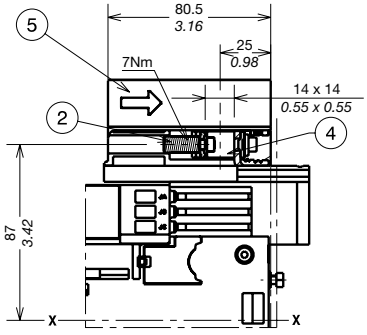


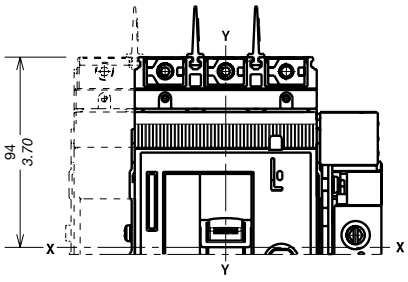


MOUNTING AT 1.97"/50mm

Terminals FCCu

Key
2 Terminals FCCu
4 Adapter
5 Phase separators 0.98"/25mm

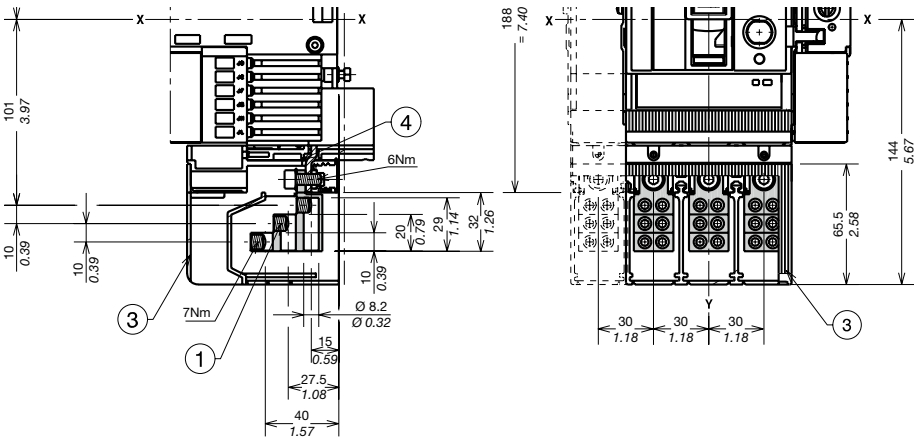




MOUNTING AT 1.97"/50mm

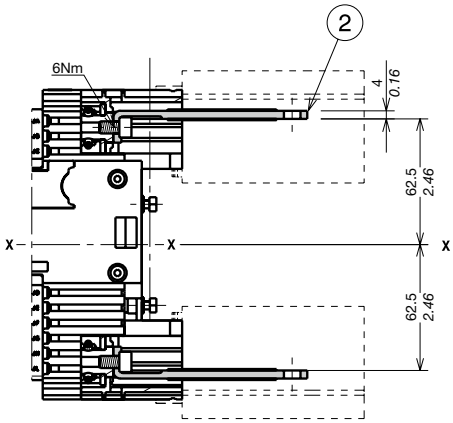
Terminals MC

Key
1 Multi-cable terminals
3 High terminal covers with degree of protection IP40
4 Adapter not provided

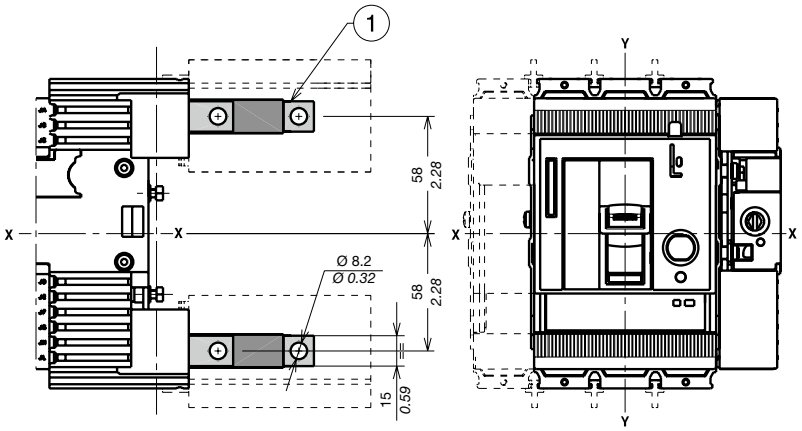


MOUNTING AT 1.97"/50mm

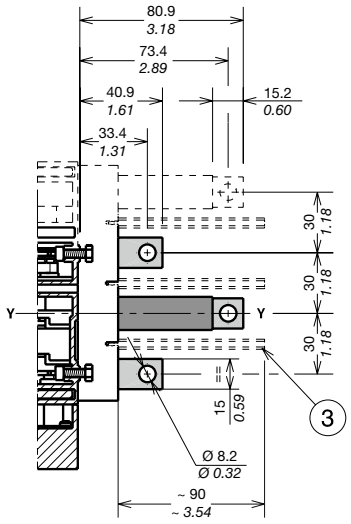
Terminals HR/VR

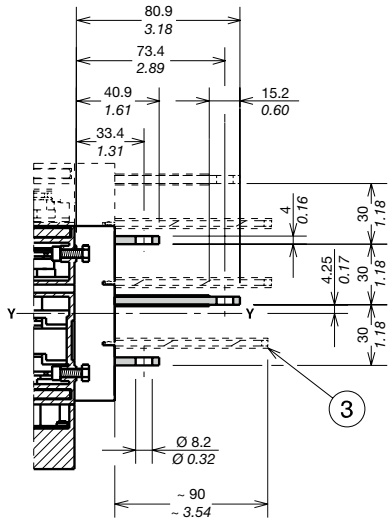


MOUNTING AT 1.97"/50mm



MOUNTING AT 1.97"/50mm





—

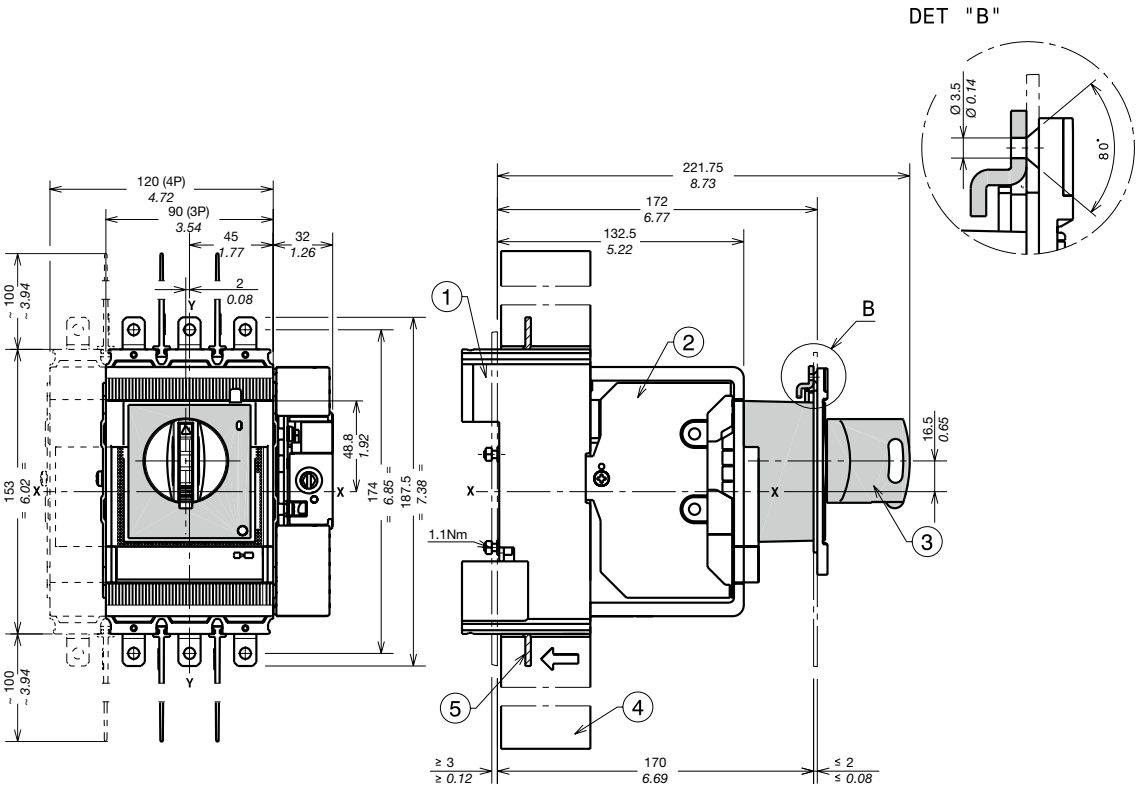
Key

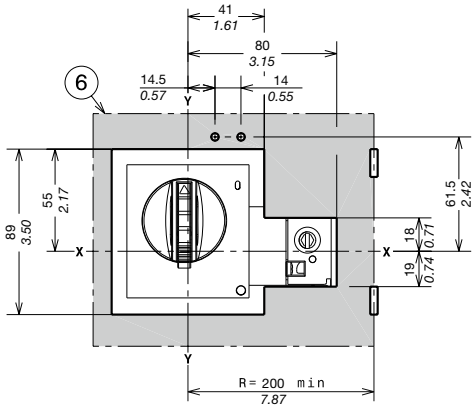
1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 3.54"/90mm

Tmax XT2 - Installation

Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on circuit-breakers (RHD)



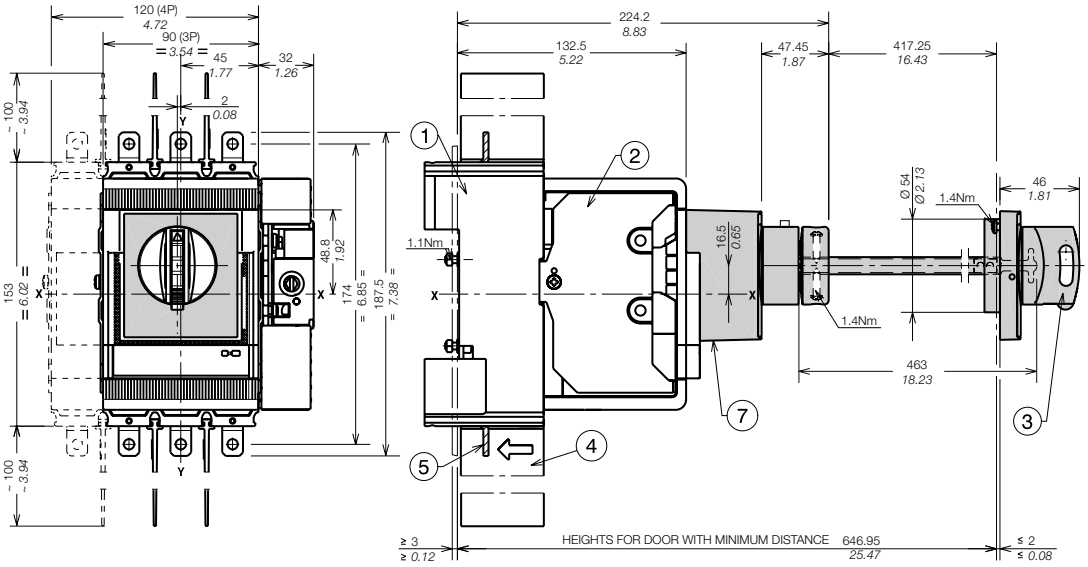


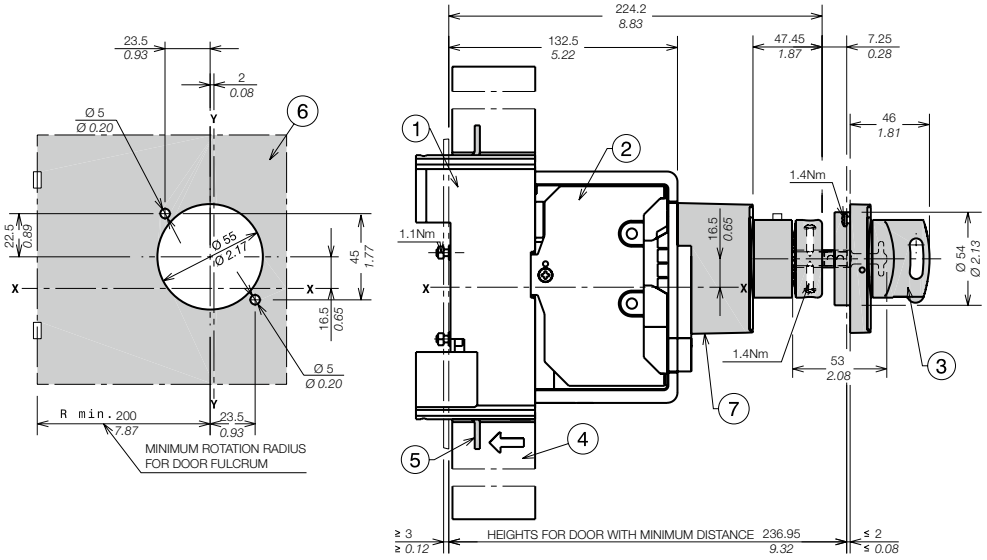
—

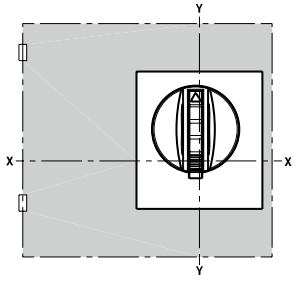
Key

1 Fixed part
2 Moving part
3 Rotary handle operating mechanism on circuit-breaker
4 Phase separators 3.94"/100mm
5 Extended terminals
6 Drilling template of door with direct rotary handle

Rotary handle operating mechanism with padlock on the compartment door (RHE-PL)







—

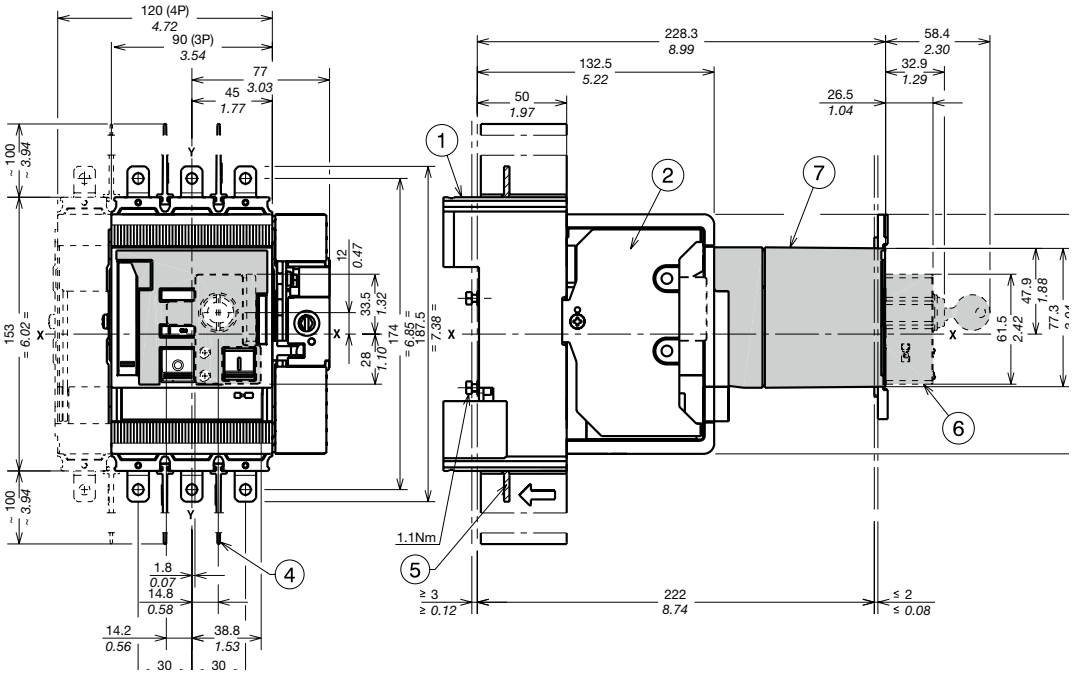
Key

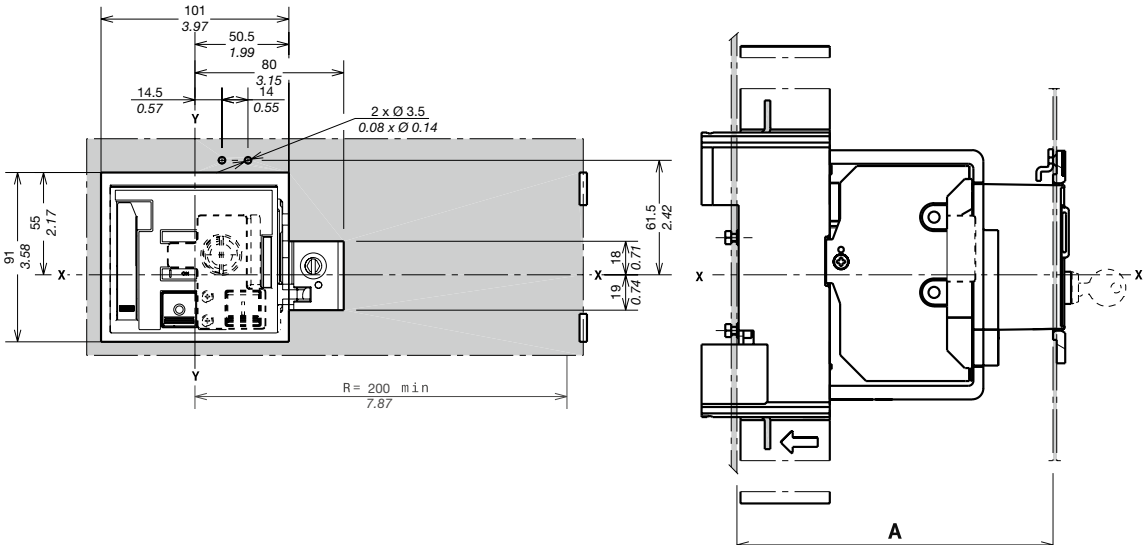
1 Fixed part
2 Moving part
4 Phase separators 3.94"/100mm
5 Extended terminals
6 Key lock
7 Stored energy motor operator (MOE)

Tmax XT2 - Installation

Accessories for withdrawable circuit-breaker

Stored energy motor operator (MOE)

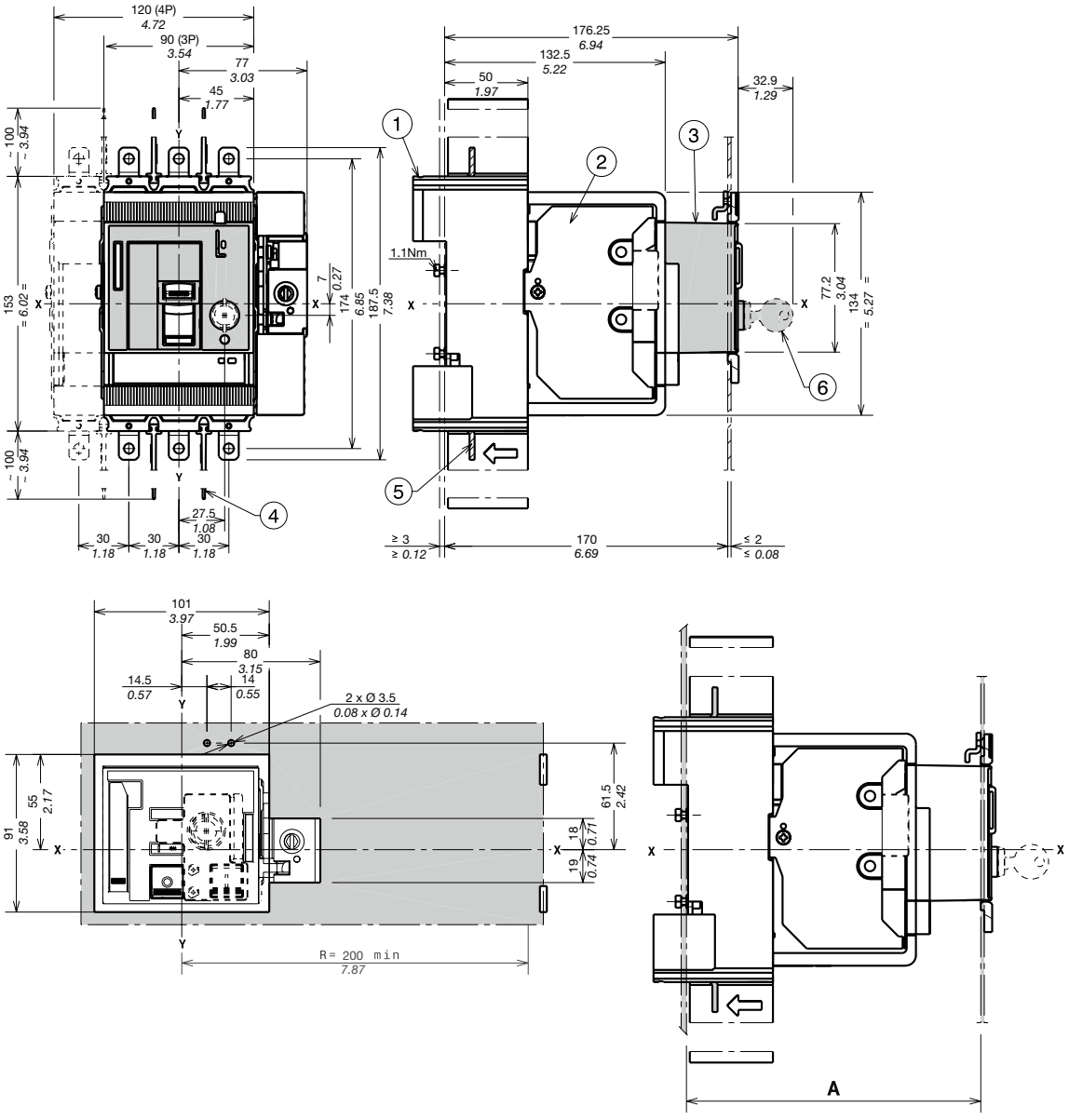




Key
1 Fixed part
2 Moving part
3 Front for lever operating (FLD)
4 Phase separators 3.94"/100mm
5 Extended terminals
6 Key lock

		A [in/mm]
Motor operator MOE	3p-4p	8.74/222

Front for lever operating (FLD)



—

Key

1 Fixed part
2 Moving part
3 Front for lever operating (FLD)
4 Phase separators 3.94"/100mm
5 Extended terminals
6 Key lock

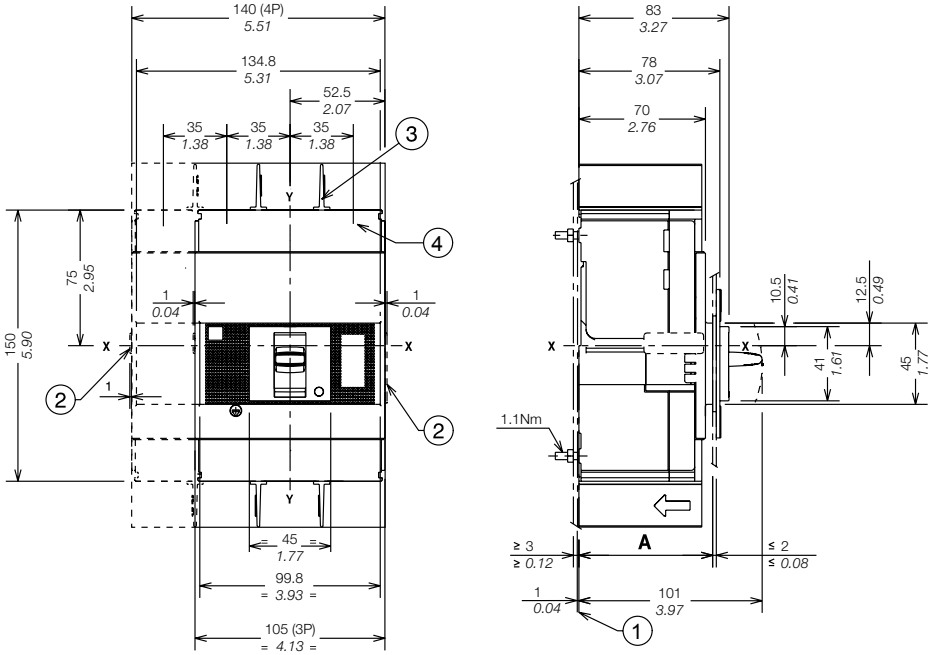
		A [in/mm]
Front for lever operating FLD	3p-4p	6.69/170

Tmax XT3 - Installation

Installation for fixed circuit-breaker

Mounting on the backplate

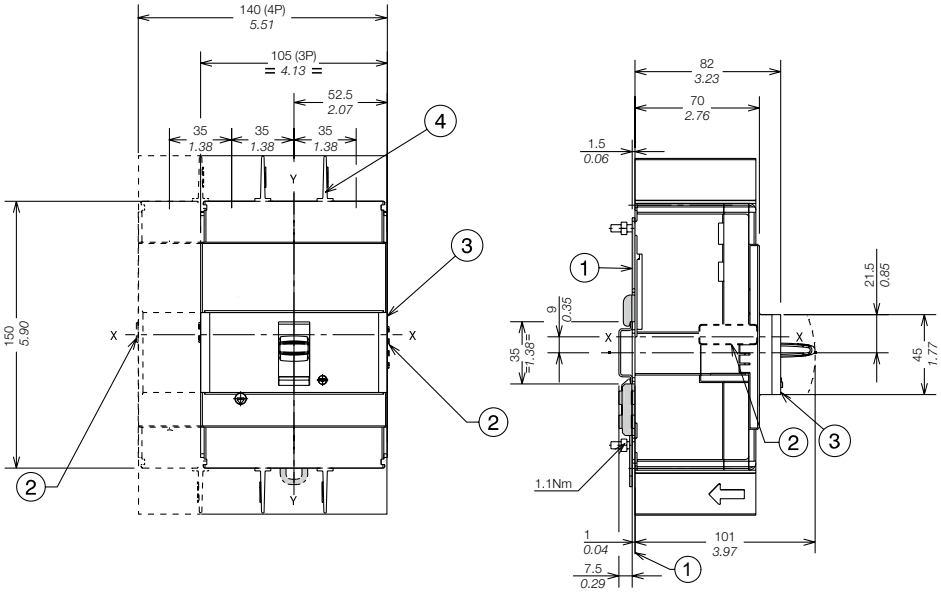
Key
1 Insulating plate
2 Overall dimension of optional wiring ducts
3 Phase separators 0.98"/25mm
4 Front carter compulsory for panel door distance ≤ 0.98"/25mm



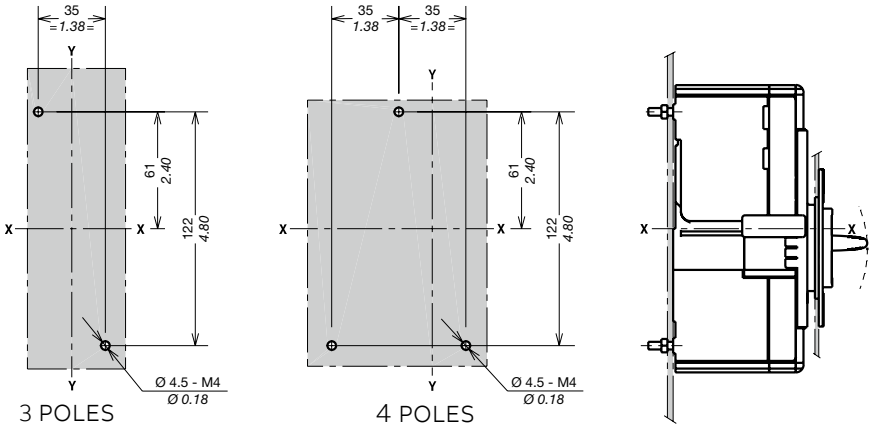
		A [in/mm]
With standard flange	3p-4p	2.91/74
Without flange	3p-4p	2.79/71
	3p-4p	3.11/79

Mounting on DIN EN 50022 rail

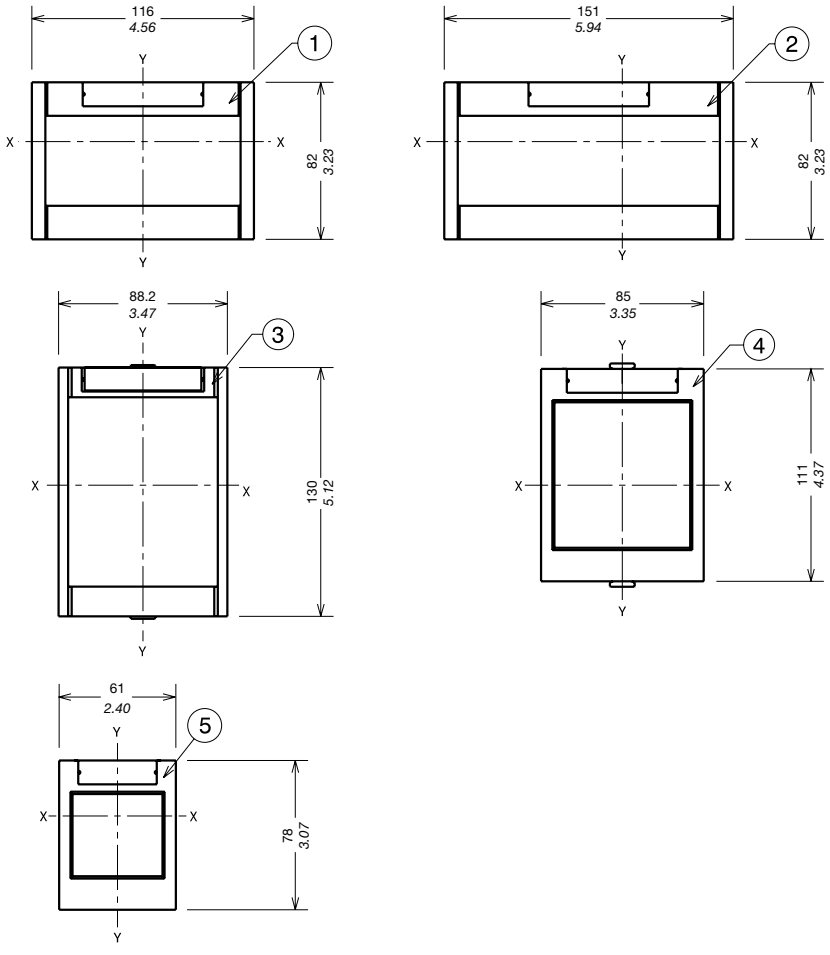
Key
1 Mounting bracket
2 Optional wiring ducts
3 Optional front cover for DIN rail
4 Phase separators 0.98"/25mm



Drilling template



Flanges



—

Key

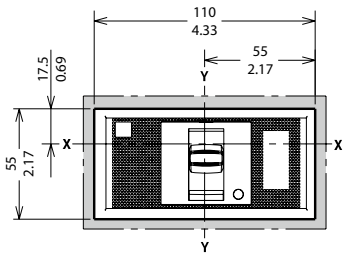
1 Flange for fixed 3p circuit-breaker
2 Flange for fixed 4p circuit-breaker
3 Flange for circuit-breaker with direct motor operator MOD
4 Flange for circuit-breaker with direct rotary handle (RHD)
5 Optional flange

Tmax XT3 - Installation

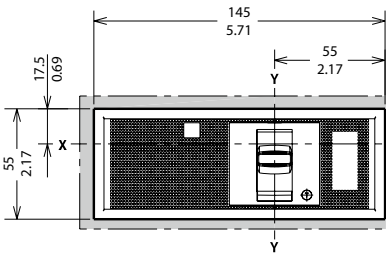
Installation for fixed circuit-breaker

Drilling templates for compartment door

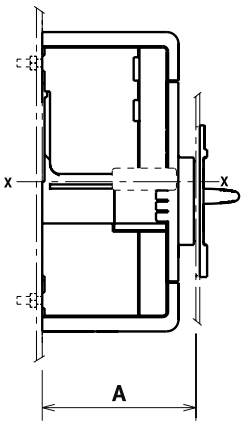
With standard flange



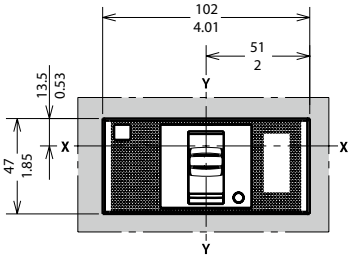
A=2.91/74
3 POLES



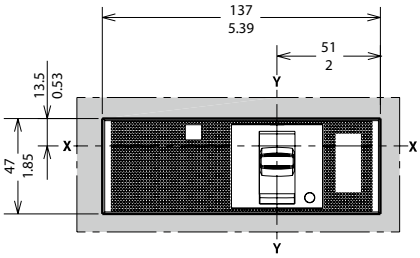
A=2.91/74
4 POLES



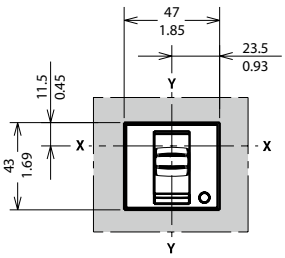
Without flange



A=2.79/71
3 POLES

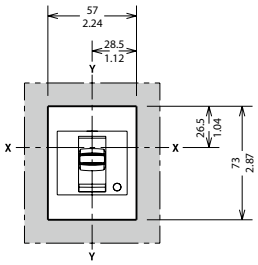


A=2.79/71
4 POLES

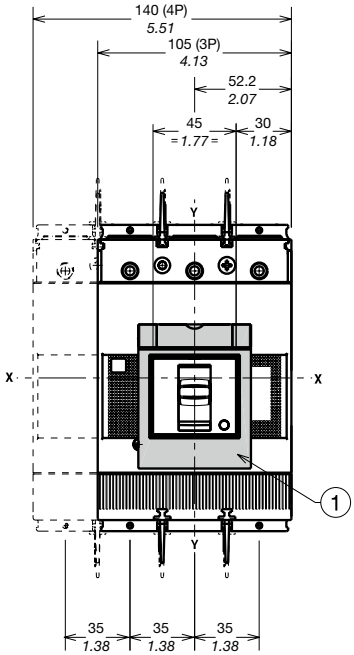


A=3.11/79
3-4 POLES

With optional flange



A=3.11/79
3-4 POLES



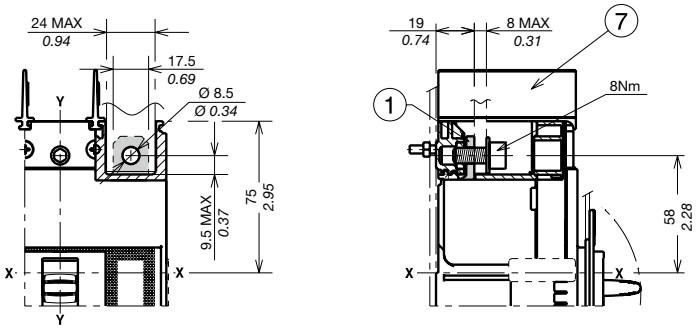
—
Key
1 Optional flange

Tmax XT3 - Installation

Terminals for fixed circuit-breaker

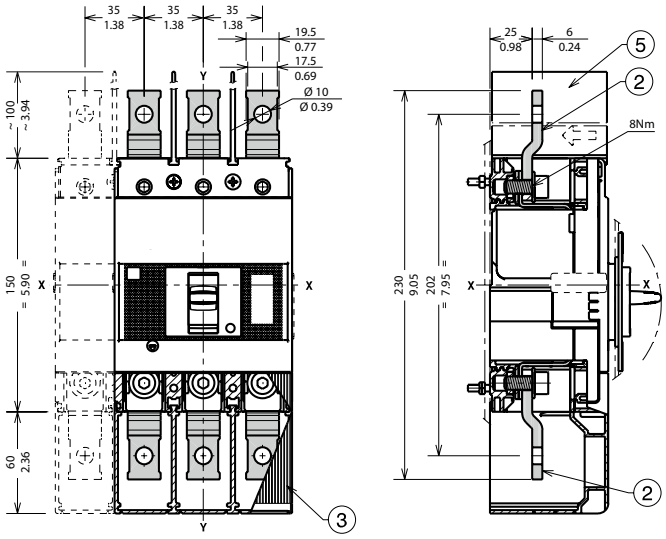
Terminals F

Key
1 Front terminals for busbar connection
7 Phase separators 0.98"/25mm



Terminals EF

Key
2 Front extended terminals
3 Terminal covers with degree of protection IP40
5 Phase separators 3.94"/100mm

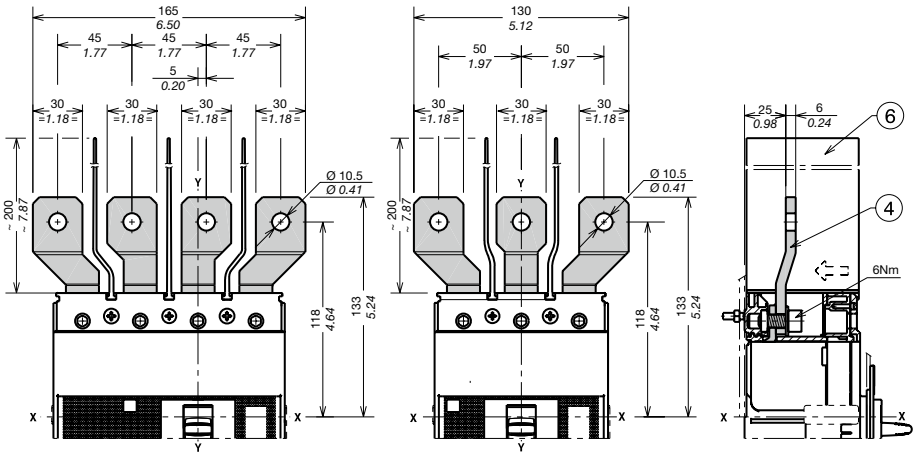


Tmax XT3 - Installation

Terminals for fixed circuit-breaker

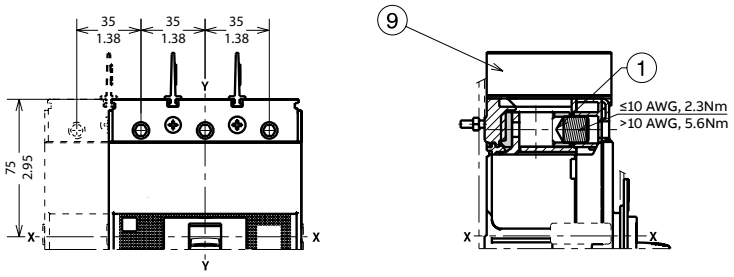
Terminals ES

Key
4 Front extended spread terminals for busbar connection
6 Phase separators 7.87"/200mm



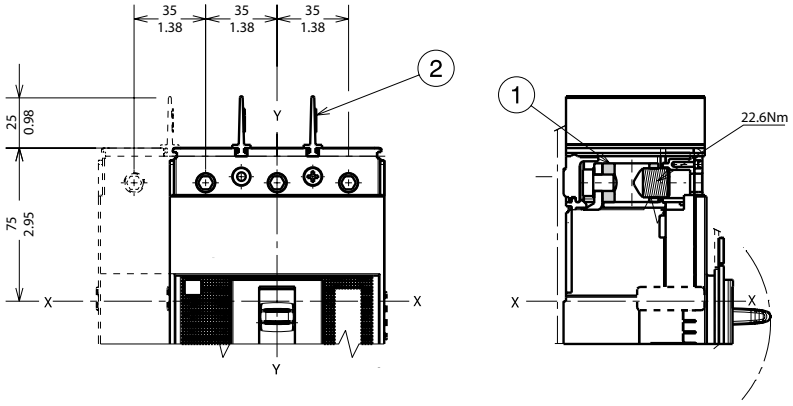
1 x 14...1/0AWG terminals FCCuAl

Key
1 1 x 14...1/0AWG terminals FCCuAl
9 Phase separators 0.98"/25mm



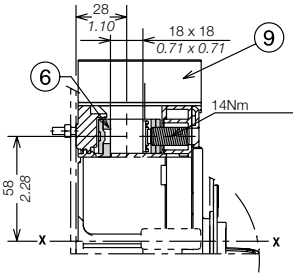
1 x 4AWG...300kcmil terminals FCCuAl

Key
1 1 x 4AWG...300kcmil terminals FCCuAl
2 Phase separators 0.98"/25mm



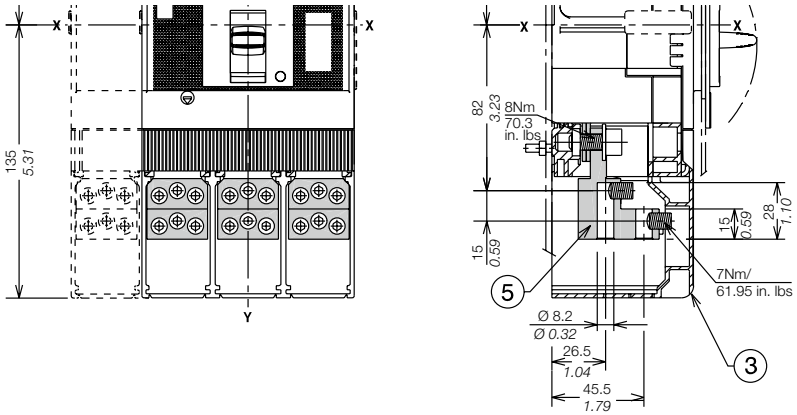
Terminals FCCu

Key
6 Front terminals FCCu
9 Phase separators 0.98"/25mm



Terminals MC

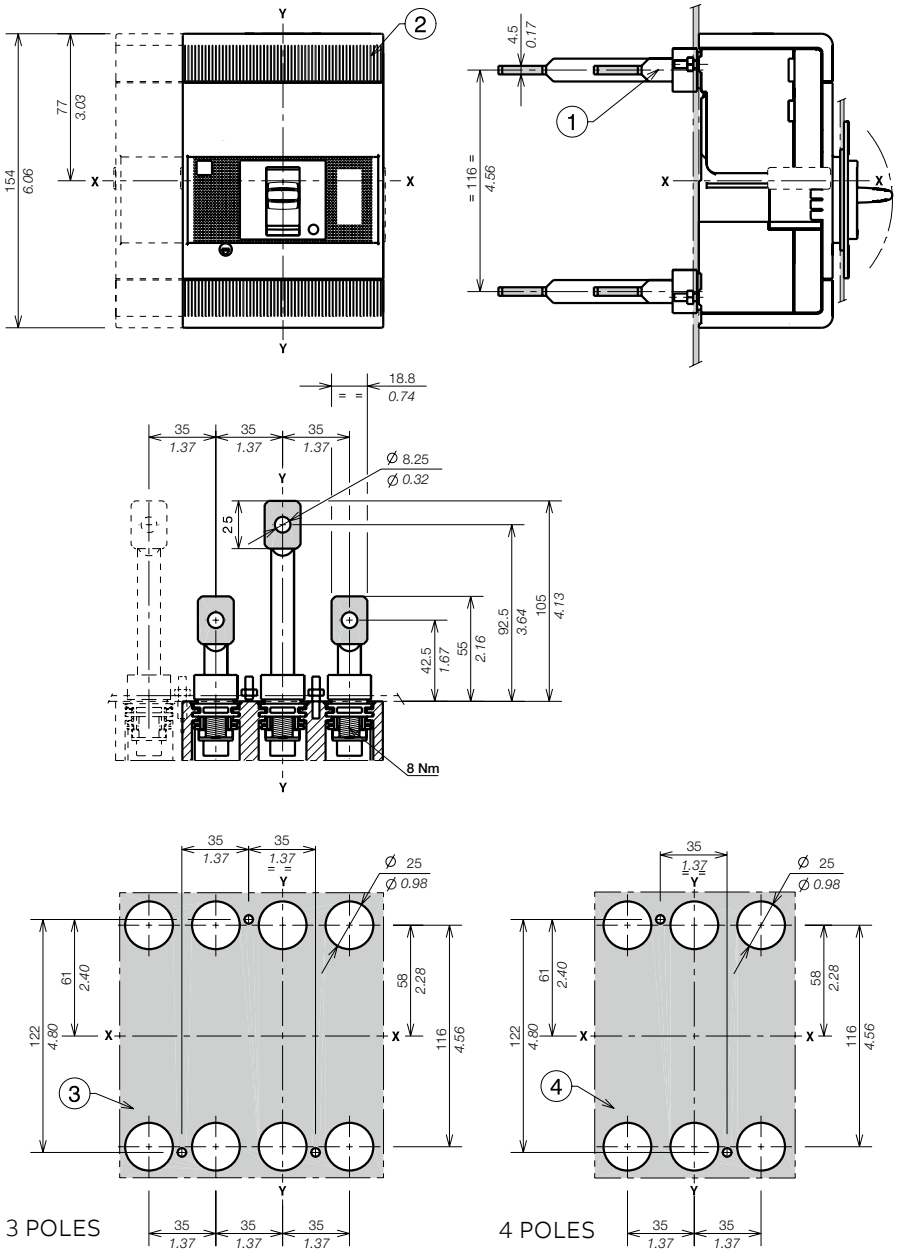
Key
3 Terminal covers with degree of protection IP40
5 Front terminal for multi-cable connection



Tmax XT3 - Installation

Terminals for fixed circuit-breaker

Terminals R



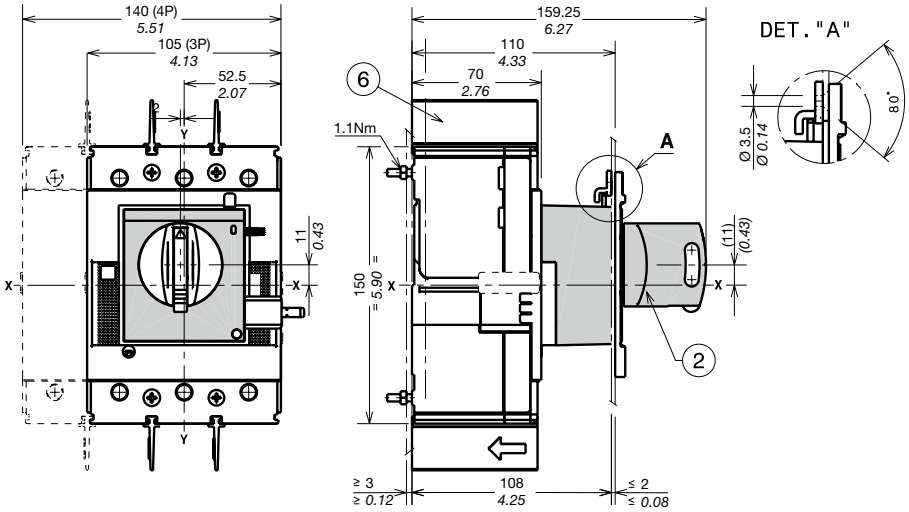
Key

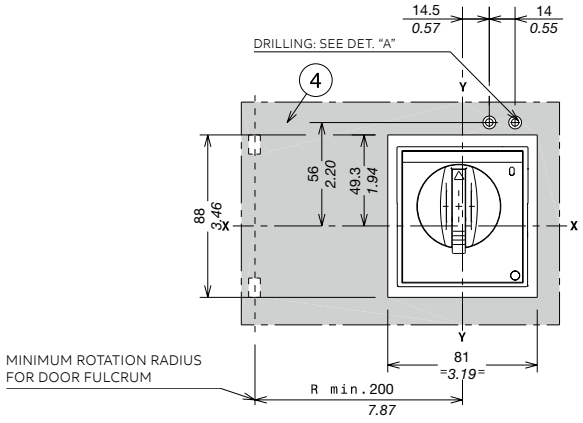
1 Adjustable rear terminals
2 Bottom terminal covers with degree of protection IP30
3 Drilling template for mounting 4p circuit-breaker on sheet
4 Drilling template for mounting 3p circuit-breaker on sheet

Tmax XT3 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breaker (RHD)





—

Key

2 Rotary handle operating mechanism on circuit-breaker RHD

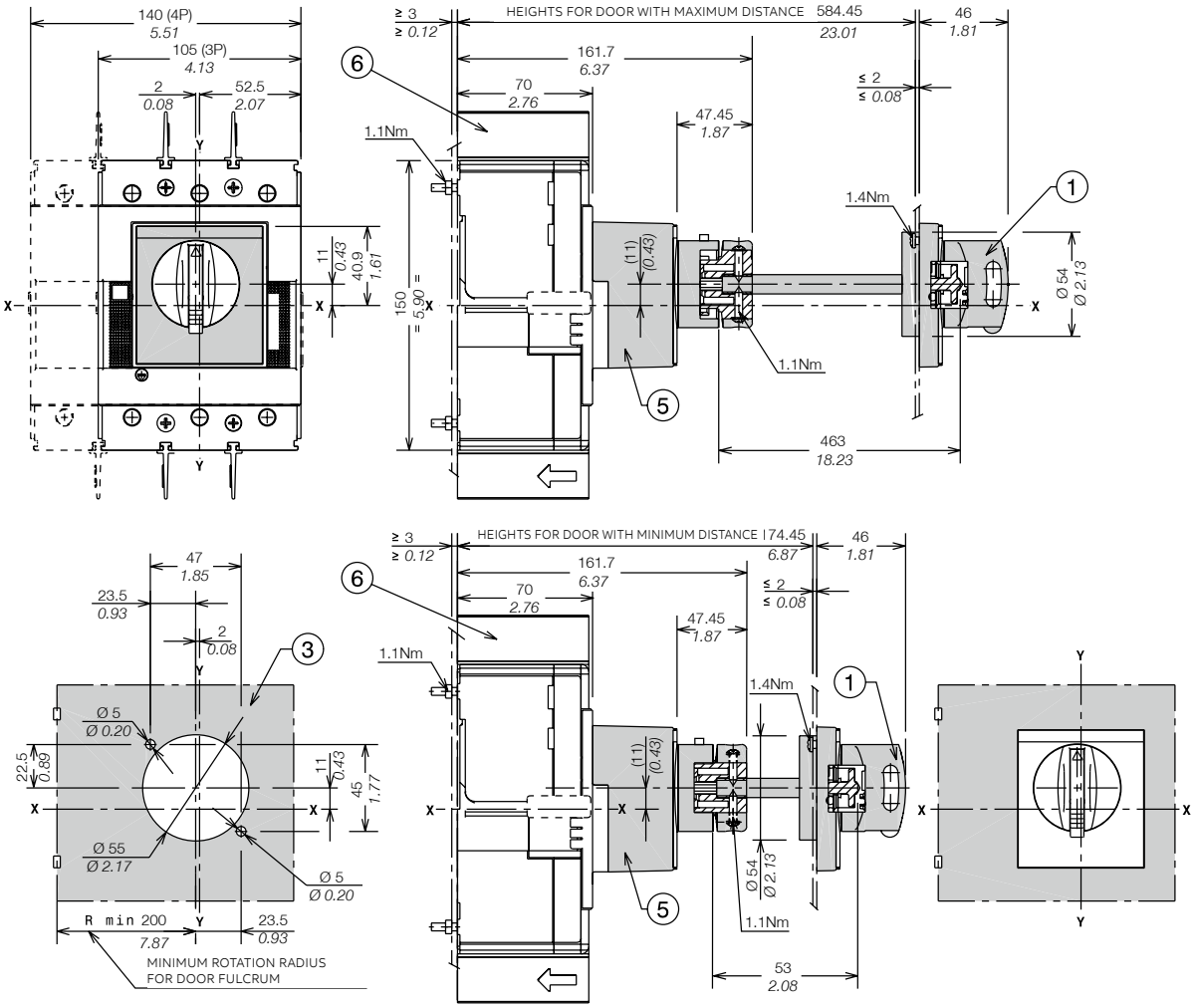
4 Drilling template of door with direct rotary handle

6 Phase separators 0.98"/25mm

Tmax XT3 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism with padlock on the compartment door (RHE-PL)

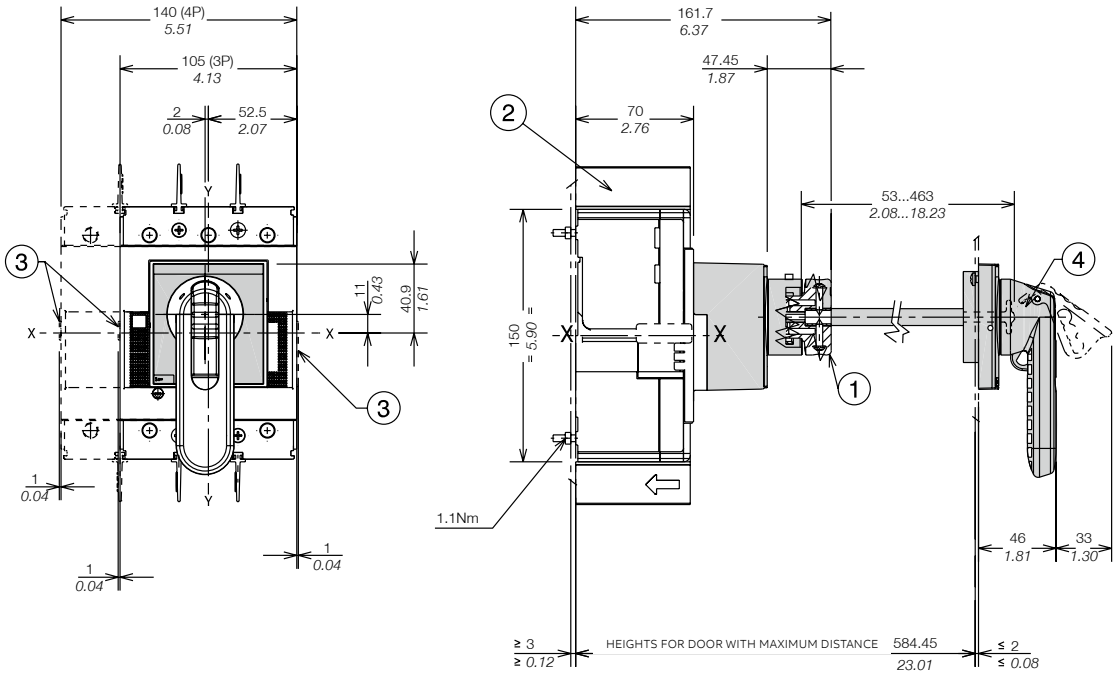


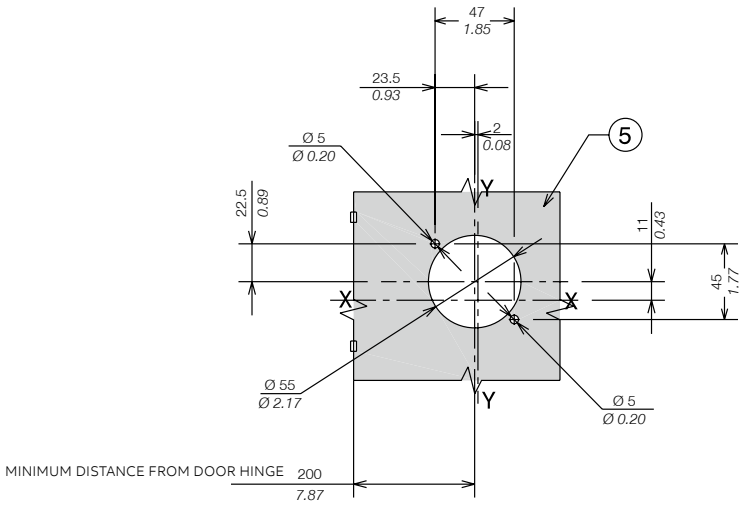
—

Key

1 Rotary handle operating mechanism on the compartment door (RHE)
3 Drilling template of door with extended rotary handle (RHE)
5 Transmission unit
6 Phase separators 0.98"/25mm

Large rotary handle operating mechanism with padlock on the compartment door (RHE-LH)





—

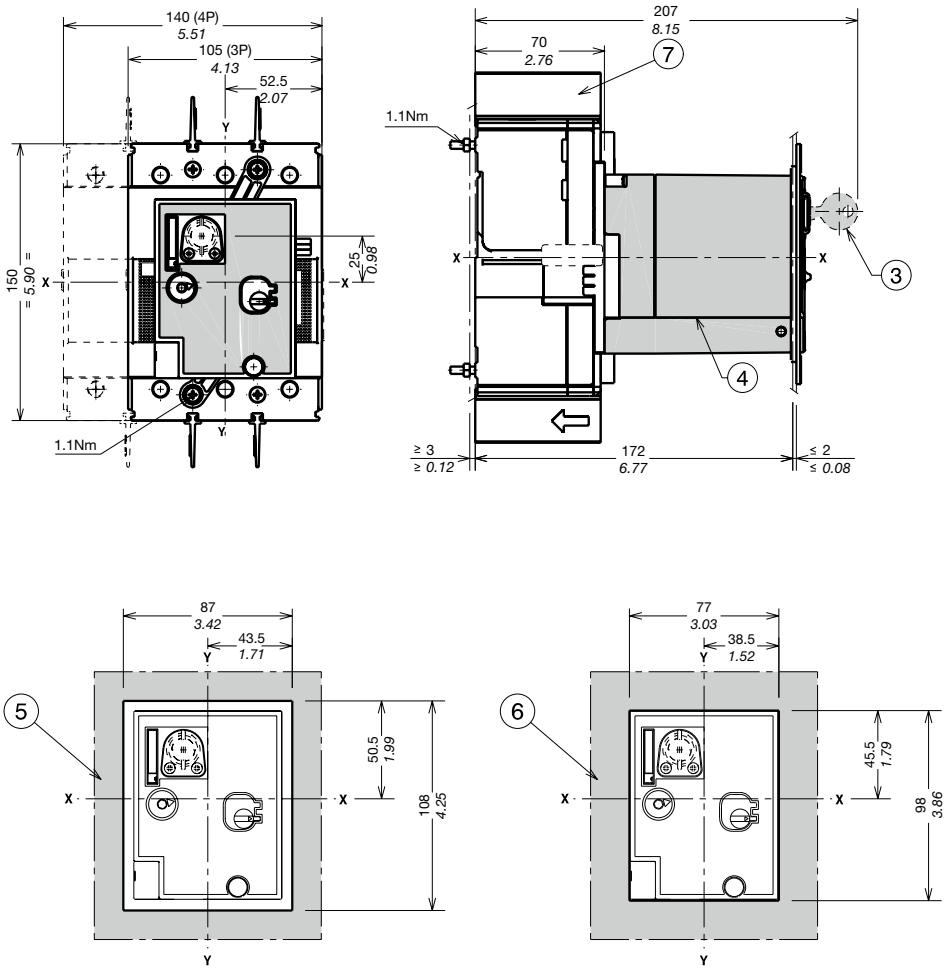
Key

1 Transmission unit
2 Phase separators 0.98"/25mm
3 Optional wiring ducts
4 Large transmitted rotary handle
5 Drilling template of door with large transmitted rotary handle

Tmax XT3 - Installation

Accessories for fixed circuit-breaker

Direct motor operator (MOD)

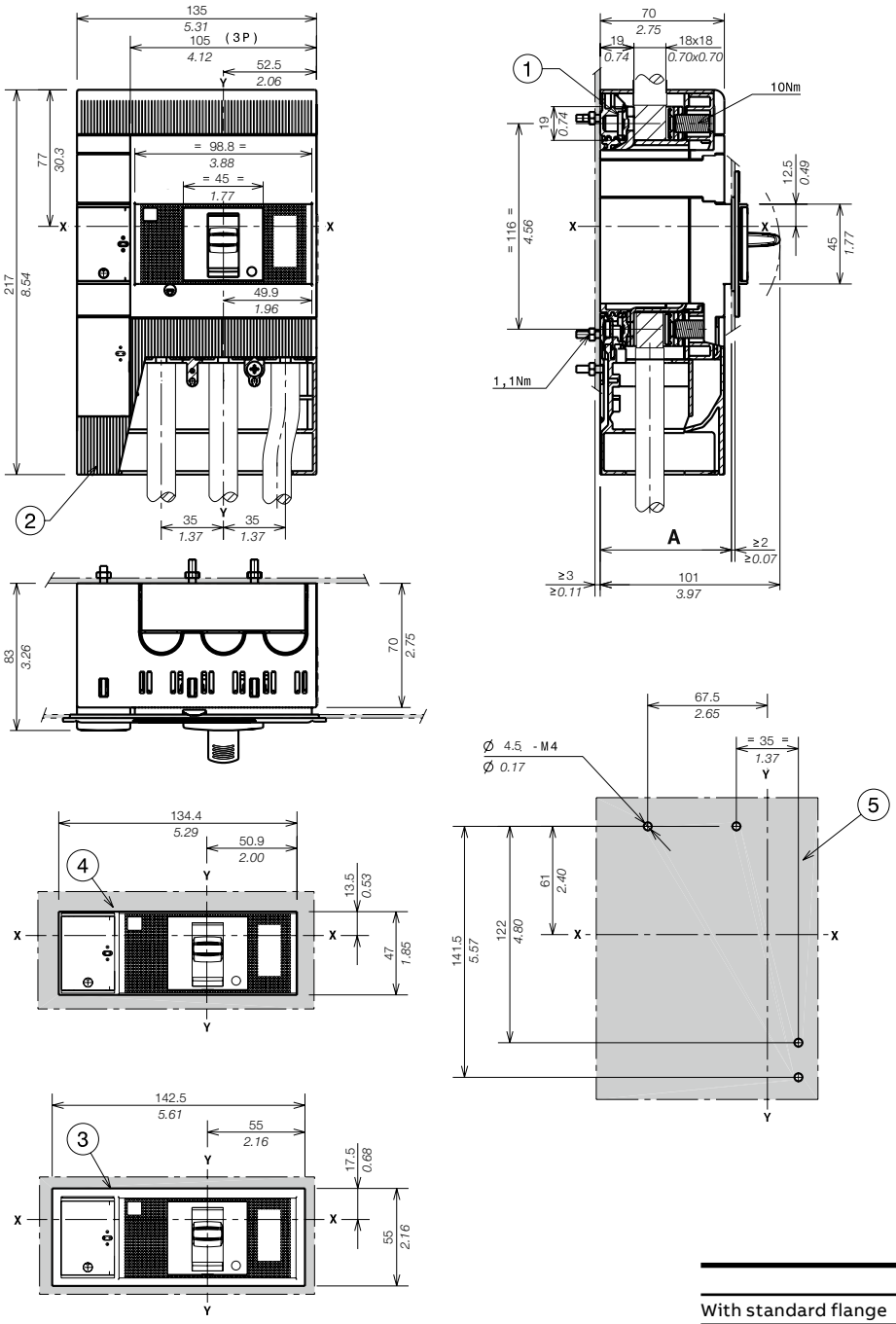


—

Key

3 Key lock (not provided)
4 Direct motor operator MOD
5 Drilling template of door with MOD with flange
6 Drilling template of door with MOD without flange
7 0.98"/25mm insulating barriers

RC Inst and RC Sel residual current release for 3-pole circuit-breaker



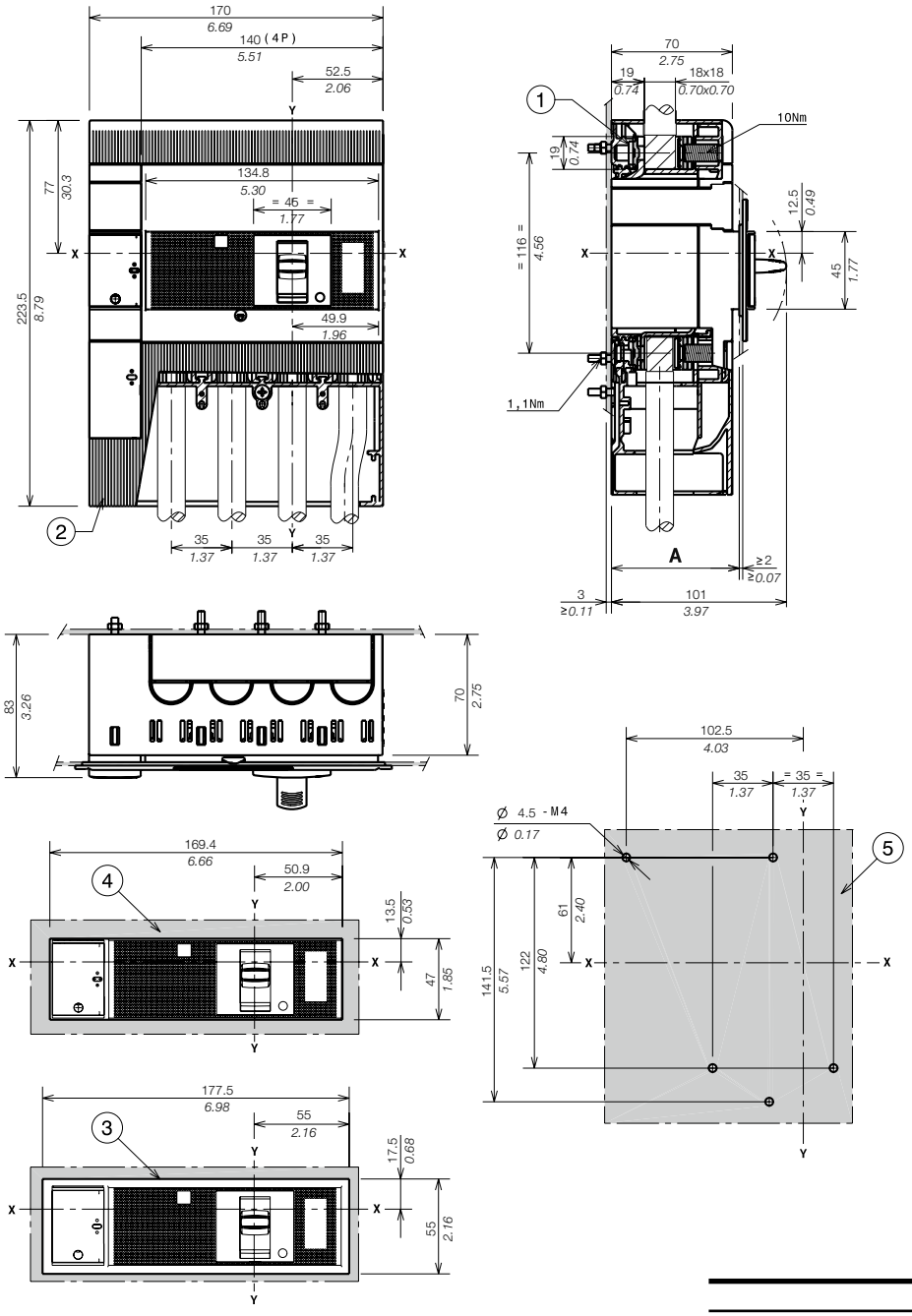
Key
1 Front terminals for cable connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for mounting circuit-breaker on sheet

		A [in/mm]
With standard flange	3p	2.91/74
Without flange	3p	2.79/71

Tmax XT3 - Installation

Accessories for fixed circuit-breaker

RC Inst and RC Sel residual current release for 4-pole circuit-breaker



Key

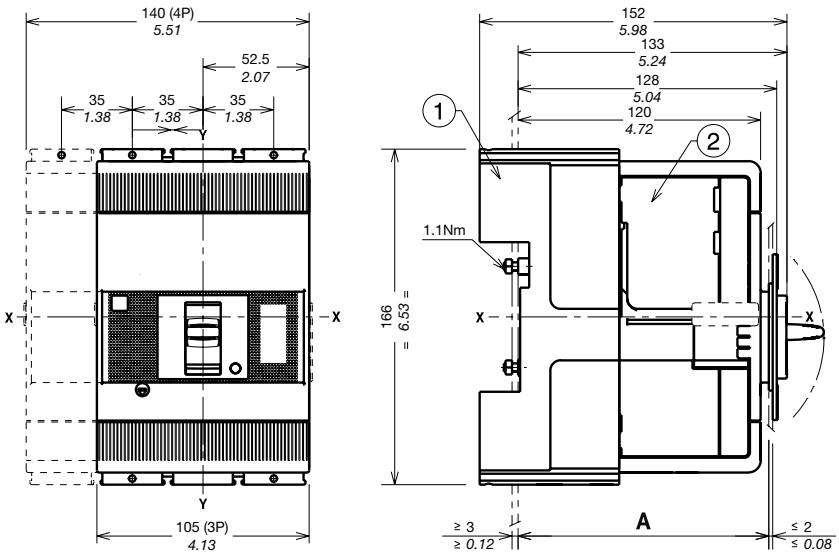
1 Front terminals for cable connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for mounting circuit-breaker on sheet

		A [in/mm]
With standard flange	4p	2.91/74
Without flange	4p	2.79/71

Tmax XT3 - Installation

Installation for plug-in circuit-breaker

Mounting on the backplate



Fixing at 1.97"/50mm		A [in/mm]
With standard flange	3p-4p	4.88/124
Without flange	3p-4p	4.76/121
	3p-4p	5.08/129

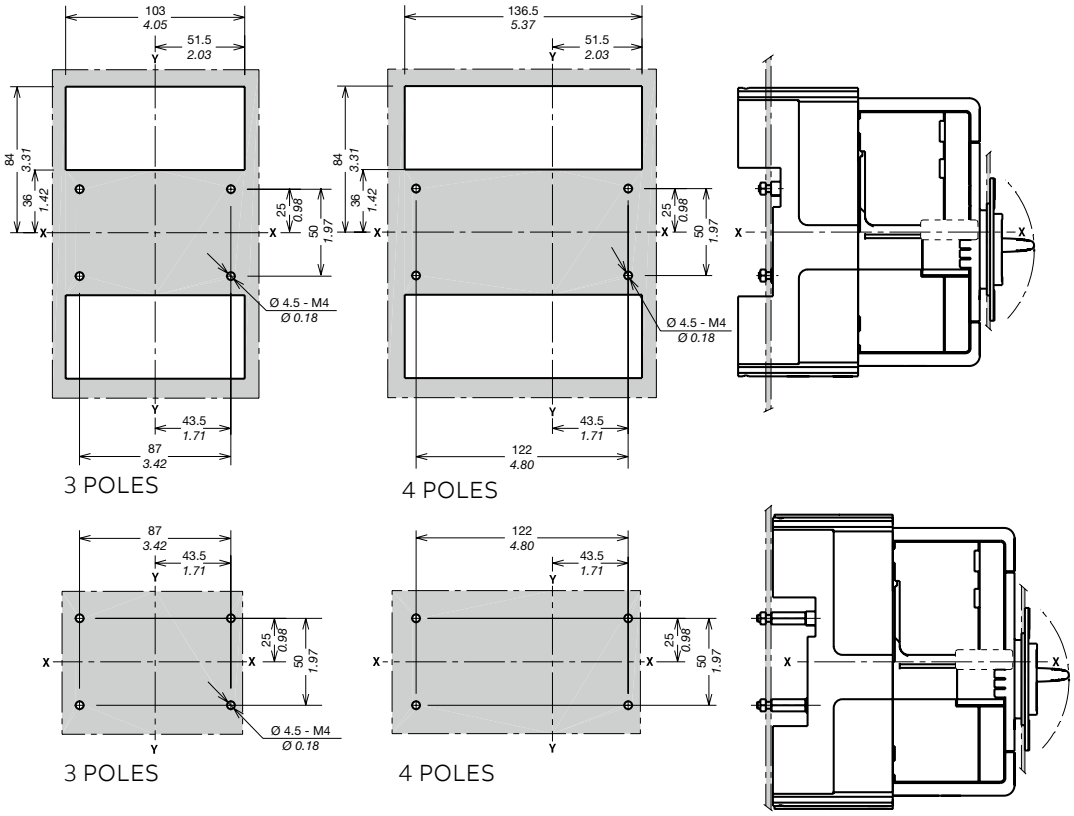
Fixing at 2.76"/70mm for extended front terminals		A [in/mm]
With standard flange	3p-4p	5.67/144
Without flange	3p-4p	5.55/141
	3p-4p	5.87/149

—
Key
1 Fixed part
2 Moving part

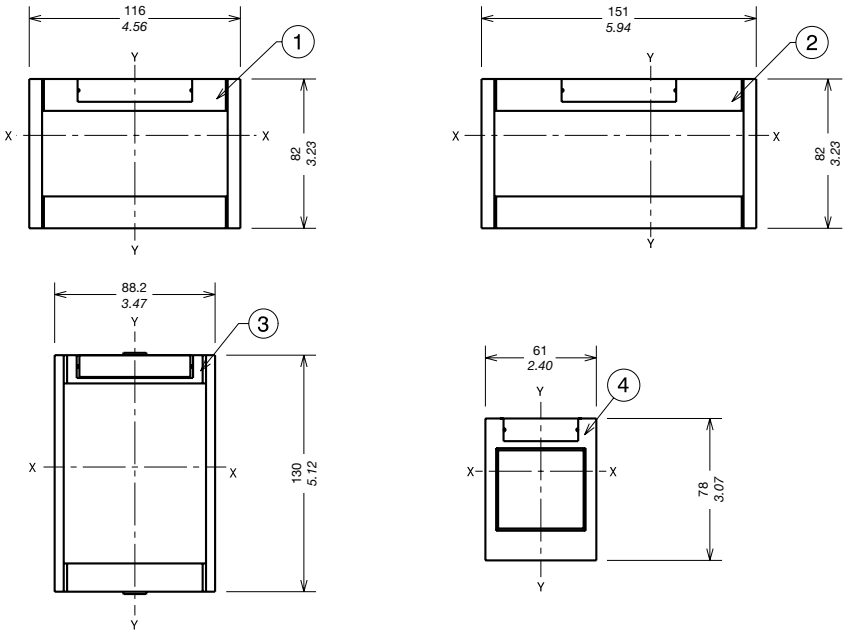
Tmax XT3 - Installation

Installation for plug-in circuit-breaker

Drilling templates for the backplate



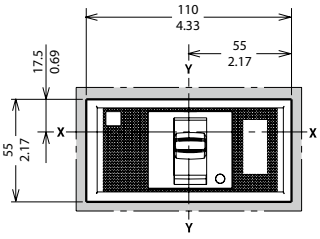
Flanges



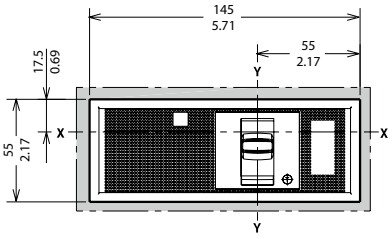
—
Key
1 Flange for plug-in 3p circuit-breaker
2 Flange for plug-in 4p circuit-breaker
3 Flange for plug-in circuit-breaker with direct motor operator MOD
4 Optional flange

Drilling templates for compartment door

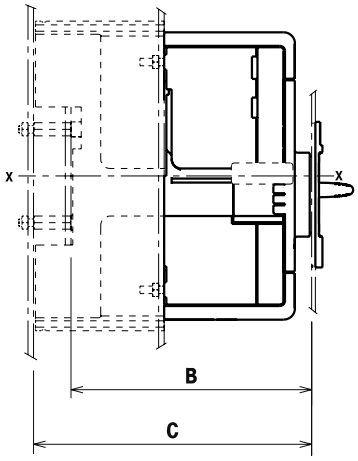
With standard flange



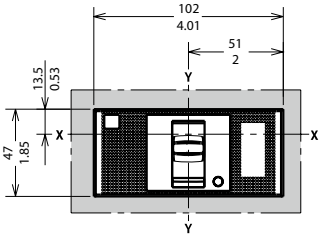
A=4.88/124 C=5.67/144
3 POLES



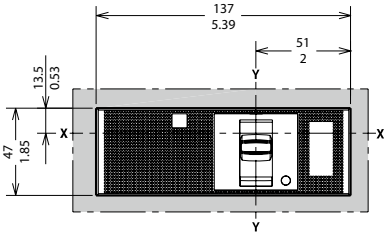
A=4.88/124 C=5.67/144
4 POLES



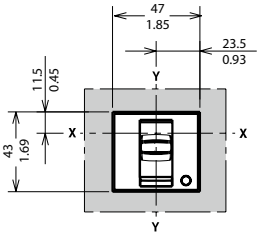
Without flange



A=4.76/121 C=5.55/141
3 POLES

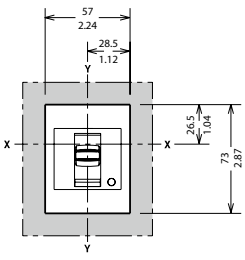


A=4.76/121 C=5.55/141
4 POLES

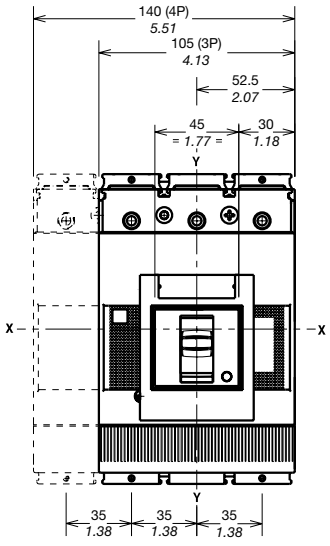


A=2.79/129 C=5.87/149
3-4 POLES

With optional flange



A=2.79/129 C=5.87/149
3-4 POLES

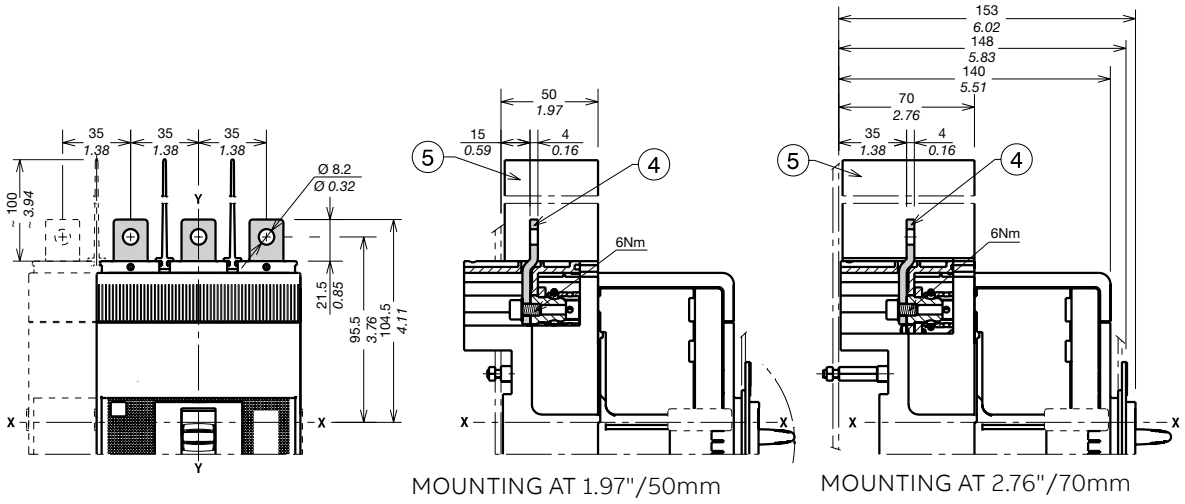


Tmax XT3 - Installation

Terminals for plug-in circuit-breaker

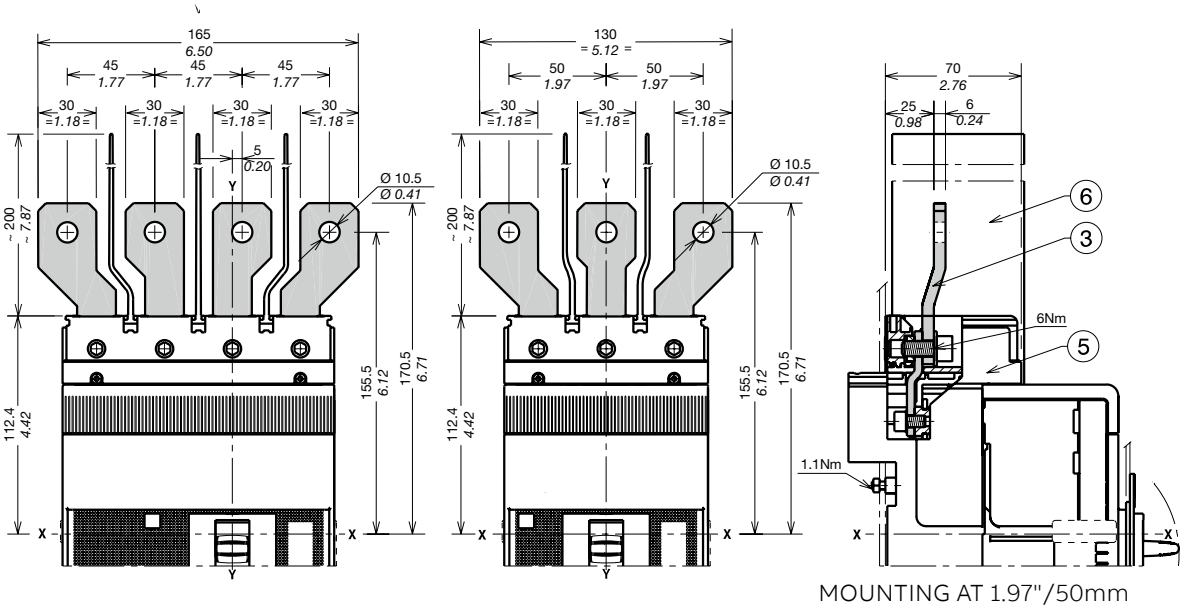
Terminals EF

Key
4 Front extended terminals
5 Phase separators 3.94"/100mm



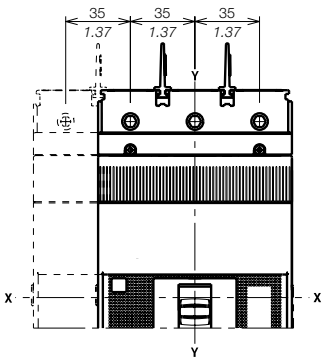
Terminals ES

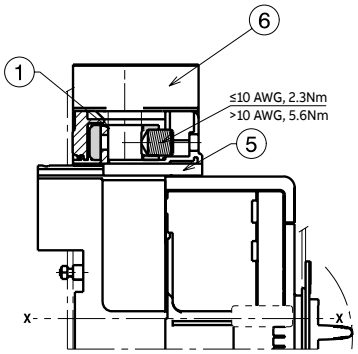
Key
3 Front extended spread terminals for busbar connection
5 Adapter for fixed part
6 Phase separators 7.87"/200mm



1 x 14...1/0AWG terminals FCCuAl

Key
1 1 x 14...1/0AWG front terminal FCCuAl
5 Adapter for fixed part (compulsory) not provided
6 0.98"/25mm insulating barriers between phases (compulsory) provided

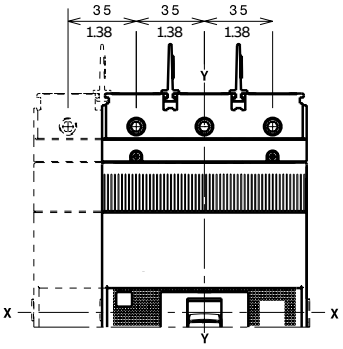


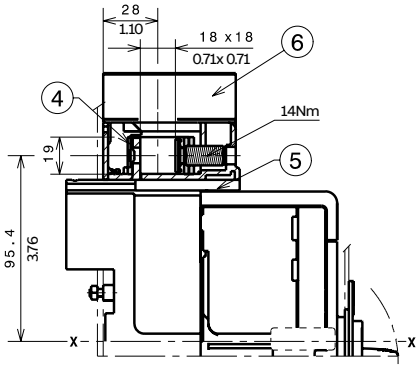


MOUNTING AT 2.76"/70mm

Terminals FCCu

Key
4 Front terminals FCCu
5 Adapter for fixed part
6 Phase separators 0.98"/25mm

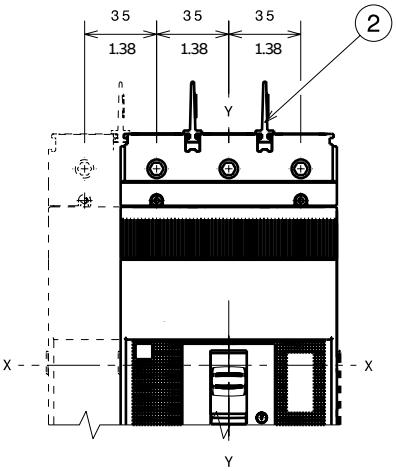


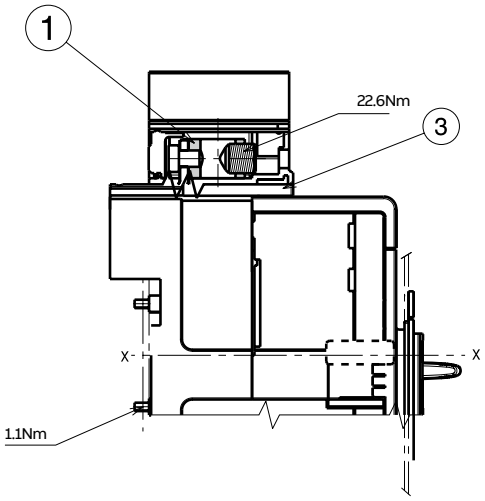


MOUNTING AT 1.97"/50mm

1x4AWG...300kcmil terminals FCCuAl

Key
1 1x4AWG...300kcmil terminals FCCuAl
2 Phase separators 0.98"/25mm
3 Adapter for fixed part

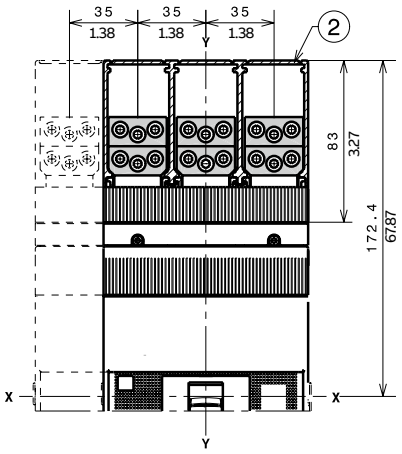


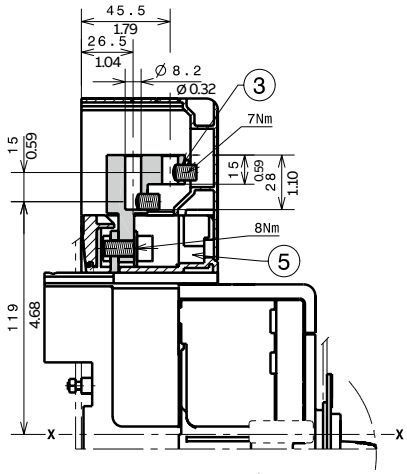


Tmax XT3 - Installation

Terminals for plug-in circuit-breaker

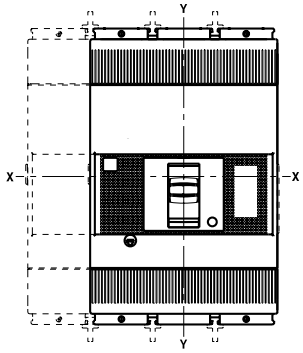
Terminals MC

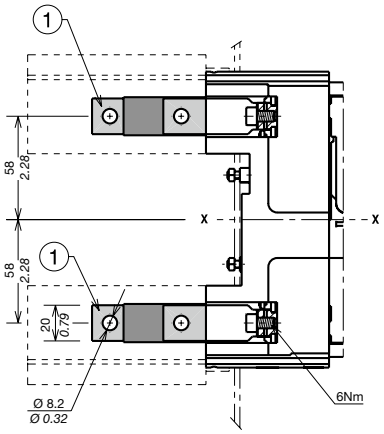


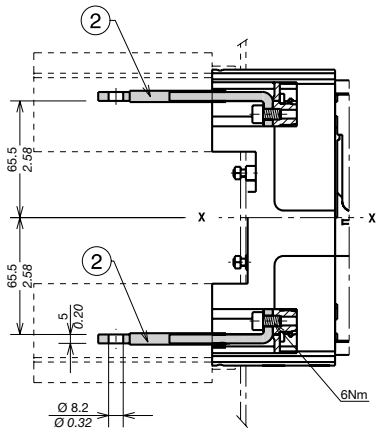


MOUNTING AT 1.97"/50mm

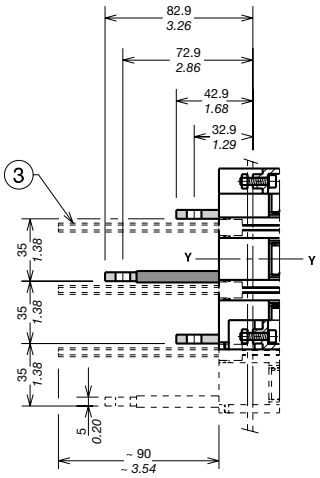
Terminals HR/VR



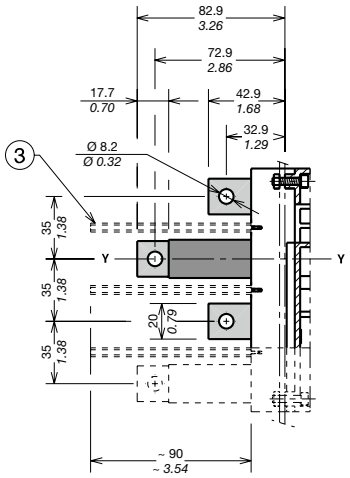




Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 3.54"/90mm



MOUNTING AT 1.97"/50mm

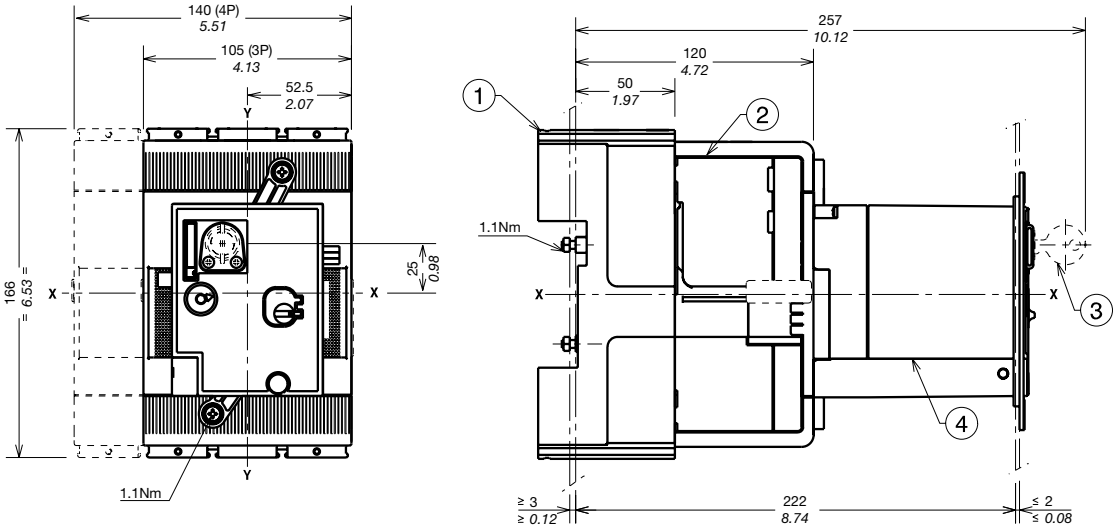


MOUNTING AT 1.97"/50mm

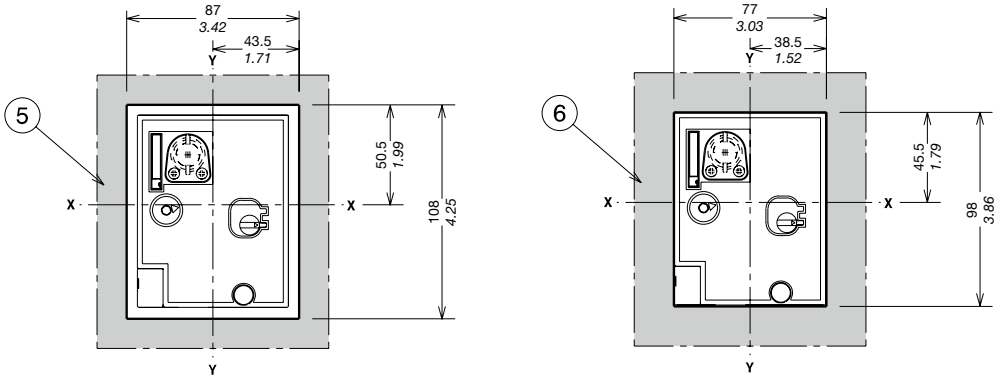
Tmax XT3 - Installation

Accessories for plug-in circuit-breaker

Direct motor operator (MOD)



MOUNTING AT 1.97"/50mm



—

Key

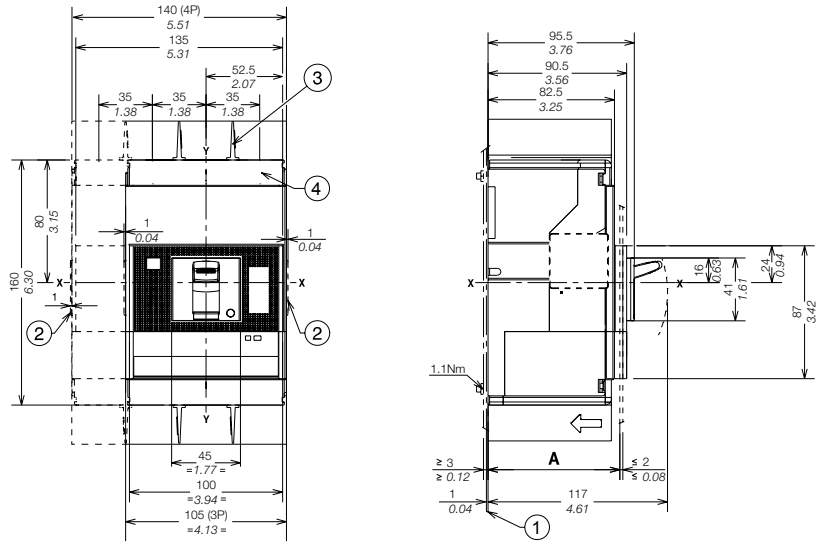
1 Fixed part
2 Moving part
3 Key lock
4 Direct motor operator MOD
5 Drilling template of door with MOD with flange
6 Drilling template of door with MOD without flange

Tmax XT4 - Installation

Installation for fixed circuit-breaker

Mounting on the backplate

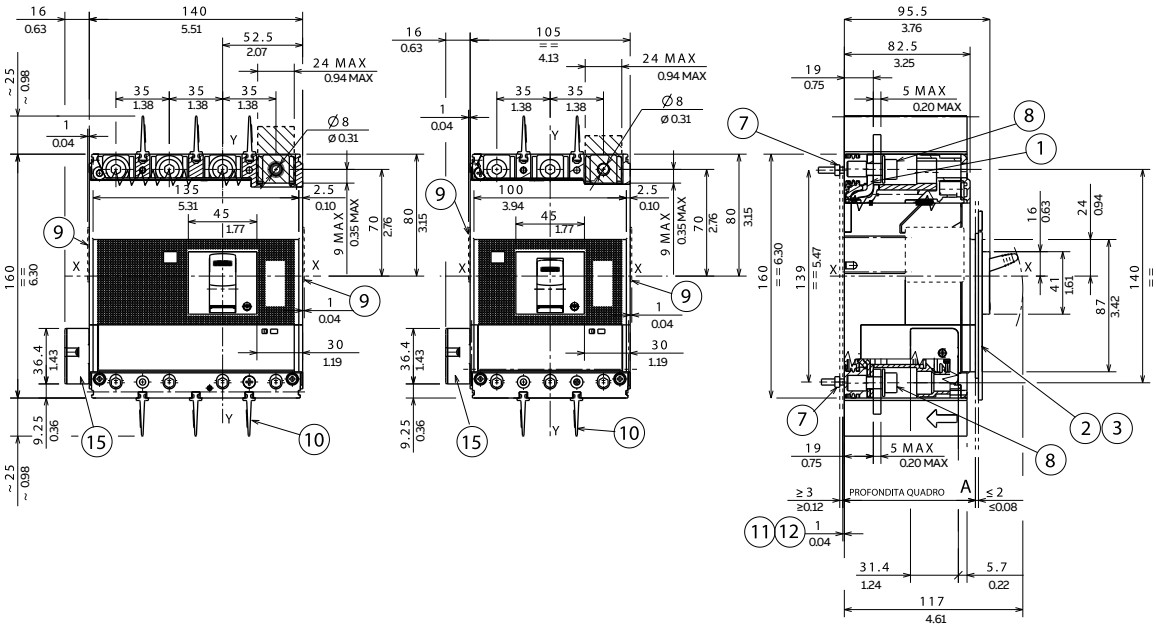
Key
1 Insulating plate
2 Overall dimension of optional wiring ducts
3 Phase separators 0.98"/25mm
4 Front carter compulsory for panel door distance ≤ 25mm/0.98"



Fixing at 1.97"/50mm		A [in/mm]
With standard flange	3p-4p	3.39/86
Without flange	3p-4p	3.29/83.5
	3p-4p	3.60/91.5

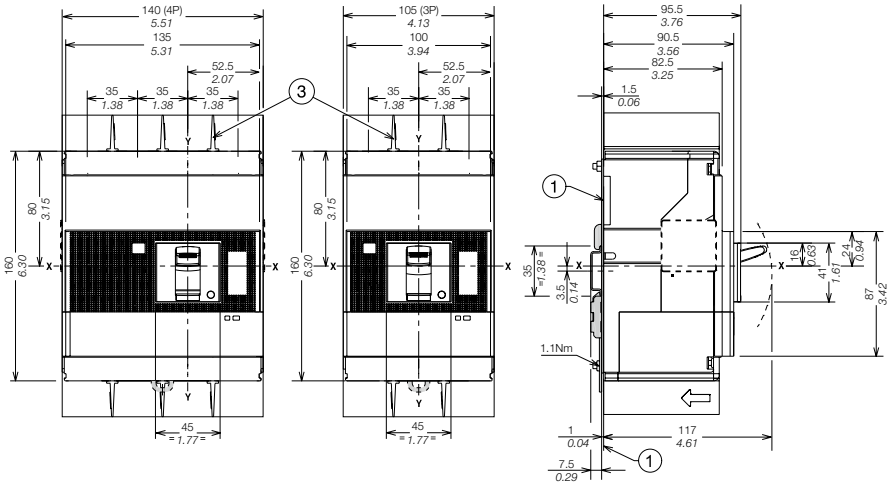
With side connector for Ekip Touch trip units

Key
1 Front terminals
2 Flange for 4p circuit-breaker (always supplied with 4p cb)
3 Flange for 3p circuit-breaker (always supplied with 3p cb)
7 Tightening torque 1.1Nm
8 Tightening torque 8Nm
9 Optional wiring duct
10 Phase separators 0.98"/25mm
11 Rear insulating plate for 3p version
12 Rear insulating plate for 4p version
15 Connection kit F/P IntBus/ExtNeut/Sel

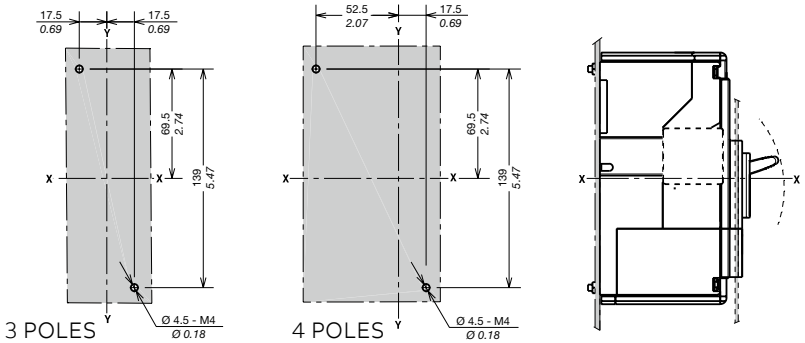


Mounting on DIN 50022 rail

Key
1 Mounting bracket
3 Phase separators 0.98"/25mm

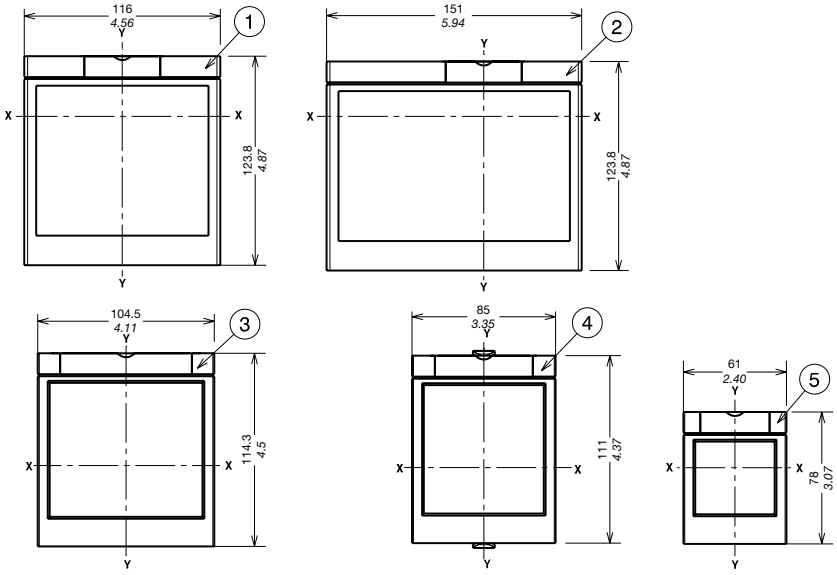


Drilling templates for the backplate



Flanges

Key
1 Flange for fixed 3p circuit-breaker
2 Flange for fixed 4p circuit-breaker
3 Flange for fixed 3p-4p circuit-breakers with MOE and FLD
4 Flange for 3p-4p circuit-breakers with direct rotary handle RHD
5 Optional flange

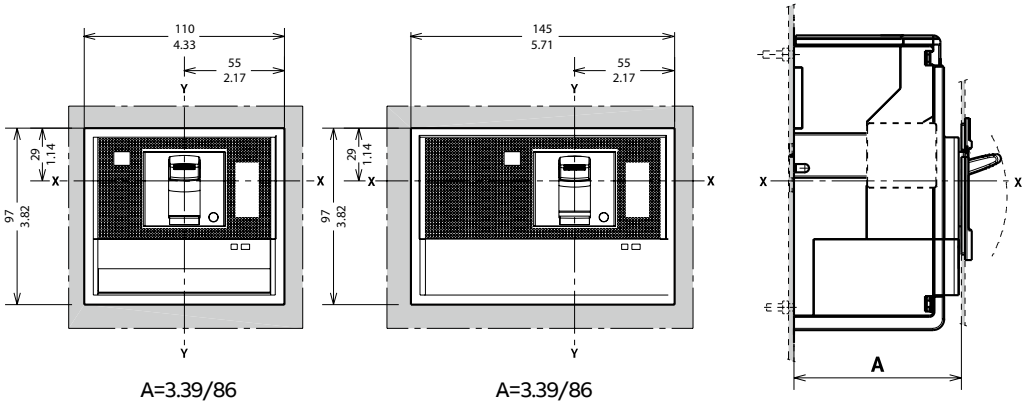


Tmax XT4 - Installation

Installation for fixed circuit-breaker

Drilling templates for compartment door

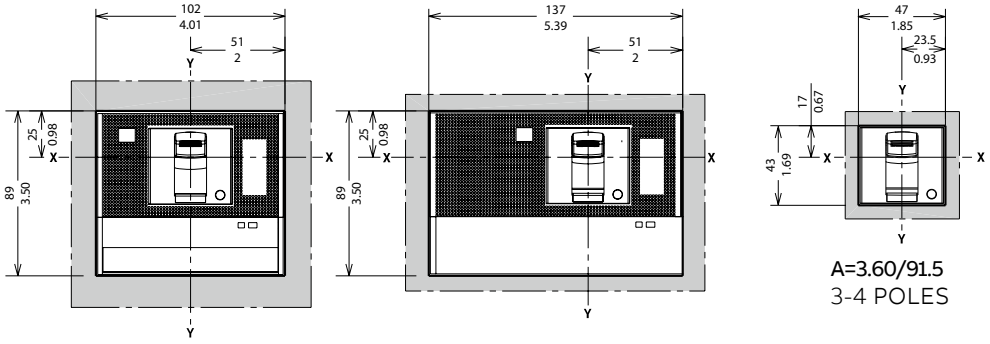
With standard flange



A=3.39/86
3 POLES

A=3.39/86
4 POLES

Without flange

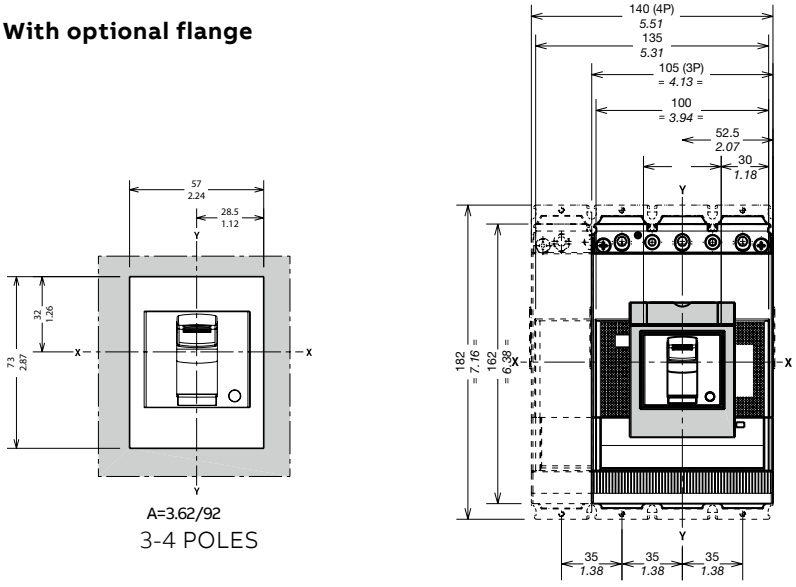


A=3.29/83.5
3 POLES

A=3.29/83.5
4 POLES

A=3.60/91.5
3-4 POLES

With optional flange

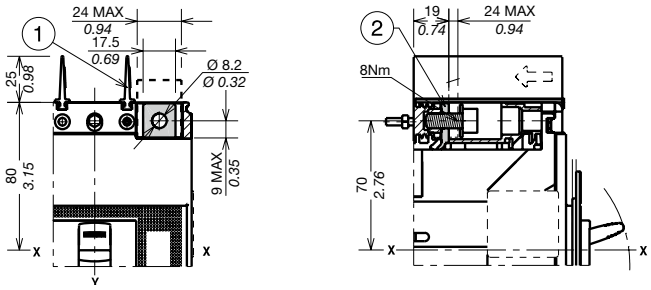


A=3.62/92
3-4 POLES

Tmax XT4 - Installation
Terminals for fixed circuit-breaker

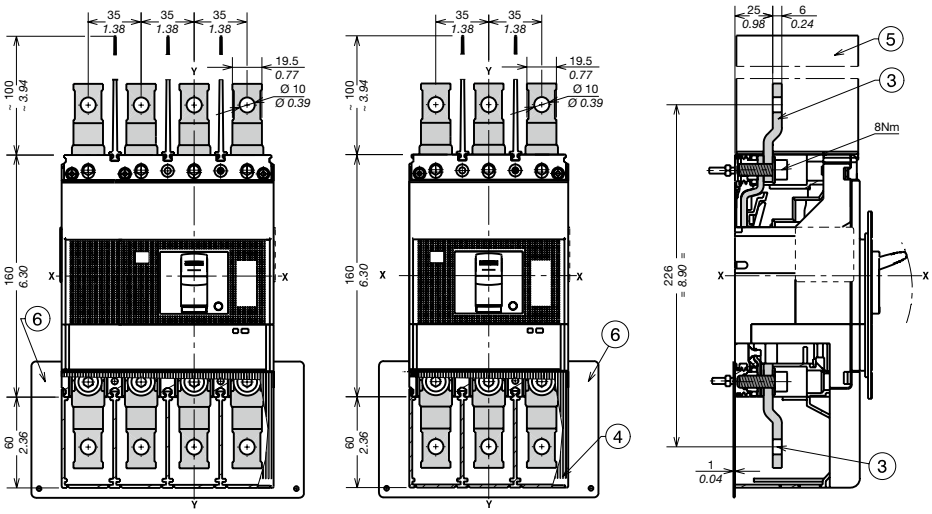
Terminals F

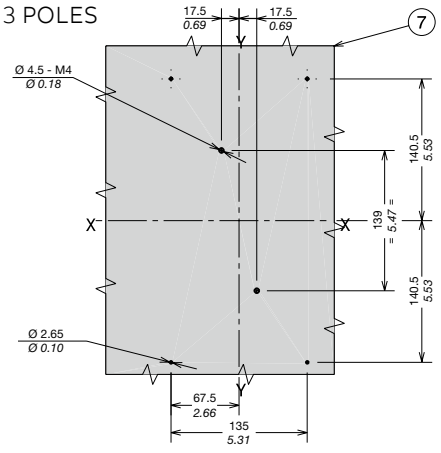
Key
1 Phase separators 0.98"/25mm
2 Top terminal covers with degree of protection IP30

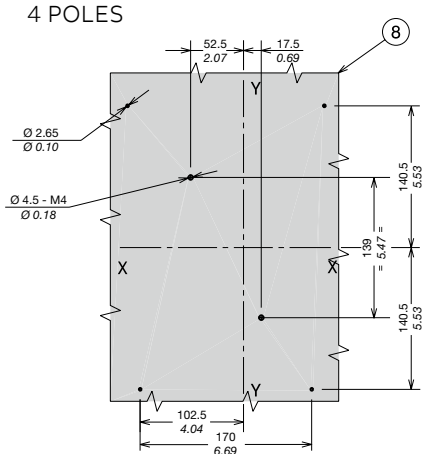


Terminals EF

Key
3 Front extended terminals
4 Terminal covers with degree of protection IP40
5 Phase separators 3.94"/100mm
6 Insulated plate
7 Drilling template for 3p circuit-breaker
8 Drilling template for 4p circuit-breaker





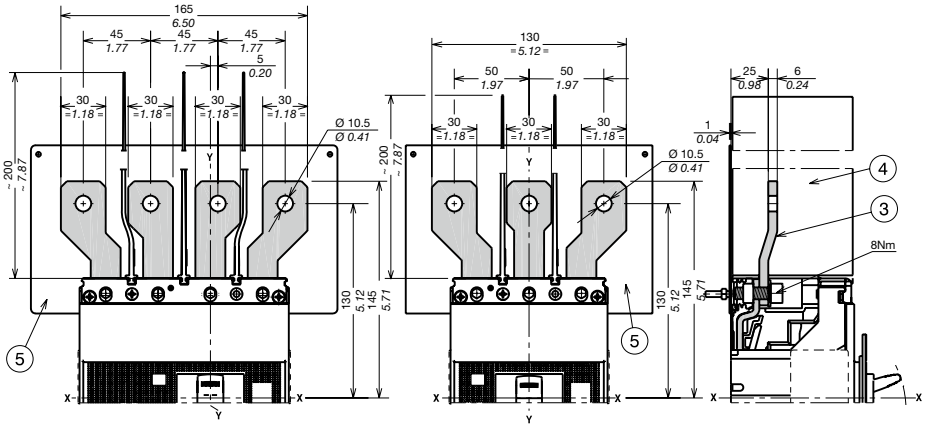


Tmax XT4 - Installation

Terminals for fixed circuit-breaker

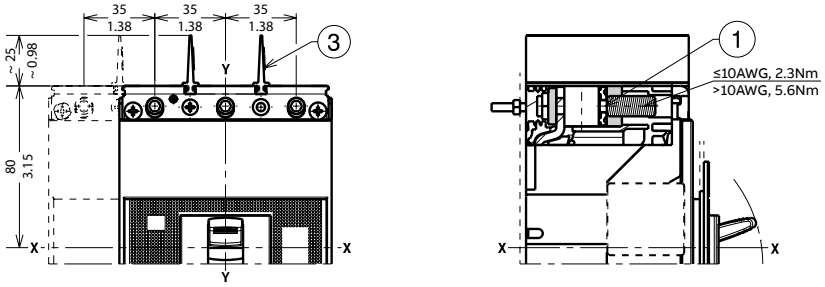
Terminals ES

Key
1 Drilling template for 3p circuit-breaker
2 Drilling template for 4p circuit-breaker
3 Front extended spread terminals
4 Phase separators 7.87"/200mm
5 Insulated plate



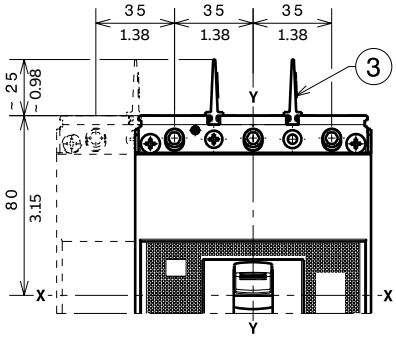
1 x 14...1/0AWG terminals FCCuAl

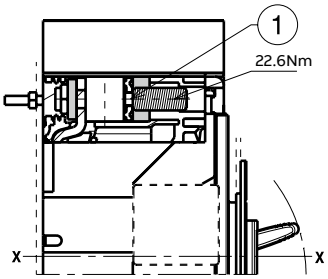
Key
1 1 x 14...1/0AWG terminals FCCuAl
3 Phase separators 0.98"/25mm



1x4AWG...300kcmil terminals FCCuAl

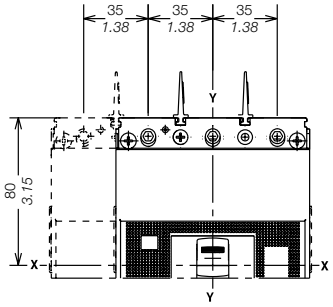
Key
1 1x4AWG...300kcmil terminals FCCuAl and 1x3/0...350kcmil terminals FCCuAl
3 Phase separators 0.98"/25mm

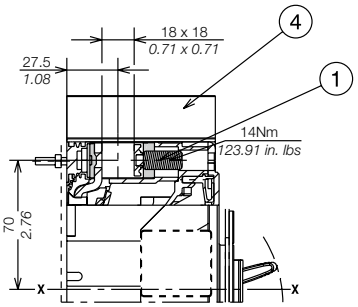




Terminals FCCu

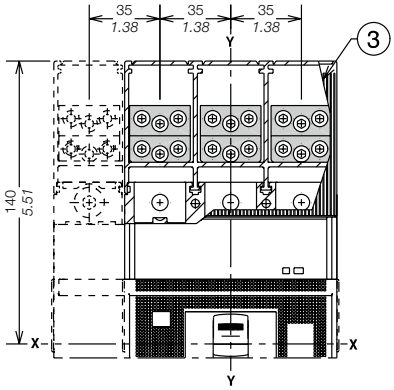
Key
1 Terminals FCCu
4 Phase separators 0.98"/25mm

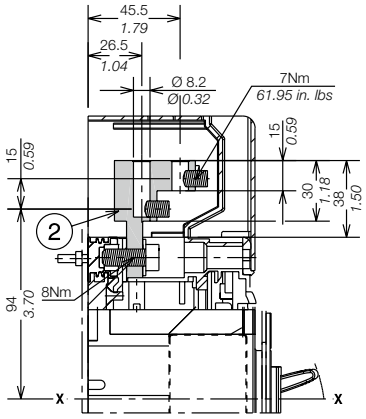




Terminals MC

Key
2 Multi-cable terminals
3 Terminal covers with degree of protection IP40

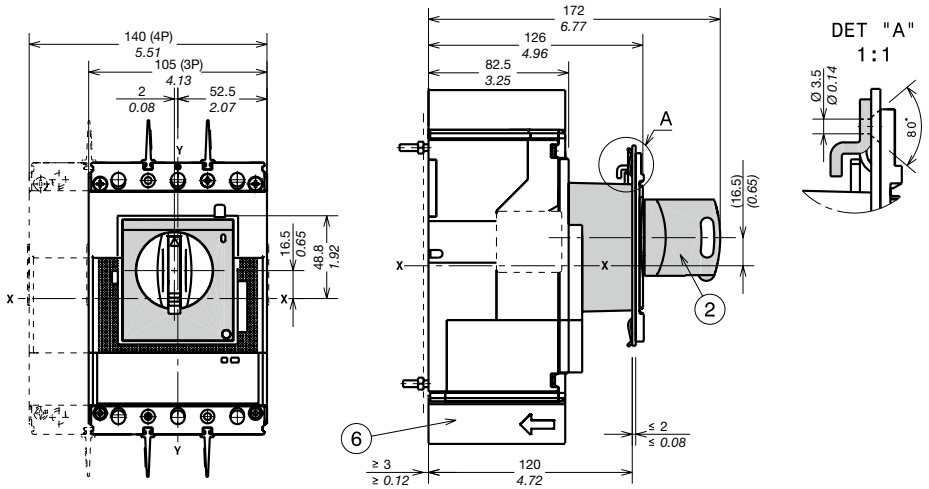


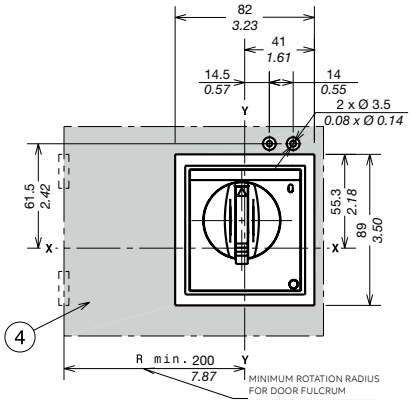


Tmax XT4 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breaker (RHD)





—

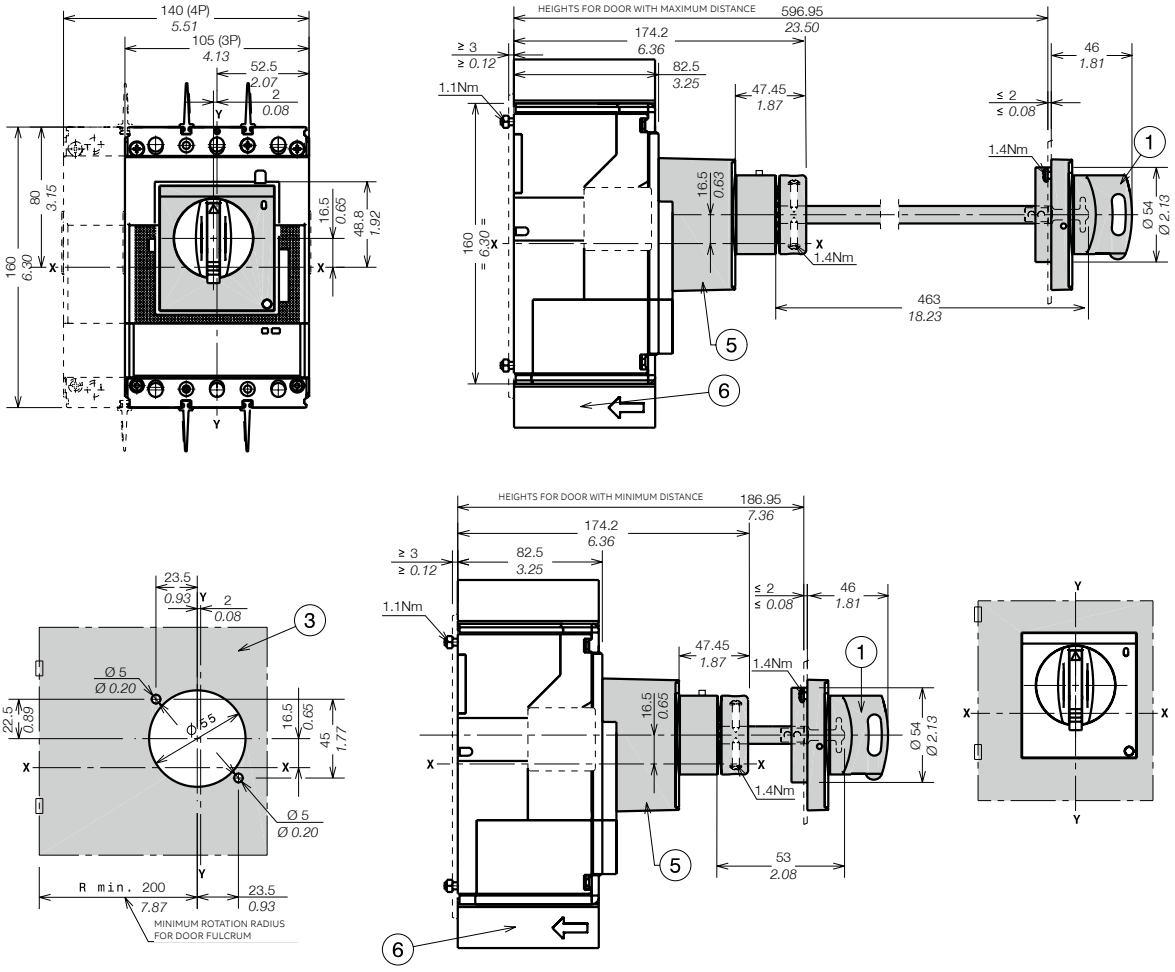
Key

2 Rotary handle operating mechanism on circuit-breaker

4 Drilling template of door with direct rotary handle

6 Phase separators 0.98"/25mm

Rotary handle operating mechanism with padlock of the compartment door (RHE-PL)



—

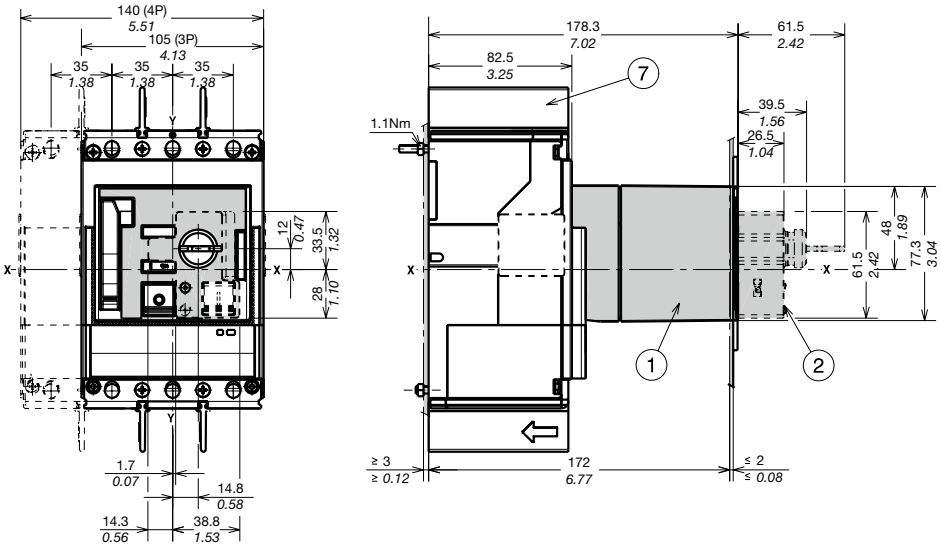
Key

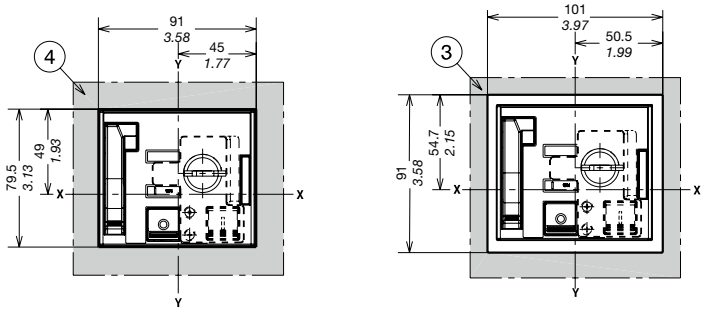
1 Rotary handle operating mechanism of the compartment door
3 Drilling template for RHE
5 Transmission unit
6 Phase separators 0.98"/25mm

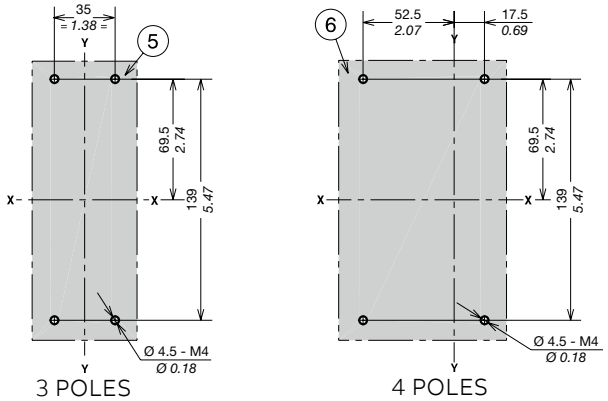
Tmax XT4 - Installation

Accessories for fixed circuit-breaker

Stored energy motor operator (MOE)





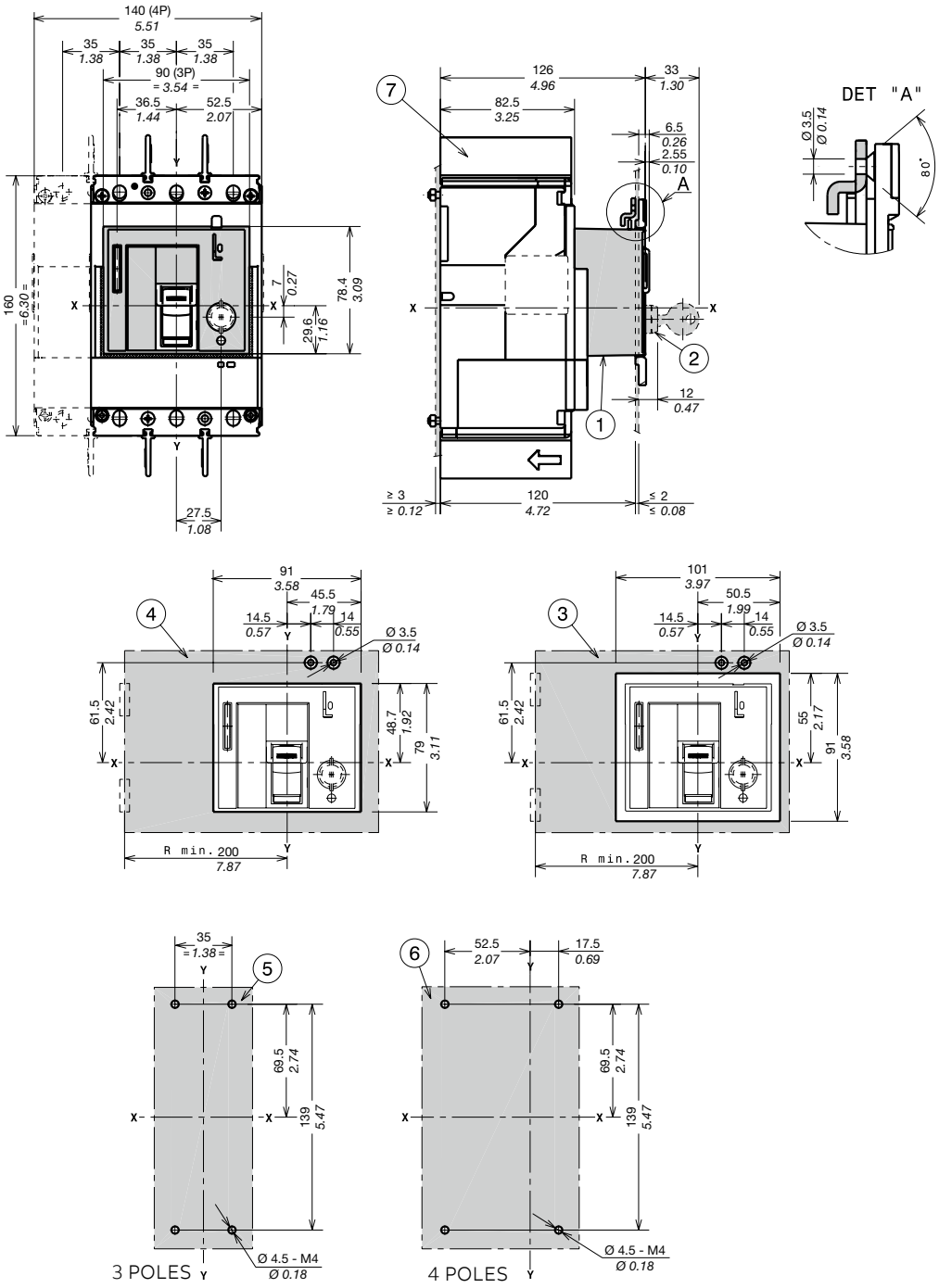


—

Key

1 Stored energy motor operator (MOE)
2 Key lock
3 Drilling template of door with flange
4 Drilling template of door without flange
5 Drilling template for mounting 3p circuit-breaker on the backplate
6 Drilling template for mounting 4p circuit-breaker on the backplate
7 Phase separators 0.98"/25mm

Front for lever operating mechanism (FLD)



—

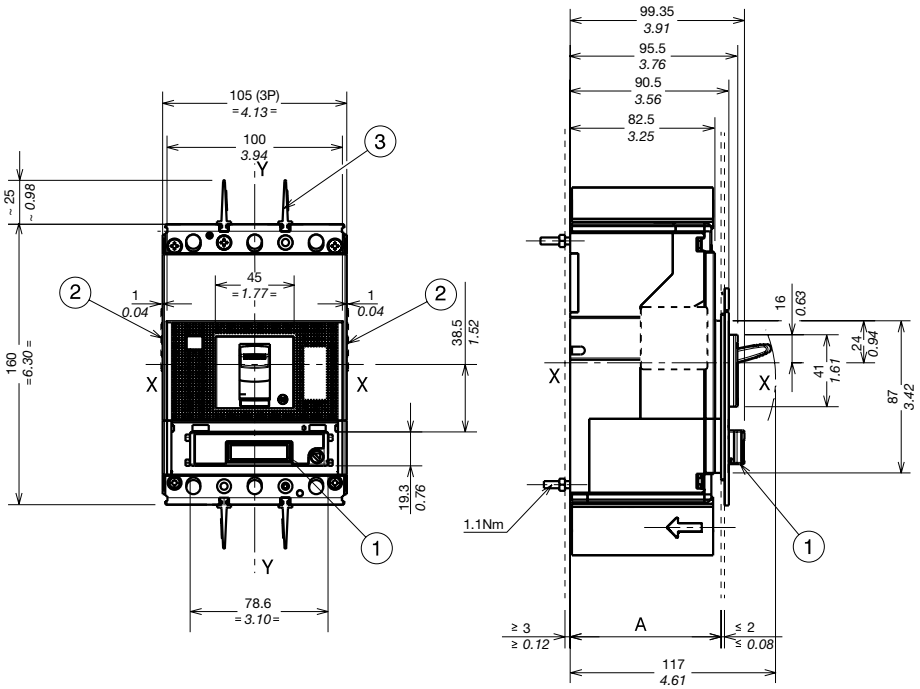
Key

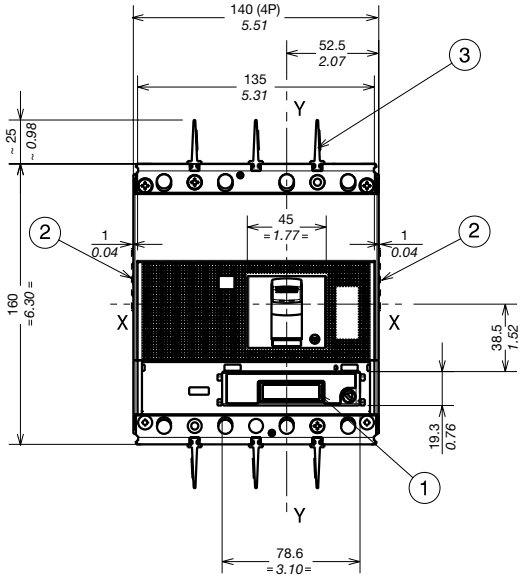
1 Front for lever operating mechanism (FLD)
2 Key lock
3 Drilling template of door with flange
4 Drilling template of door without flange
5 Drilling template for mounting 3p circuit-breaker on the backplate
6 Drilling template for mounting 4p circuit-breaker on the backplate
7 Phase separators 0.98"/25mm

Tmax XT4 - Installation

Accessories for fixed circuit-breaker

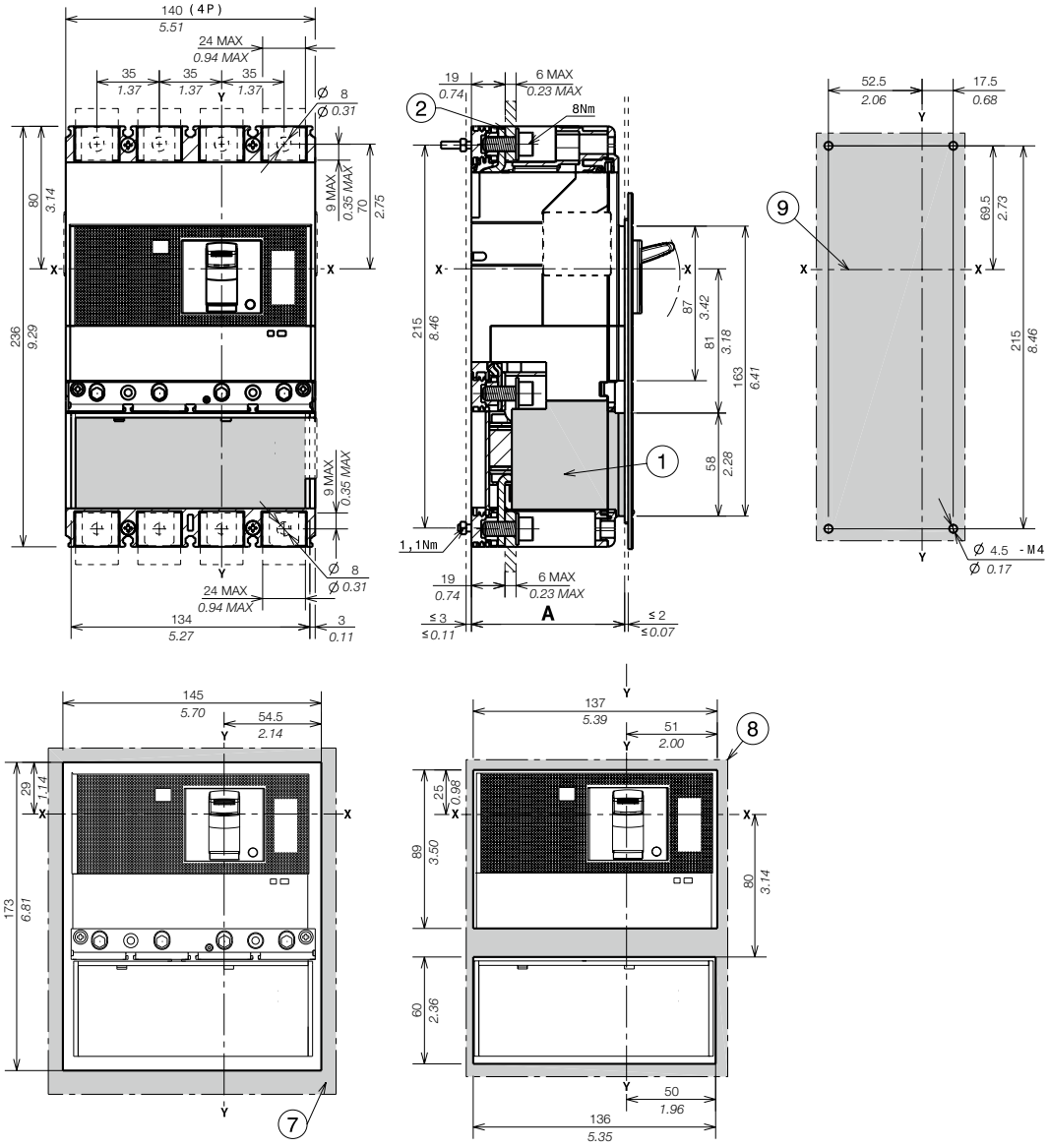
Ekip Display or LED Meter





—
Key
1 Ekip Display or LED Meter
2 Optional wiring ducts
3 Phase separators 0.98"/25mm

Residual current RC Sel



—

Key

1 Residual current
2 Front terminals
7 Drilling template of door with flange
8 Drilling template of door without flange
9 Drilling template for mounting circuit-breaker on sheet

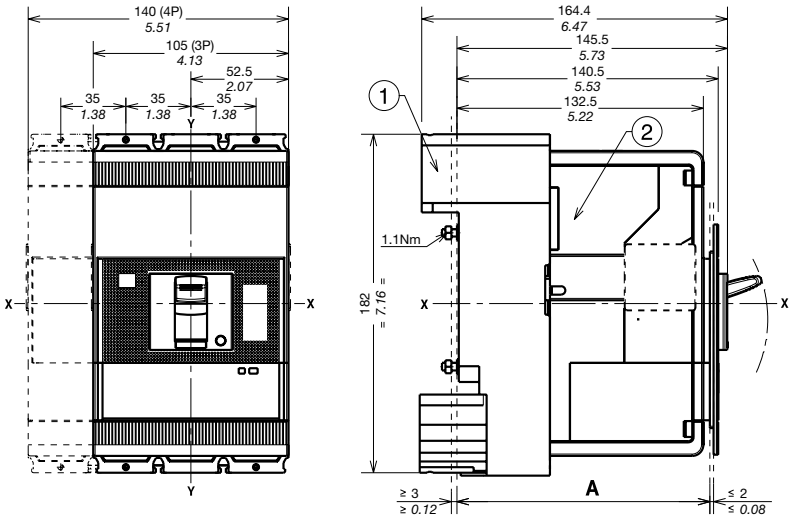
		A [in/mm]
With standard flange	4p	3.39/86
Without flange	4p	3.29/83.5

Tmax XT4 - Installation

Installation for plug-in circuit-breaker

Mounting on the backplate

Key
1 Fixed part
2 Moving part

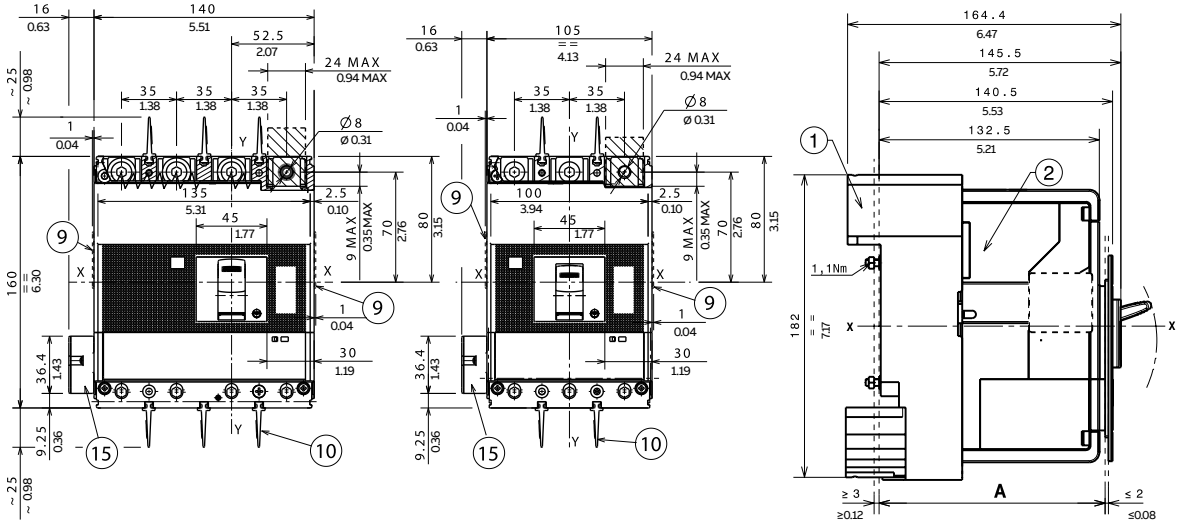


Fixing at 1.97"/50mm		A [in/mm]
With standard flange	3p-4p	5.35/136
Without flange	3p-4p	5.26/133.5
	3p-4p	5.57/141.5

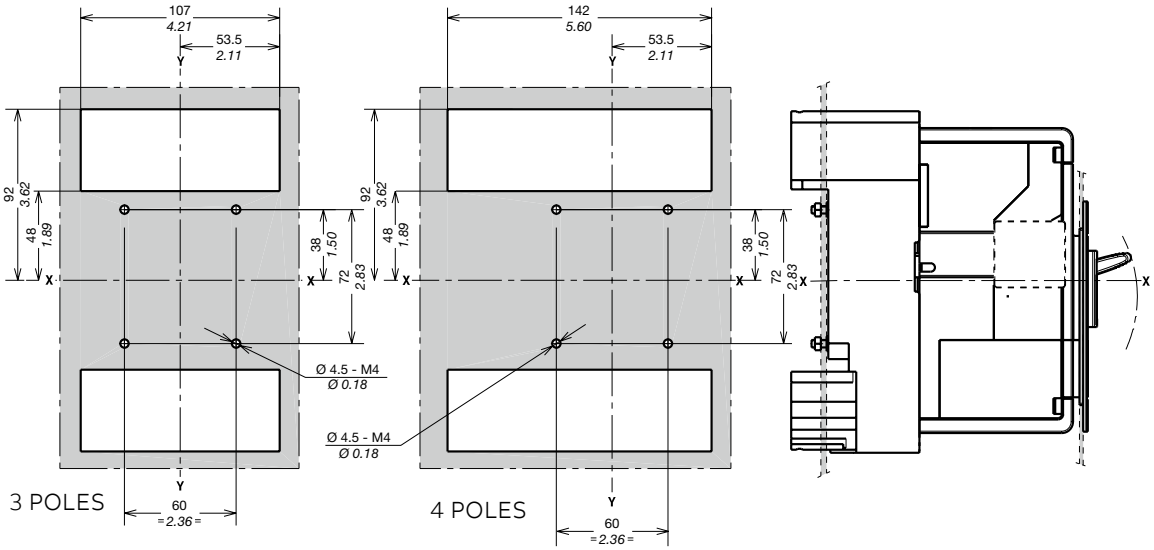
Fixing at 2.76"/70mm for extended front terminals		A [in/mm]
With standard flange	3p-4p	6.14/156
Without flange	3p-4p	6.04/153.5
	3p-4p	6.36/161.5

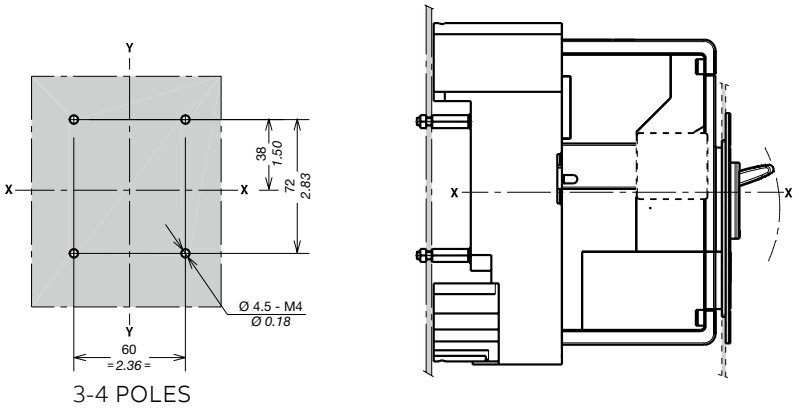
Key
1 Front terminals
2 Flange for 4p circuit-breaker
9 Optional wiring duct
10 Phase separators 0.98"/25mm
15 Connection kit F/P IntBus/ExtNeut/Se

With side connector for Ekip Touch trip units



Drilling templates

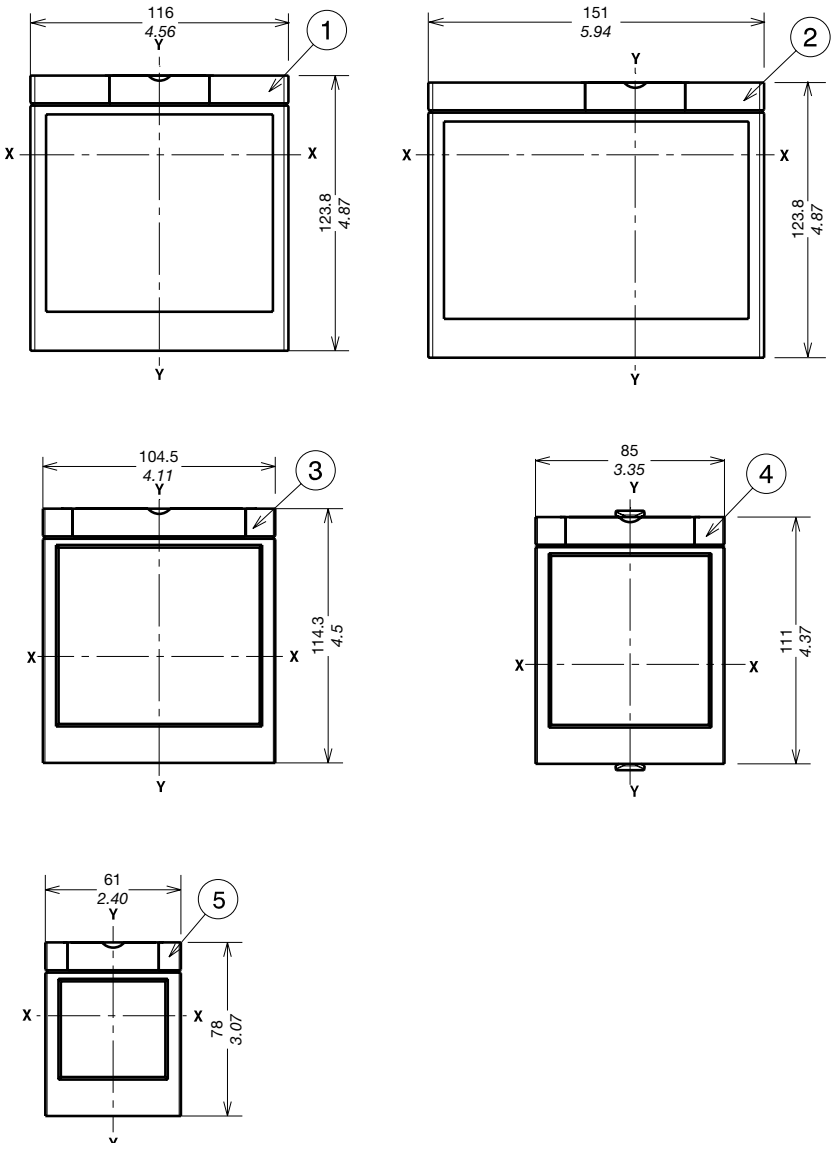




Tmax XT4 - Installation

Installation for plug-in circuit-breaker

Flanges



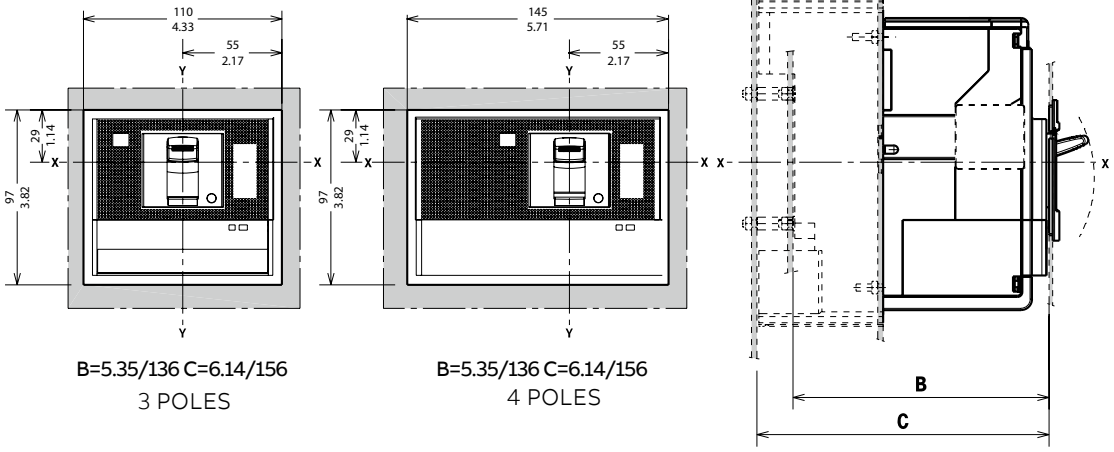
—

Key

1 Flange for plug-in 3p circuit-breaker
2 Flange for plug-in 4p circuit-breaker
3 Flange for plug-in 3p-4p circuit-breakers with MOE and FLD
4 Flange for 3p-4p circuit-breakers with direct rotary handle
5 Optional flange

Compartment door drilling templates

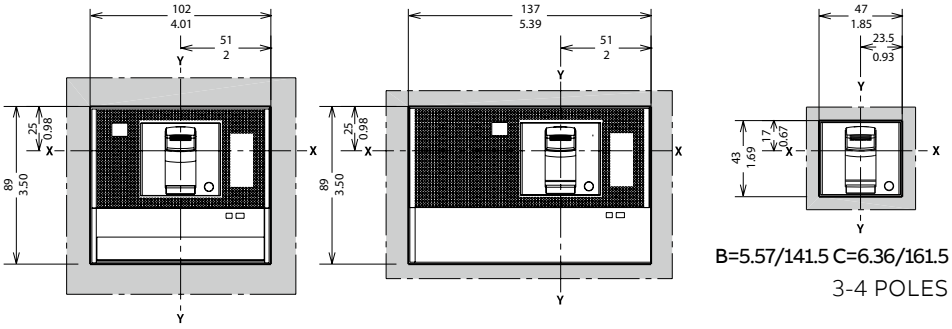
With standard flange



B=5.35/136 C=6.14/156
3 POLES

B=5.35/136 C=6.14/156
4 POLES

Without flange

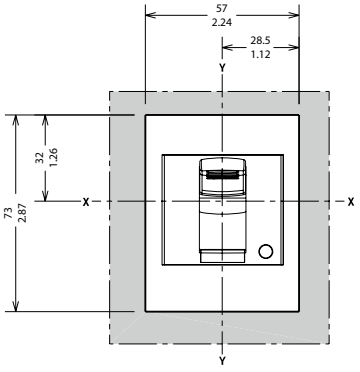


B=5.26”/133.5 C=6.04/153.5
3 POLES

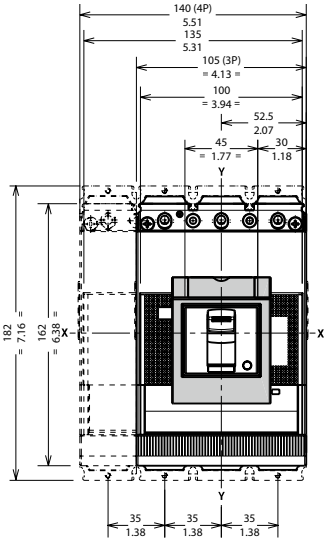
B=5.26/133.5 C=6.04/153.5
4 POLES

B=5.57/141.5 C=6.36/161.5
3-4 POLES

With optional flange



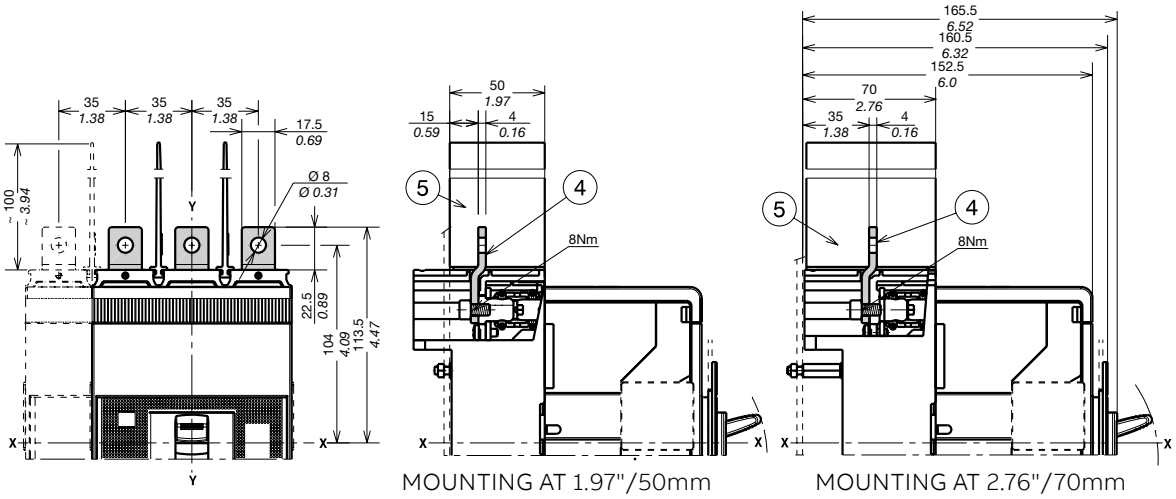
B=5.60/142 C=6.38/162
3-4 POLES



Tmax XT4 - Installation

Terminals for plug-in circuit-breaker

Terminals EF



MOUNTING AT 1.97"/50mm

MOUNTING AT 2.76"/70mm

—

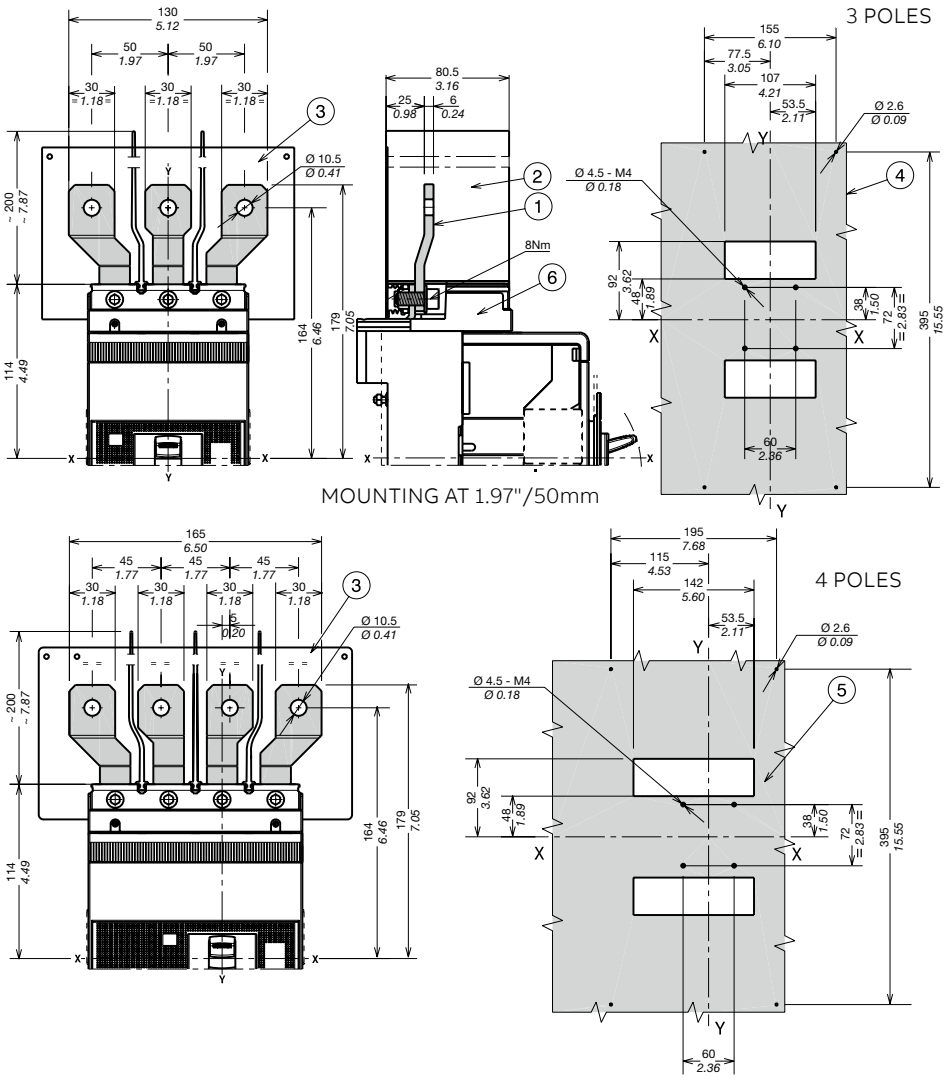
Key

4 Front extended terminals

5 Phase separators 3.94"/100mm

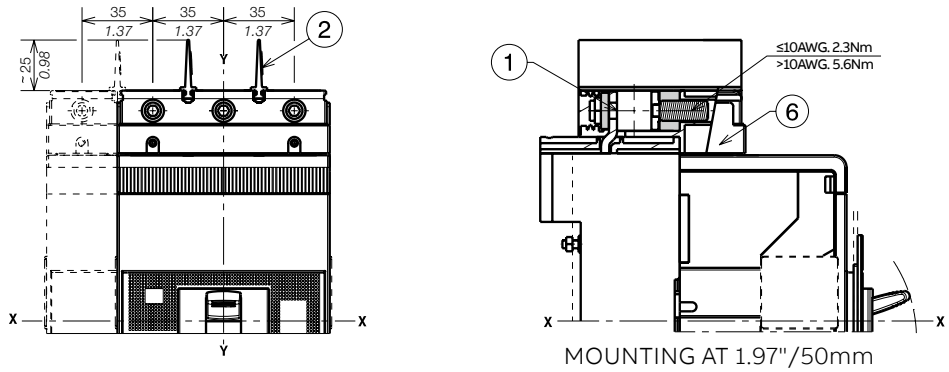
Terminals ES

Key
1 Front extended spread terminals
2 Phase separators 7.87"/200mm
3 Insulated plate
4 Drilling template for 3p circuit-breaker
5 Drilling template for 4p circuit-breaker
6 Adapter



1 x 14...1/0 AWG terminals FCCuAl

Key
1 1 x 14...1/0 AWG front terminals FCCuAl
2 Phase separators 0.98"/25mm
6 Adapter

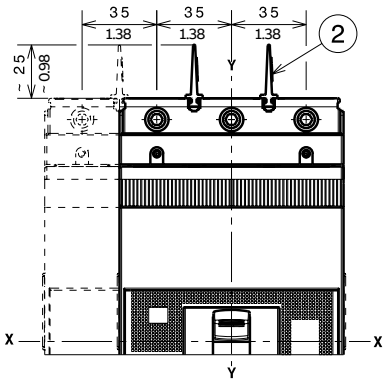


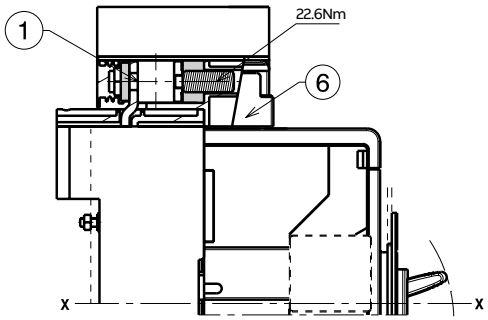
Tmax XT4 - Installation

Terminals for plug-in circuit-breaker

1x4AWG...300kcmil terminals FCCuAl

Key
1 1x4AWG...300kcmil front terminals FCCuAl
2 Phase separators 0.98"/25mm
6 Adaptor

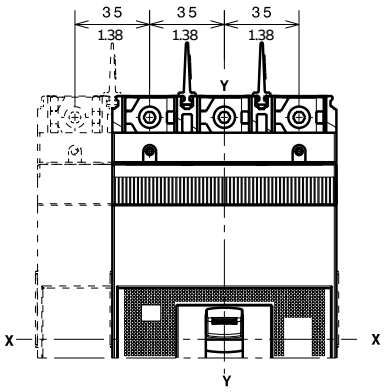


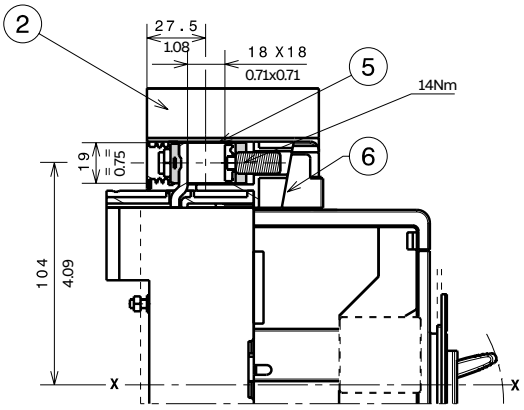


MOUNTING AT 1.97"/50mm

Terminals FCCu

Key
2 Phase separators 0.98"/25mm
5 Terminals FCCu
6 Adaptor

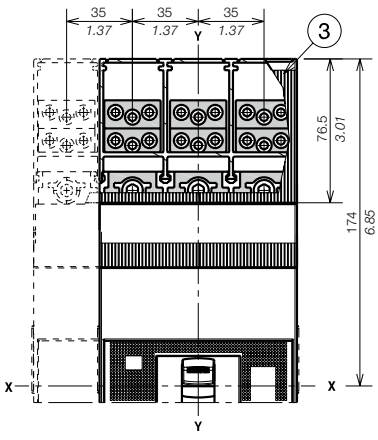


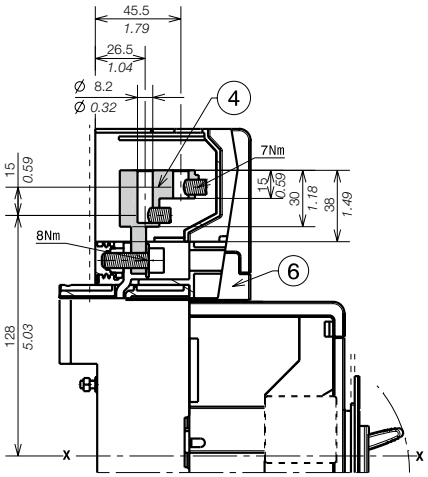


MOUNTING AT 1.97"/50mm

Terminals MC

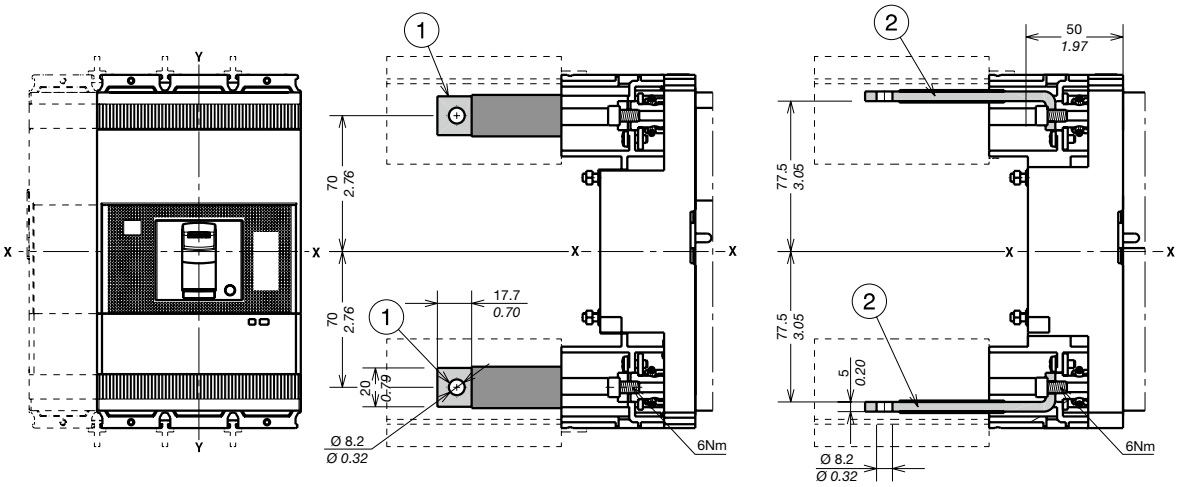
Key
3 High terminal covers with degree of protection IP40
4 Multicable terminals
6 Adapter





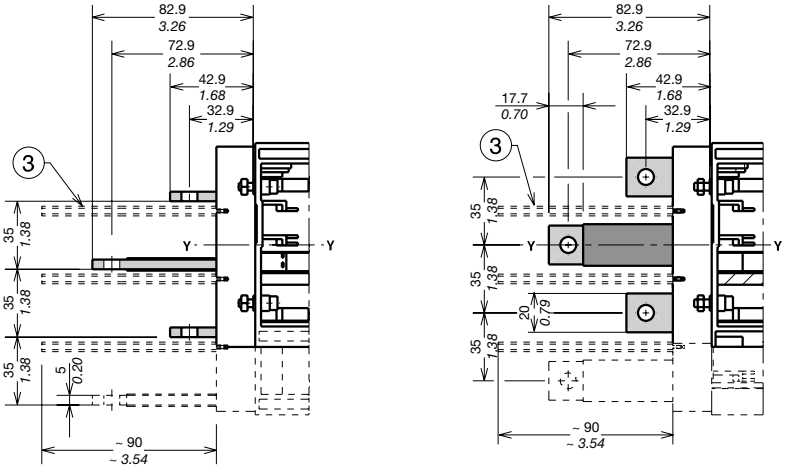
MOUNTING AT 1.97"/50mm

Terminals HR/VR



MOUNTING AT 1.97"/50mm

MOUNTING AT 1.97"/50mm

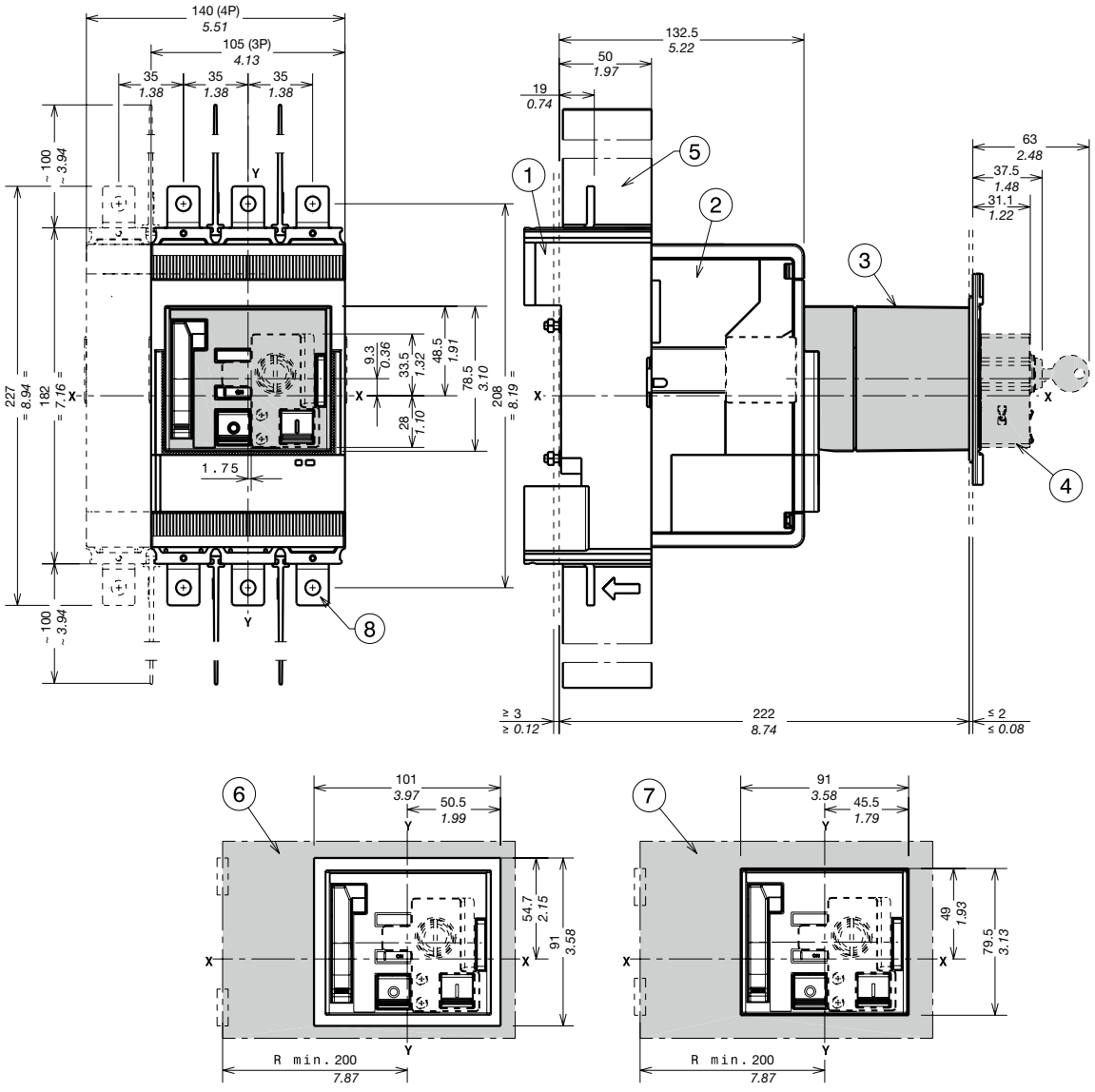


Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 3.54"/90mm

Tmax XT4 - Installation

Accessories for plug-in circuit-breaker

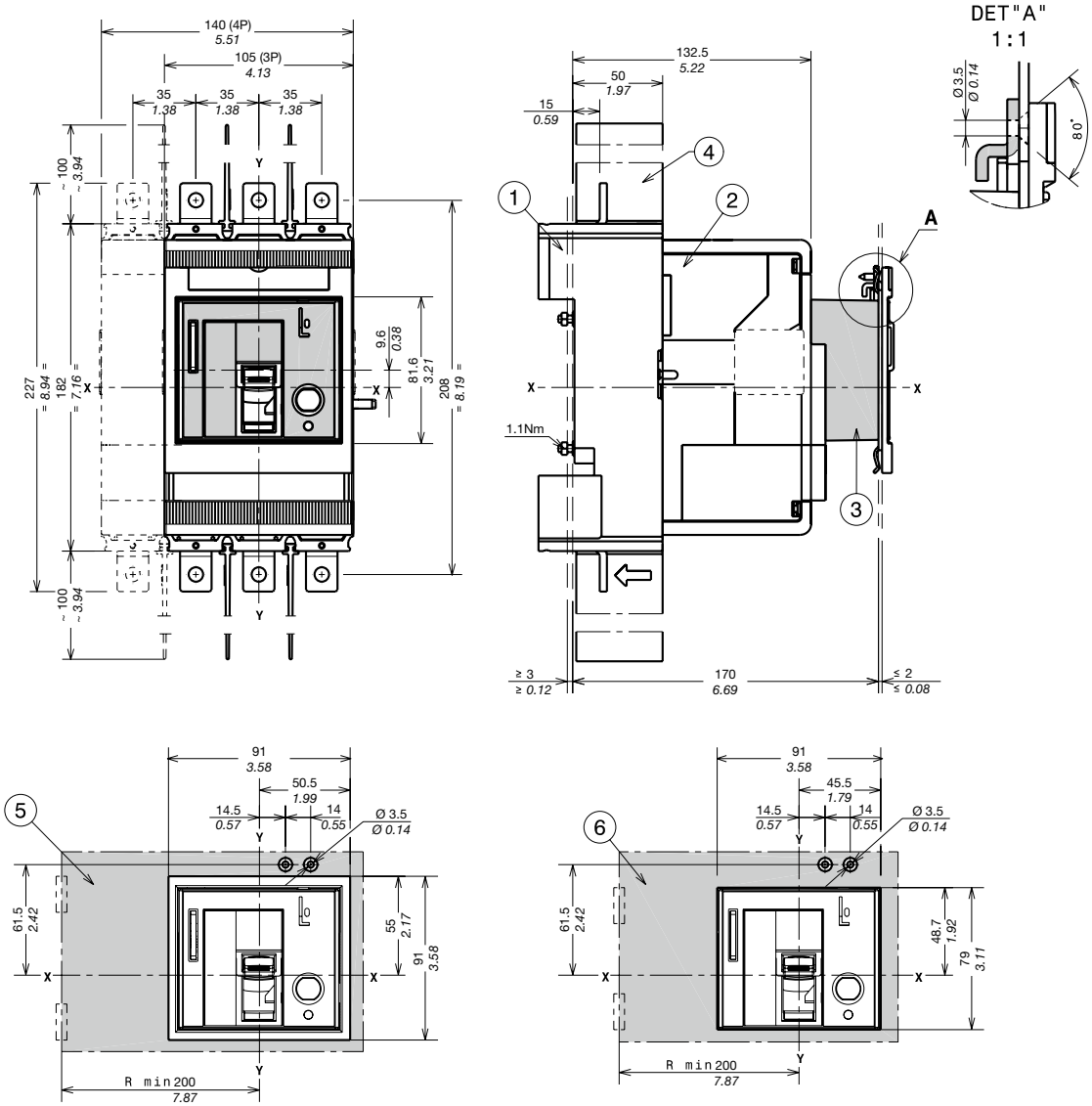
Stored energy motor operator (MOE)



Key

1 Fixed part
2 Moving part
3 Stored energy motor operator (MOE)
4 Key lock
5 Phase separators 3.94"/100mm
6 Drilling template of door with flange
7 Drilling template of door without flange
8 Extended terminals

Front for lever operating mechanism (FLD)



—

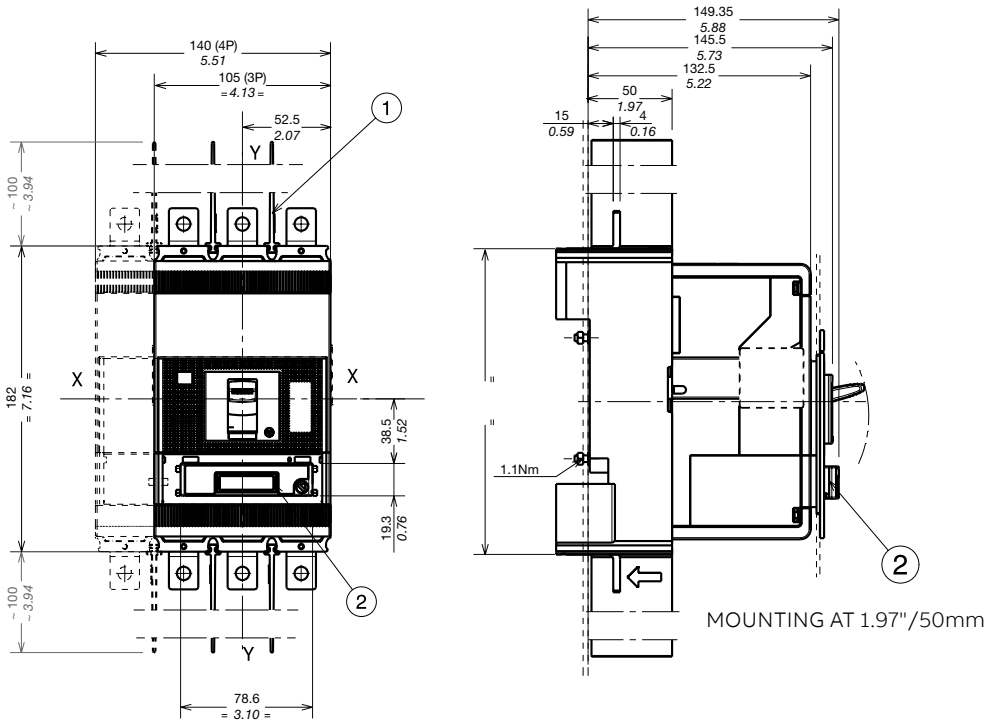
Key

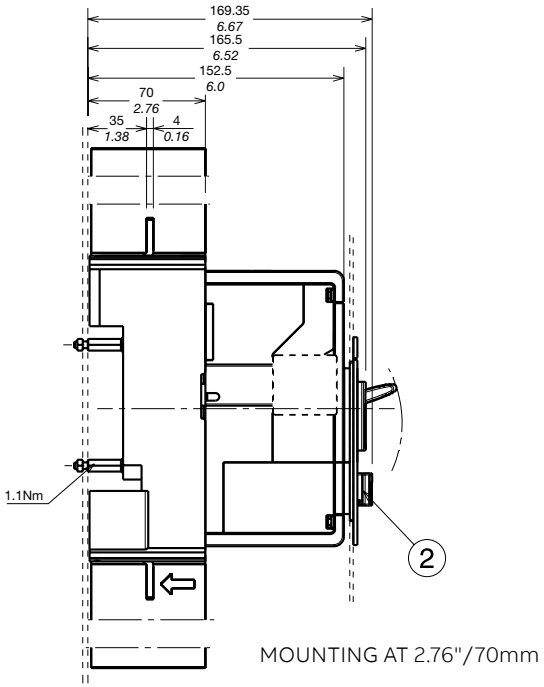
1 Fixed part
2 Moving part
3 Front for lever operating mechanism (FLD)
4 Phase separators 3.94"/100mm
5 Drilling template of door with flange
6 Drilling template of door without flange

Tmax XT4 - Installation

Accessories for plug-in circuit-breaker

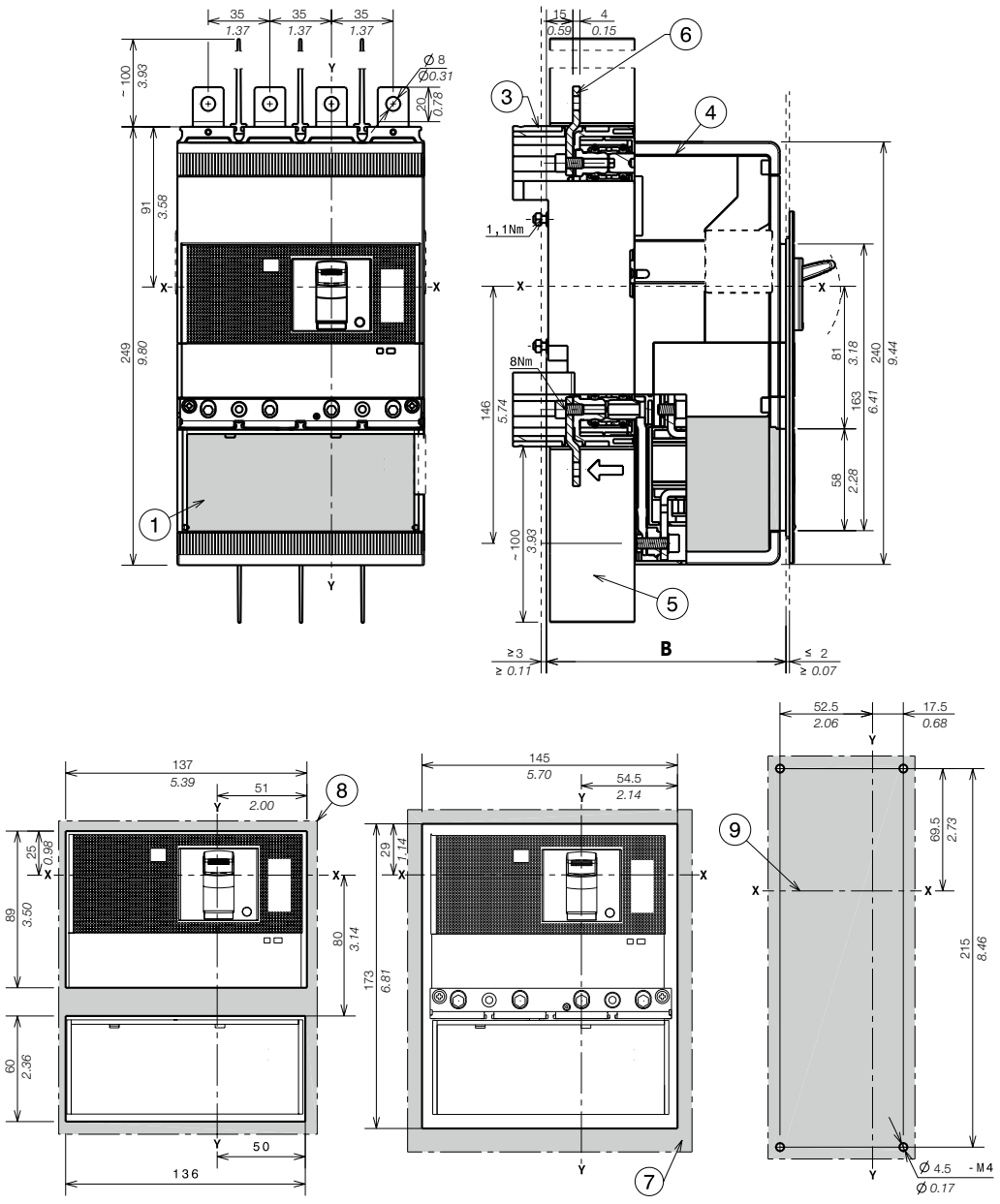
Ekip Display or LED Meter





Key
1 Phase separators 3.94"/100mm (compulsory) provided
2 Ekip Display or LED Meter

Residual current RC Sel



—

Key

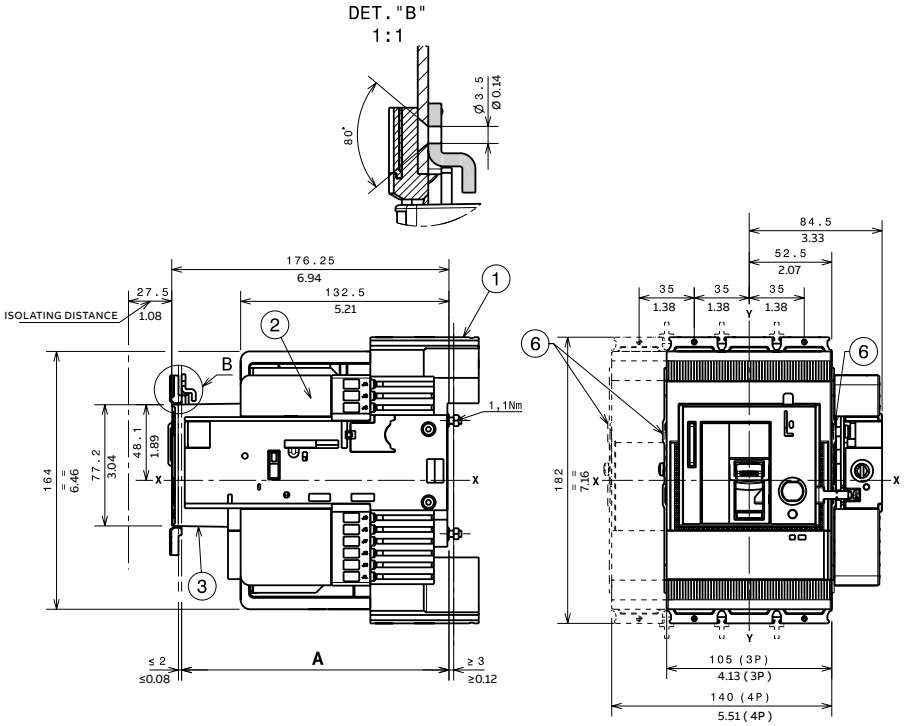
1 Residual current
3 Fixed part
4 Moving part
5 Phase separators 3.94"/100mm
6 Extended terminals
7 Drilling template of door with flange
8 Drilling template of door without flange
9 Drilling template for mounting circuit-breaker on sheet

		A [in/mm]
With standard flange	4p	5.35/136
Without flange	4p	52.56/133.5

Tmax XT4 - Installation

Installation for withdrawable circuit-breaker

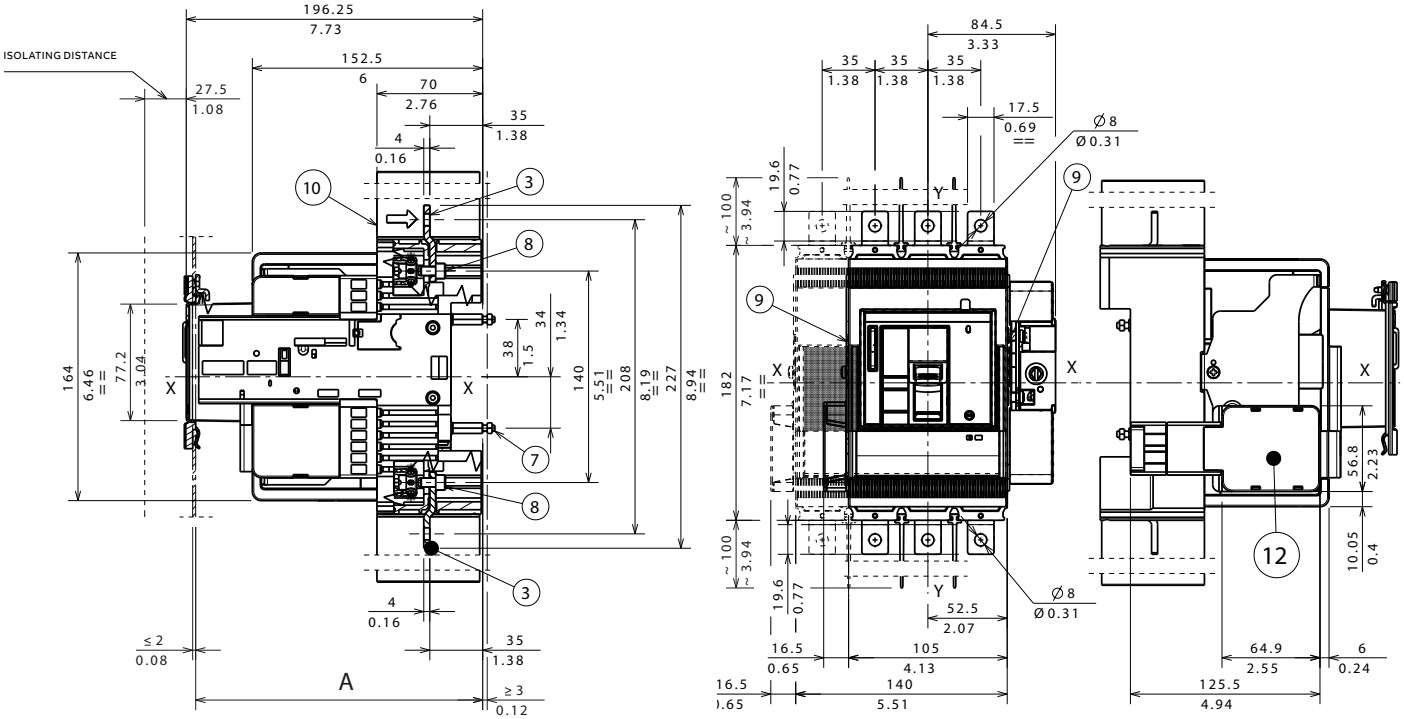
Fixing on sheet



			A [in/mm]
With standard flange	3p-4p	Fixing at 1.97"/50mm	6.69/170
	3p-4p	Fixing at 2.76"/70mm for extended front terminals	7.48/190

—
Key
1 Fixed part
2 Moving part
3 FLD (FLD or RHD or RHE or MOE) mandatory with withdrawable version
6 Optional wiring ducts

With side connector for Ekip Touch trip units



—

Key

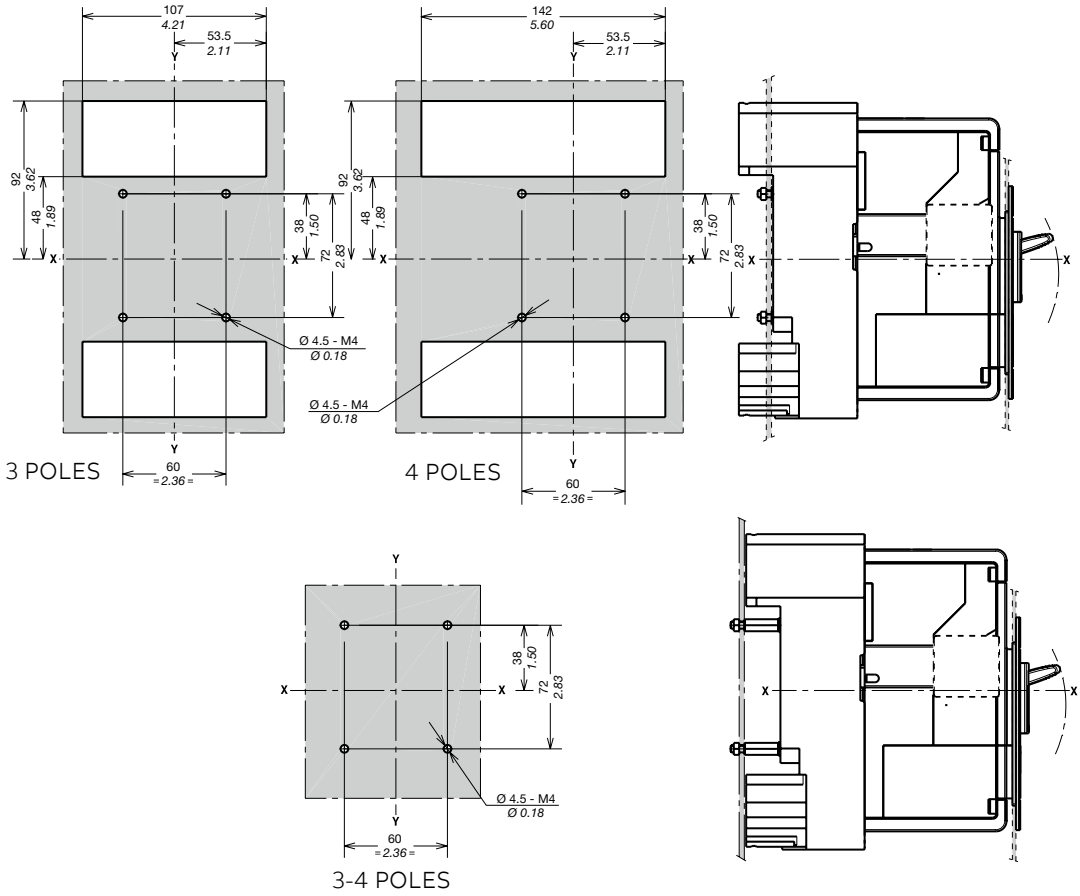
1 Fixed part
2 Moving part
3 FLD (FLD or RHD or RHE or MOE) mandatory with withdrawable version
4 Flange
9 Optional wiring ducts
12 Connection kit W IntBus/ExtNeut/Sel

			A [in/mm]
With standard flange	3p-4p	Fixing at 1.97"/50mm	6.69/170
	3p-4p	Fixing at 2.76"/70mm for extended front terminals	7.48/190

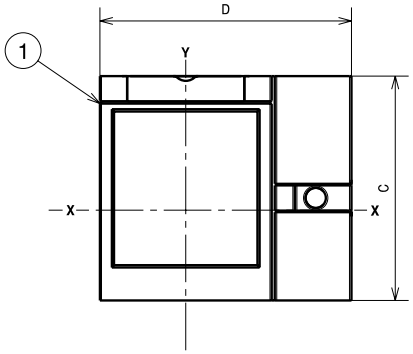
Tmax XT4 - Installation

Installation for withdrawable circuit-breaker

Drilling templates for the backplate



Flanges

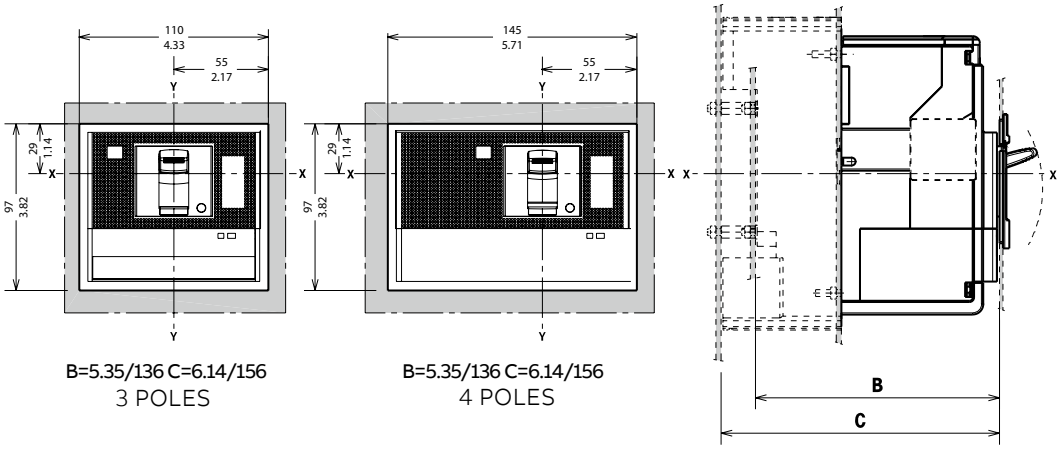


Key
1 Flange for withdrawable 3p-4p circuit-breakers

	C [in/mm]	D [in/mm]
RHD	4.37/111	4.90/124.5
FLD - MOE	4.5/114.3	5.29/134.5

Drilling templates for compartment door

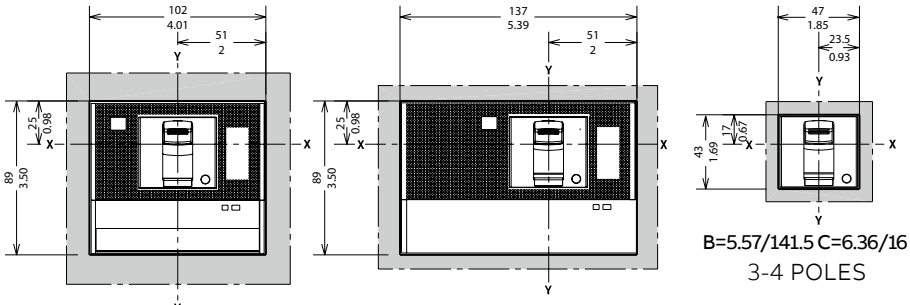
With standard flange



B=5.35/136 C=6.14/156
3 POLES

B=5.35/136 C=6.14/156
4 POLES

Without flange

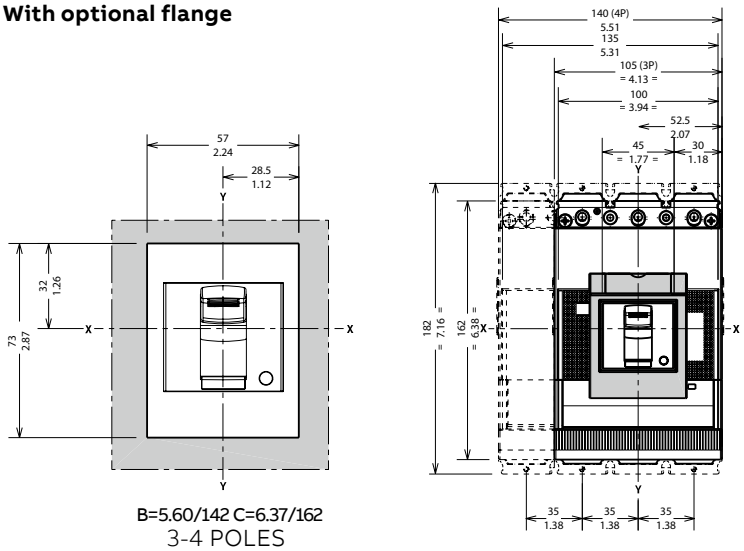


B=5.57/141.5 C=6.36/16
3-4 POLES

B=5.26/133.5 C=6.04/153.5
3 POLES

B=5.26/133.5 C=6.04/153.5
4 POLES

With optional flange

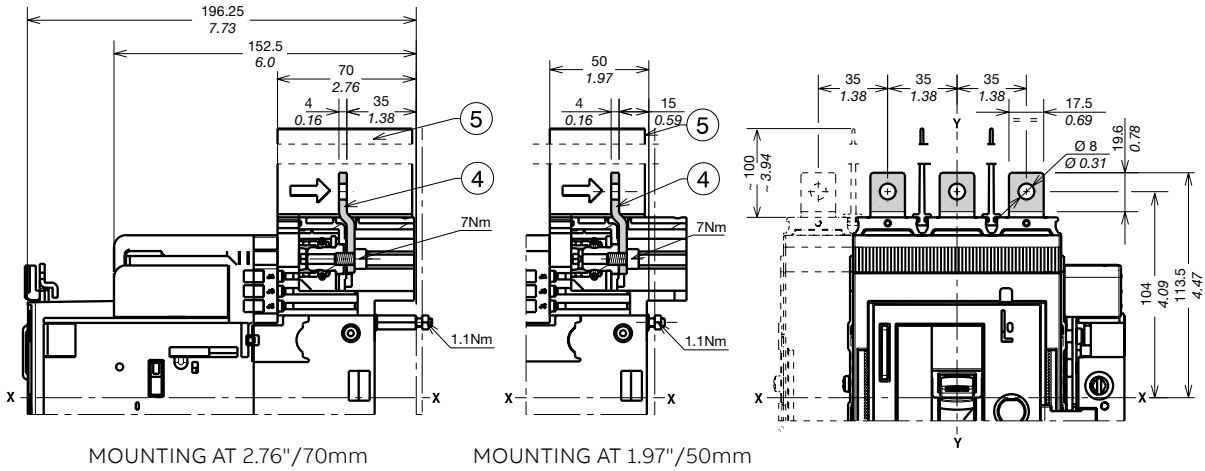


B=5.60/142 C=6.37/162
3-4 POLES

Tmax XT4 - Installation

Terminals for withdrawable circuit-breaker

Terminals EF



MOUNTING AT 2.76"/70mm

MOUNTING AT 1.97"/50mm

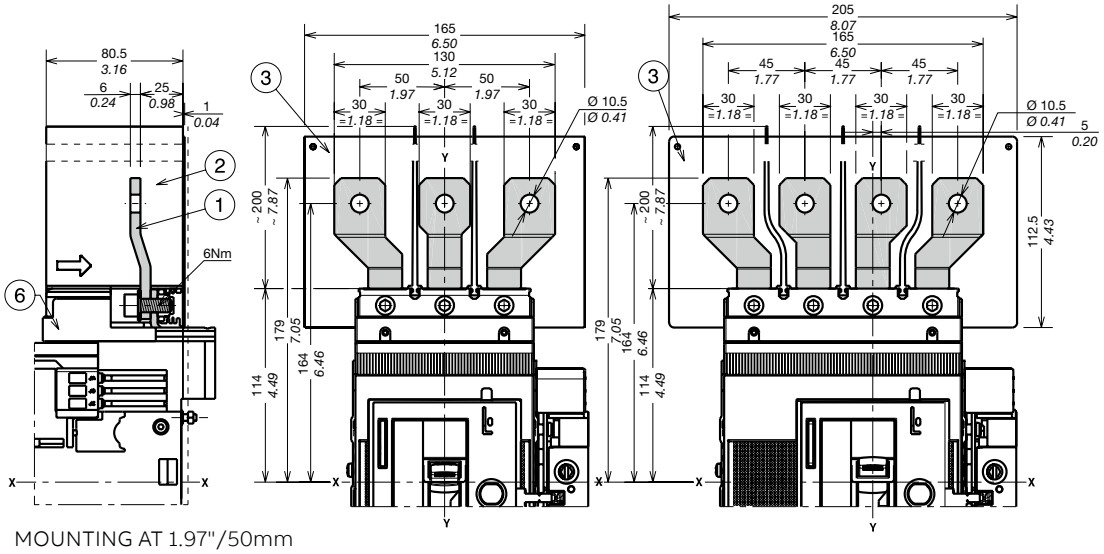
—

Key

4 Front extended terminals

5 Phase separators 3.94"/100mm

Terminals ES



—

Key

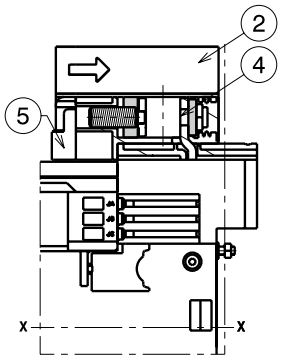
1 Front extended spread terminals
2 Phase separators 7.87"/200mm
3 Insulated plate provided compulsory for Ue>440V
4 Drilling template for 3p circuit-breaker
5 Drilling template for 4p circuit-breaker
6 Adapter

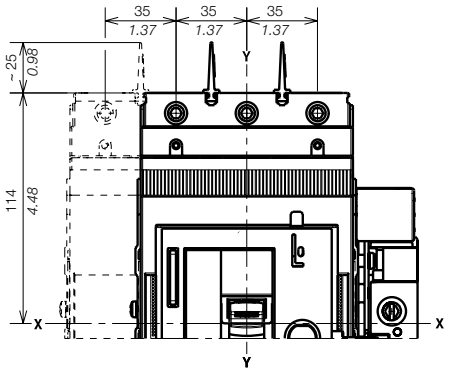
Tmax XT4 - Installation

Terminals for withdrawable circuit-breaker

1 x 14...1/0 AWG terminals FCCuAl

Key
2 Phase separators 0.98"/25mm
4 Front terminals FCCuAl
5 Adapter

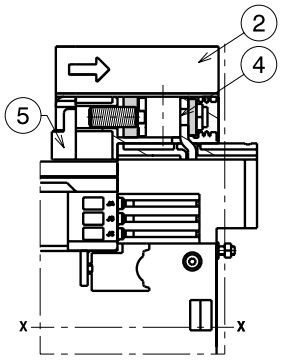


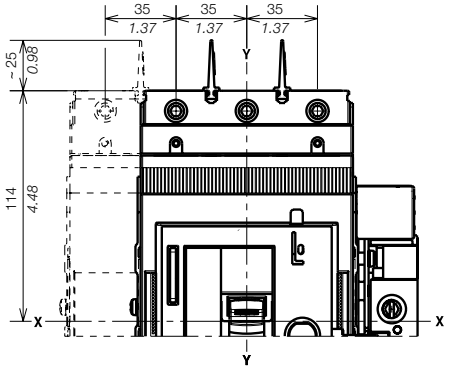


MOUNTING AT 1.97"/50mm

1 x 4AWG...300kcmil terminals FC CuAl

Key
2 Phase separators 0.98"/25mm
4 Front terminals FCCuAl
5 Adapter

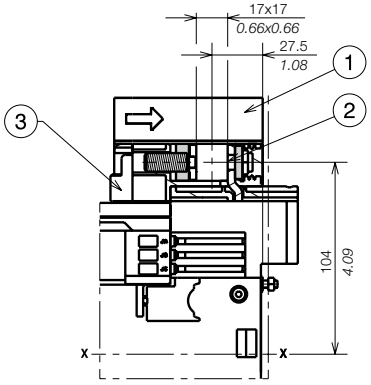


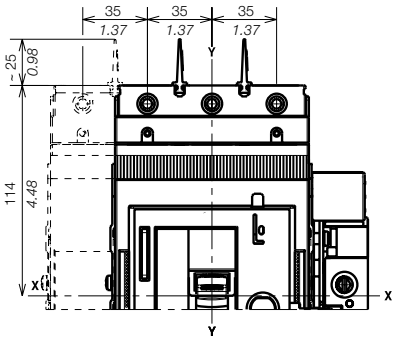


MOUNTING AT 1.97"/50mm

Terminals FCCu

Key
1 Phase separators 0.98"/25mm
2 Terminals FCCu
3 Adapter

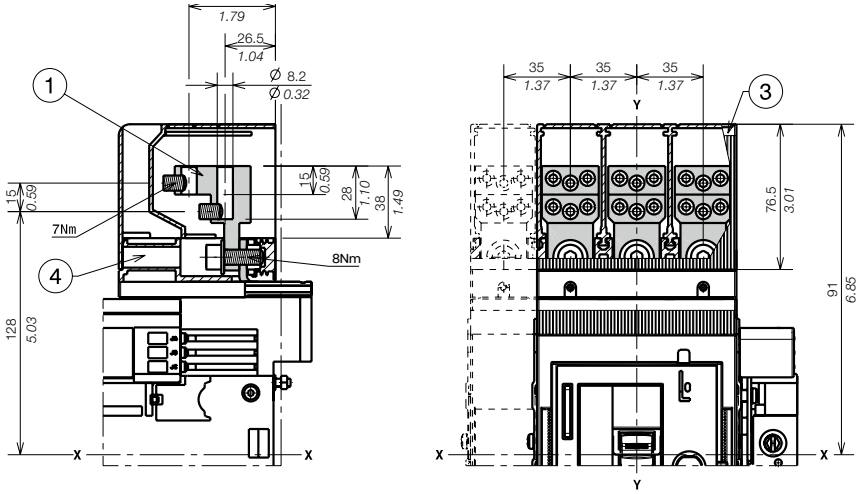




MOUNTING AT 1.97"/50mm

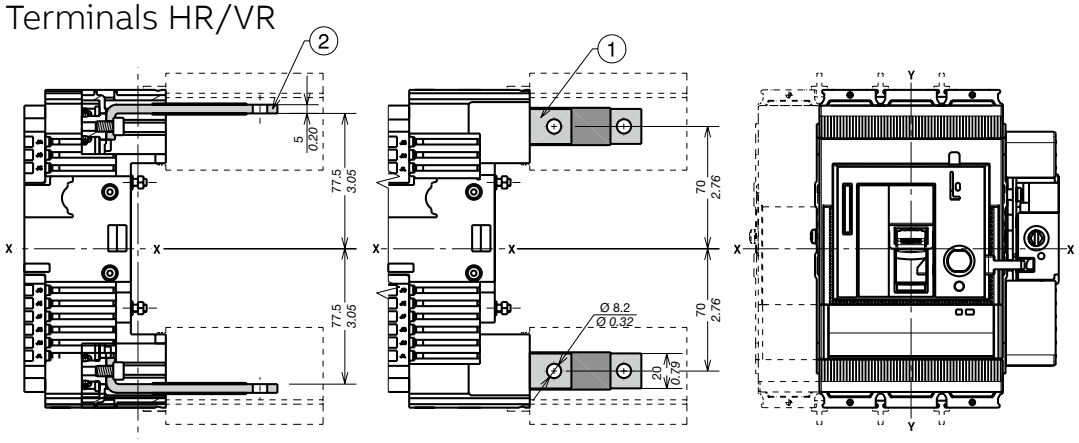
Terminals MC

—
Key
1 Multicable terminals
3 High terminal covers with degree of protection IP40
4 Adapter



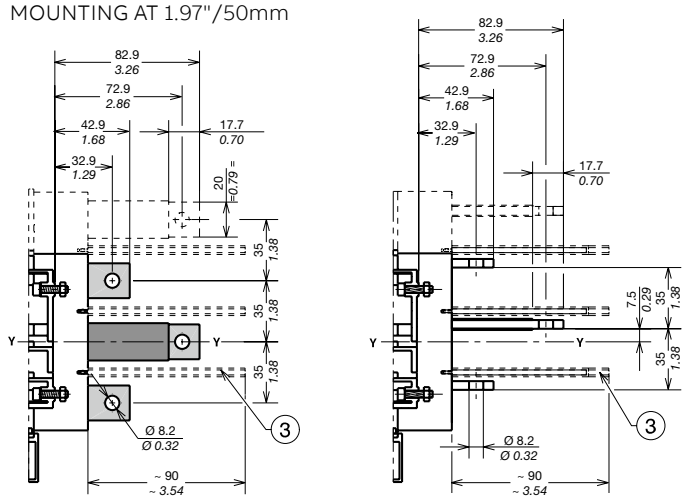
MOUNTING AT 1.97"/50mm

Terminals HR/VR



MOUNTING AT 1.97"/50mm MOUNTING AT 1.97"/50mm

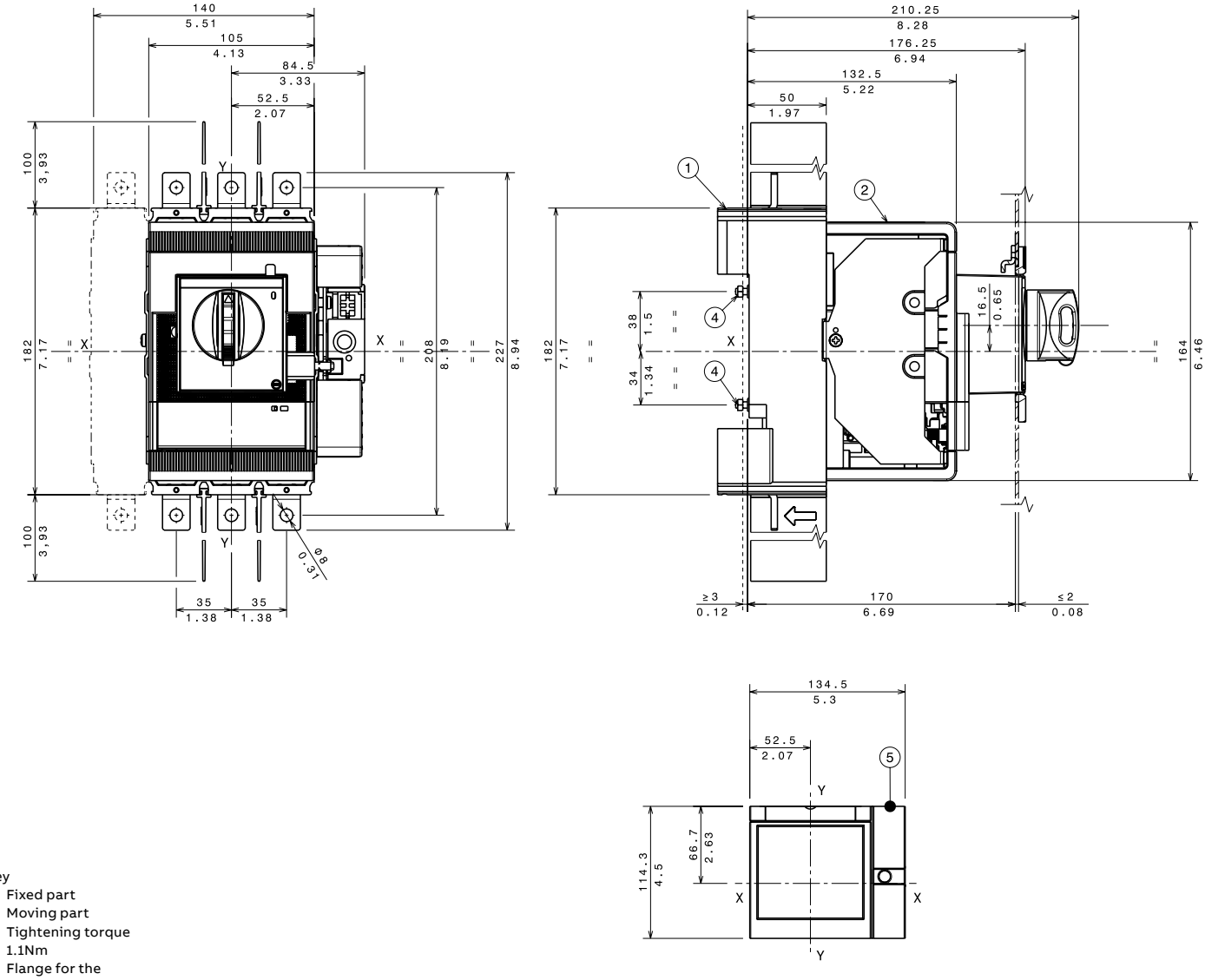
—
Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 3.54"/90mm



Tmax XT4 - Installation

Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on circuit-breakers (RHD)

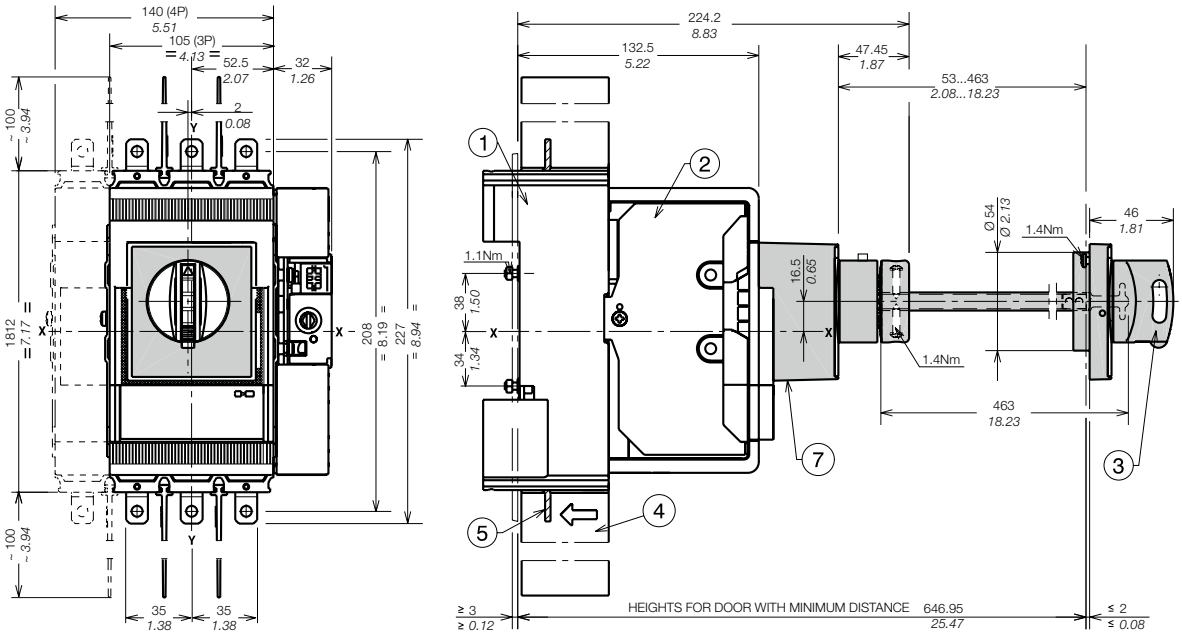


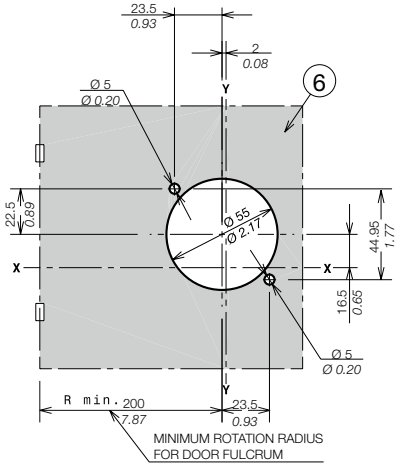
—

Key

1 Fixed part
2 Moving part
4 Tightening torque 1.1Nm
5 Flange for the compartment door
6 Rotary handle operating mechanism for circuit-breaker

Rotary handle operating mechanism with padlock on the compartment door (RHE-PL)





—

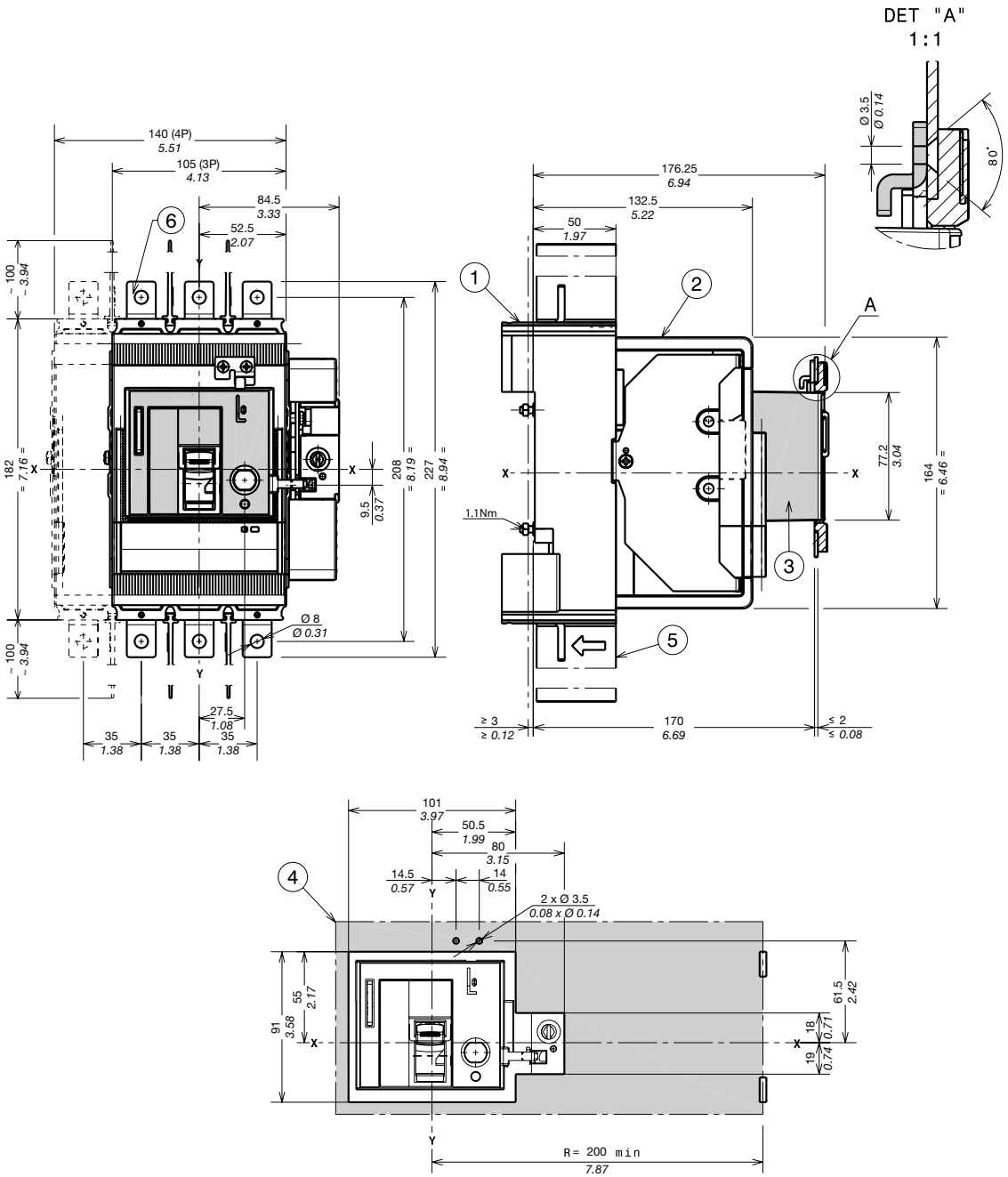
Key

1 Fixed part
2 Moving part
3 Rotary handle operating mechanism on the compartment door (RHE)
4 Phase separators 3.94"/100mm
5 Extended terminals
6 Door drilling template with extended rotary handle
7 Transmission unit

Tmax XT4 - Installation

Accessories for withdrawable circuit-breaker

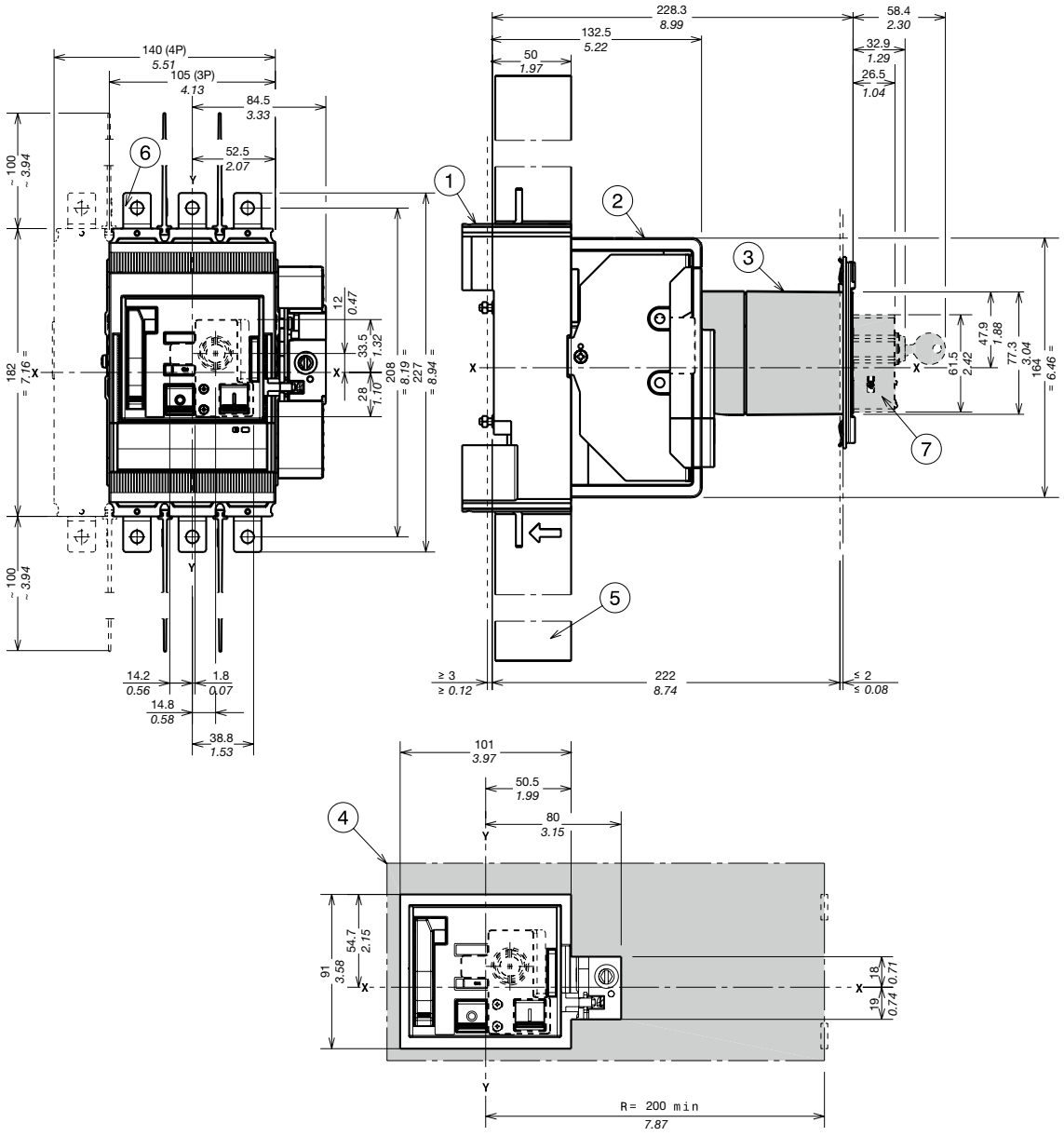
Front for lever operating mechanism (FLD)



Key

1 Fixed part
2 Moving part
3 Front for lever operating mechanism FLD
4 Drilling template of door with fixed flange
5 Phase separators 3.94"/100mm
6 Extended terminals

Stored energy motor operator (MOE)



—

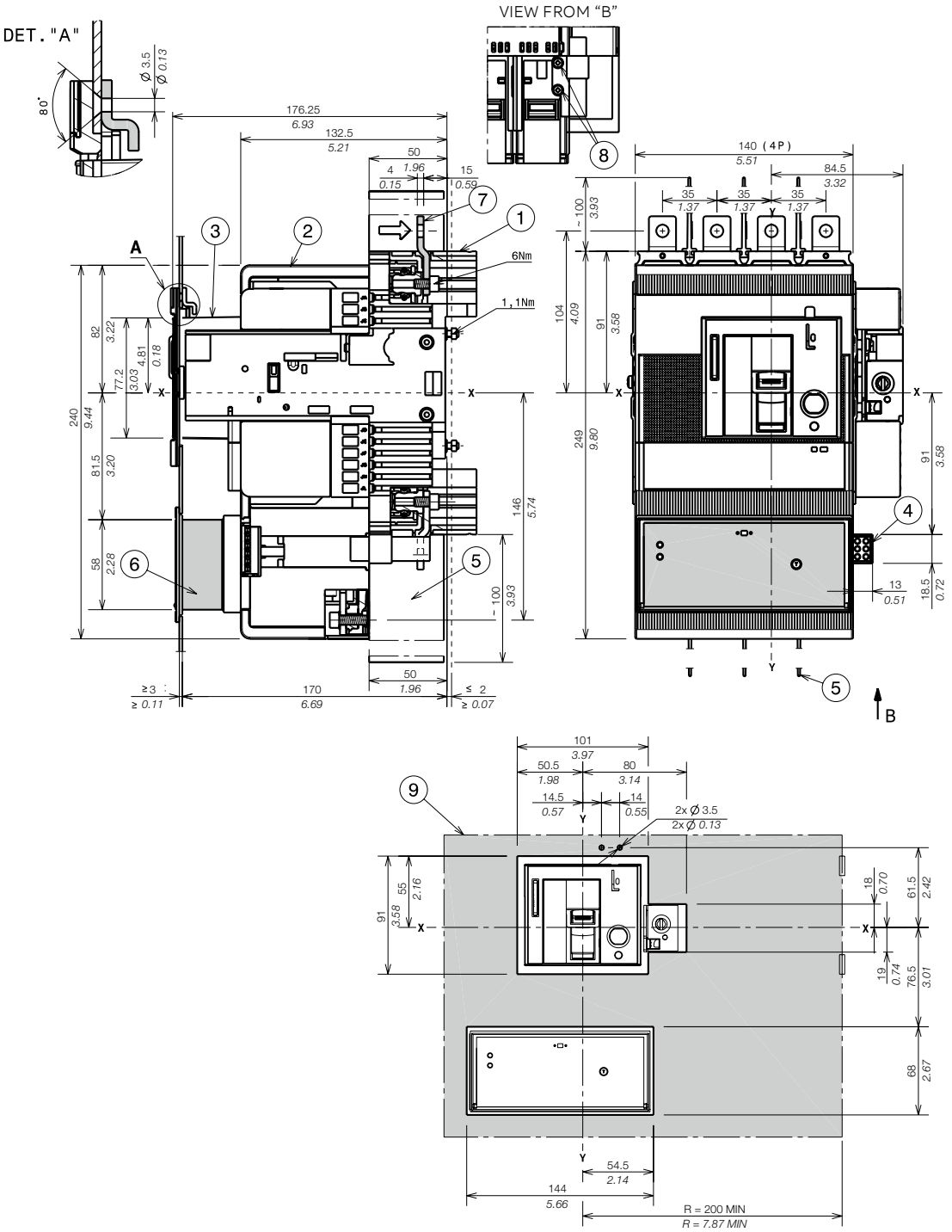
Key

1 Fixed part
2 Moving part
3 Stored energy motor operator (MOE)
4 Drilling template of door with MOE and fixing flange
5 Phase separators 3.94"/100mm
6 Extended terminals
7 Key lock

Tmax XT4 - Installation

Accessories for withdrawable circuit-breaker

Residual current RC Sel 4 poles



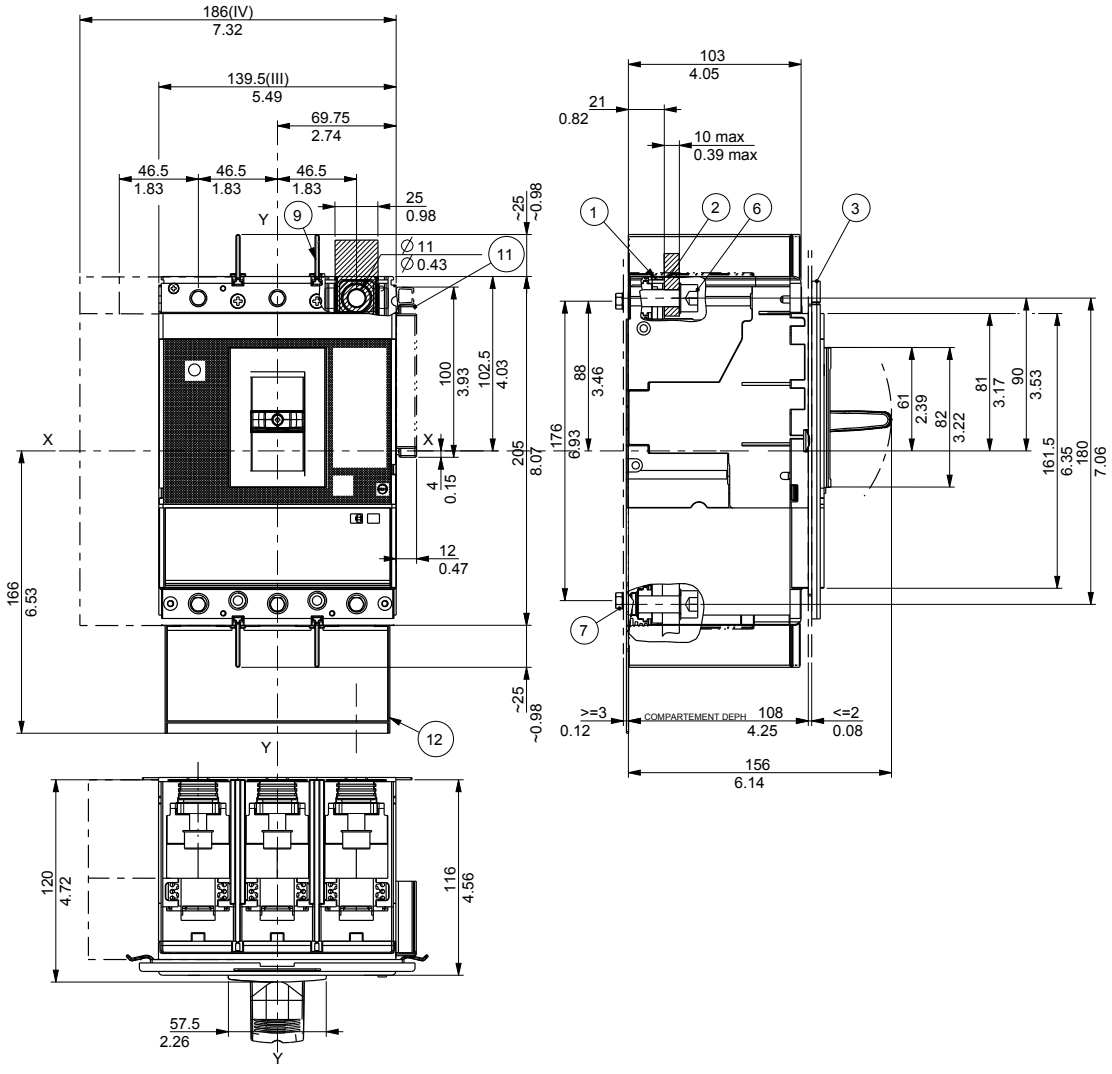
Key

1 Fixed part
2 Moving part
3 Front for lever operating mechanism
4 Connector residual current
5 Phase separators 3.94"/100mm
6 Residual current
7 Extended terminals
8 Mounting screws for fixed part of connector
9 Drilling template of door with fixed flange

Tmax XT5 - Installation

Installation for fixed circuit-breaker

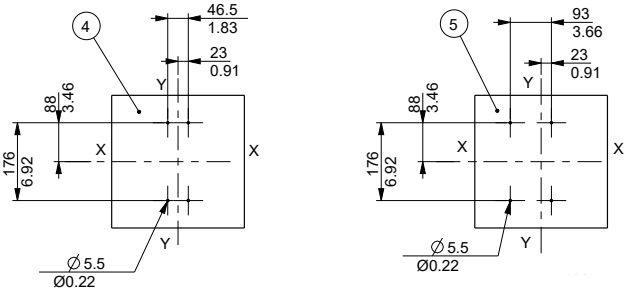
Fixing on sheet



Key

1 Front terminals for flat connection
2 Busbar
3 Flange without gasket for the compartment door
6 Tightening torque 36Nm
7 Tightening torque 2Nm
9 Phase separators 0.98"/25mm
11 Cable rack
12 Plate insulating by the client or plate cap kits

Drilling templates for support sheet

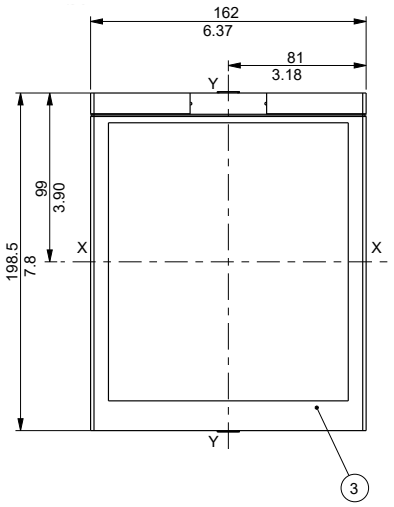


Tmax XT5 - Installation

Installation for fixed circuit-breaker

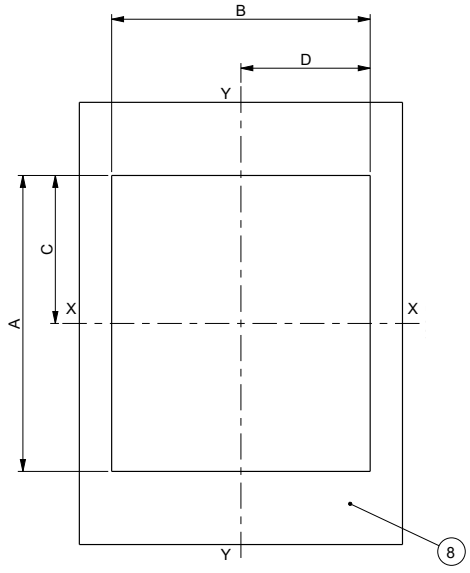
Flange

Key
3 Flange without gasket for the compartment door



Compartment door drilling templates

Key
8 Compartment door drilling template

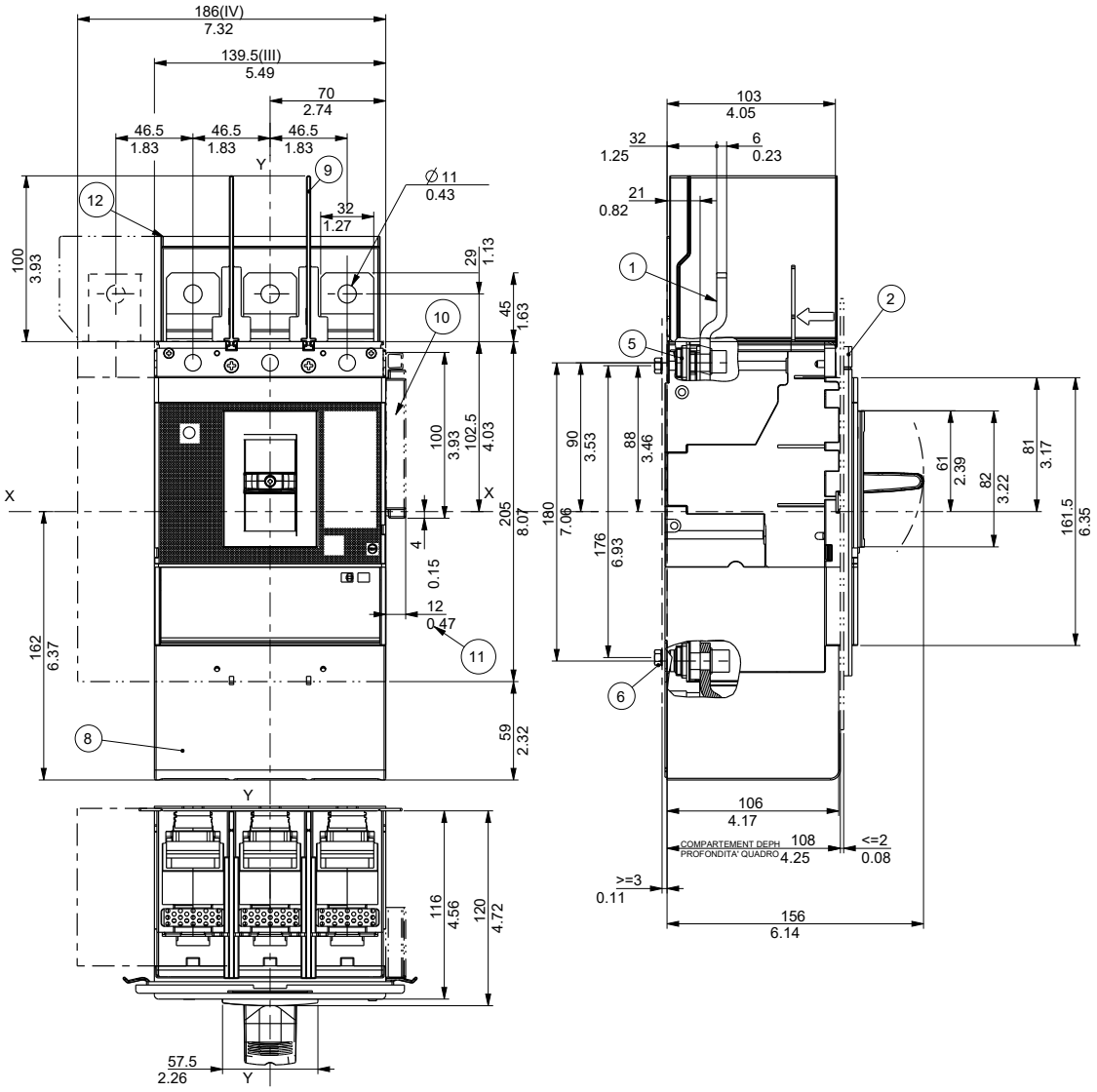


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	6.85/174	5.98/152	3.42/87	3/76
Without flange	3p-4p	6.49/165	5.63/143	3.24/82.5	2.81/71.5

Tmax XT5 - Installation

Terminals for fixed circuit-breaker

Terminals EF



—

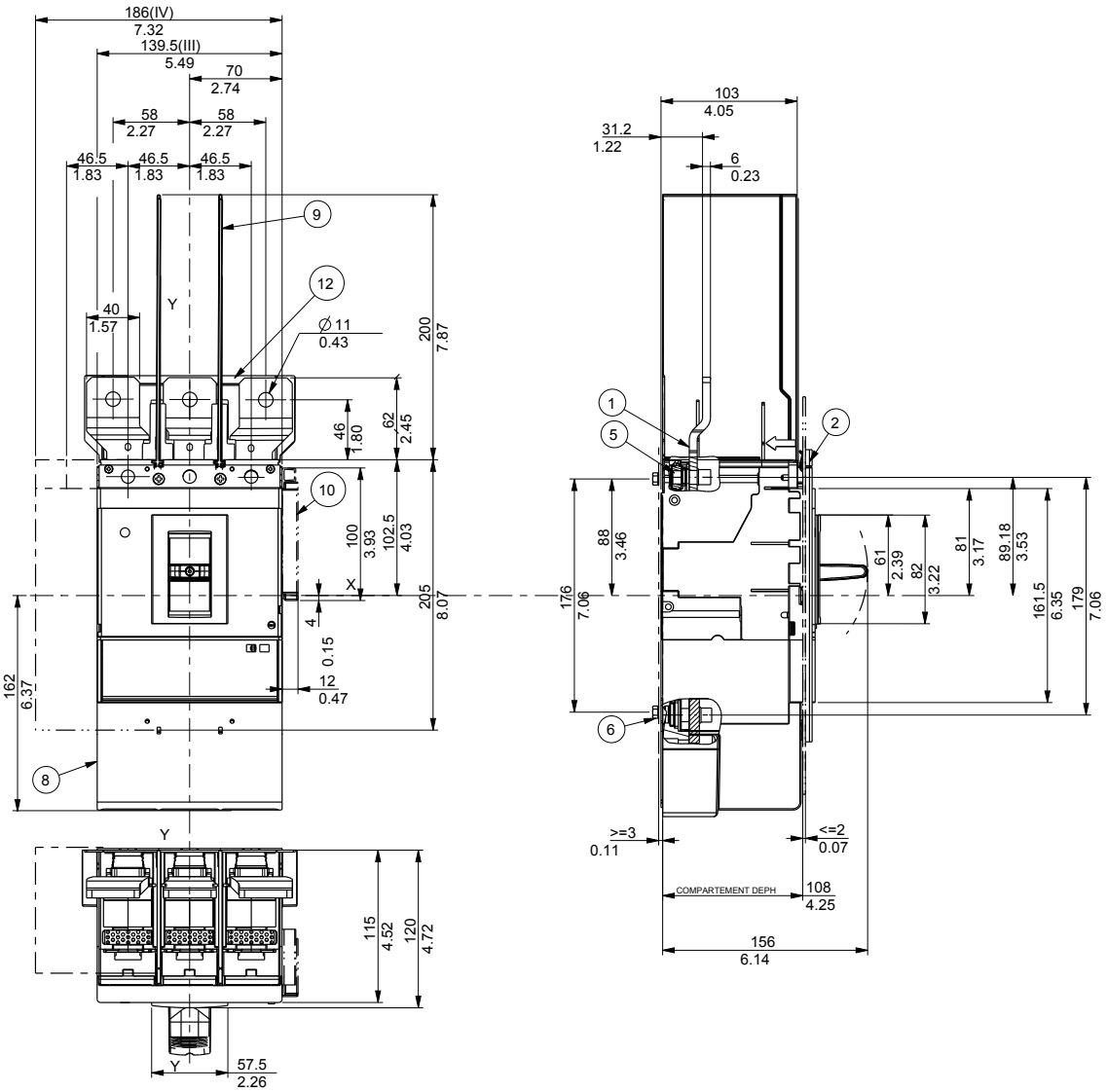
Key

1 Extended front terminals
2 Flange for the compartment door
5 Tightening torque 36Nm
6 Tightening torque 2Nm
8 High terminal cover
9 Phase separators 3.94"/100mm
10 Cable rack
12 Rear insulating plate

Tmax XT5 - Installation

Terminals for fixed circuit-breaker

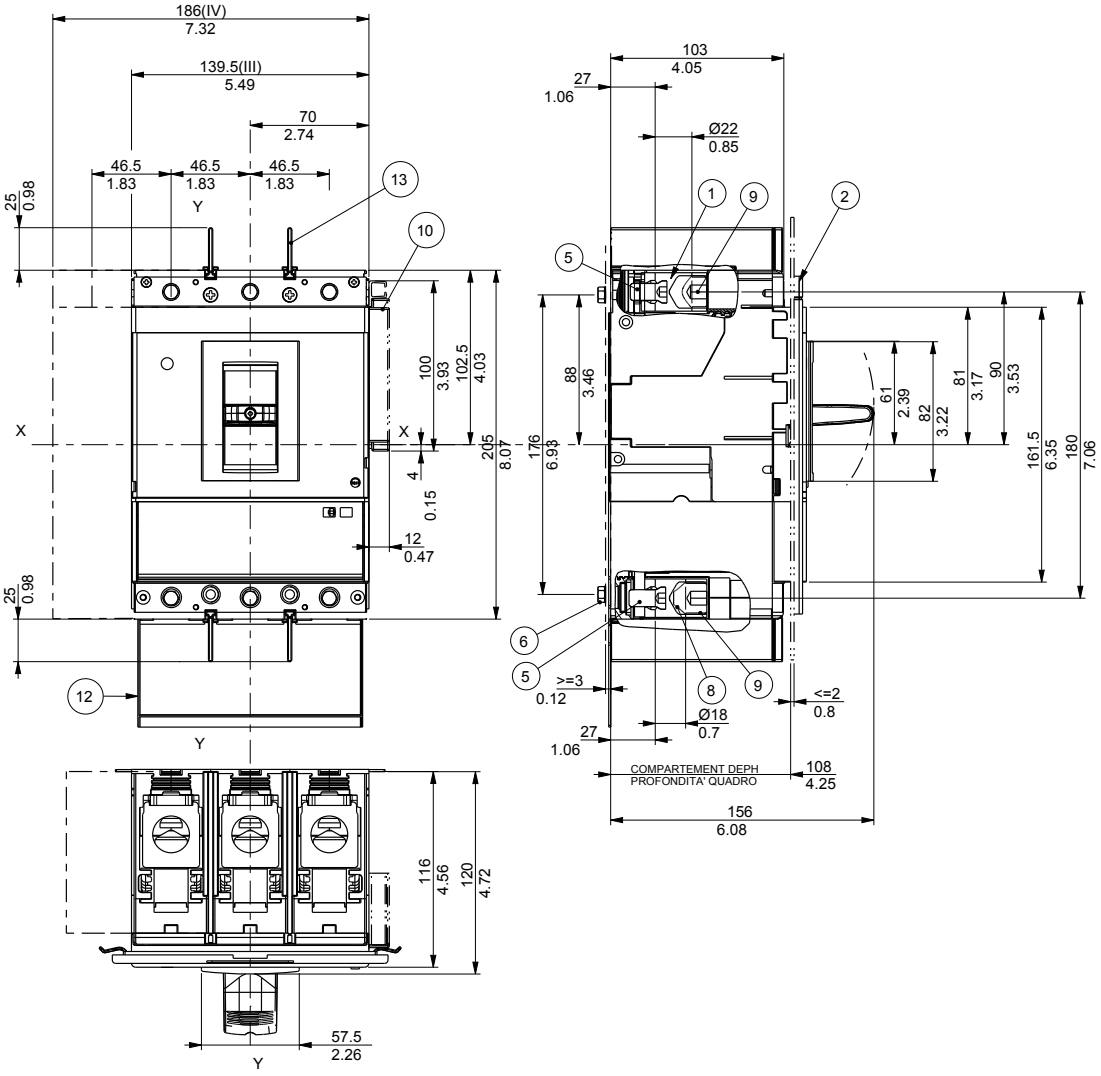
Terminals ES



Key

1 Extended front terminals
2 Flange for the compartment door
5 Tightening torque 18Nm
6 Tightening torque 2Nm
8 High spread terminal cover
9 Phase separators 7.87"/200mm
10 Cable rack
12 Rear insulating plate

1 x 4/0…500kcmil and 1 x 6AWG…350kcmil terminals FC CuAl



—

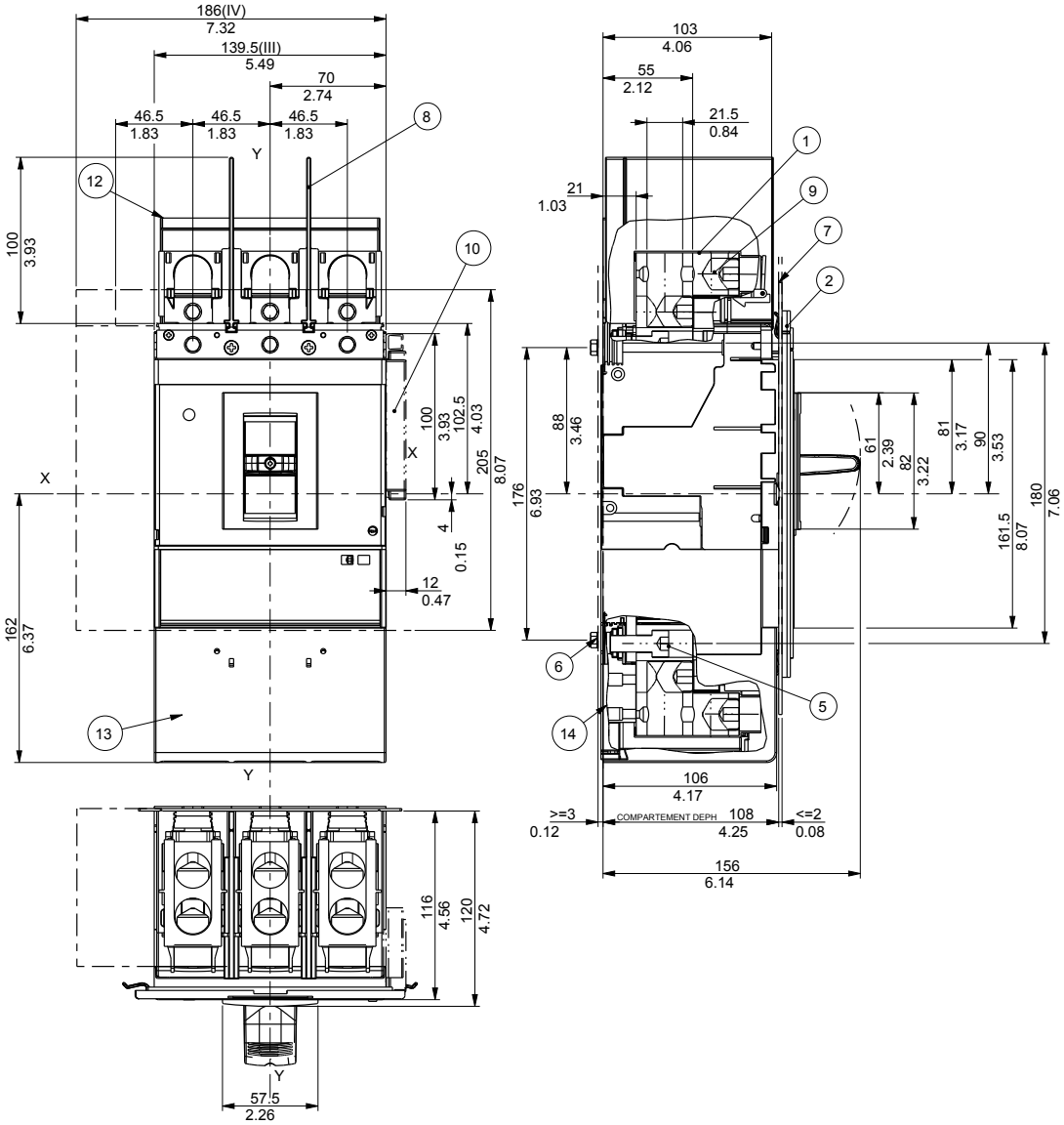
Key

1 Terminals FCCuAl 1x4/0...500Kcmil
2 Flange for the compartment door
5 Tightening torque 23Nm
6 Tightening torque 2Nm
8 Terminals FCCuAl 1x6AWG...350Kcmil
9 Tightening torque 23Nm
10 Cable rack
12 Rear insulating plate
13 Phase separators 0.98"/25mm

Tmax XT5 - Installation

Terminals for fixed circuit-breaker

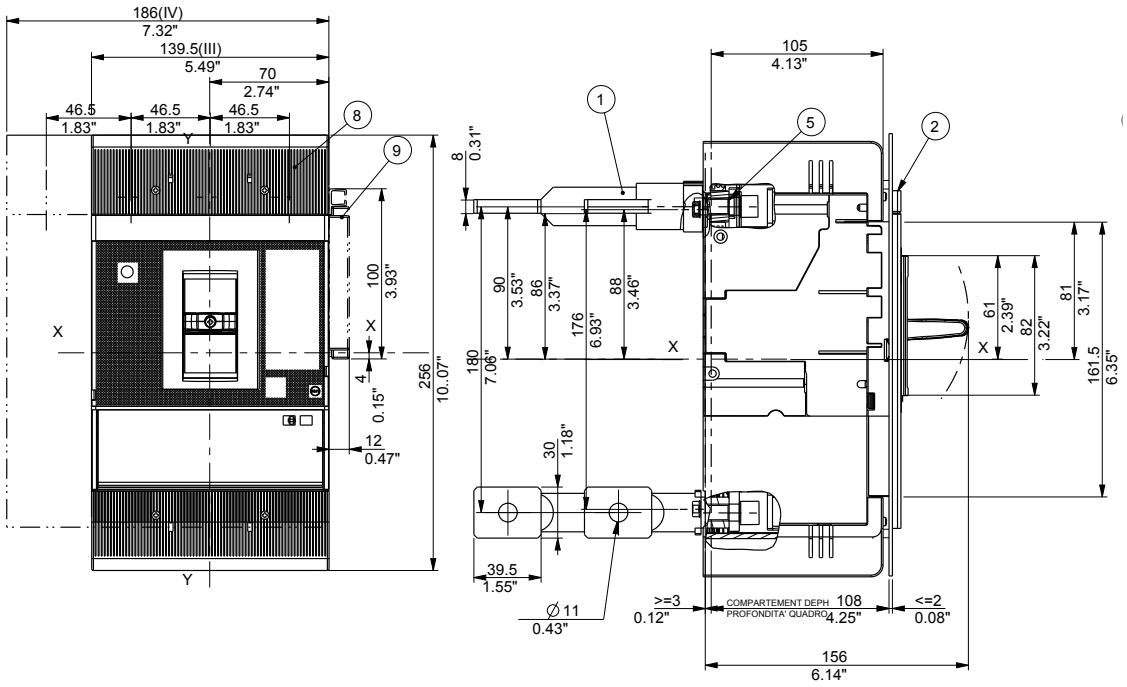
2 x 2/0AWG...500kcmil terminals FC CuAl



Key

1 Terminals FCCuAl 2 x 2/0AWG...500kcmil
2 Flange for the compartment door
5 Tightening torque 36Nm
6 Tightening torque 2Nm
7 Compartment door drilling template for flange without gasket
8 Phase separators 3.94"/100mm
9 Tightening torque 31Nm
10 Cable rack
12 Cap kits plate
13 High terminal cover
14 Form base 4p optional in alternative plate cap kits

Terminals R



—

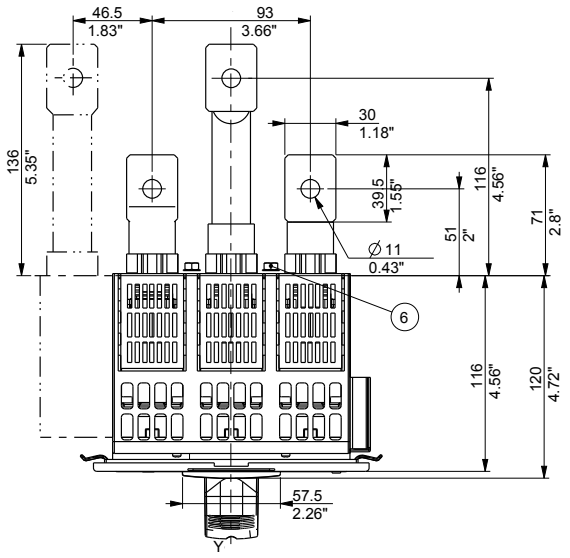
Key

1 Rear terminals
2 Flange without gasket for the compartment door
5 Tightening torque 18Nm
8 Low terminal cover
9 Cable rack

Tmax XT5 - Installation

Terminals for fixed circuit-breaker

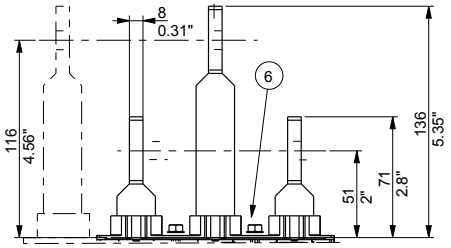
Terminals HR upper



Key

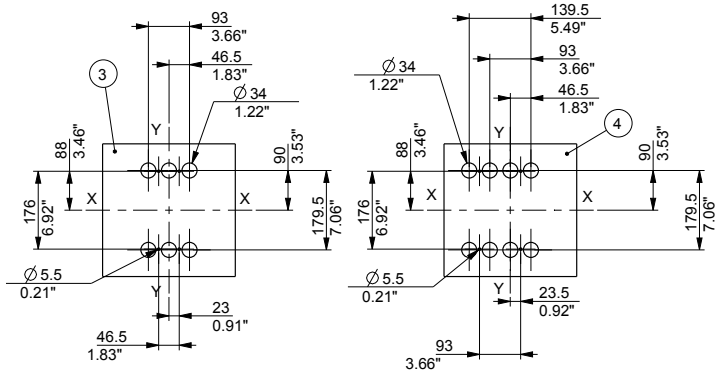
6 Tightening torque 2Nm

Terminals VR lower



Key

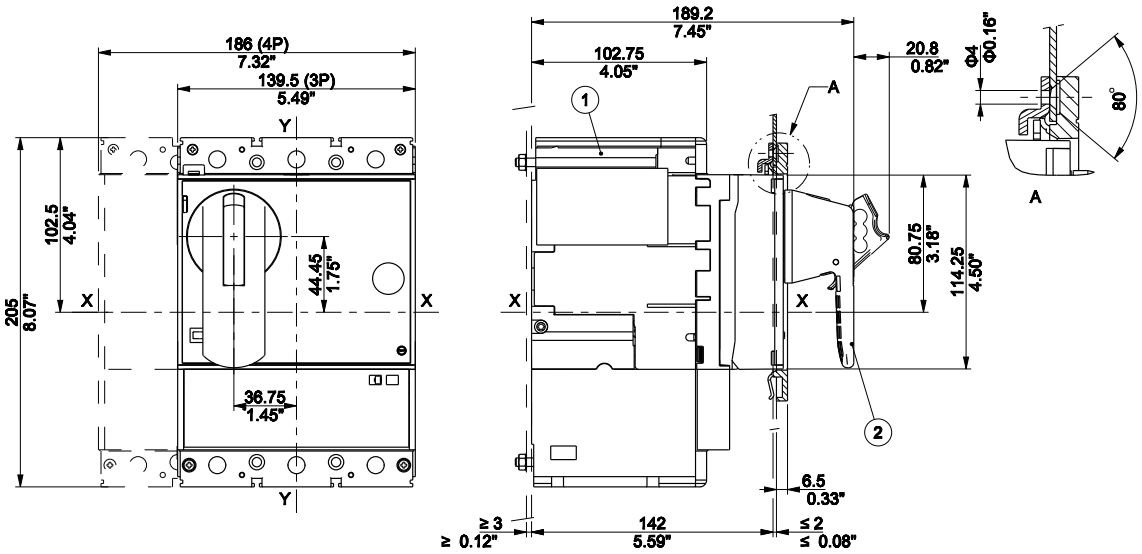
3 Drilling template 3p
4 Drilling template 4p
6 Tightening torque 2Nm



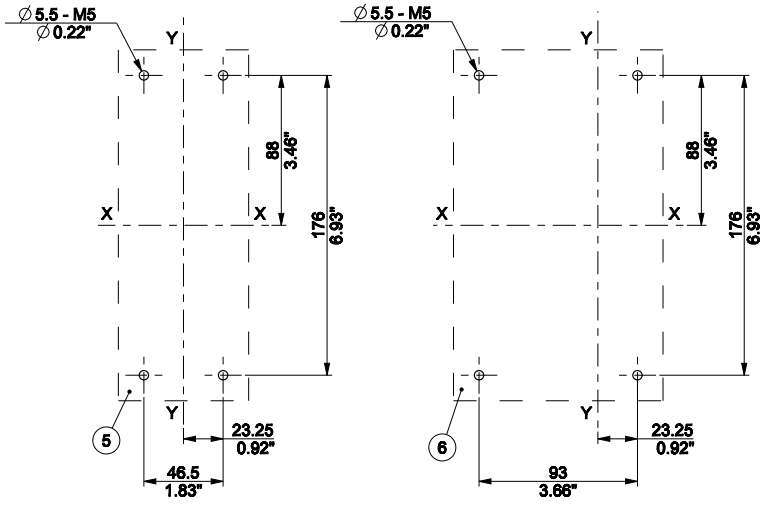
Tmax XT5 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the circuit-breaker (RHD)



Drilling templates for support sheet



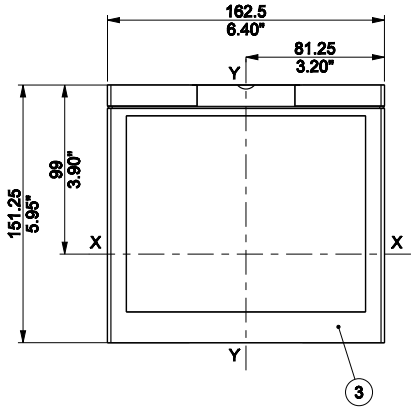
Key
1 Circuit-breaker
2 Rotary handle operating mechanism on circuit-breaker
3 Flange for the compartment door
4 Compartment door drilling template with/without flange
5 Drilling template 3p
6 Drilling template 4p

Tmax XT5 - Installation

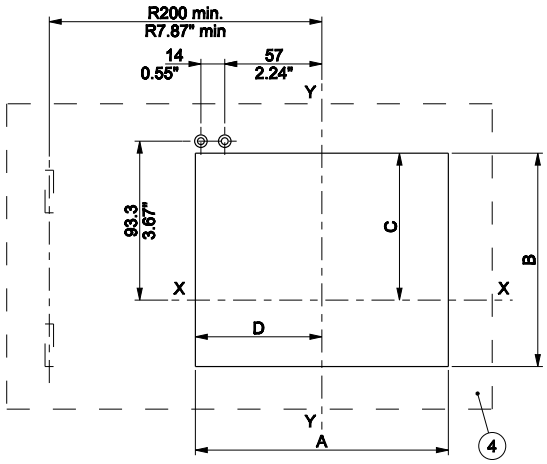
Accessories for fixed circuit-breaker

Flange

Key
3 Flange for the compartment door
4 Compartment door drilling template with/without flange



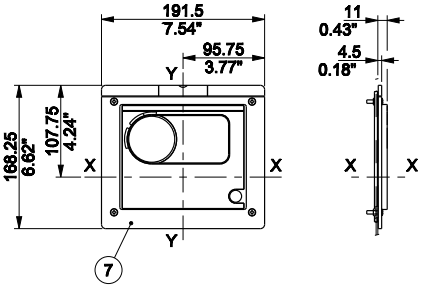
Compartment door drilling templates



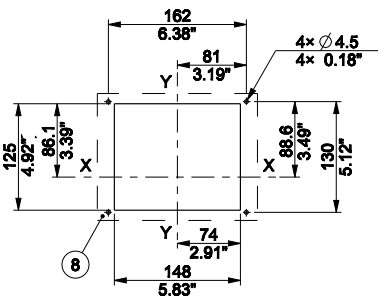
		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

Flange IP54

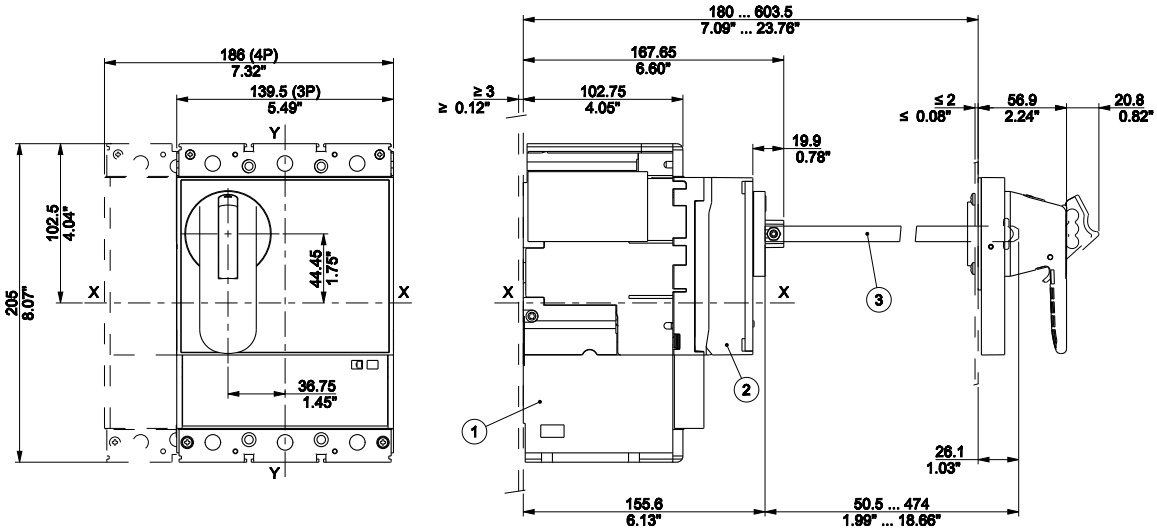
Key
7 IP54 flange for the compartment door
8 Compartment door drilling template with IP54 flange

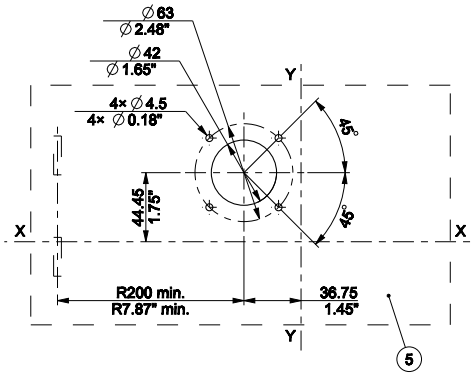


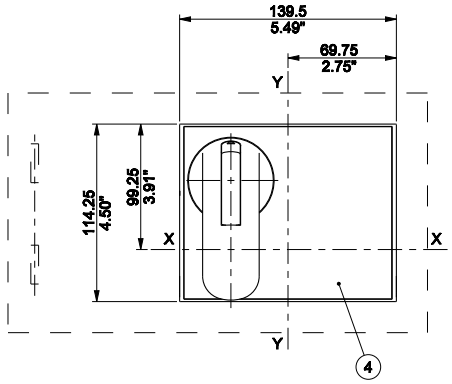
Compartment door drilling templates with flange IP54



Rotary handle operating mechanism on the compartment door (RHE)





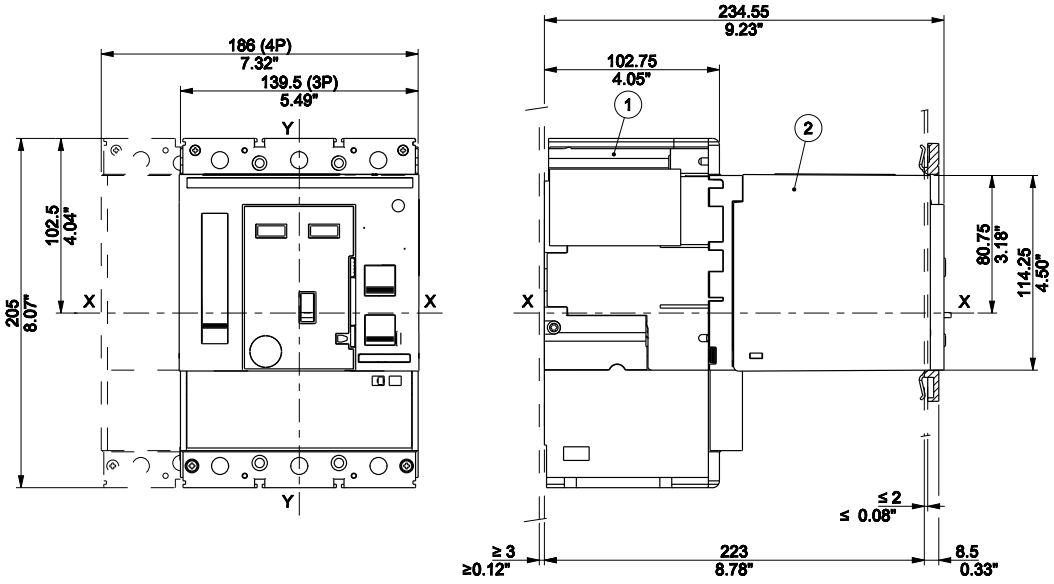


Key
1 Circuit-breaker
2 Base of rotary handle operating mechanism
3 300mm Connection rod
4 Rotary handle operating mechanism of compartment door
5 Compartment door drilling template
6 Drilling template 3p
7 Drilling template 4p

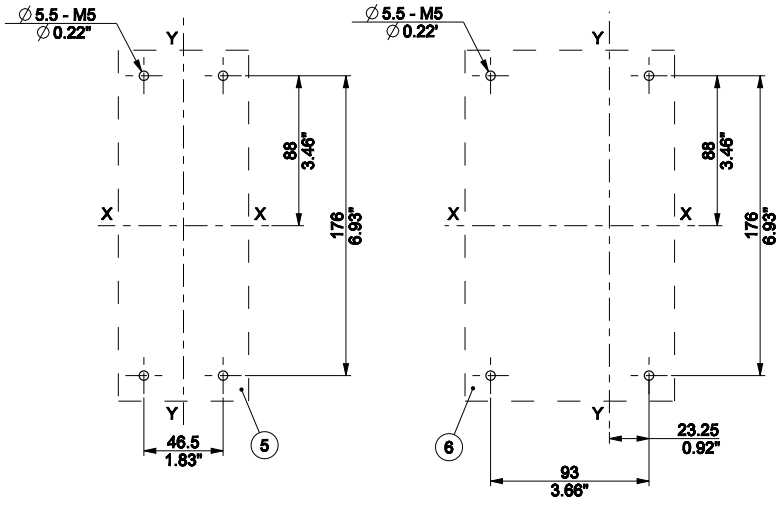
Tmax XT5 - Installation

Accessories for fixed circuit-breaker

Stored energy motor operator (MOE)



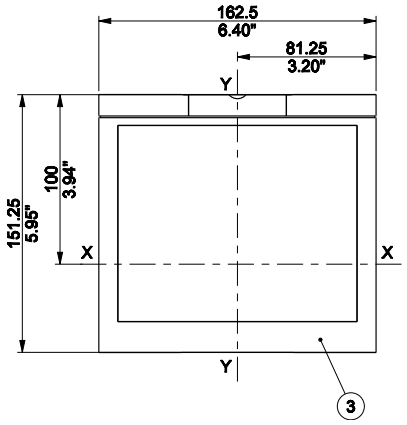
Drilling templates for support sheet



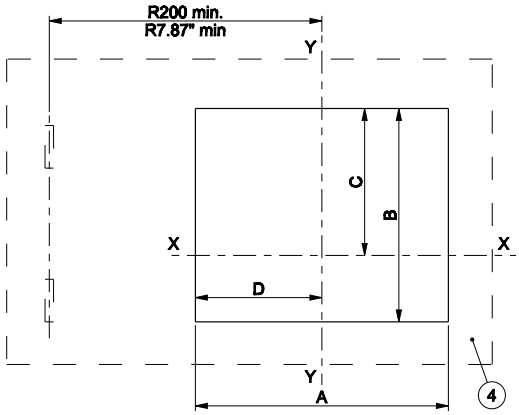
Key
1 Circuit-breaker
2 Stored energy motor operator
3 Flange for the compartment door
4 Compartment door drilling template with/without flange
5 Drilling template 3p
6 Drilling template 4p

Flange

—
Key
3 Flange for the compartment door



Compartment door drilling templates



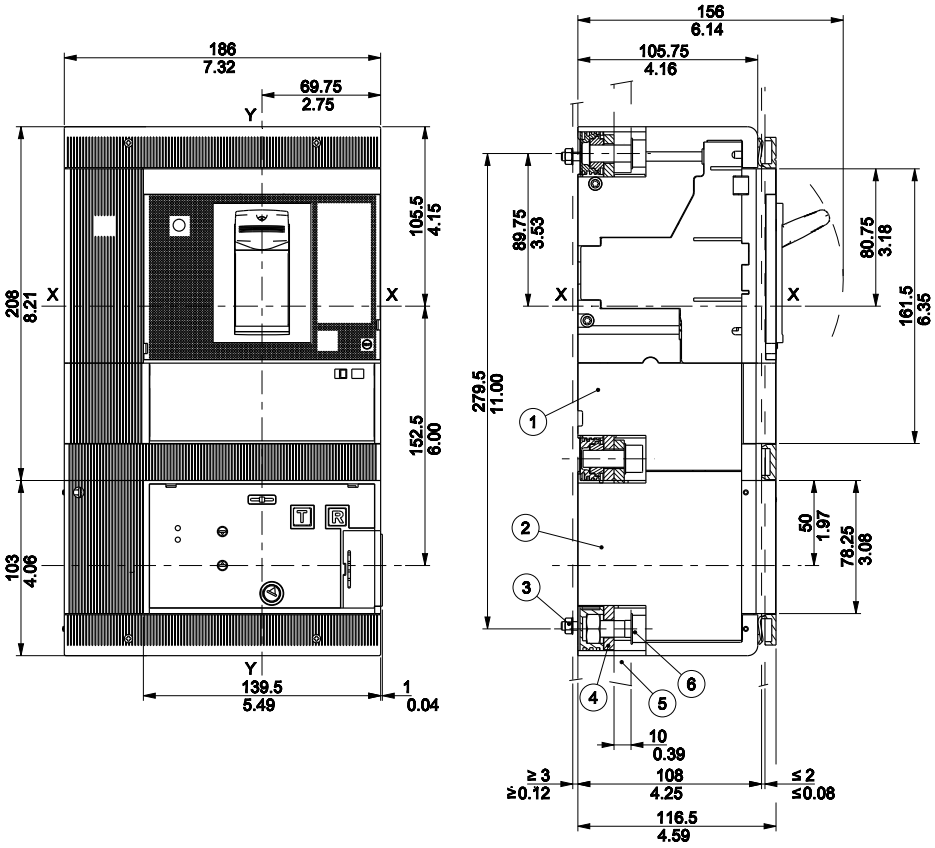
—
Key
4 Compartment door drilling template with/without flange

		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

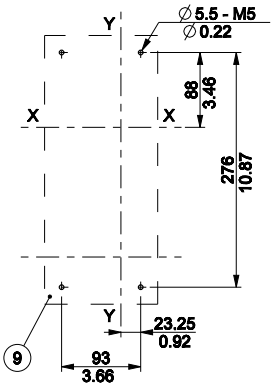
Tmax XT5 - Installation

Accessories for fixed circuit-breaker

Residual current RC



Drilling template for support sheet

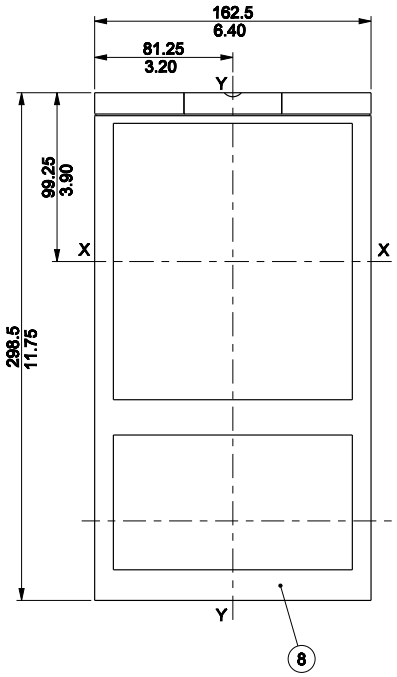


—

Key

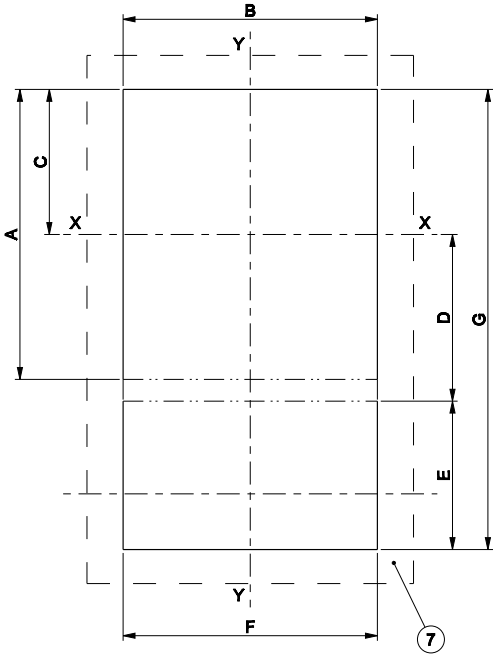
1 Circuit-breaker
2 Residual current release
3 Tightening torque 2Nm
4 Front terminals for flat connection
5 Busbar
6 Tightening torque 36Nm
9 Drilling template 4p

Flange



Key
3 Flange for the compartment door

Compartment door drilling templates



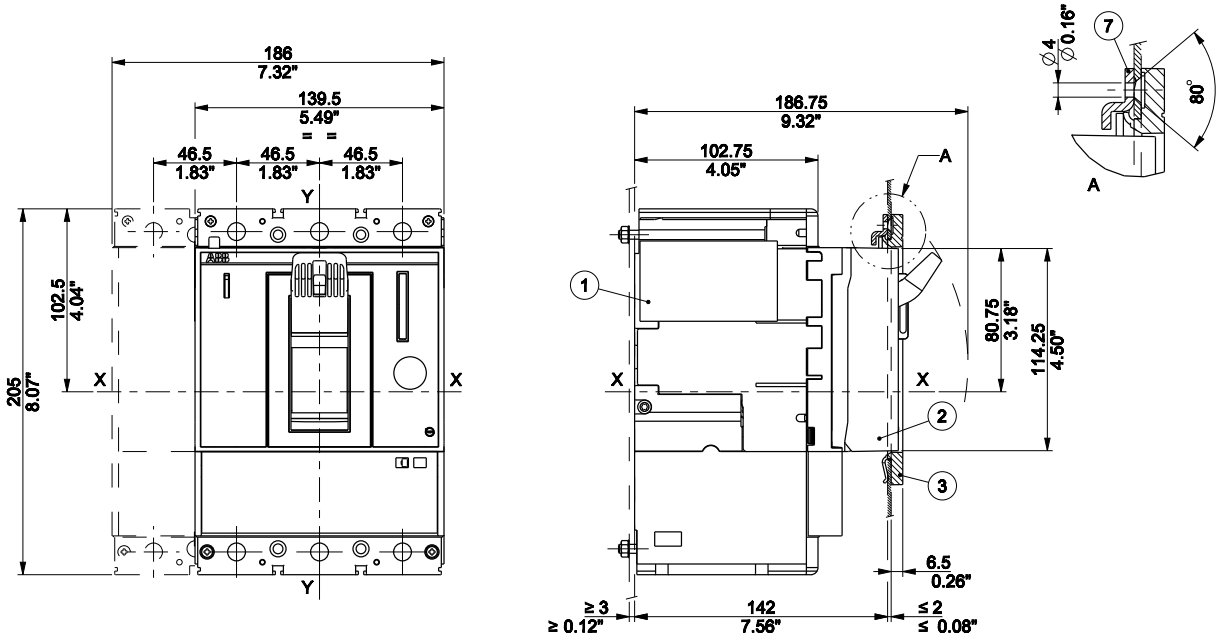
Key
4 Compartment door drilling template with/without flange

		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]	E [in/mm]	F [in/mm]	G [in/mm]
With flange	3p-4p	-	5.81/147.5	3.34/84.8	-	-	5.81/147.5	10.61/269.5
Without flange	3p-4p	6.44/163.5	5.57/141.5	3.22/81.8	4.00/101.5	3.16/80.3	5.57/141.5	-

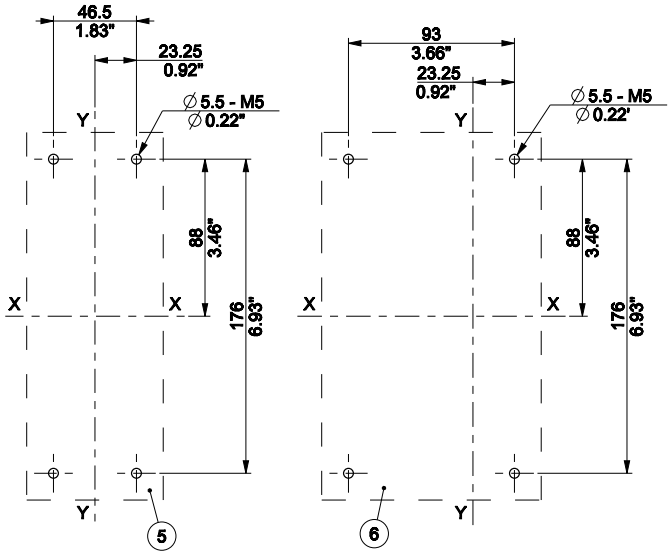
Tmax XT5 - Installation

Accessories for fixed circuit-breaker

Front for lever operating mechanism (FLD)



Drilling templates for support sheet



Key
1 Circuit-breaker
2 Front for lever operating system (FLD)
3 Flange for the compartment door
4 Compartment door drilling template with/without flange
5 Drilling template 3p
6 Drilling template 4p
7 Door lock

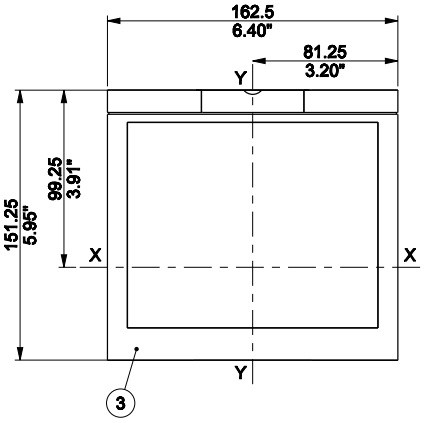
Flange

—

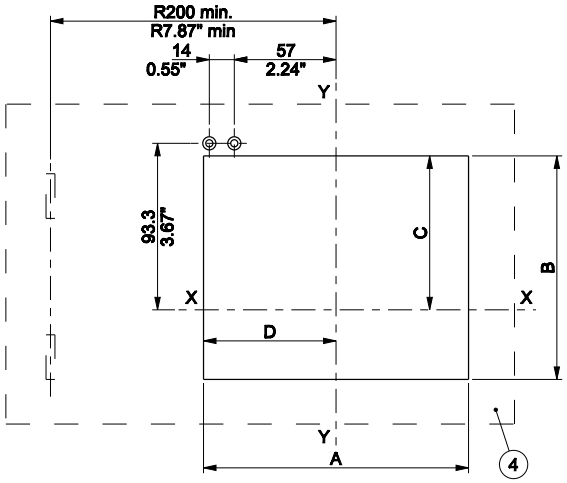
Key

3 Flange for the compartment door

4 Compartment door drilling template with/without flange



Compartment door drilling templates

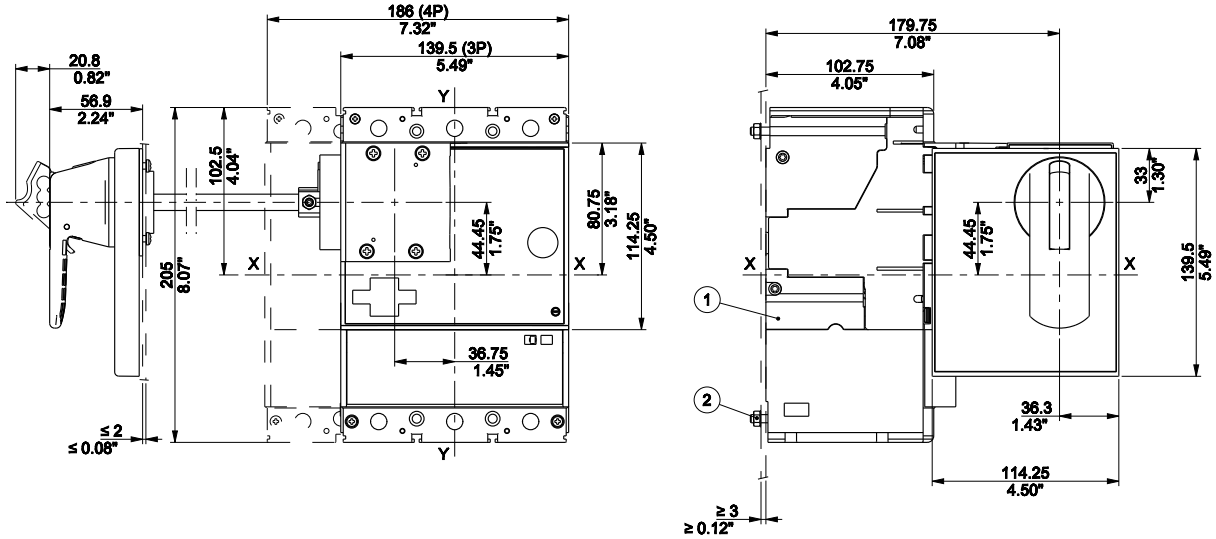


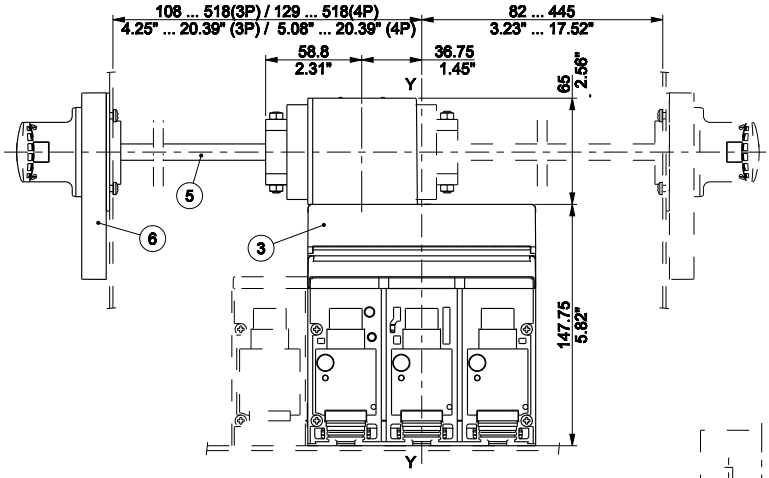
		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

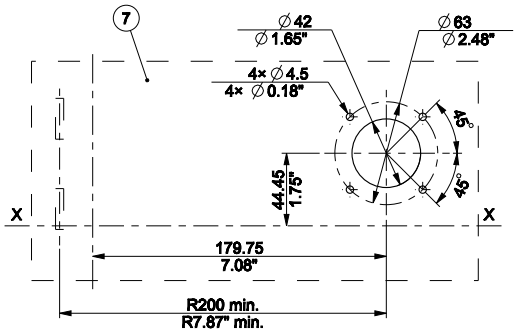
Tmax XT5 - Installation

Accessories for fixed circuit-breaker

Lateral rotary handle operating mechanism on the compartment door (RHL)







—

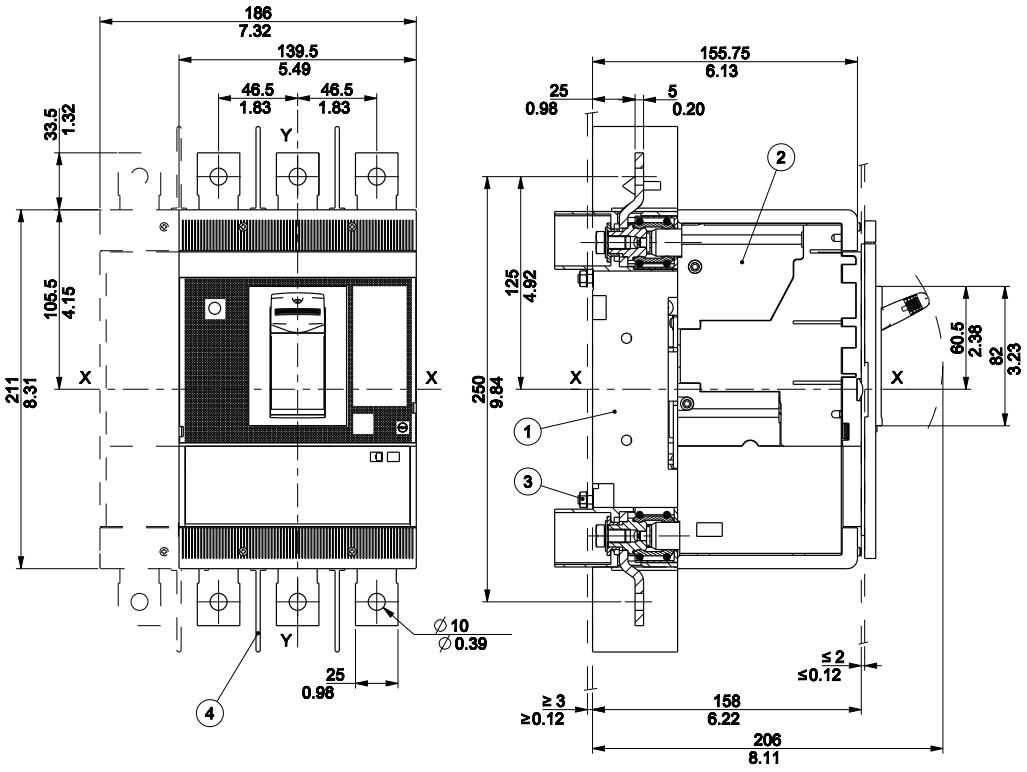
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
5 Base of rotary handle operating mechanism
6 Lateral handle
7 500mm connection rod
8 Rotary handle on compartment door
11 Compartment door drilling template

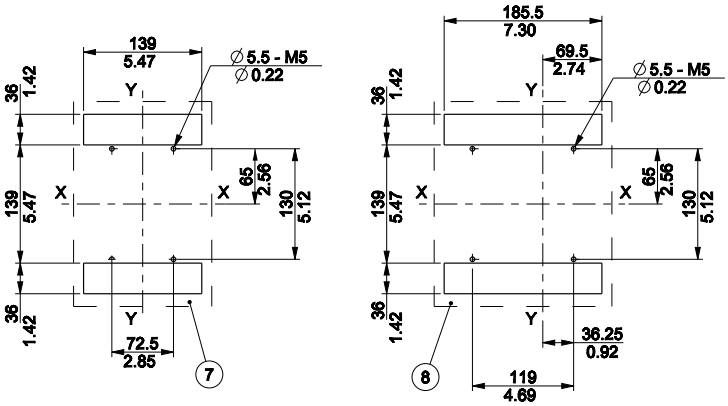
Tmax XT5 - Installation

Installation for plug-in circuit-breaker 400A

Fixing on sheet



Drilling templates for support sheet



—

Key

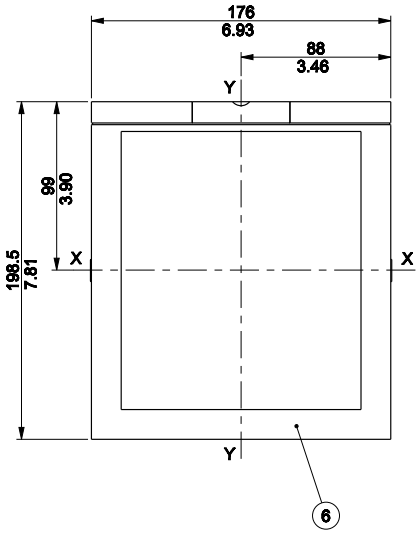
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Compartment door drilling template with/without flange
6 Flange without gasket for the compartment door
7 Drilling template 3p
8 Drilling template 4p

Tmax XT5 - Installation

Installation for plug-in circuit-breaker 400A

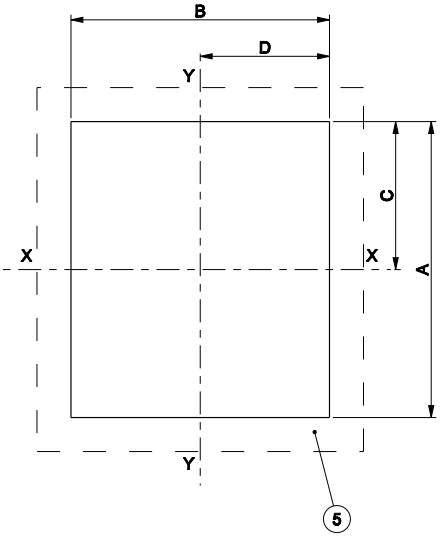
Flange

Key
6 Flange without gasket for the compartment door



Compartment door drilling templates

Key
5 Compartment door drilling template with/without flange

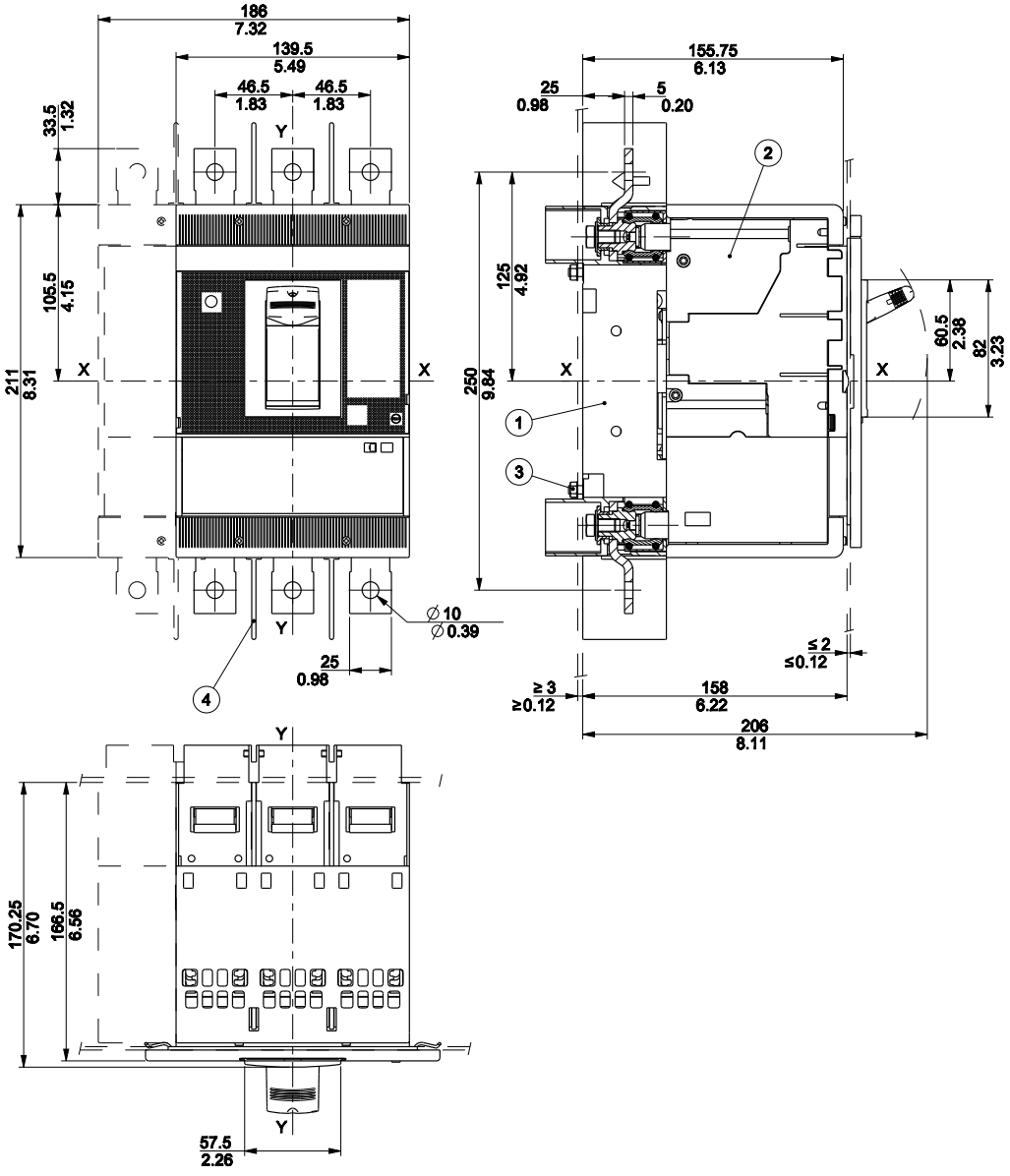


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	6.85/174	5.98/152	3.42/87	3.00/76
Without flange	3p-4p	6.49/165	5.63/143	3.24/82.5	2.81/71.5

Tmax XT5 - Installation

Terminals for plug-in circuit-breaker 400A

Terminals EF

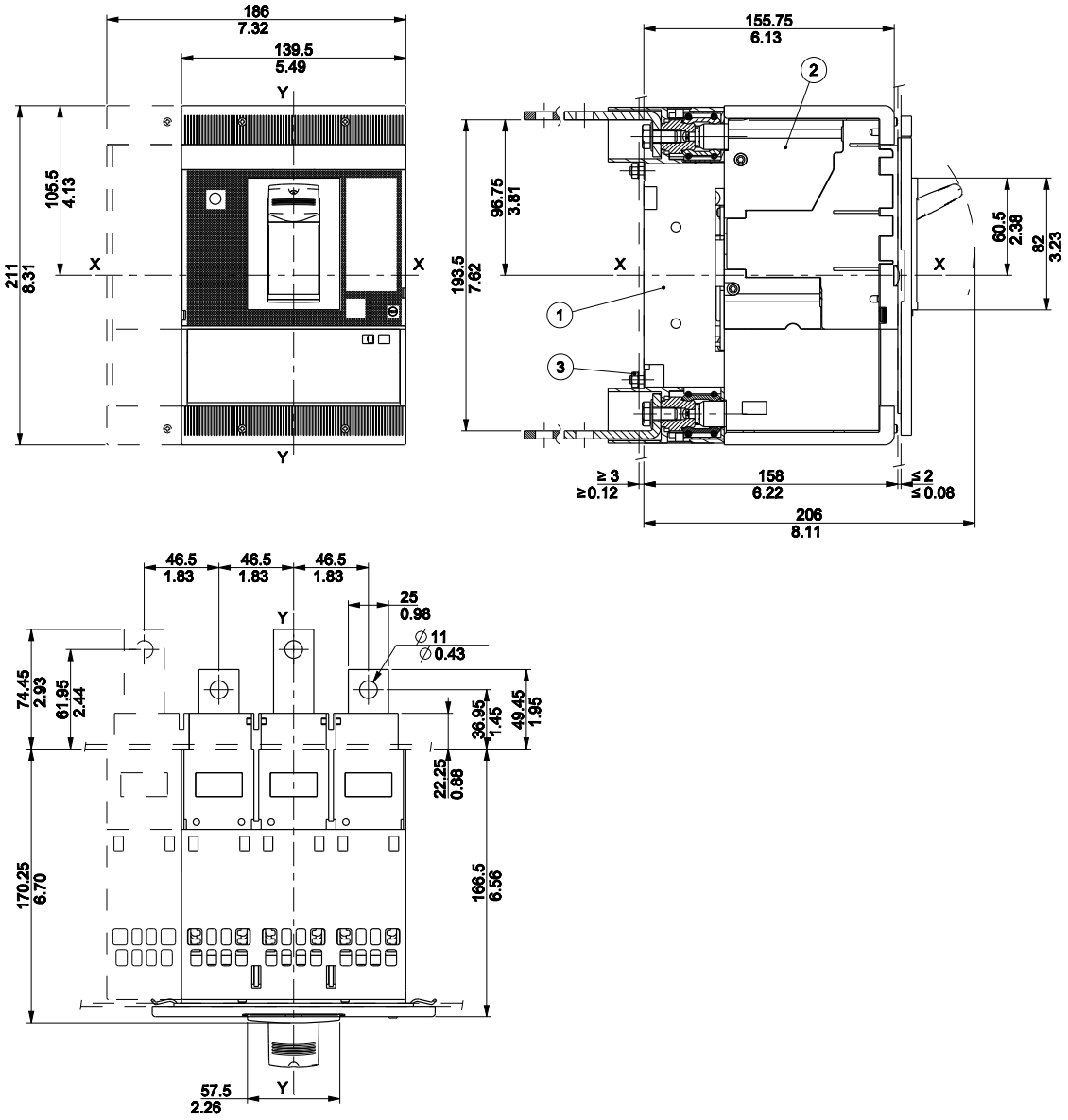


Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators
3.94"/100mm

Tmax XT5 - Installation

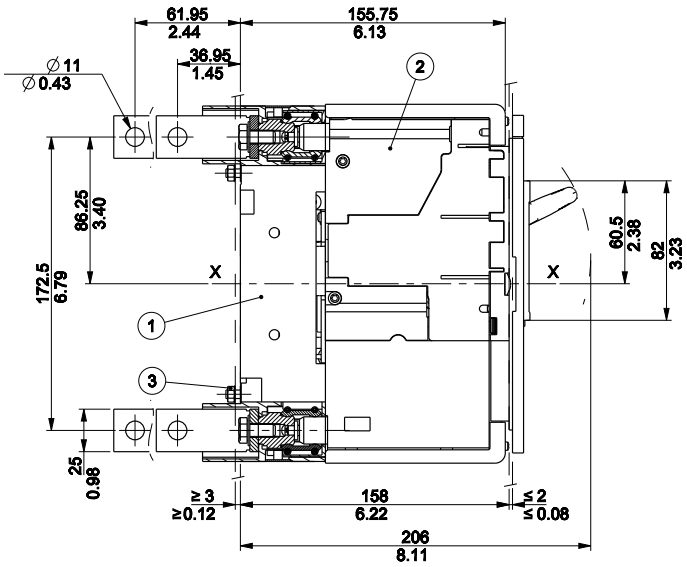
Terminals for plug-in circuit-breaker 400A

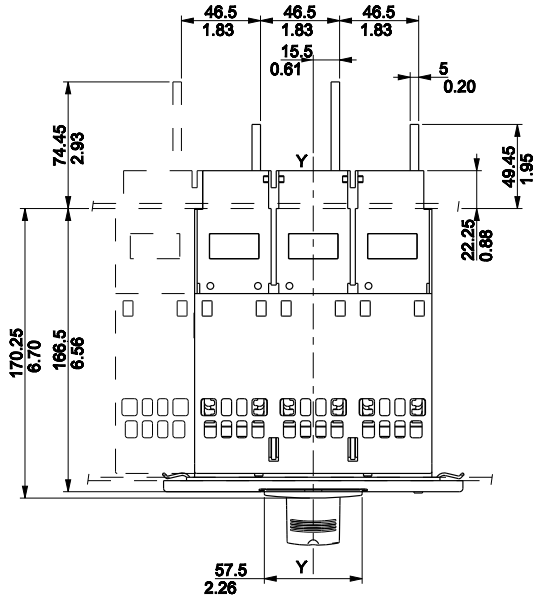
Terminals HR



Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm

Terminals VR





—

Key

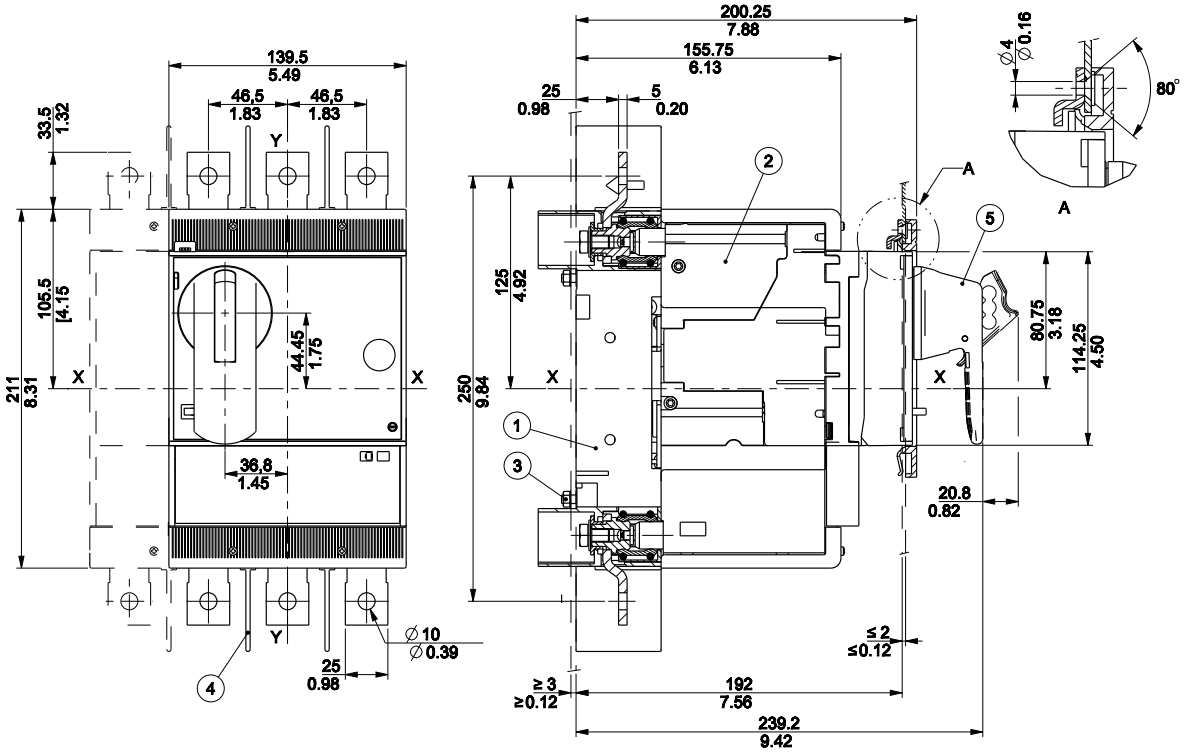
1 Fixed part
2 Moving part
3 Tightening torque 2Nm

Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 400A

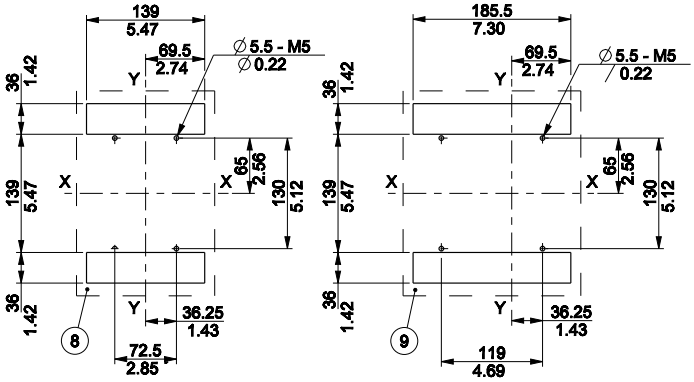
Rotary handle operating mechanism on the circuit-breaker (RHD)

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Rotary handle operating mechanism (RHD)



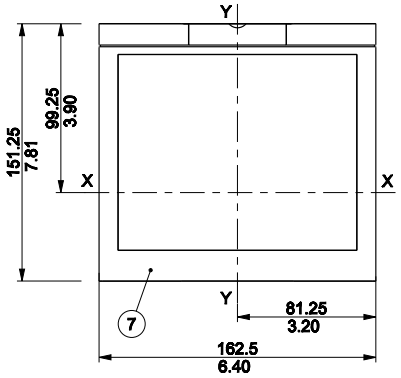
Drilling templates for support sheet

Key
8 Drilling template 3p
9 Drilling template 4p

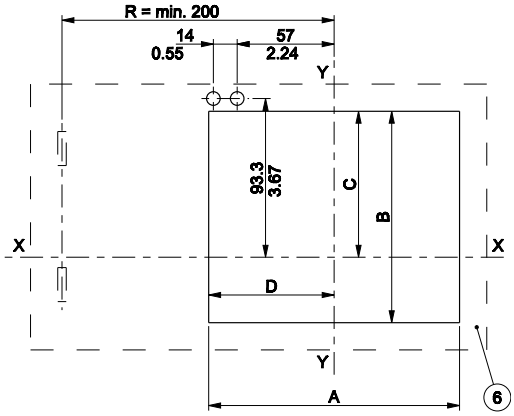


Flange

—
Key
7 Flange for the compartment door
8 Compartment door drilling template with/without flange



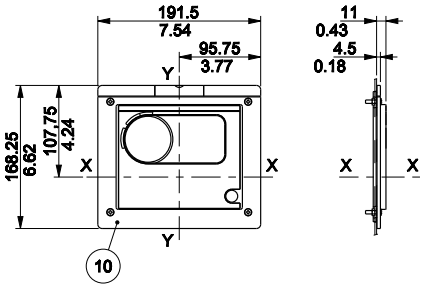
Compartment door drilling templates



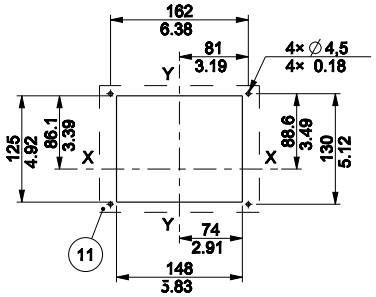
		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

Flange IP54

—
Key
10 IP54 flange for the compartment door
11 Compartment door drilling template with IP54 flange



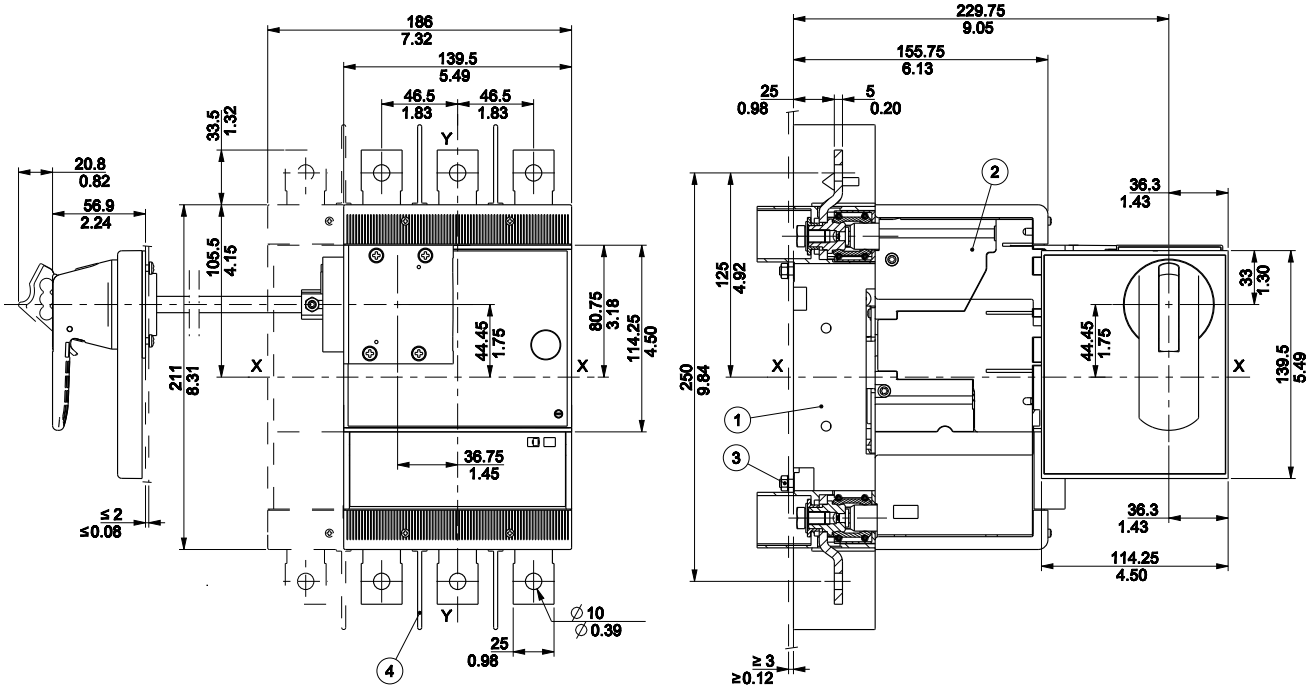
Compartment door drilling templates with flange IP54

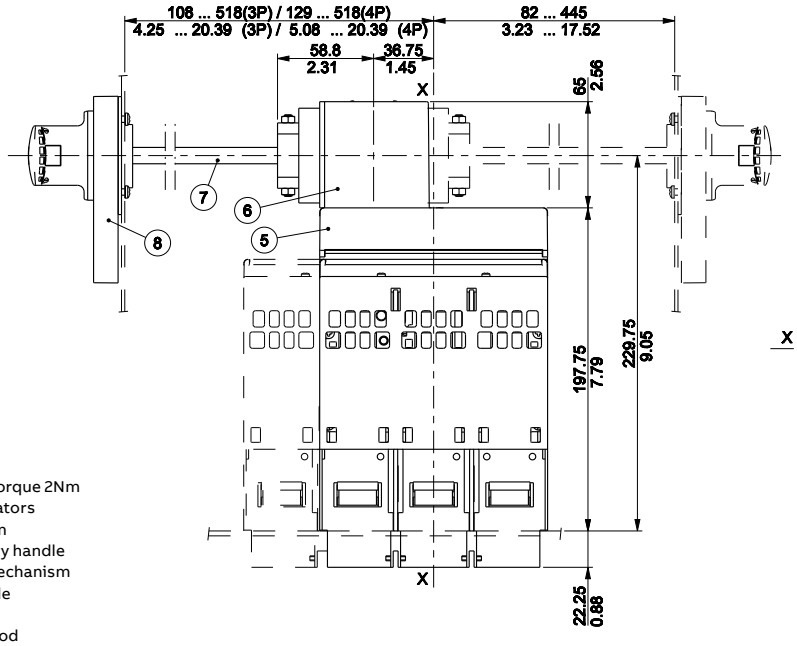


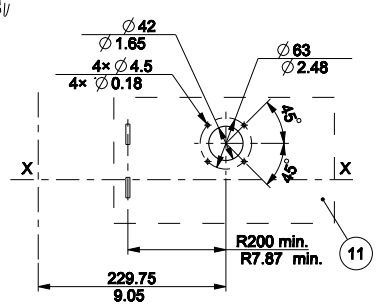
Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 400A

Lateral rotary handle operating mechanism on the compartment door (RHL)





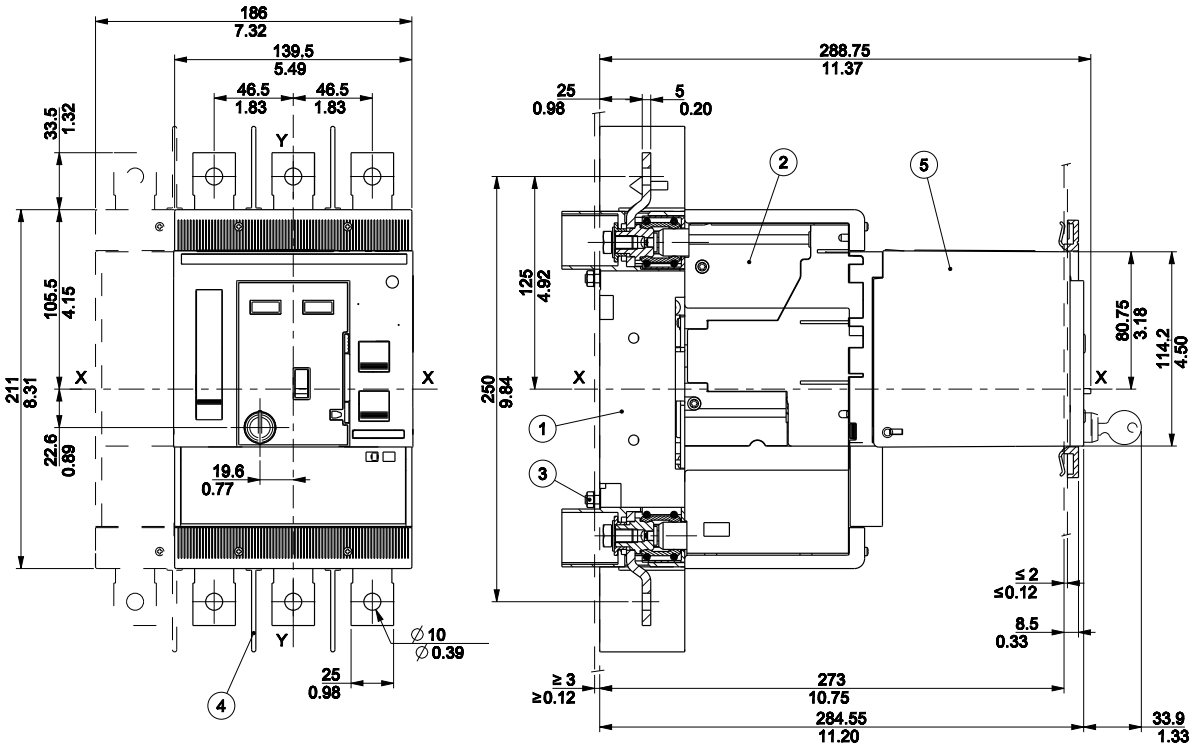


Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Base of rotary handle operating mechanism
6 Lateral handle
7 500mm connection rod
8 Rotary handle on compartment door
11 Compartment door drilling template

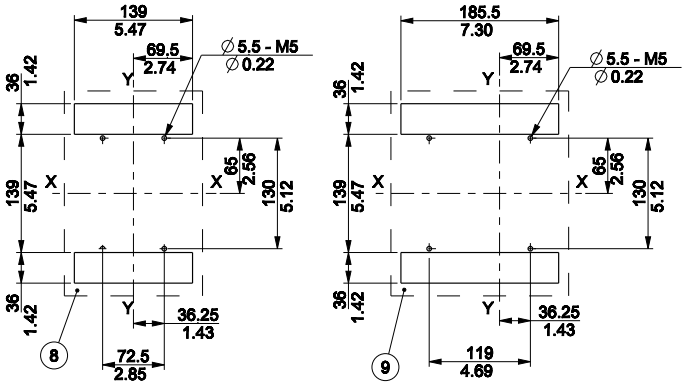
Stored energy motor operator (MOE)

—
Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Stored energy motor operator (MOE)



Drilling templates for support sheet

—
Key
8 Drilling template 3p
9 Drilling template 4p

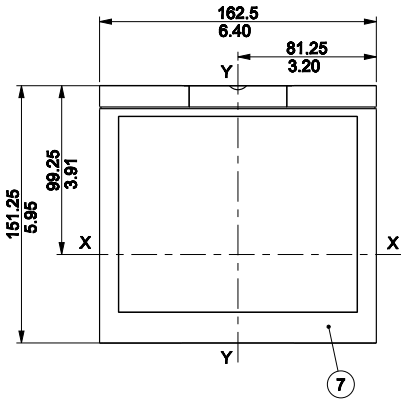


Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 400A

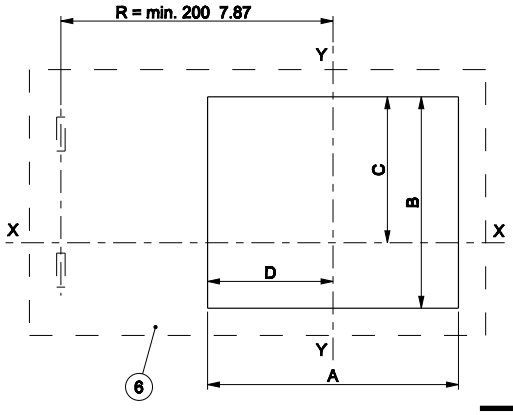
Flange

Key
7 Flange without gasket for the compartment door



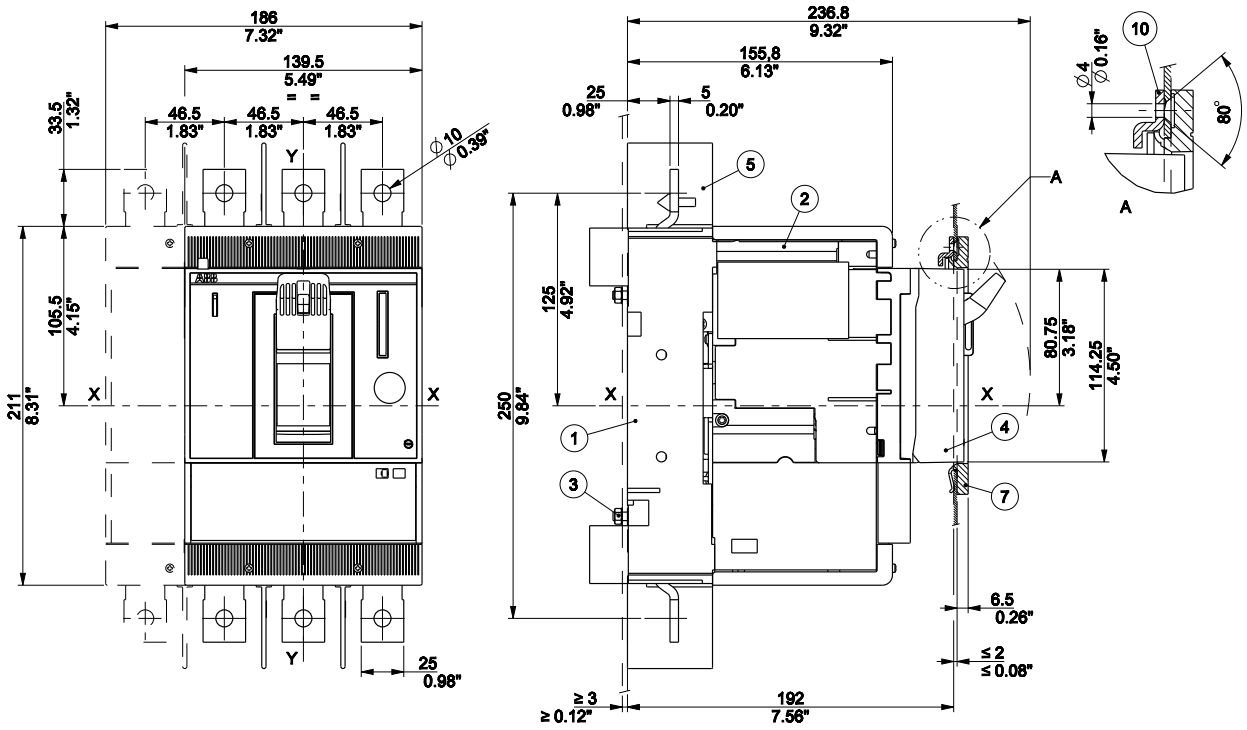
Compartment door drilling templates

Key
6 Compartment door drilling template with/without flange

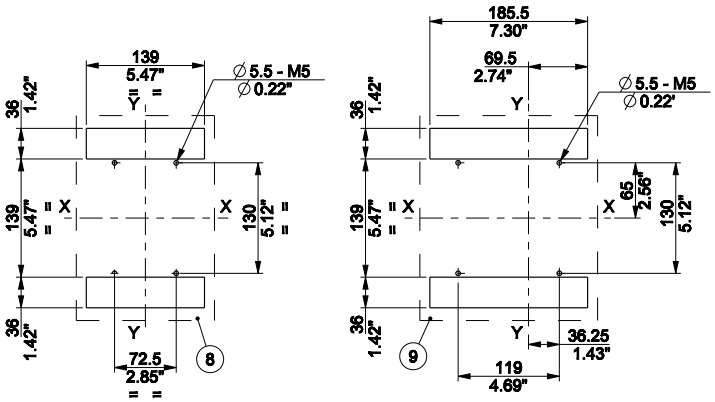


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

Front for lever operating mechanism (FLD)



Drilling templates for support sheet



—

Key

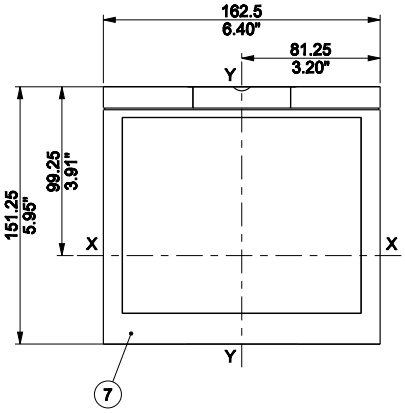
1 Fixed part
2 Moving part
3 Tightening torque 2Nm - 18lbs in
4 Fron for lever operating system (FLD)
5 Phase separators 3.94"/100mm
7 Flange without gasket for the compartment door
10 Door lock

Tmax XT5 - Installation

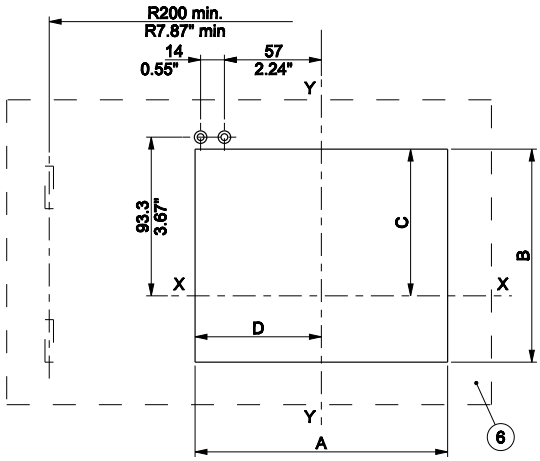
Accessories for plug-in circuit-breaker 400A

Flange

Key
6 Compartment door drilling template with/without flange
7 Flange without gasket for the compartment door

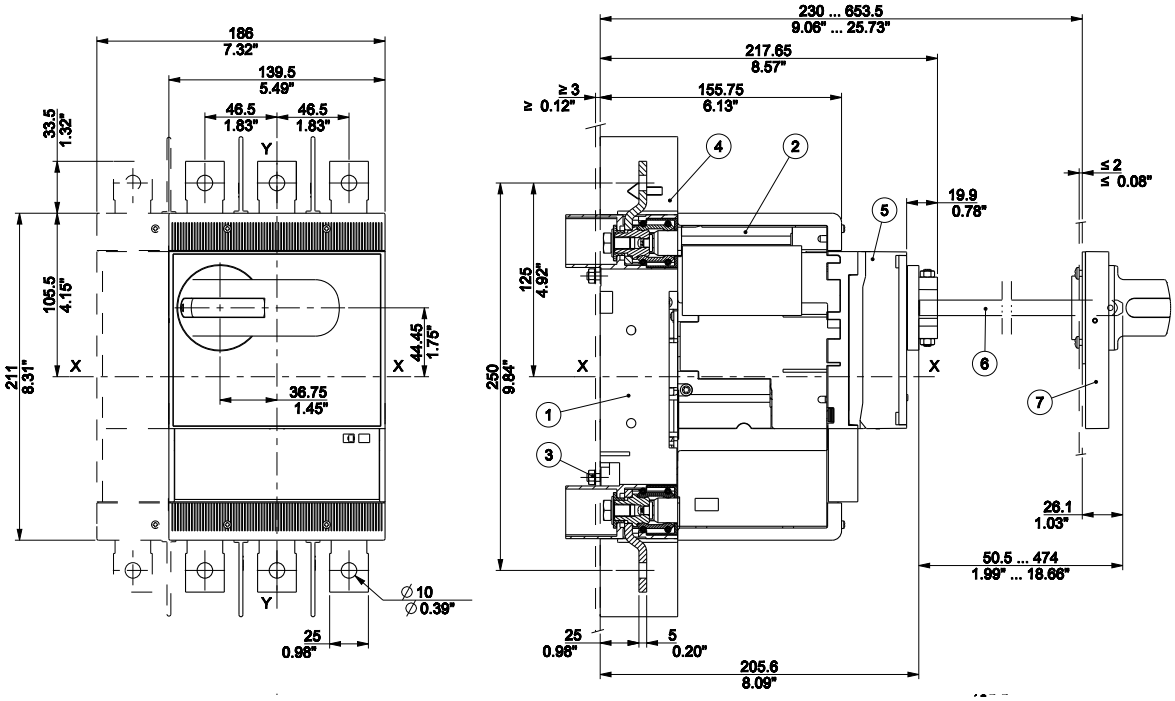


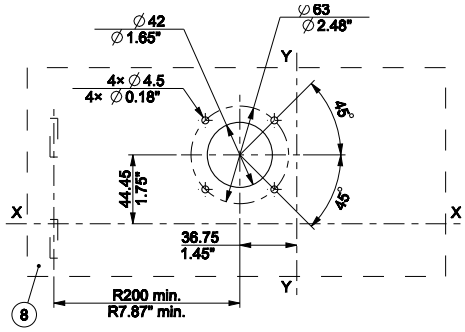
Compartment door drilling templates

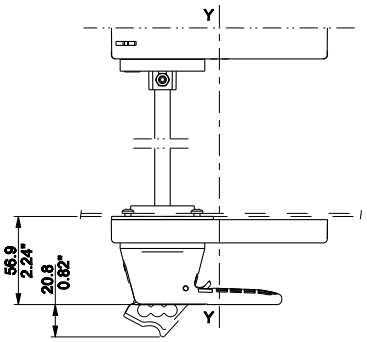


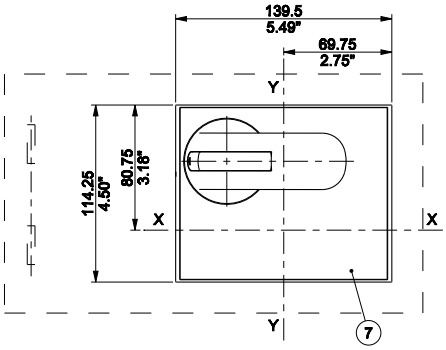
		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

Rotary handle operating mechanism on the compartment door (RHE)









—

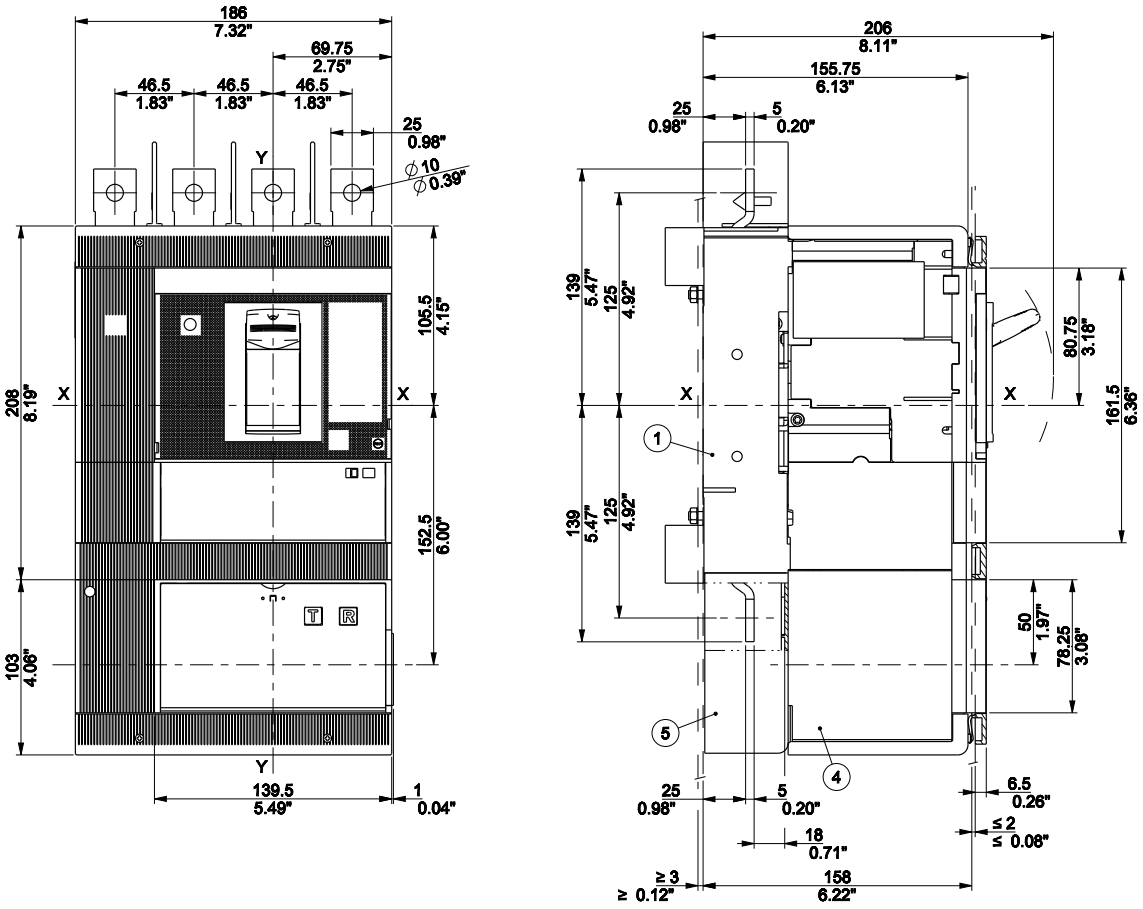
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Phase separators 3.94"/100mm
5 Rotary handle operating mechanism base (RHE_B)
6 500mm Connection rod (RHE_S)
7 Rotary handle on compartment door (RHE_H)
8 Compartment door drilling template

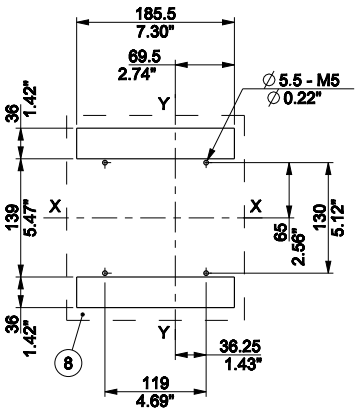
Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 400A

Residual current RC



Drilling template for support sheet



—

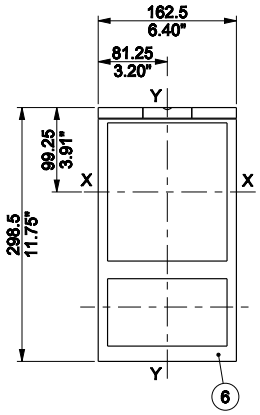
Key

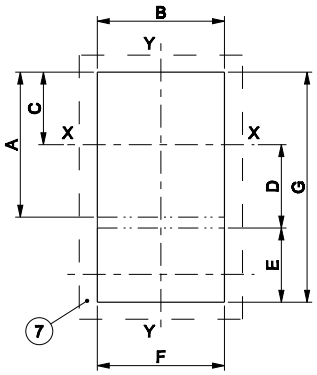
1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Residual current release
5 Terminal cover for residual current release
8 Fixing on sheet steel

Flange

Compartment door drilling templates

—
Key
6 Flange for the compartment door
7 Compartment door drilling template with/without flange





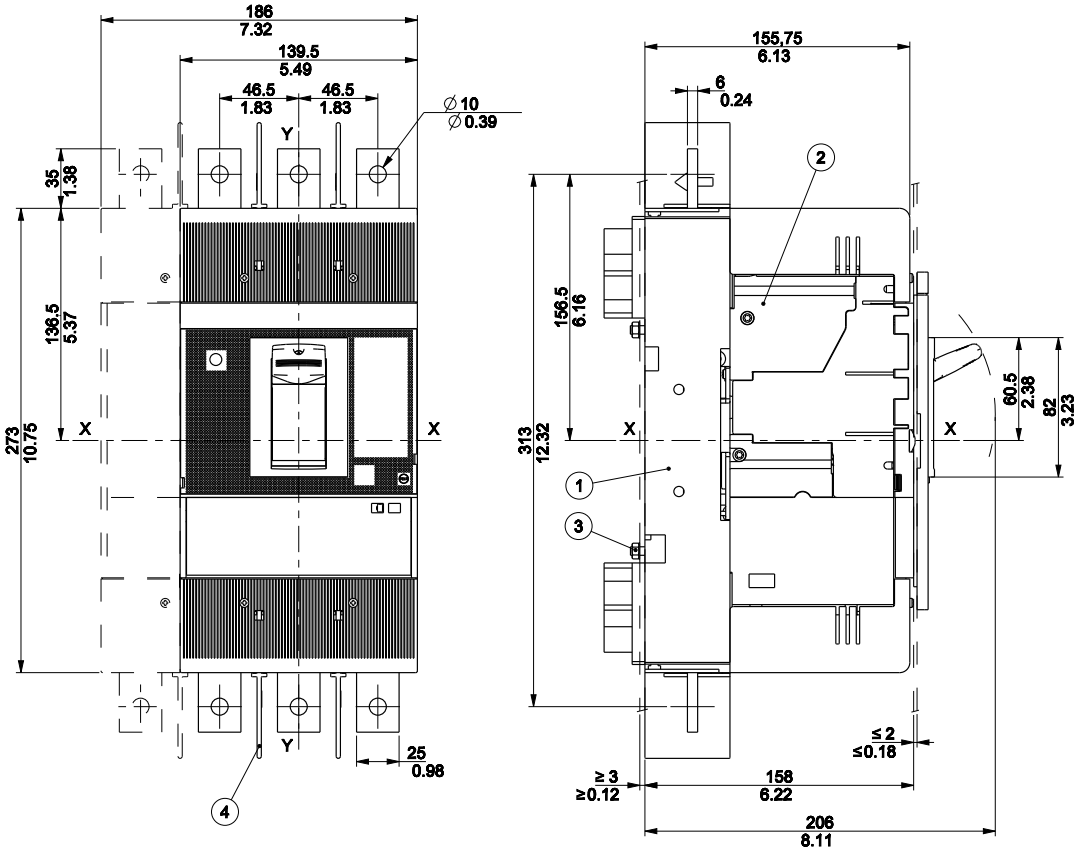
		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]	E [in/mm]	F [in/mm]	G [in/mm]
With flange	3p-4p	-	5.81/147.5	3.34/84.8	-	-	5.81/147.5	10.61/269.5
Without flange	3p-4p	6.44/163.5	5.57/141.5	3.22/81.8	4.00/101.5	3.16/80.3	5.57/141.5	-

Tmax XT5 - Installation

Installation for plug-in circuit-breaker 600A

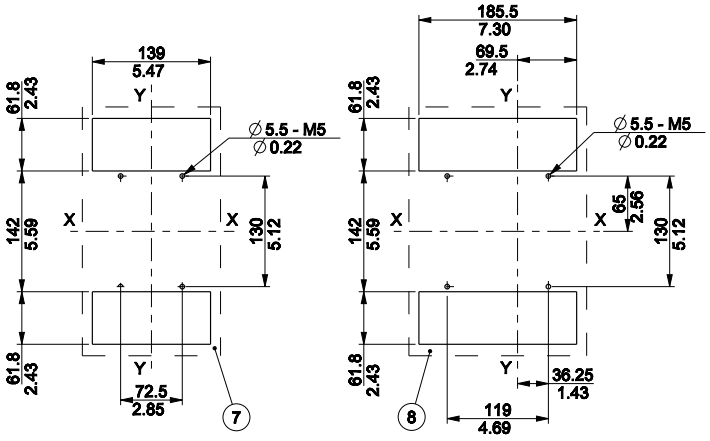
Fixing on sheet

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators
3.94"/100mm



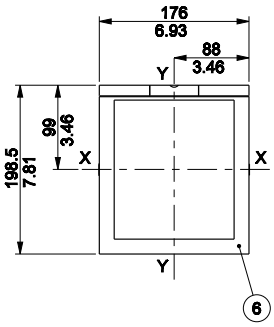
Drilling templates for support sheet

Key
7 Drilling template 3p
8 Drilling template 4p



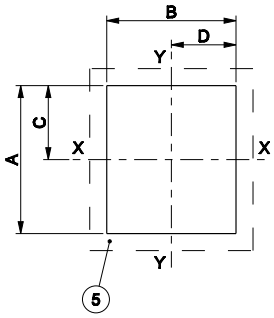
Flange

—
Key
6 Flange without gasket for the compartment door



Compartment door drilling templates

—
Key
5 Compartment door drilling template with/without flange

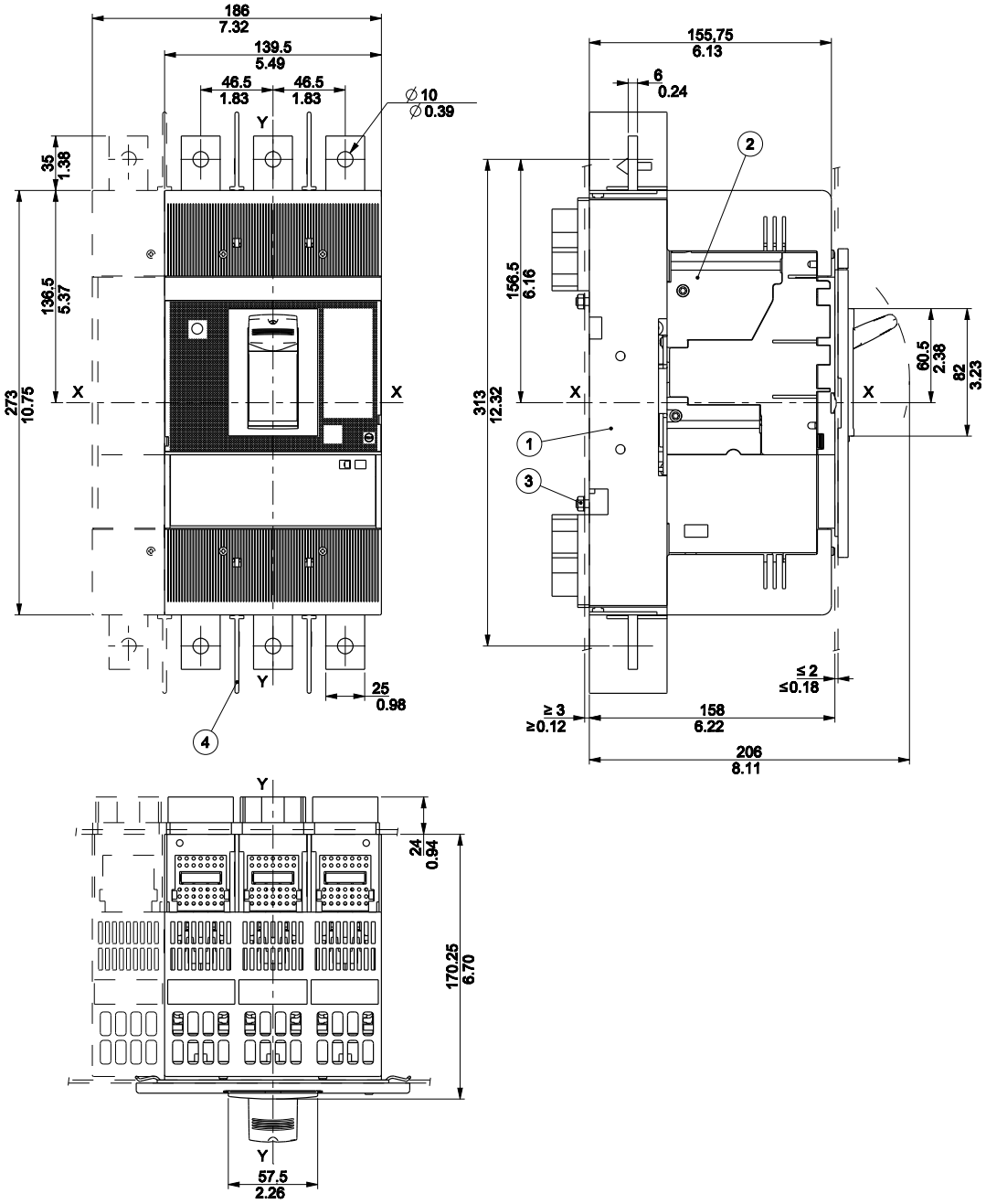


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	6.85/174	5.98/152	3.42/87	3.00/76
Without flange	3p-4p	6.49/165	5.63/143	3.24/82.5	2.81/71.5

Tmax XT5 - Installation

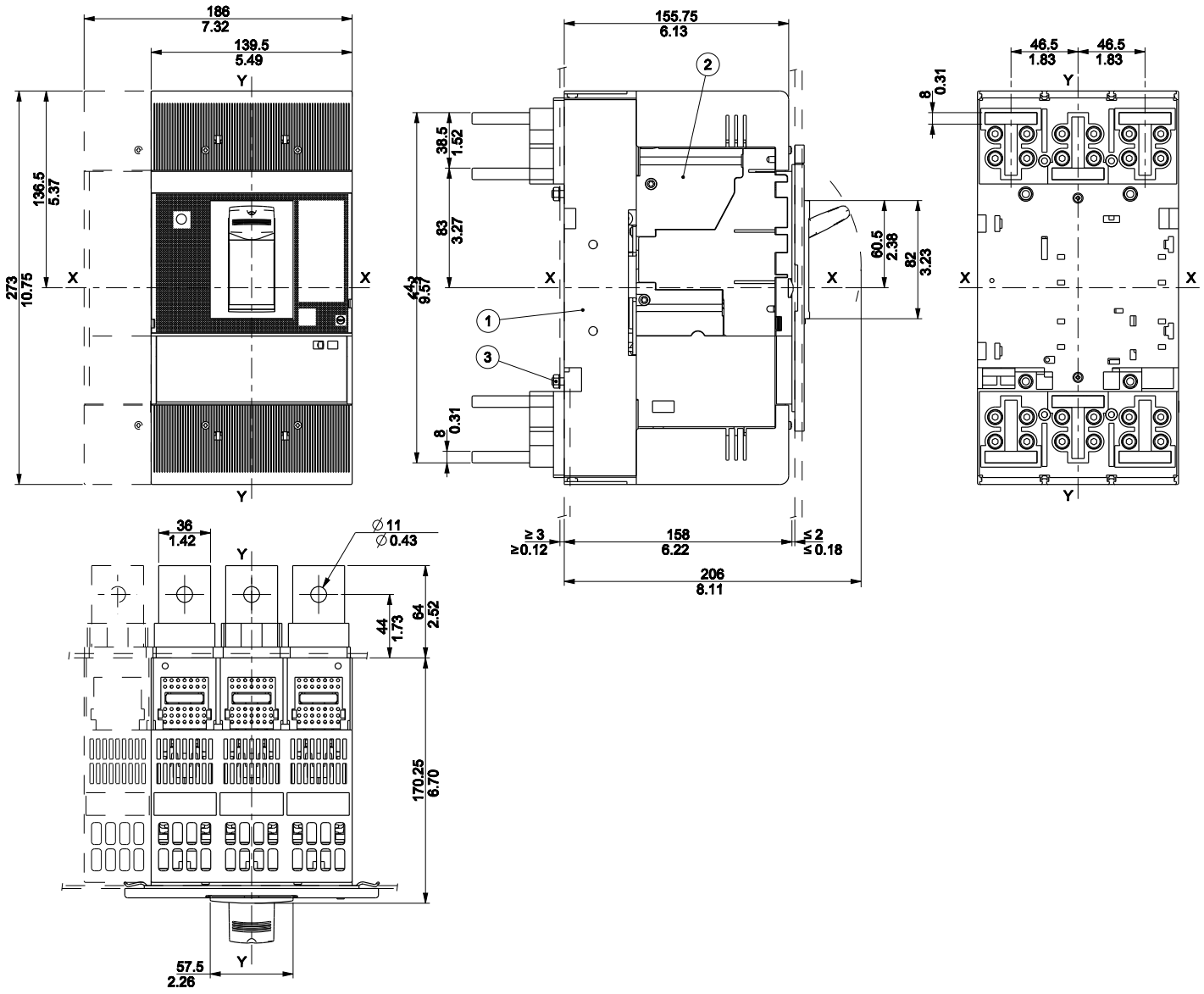
Terminals for plug-in circuit-breaker 600A

Terminals EF



Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm

Terminals HR



—

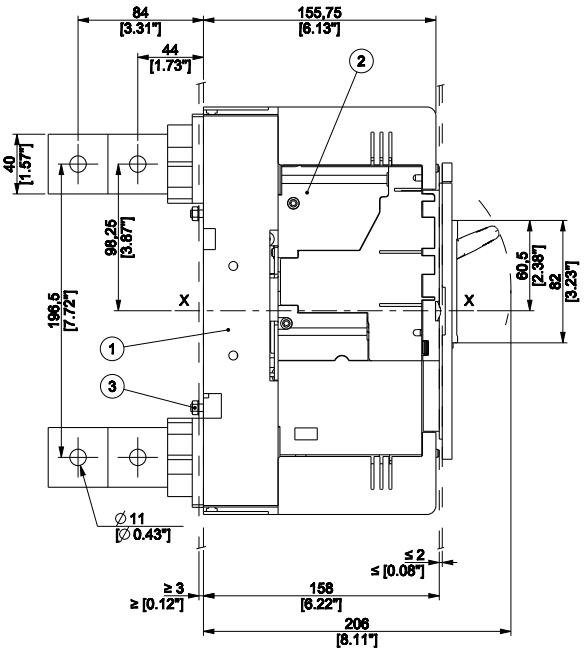
Key

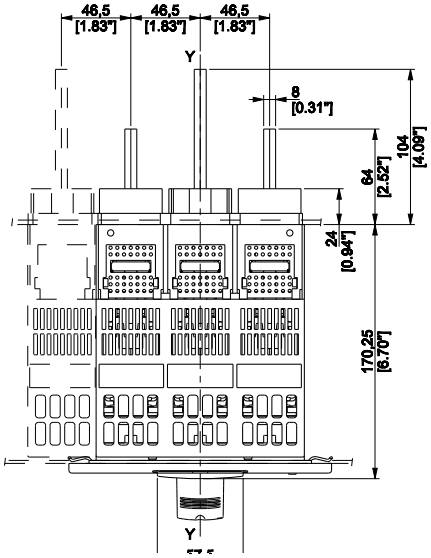
1 Fixed part
2 Moving part
3 Tightening torque 2Nm

Tmax XT5 - Installation

Terminals for plug-in circuit-breaker 600A

Terminals VR





—

Key

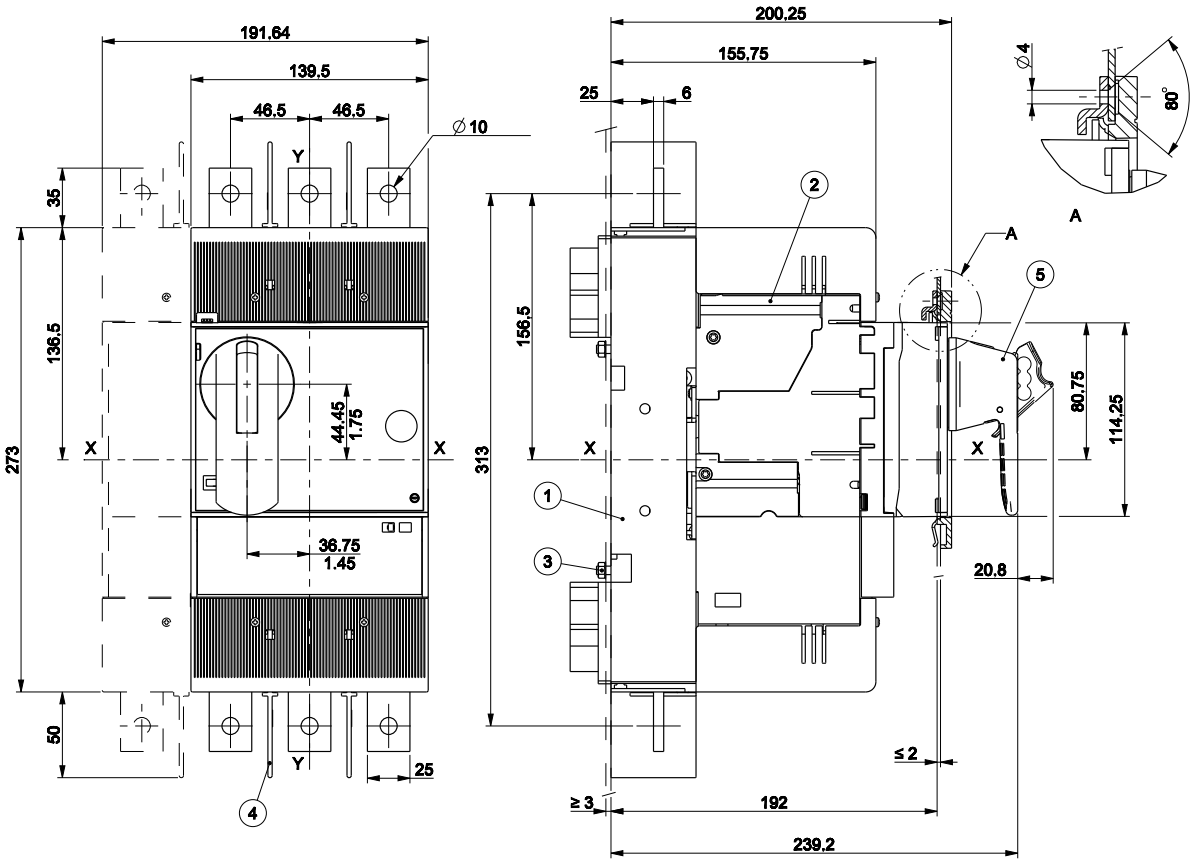
1 Fixed part
2 Moving part
3 Tightening torque 2Nm

Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 600A

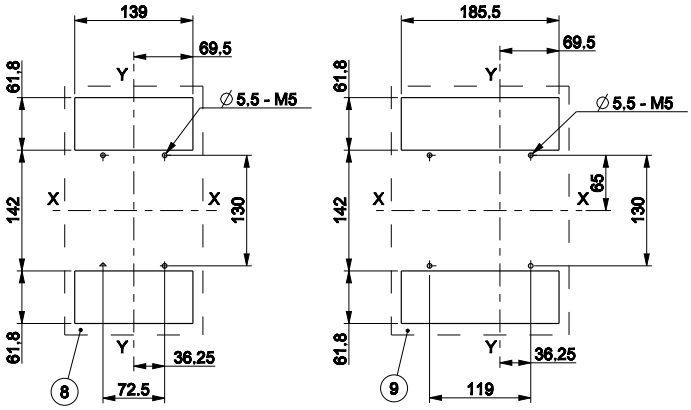
Rotary handle operating mechanism on the circuit-breaker (RHD)

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Direct rotary handle operating mechanism (RHD)



Drilling templates for support sheet

Key
8 Drilling template 3p
9 Drilling template 4p

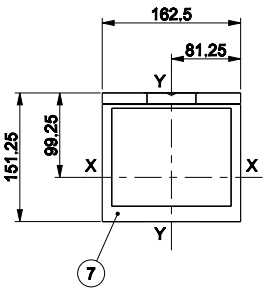


Tmax XT5 - Installation

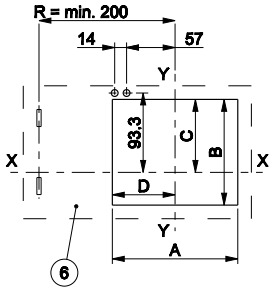
Accessories for plug-in circuit-breaker 600A

Flange

Key
6 Compartment door drilling template with/without flange
7 Flange for the compartment door



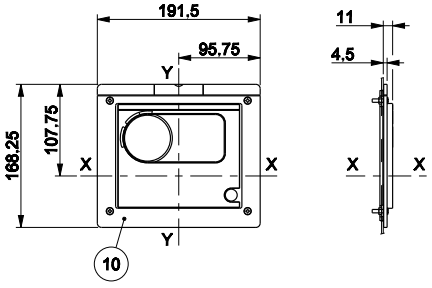
Compartment door drilling templates



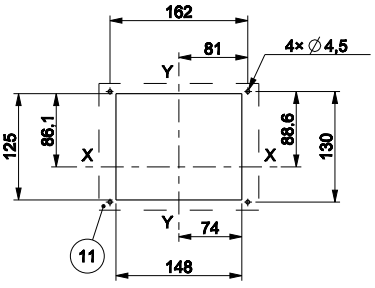
		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

Flange IP54

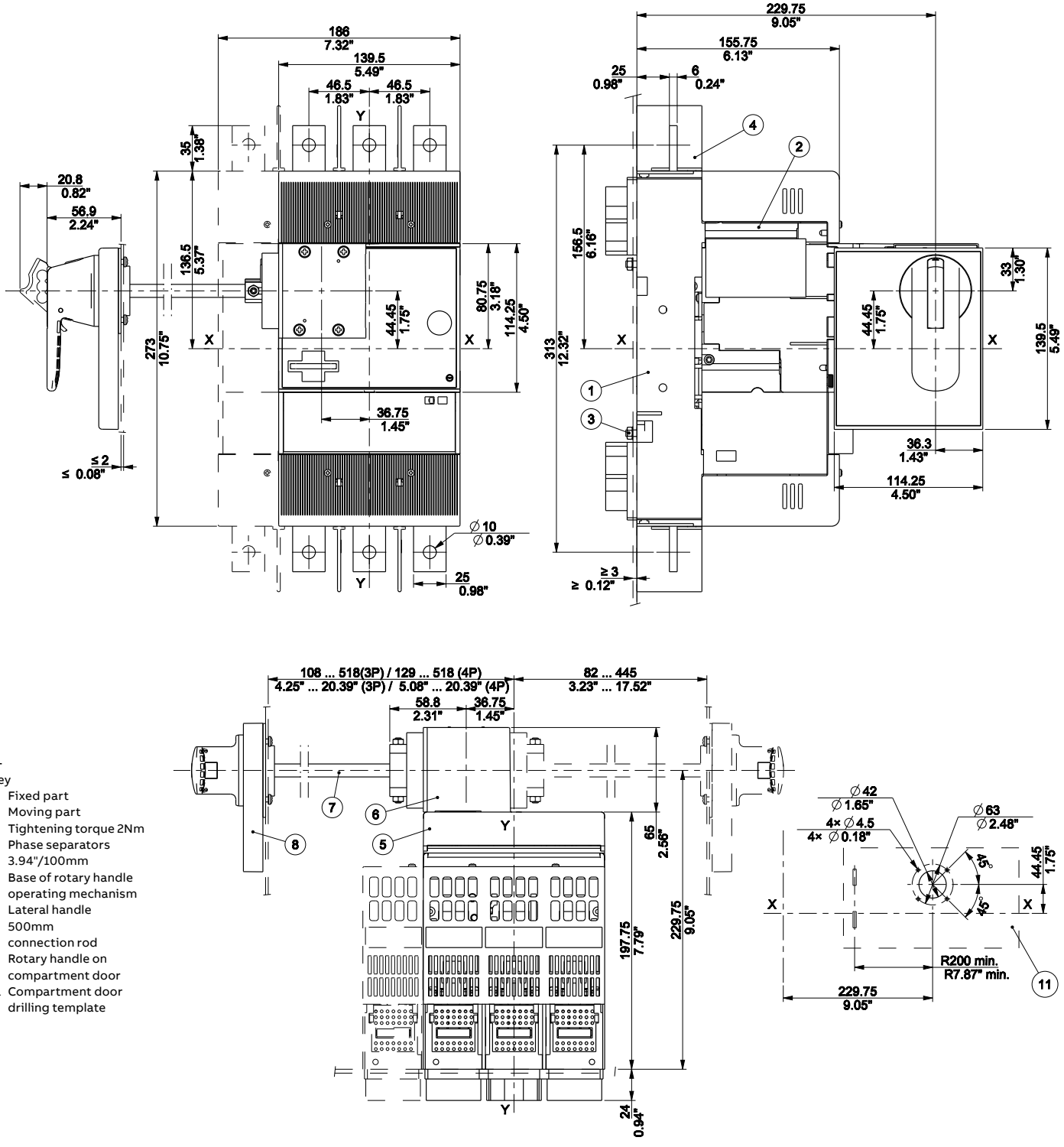
Key
10 IP54 flange for the compartment door
11 Compartment door drilling template with IP54 flange



Compartment door drilling templates with flange IP54



Lateral rotary handle operating mechanism on the compartment door (RHL)



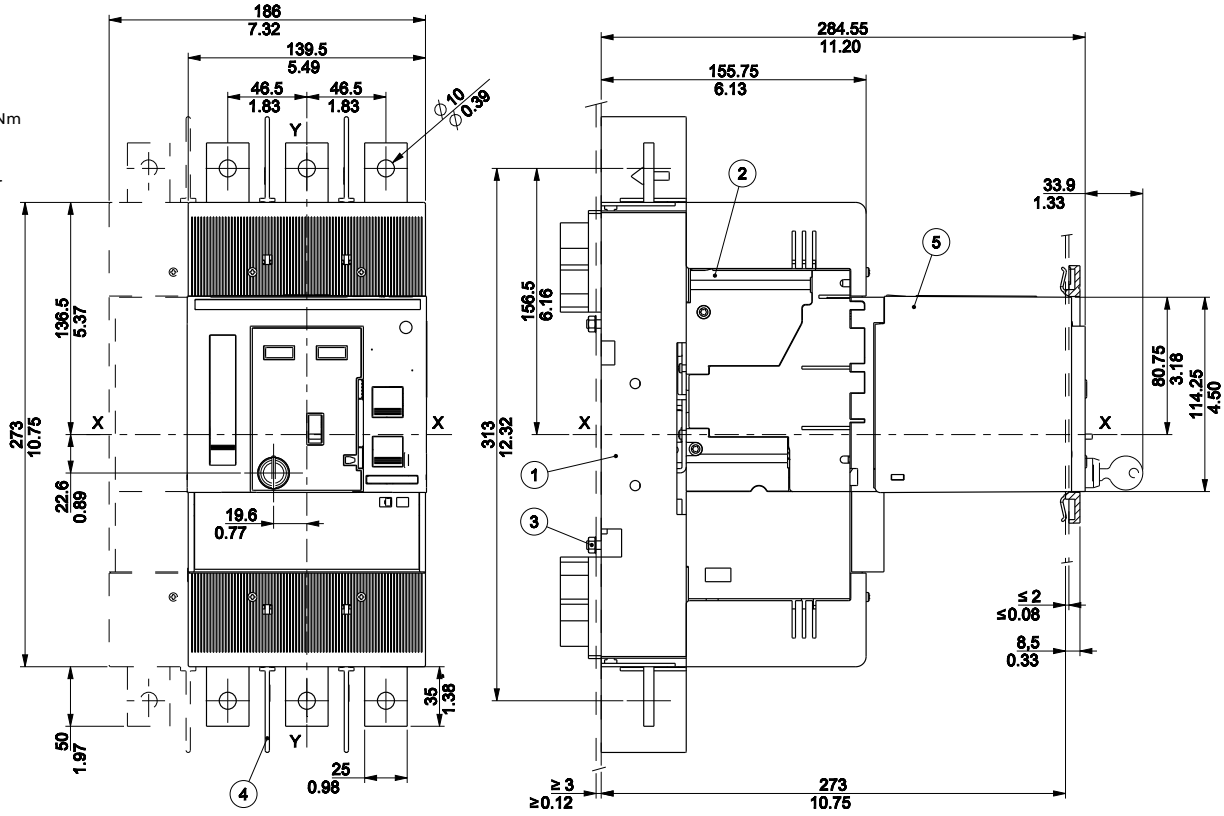
Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Base of rotary handle operating mechanism
6 Lateral handle
7 500mm connection rod
8 Rotary handle on compartment door
11 Compartment door drilling template

Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 600A

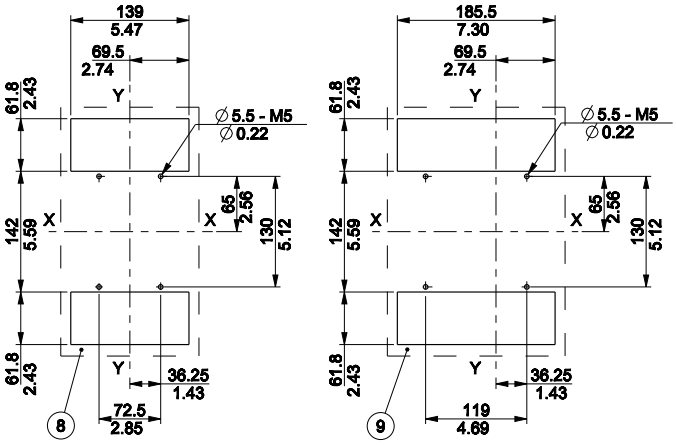
Stored energy motor operator (MOE)

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Stored energy motor operator (MOE)



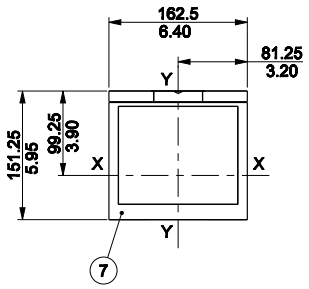
Drilling templates for support sheet

Key
8 Drilling template 3p
9 Drilling template 4p



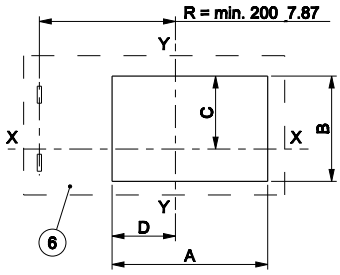
Flange

—
Key
7 Flange without gasket for the compartment door



Compartment door drilling templates

—
Key
6 Compartment door drilling template with/without flange

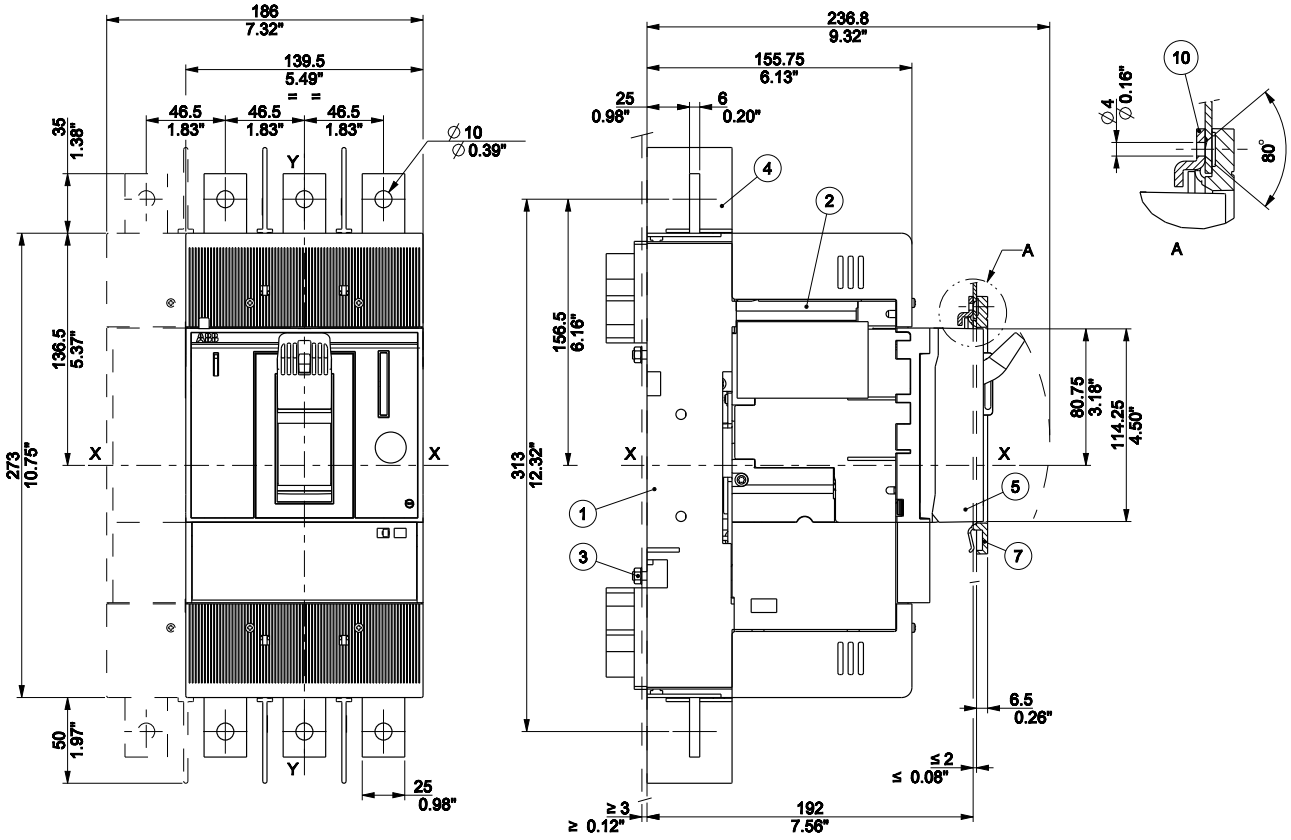


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

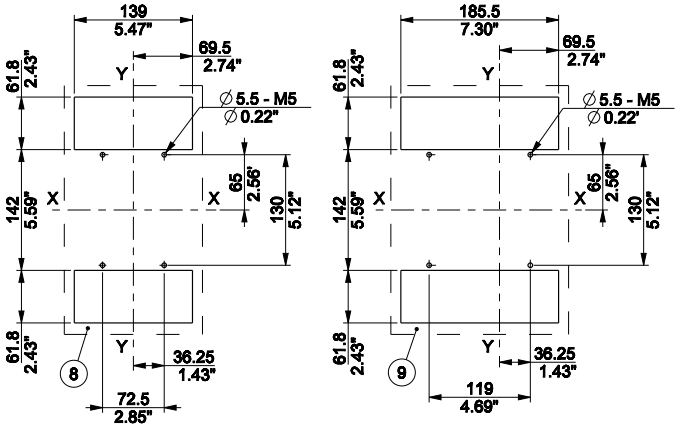
Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 600A

Front for lever operating mechanism (FLD)



Drilling templates for support sheet



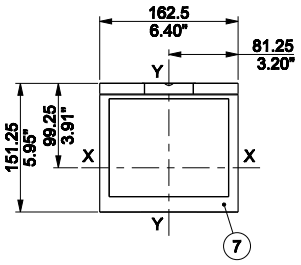
—

Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Phase separators 3.94"/100mm
5 Front for lever operating mechanism (FLD)
8 Drilling template 3p
9 Drilling template 4p
10 Door lock

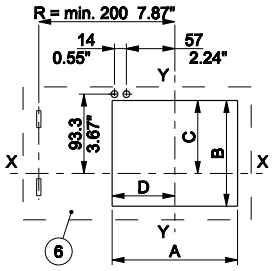
Flange

—
Key
7 Flange without gasket for the compartment door



Compartment door drilling templates

—
Key
6 Compartment door drilling template with/without flange

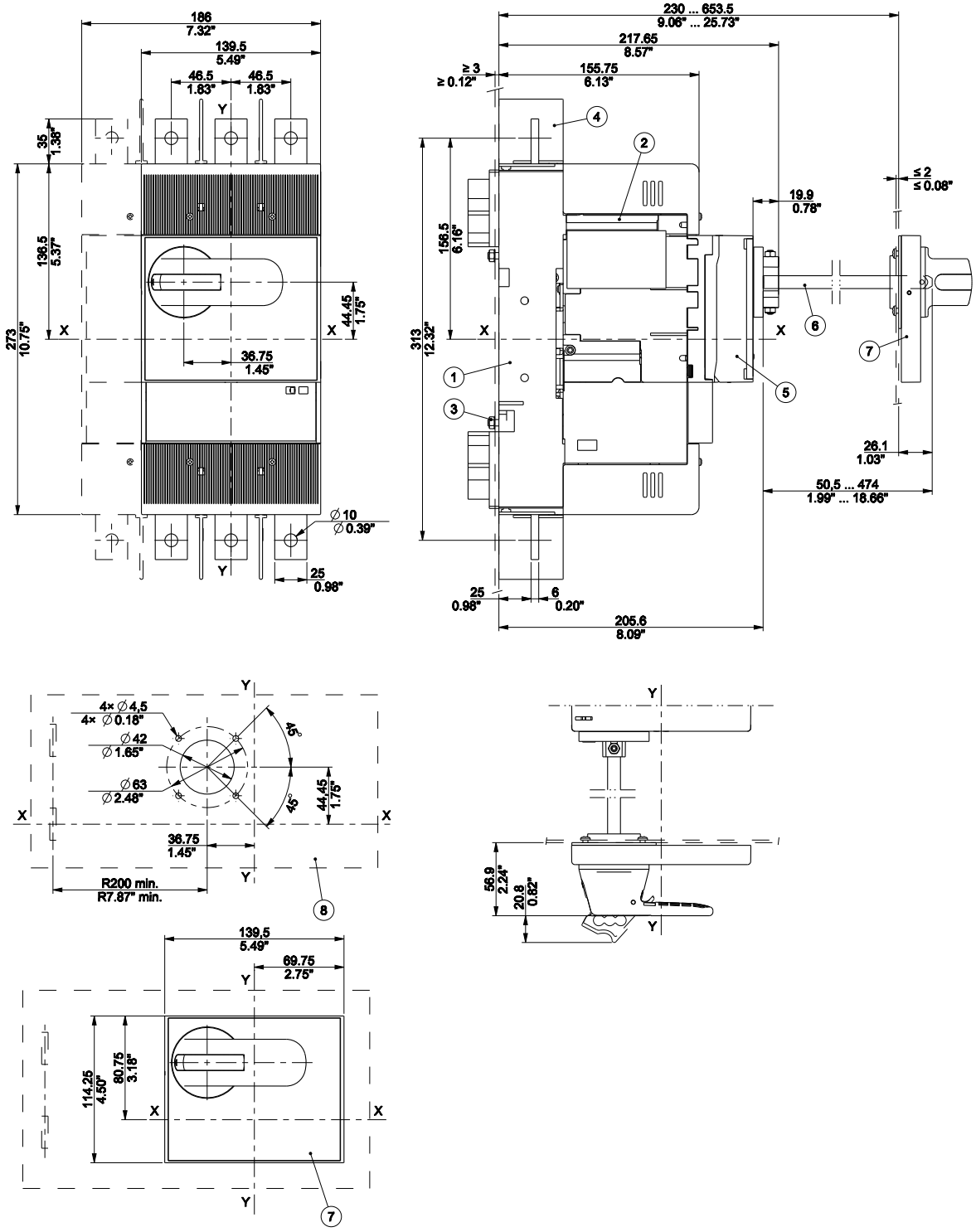


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	5.81/147.5	4.89/124.3	3.38/85.8	2.90/73.75
Without flange	3p-4p	5.53/140.5	4.54/115.3	3.20/81.3	2.77/70.25

Tmax XT5 - Installation

Accessories for plug-in circuit-breaker 600A

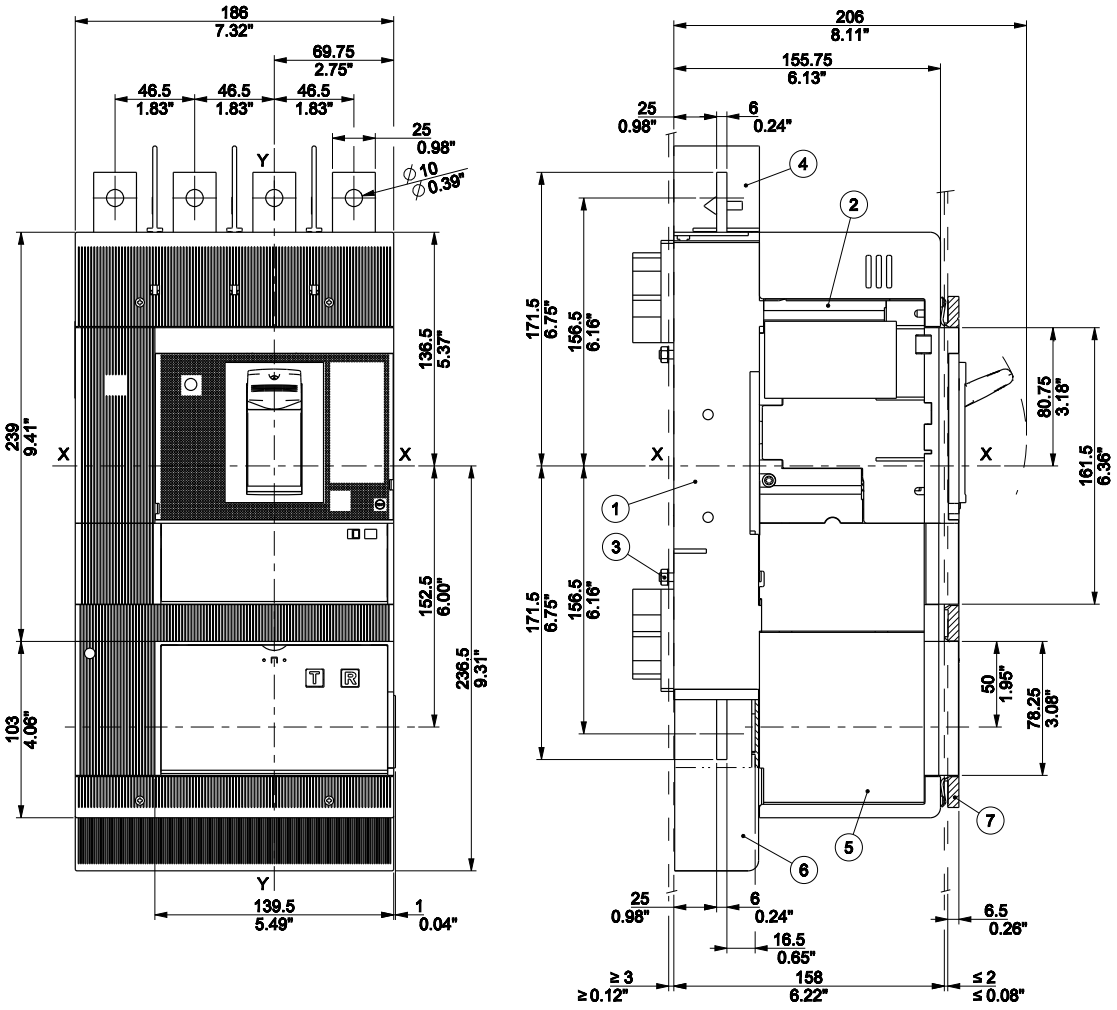
Rotary handle operating mechanism on the compartment door (RHE)



Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Phase separators 3.94"/100mm
5 Rotary handle operating mechanism base (RHE_B)
6 500mm Connection rod (RHE_S)
7 Rotary handle on compartment door (RHE_H)
8 Compartment door drilling template

Residual current RC

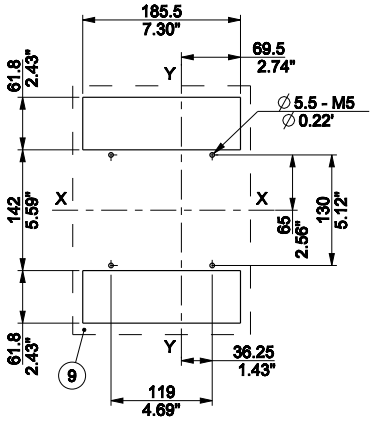


—

Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Phase separators 3.94"/100mm
5 Residual current release
6 Terminal cover for residual current release
9 Fixing on sheet steel

Drilling template for support sheet

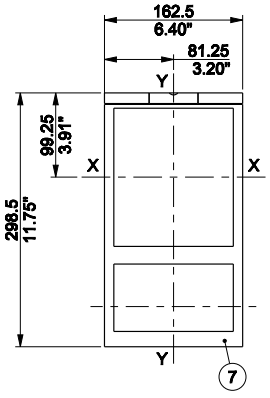


Tmax XT5 - Installation

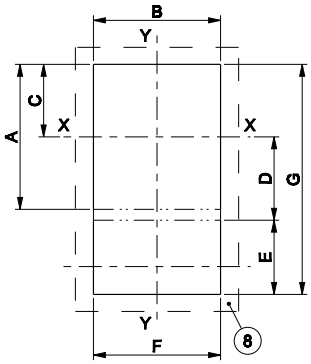
Accessories for plug-in circuit-breaker 600A

Key
7 Flange for the compartment door
8 Compartment door drilling template with/without flange

Flange



Compartment door drilling templates

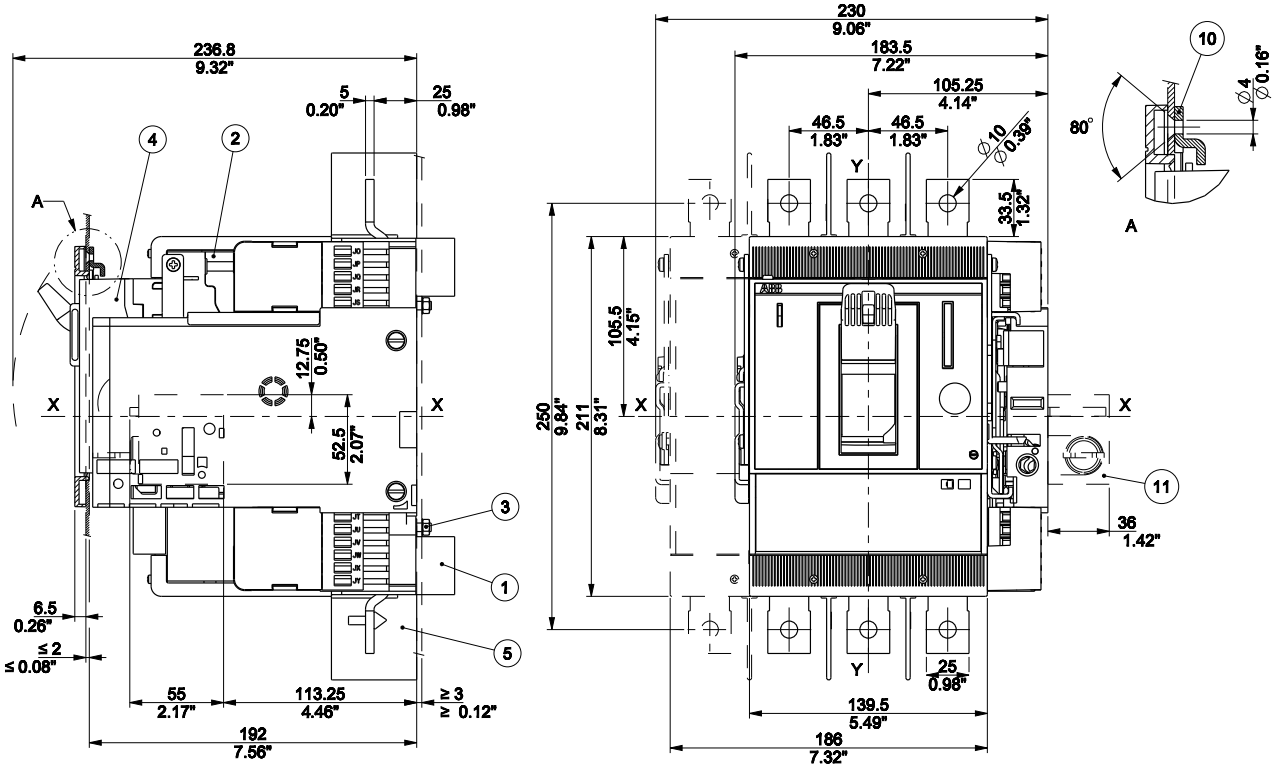


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]	E [in/mm]	F [in/mm]	G [in/mm]
With flange	3p-4p	-	5.81/147.5	3.34/84.8	-	-	5.81/147.5	10.61/269.5
Without flange	3p-4p	6.44/163.5	5.57/141.5	3.22/81.8	4.00/101.5	3.16/80.3	5.57/141.5	-

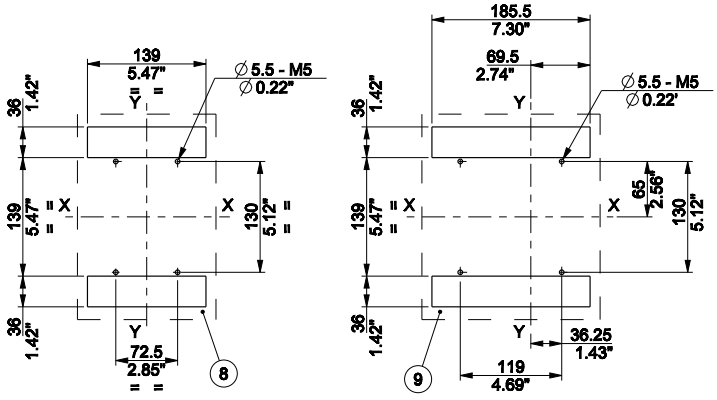
Tmax XT5 - Installation

Installation for withdrawable circuit-breaker 400A

Fixing on sheet



Drilling templates for support sheet



—

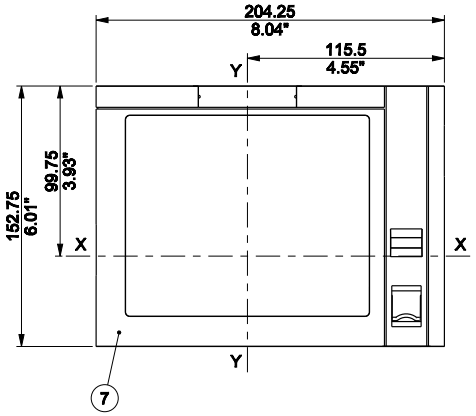
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism (FLD)
5 Phase separators 3.94"/100mm
8 Drilling template 3p
9 Drilling template 4p
10 Door lock

Tmax XT5 - Installation

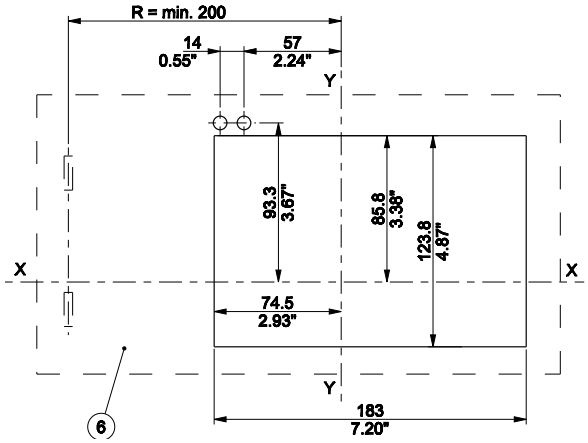
Installation for withdrawable circuit-breaker 400A

Flange



Key
7 Flange without gasket for the compartment door

Compartment door drilling templates

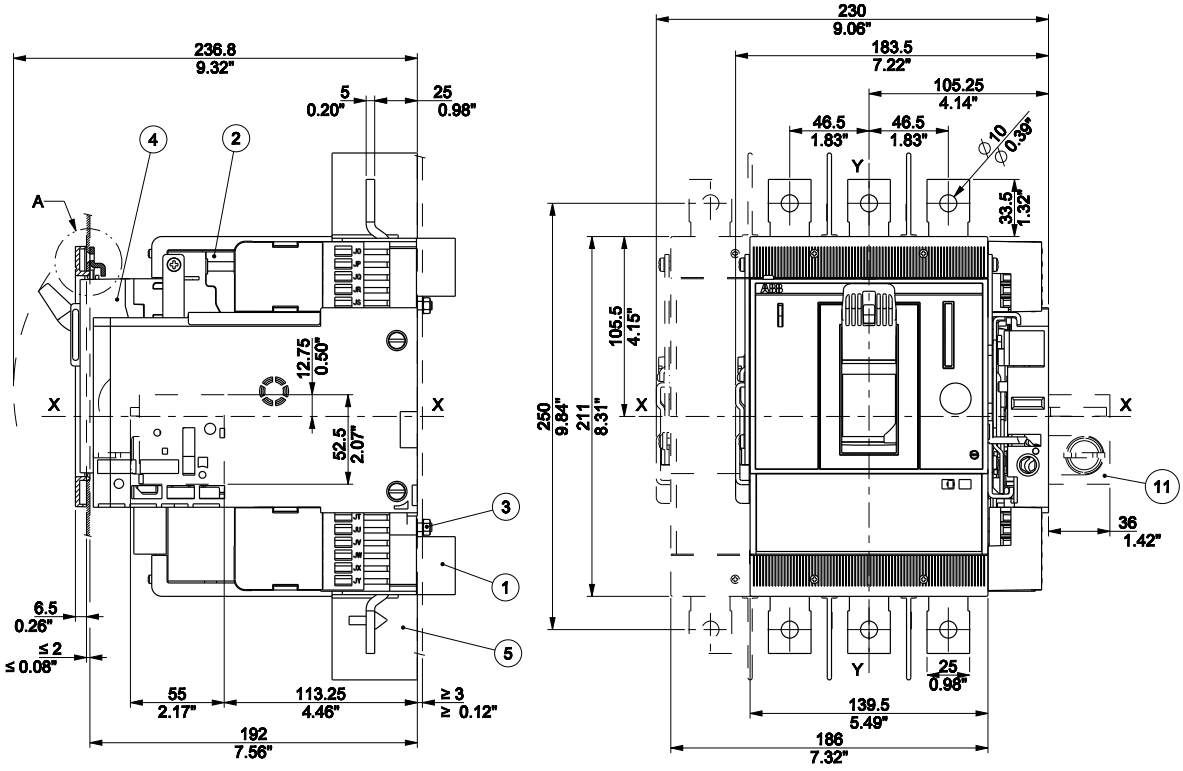


Key
6 Compartment door drilling template with/without flange

Tmax XT5 - Installation

Terminals for withdrawable circuit-breaker 400A

Terminals EF



—

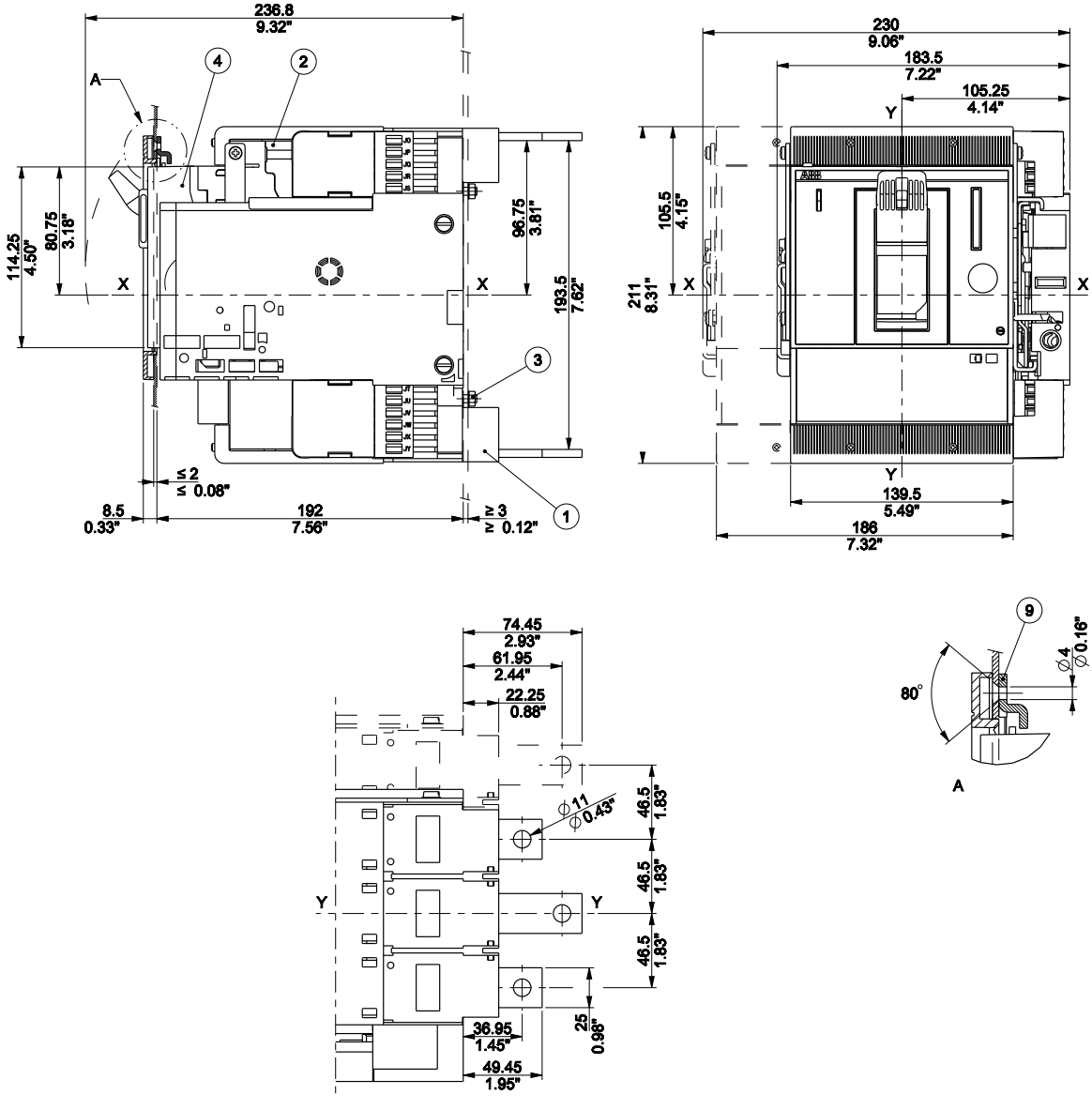
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism (FLD)
5 Phase separators 3.94"/100mm

Tmax XT5 - Installation

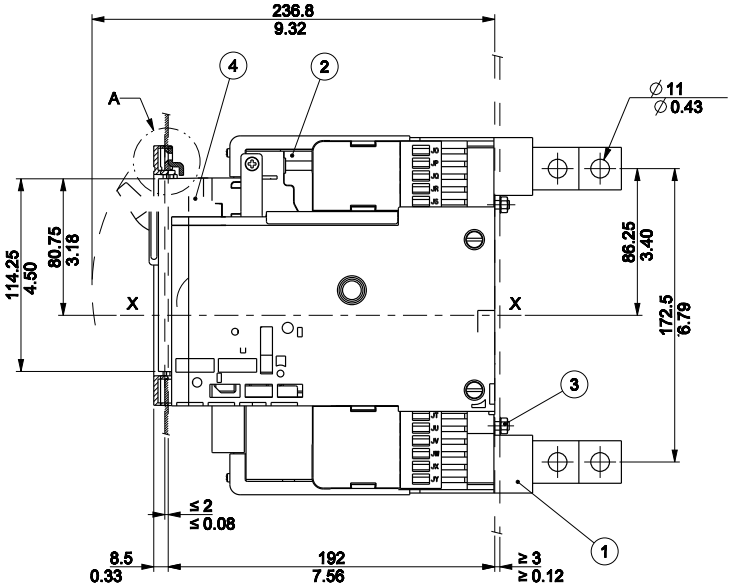
Terminals for withdrawable circuit-breaker 400A

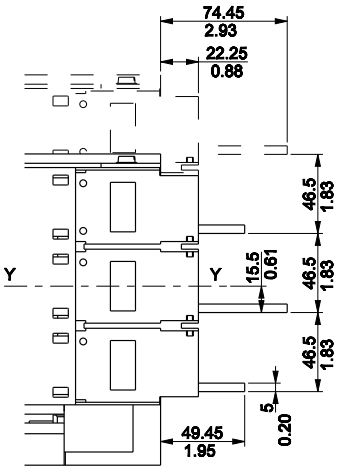
Terminals HR



Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism (FLD)
9 Door lock

Terminals VR





—

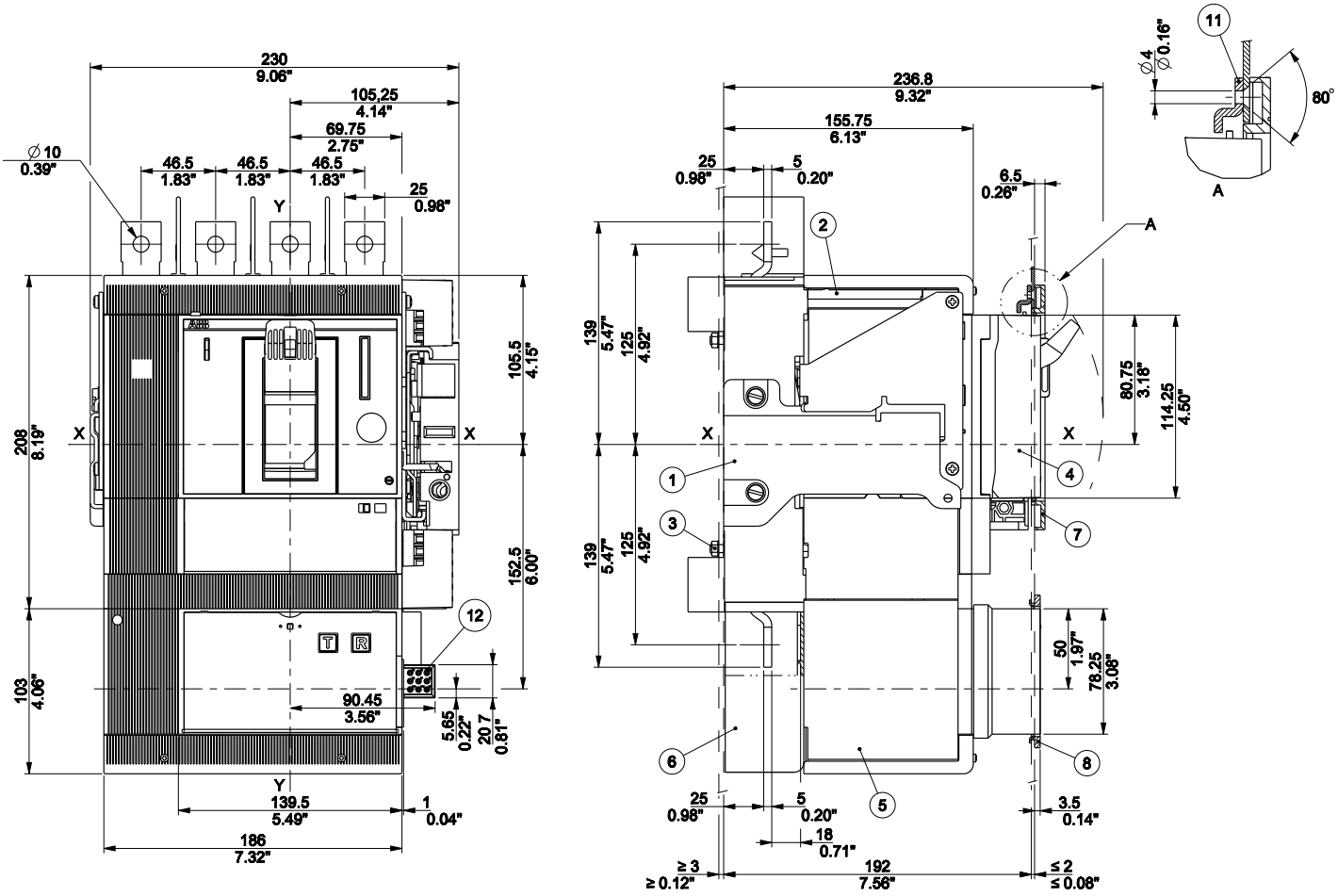
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism (FLD)

Tmax XT5 - Installation

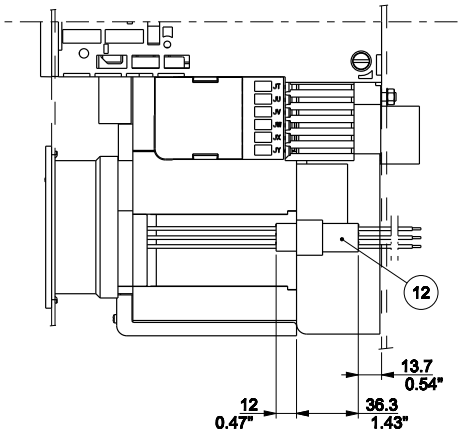
Terminals for withdrawable circuit-breaker 400A

Residual current (RC) and Front for lever operating mechanism (FLD)

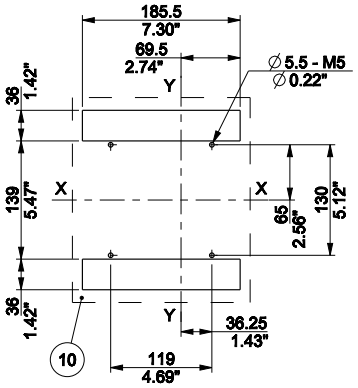


Key

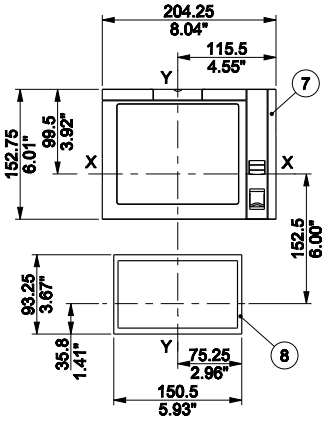
1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Front for operating lever mechanism
5 Residual current release
6 Terminal cover for residual current release
7 Flange for the compartment door
8 Flange for residual current release
11 Door lock plate
12 Plug and socket adapter for residual current release



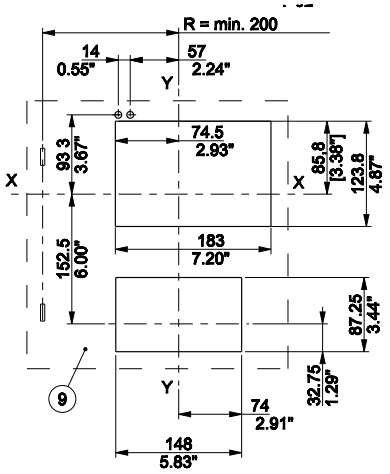
Drilling template for support sheet



Flange



Compartment door drilling templates



—

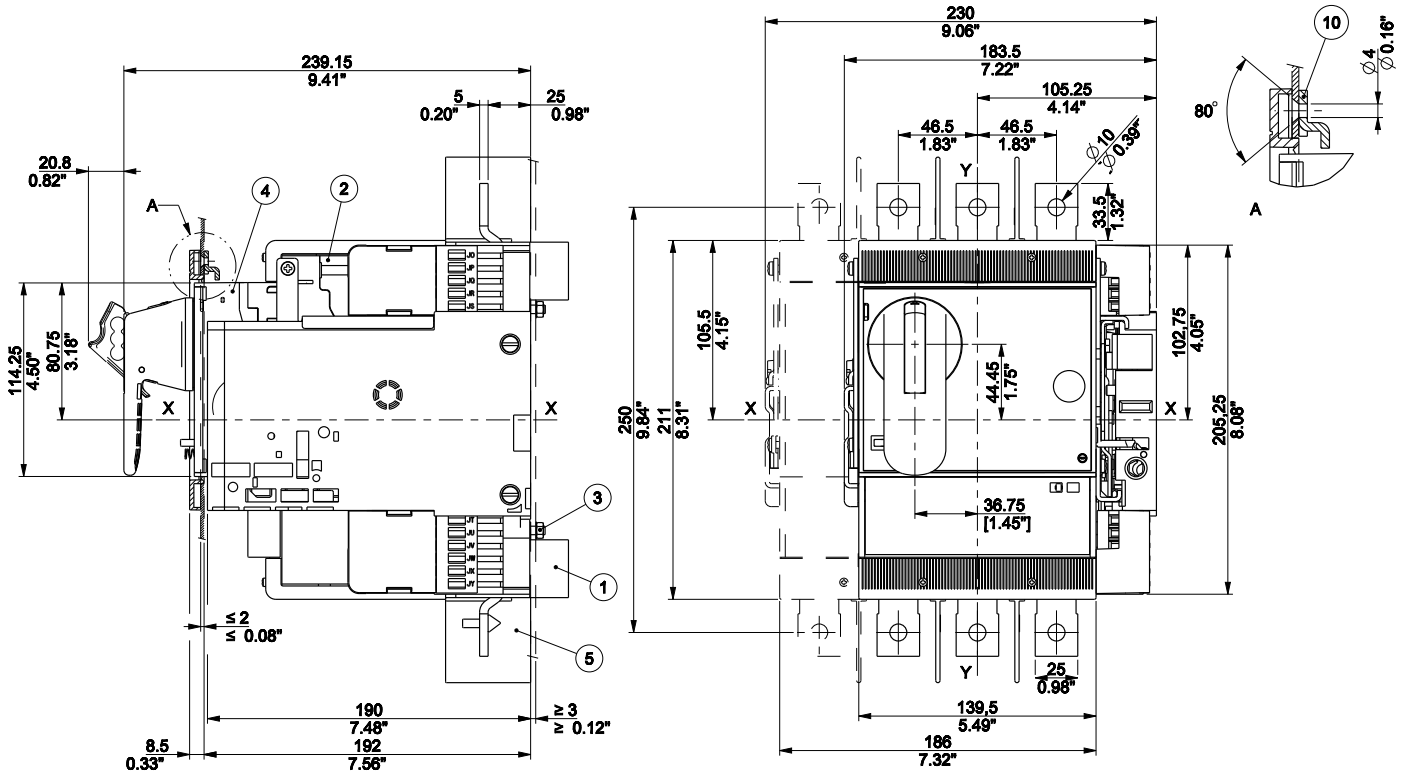
Key

7 Flange for the compartment door
8 Flange for residual current release
9 Compartment door drilling template with/without flange
10 Fixing on sheet steel

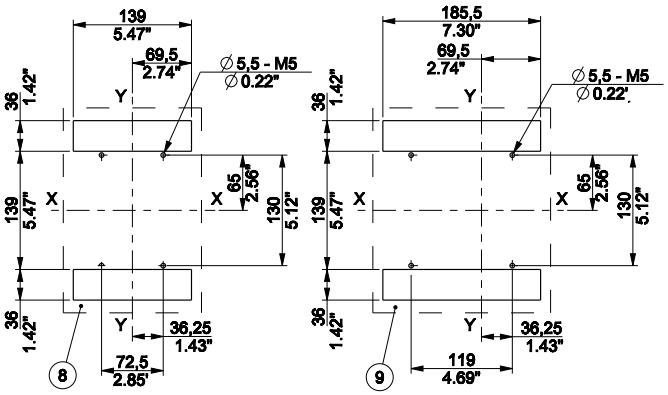
Tmax XT5 - Installation

Accessories for withdrawable circuit-breaker 400A

Rotary handle operating mechanism on the circuit-breaker (RHD)



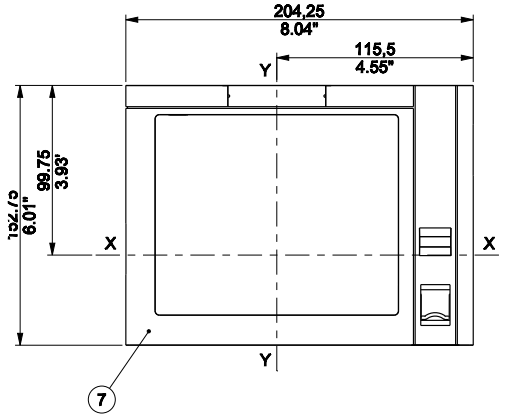
Drilling templates for support sheet



Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Rotary handle operating mechanism (RHD)
5 Phase separators 3.94"/100mm
8 Drilling template 3p
9 Drilling template 4p
10 Door lock

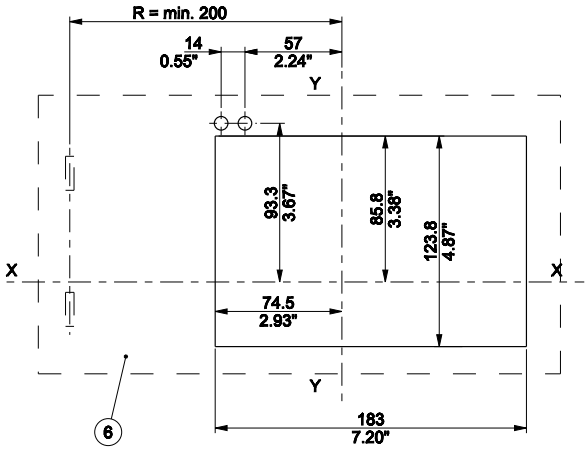
Flange

—
Key
7 Flange without gasket for the compartment door



Compartment door drilling templates

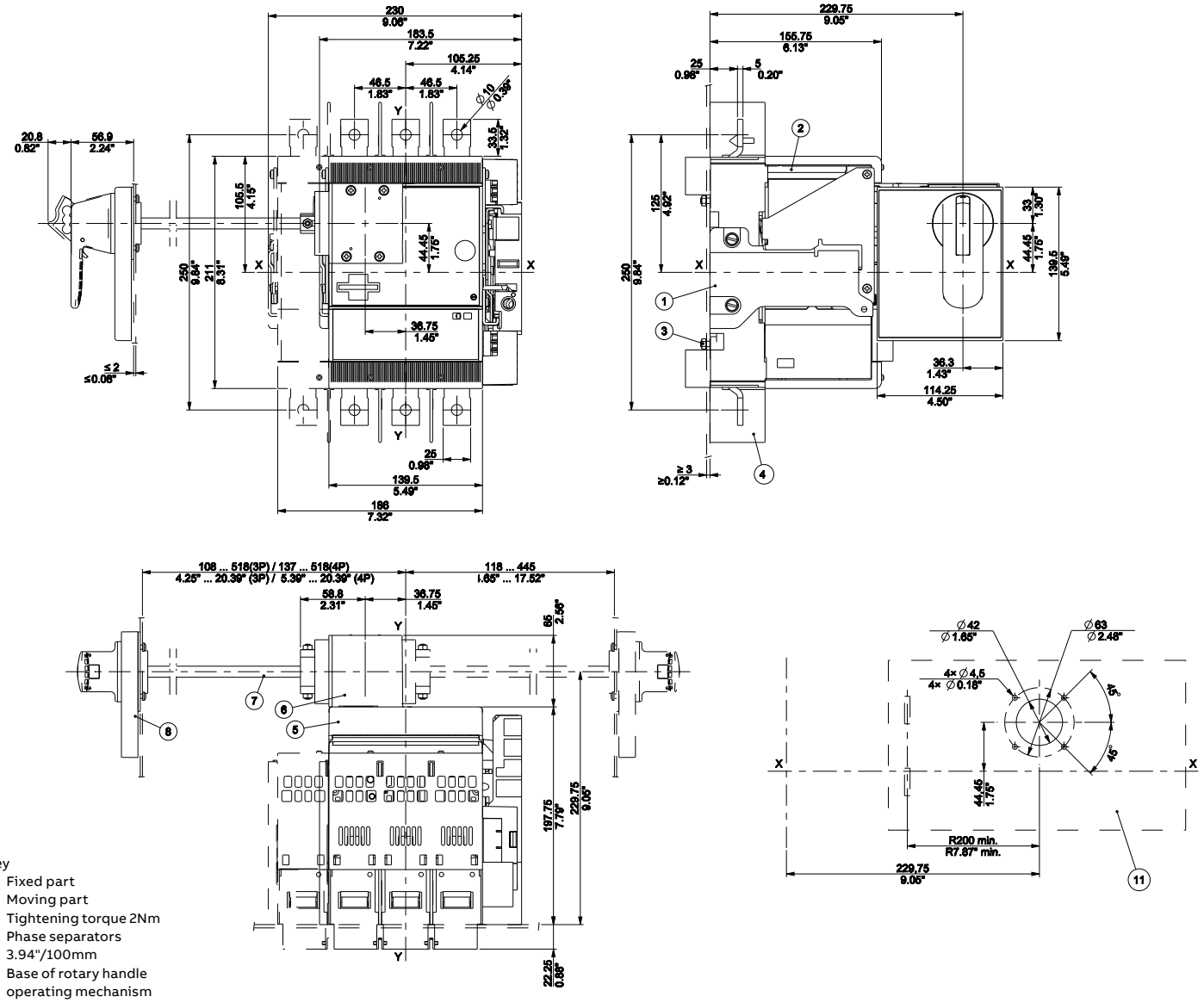
—
Key
6 Compartment door drilling template with flange



Tmax XT5 - Installation

Accessories for withdrawable circuit-breaker 400A

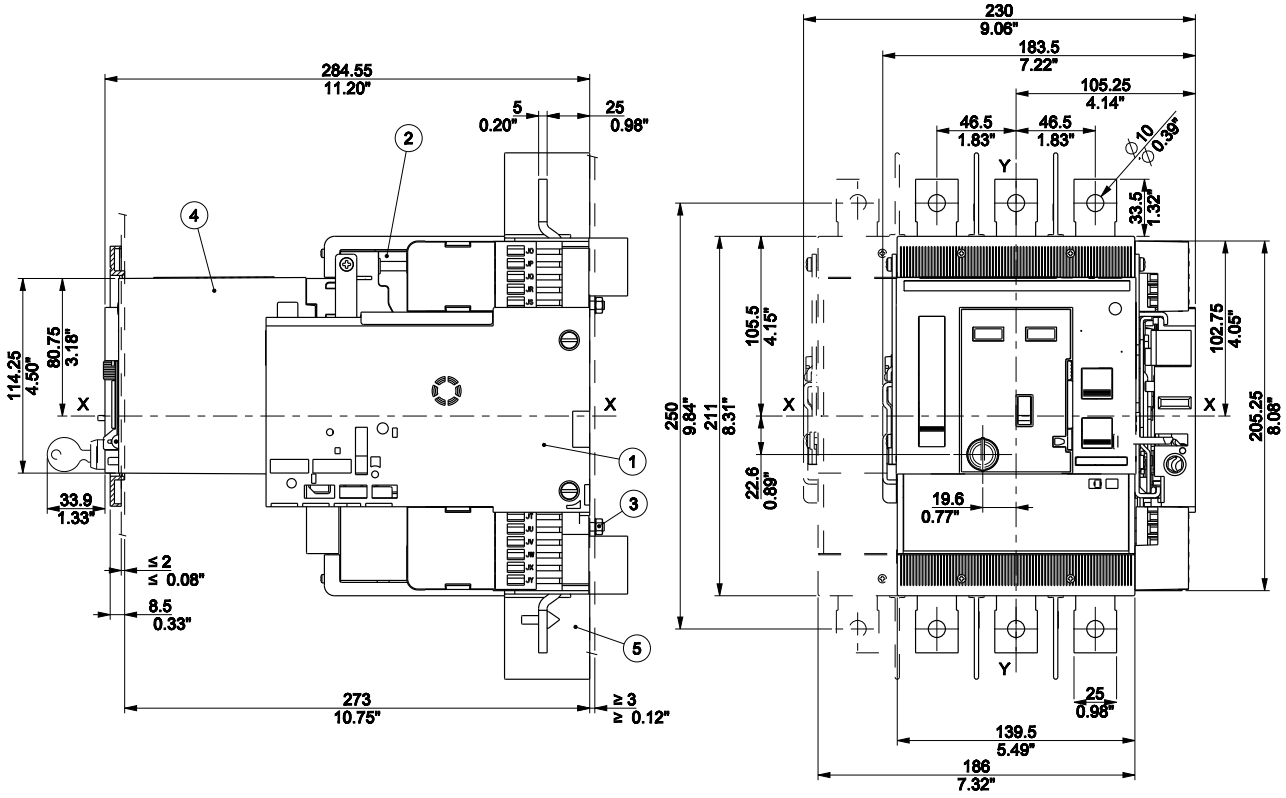
Lateral rotary handle operating mechanism on the compartment door (RHL)



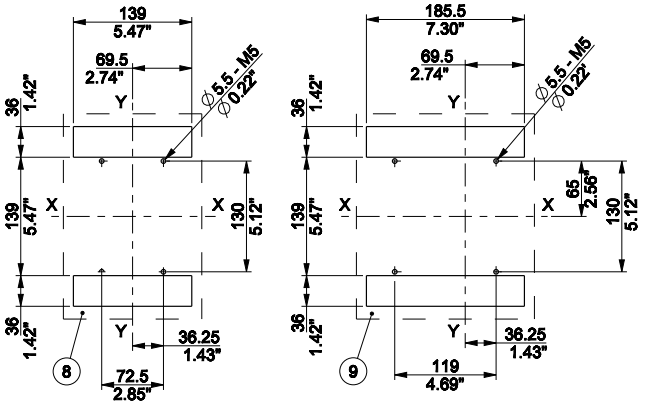
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Base of rotary handle operating mechanism
6 Lateral handle
7 500mm Connection rod
8 Rotary handle on compartment door
11 Compartment door drilling template

Stored energy motor operator (MOE)



Drilling templates for support sheet



—

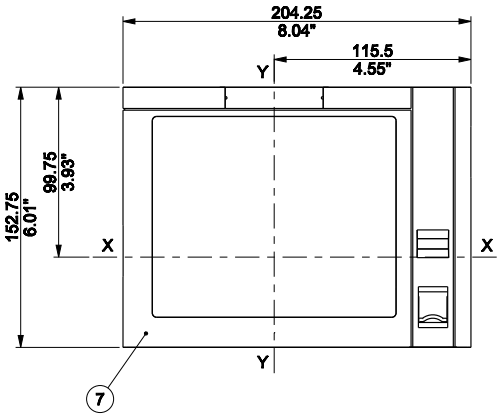
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Stored energy motor operator (MOE)
5 Phase separators 3.94"/100mm
8 Drilling template 3p
9 Drilling template 4p

Tmax XT5 - Installation

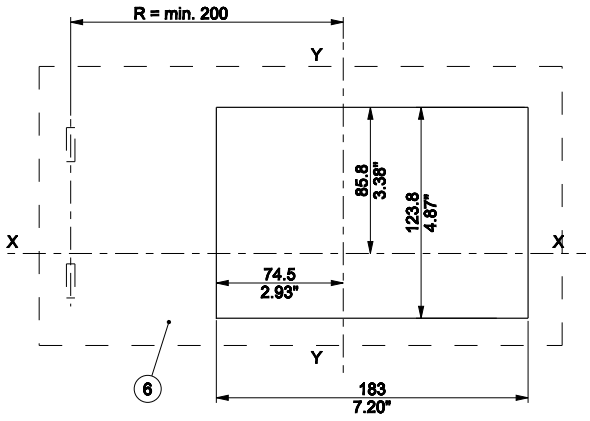
Accessories for withdrawable circuit-breaker 400A

Key
7 Flange without gasket for the compartment door

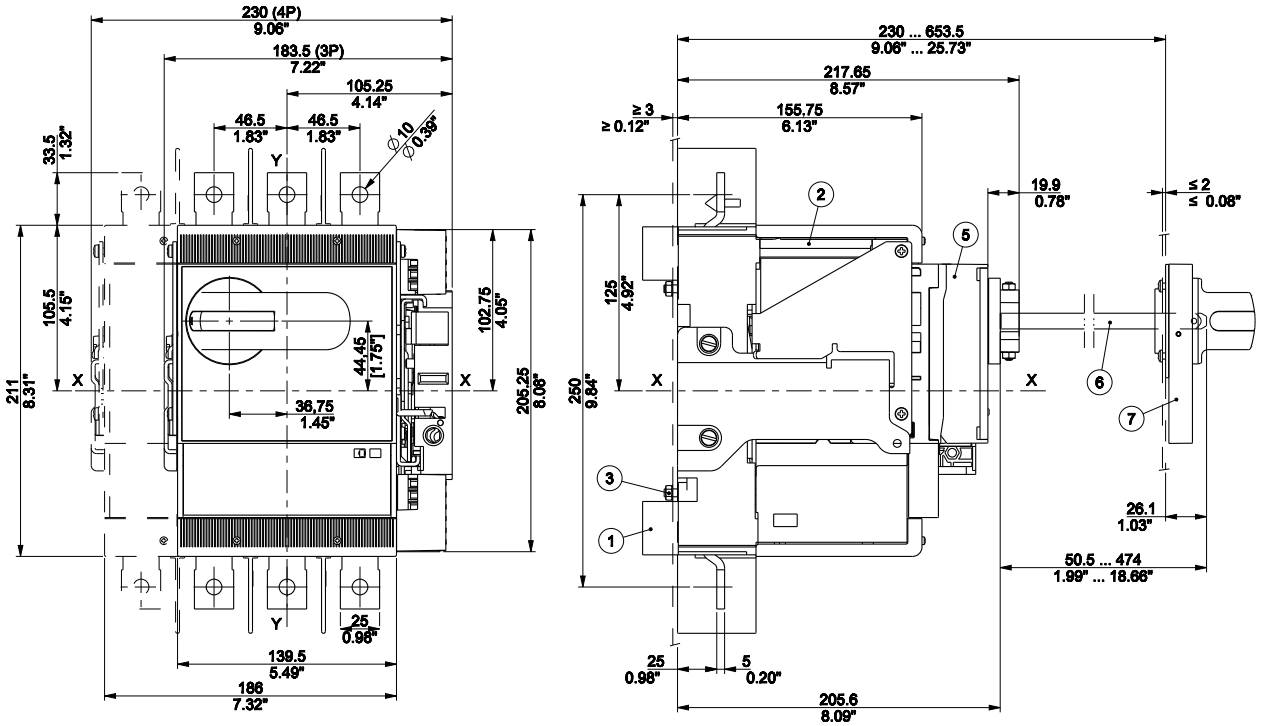


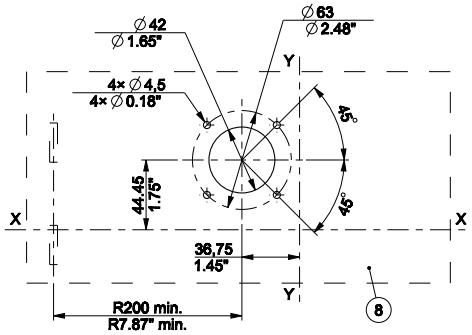
Compartment door drilling templates

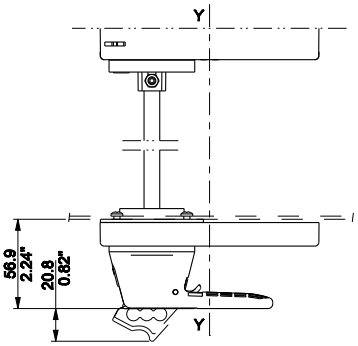
Key
6 Compartment door drilling template with flange

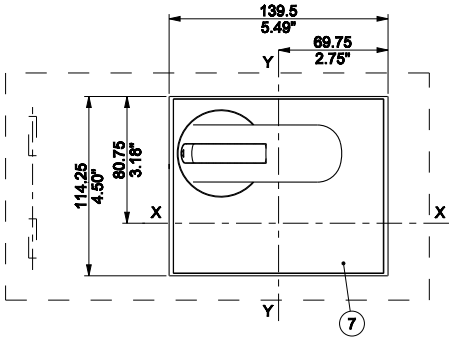


Rotary handle operating mechanism on the compartment door (RHE)









—
—

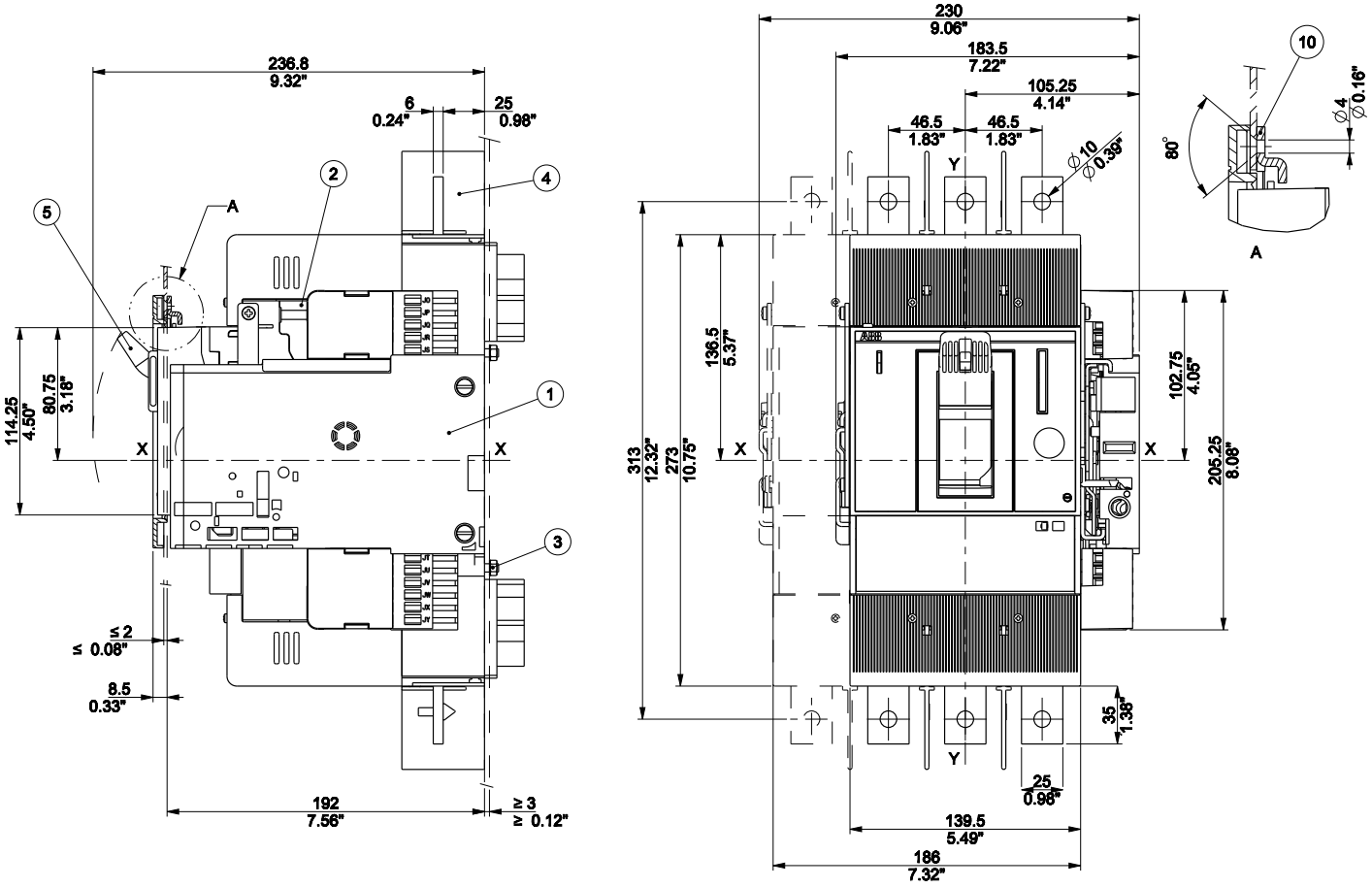
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Phase separators 3.94"/100mm
5 Rotary handle operating mechanism base (RHE_B)
6 Connection rod (RHE_S)
7 Rotary handle on compartment door (RHE_H)
8 Compartment door drilling template

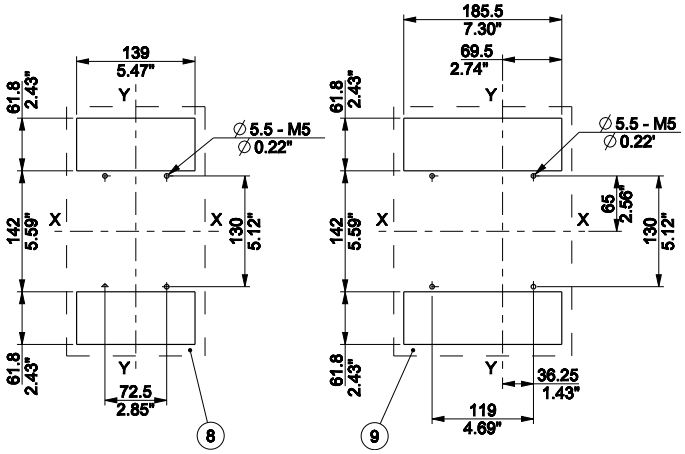
Tmax XT5 - Installation

Installation for withdrawable circuit-breaker 600A

Fixing on sheet



Drilling templates for support sheet



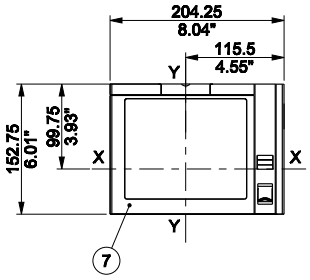
—

Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Front for lever operating mechanism
8 Drilling template 3p
9 Drilling template 4p
10 Door lock

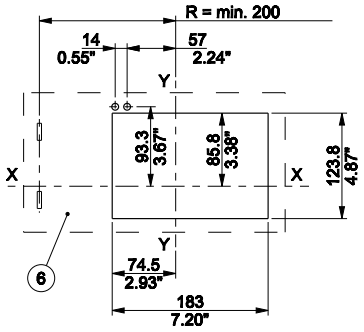
Flange

—
Key
7 Flange without gasket for the compartment door



Compartment door drilling templates

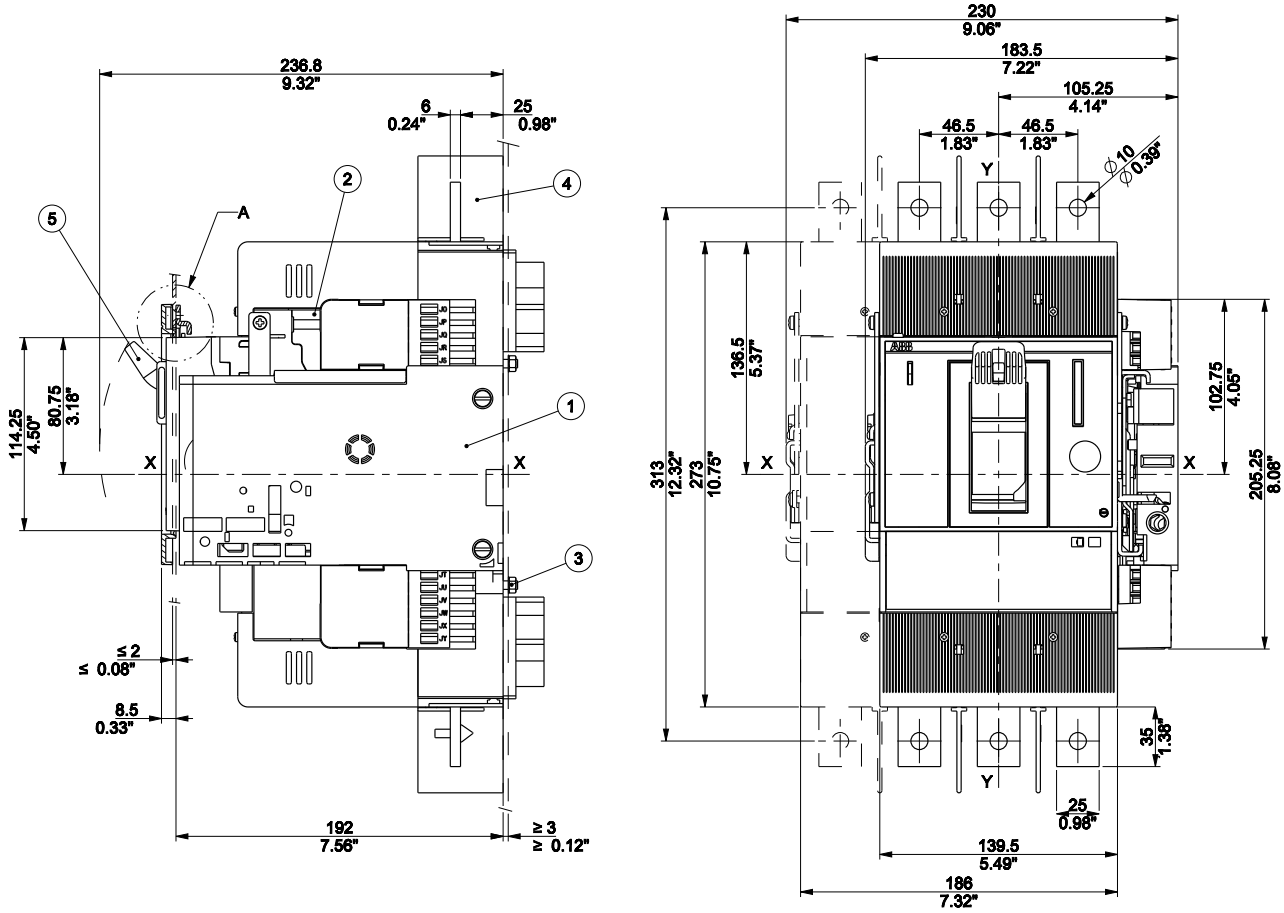
—
Key
6 Compartment door drilling template with flange



Tmax XT5 - Installation

Terminals for withdrawable circuit-breaker 600A

Terminals EF

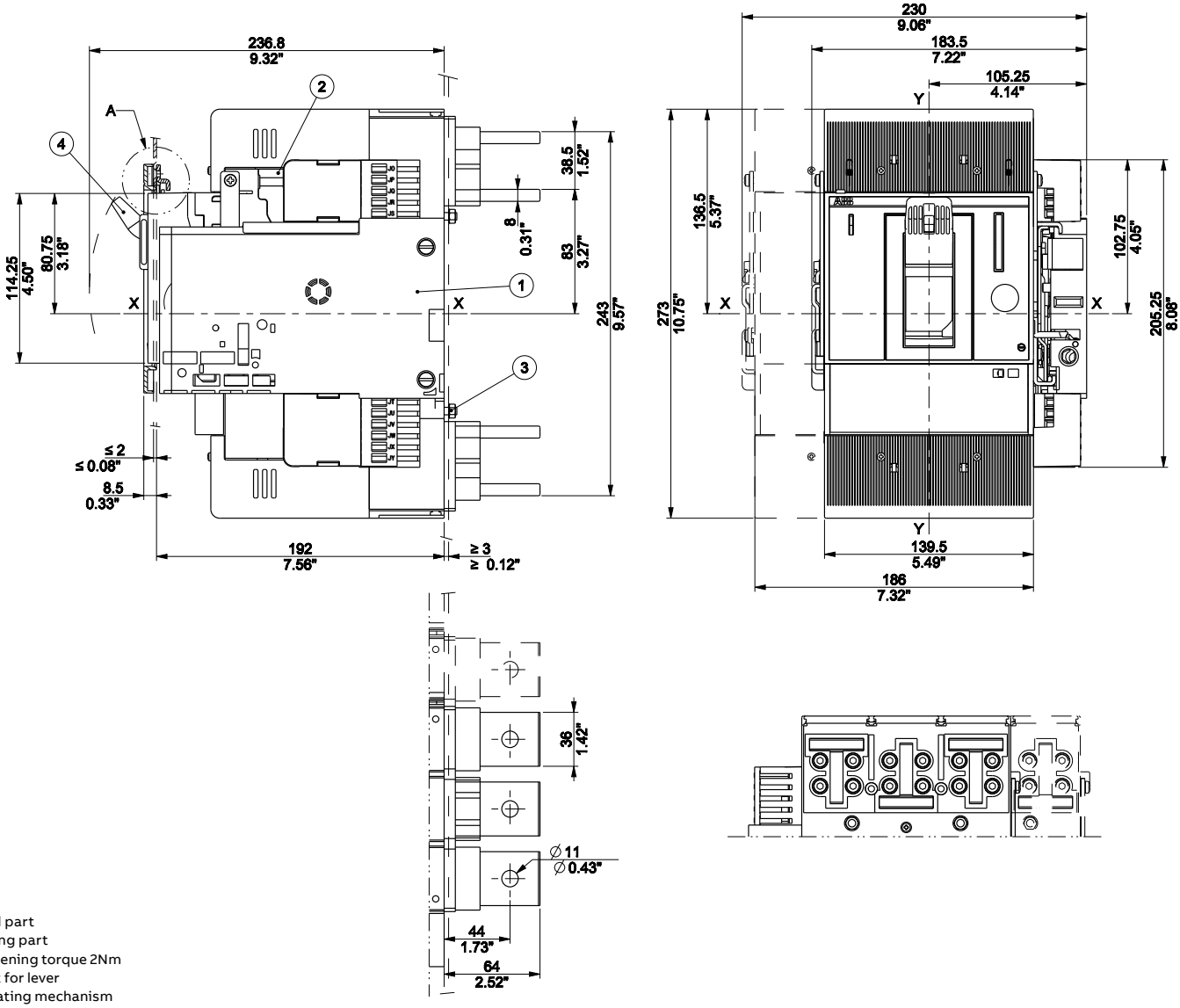


—

Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Front for lever operating mechanism

Terminals HR



—

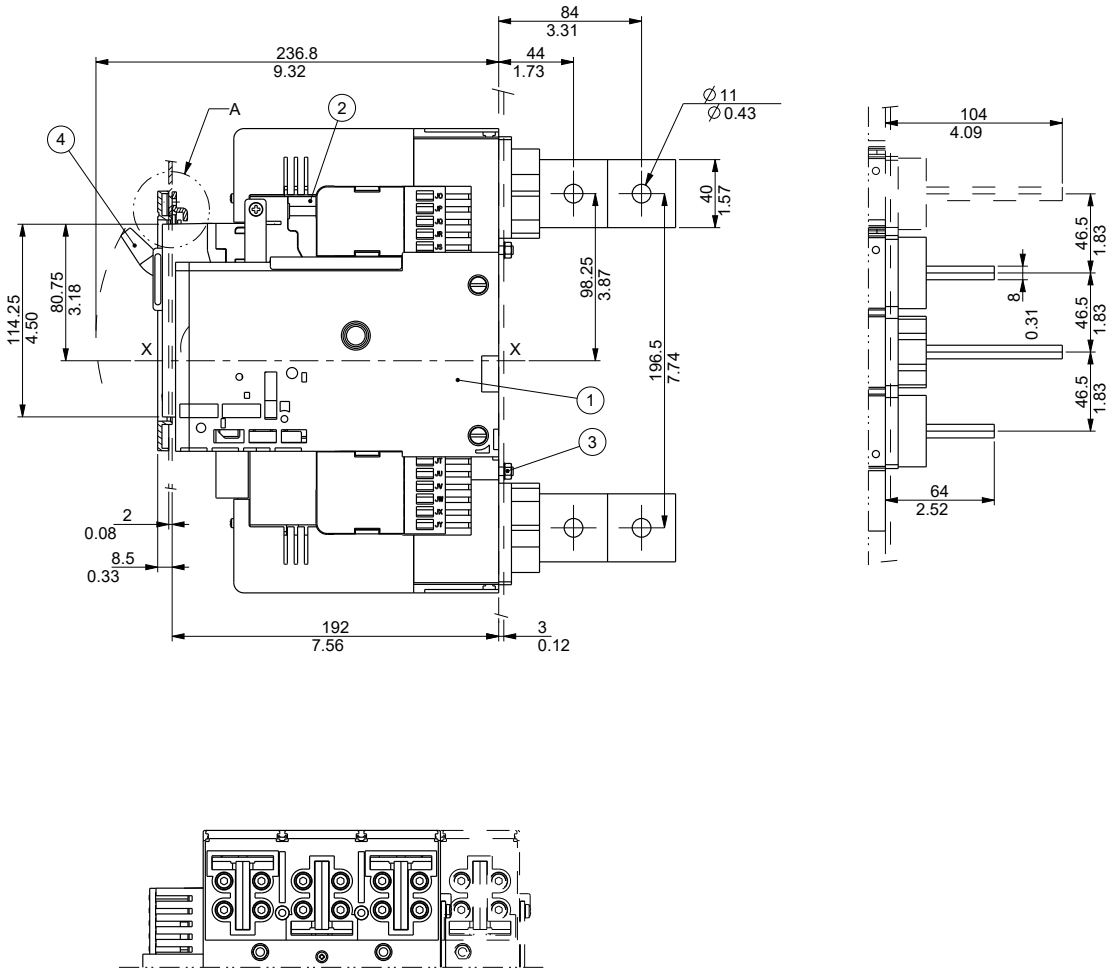
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism

Tmax XT5 - Installation

Terminals for withdrawable circuit-breaker 600A

Terminals VR

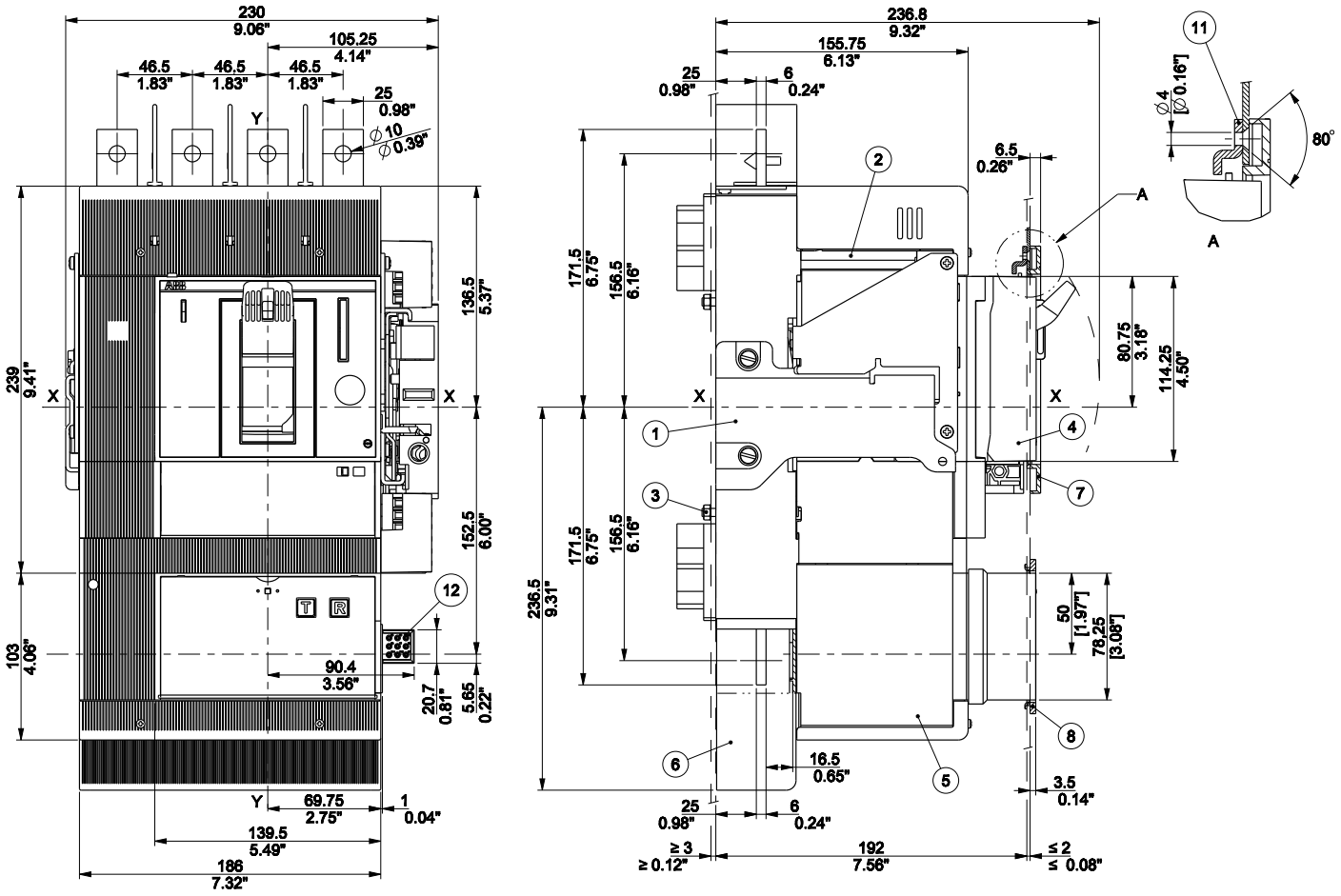


—

Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism (FLD)

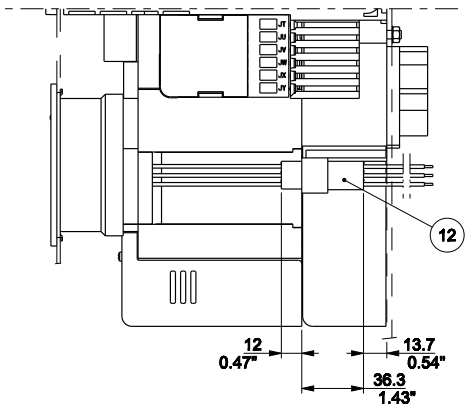
Residual current (RC) and Front for lever operating mechanism (FLD)



—

Key

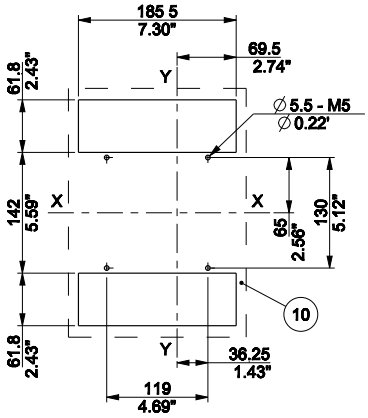
1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Front for operating lever mechanism
5 Residual current release
6 Terminal cover for residual current release
7 Flange for the compartment door
8 Flange for residual current release
11 Door lock plate
12 Plug and socket adapter for residual current release



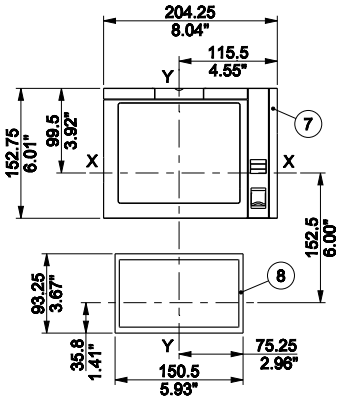
Tmax XT5 - Installation

Terminals for withdrawable circuit-breaker 600A

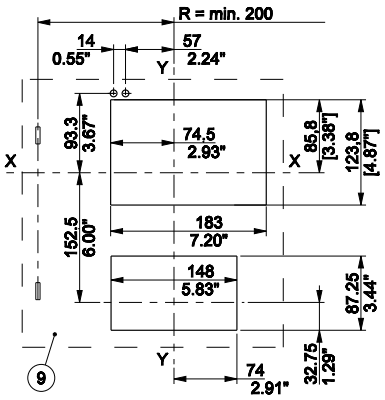
Drilling template for support sheet



Flange



Compartment door drilling templates



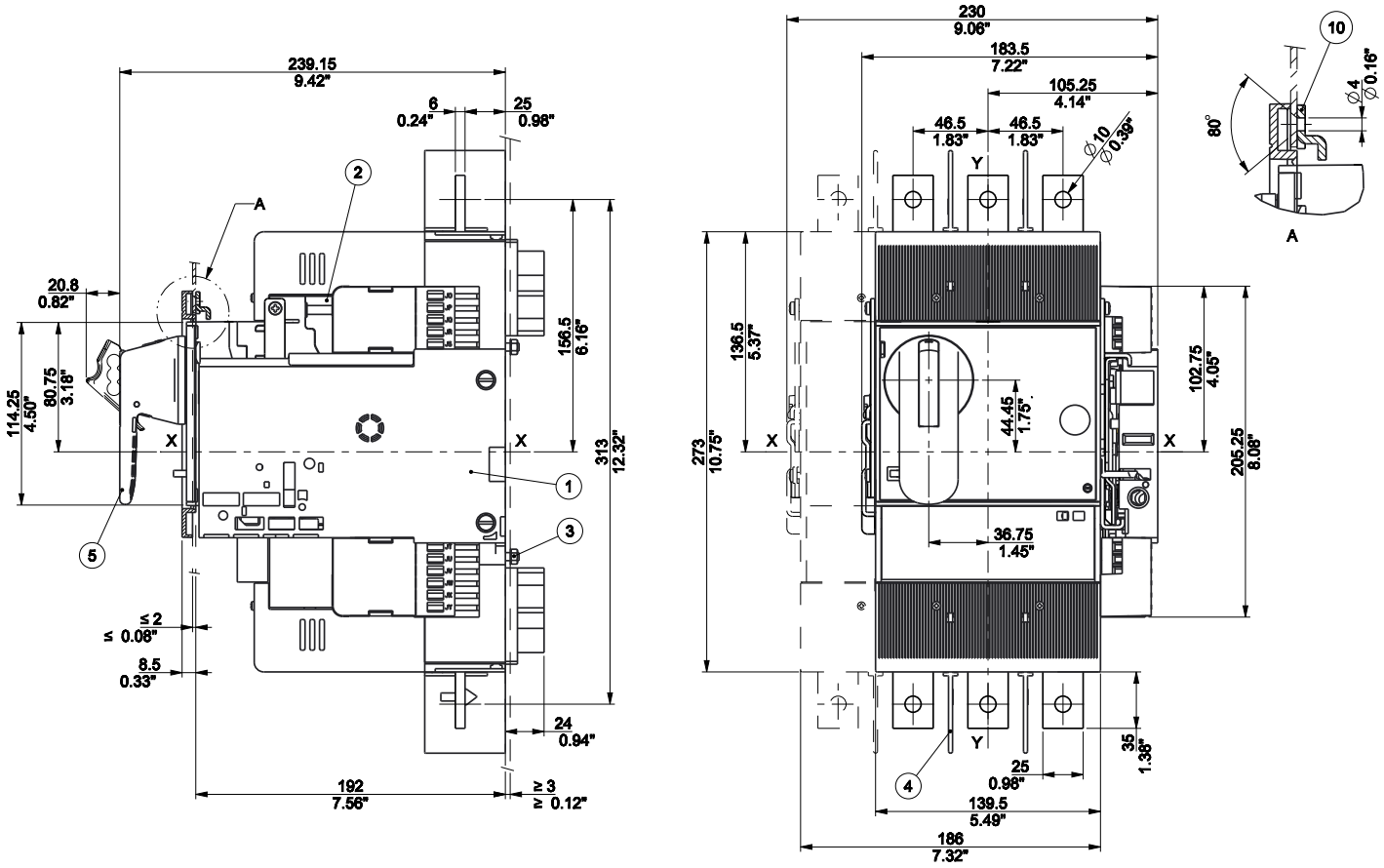
Key

7 Flange for the compartment door
8 Flange for residual current release
9 Compartment door drilling template with/without flange
10 Fixing on sheet steel

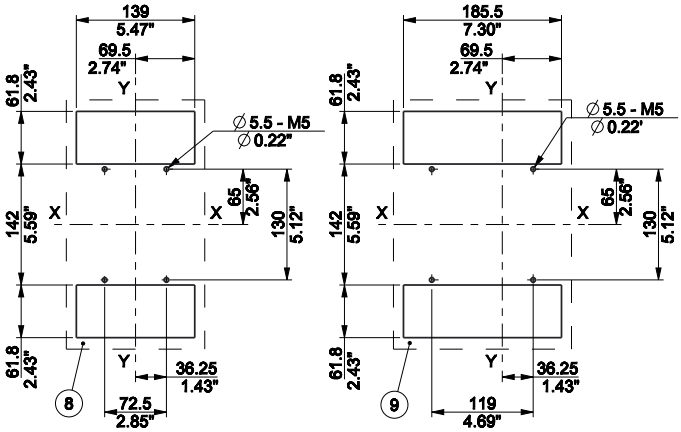
Tmax XT5 - Installation

Accessories for withdrawable circuit-breaker 600A

Rotary handle operating mechanism on the circuit-breaker (RHD)



Drilling templates for support sheet



—

Key

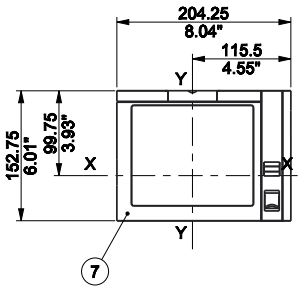
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Rotary handle operating mechanism (RHD)
8 Drilling template 3p
9 Drilling template 4p
10 Door lock

Tmax XT5 - Installation

Accessories for withdrawable circuit-breaker 600A

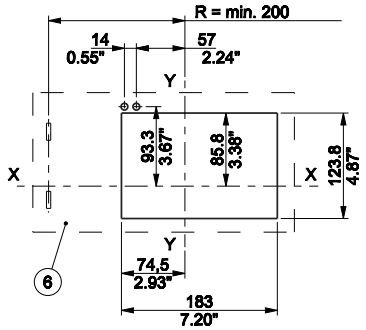
Flange

Key
7 Flange without gasket for the compartment door

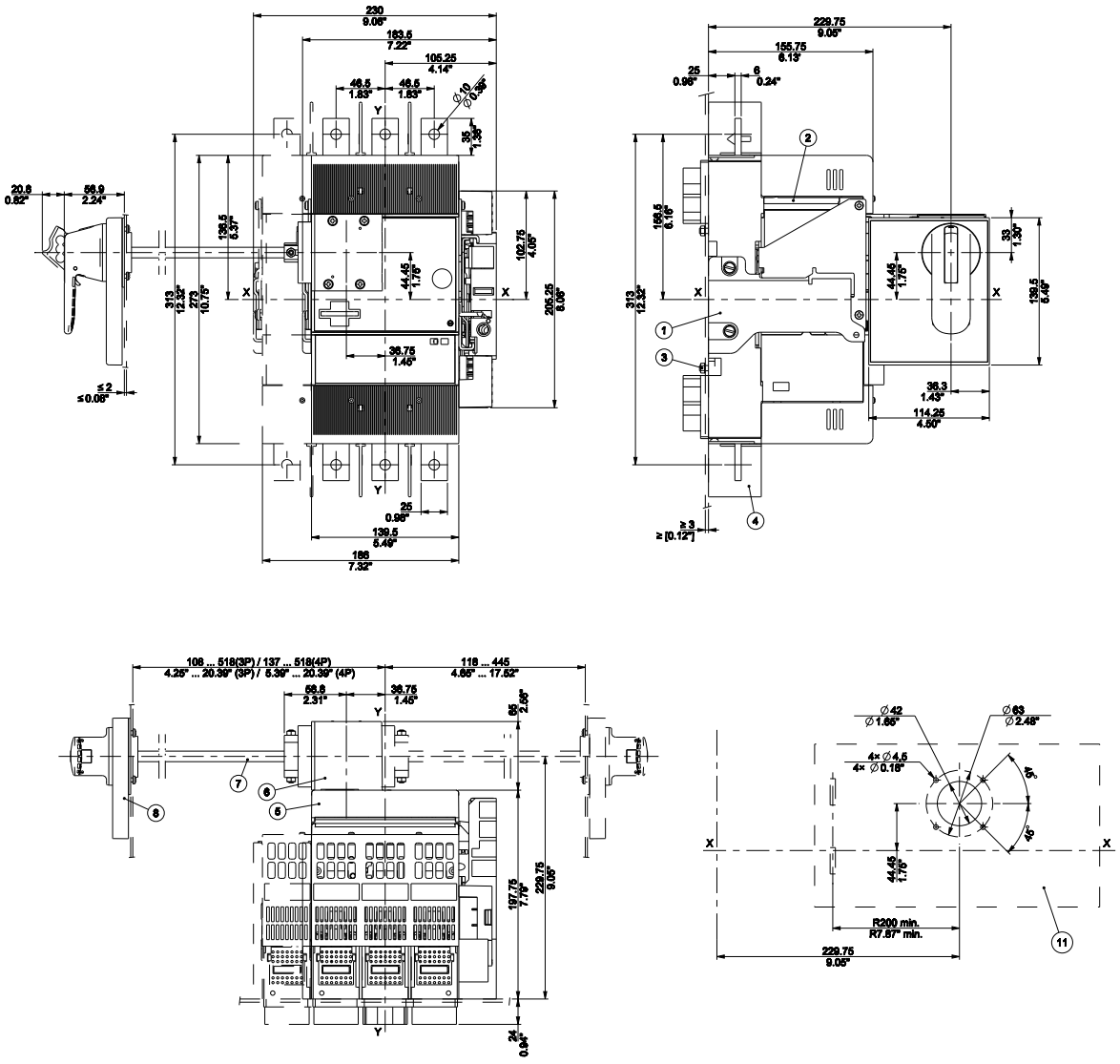


Compartment door drilling templates

Key
6 Compartment door drilling template with flange



Lateral rotary handle operating mechanism on the compartment door (RHL)



—

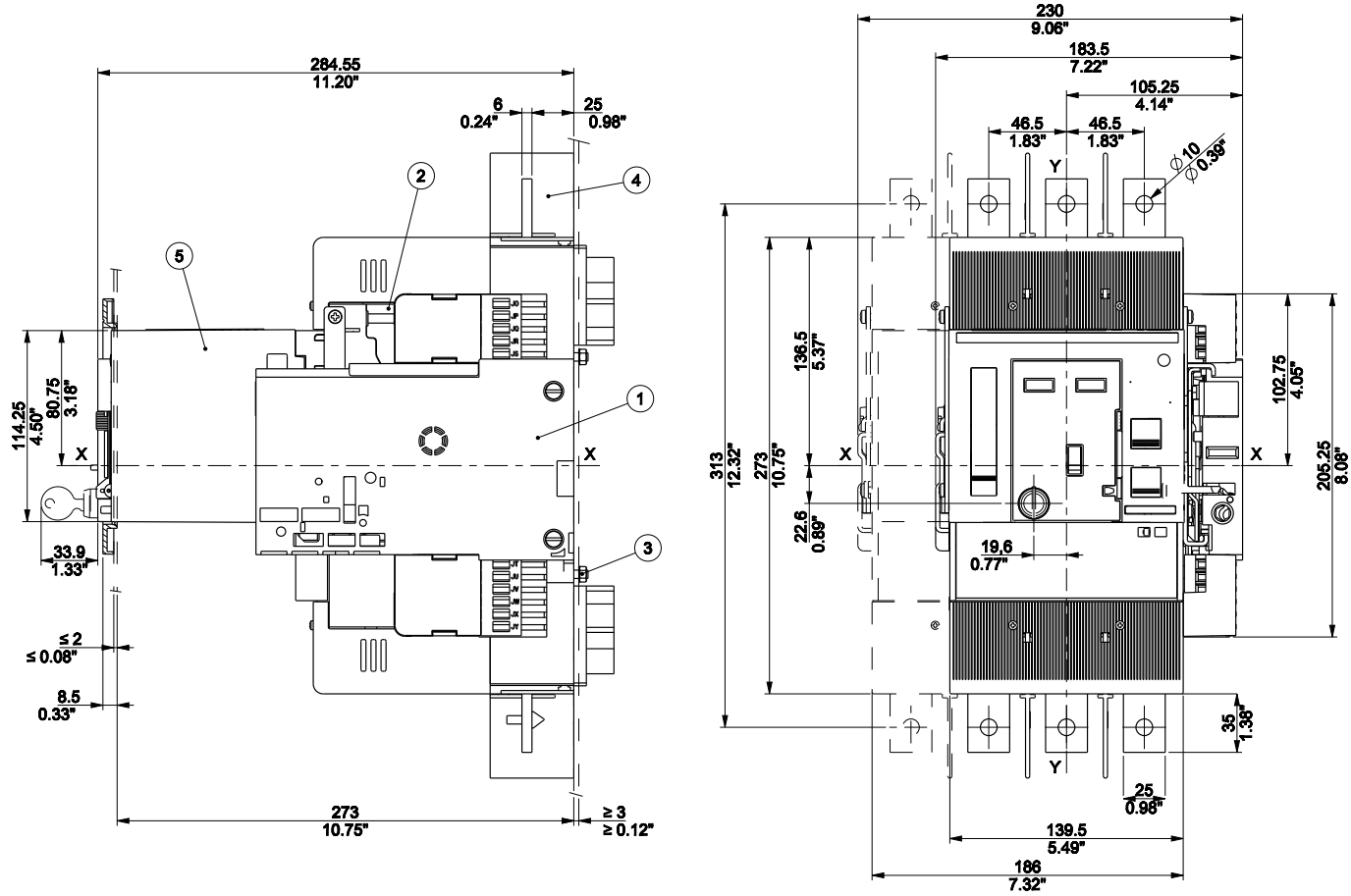
Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Base of rotary handle operating mechanism
6 Lateral handle
7 500mm Connection rod
8 Rotary handle on compartment door
11 Compartment door drilling template

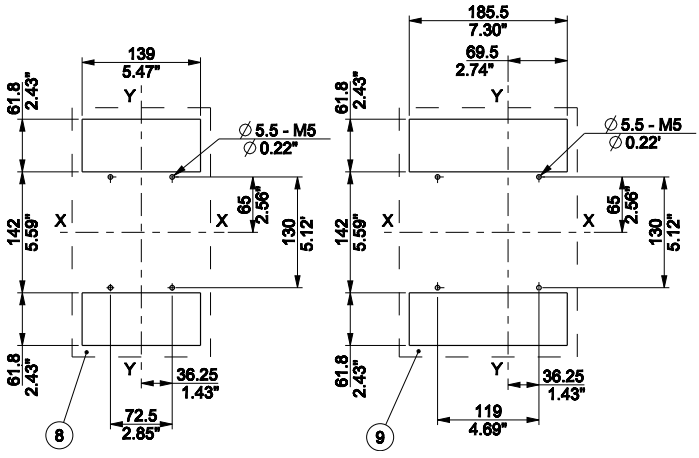
Tmax XT5 - Installation

Accessories for withdrawable circuit-breaker 600A

Stored energy motor operator (MOE)



Drilling templates for support sheet

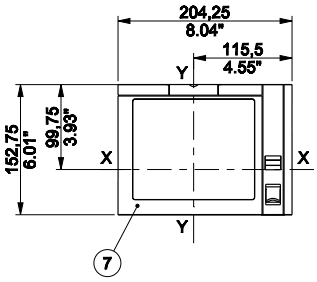


Key

1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 3.94"/100mm
5 Stored energy motor operator (MOE)
8 Drilling template 3p
9 Drilling template 4p

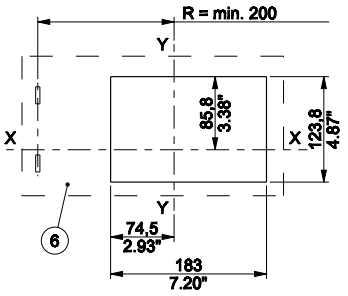
Flange

—
Key
7 Flange without gasket for the compartment door



Compartment door drilling templates

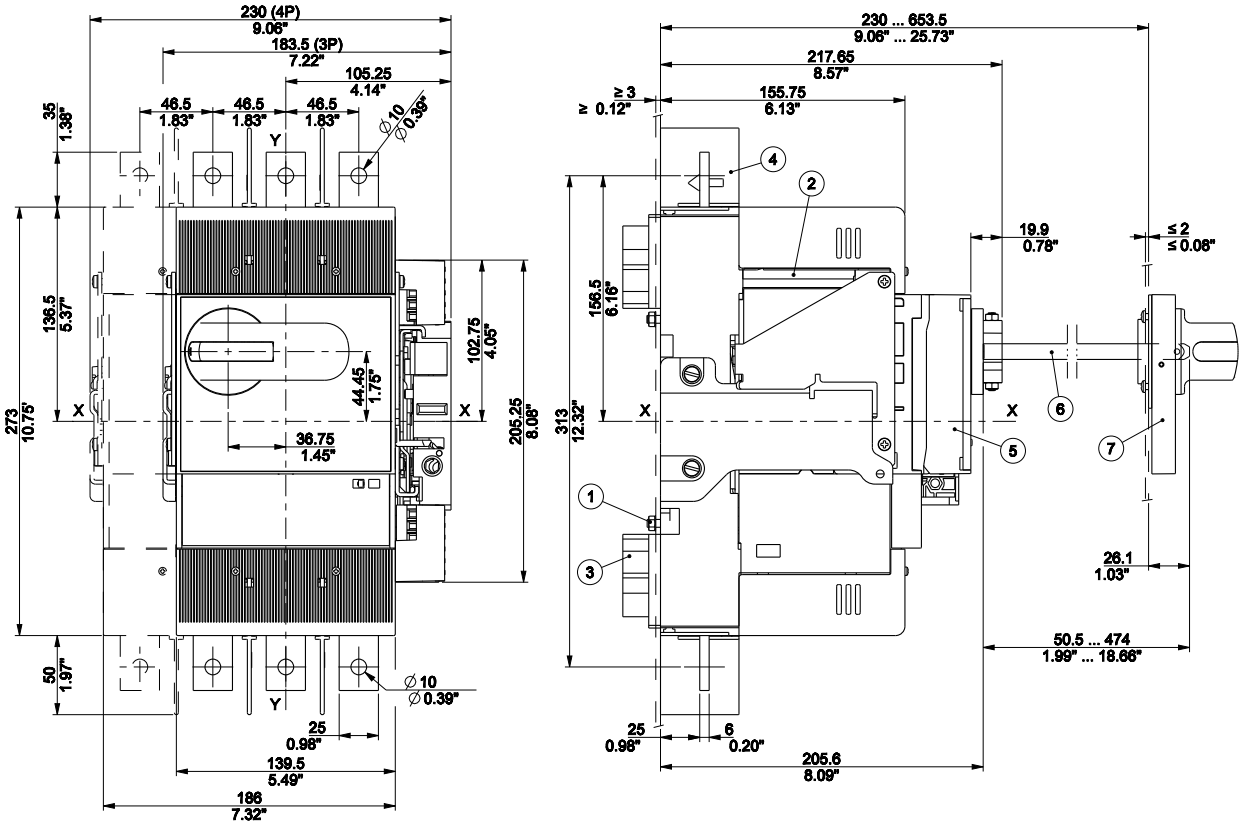
—
Key
6 Compartment door drilling template with flange

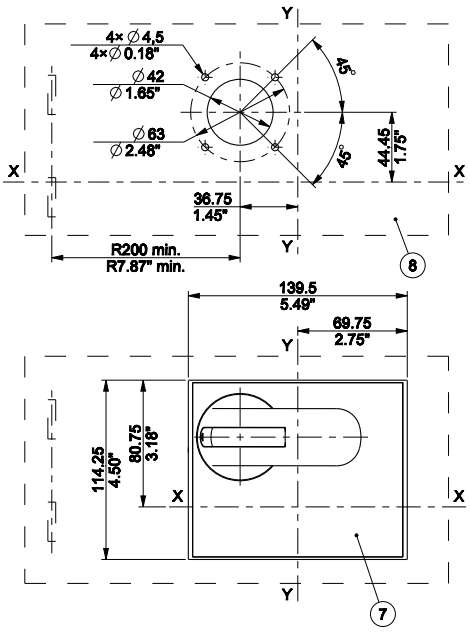


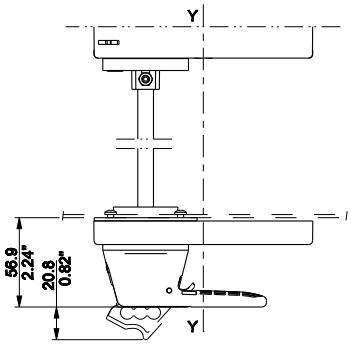
Tmax XT5 - Installation

Accessories for withdrawable circuit-breaker 600A

Rotary handle operating mechanism on the compartment door (RHE)







Key

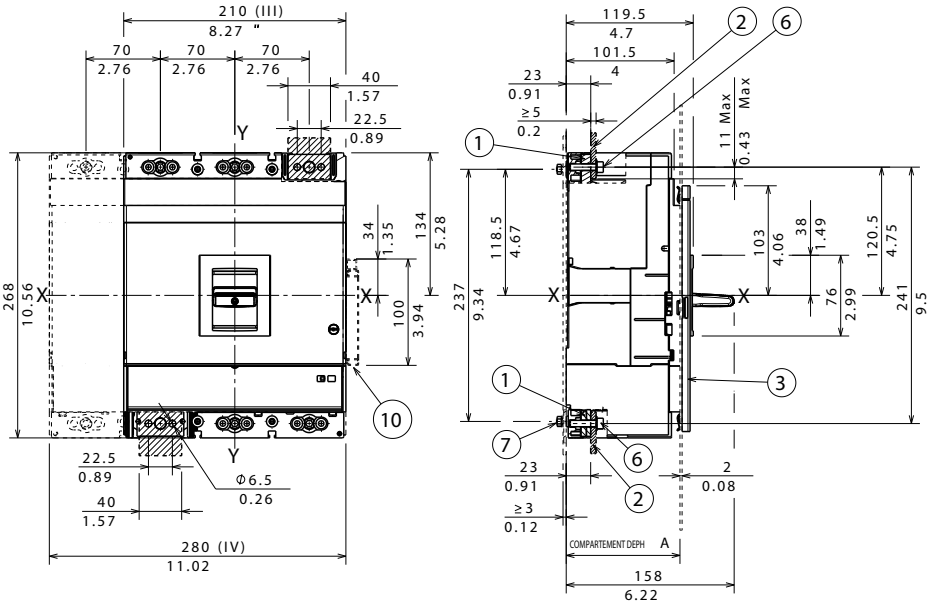
1 Fixed part
2 Moving part
3 Tightening torque 2Nm-18lbs in
4 Phase separators 3.94"/100mm
5 Rotary handle operating mechanism base (RHE_B)
6 Connection rod (RHE_S)
7 Rotary handle on compartment door (RHE_H)
8 Compartment door drilling template

Tmax XT6 - Installation

Installation for fixed circuit-breaker

Fixing on sheet

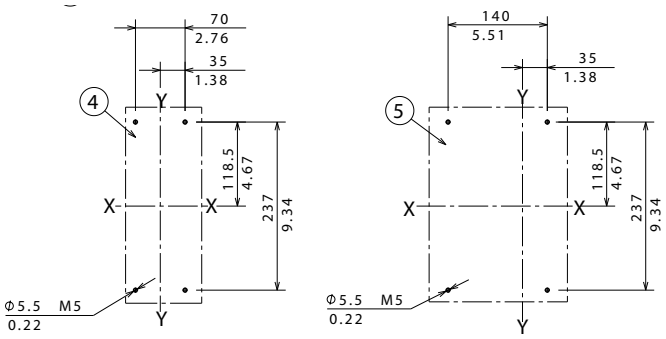
Key
1 Front terminals for flat connection
2 Busbar
6 Tightening torque 9Nm
7 Tightening torque 2Nm
10 Cable rack



		A [in/mm]
With flange	3p-4p	4.25/108
Without flange	3p-4p	4.03/103.5

Drilling templates for support sheet

Key
4 Drilling template 3p
5 Drilling template 4p

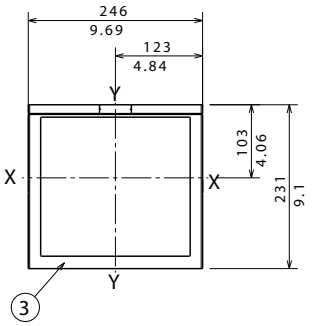


Tmax XT6 - Installation

Installation for fixed circuit-breaker

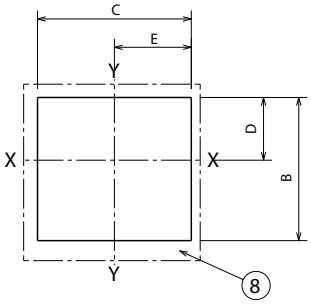
Flange

Key
3 Flange without gasket for compartment door



Compartment door drilling templates

Key
8 Compartment door drilling template with/without flange

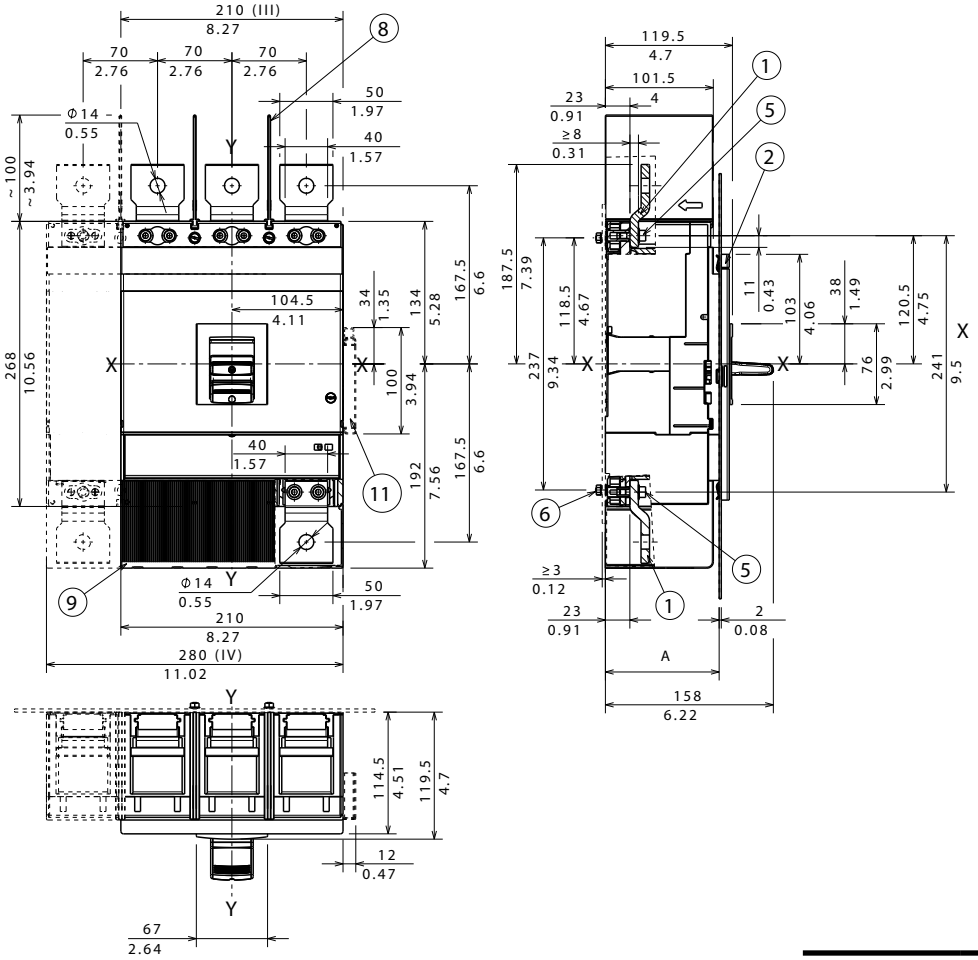


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]	E [in/mm]
With flange	3p-4p	4.25/108	7.95/202	8.54/217	3.48/88.5	4.27/108.5
Without flange	3p-4p	4.03/103.5	7.75/197	8.35/212	3.39/86	4.17/106

Tmax XT6 - Installation

Terminals for fixed circuit-breaker

Terminals EF



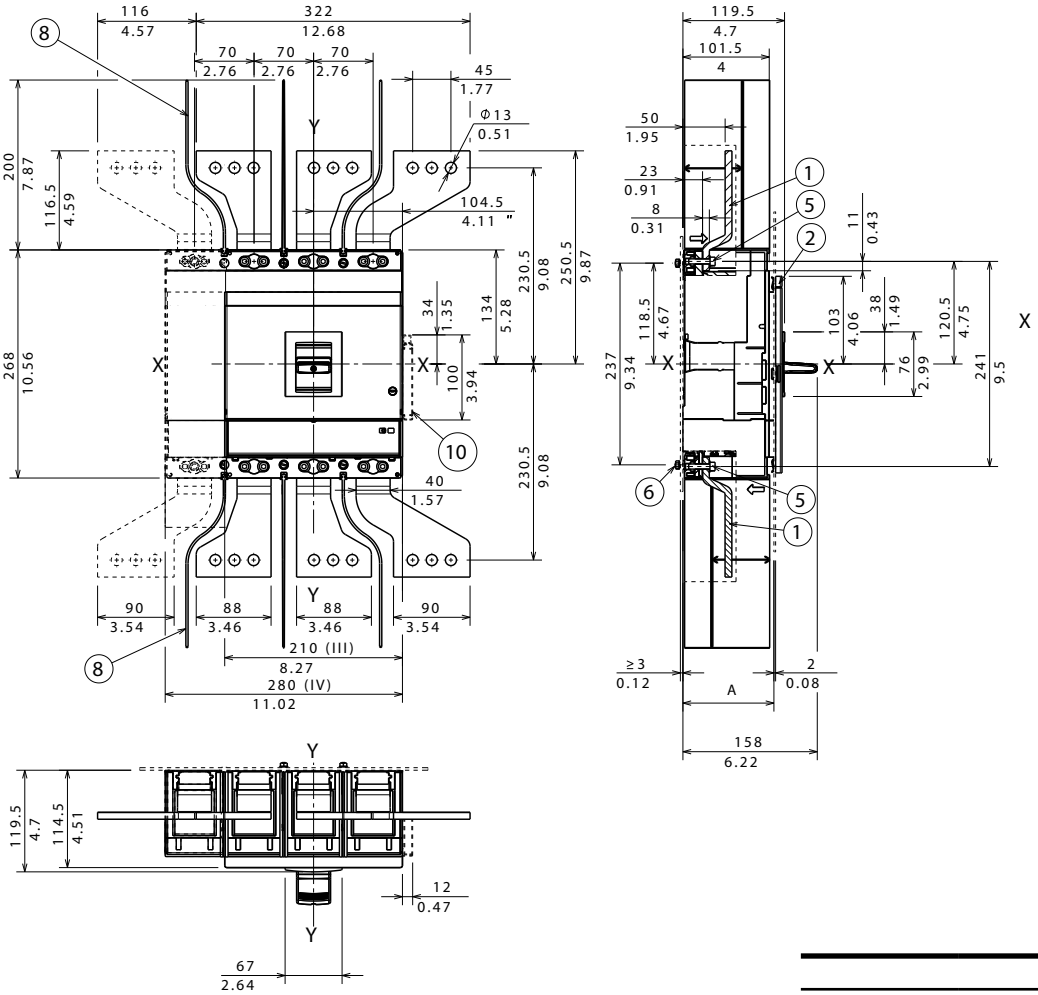
Key
1 Extended front terminals
5 Tightening torque 9Nm
6 Tightening torque 2Nm
8 Phase separators 3.94"/100mm
9 High terminal cover with IP40 protection degree
11 Cable rack

		A [in/mm]
With flange	3p-4p	4.25/108
Without flange	3p-4p	4.03/103.5

Tmax XT6 - Installation

Terminals for fixed circuit-breaker

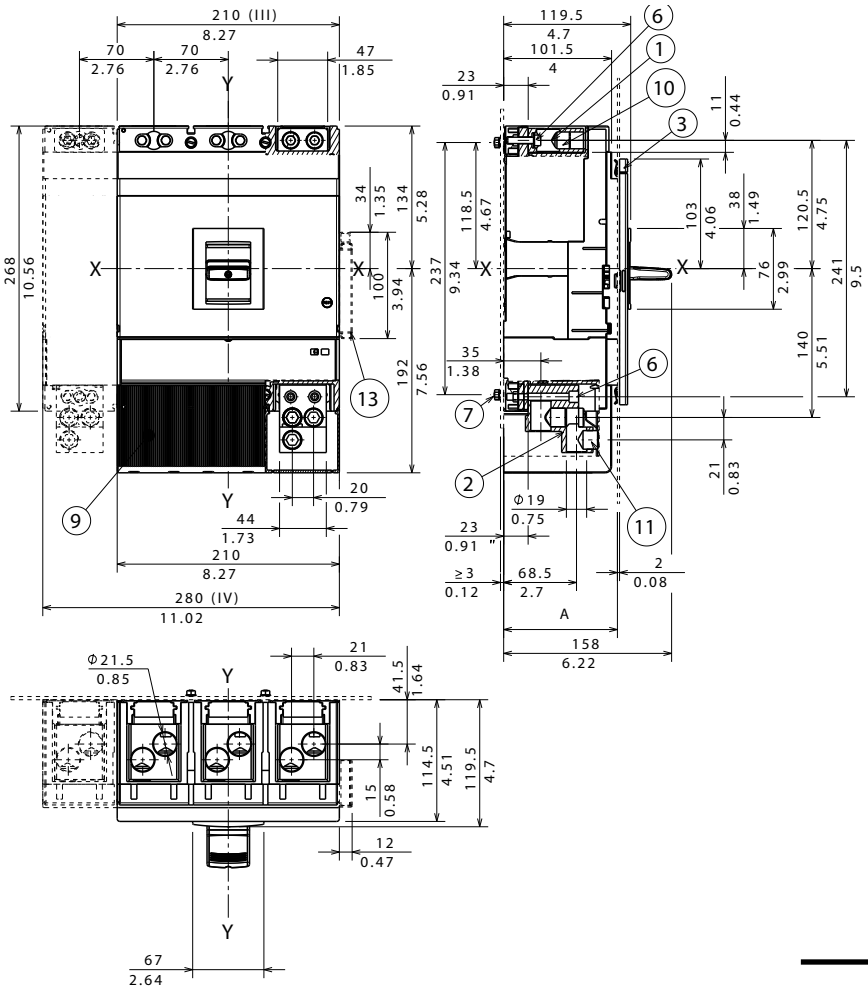
Terminals ES



Key
1 Extended front terminals
5 Tightening torque 9Nm
6 Tightening torque 2Nm
8 Phase separators 7.87"/200mm
10 Cable rack

		A [in/mm]
With flange	3p-4p	4.25/108
Without flange	3p-4p	4.03/103.5

2 x 250…500kcmil and 3 x 2/0AWG…400kcmil terminals FC CuAl



—

Key

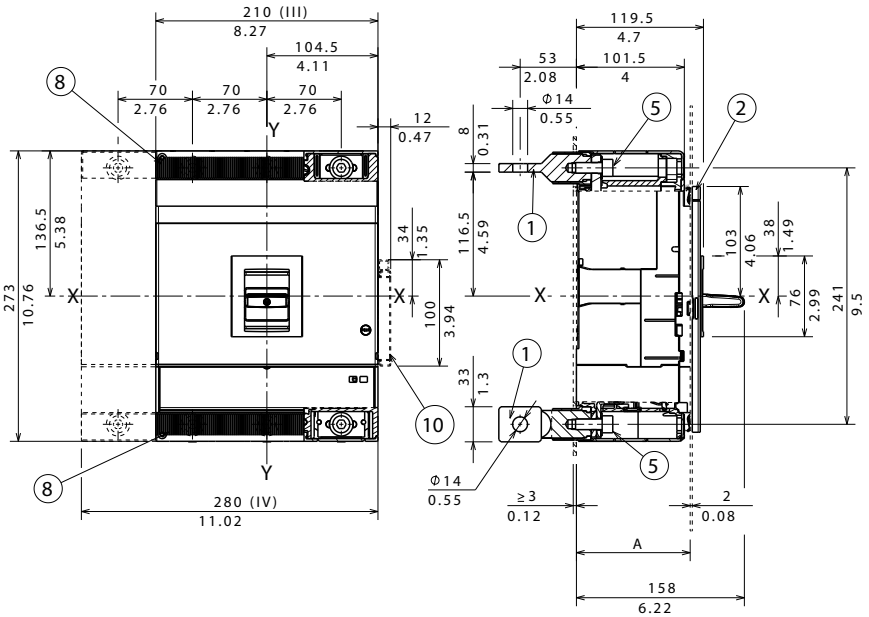
1 Terminal FCCuAl 600A
2 Terminal FCCuAl 800A
6 Tightening torque 9Nm
7 Tightening torque 2Nm
9 High terminal cover with IP40 protection degree
10 Tightening torque 31Nm
11 Tightening torque 43Nm
13 Cable rack

		A [in/mm]
With flange	3p-4p	4.25/108
Without flange	3p-4p	4.03/103.5

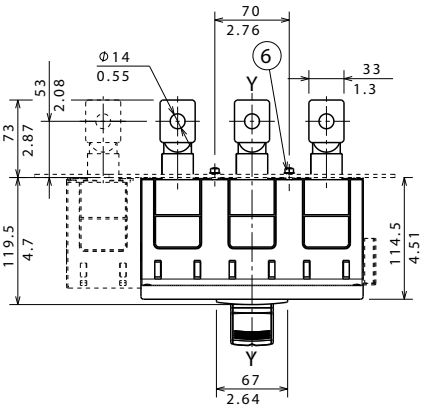
Tmax XT6 - Installation

Terminals for fixed circuit-breaker

Terminals R



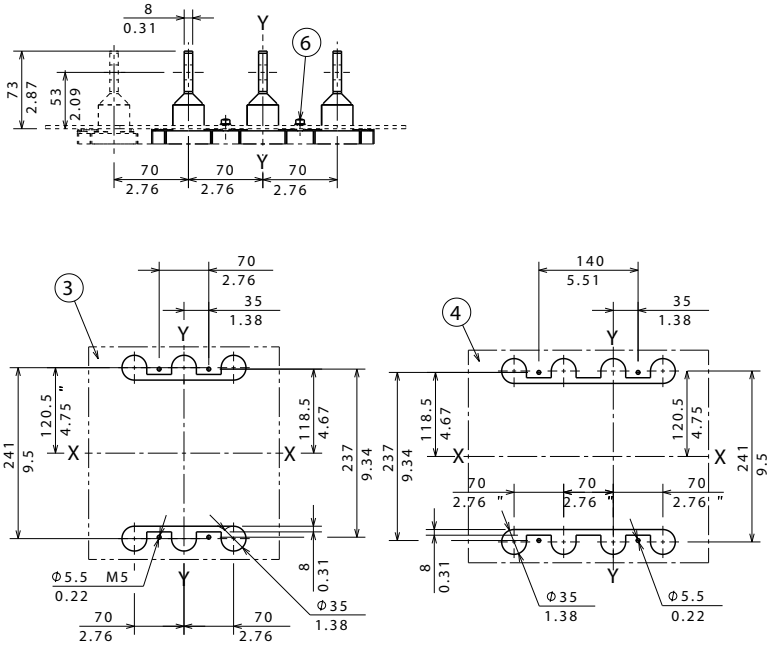
Terminals HR upper



Key
1 Rear terminals (horizontal or vertical)
5 Tightening torque 18Nm
6 Tightening torque 2Nm
8 Terminals cover with IP20 protection degree
10 Cable rack

		A [in/mm]
With flange	3p-4p	4.25/108
Without flange	3p-4p	4.03/103.5

Terminals VR lower

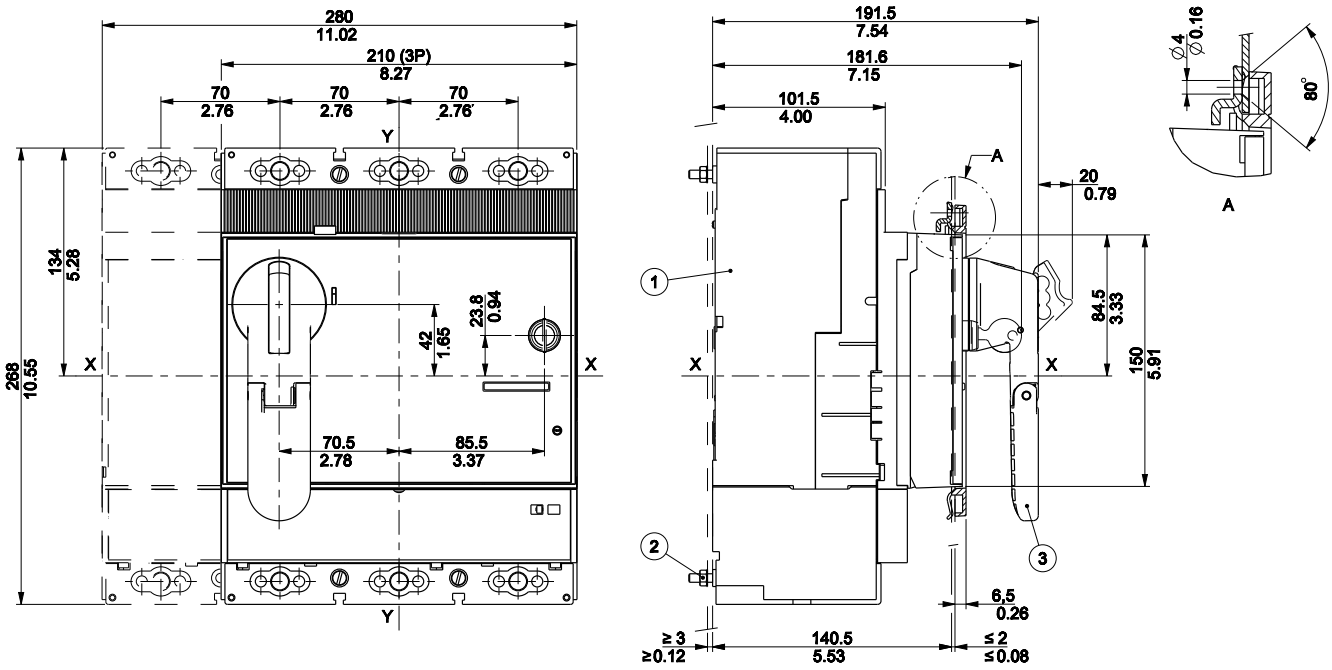


Key
3 Drilling template 3p
4 Drilling template 4p
6 Tightening torque 2Nm

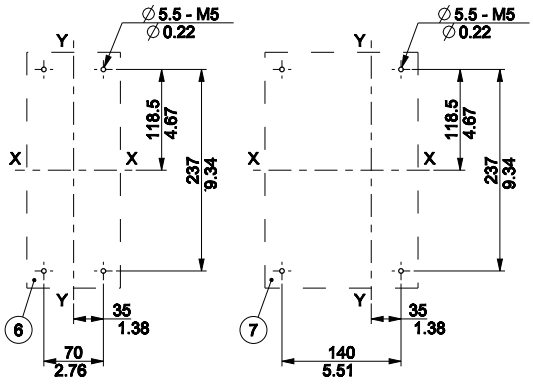
Tmax XT6 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the circuit-breaker (RHD)



Drilling templates for support sheet



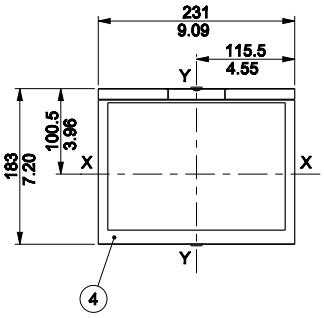
—

Key

1 Circuit-breaker
2 Tightening torque 2Nm
3 Rotary handle operating mechanism on circuit-breaker (RHD)
6 Drilling template 3p
7 Drilling template 4p

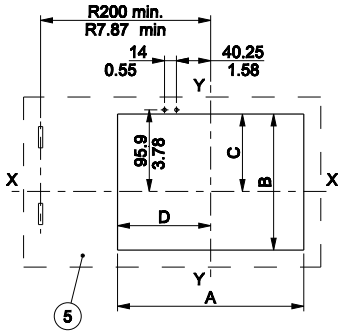
Flange

—
Key
4 Flange for the compartment door



Compartment door drilling templates

—
Key
5 Compartment door drilling template with/ without flange

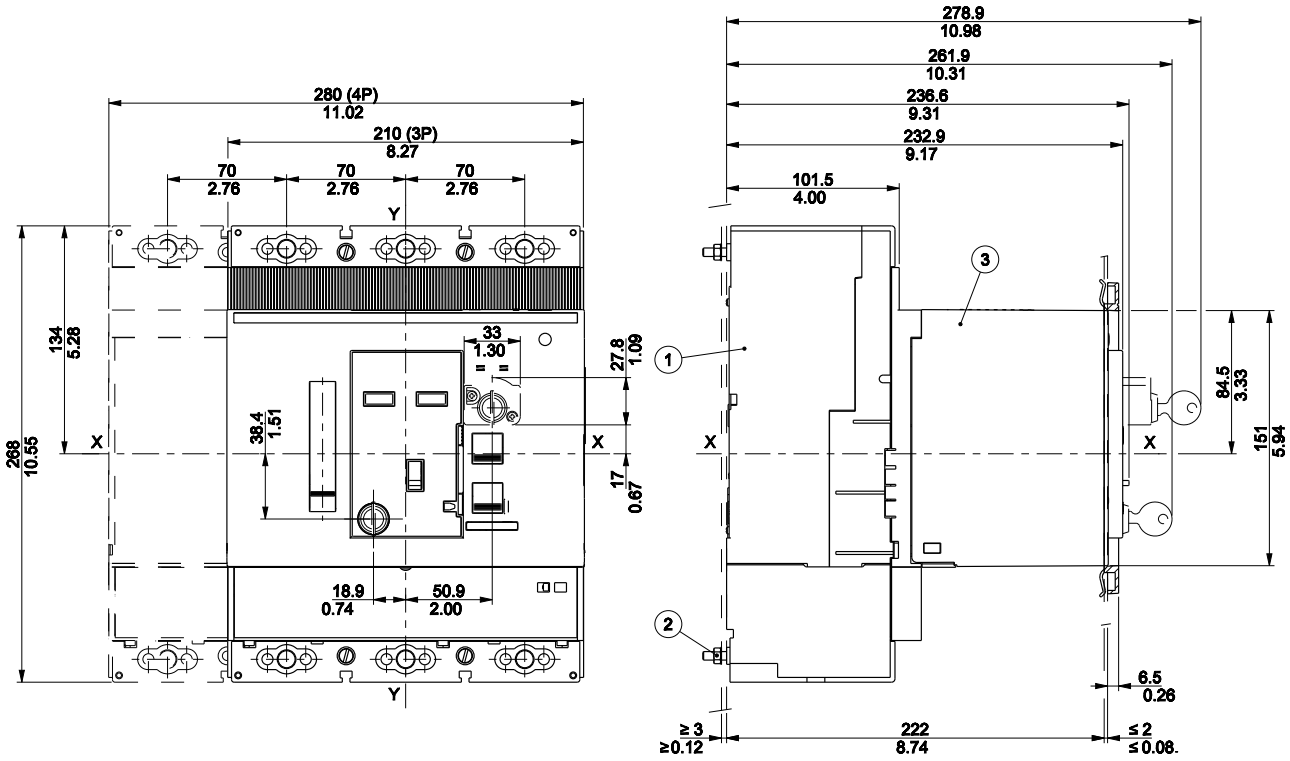


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	8.62/219	6.30/160	3.58/91	4.31/109.5
Without flange	3p-4p	8.23/209	5.90/149.8	3.38/85.9	4.11/104.5

Tmax XT6 - Installation

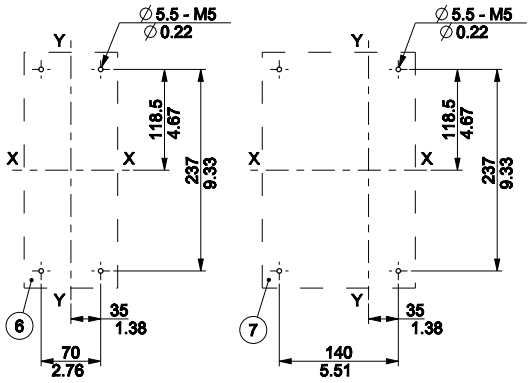
Accessories for fixed circuit-breaker

Stored energy motor operator (MOE)



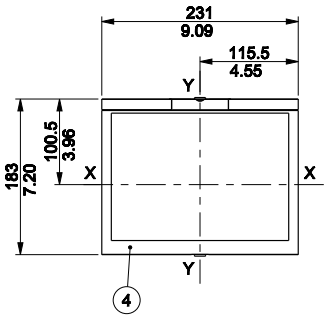
Key
1 Circuit-breaker
2 Tightening torque 2Nm
3 Stored energy motor operator (MOE)
6 Drilling template 3p
7 Drilling template 4p

Drilling templates for support sheet



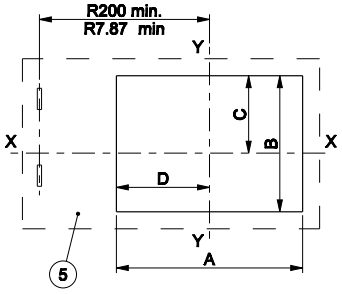
Flange

—
Key
4 Flange for the compartment door



Compartment door drilling templates

—
Key
5 Compartment door drilling template with/ without flange

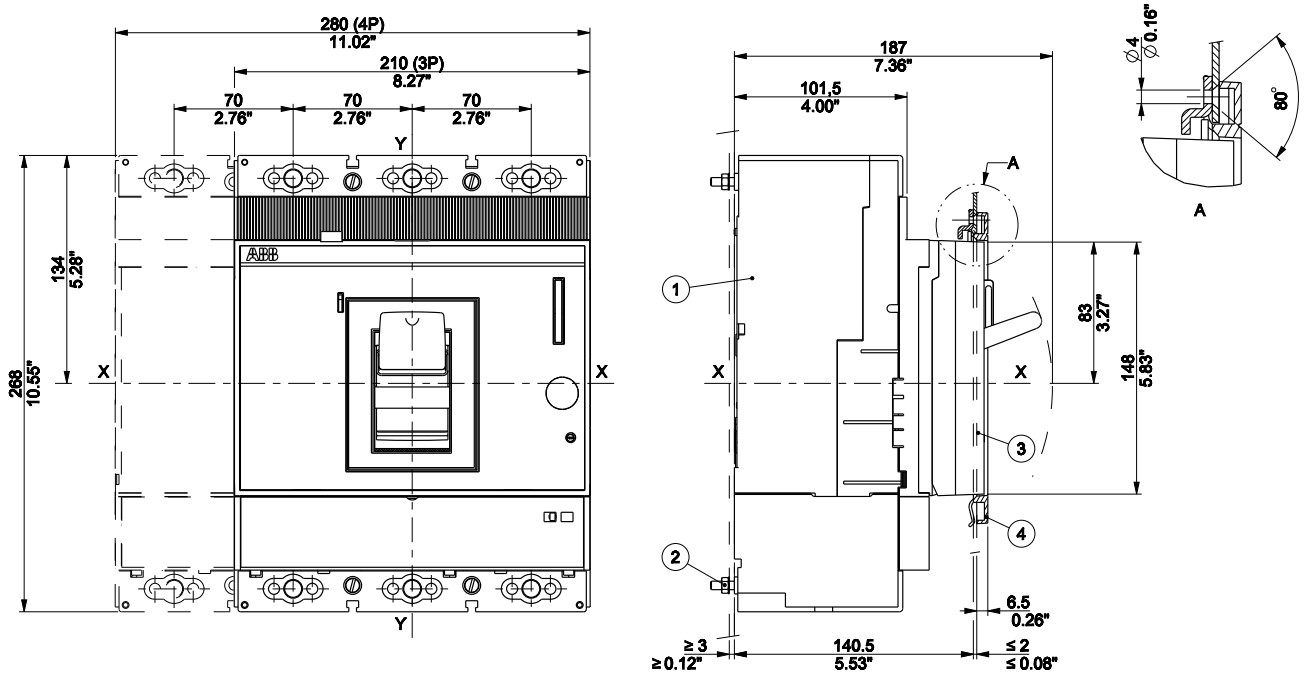


		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	8.62/219	6.30/160	3.58/91	4.31/109.5
Without flange	3p-4p	8.23/209	5.90/149.8	3.38/85.9	4.11/104.5

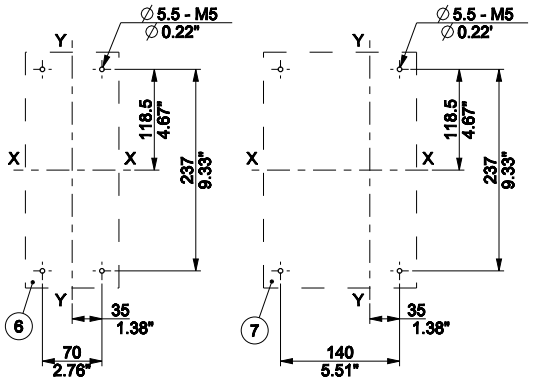
Tmax XT6 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the circuit-breaker (RHD)



Drilling templates for support sheet



—

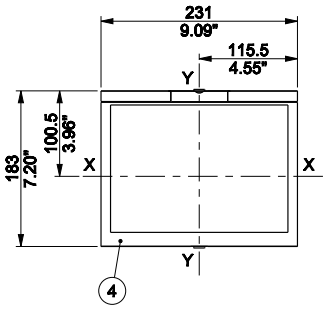
Key

1 Circuit-breaker
2 Tightening torque 2Nm-18lbs in
3 Front for lever operating mechanism (FLD)
4 Flange for the compartment door
6 Drilling template 3p
7 Drilling template 4p

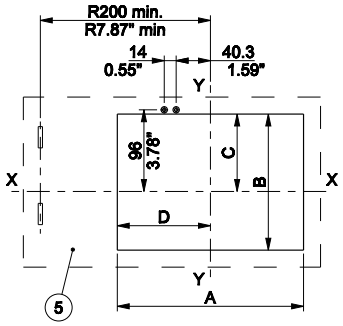
Flange

—

Key
4 Flange for the compartment door
5 Compartment door drilling template with / without flange



Compartment door drilling templates

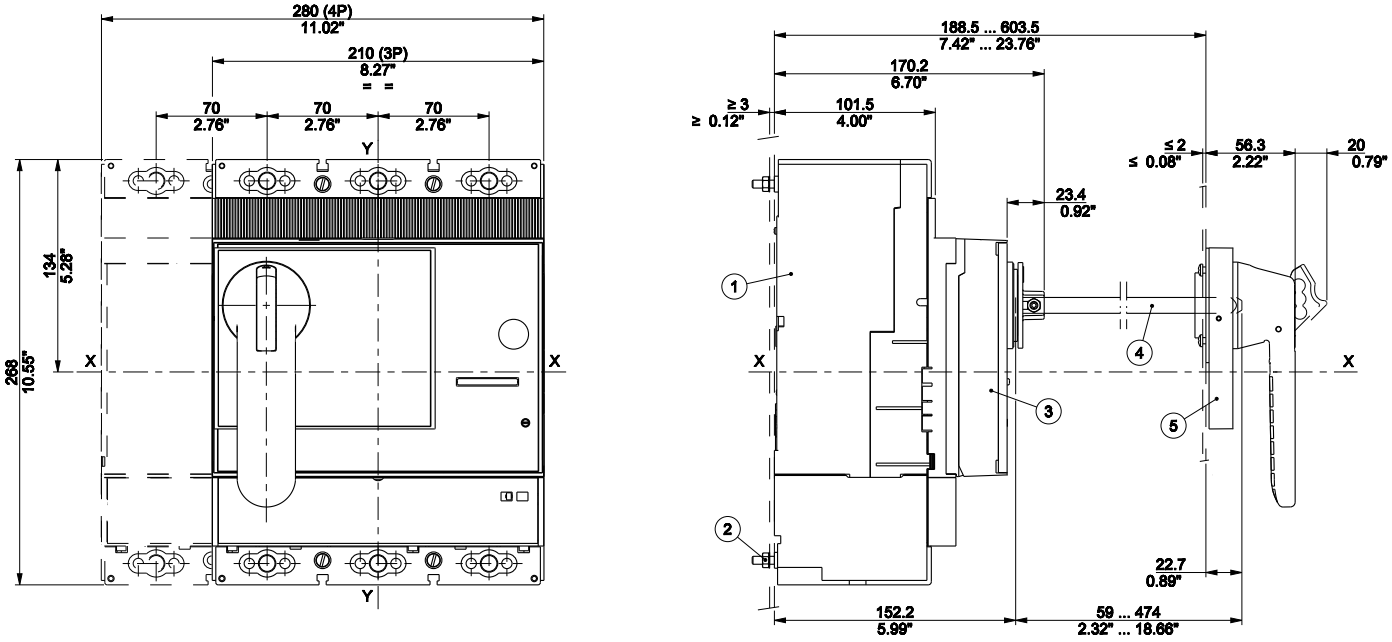


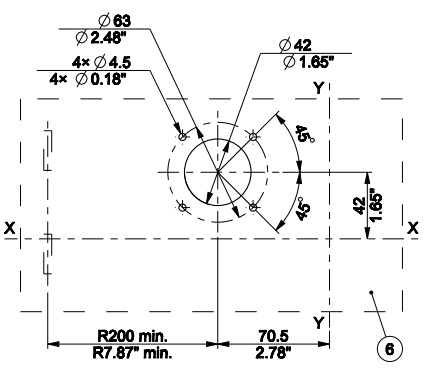
		A [in/mm]	B [in/mm]	C [in/mm]	D [in/mm]
With flange	3p-4p	8.62/219	6.30/160	3.58/91	4.31/109.5
Without flange	3p-4p	8.23/209	5.90/149 .8	3.38/85.9	4.11/104 .5

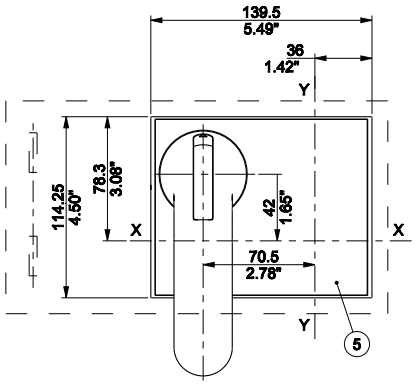
Tmax XT6 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)







—

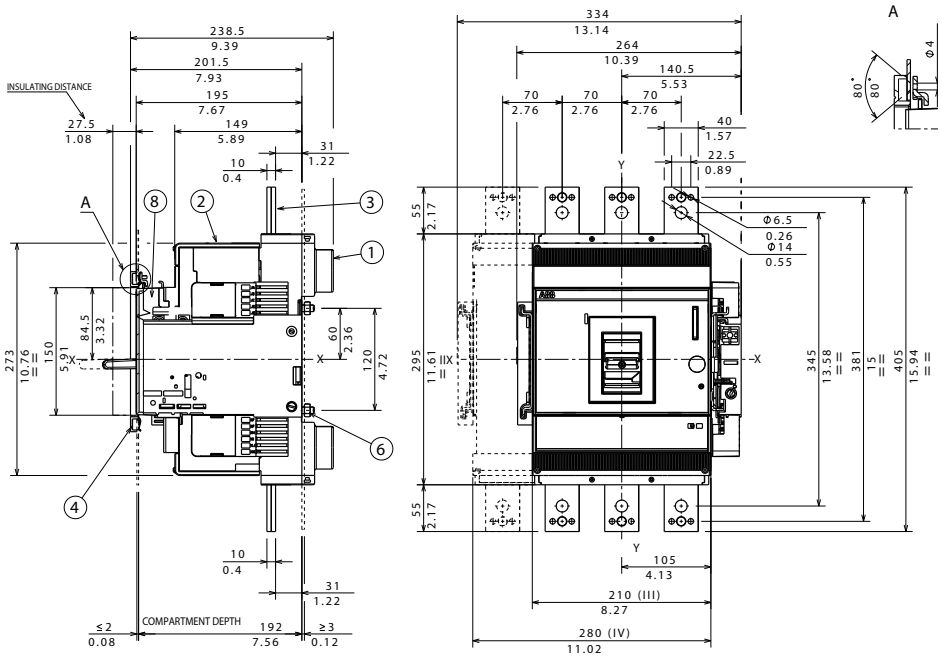
Key

1 Circuit-breaker
2 Tightening torque 2Nm-18lbs in
3 Base of rotary handle operating mechanism
4 Connection rod
5 Rotary handle operating mechanism of the compartment door
6 Compartment door drilling template

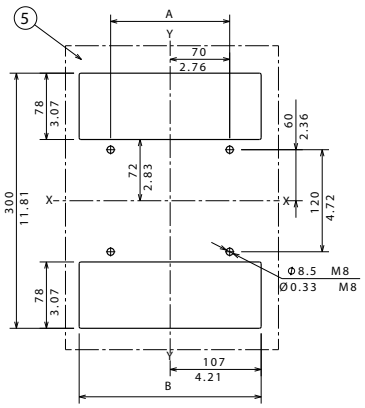
Tmax XT6 - Installation

Installation for withdrawable circuit-breaker

Fixing on sheet



Drilling template for support sheet



—

Key

1 Fixed part
2 Moving part
3 Extended front terminals
5 Drilling template 3p-4p
6 Tightening torque 8Nm
8 FLD

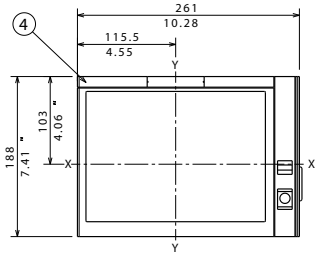
	A [in/mm]	B [in/mm]
3p	5.51/140	8.43/214
4p	8.27/210	11.18/284

Tmax XT6 - Installation

Installation for withdrawable circuit-breaker

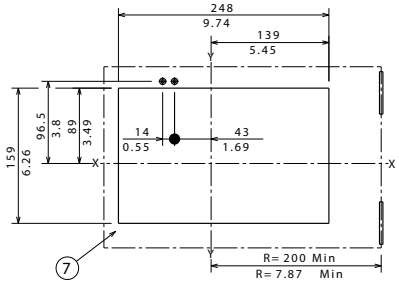
Flange

Key
4 Drilling template 3p



Compartment door drilling templates

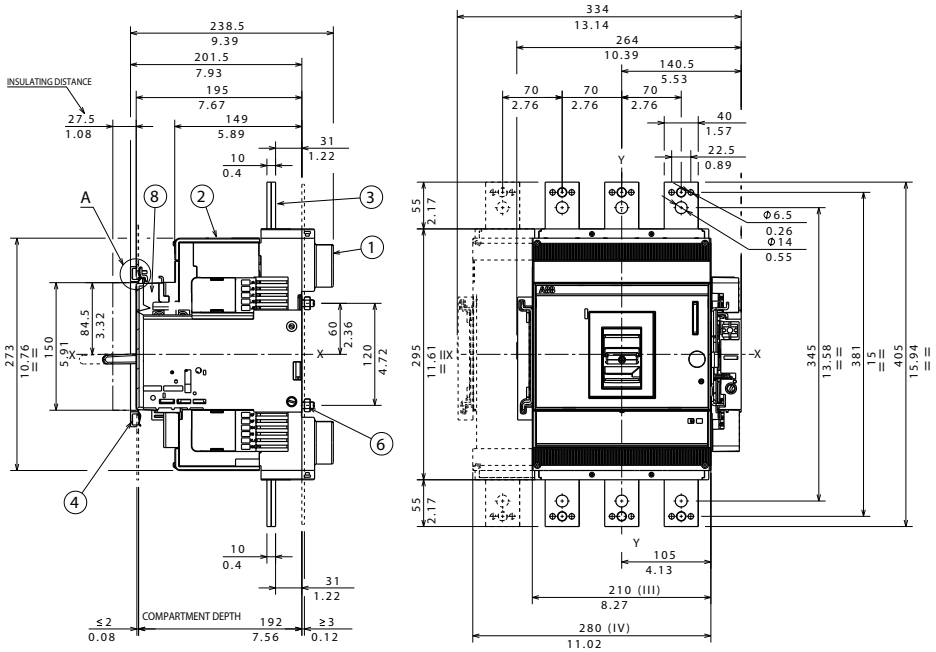
Key
7 Compartment door sheet drilling with flange



Tmax XT6 - Installation

Terminals for withdrawable circuit-breaker

Terminals EF



—

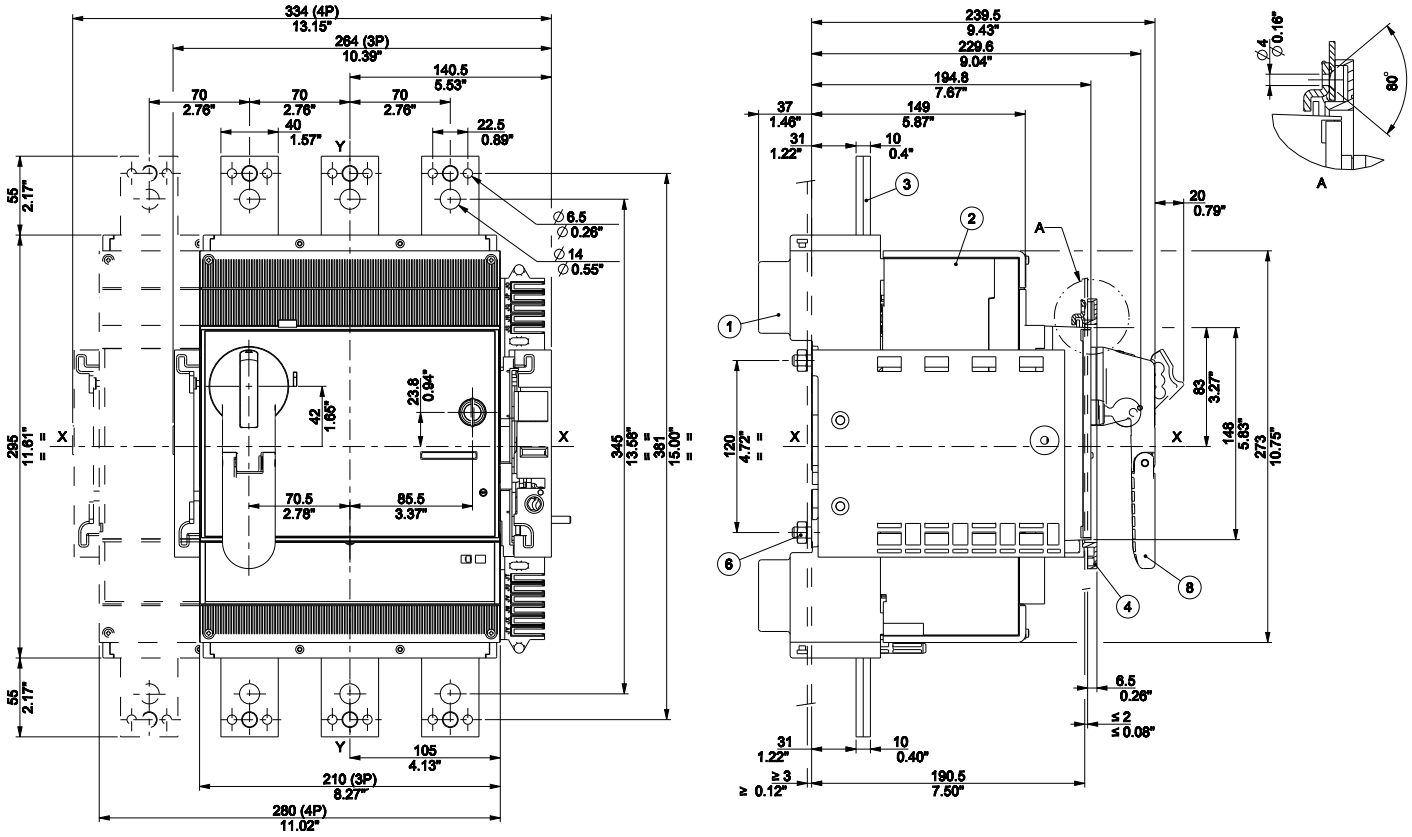
Key

1 Fixed part
2 Moving part
3 Extended front terminals
6 Tightening torque 8Nm
8 FLD

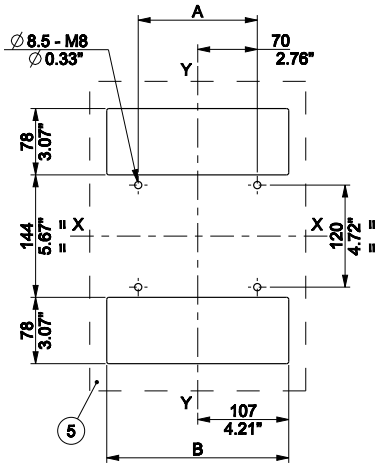
Tmax XT6 - Installation

Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on the circuit-breaker (RHD)



Drilling template for support sheet



—

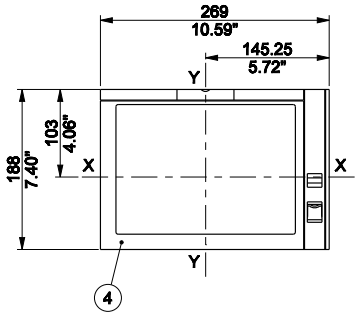
Key

1 Fixed part
2 Moving part
3 Extended front terminals
5 Drilling template 3p-4p
6 Tightening torque 8Nm
8 Rotary handle operating mechanism on circuit-breaker (RHD)

	A [in/mm]	B [in/mm]
3p	5.51/140	8.43/214
4p	8.27/210	11.18/284

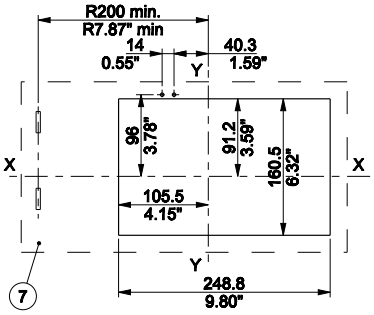
Flange

—
Key
4 Flange for the compartment door



Compartment door drilling templates

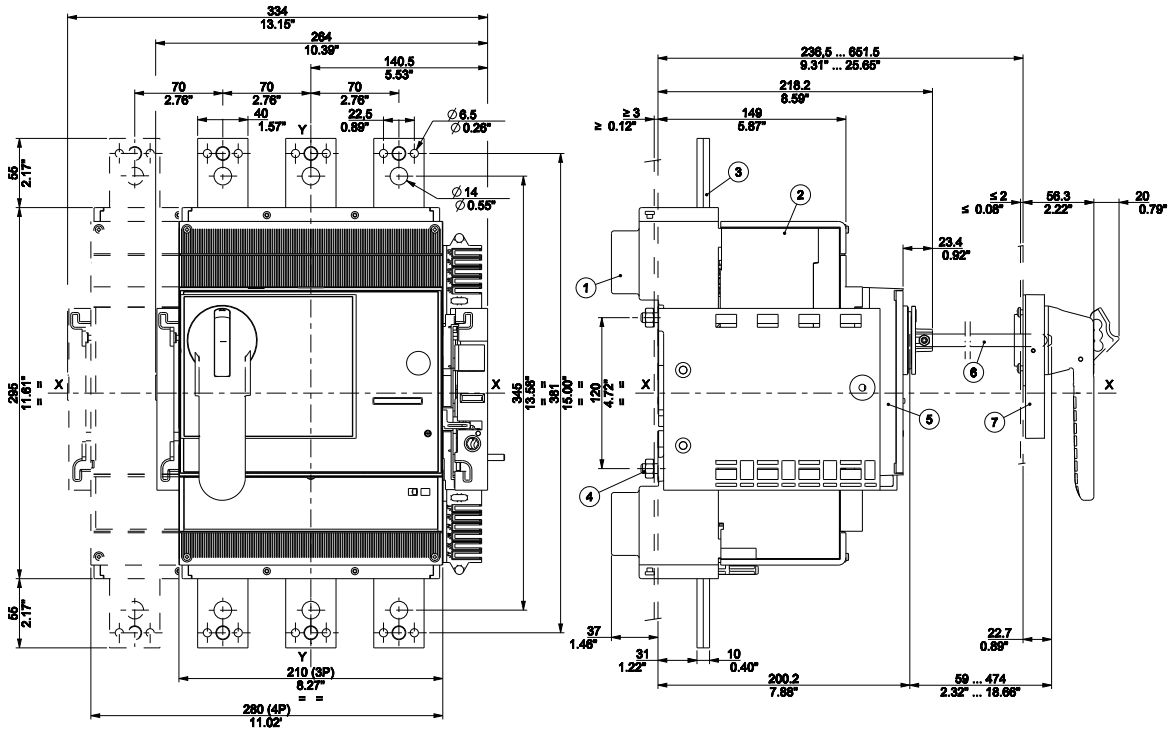
—
Key
7 Compartment door drilling template with flange

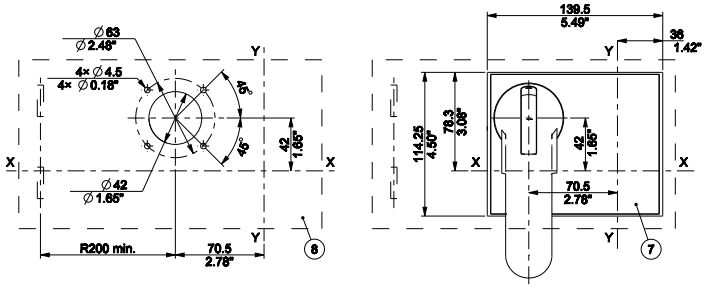


Tmax XT6 - Installation

Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)

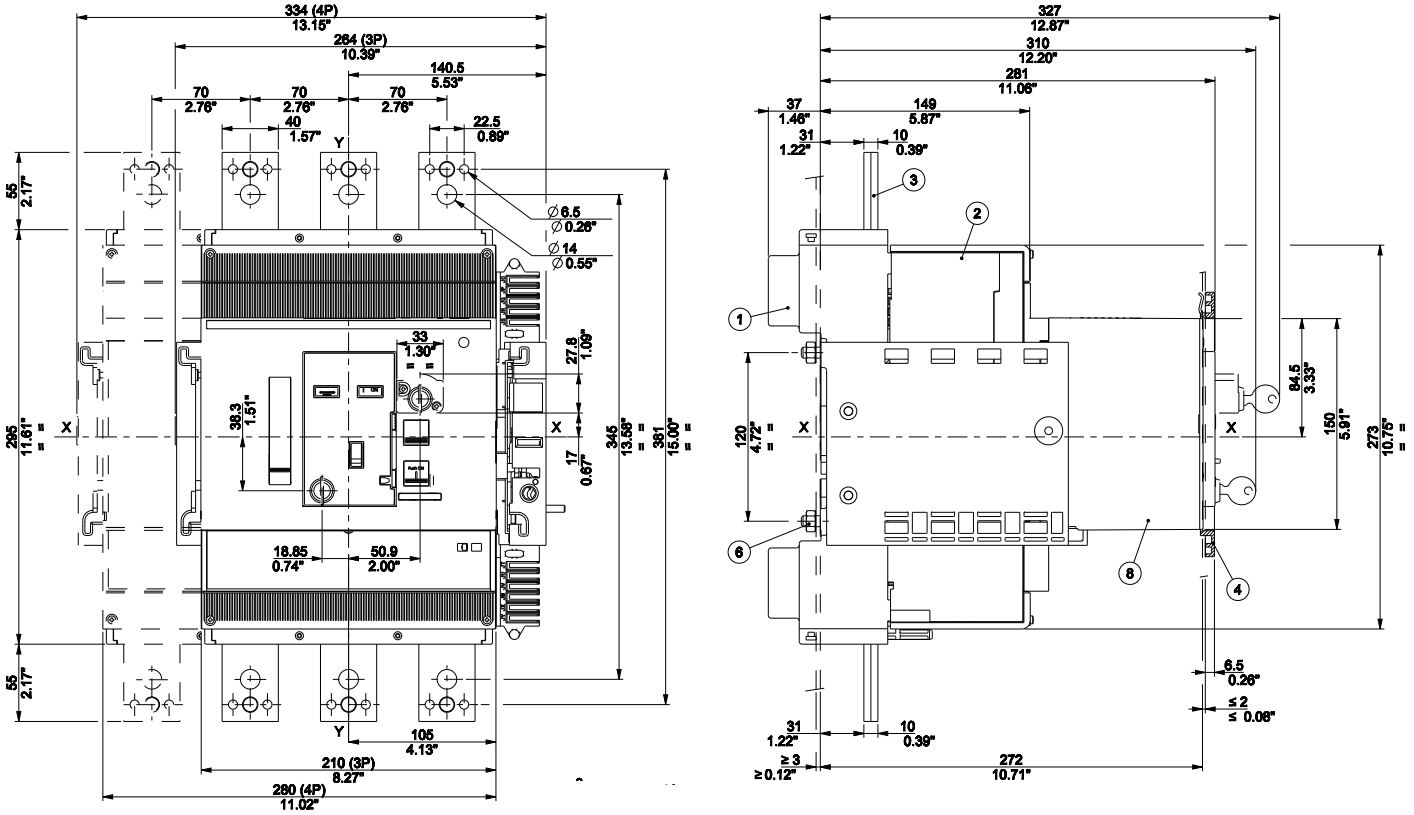




Key

1 Fixed part
2 Moving part
3 Extended front terminals
4 Tightening torque 2Nm-18lbs in
5 Base of rotary handle operating mechanism
6 Connection rod
7 Rotary handle operating mechanism of the compartment door
8 Compartment door drilling template

Stored energy motor operator (MOE)

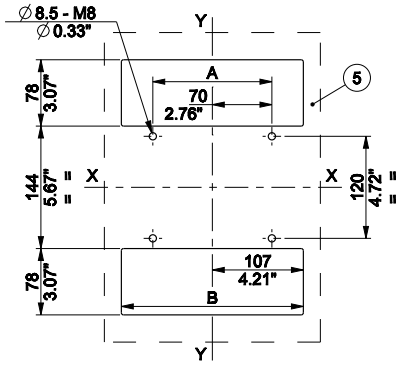


Drilling template for support sheet

—

Key

1 Fixed part
2 Moving part
3 Extended front terminals
5 Drilling template 3p-4p
6 Tightening torque 8Nm
8 Stored energy motor operator



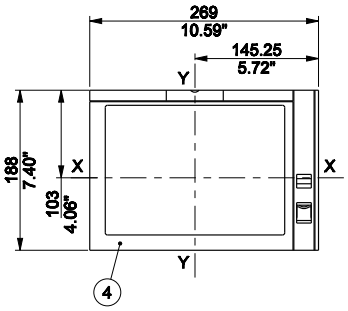
	A [in/mm]	B [in/mm]
3p	5.51/140	8.43/214
4p	8.27/210	11.18/284

Tmax XT6 - Installation

Accessories for withdrawable circuit-breaker

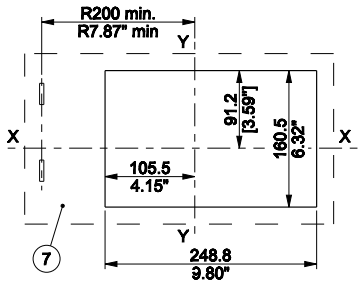
Flange

Key
4 Flange for the compartment door



Compartment door drilling templates

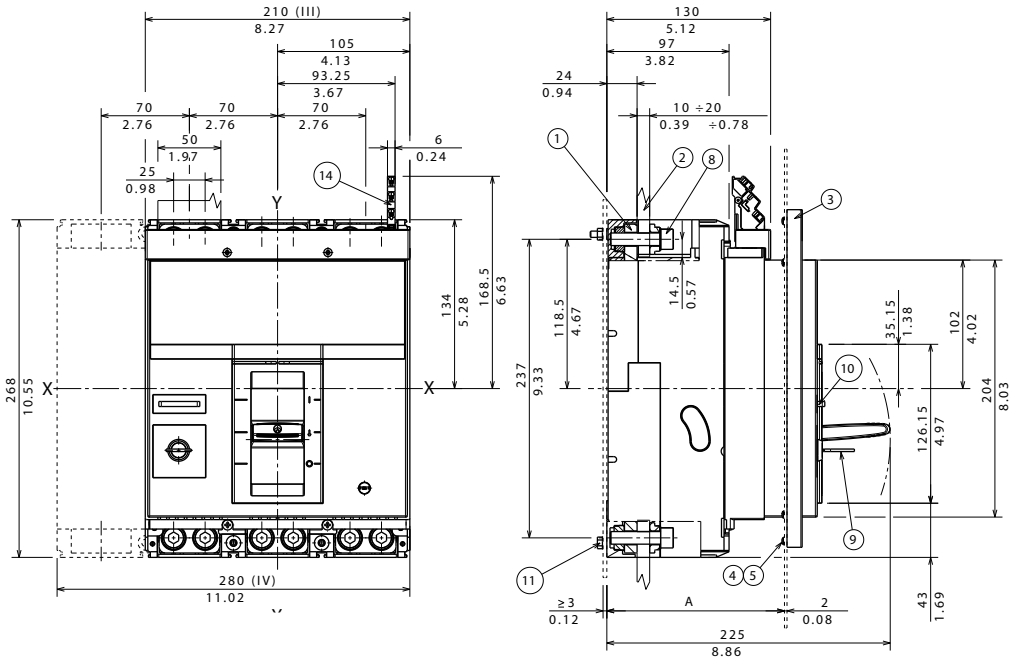
Key
7 Compartment door drilling template with flange



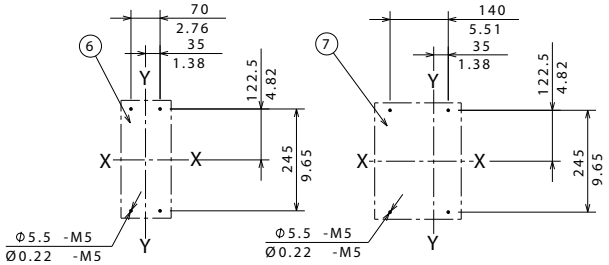
Tmax XT7 - Installation

Installation for fixed circuit-breaker

Fixing on sheet



Drilling templates for support sheet



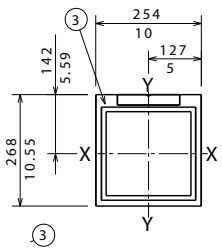
		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

—

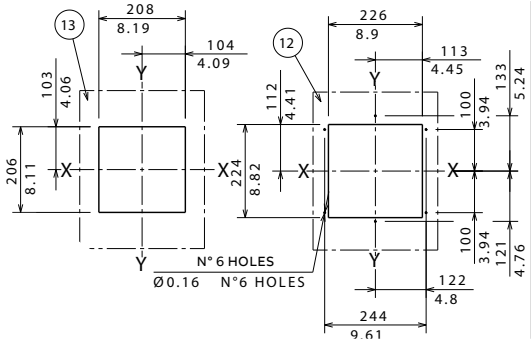
Key

1 Front terminals for flat connection
2 Extended front terminals
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
6 Drilling template 3p
7 Drilling template 4p
8 Tightening torque 18Nm
9 Key lock
10 Padlock device
11 Tightening torque 2Nm
12 Compartment door drilling template for flange
13 Compartment door drilling template for 206x204 frontal
14 Slot for external signaling

Flange



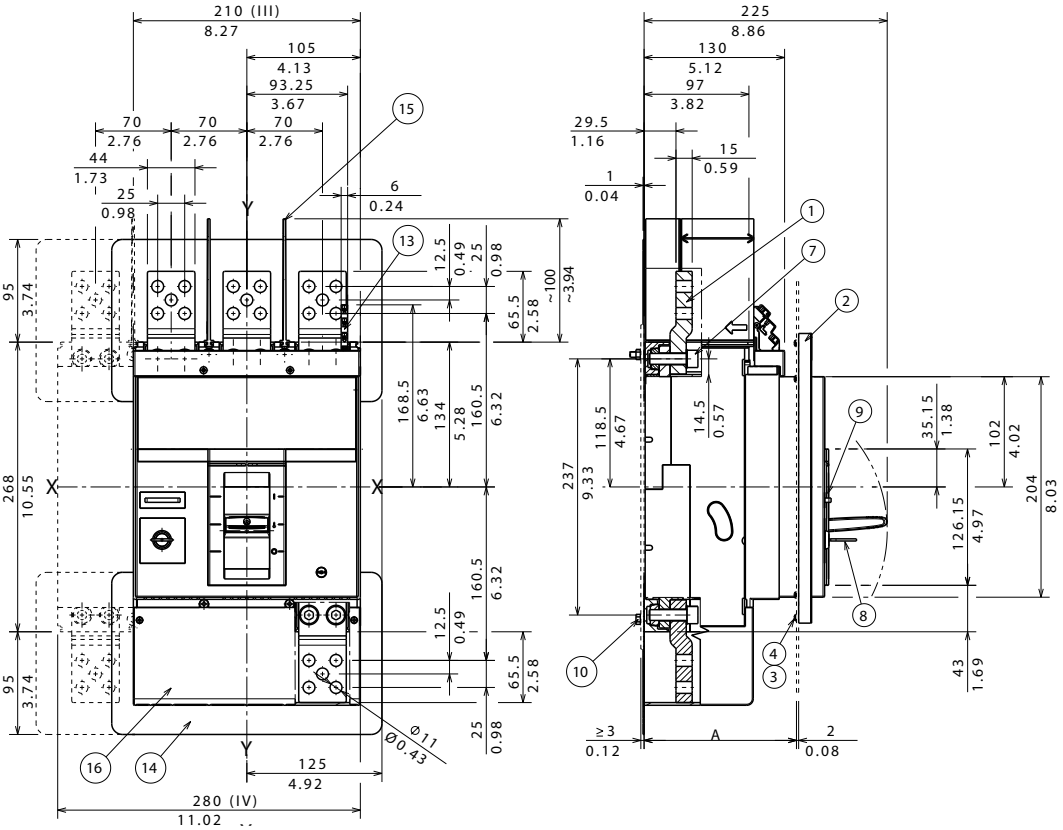
Compartment door drilling templates



Tmax XT7 - Installation

Terminals for fixed circuit-breaker

Terminals EF



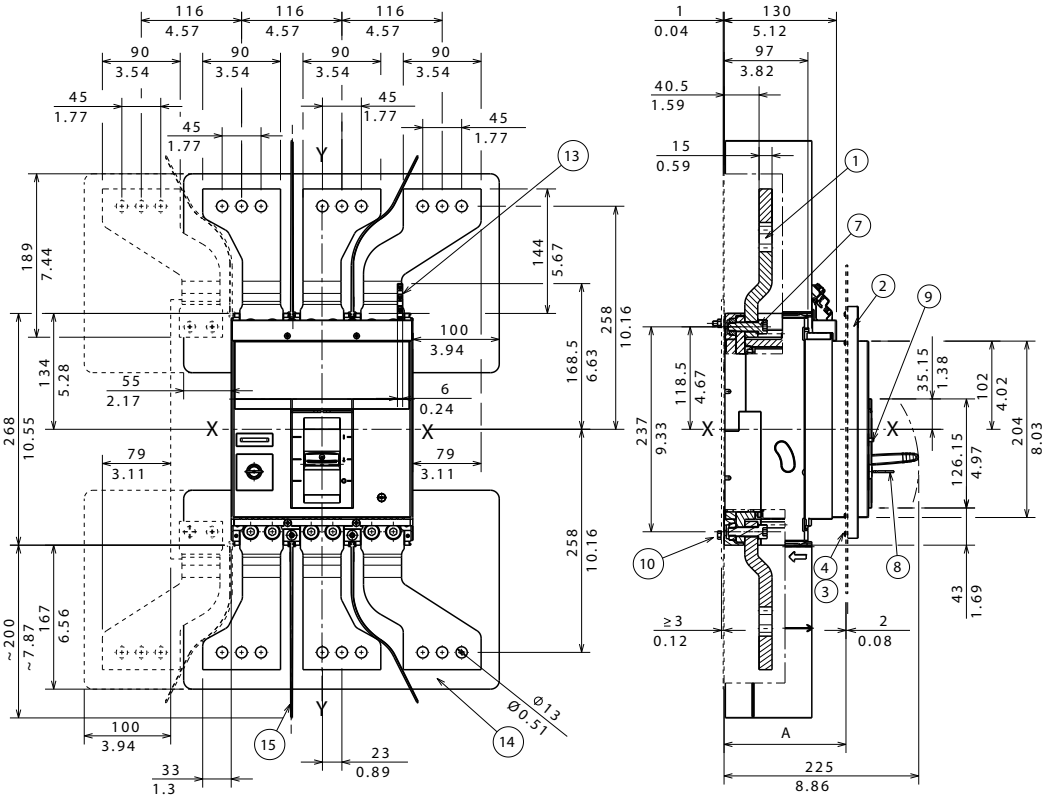
—

Key

1 Extended front terminals EF
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5Nm
7 Tightening torque 18Nm
8 Key lock
9 Padlock device
10 Tightening torque 2Nm
13 Slot for external signaling
14 Insulating plate
15 Phase separators 3.94"/100mm
16 High terminal cover with IP40 protection degree

		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

Terminals ES



		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

—

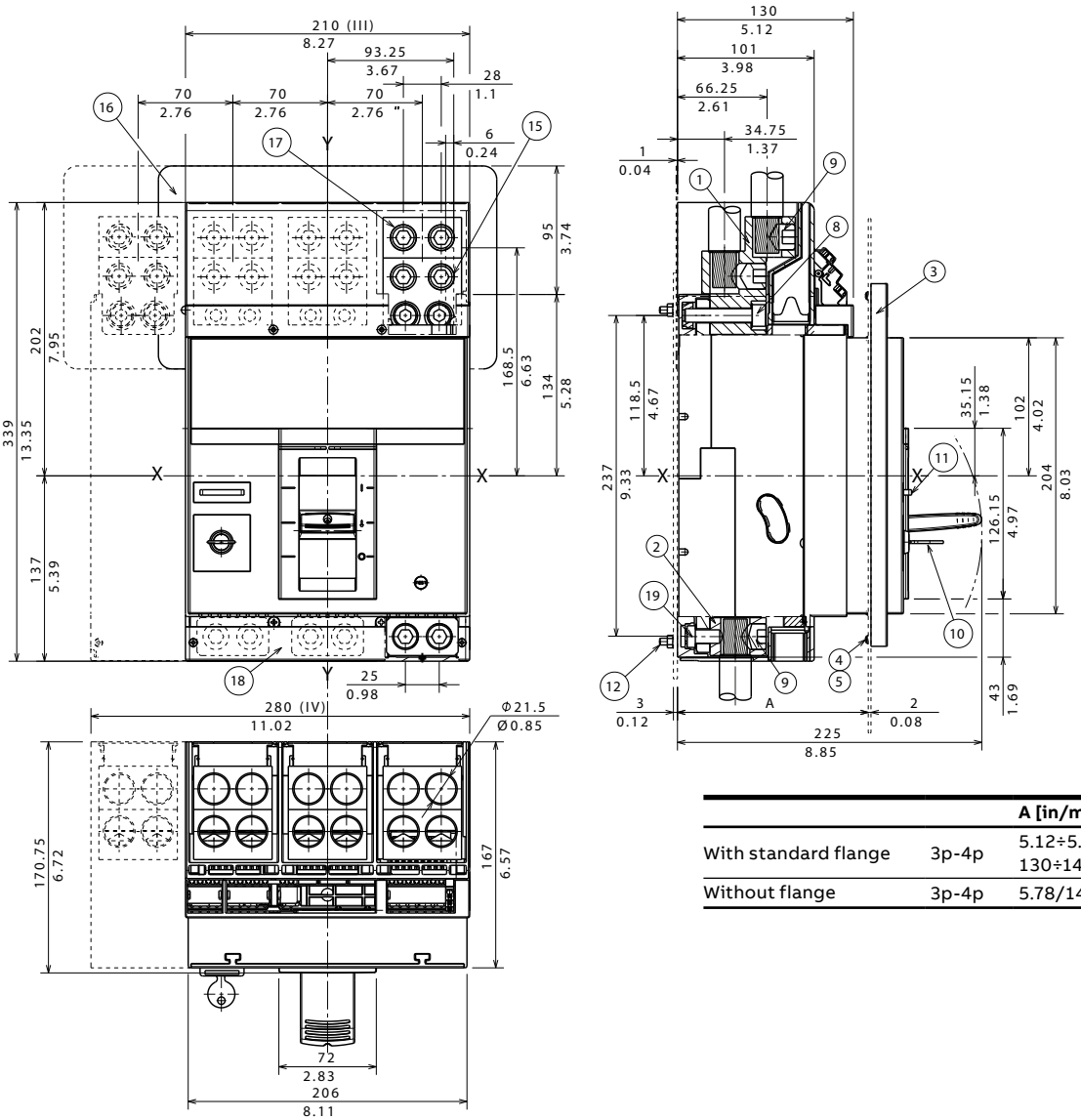
Key

1 Spreadead extended front terminals ES
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5Nm
7 Tightening torque 18Nm
8 Key lock
9 Padlock device
10 Tightening torque 2 Nm
13 Slot for external signaling
14 Insulating plate
15 Phase separators 7.87"/200mm

Tmax XT7 - Installation

Terminals for fixed circuit-breaker

4 x 500 kcmil and 2 x 500 kcmil (IEC only) FC CuAl

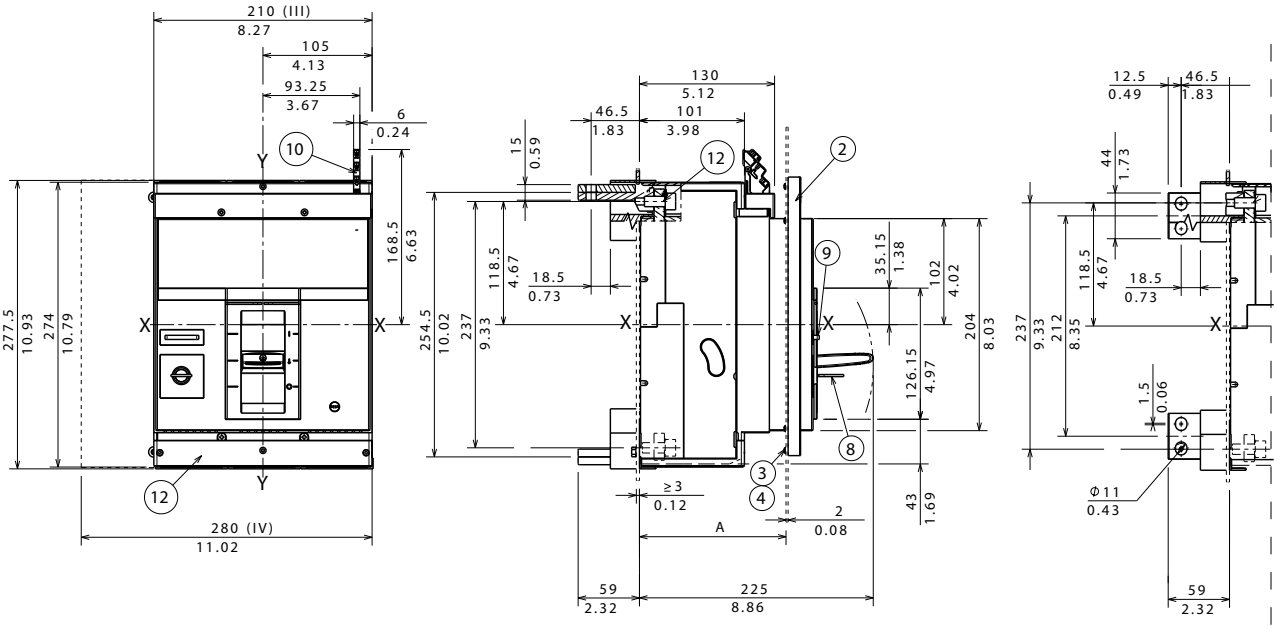


		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

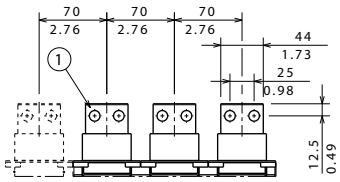
Key

1 Fc Cu-Al terminal 4x500 kcmil
2 Fc Cu-Al terminal 2x500kcmil (IEC only)
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 18Nm
9 Tightening torque 43Nm
10 Key lock
11 Padlock device
12 Tightening torque 2Nm
15 Slot for external signaling
16 Insulating plate
17 High terminal cover with IP40 protection degree
18 Low protection cover with IP30 protection degree
19 Tightening torque 18Nm

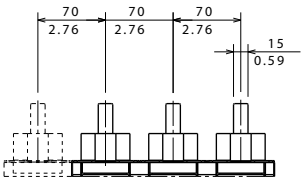
Terminals HR/VR adjustable



Terminals HR upper



Terminals VR lower

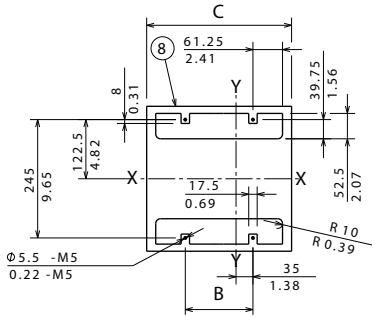


		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

—

Key

1 HR horizontal rear terminal HR
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5Nm
8 Key lock
9 Padlock
10 Slot for external signaling
12 Tightening torque 20Nm

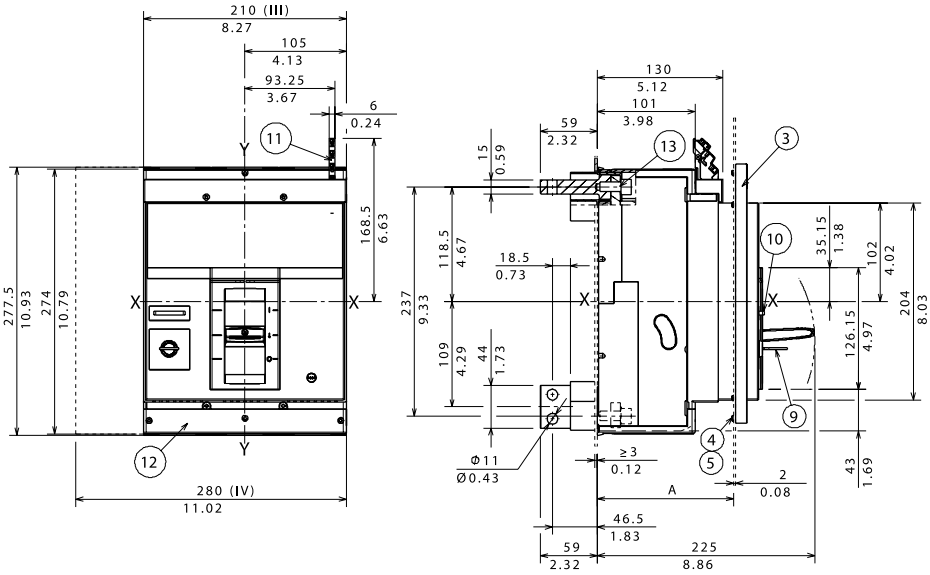


	A [in/mm]	B [in/mm]	C [in/mm]
With flange	7.91/201	4.56/116	0.95/24.25
Without flange	7.67/192	4.21/107	0.77/19.75

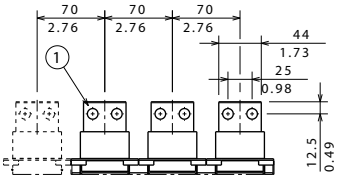
Tmax XT7 - Installation

Terminals for fixed circuit-breaker

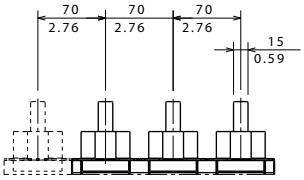
Terminals HR and VR



Terminals HR upper

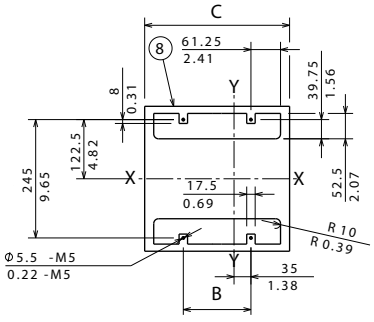


Terminals VR lower



		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

Key
1 HR horizontal rear terminal HR
1 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Drilling template support plate
9 Key lock
10 Padlock device
11 Clamp for auxiliary contacts
12 Low protection cover with IP30 protection degree
13 Tichtening torque 9Nm

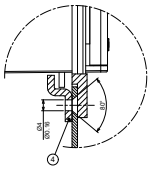


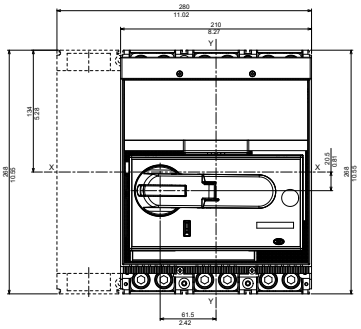
	A [in/mm]	B [in/mm]	C [in/mm]
With flange	7.91/201	4.56/116	0.95/24.25
Without flange	7.67/192	4.21/107	0.77/19.75

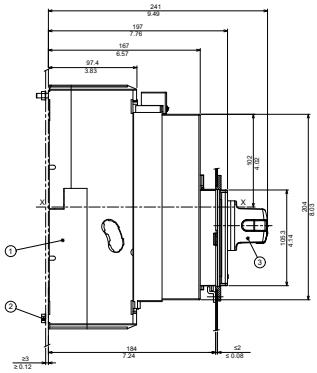
Tmax XT7 - Installation

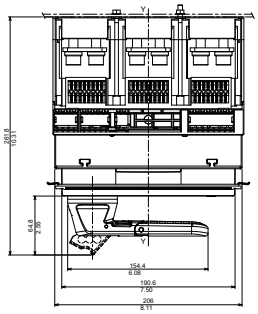
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the circuit-breaker (RHD)

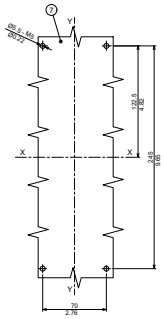


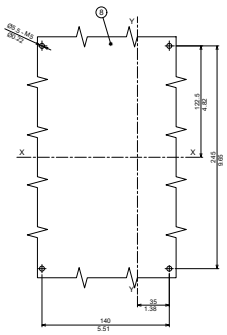




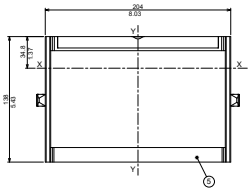


Drilling templates for support sheet

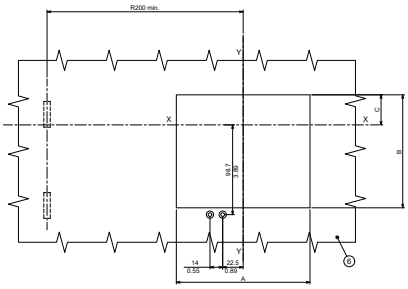




Flange



Compartment door drilling templates



	A [in/mm]	B [in/mm]	C [in/mm]
With flange	7.91/201	4.57/116	0.95/24.25
Without flange	7.56/192	4.21/107	0.78/19.75

—

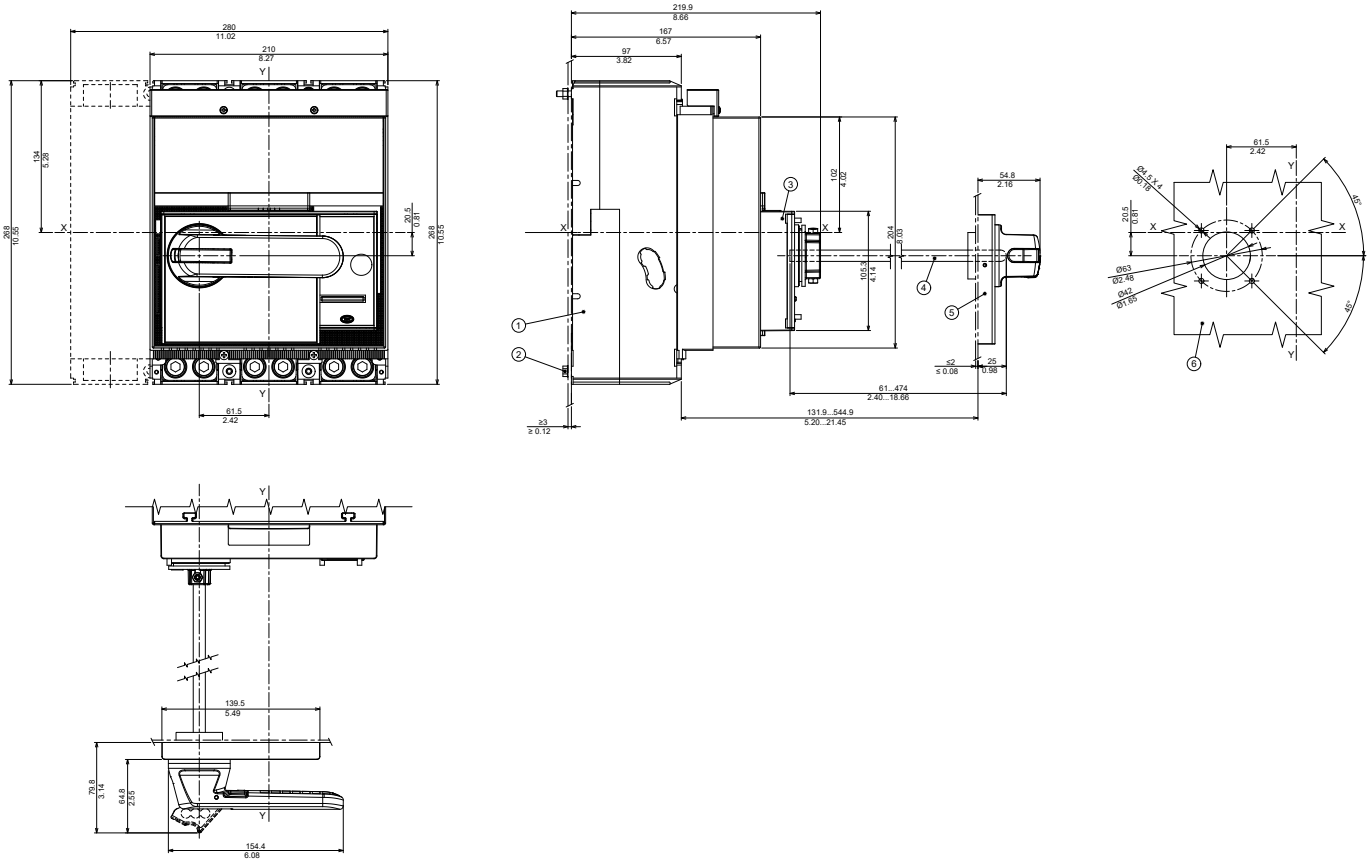
Key

1 Circuit-breaker
2 Tightening torque 2Nm
3 Rotary handle operating mechanism for circuit-breaker
4 Plate for door lock
5 Flange without gasket for the compartment door
6 Compartment door drilling template with/without flange
7 Drilling template 3p
8 Drilling template 4p

Tmax XT7 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)



—

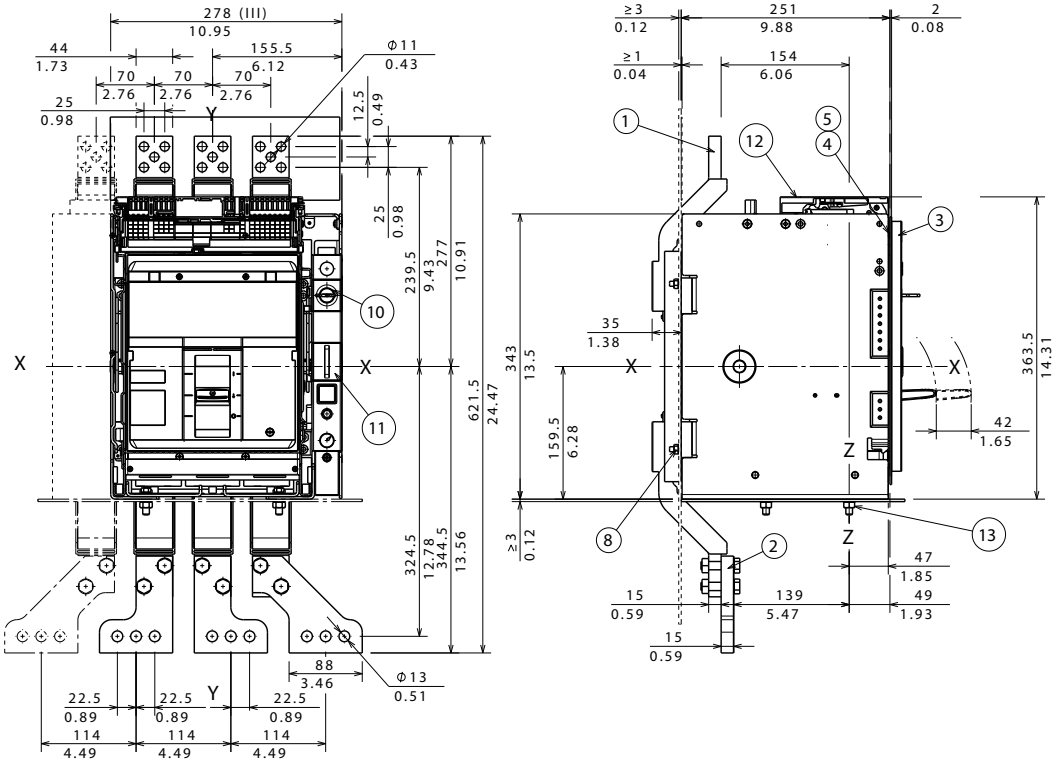
Key

1 Circuit-breaker
2 Tightening torque 2Nm
3 Base for rotary handle operating mechanism
4 500mm Connection rod
5 Rotary handle operating mechanism of the compartment door
6 Compartment door drilling template

Tmax XT7 - Installation

Installation for withdrawable circuit-breaker

Fixing on sheet



—

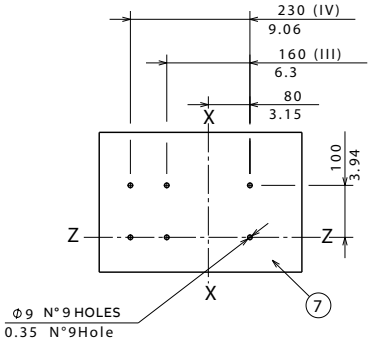
Key

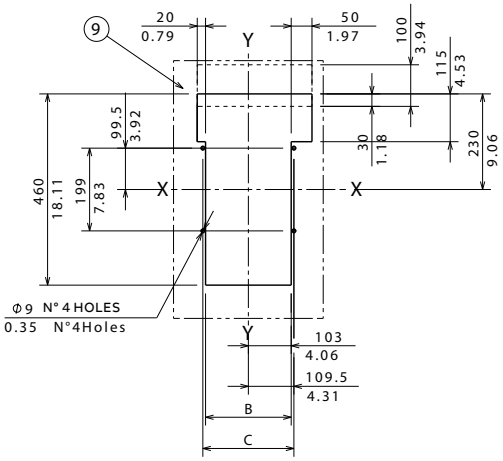
1 EF front terminal
2 ES front terminal
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 9Nm
10 Key lock
11 Padlock
12 Clamp for auxiliary contacts
13 Tightening torque 9Nm

Tmax XT7 - Installation

Installation for withdrawable circuit-breaker

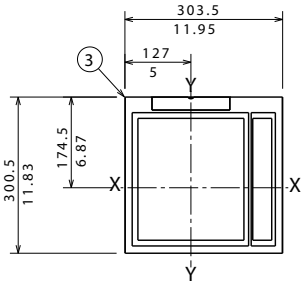
Drilling templates for support sheet



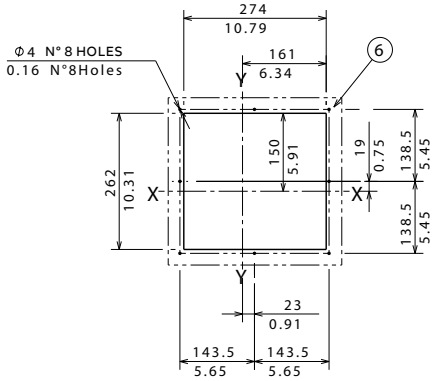


	3p [in/mm]	4p [in/mm]
B	8.11/206	10.86/276
C	8.62/219	11.37/289

Flange



Compartment door drilling templates

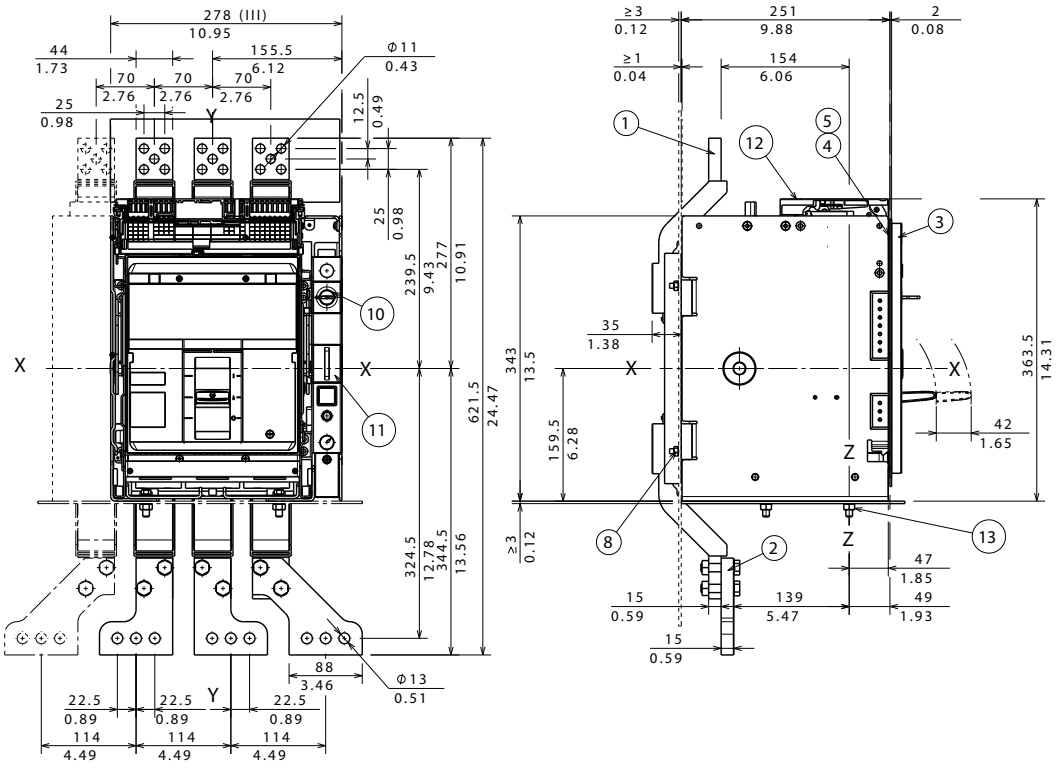


Key
3 Flange for the compartment door
6 Compartment door drilling template for flange
7 Fixing on sheet steel drilling template
9 Mounting at wall

Tmax XT7 - Installation

Terminals for withdrawable circuit-breaker

Terminals EF and ES



—

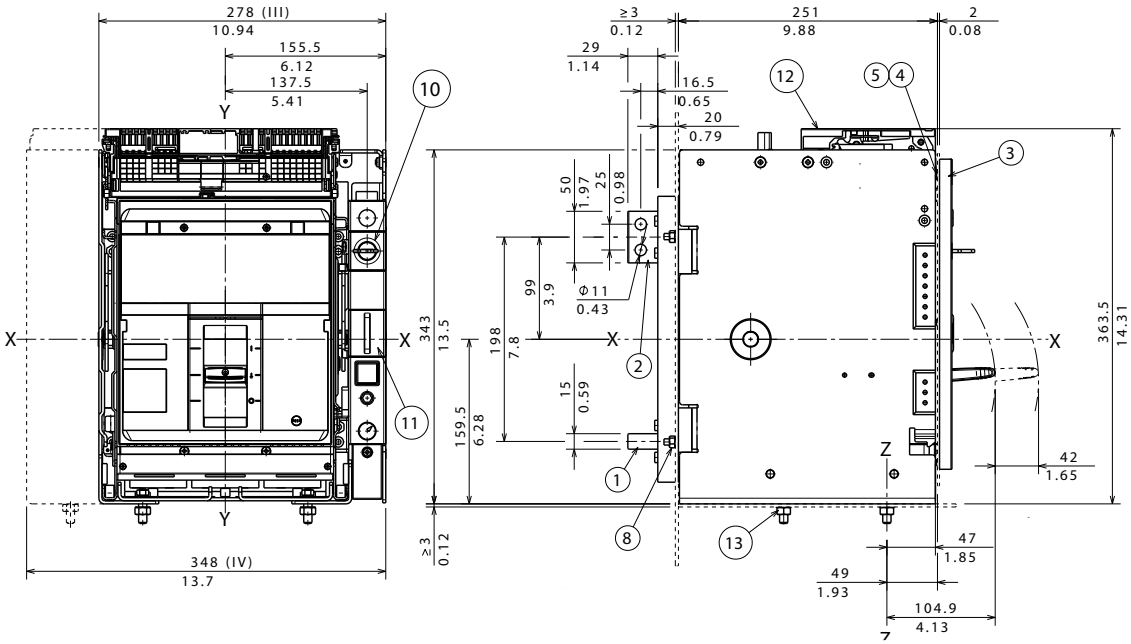
Key

1 EF front terminal
2 ES front terminal
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 9Nm
10 Key lock
11 Padlock
12 Clamp for auxiliary contacts
13 Tightening torque 9Nm

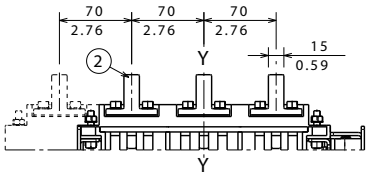
Tmax XT7 - Installation

Terminals for withdrawable circuit-breaker

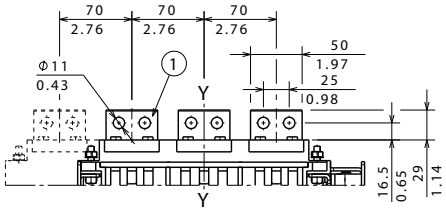
Terminals HR/VR

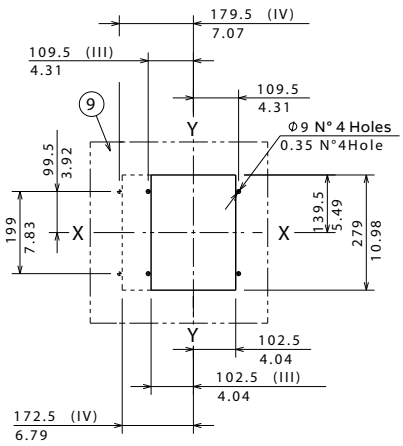


Terminals VR upper



Terminals HR lower



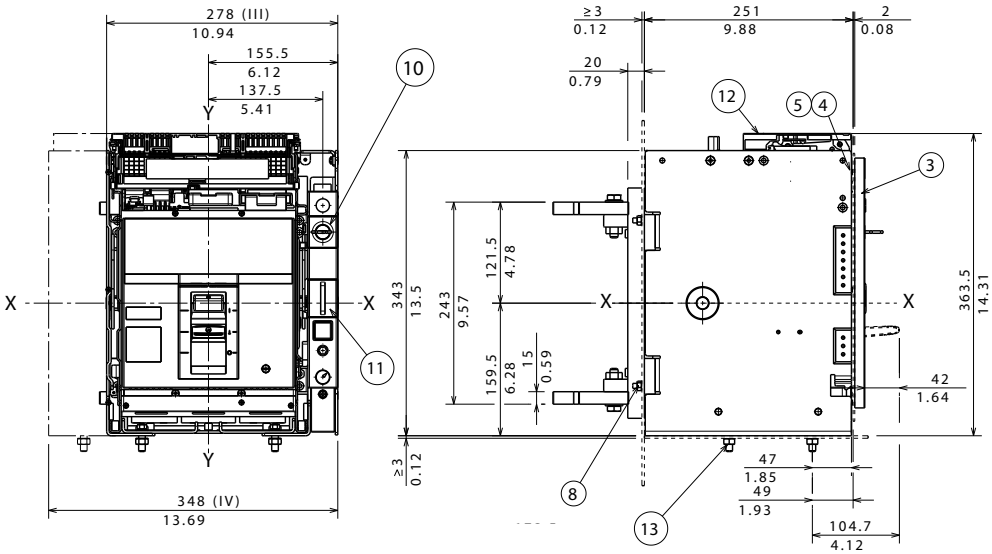


—

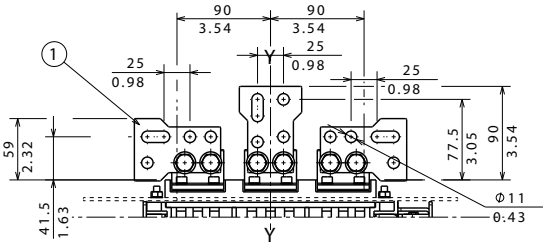
Key

1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 9Nm
9 Mounting at wall
10 Key lock
11 Padlock
12 Clamp for auxiliary contacts
13 Tightening torque 9Nm

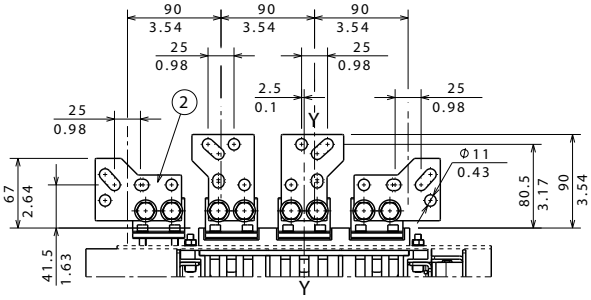
Terminals SHR

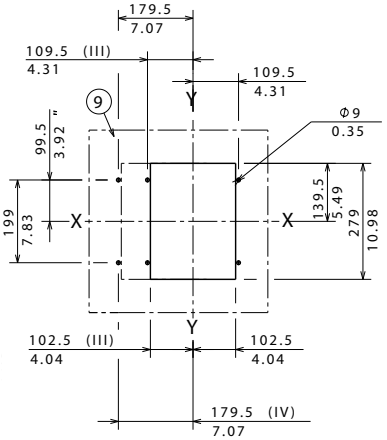


Terminals VR upper



Terminals HR lower





—

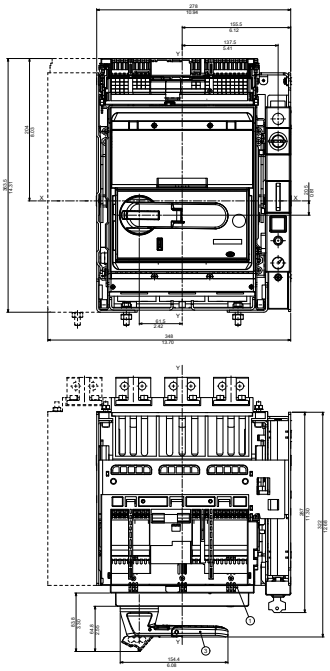
Key

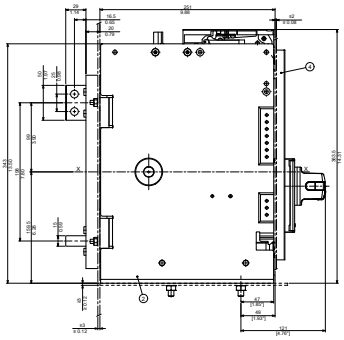
1 SHR rear side terminals (3p)
2 SHR rear side terminals (4p)
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 9Nm
9 Mounting at wall
10 Key lock
11 Padlock
12 Slot for external signaling
13 Tightening torque 9Nm

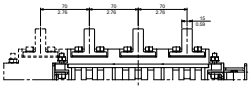
Tmax XT7 - Installation

Accessories for withdrawable circuit-breaker

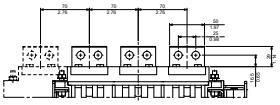
Rotary handle operating mechanism on the circuit-breaker (RHD)





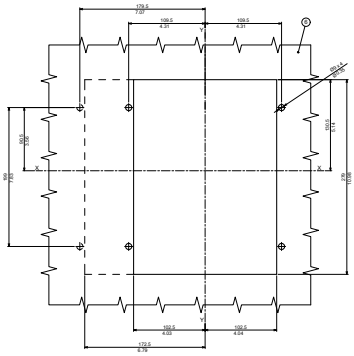


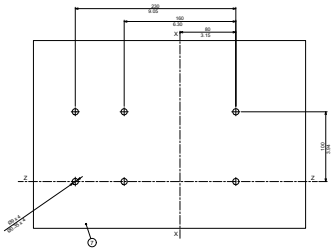
Terminals VR upper



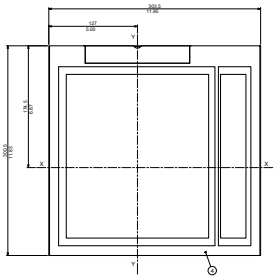
Terminals HR lower

Drilling templates for support sheet

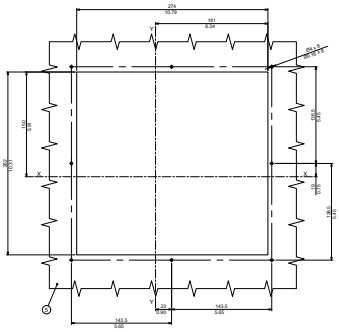




Flange



Compartment door drilling templates

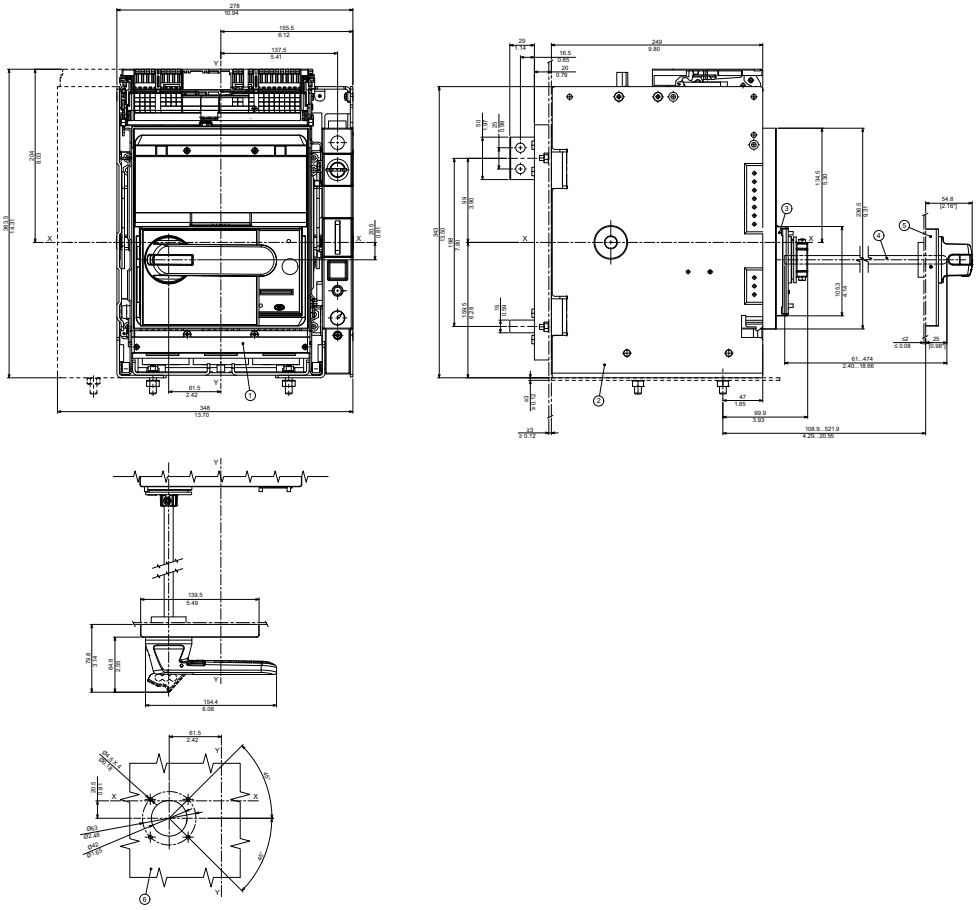


—

Key

1 Moving part
2 Fixed part
3 Rotary handle operating mechanism for circuit-breaker
4 Flange for the compartment door
5 Compartment door drilling template for flange
6 Mounting at wall
7 Fixing on sheet steel drilling template

Rotary handle operating mechanism on the compartment door (RHE)



—

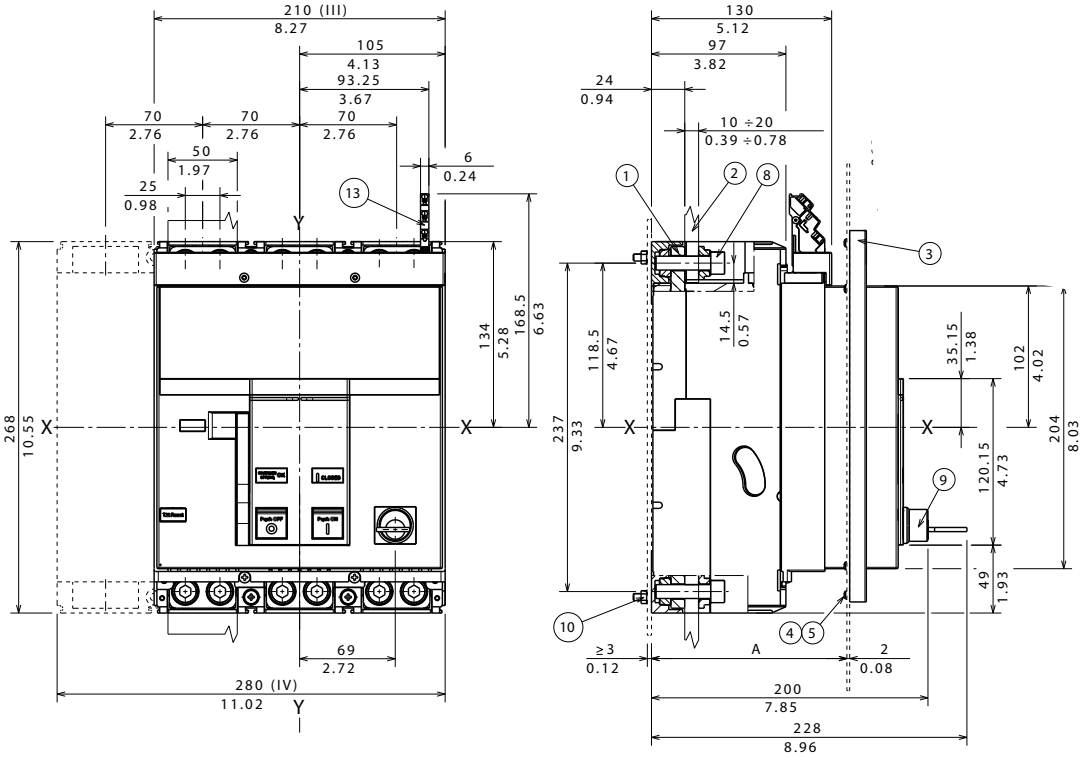
Key

1 Circuit-breaker
2 Fixed part
3 Base for rotary handle operating mechanism
5 500mm Connection rod
6 Rotary handle operating mechanism of the compartment door

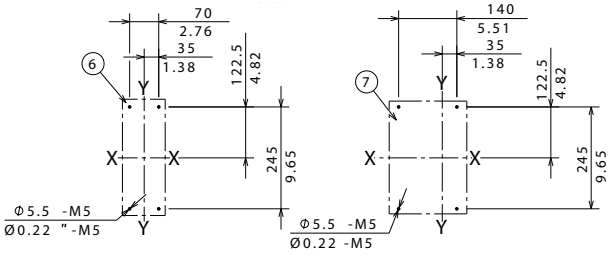
Tmax XT7 M - Installation

Installation for fixed circuit-breaker

Fixing on sheet



Drilling templates for support sheet

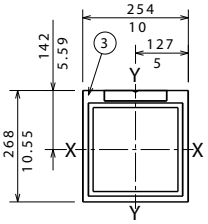


		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

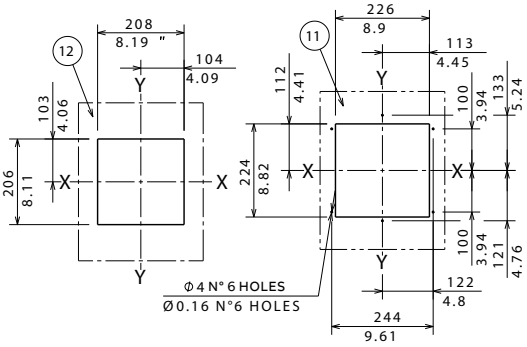
Key

1 Front terminals for flat connection
2 Extended front terminals
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
6 Drilling template 3p
7 Drilling template 4p
8 Tightening torque 18Nm
9 Key lock
10 Tightening torque 2 Nm
11 Compartment door drilling template for flange
12 Compartment door drilling template for 206x204 frontal
13 Clamp for auxiliary contacts

Flange



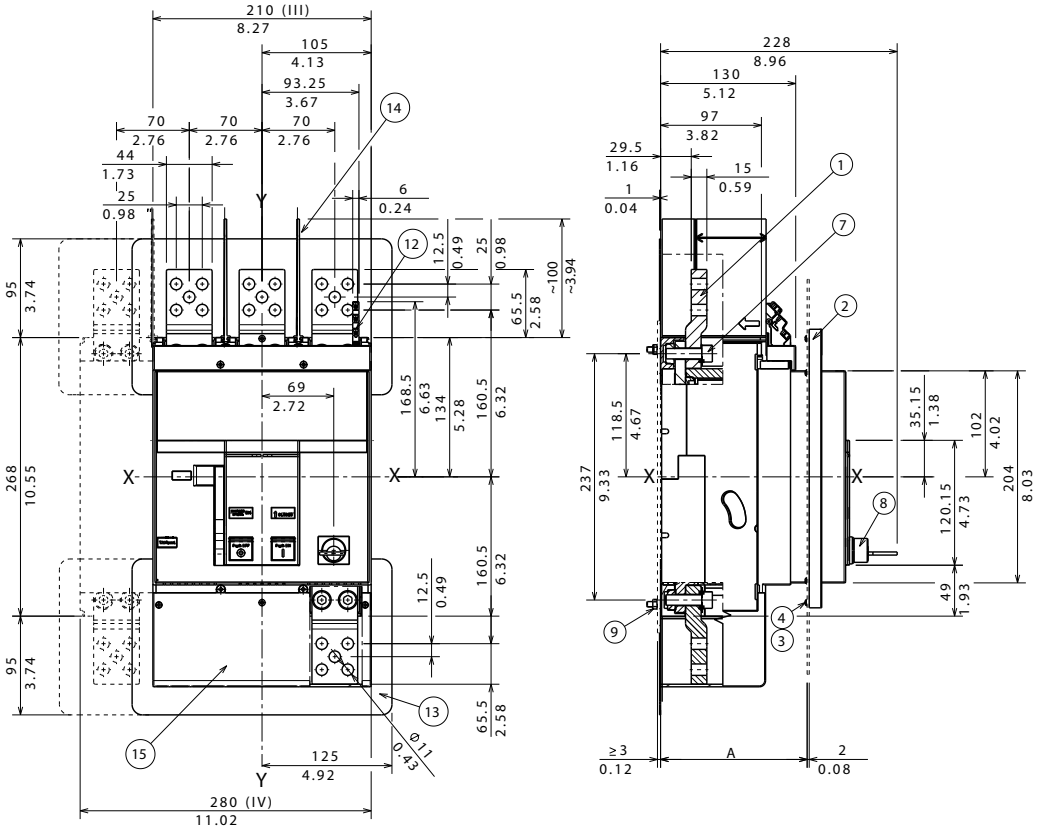
Compartment door drilling templates



Tmax XT7 M - Installation

Terminals for fixed circuit-breaker

Terminals EF



—

Key

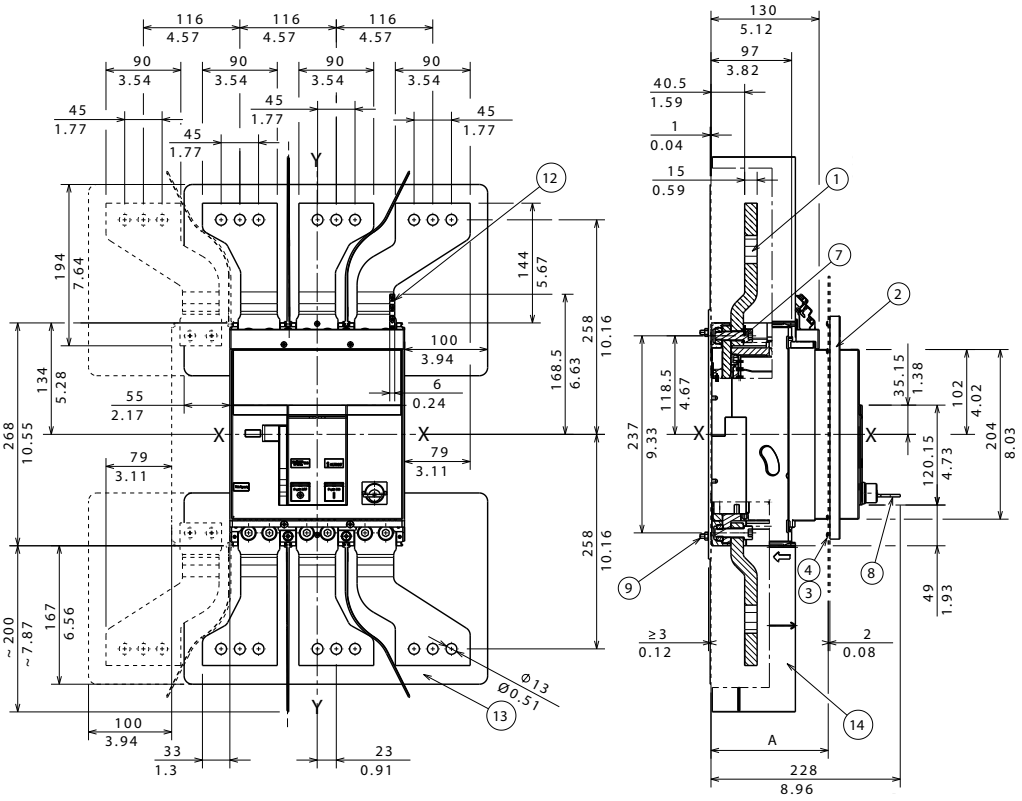
1 Extended front terminals EF
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5Nm
7 Tightening torque 18 Nm
8 Key lock
9 Tightening torque 2Nm
12 Slot for external signaling
13 Insulating plate
14 Phase separators 3.94"/100mm
15 High terminal cover with IP40 protection degree

		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

Tmax XT7 M - Installation

Terminals for fixed circuit-breaker

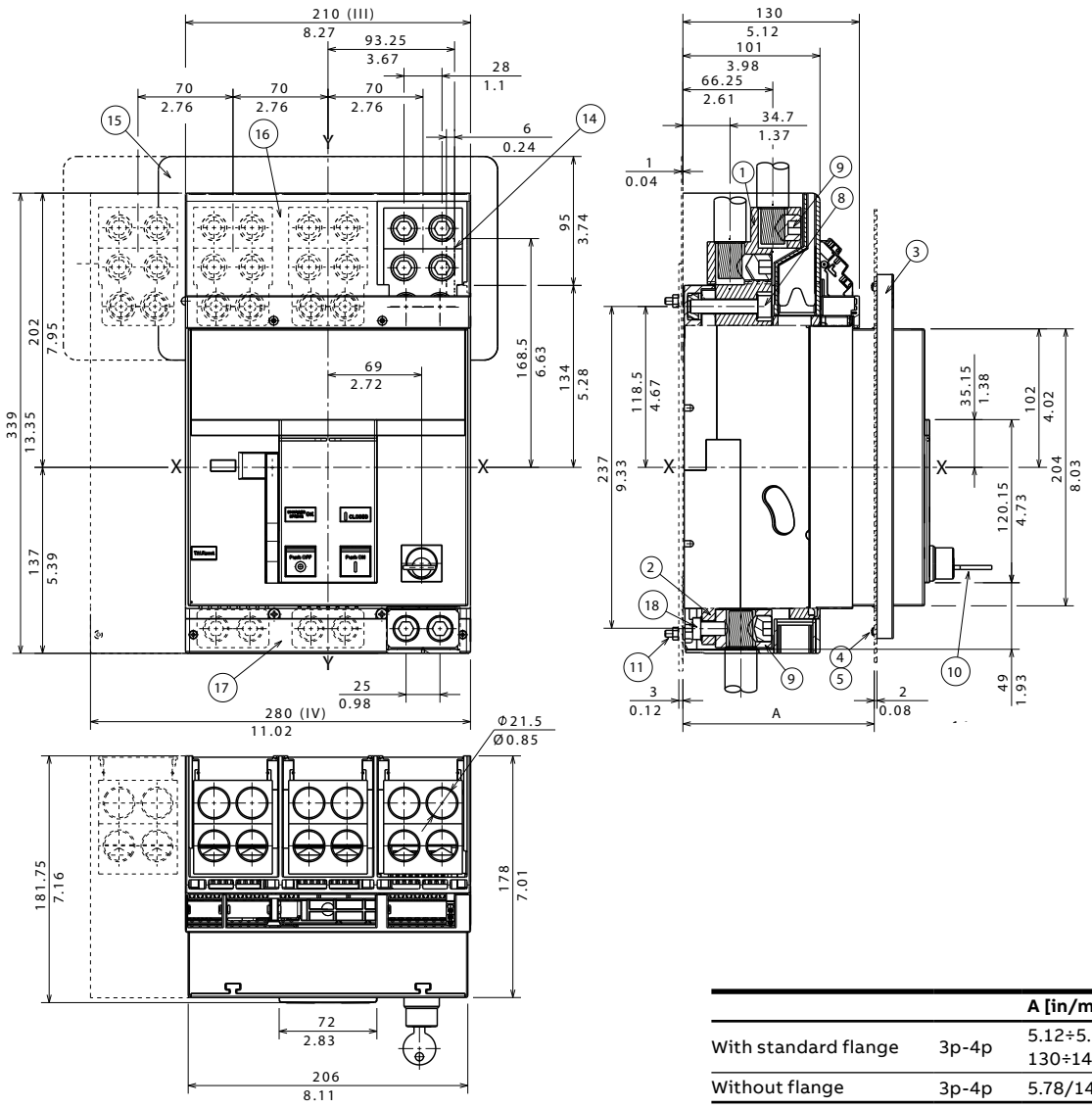
Terminals ES



Key
1 Spreadead extended front terminals ES
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5Nm
7 Tightening torque 18Nm
8 Key lock
9 Tightening torque 2 Nm
12 Slot for external signaling
13 Insulating plate

		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

4 x 500 kcmil and 2 x 500 kcmil (IEC only) FC CuAl



Key

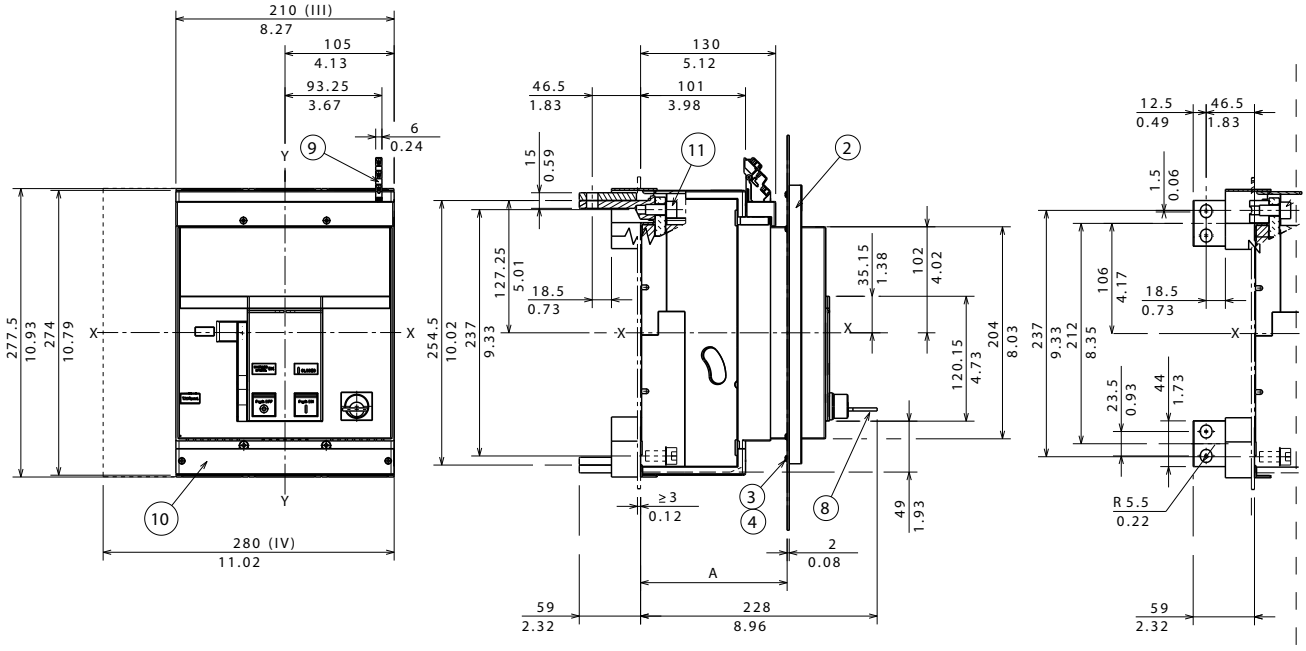
1 Fc Cu-Al terminal 4x500kcmil
2 Fc Cu-Al terminal 2x500kcmil (IEC only)
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 18Nm
9 Tightening torque 43Nm
10 Key lock
11 Tightening torque 2 Nm
14 Slot for external signaling
15 Insulating plate
16 High terminal cover with IP40 protection degree
17 Low protection cover with IP30 protection degree
18 Tightening torque 18Nm

		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

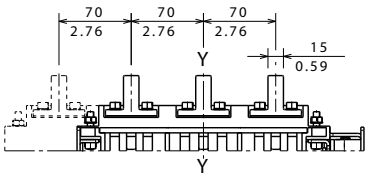
Tmax XT7 M - Installation

Terminals for fixed circuit-breaker

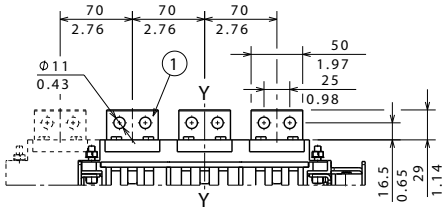
Terminals HR/VR adjustable

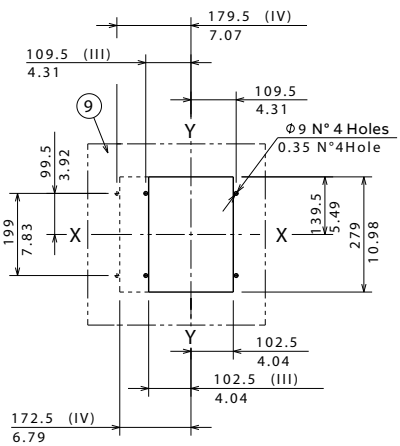


Terminals HR upper



Terminals VR lower

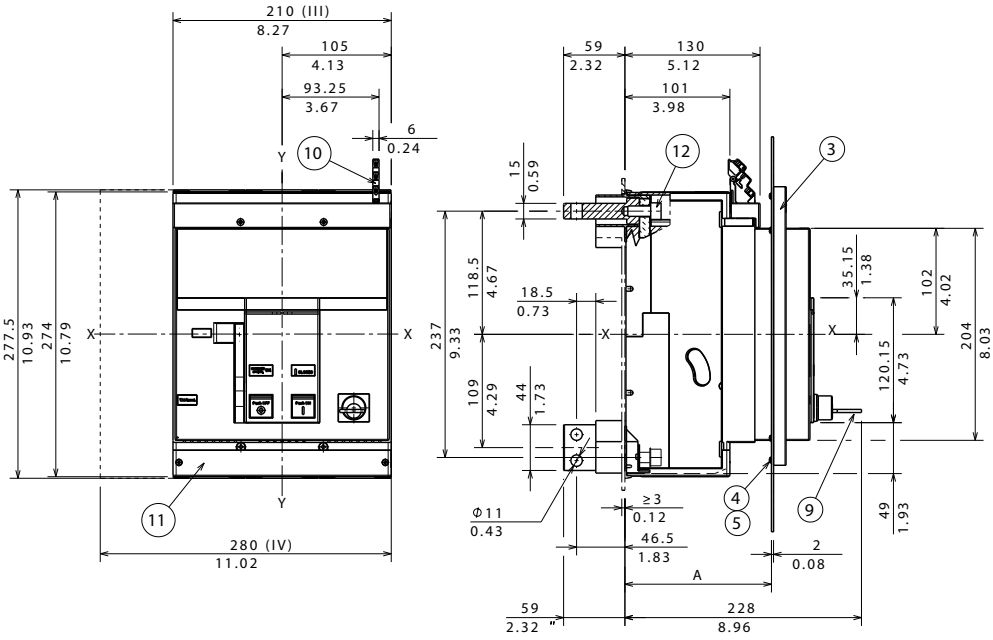




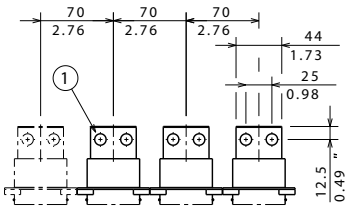
—
Key
1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm - 4.4lbs in
8 Key lock
9 Slot for external signaling
10 Low protection cover with IP30 protection degree
11 Tightening torque 20Nm

		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

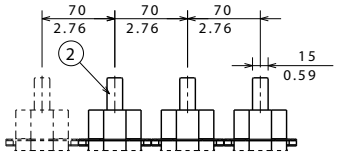
Terminals HR and VR

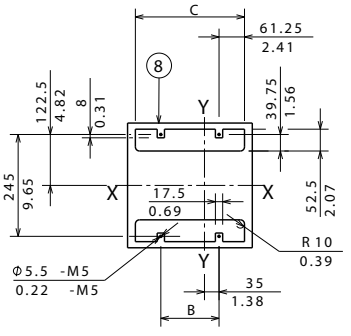


Terminals HR upper



Terminals VR lower





	3p [in/mm]	4p [in/mm]
B	2.76/70	5.51/140
C	7.58/192.5	10.33/262.5

		A [in/mm]
With standard flange	3p-4p	5.12÷5.55/ 130÷141
Without flange	3p-4p	5.78/147

—

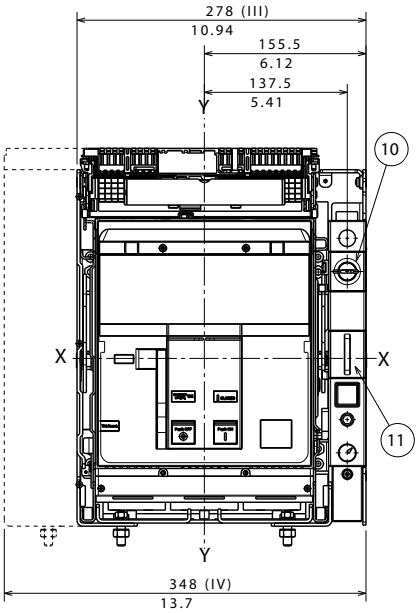
Key

1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm - 4.4lbs in
8 Drilling template support plate
9 Key lock
10 Clamp for auxiliary contacts
11 Low protection cover with IP30 protection degree
12 Tightening torque 9Nm

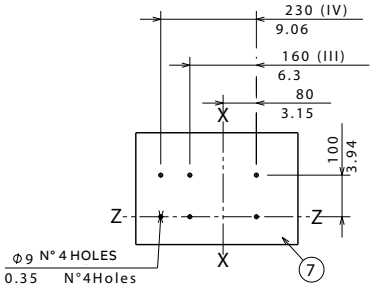
Tmax XT7 M - Installation

Installation for withdrawable circuit-breaker

Fixing on sheet



Drilling template for support sheet

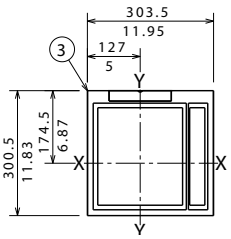


—

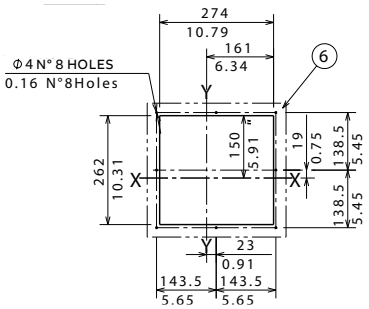
Key

3 Flange for the compartment door
6 Compartment door drilling template for flange
7 Fixing on sheet steel drilling template
10 Key lock
11 Padlock

Flange



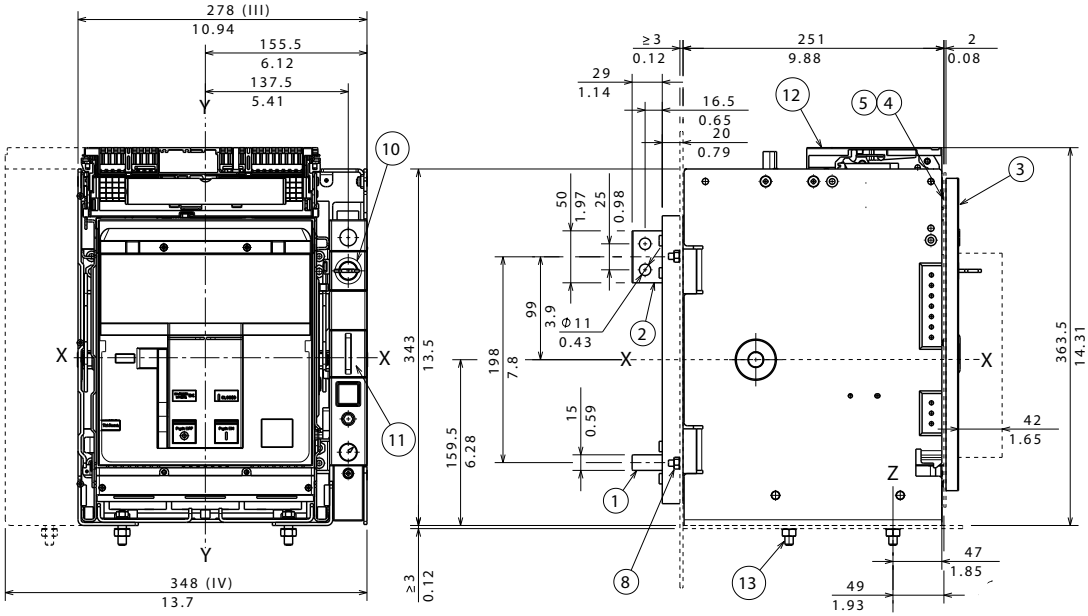
Compartment door drilling templates



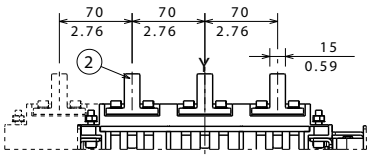
Tmax XT7 M - Installation

Terminals for withdrawable circuit-breaker

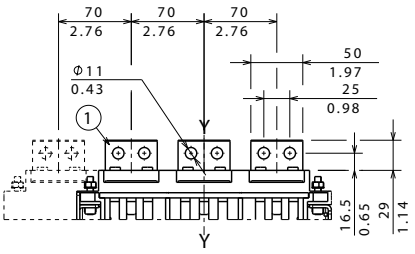
Terminals R

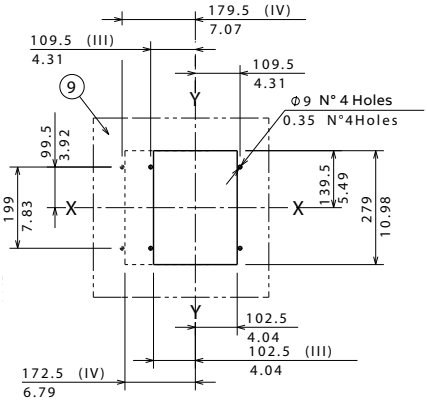


Terminals VR lower



Terminals HR lower





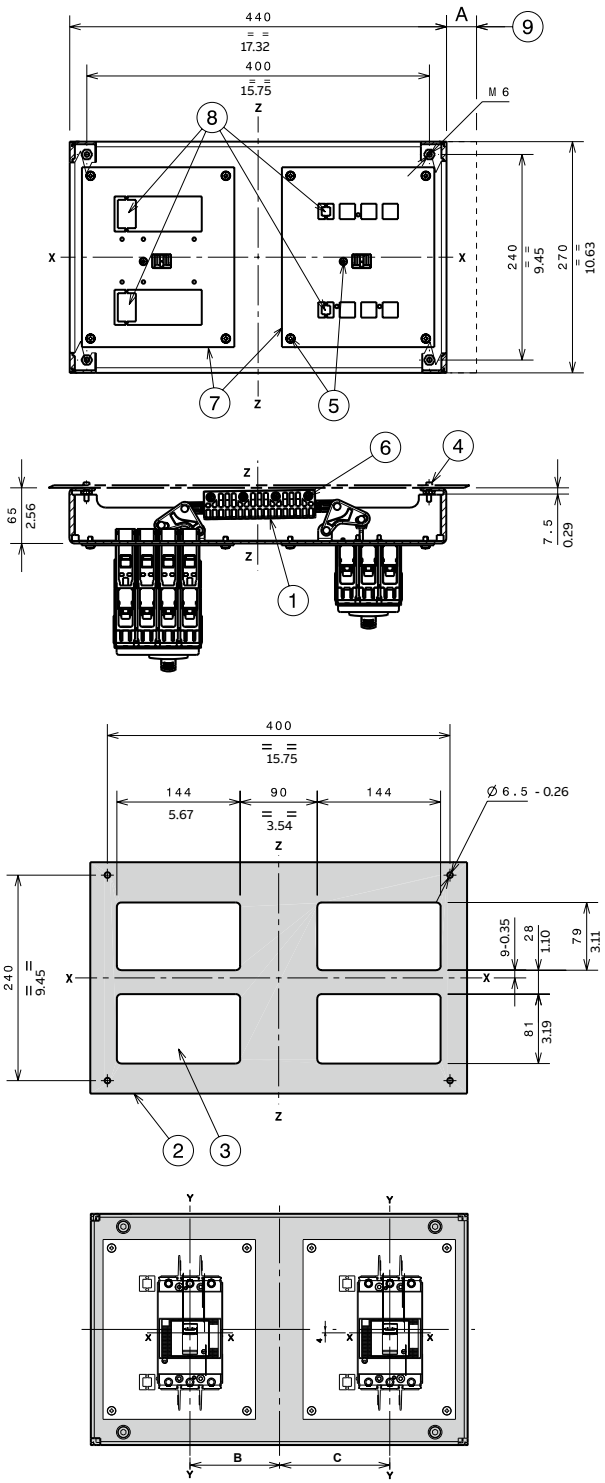
—

Key

1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 9Nm
9 Mounting at wall
10 Key lock
11 Padlock
12 Slot for external signaling
13 Tightening torque 9Nm

Tmax XT - Common accessories

Horizontal interlock XT series

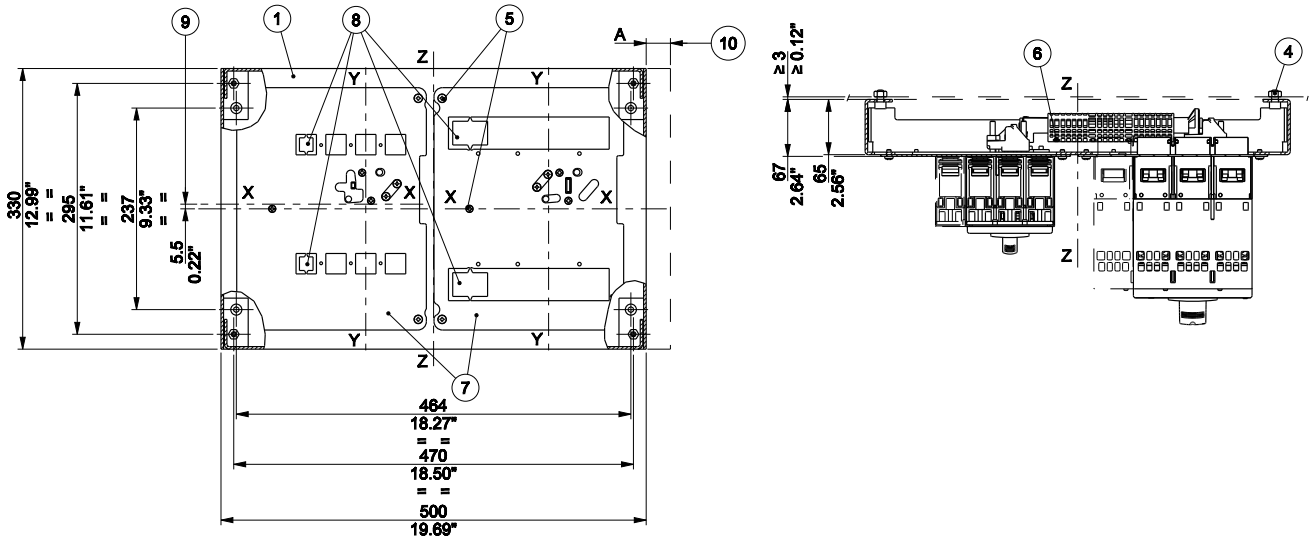


Key

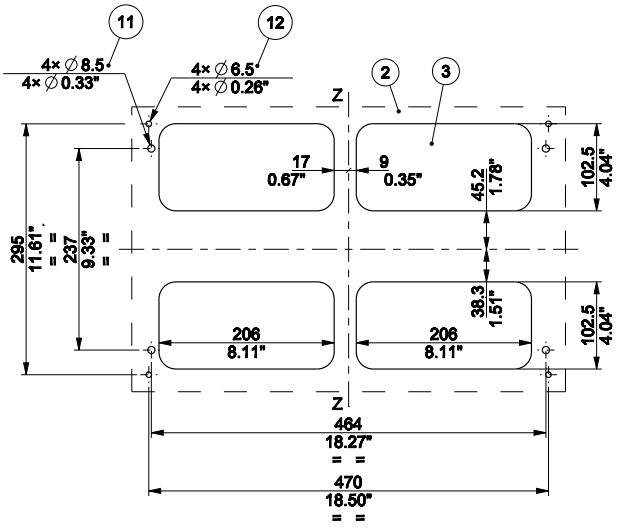
1 Interlocking mechanism
2 Drilling template for fixing interlocking system
3 Drilling template for all version with rear terminals
4 Tightening torque 3.7Nm
5 Tightening torque 3 Nm
6 Tightening torque 2.5Nm
7 Interlocking plate for circuit-breakers
8 Provision for 4p circuit-breaker
9 A = 1.38"/35mm XT4 withdrawable with key lock for fixed part
A = 0.98"/25mm XT2 withdrawable with key lock for fixed part

	B [in/mm]	C [in/mm]
XT1	4.10/104.25	5.09/129.25
XT2	4/101.75	5.19/131.75
XT3	3.92/99.75	5.26/133.75
XT4	3.91/99.25	5.28/134.25

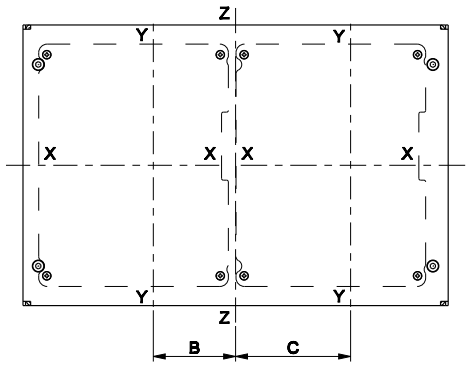
Horizontal interlock between two circuit-breakers (MIR-H)



Drilling template



Interlocking plate



Type	Description	B [in/mm]	C [in/mm]
Plate A	XT4 F	3.14/79.75	5.99/152.25
Plate B	XT4 P/W	3.14/79.75	5.99/152.25
Plate C	XT5 F	3.81/96.75	5.32/135.25
Plate D	XT5 400 P/W	3.81/96.75	5.32/135.25
Plate E	XT5 630 P/W	3.81/96.75	5.32/135.25

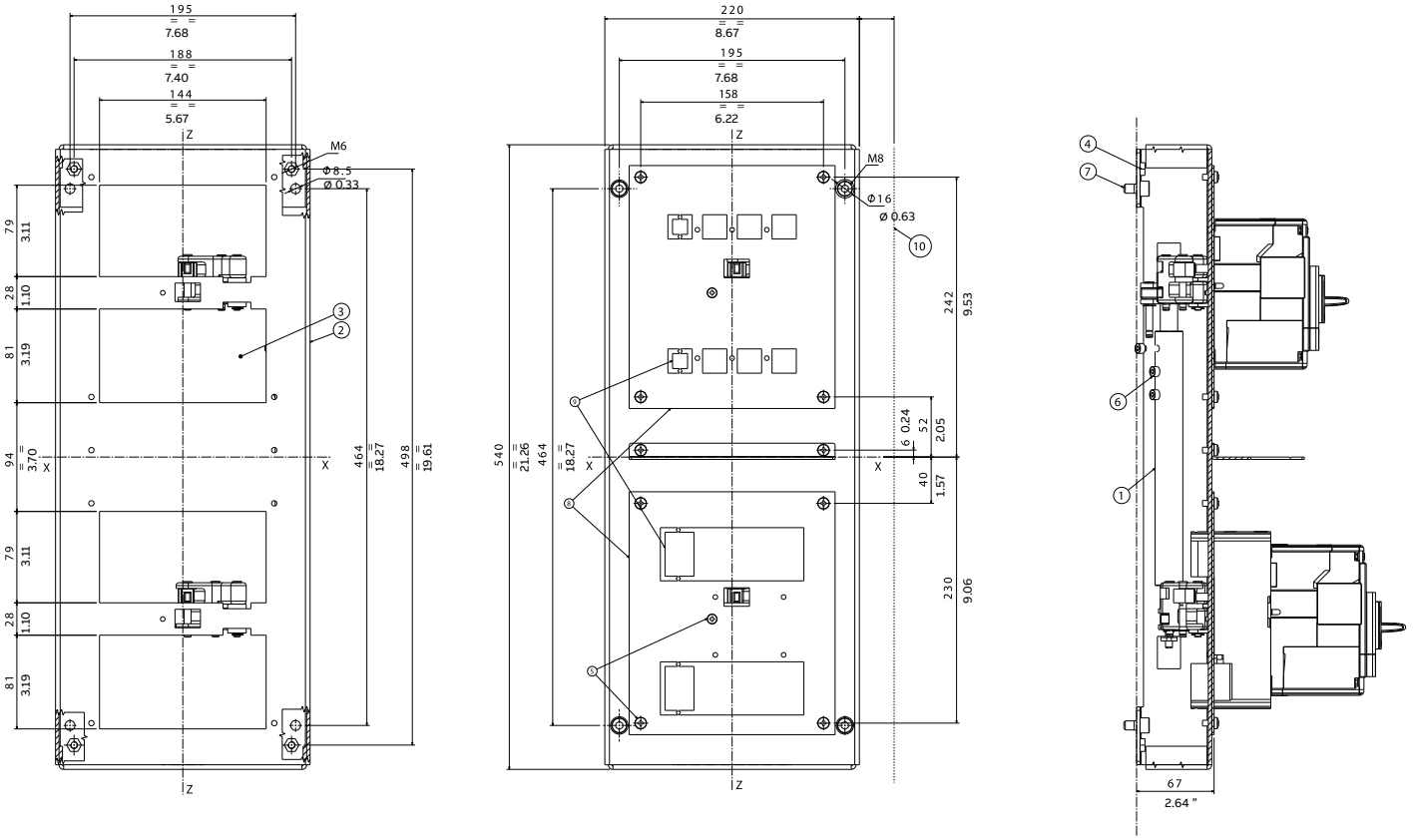
—

Key

1 Interlocking mechanism
2 Drilling template for fixing interlocking system
3 Drilling template for all version with rear terminals
4 Tightening torque 3.7Nm
5 Tightening torque 3Nm
6 Tightening torque 2.5Nm
7 Interlocking plate for circuit-breakers
8 Provision for 4p circuit-breaker
9 Dimension for XT4 circuit-breaker only
10 A = 23mm XT4 withdrawable with key lock for fixed part
A = 28.5mm XT5 withdrawable with key lock for fixed part
11 Hole for front mounted only
12 Hole for rear mounted only

Tmax XT - Common accessories

Vertical interlock XT series



—

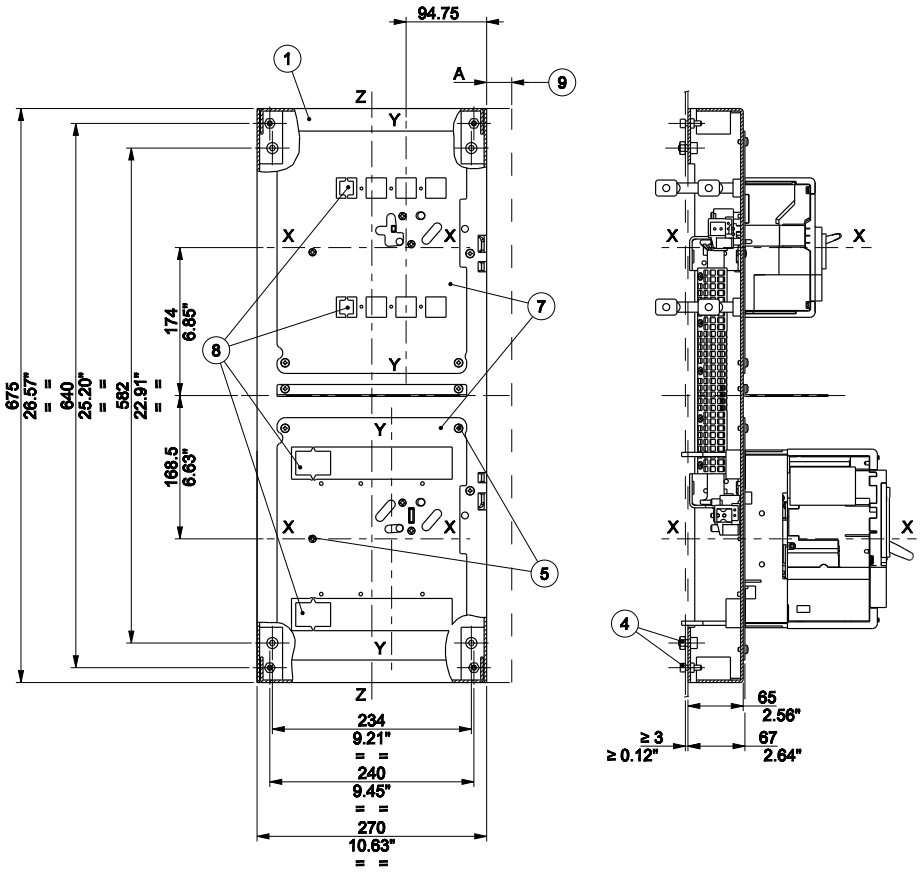
Key

1 Interlock device
2 Drilling template for fixing the interlock device on sheet Steel
3 Drilling template for all rear terminal version
4 Tightening torque 9Nm
6 Tightening torque 1Nm
7 Tightening torque under customer's responsibility
9 Pre-drilling for 4p version
10 A=1.38"/35mm for XT4 fixed part withdrawable with padlock device
A=1.18"/30mm for XT2 fixed part withdrawable with padlock device

—

Note:
For the overall dimension of the circuit-breaker see the relevant dimension tables and the configuration

Vertical interlock between two circuit-breakers (MIR-V)



—

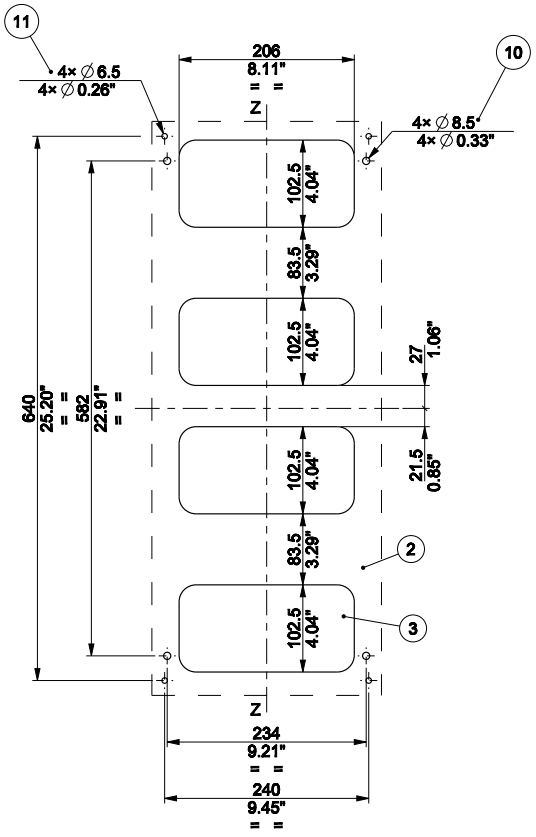
Key

1 Interlocking mechanism
4 Tightening torque 3.7Nm
5 Tightening torque 3Nm
6 Tightening torque 2.5Nm
7 Interlocking plate for circuit-breakers
8 Provision for 4p circuit-breaker
9 A = 26mm XT4 withdrawable with key lock for fixed part
A = 29.5mm XT5 withdrawable with key lock for fixed part

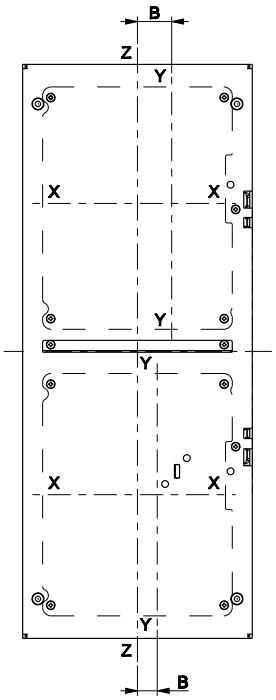
Tmax XT - Common accessories

Vertical interlock XT series

Drilling template



Interlocking plate



Type	Description	B [in/mm]
Plate A	XT4 F	1.58/40.25
Plate B	XT4 P/W	1.58/40.25
Plate C	XT5 F	0.92/23.25
Plate D	XT5 400 P/W	0.92/23.25
Plate E	XT5 630 P/W	0.92/23.25

—

Key

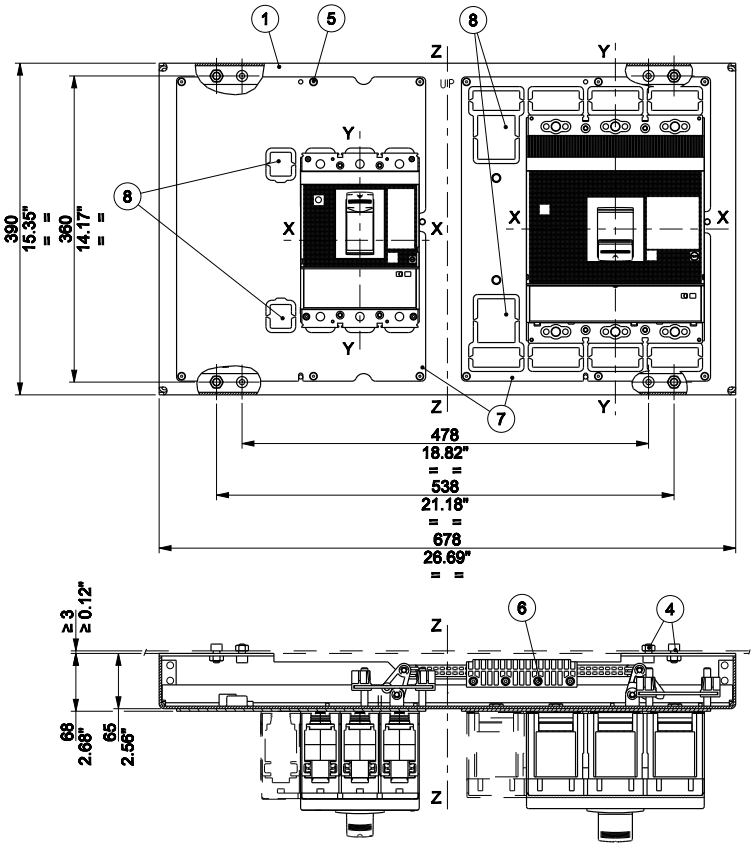
2 Drilling template for fixing interlocking system

3 Drilling template for all version with rear terminals

10 Hole for front mounted only

11 Hole for rear mounted only

Horizontal interlock between two circuit-breakers (MIR-H)



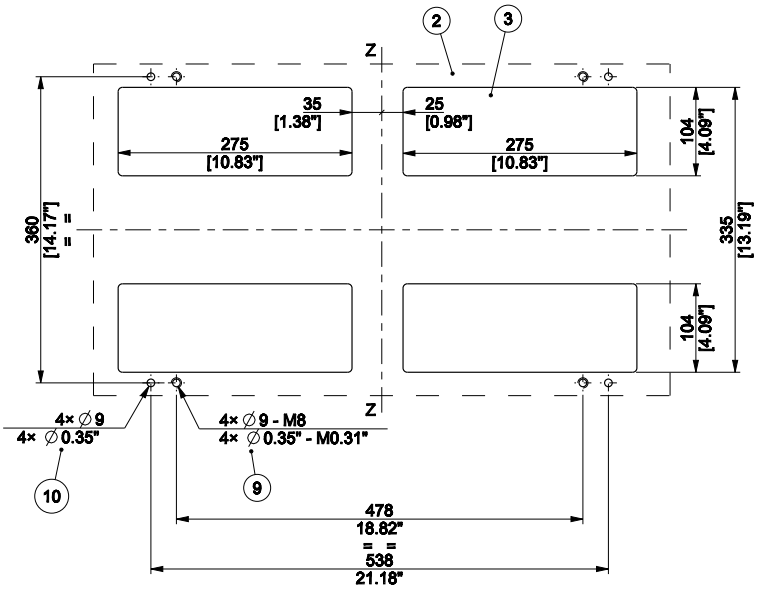
—

Key

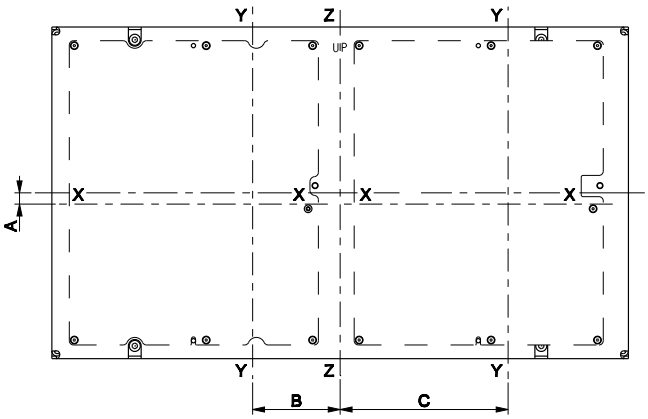
1 Interlocking mechanism
2 Drilling template for fixing interlocking system
3 Drilling template for all version with rear terminals
4 Tightening torque 18Nm
5 Tightening torque 3Nm
6 Tightening torque 3Nm
7 Interlocking plate for circuit-breakers
8 Provision for 4p circuit-breaker

Tmax XT - Common accessories
Vertical interlock XT series

Drilling template



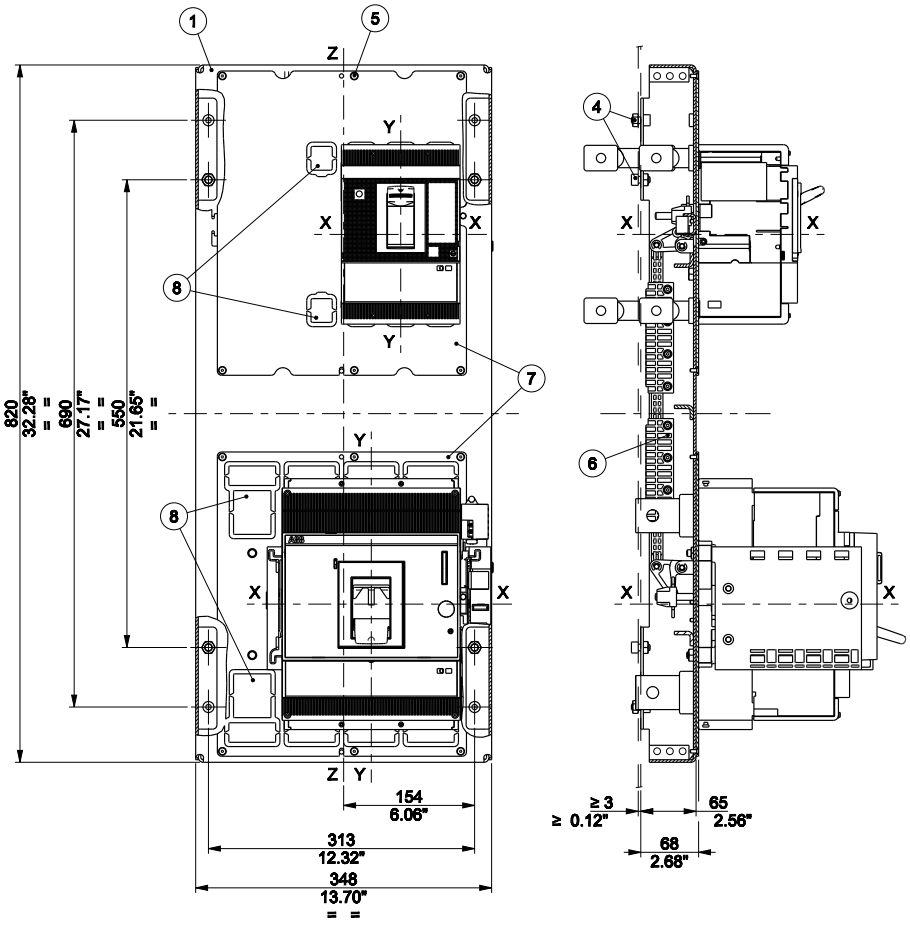
Interlocking plate



—
Key
9 4×Ø9-M8 hole for front mounted only
10 4×Ø9 hole for rear mounted only

Couplink plate type	A [in/mm]	B [in/mm]	C [in/mm]
MIR-P XT5 F	0.52/13.25	4.05/102.9	9.14/232.1
MIR-P XT5 P/W 400	0.52/13.25	4.05/102.9	9.14/232.1
MIR-P XT5 P/W 630	0.52/13.25	4.05/102.9	9.14/232.1
MIR-P XT6 F	0/0	5.41/137.5	7.78/197.5
MIR-P XT6 W	0/0	5.41/137.5	7.78/197.5

Vertical interlock between two circuit-breakers (MIR-V)



—

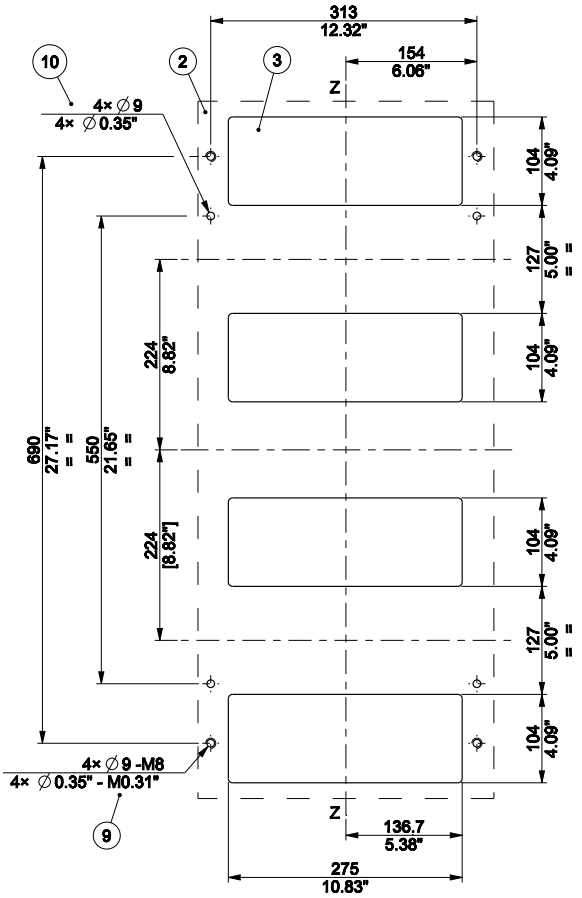
Key

1 Interlocking mechanism
4 Tightening torque 18Nm
5 Tightening torque 3Nm
6 Tightening torque 3Nm
7 Interlocking plate for circuit-breakers
8 Provision for 4p circuit-breaker

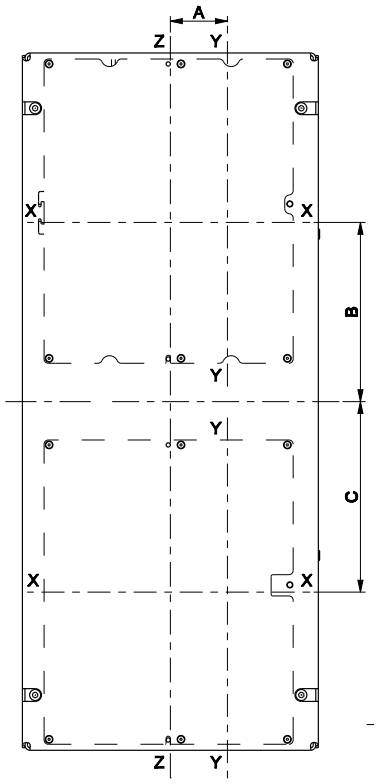
Tmax XT - Common accessories

Vertical interlock XT series

Drilling template



Interlocking plate



Couplink plate type	A [in/mm]	B [in/mm]	C [in/mm]
MIR-P XT5 F	2.64/67.1	8.30/210.75	9.34/237.25
MIR-P XT5 P/W 400	2.64/67.1	8.30/210.75	9.34/237.25
MIR-P XT5 P/W 630	2.64/67.1	8.30/210.75	9.34/237.25
MIR-P XT6 F	1.28/32.5	8.82/224	8.82/224
MIR-P XT6 W	1.28/32.5	8.82/224	8.82/224

—

Key

2 Drilling template for fixing interlocking system
3 Drilling template for all version with rear terminals
9 4×Ø9-M8 hole for front mounted only
10 4×Ø9 hole for rear mounted only

Wiring diagrams

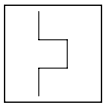
Reading information
3/2 Graphical symbols for electrical diagrams (617 IEC STANDARDS)
3/4 Information on how to read the diagrams

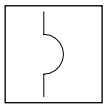
3/13 **Wiring diagrams**
3/17 Diagrams for XT1...XT4
3/34 Diagrams for XT5-XT6
3/59 Diagrams for XT7 and XT7 M
3/68 XT2-XT4-XT5-XT7-XT7 M modules

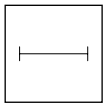
Reading information

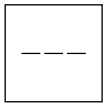
Graphical symbols for electrical diagrams (617 IEC STANDARDS)

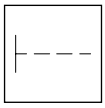
Graphical symbols for electrical diagrams (Standards IEC 617)

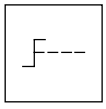

Thermal effect

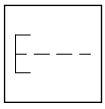

Electromagnetic effect

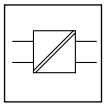

Timing

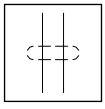

Mechanical connection

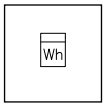

Manual mechanical operating mechanism (general case)


Rotary handle operating mechanism

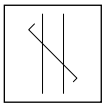

Pushbutton operating mechanism

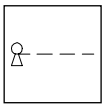

Converter separated galvanically

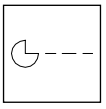

Conductors in shielded cable (example two conductors)

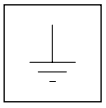


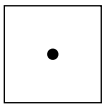
Watt-hour meter

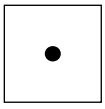

Conductors with corded cables (example two conductors)

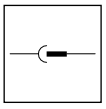

Key operating mechanism

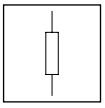

Cam operating mechanism

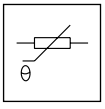

Ground (general symbol)


Connection of conductors

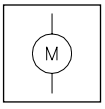

Terminal or clamp


Socket and plug (female and male)

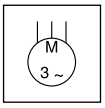

Resistor (general symbol)



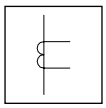
Resistor dependent on the temperature

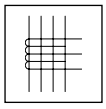


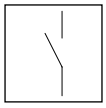
Motor (general symbol)

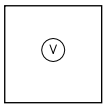


Three-phase asynchronous motor, with short-circuited rotor (cage)

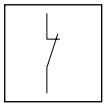

Current transformer

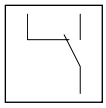

Current transformer with primary consisting of 4 passing conductors and with wound secondary, with socket

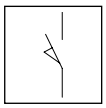

Closing contact

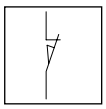


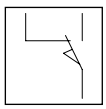
Voltmeter

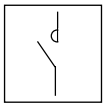

Opening contact


Changeover contact with momentary break

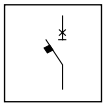

Closing position contact (limit switch)


Opening position contact (limit switch)

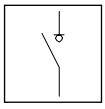

Changeover contact with momentary break (limit switch)



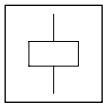
Contactor
(closing contact)



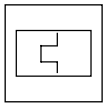
Power cut-off of switch-disconnector power with automatic opening



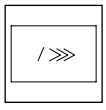
Switch-disconnector



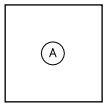
Control coil
(general symbol)



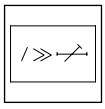
Thermal trip unit



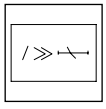
Instantaneous overcurrent release



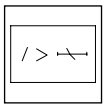
Ammeter



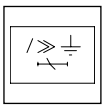
Overcurrent release with short adjustable time delay characteristic



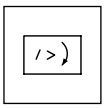
Overcurrent release with short inverse adjustable time delay characteristic



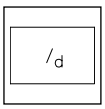
Overcurrent release with long inverse adjustable time delay characteristic



Overcurrent release for earth fault with short inverse time characteristic



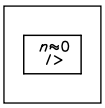
Current relay for unbalance between phases



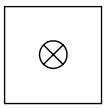
Residual current release



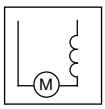
Relay for detecting lack of phase in a three-phase system



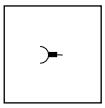
Relay for detecting blocked rotor by means of current measurement



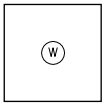
Lamp, general symbol



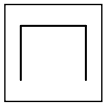
Motor with excitation in series



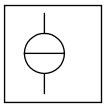
Brush



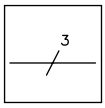
Wattmeter



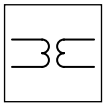
Screen, shield (it may be drawn in any convenient shape)



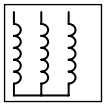
Ideal current source



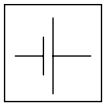
Three connections



Voltage transformer



Winding of three-phase transformer, connection star



Primary cell, secondary cell, battery of primary cell or secondary cell

Reading information
Information on how to read the diagrams

State of operation shown
The diagrams are shown in the following conditions:
- fixed version circuit-breaker, open;
- withdrawable or plug-in version circuit-breaker, open and connected;
- contactor for starting the motor open;
- circuits de-energised;
- trip units not tripped;
- motor operator with springs charged.

Key XT1...XT4

* = See note indicated by the letter
A12 = Ekip Com type interface unit
A13 = Ekip Signaling 10K type signaling unit
A14 = MOE-E type stored energy motor operator actuating unit
A15 = Ekip Multimeter type measurement unit
A16 = Ekip Micro Module I/O type interface unit
A17 = MOE type stored energy motor operator actuating unit
BUS1 = Serial interface with external bus
BUS2 = Redundant serial interface with external bus
LINK BUS = Interface with external Link bus
D 2 Electronic time-delay device for undervoltage release coil YU, outside circuit-breaker (only for voltage up to 250 V)
H2 = Signaling lamp for stored energy motor operator blocked
I 11...32 = Programmable digital inputs
| 41...43 51...53 = Analog inputs from temperature sensor
| 44-54 = Analog inputs from 4-20mA sensor
| Pt1OO = Analog input from PtiOO temperature sensor of motor
I reset = Digital input for resetting tripped mo tor starting contactor operating unit
J... = Connectors for auxiliary circuits of withdrawable circuit-breaker. Withdrawal of connectors occurs at the same time as that of circuit-breaker
K = Motor starting contactor
K51 = Ekip type electronic relay for overcurrent protection
K51/CI = Motor starting contactor operator module
K51/COM = Communication module
K51/MEAS= Measurement module
K51/SIGN= Signaling module
K51/SUPPLY = Auxiliary supply module (110-24OVAC/DC and 24-48VDC)
K51/SYNC= Synchronizing module
K51/TEMP= Temperature monitoring module
K87 = Residual current relay
M = Motor with energizing in series for circuit-breaker opening and closing (Fig. 21)
M = Motor for opening circuit-breaker and loading the closing springs (Fig. 22-54-55-56-57)
M1 = Three-phase asynchronous motor
0 11...32 = Programmable signaling contacts
OCI = Contact for motor starting contactor operating mechanism
0 SC = Synchronism monitoring contact
Q = Main circuit-breaker
Q/O...7 = Auxiliary contacts of the circuit-breaker open/closed
R-R1 = Resistor
R2 = Pt100 temperature sensor of motor
81 = Contact controlled by the motor operator cam
82 = Contact controlled by the key lock of the direct action motor operator
83/1-2 = Contacts operated by Auto/Manual selector switch and by key lock of the stored energy motor operator
S4 = Contact operated by direct action motor operator cam
S4/1-2 = Early auxiliary contacts operated by circuit-breaker mounted crank handle
851 = Contact for signaling circuit-breaker open due to tripped thermomagnetic overcurrent protection release or electronic relay
86/1-2 = Contacts controlled by Auto/Manual selector switch of direct action motor operator

S75E/1-2 = Contacts for signaling circuit-breaker in withdrawn position (only applicable to withdrawable circuit-breaker versions)
S75I/1-2-5 = Contacts for signaling circuit-breaker in racked-in position (only applicable to withdrawable or plug-in circuit-breaker versions)
S87/1 = Contact for electrical signaling of residual current relay prealarm
S87/2 = Contact for electrical signaling of residual current relay alarm
S87/3 = Contact for electrical signaling of circuit-breaker open due to residual current relay trip
SC = Pushbutton or contact for closing the circuit-breaker
SC3 = Motor start pushbutton
SD = Residual current relay supply disconnector
SO = Pushbutton or contact for opening circuit-breaker
SO3 = Motor stop pushbutton
SR = Electrical reset pushbutton or contact
SY/1...3 = Contacts for signaling circuit-breaker open due to tripped overcurrent protection relay, thermomagnetic release and coils Y0, YOi, Y02, YU (tripped position)
TI = Toroidal current transformer
TI/L1-L2-L3 = L1-L2-L3 phase current transformer
TI/N = Current transformer on neutral
TU2 = Insulation voltage transformer (outside circuit-breaker)
Uaux = Auxiliary supply voltage
V1 = Circuit-breaker applications
V2 = Motor operator applications
V4 = Indicative switchgear and connections for operation and signaling, outside circuit-breaker
V5 = Ekip DIN Rail Cartridge Basic or Ekip DIN Rail Cartridge applications
W2 = Serial interface with internal bus (local bus)
W9...14 = Connector RJ45 for interface unit and for communication modules
W9R...12R = Connector RJ45 for redundant communication modules
X3-X4-X8 = Protection relay connectors
X41 = Connector of current circuit for external neutral
XB.. = Three-way connector for auxiliary circuits of plug-in circuit-breaker
XC.. = Six-way connector for auxiliary circuits of plug-in circuit-breaker
XC2-3 = Six-way connector for auxiliary circuits of plug-in circuit-breaker for voltage up to 400V
XCT1-2 = Terminal box of Ekip DIN Rail Cartridge Basic or Ekip DIN Rail Cartridge
XD.. = Nine-way connector for auxiliary circuits of plug-in circuit-breaker
XE.. = Fifteen-way connector for auxiliary circuits of plug-in circuit-breaker
XF.. = Ekip Com type interface unit connector
XG = Protection relay connector
XH1 = Protection relay connector
XK7 = Connector of contact S75I/5
XM = MOE-E actuator unit connector
XV = Terminal box of circuit-breaker applications
YC = Closing coil of stored energy motor operator
YO = Opening coil
YO1 = Coil for opening due to overcurrent
YO2 = Opening coil of residual current relay
YU = Undervoltage coil

Reading information
Information on how to read the diagrams

Notes XT1...XT4

A) The presence of an auxiliary supply is required for the local bus and zone selectivity functions (see Fig. 51-81).

B) The undervoltage coil is provided for power supply branched on the supply side of the circuit-breaker or from an independent source: circuit-breaker can only close when coil is energized (closing lock is obtained mechanically).

C) Contacts 84/1 and 84/2 of Fig. 7-8 open circuit when circuit-breaker is open and close it again when a manual closing command is imparted by means of the rotary handle, in accordance with the Standards governing machine tools (however, circuit-breaker will not close if undervoltage release is not being supplied).

E) If the application in Fig. 21 and the contacts in Fig. 31 must be installed at the same time, contact 0/2 must be installed in the adjacent slot (marked 0/1).

F) R= Additional external undervoltage resistor supplied at 380/440 VAC and 480/525 VAC.
R1= Additional external resistor for stored energy motor operator or direct action motor operator supplied at 480/525VAC.

G) If a three-pole fixed circuit-breaker with current transformer on the neutral conductor outside the circuit-breaker is used, the terminals of the Tl/N transformer must be short-circuited when the circuit-breaker must be removed.

H) "Galvanically separated converters" conforming to standards IEC 60950 (UL 1950) or equivalent must be used since an earthed Uaux is required.

I) Mandatory in the presence of any sort of Ekip module.

L) Only one application among Fig. 83...97-131-132 can be supplied in the case of Ekip DIN Rail Cartridge Basic. In the case of Ekip DIN Rail Cartridge, up to three applications can be supplied among Fig. 83...97-131-132, taken once only. In addition, the Ekip Com module (if chosen) can be duplicated by choosing among Fig. 110...116.

M) To ensure correct operation, at least one module must always be present.

N) BELDEN 3105A cables or an equivalent type must be used.

O) When there are several Ekip Com modules with withdrawable circuit-breakers, contact S75I/5 must be connected once only to one single module.

P) Auxiliary voltage Uaux allows all the functions of EKIP electronic protection relays to be activated. "Galvanically separated converters" conforming to standards IEC 60950 (UL 1950) or equivalent must be used since an earthed Uaux is required.

Q) BELDEN 3105A cables or an equivalent type must be used. Maximum length 15 m.

R) Recommended RJ45 cable: CAT6 STP.

S) Consult “Technical Application Papers - vol. 9: Communication via BUS with ABB circuit-breakers" for connection of the EIA RS485 serial line.

T) Short-circuit terminals 1200 on to install a termination resistor on the Local Bus.

U) Use Belden 3079A cables or equivalent. Consult White Paper 1SDCOO741ZGO201 "Communication with SACE Emax 2 circuit-breakers" for further details.

V) Use Belden 3084A cables or equivalent. Consult White Paper 1SDC007412G0201 "Communication with SACE Emax 2 circuit-breakers" for further details.

Z) Ekip Supply cannot be used to energize the electronic relay via terminals K1 and K2.

AA) Consult Fig. 51 or 81 for the connection of W3 and W4.

AB) Use two-pole shielded cable type BELDEN 8762/8772 or equivalent. The shield must be earthed on the selectivity input side (for zone selectivity) or on both sides (for other applications).

AC) The rated maximum secondary voltage is 120V.

AD) Use insulated cables for thermcouples such as PENTRONIC TEC/SITW-24F (Type TX) or equivalent. Maximum length 3 m.

AE) Use suitable cables up to 3 meters in length compatible with the workplace in which the 4-20mA current sensor is used.

Key XT5-XT6

* = See note indicated by the letter
A12 = Ekip Com type Interface unit
A13 = Ekip Signaling 10K type signaling unit
A14 = MOE-E type stored energy motor operator actuating unit
A15 = Ekip Multimeter type measurement unit
A16 = Ekip Micro Module I/O type interface unit
A17 = MOE type stored energy motor operator actuating unit
A18 = Ekip DIN Rail Cartridge Basic
A19 = Ekip DIN Rail Cartridge
BUS1 = Serial interface with external bus
BUS2 = Redundant serial interface with external bus
LINK BUS = Interface with external Link bus
D = Electronic time delay device for undervoltage release coilYU, outside circuit-breaker (only for voltages up to 250V)
H2 = Signaling lamp for stored energy motor operator blocked
I 01-11...32=Programmable digital inputs
I 41-51 = Analog inputs from 4-20mA sensor
I 42-44 52...54 = Analog inputs temperature sensor
I Pt 100 = Analog input from Pt 100 temperature sensor of motor
I reset = Digital input for resetting tripped motor startin contactor operating unit
J... = Connectors for auxiliary circuits of a withdrawable circuit-breaker. Withdrawal of connectors occurs at the same time as that of circuit-breaker
K = Motor starting contactor
K51 = Ekip type electronic relay for overcurrent protection
K51/CI = Motor starting contactor operator module
K51/COM = Communication module
K51/SIGN = Signaling module
K51/SUPPLY = Auxiliary supply module (110-240VAC/DC and 24-48Vdc)
K51/SYNC = Synchronizing module
K51/TEMP = Temperature monitoring
K87 = Residual current release type RC Inst, RC Sel, RC Sel 200, RC B Type
KO = Auxiliary opening relay
M = Motor for opening circuit-breaker and loading closing springs
0 01-11...32 = Programmable signaling contacts
OCI = Contact for motor starting contactor operating mechanism
O SC = Synchronism monitoring contact
Q = Main circuit-breaker
Q/0..7 = Auxiliary contacts of the circuit-breaker open/closed
Q/26 = Open/Close auxiliary used internally by protection release
R = Resistor
R2 = Pt100 temperature sensor of motor
S1 = Contact controlled by the motor operator cam
S3/1-2 = Contacts controlled by Auto/Manual selector switch and key lock of motor
S4/1-2 = Early auxiliary contacts
S4/1-4 = Early auxiliary contacts operated by circuit-breaker mounted crank handle
S51 = Contact for signaling circuit-breaker open due to tripped thermomagnetic overcurrent protection release or electronic relay
S52 = YU/YO trip signaling contact (for voltage up to 250V)
S75E/1 = Contact for signaling circuit-breaker in racked out position (only applicable to withdrawable circuit-breaker versions)
S75E/1-2-3 = Contacts for signaling circuit-breaker in racked-in position (only applicable to withdrawable or plug-in circuit-breaker versions)
S75T/1 = Contact for signaling circuit-breaker in test position (only applicable to withdrawable circuit-breaker versions)
S87/1 = Contact for electrical signaling of residual current relay prealarm
S87/2 = Contact for electrical signaling of residual current relay alarm

Reading information
Information on how to read the diagrams

S87/3 = Contact for electrical signaling of circuit-breaker open due to residual current relay trip
SC = Pushbutton or contact for closing the circuit- breaker
SC3 = Motor start pushbutton
SD = Residual current relay supply disconnector
SO = Pushbutton or contact for opening circuit-breaker
S03 = Motor stop pushbutton
SR = Electrical reset pushbutton or contact
SY/1...3 = Contacts for signaling circuit-breaker open due to tripped overcurrent protection relay, thermomagnetic release and coils YO, Y01, Y02, YU (tripped position)
TI = Toroidal current transformer
TI/L1-L2-L3 = L1-L2-L3 phase current transformer
TI/N = Current transformer on neutral
TU2 = Insulation voltage transformer (outside circuit-breaker)
Uaux = Auxiliary supply voltage
V1 = Circuit-breaker applications
V2 = Motor operator applications
V4 = Indicative switchgear and connections for operation and signaling, outside circuit- breaker
V5 = Ekip DIN Rail Cartridge Basic or Ekip DIN Rail Cartridge applications
W2 = Serial interface with internal bus (local bus)
W9...14 = Connector RJ45 for interface unit and for communication modules
W9R...12R = Connector RJ45 for redundant communication modules
X3-X4-X8 = Protection relay connectors
XB.. = Three-way connector for auxiliary circuits of plug-in circuit-breaker
XC.. = Six-way connector for auxiliary circuits of plug-in circuit-breaker
XC2-3 = Six-way connector for auxiliary circuits of plug-in circuit-breaker for voltage up to 400V
XCT1-2 = Terminal box of Ekip DIN Rail Cartridge Basic or Ekip DIN Rail Cartridge
XD.. = Nine-way connector for auxiliary circuits of plug-in circuit-breaker
XE.. = Fifteen-way connector for auxiliary circuits of plug-in circuit-breaker
XF.. = Ekip Com type interface unit connector
XH1 = Protection relay connector
XV = Terminal box of circuit-breaker applications
YC = Closing coil of stored energy motor operator
YO = Opening coil
YO1 = Coil for opening due to overcurrent
YO2 = Opening coil of residual current relay
YU = Undervoltage coil
YU/0 = Undervoltage and opening coil (Combo)

Notes XT5-XT6

A) The presence of an auxiliary supply is required for the local bus and zone selectivity functions (see Fig. 41-78).

B) The undervoltage coil is provided for power supply branched on the supply side of the circuit-breaker or from an independent source: circuit-breaker can only close when coil is energized (closing lock is obtained mechanically).

C) Contacts S4/1 and S4/2 of Fig. 7-10-15 open circuit when circuit-breaker is open and close it again when a manual closing command is imparted by means of the rotary handle, in accordance with the Standards governing machine tools (however, circuit-breaker will not close if undervoltage release is not being supplied).

D) Only for XT5 F-P.

E) Only for XT5

G) If a three-pole fixed circuit-breaker with current transformer on the neutral conductor outside the circuit-breaker is used, the terminals of the TI/N transformer must be short-circuited when the circuit-breaker must be removed.

H) "Galvanically separated converters" conforming to standards IEC 60950 (UL 1950) or equivalent must be used since an earthed Uaux is required.

I) Mandatory in the presence of any sort of Ekip module.

L) Only one application among Fig. 79...93-131-132 can be supplied in the case of Ekip DIN Rail Cartridge Basic. In the case of Ekip DIN Rail Cartridge, up to three applications can be supplied among Fig. 79...93-131-132, taken once only. In addition, the Ekip Com module (if chosen) can be duplicated by choosing among Fig. 110...116.

M) To ensure correct operation, the Ekip Supply module and at least one module must always be present.

N) BELDEN 3105A cables or an equivalent type must be used.

0) When there are several Ekip Com modules with withdrawable circuit-breakers, contact 5751/2 must be connected once only to one single module.

P) Auxiliary voltage Uaux allows all the functions of EKIP electronic protection relays to be activated. "Galvanically separated converters" conforming to standards IEC 60950 (UL 1950) or equivalent must be used since an earthed Uaux is required.

Q) BELDEN 3105A cables or an equivalent type must be used. Maximum length 15 m.

R) Recommended RJ45 cable: CAT6 STP.

S) Consult "Technical Application Papers - vol. 9: Communication via BUS with ABB circuit-breakers" for connection of the EIA RS485 serial line.

T) Short-circuit terminals 1200 on to install a termination resistor on the Local Bus.

U) Use Belden 3079A cables or equivalent. Consult White Paper 1SDC007412G0201 "Communication with SACE Emax 2 circuit-breakers" for further details.

V) Use Belden 3084A cables or equivalent. Consult White Paper 1SDC007412G0201 "Communication with SACE Emax 2 circuit-breakers" for further details.

Z) Ekip Supply cannot be used to energize the electronic relay via terminals K1 and K2.

AA) Consult Fig. 78 for the connection of W3 and W4.

AB) Use two-pole shielded cable type BELDEN 8762/8772 or equivalent. The shield must be earthed on the selectivity input side (for zone selectivity) or on both sides (for other applications).

AC) The rated maximum secondary voltage is 120V.

AD) Use insulated cables for thermcouples such as PENTRONIC TEC/SITW-24F (Type TX) or equivalent. Maximum length 3 m.

AE) Use suitable cables up to 3 meters in length compatible with the workplace in which the 4-20mA current sensor is used

AG) Relay type TMG for XT5 only

AH) Designation Connector X .. -> X3 for XT5; X4 for XT6

Reading information

Information on how to read the diagrams

Key XT7-XT7M

* = See note indicated by the letter
A1 = Applications located on the moving part of the circuit-breaker
A3 = Applications located on the fixed part of the circuit-breaker
A4 = Indicative devices and connections for control and signaling, outside the circuit-breaker
A13 = Signaling unit type Ekip Signalling 10K
A15 = Metering unit type Ekip Multimeter
BUS1 = Serial interface with external bus
BUS2 = Redundant serial interface with external bus
LINK BUS = Interface with the external Link bus
D = Electronic time-lag device of YU under voltage coil, outside the circuit-breaker
GZi(DBi) = Zone selectivity input for G protection or input in "reverse" direction for D protection
GZo(DBo)= Zone selectivity output for G protection or output in "reverse" direction for D protection
| 11...32 = Programmable digital inputs
| 41...43 51...53 = Analogue inputs from temperature sensor
| 44-54 = Analogue inputs from 4-20mA sensor
K51 = Ekip type electronic release for overcur rent protection
K51/COM = Communication module
K51/MEAS = Measurement module
K51/SIGN = Signaling module
K51/SUPPLY = Auxiliary supply module (110-220VAC/ DC and 24-48VDC)
K51/SYNC = Synchronization module
K51/TEMP = Temperature monitoring module
K51/YC = Closing command from EKIP protection release
K51/YO = Opening command from EKIP protection release
M = Motor for loading closing springs
O 11...32 = Programmable signaling contacts
0 SC = Contact for synchronism control
Q = Circuit-breaker
Q/1...25 = Open/close auxiliary contacts of circuit-breaker
Q/26-27 = Open/close auxiliary contacts used internally by protection release
RC = RC (residual current) protection sensor
RTC EKIP= Ready to close auxiliary contact of circuit-breaker, used internally by protection release
RTC = Contact for signaling circuit-breaker is ready to close
S4/1-2 = Early auxiliary contacts (AUE1-2)
S33M/1-2 = Limit contacts of spring loading motor
S43 = Switch for presetting remote/local control
S51 = Contact for signaling circuit-breaker open due to tripping of overcurrent protection release
S52 = Contact for signaling circuit-breaker open due to tripping of opening coil and of undervoltage coil
S75E/1-2 = Contacts for signaling circuit-breaker in racked-out position (only provided with withdrawable circuit-breakers)
S75I/1-2-5 = Contacts for signaling circuit-breaker in racked-in position (only provided with withdrawable circuit-breakers)
S75T/1-2 = Contact for signaling circuit-breaker in test position (only provided with with drawable circuit-breakers)
SC = Pushbutton or contact for closing circuit-breaker
S0 = Pushbutton or contact for immediate opening of circuit-breaker
S01 = Pushbutton or contact for opening circuit-breaker with time-delayed trip
SR = Pushbutton or contact for electrical resetting of S51 trip contact
SY = Contact for signaling circuit-breaker open due to tripping of overcurrent protection release and of Y0, Y02, YU coils (tripped position)
SZi(DFi) = Zone selectivity input for S protection or input in "forward" direction for S protection

SZo(DFo) = Zone selectivity output for S protection or output in "forward" direction for D protection
Tl/L1-L2-L3 = Current transformer phase L1-L2-L3
Tl/N = Current transformer on neutral
TU1-2 = Insulation voltage transformer (outside circuit-breaker)
Uaux = Auxiliary supply voltage
Ul/L1-L2-L3 = Current sensor phase L1-L2-L3
Ul/N = Current sensor on neutral
Ul/O = Single-pole current sensor
W2 = Serial interface with internal bus (local bus)
W9...14 = RJ45 connector for communication modules
W9R...12R= RJ45 connector for redundant communication modules
X = Delivery connector for auxiliary circuits of withdrawable circuit-breaker
XB1...7 = Connectors for circuit-breaker applications
XF = Delivery terminal box for position contacts of withdrawable circuit-breaker
XK1...3 = Connectors for auxiliary circuits of EKIP protection release
XK7 = Connector for auxiliary circuits of communication modules
XV = Delivery terminal board for auxiliary circuits of fixed circuit-breaker
YC = Closing coil
YO = Opening coil
YO1 = Opening coil for overcurrent
YO2 = Second opening coil
YR = Coil for electrical resetting of trip contact S51
YU = Undervoltage coil

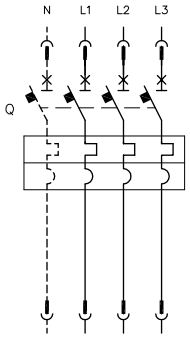
Notes XT7-XT7M

A) Auxiliary power supply must be present for zone selectivity and local bus functions (consult Fig. 31-32).
B) When there are mixed auxiliary contacts, 01 and 02 are 400V, while 03-04 are 24V.
C) Always supplied with Ekip Com module.
D) Always supplied with motor for loading closing springs in Fig. 13.
E) A voltage transformer is mandatory in the case of external sockets. External sockets are mandatory for systems for over 690V rated voltage. Admissible maximum rated secondary voltage is 230V.
F) Connections between RC residual current protection sensor and poles of connector X (or XV) of the circuit-breaker must be made of 4-pole shielded cable with paired braided conductors (BELDEN 9696 paired type or equivalent) no more than 10 m in length.
G) Earth fault protection (Gext) by means of a current sensor on the neutral point of the MV/LV transformer is available with all electronic protection releases equipped with display interface with LSIG protections. The connection between terminals 1 and 2 of the Ul/O current transformer and Ge+ and Ge- poles of connector X (or XV) must be made of shielded and stranded 2-pole cable (BELDEN 8841 or equivalent) no more than 15 m in length.
H) Use the supplied cable to make the connection. There must be no break in the cable. Use of other cables or extensions using intermediate terminal boxes is not allowed. With a circuit-breaker, poles Ne+ and Ne- of connector X (or XV) are short-circuited unless the external neutral is present: enable short-circuit if connection is absent.
I) Mandatory if any Ekip module is present.
L) Up to two applications between Fig. 41...59 taken only once can be supplied. The Ekip Com module selected can be duplicated by choosing between Fig. 61...67.

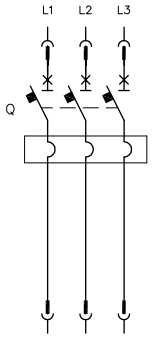
Reading information
Information on how to read the diagrams

M) Opening and closing commands from Ekip Actuator can be obtained with Y0 and Y0 coils, with 110-120VDC and 240-250VAC maximum voltage values.
N) Use BELDEN 3105A cables or equivalent.
O) Contact 8751/5 should be connected once only to a single module when there are several Ekip Com modules with withdrawable circuit-breakers.
P) Auxiliary voltage Uaux. Enables all the functions of the EKIP electronic protection releases to be activated. "Galvanically separated convertors" conforming to standard IEC 60950 (UL 1950) or equivalent must be used since an earthed Uaux is required.
Q) Use BELDEN 3105A cables or equivalent not more than 15m in length.
R) Recommended RJ45 cable: CAT6 STP.
S) Consult "Technical Application Papers - vol. 9: Bus Communication with ABB Circuit-breakers" for serial line connection EIA RS485.
T) Short-circuit terminals 1200 on if a terminating resistor must be connected to the Local Bus.
U) Use Belden 3079A cables or equivalent. For further details see White Paper 1SDCOO741200201 "Communication with SACE Emax 2 Circuit-Breakers".
V) Use Belden 3084A cables or equivalent. For further details see White Paper 18DCOO7412G0201 "Communication with SACE Emax 2 Circuit-Breakers".
W) Contacts S4/1 and S4/2 in Fig. 17 can be used to open the undervoltage coil circuit shown in Fig. 73-74 when the circuit-breaker is open and to close it again in the presence of a closing command, in compliance with the Standard governing machine tools.
X) Contact S52 signals the state of the Y02 / YU opening coils.
For coil Y02, the contact connected to poles 25-28 of connector X (or XV) is closed with Y02 energized (circuit-breaker opening activated), contact 25-26 is closed with Y02 de- energized.
For coil YU, the contact connected to poles 25-28 of connector X (or XV) is closed with YU de-energized (circuit-breaker opening activated), contact 25-26 is closed with YU energized.
Z) Ekip Supply cannot be used for direct supply to the electronic release by means of terminals K1 and K2.
AA) See Fig. 31 and 32 for connection of W3 and W4.
AB) Use BELDEN 8762/8722 two-pole shielded cable or equivalent. The shield must be earthed on the selectivity input side (for zone selectivity) or on both sides (for other applications).
AC) Admissible maximum rated secondary voltage is 120V.
AD) Use PENTRONIC TEC/SITW-24F (type TX) insulated cables for thermocouples or equivalent, no more than I'm in length.
AE) Use appropriate cables compatible with the workplace in which the 4-20mA current sensor is used and not more than 3 m in length.

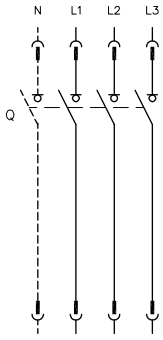
Wiring diagrams



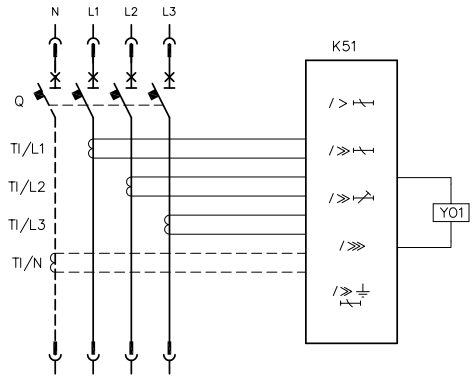
Three-pole or four-pole circuit-breaker with thermal magnetic trip unit



Three-pole circuit-breaker with magnetic trip unit

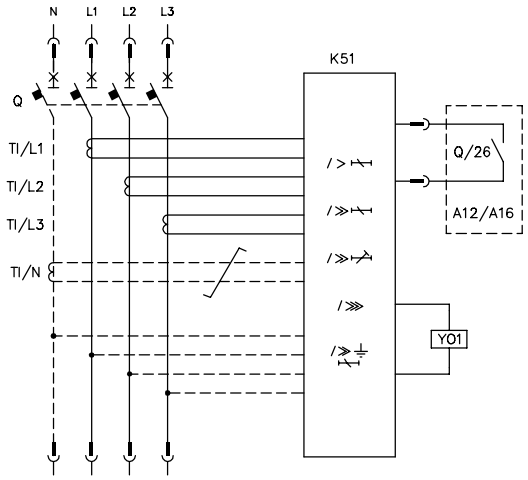


Three-pole or four-pole molded case switch

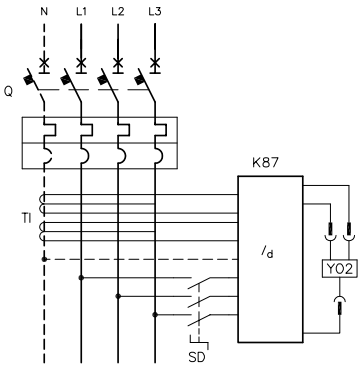


Three-pole or four-pole version circuit-breaker with Ekip Dip trip unit

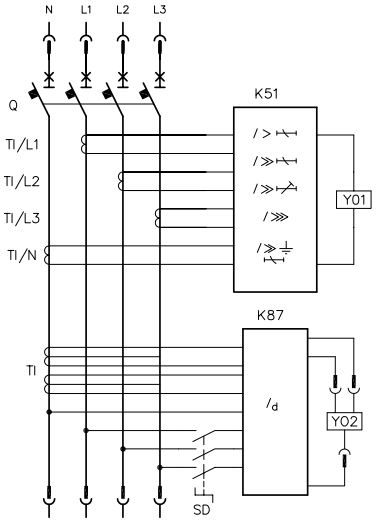
Wiring diagrams



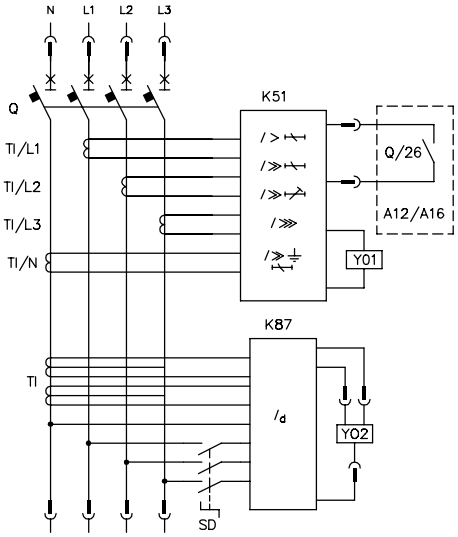
Three-pole or four pole version circuit-breaker XT5-XT6 with Ekip Touch trip unit



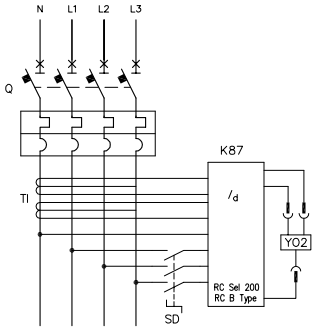
Three-pole or four-pole version circuit-breaker with thermal magnetic trip unit and residual current device



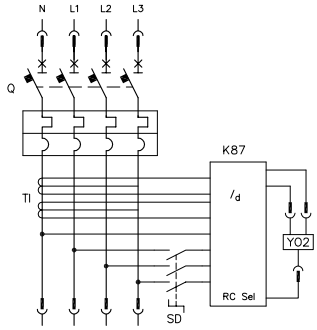
Three-pole or four-pole version circuit-breaker with Ekip Dip trip unit and residual current device



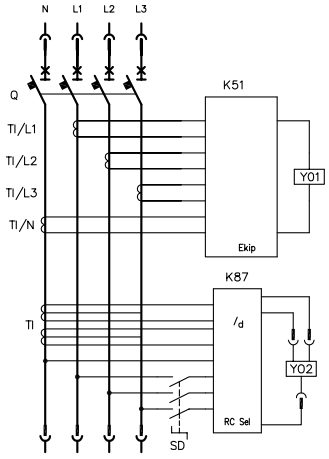
Three-pole or four pole version circuit-breaker with Ekip Touch trip unit and residual current device



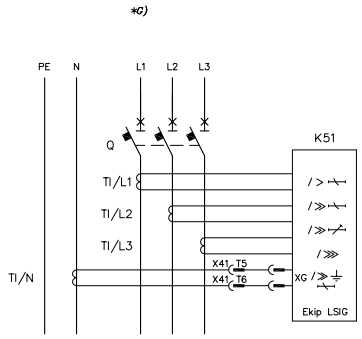
Four-pole circuit-breaker with thermal magnetic trip unit and RC Sel 200 or RC B type residual current release



Four-pole circuit-breaker with thermal magnetic trip unit and RC Sel residual current release

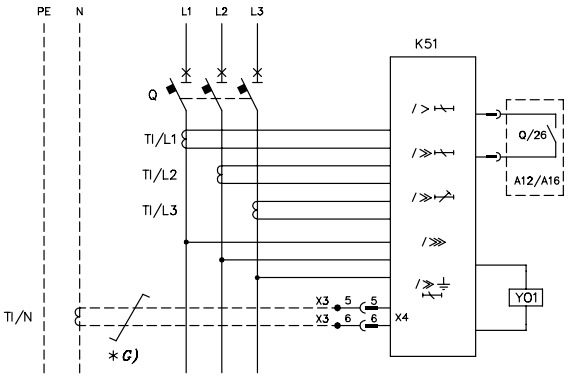


Four-pole circuit-breaker with electronic trip unit and RC Sel residual current release

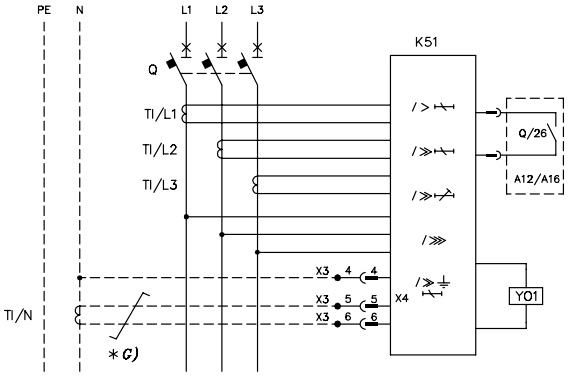


Three-pole fixed version circuit-breaker with Ekip Dip trip unit with current transformer on the neutral conductor outside the circuit-breaker

Wiring diagrams



Three-pole fixed version circuit-breaker with Ekip Touch trip unit with current sensor on the neutral conductor outside the circuit-breaker



Three-pole fixed version circuit-breaker with Ekip Touch trip unit with current and voltage sensor on the neutral conductor outside the circuit-breaker

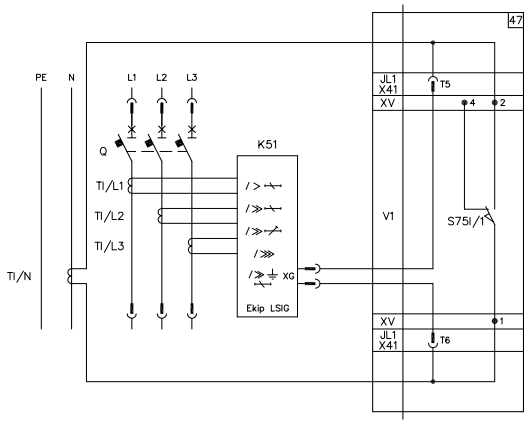
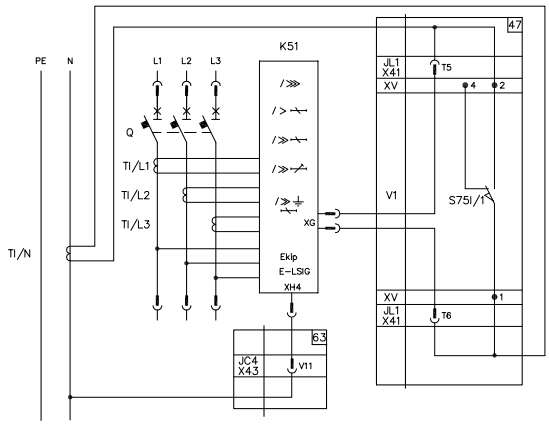


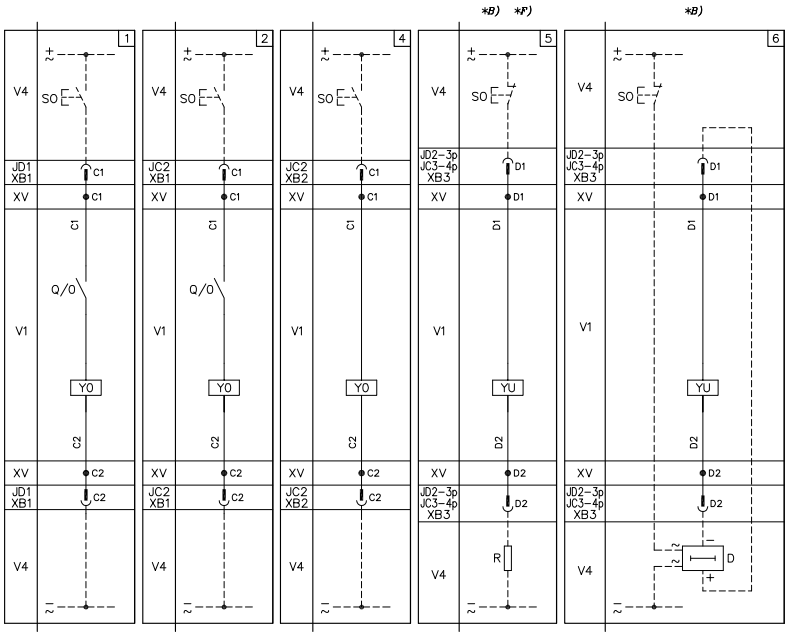
Diagram recommended for three-pole plug-in or withdrawable version circuit-breakers with Ekip Dip trip unit with current sensor on the neutral conductor outside the circuit-breaker



Advisable diagram for plug-in or withdrawable version three-pole circuit-breakers with Ekip Dip trip unit, current transformer and voltage connection on neutral conductor, external to circuit-breaker

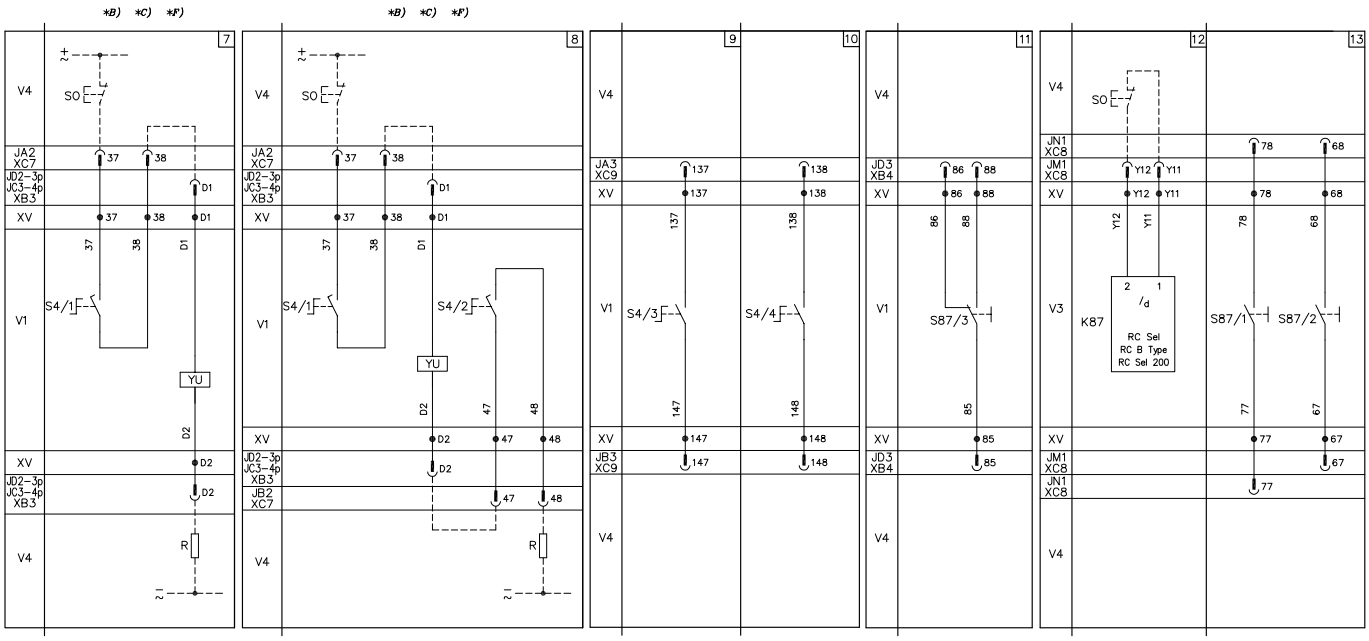
Wiring diagrams
Diagrams for XT1...XT4

1) Shunt opening release.
2) Supplementary shunt opening release (only for four-pole circuit-breakers).
4) Supplementary permanent shunt opening release (only for four-pole circuit-breakers).
5) Instantaneous undervoltage release (see Notes B and F).
6) Undervoltage release with electronic time delay device outside the circuit-breaker, see note B).



Wiring diagrams
Diagrams for XT1...XT4

7) Instantaneous undervoltage release in the version for machine tools with one contact in series (see notes B, C and F).
8) Instantaneous undervoltage release in the version for machine tools with two contacts in series (see Notes B, C and F).
9) First auxiliary early contact operated by the crank handle.
10) Second auxiliary early contact operated by the crank handle.
11) One changeover contact for electrical signaling of circuit-breaker open due to tripping of the residual current release type RC Inst, RC Sel, RC B Type or RC Sel 200.
12) Residual current release circuits type RC Sel, RC B Type or RC Sel 200.
13) Two contacts for electrical signaling of residual current release pre-alarm and alarm type RC Sel, RC B Type or RC Sel 200.

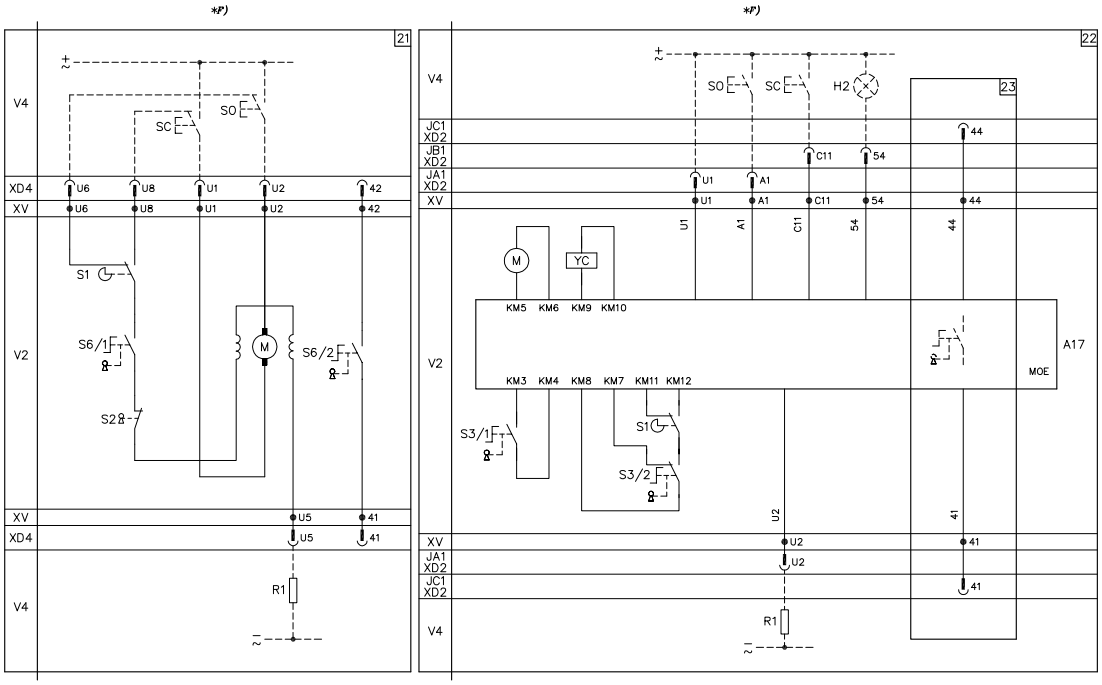


Motor operator

21) Direct control motor operator (MOD) (only for XT1 and XT3 fixed or plug-in circuit-breakers) (see note I).

22) Motor operator with stored energy (MOE) (only for circuit-breakers XT2 and XT4).

23) A contact for electrical signaling of stored energy motor operator that can be operated remotely.



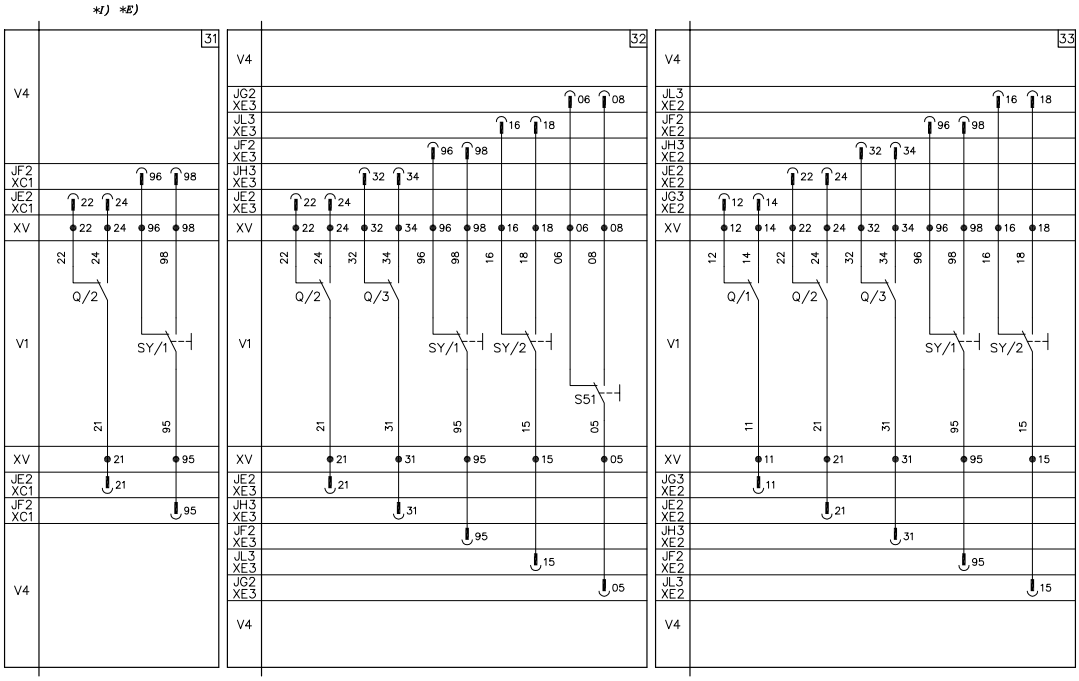
Wiring diagrams
Diagrams for XT1...XT4

Signaling contacts

31) One changeover contact for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V) (see notes E and I).

32) Two changeover contacts for electrical signaling of circuit-breaker open or closed, two change over contacts for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the ther momagnetic or electronic trip unit (only for voltages up to 250V).

33) Three changeover contacts for electrical signaling of circuit-breaker open or closed and two changeover contacts for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).



Signaling contacts

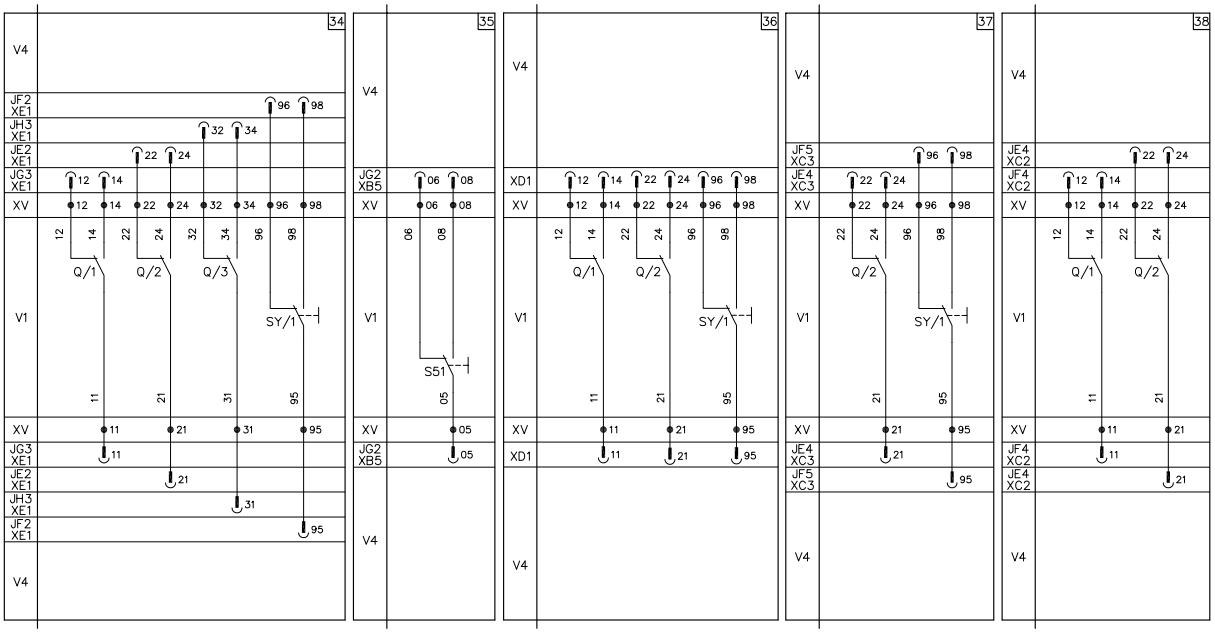
34) Three changeover contacts for electrical signaling of circuit-breaker open and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal-magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

35) One changeover contact for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic electronic trip unit (only for voltages up to 250V).

36) Two changeover contacts for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

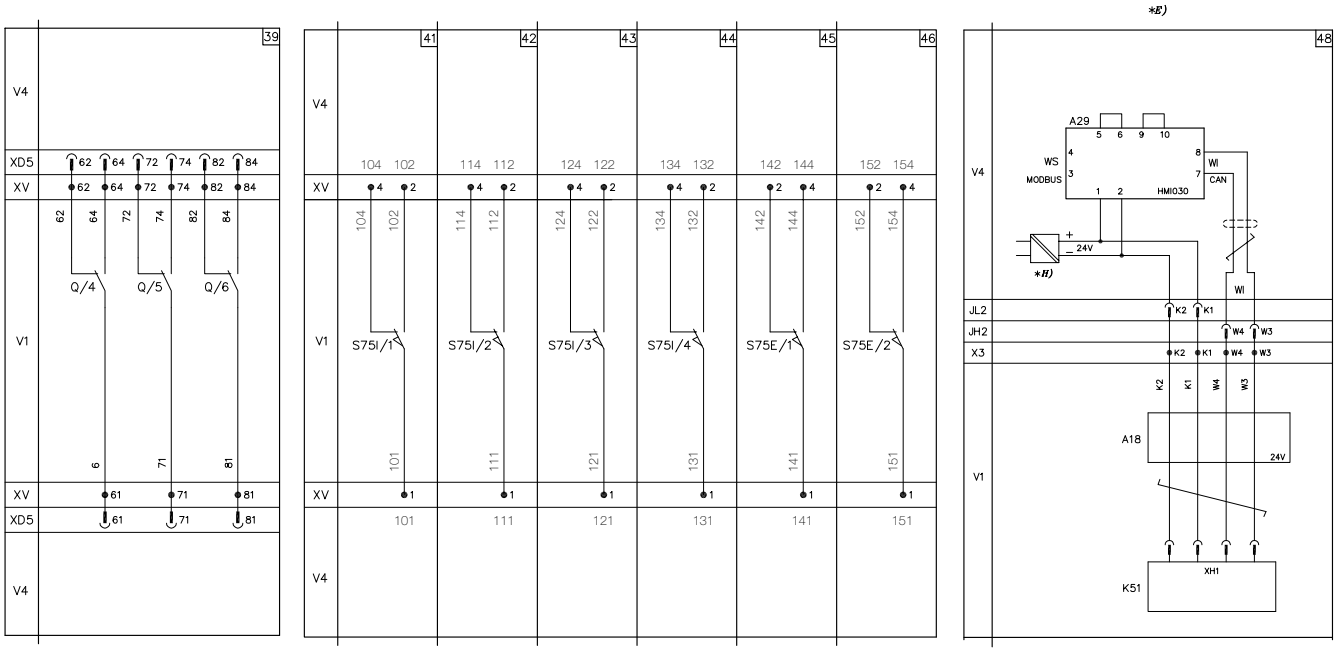
37) One changeover contact for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltage up to 400V).

38) Two changeover contacts for electrical signaling of circuit-breaker open or closed (only for voltage up to 400V).



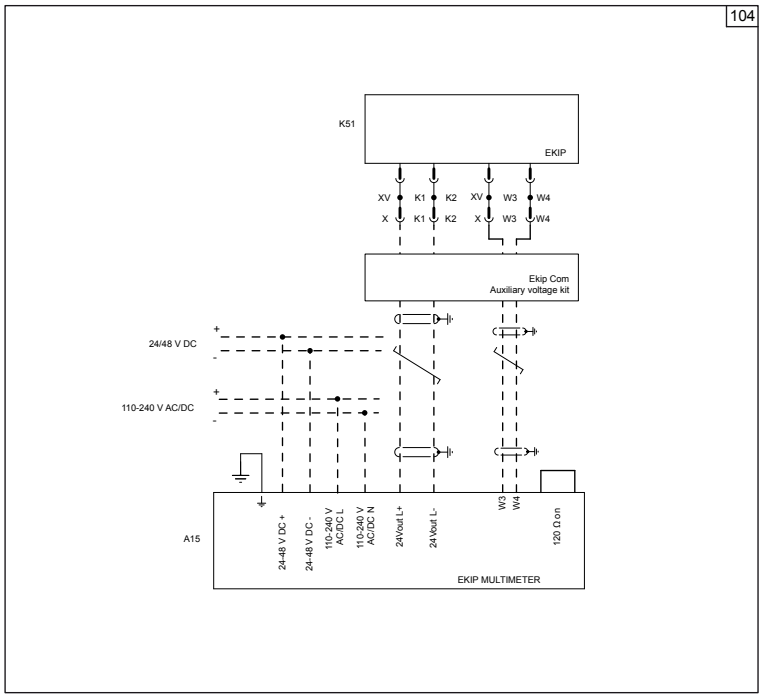
Wiring diagrams
Diagrams for XT1...XT4

39) Three supplementary changeover contacts for electrical signaling of circuit-breaker open or closed (only for fixed or plug-in version circuit-breakers).
41) First changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
42) Second changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
43) Third changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
44) Fourth changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
45) First changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).
46) Second changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).
48) Auxiliary circuits of the 24V auxiliary power supply unit and of the HMI030 type interface unit (see note E).



Signaling contacts

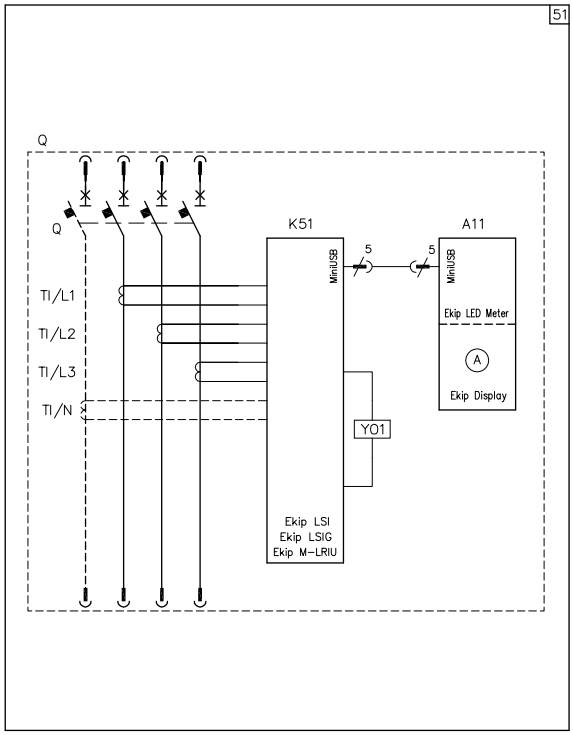
104) Auxiliary circuits of Ekip Com or Kit of 24V DC auxiliary voltage for electronic trip units and of Ekip Multimeter display.



Wiring diagrams
Diagrams for XT1...XT4

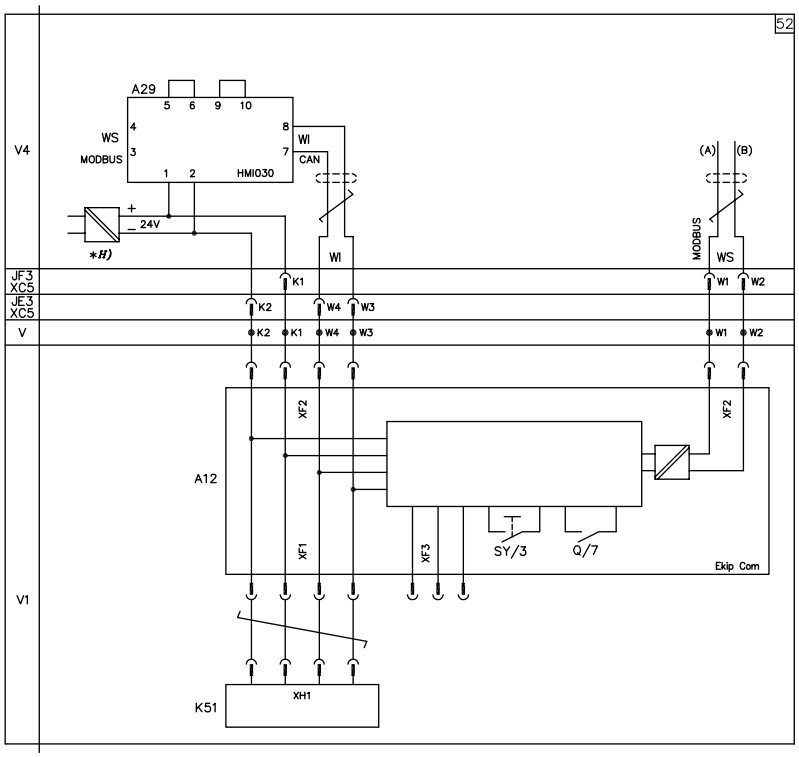
Electronic trip unit Ekip LSI, Ekip LSIG, connected with Ekip Display or Ekip LED Meter

51) Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip MLRIU connected to display unit type Ekip Display (display) or Ekip LED Meter (current display).



Auxiliary circuit of Ekip-Com and HMI030

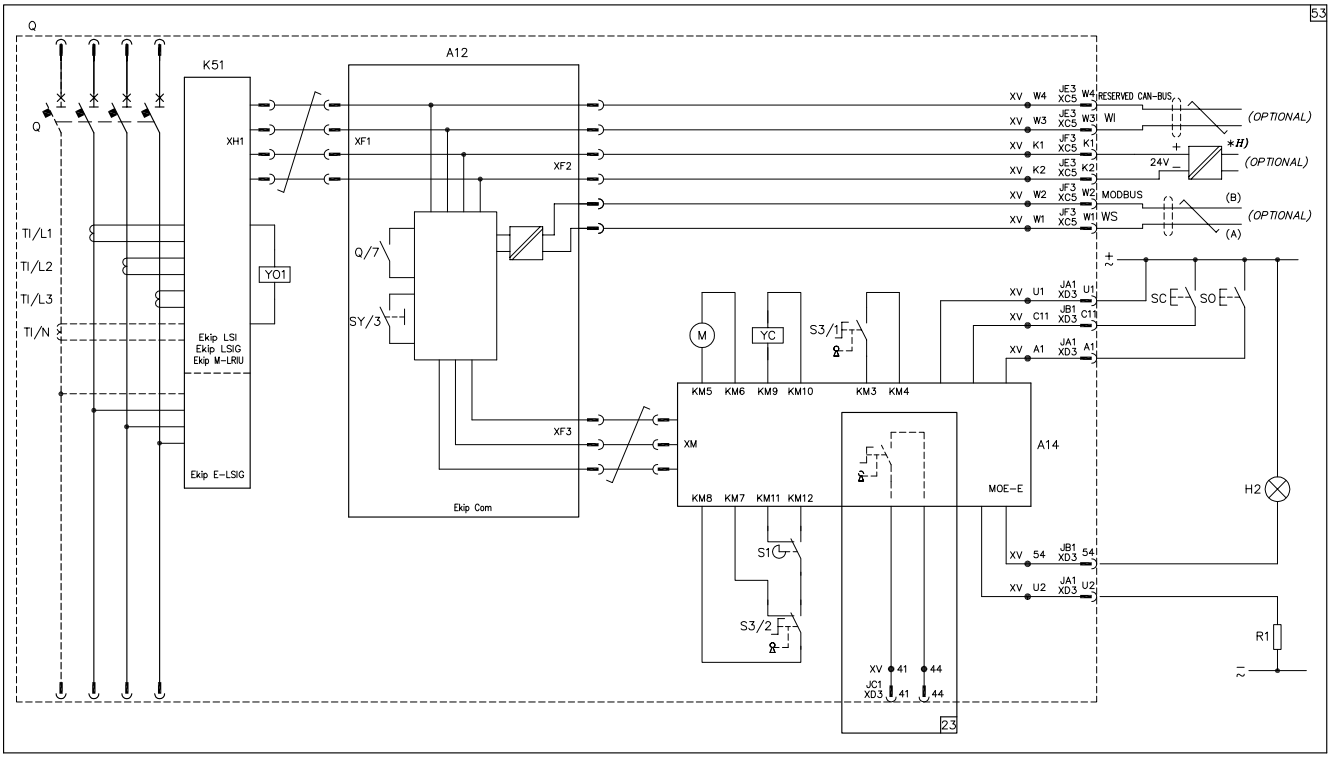
52) Auxiliary circuits of the Ekip Com type interface unit and of the HMI030 type interface unit (see note E).



Wiring diagrams
Diagrams for XT1...XT4

Electronic trip unit Ekip LSI or Ekip LSIG connected to interface unit Ekip Com and with actuator unit type MOE-E for the stored energy motor operator

23) One Contact for electrical signaling of stored energy motor operator that can be operated remotely.
53) Auxiliary circuits of the electronic trip unit type Ekip LSI or Ekip LSIG connected to interface unit type Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.



Instructions for resetting the circuit-breaker after tripping

Selection of the type of circuit-breaker resetting depends on design requirements and on service conditions.
Resetting can take place following tripping of the following releases:

- overcurrent;
- undervoltage;
- shunt opening.

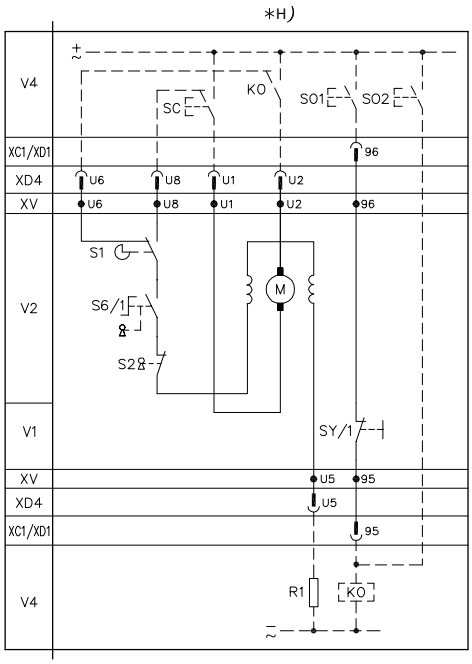
The following three possibilities are suggested (see diagrams in the following page):

1. Only manual resetting
   To be wired (by the customer): contact SO1, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening is prevented until the circuit-breaker is in the tripped position.
   To reset the circuit-breaker it is necessary to activate the special lever on the front of the motor until the circuit-breaker goes into the open position.
2. Electrical resetting under the operator's responsibility
   To be wired (by the customer): contact SO1, SO2, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening of the circuit-breaker is allowed by means of the contact S02. Such contact shall be protected to avoid unwanted activation and can be used only if the information received by the operator make it possible to exclude tripping due to a short-circuit, or if the causes of the short-circuit have been removed.
3. Electrical resetting always allowed
   To be wired (by the customer): contact SO1, SO2, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening is always allowed by means of contact S02.

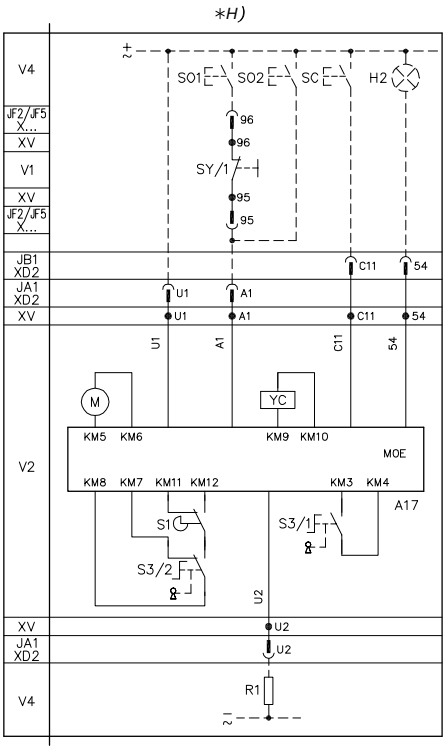
NB: If the magnetic, thermal magnetic or electronic trip unit is present, it is necessary to find the causes which led to the circuit-breaker being in the tripped position so as to prevent reclosing under short-circuit conditions. In all cases, manual resetting is always allowed.

Wiring diagrams
Diagrams for XT1...XT4

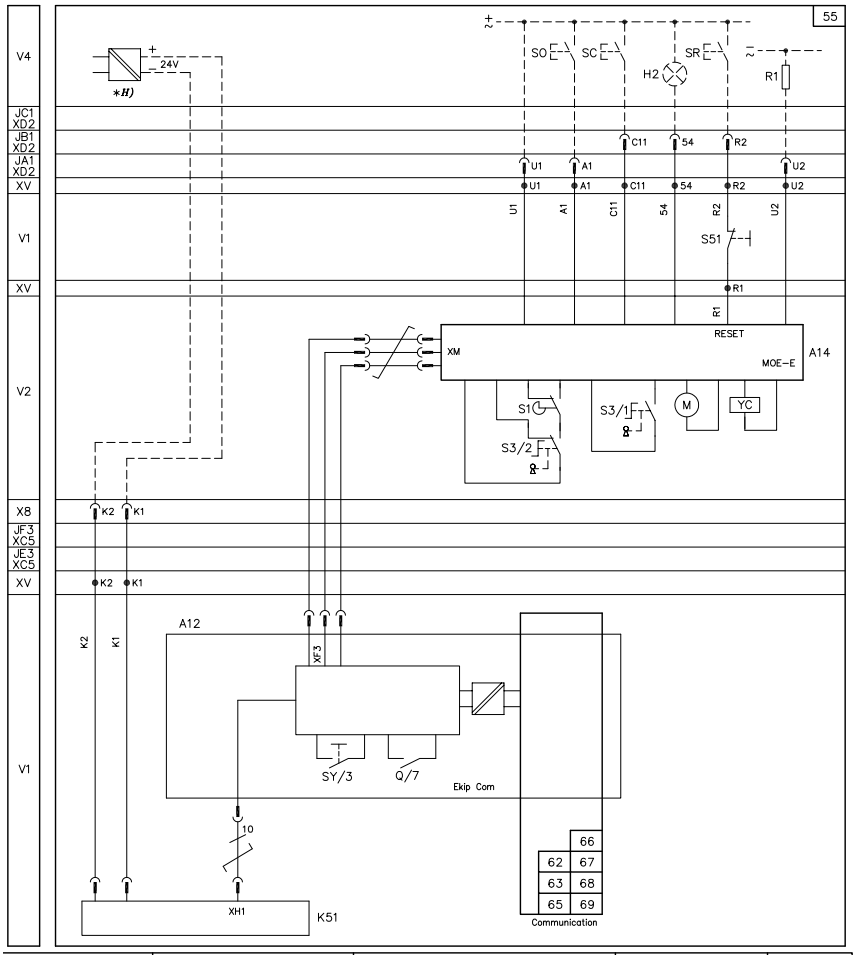
MOD



MOE or MOE-E

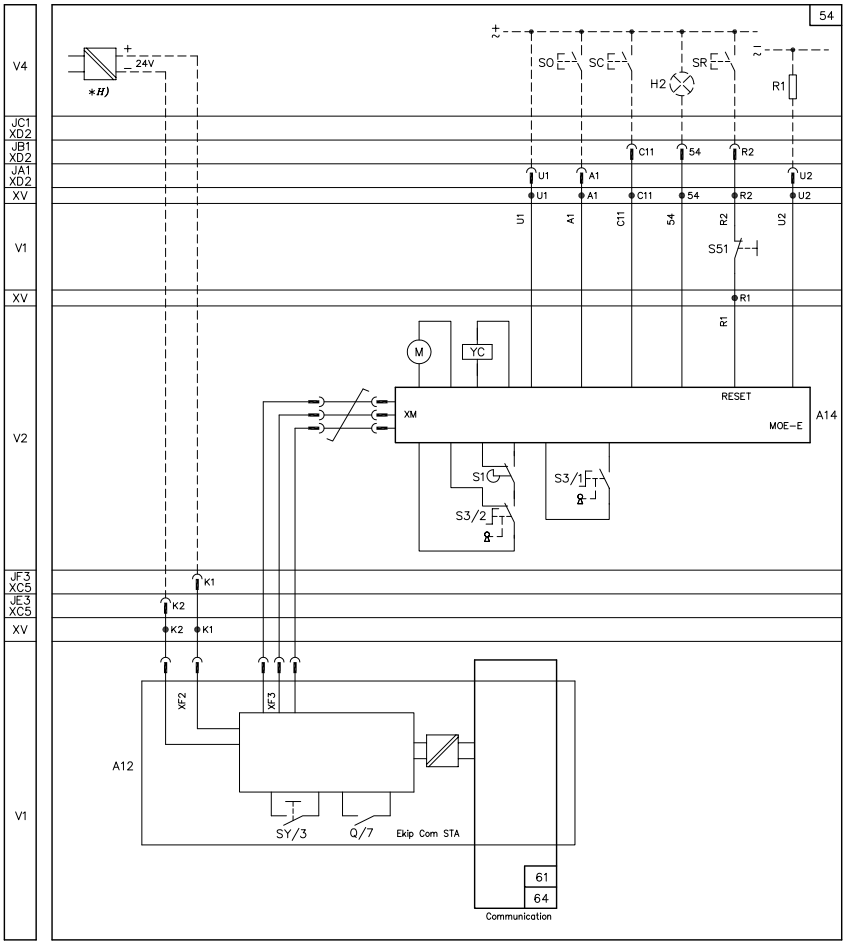


55a) Interface unit type Ekip Com with direct supply to the trip unit and MOE-E motor operator



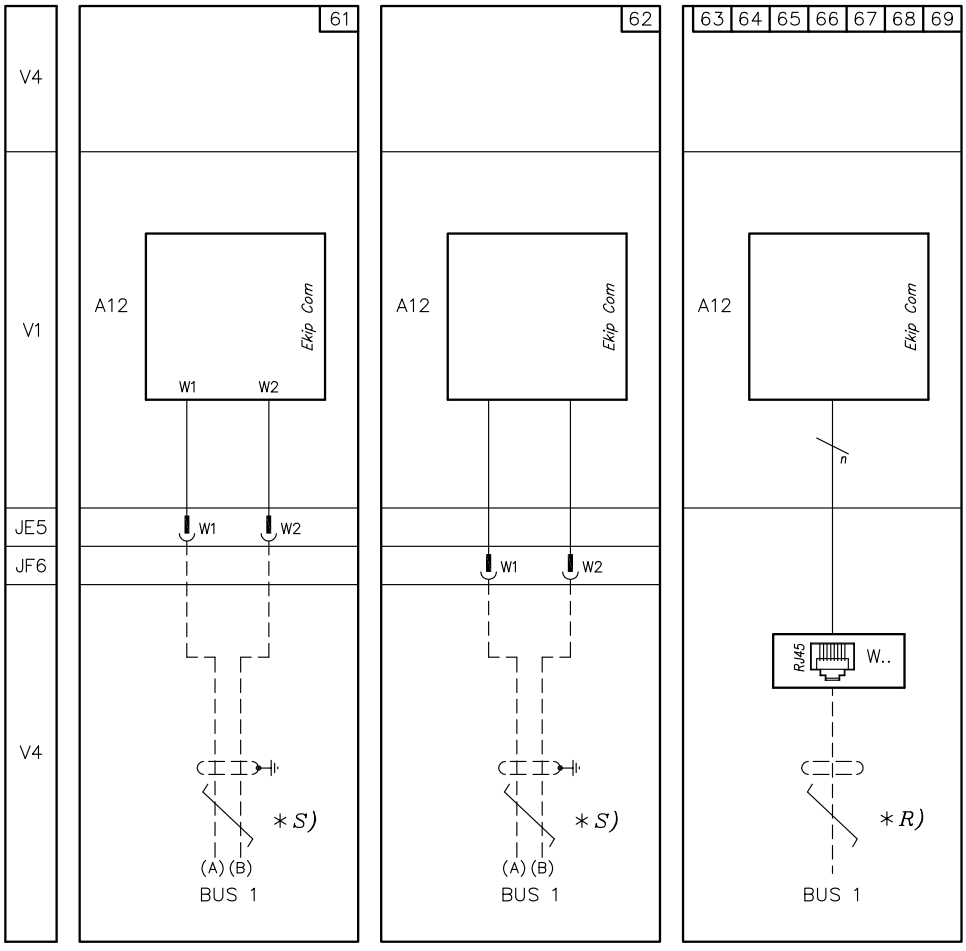
Wiring diagrams
Diagrams for XT1...XT4

54a) Stand-alone interface unit type Ekip Com with MOE-E motor operator



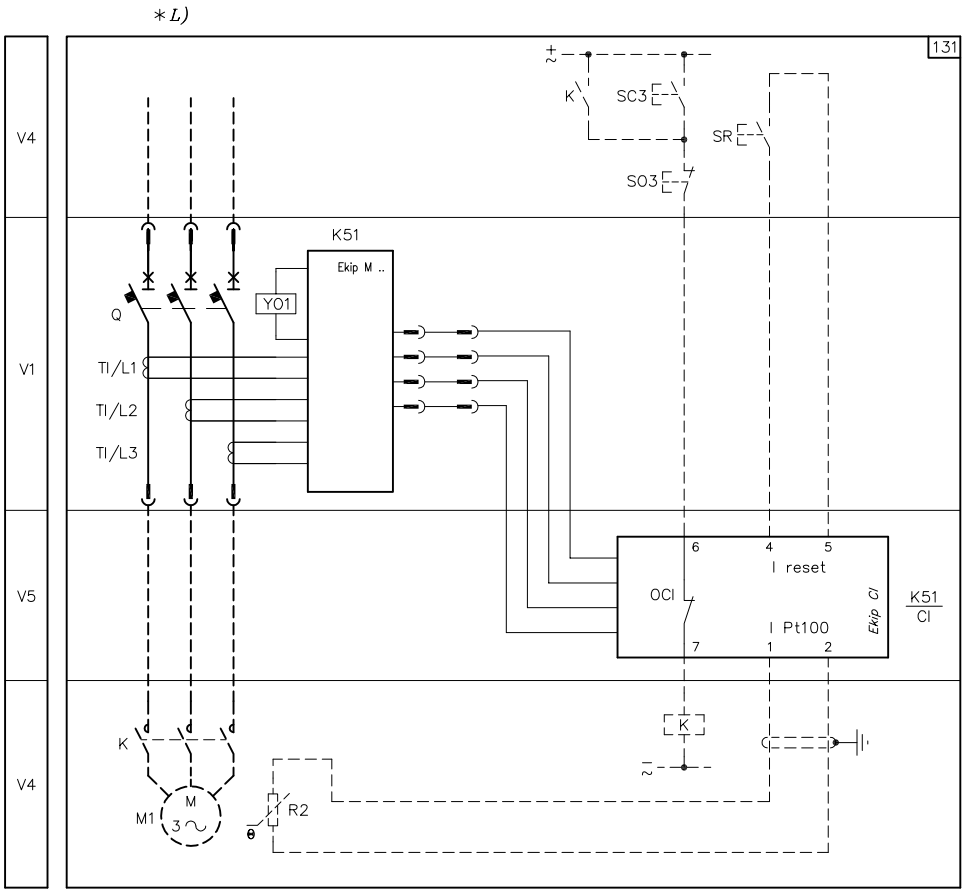
61) Modbus RTU STA interface of Ekip Com Unit to be installed inside the circuit-breaker
62a)Modbus RTU interface of Ekip Com Unit to be installed inside the circuit-breaker
63a)Modbus TCP STA interface of Ekip Com Unit to be installed inside the circuit-breaker
64) Modbus TCP interface of Ekip Com Unit to be installed inside the circuit-breaker
65) Profinet interface of Ekip Com Unit to be installed inside the circuit-breaker
66) Ethernet IP interface of Ekip Com Unit to be installed inside the circuit-breaker
67) IEC61850 interface of Ekip Com Unit to be installed inside the circuit-breaker
68) Ekip Link interface of Ekip Com Unit to be installed inside the circuit-breaker
69) ABB Ability™ Edge Industrial Gateway interface of Ekip Com Unit to be installed inside the circuit-breaker

—
61 - 62 - 63 - 64 - 65 - 66 - 67 - 68 - 69 as an alternative to each other

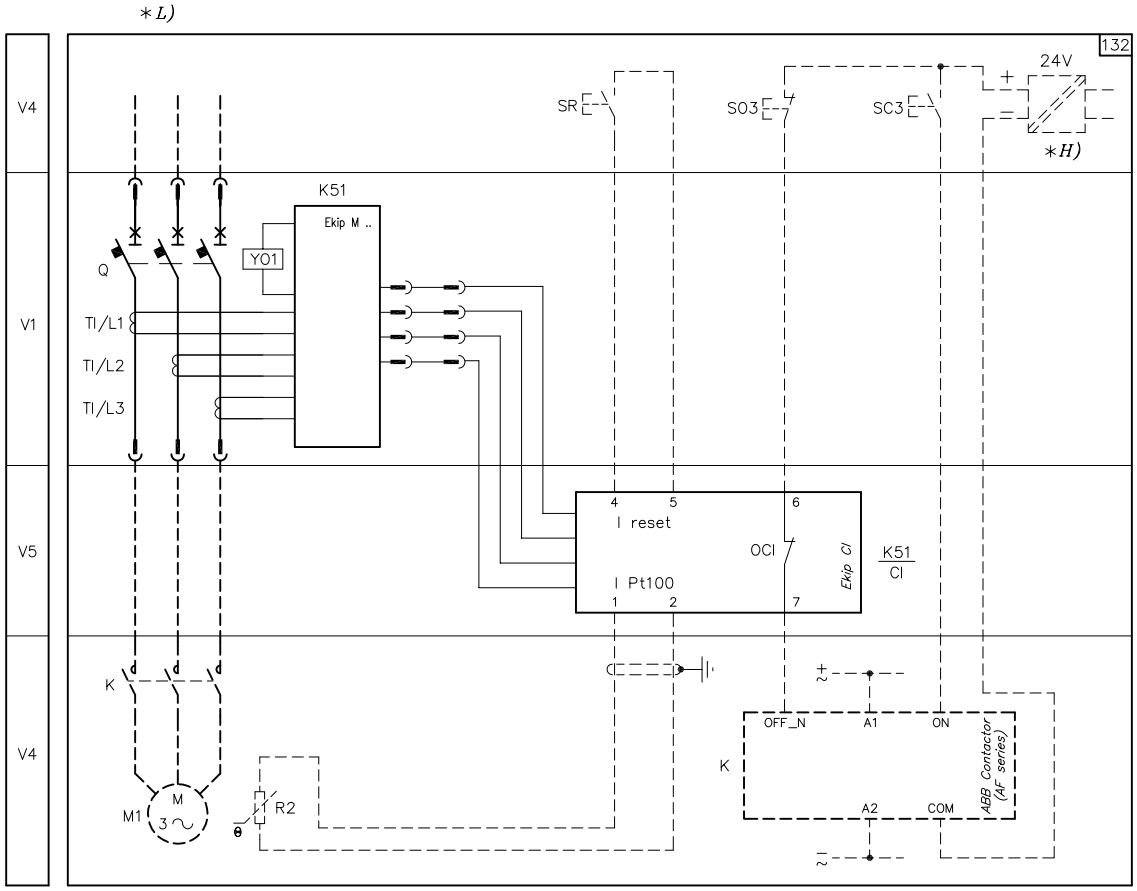


Wiring diagrams
Diagrams for XT1...XT4

131) Motor starting module Ekip CI

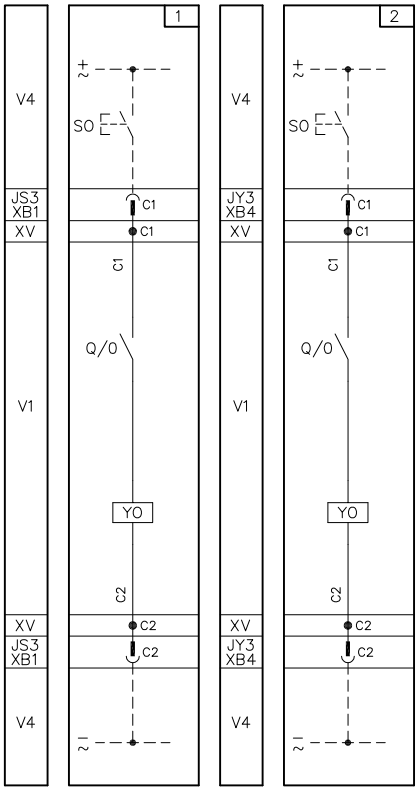


132) Motor starting module Ekip CI with ABB contactor series AF



Wiring diagrams
Diagrams for XT5 and XT6

1) Left opening coil - YO (1)
2) Right opening coil - YO (1)

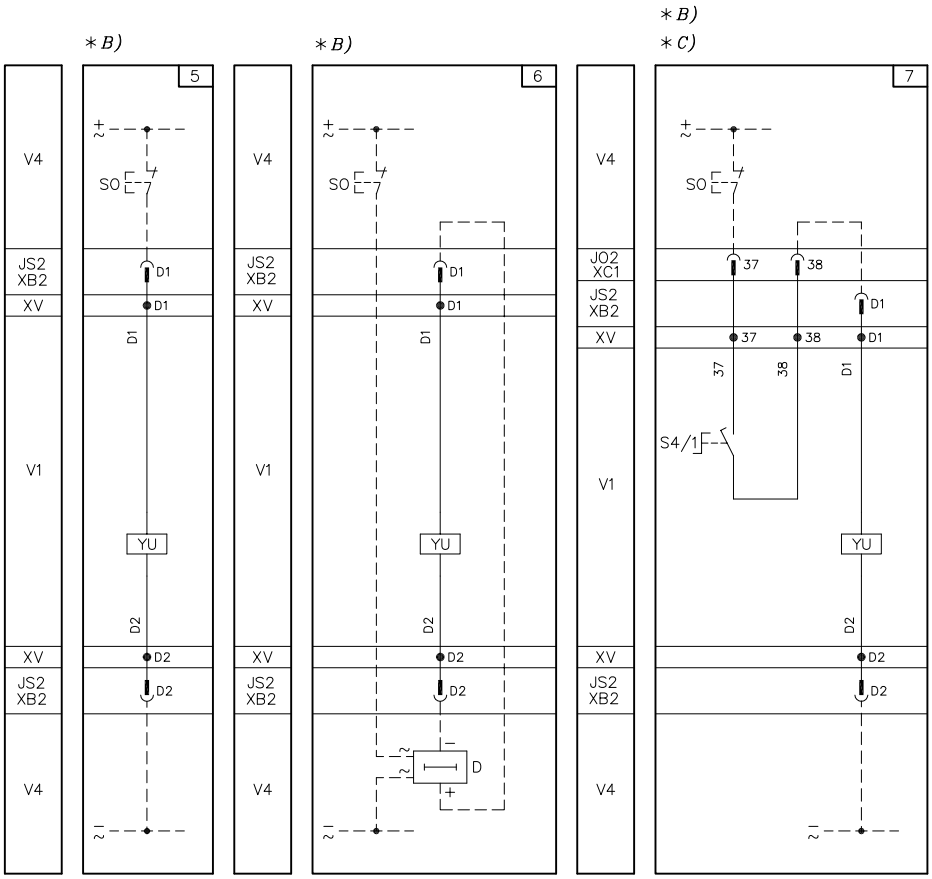


(1) Up to 380-440V YO version

5) Instantaneous left undervoltage coil - YU (1)

6) Left undervoltage coil with electronic time-delay device outside the circuit-breaker - YU (1)

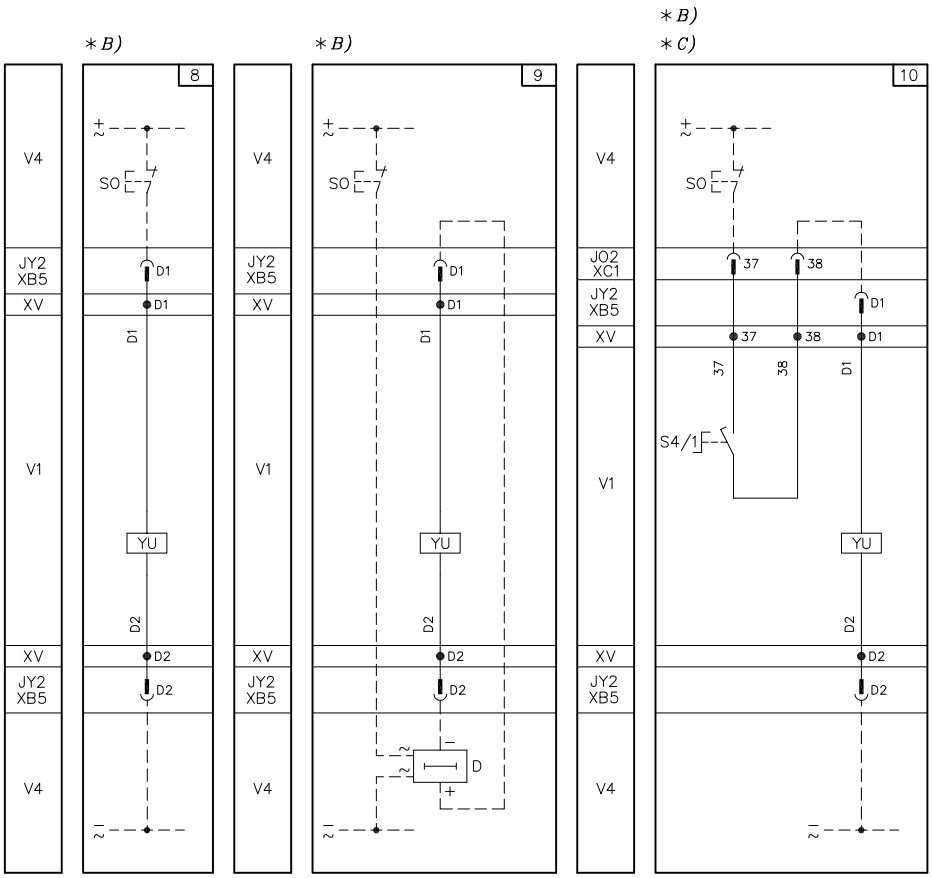
7) Instantaneous left undervoltage coil in the version for machine tools with a contact in series - YU (1)



(1) Up to 380-440V YU version

Wiring diagrams
Diagrams for XT5 and XT6

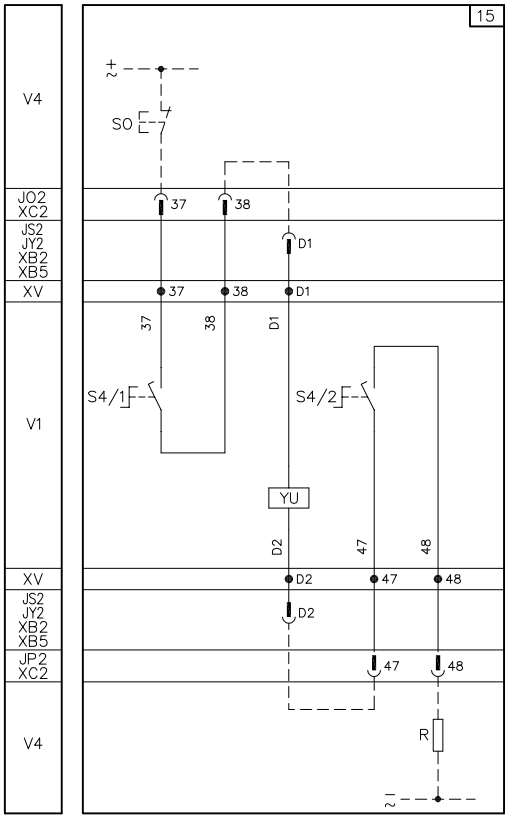
8) Instantaneous right undervoltage coil - YU (1)
9) Right undervoltage coil with electronic time-delay device outside the circuit-breaker - YU (1)
10) Instantaneous right undervoltage coil in the version for machine tools with a contact in series - YU (1)



(1) Up to 380-440V YU version

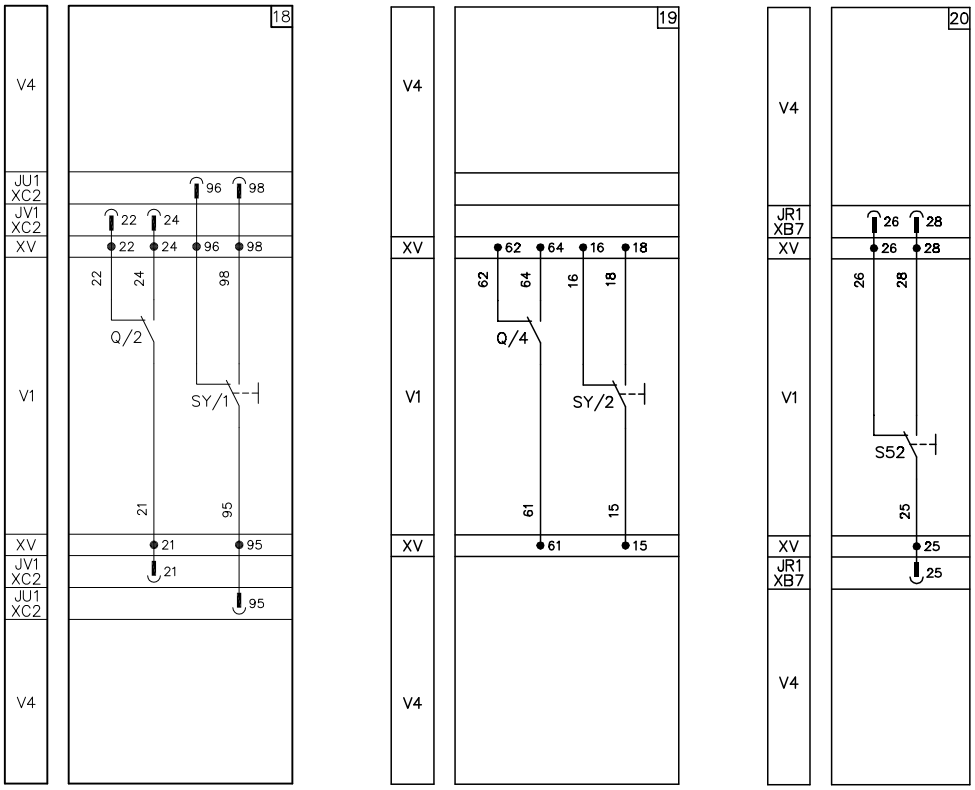
15) Instantaneous undervoltage coil in the version for machine tools with two contact in series - YU

** B)*
** C)*
** F)*



Wiring diagrams
Diagrams for XT5 and XT6

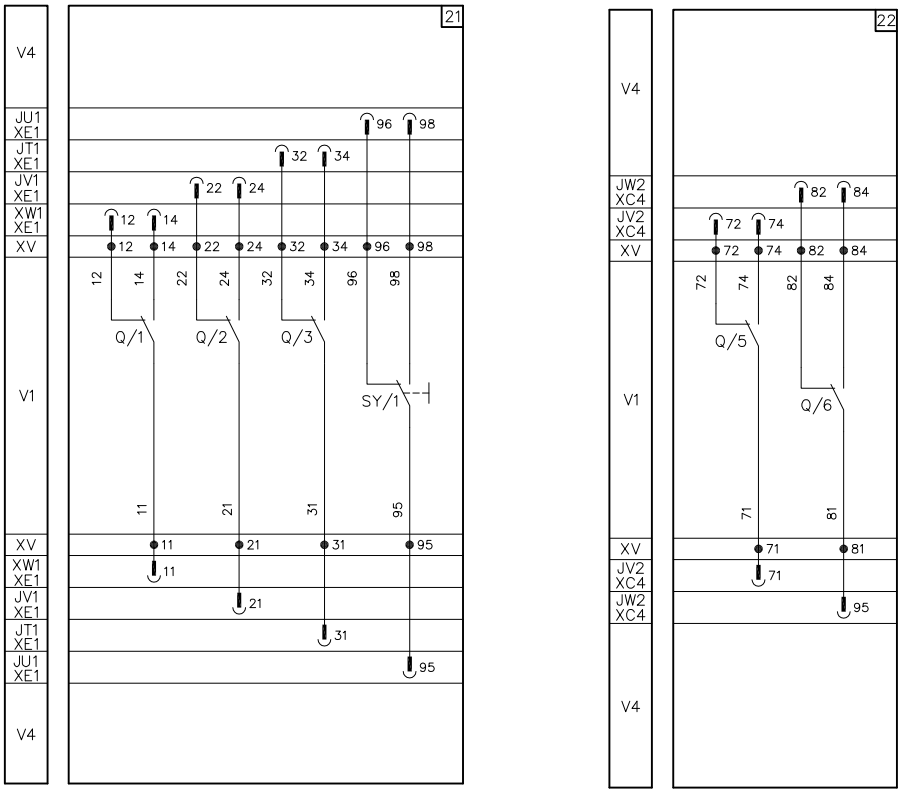
18) Open/closed circuit-breaker signalling contact and circuit-breaker tripped signalling contact (for voltage up to 250V)
19) Open/closed circuit-breaker signalling contact and circuit-breaker tripped signalling contact (for voltage up to 250V) left position
20) Signalling contact for minimum voltage relay tripping



21) Three open/closed circuit-breaker signalling contacts and circuit-breaker tripped signalling contacts (for voltage up to 250V)

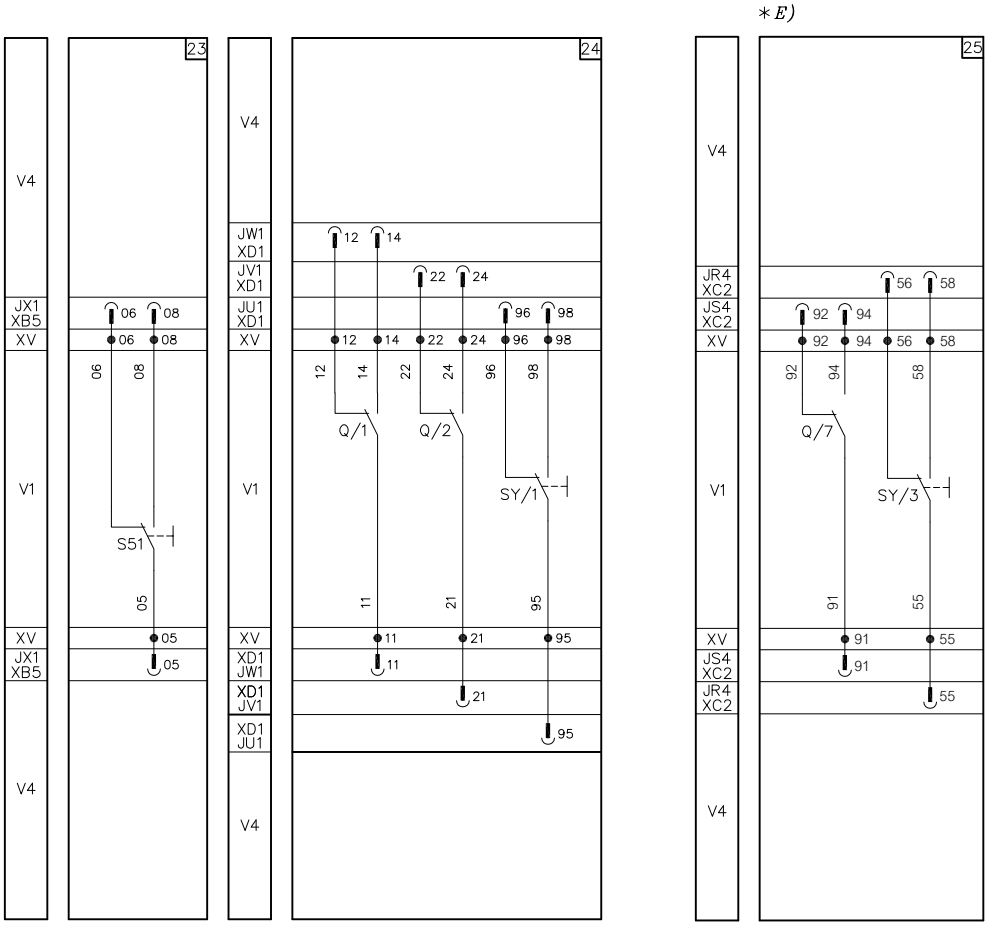
22) Open/closed circuit-breaker 2 signalling contacts (for voltage up to 400V)

$*D)$



Wiring diagrams
Diagrams for XT5 and XT6

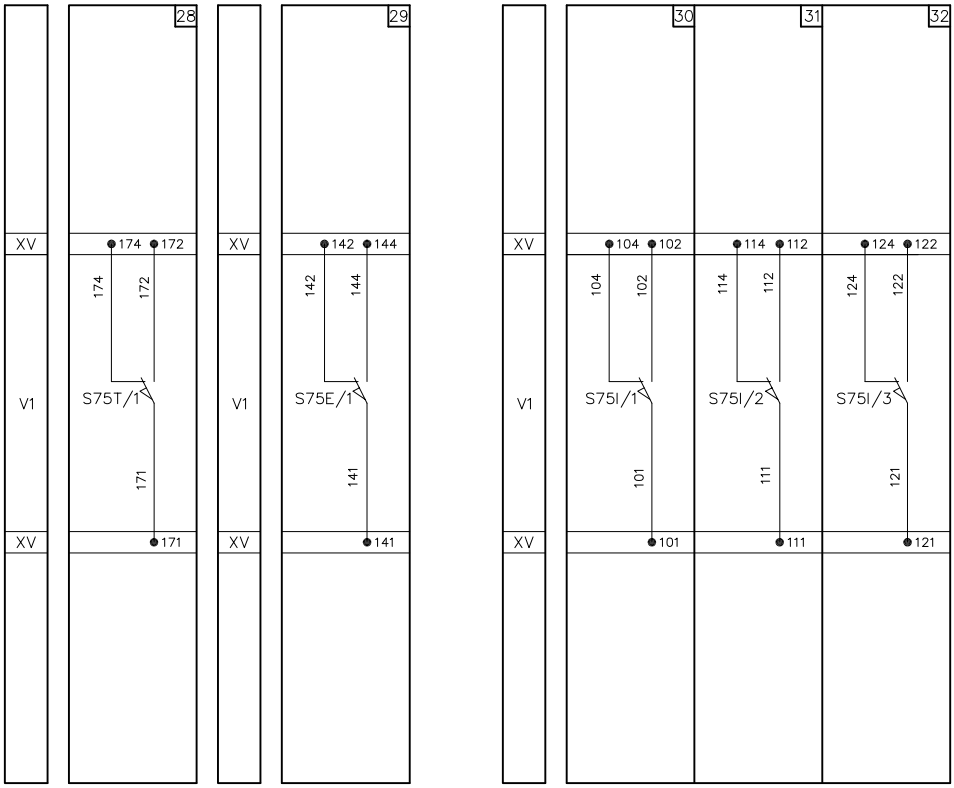
23) Protection relay tripped signalling contact (for voltage up to 250V)
24) Two open/closed circuit-breaker signalling contacts and circuit-breaker tripped signalling contacts (for voltage up to 250V)
25) Open/closed circuit-breaker signalling contacts and circuit-breaker tripped signalling contacts (for voltage up to 400V)



28) Circuit-breaker test position signalling contacts
29) Circuit-breaker disconnected position signalling contacts
30) Circuit-breaker inserted position signalling contacts
31) Circuit-breaker inserted position signalling contacts
32) Circuit-breaker inserted position signalling contacts

—
28 - 29
Only for withdrawable version circuit-breaker

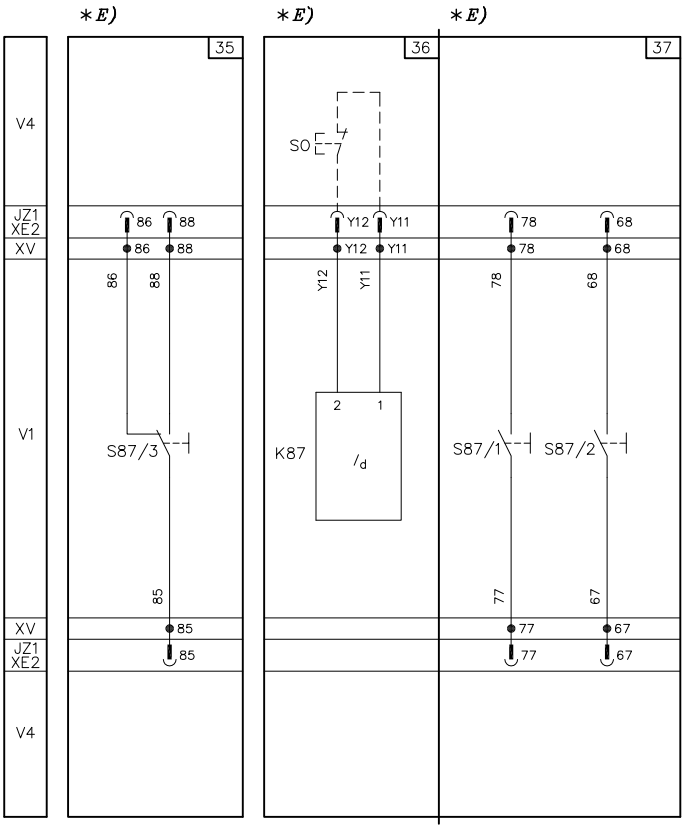
—
30 - 31 - 32
Only for plug-in or withdrawable version circuit-breaker



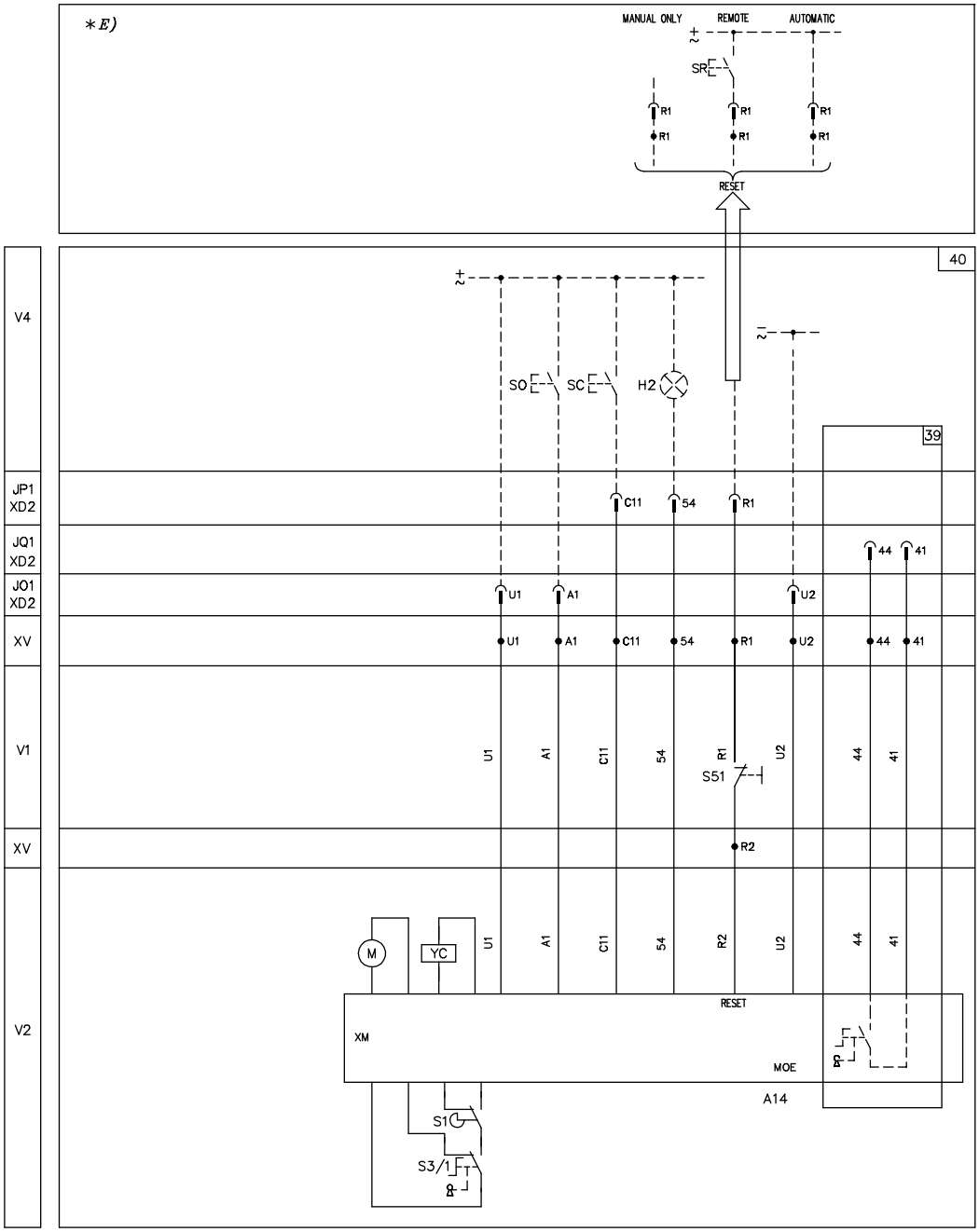
Wiring diagrams
Diagrams for XT5 and XT6

35) Differential relay tripped signalling contact S87/3
36) Differential relay circuits K87
37) Two contacts signalling differential relay pre-alarm and alarm S87

—
36 - 37
Only for differential relay type RC sel XT5 4 poles



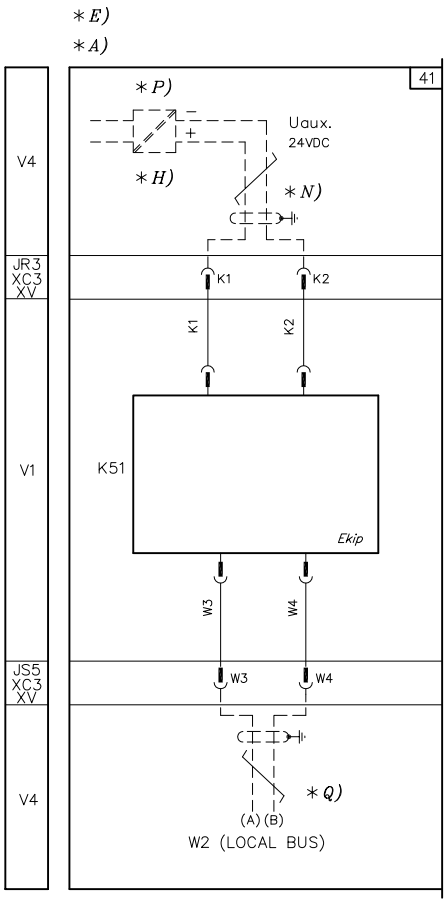
39) Auto/manual/lock status feedback
40) Stored energy motor operator (MOE)



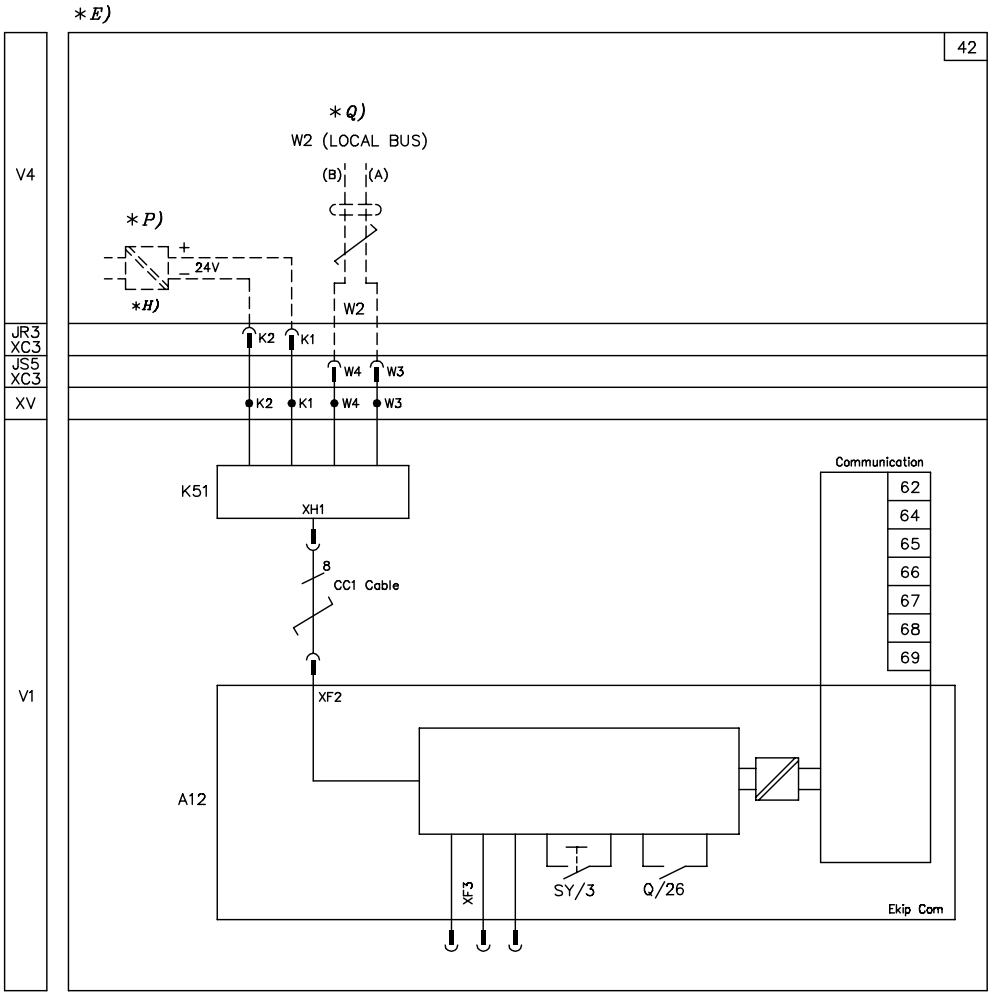
Wiring diagrams
Diagrams for XT5 and XT6

41) Direct auxiliary supply 24Vdc and local bus

—
As an alternative
to figure 78

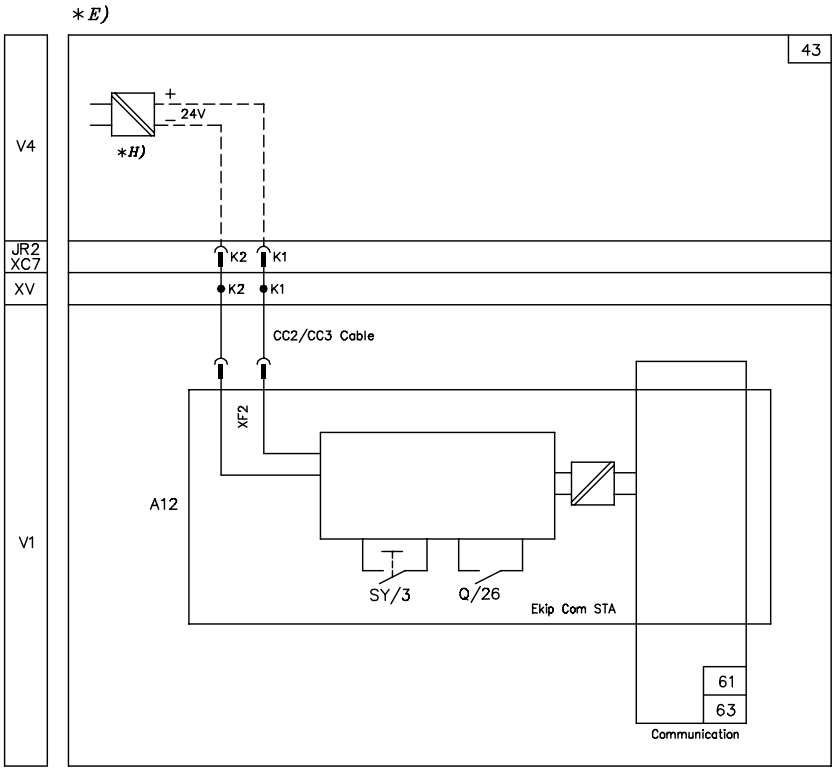


42) Interface unit type Ekip Com



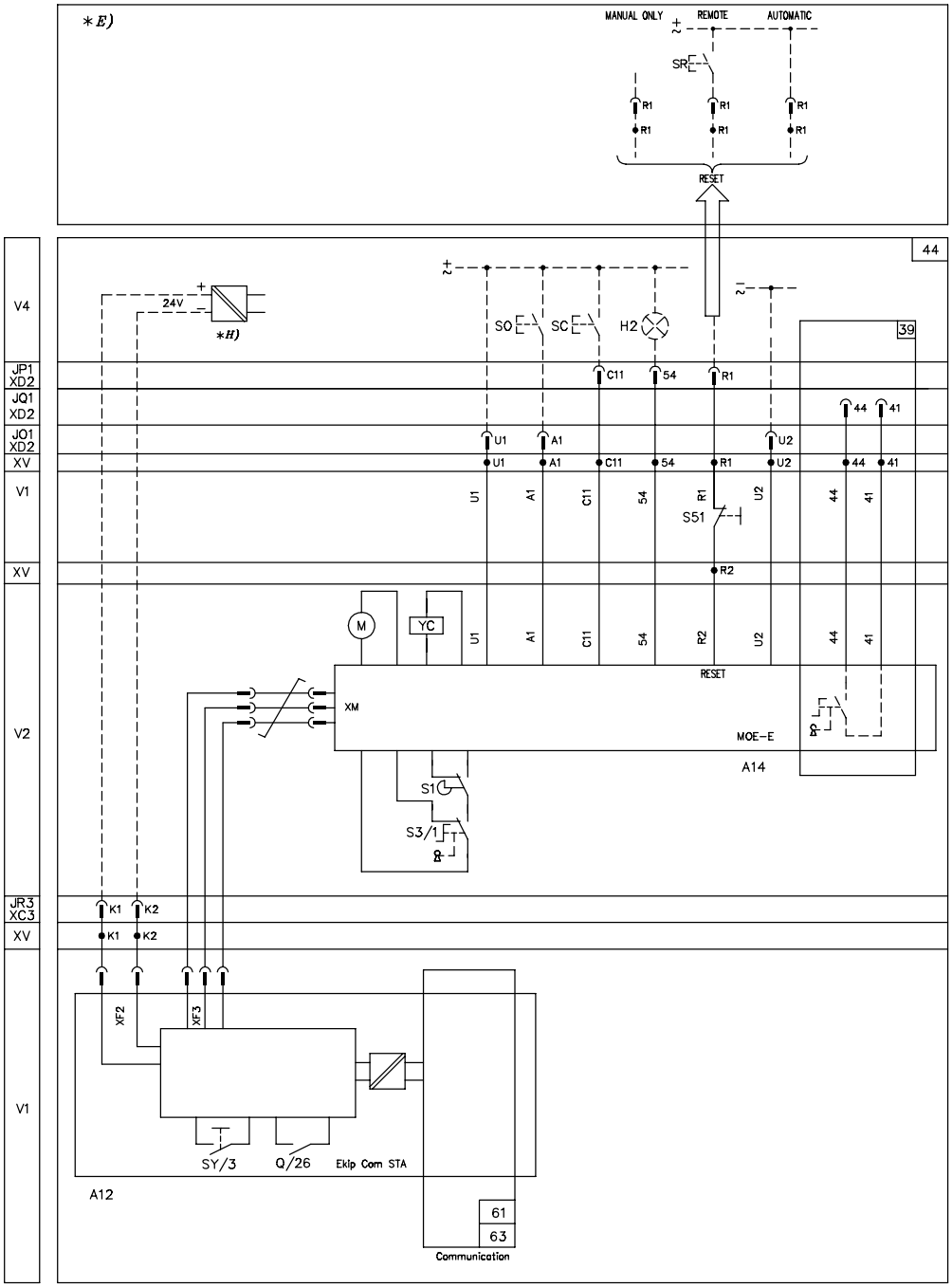
Wiring diagrams
Diagrams for XT5 and XT6

43) Stand alone interface unit type Ekip Com



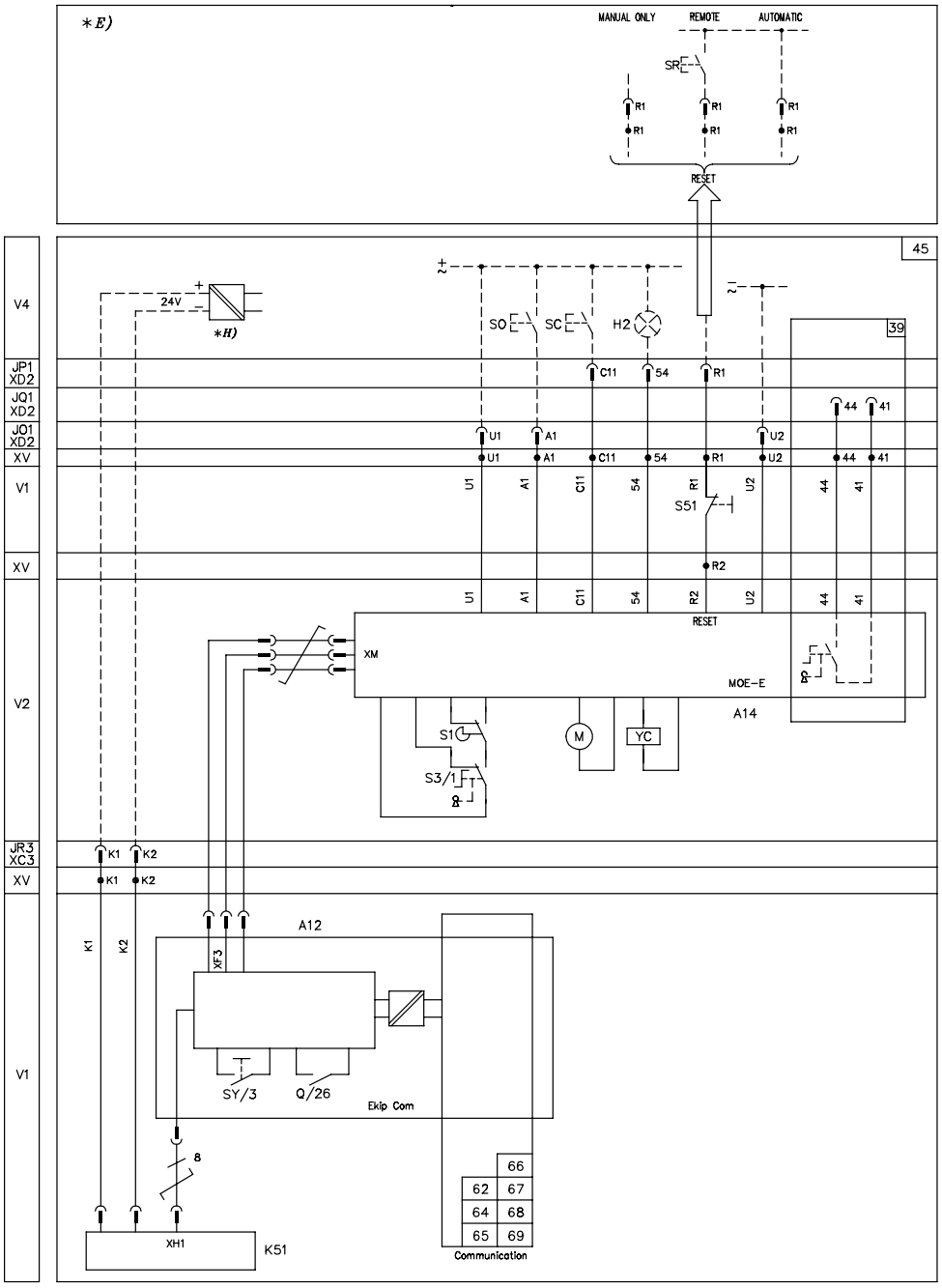
39) Auto/manual/lock status feedback

44) Stand alone interface unit type Ekip Com with MOE-E motor operator

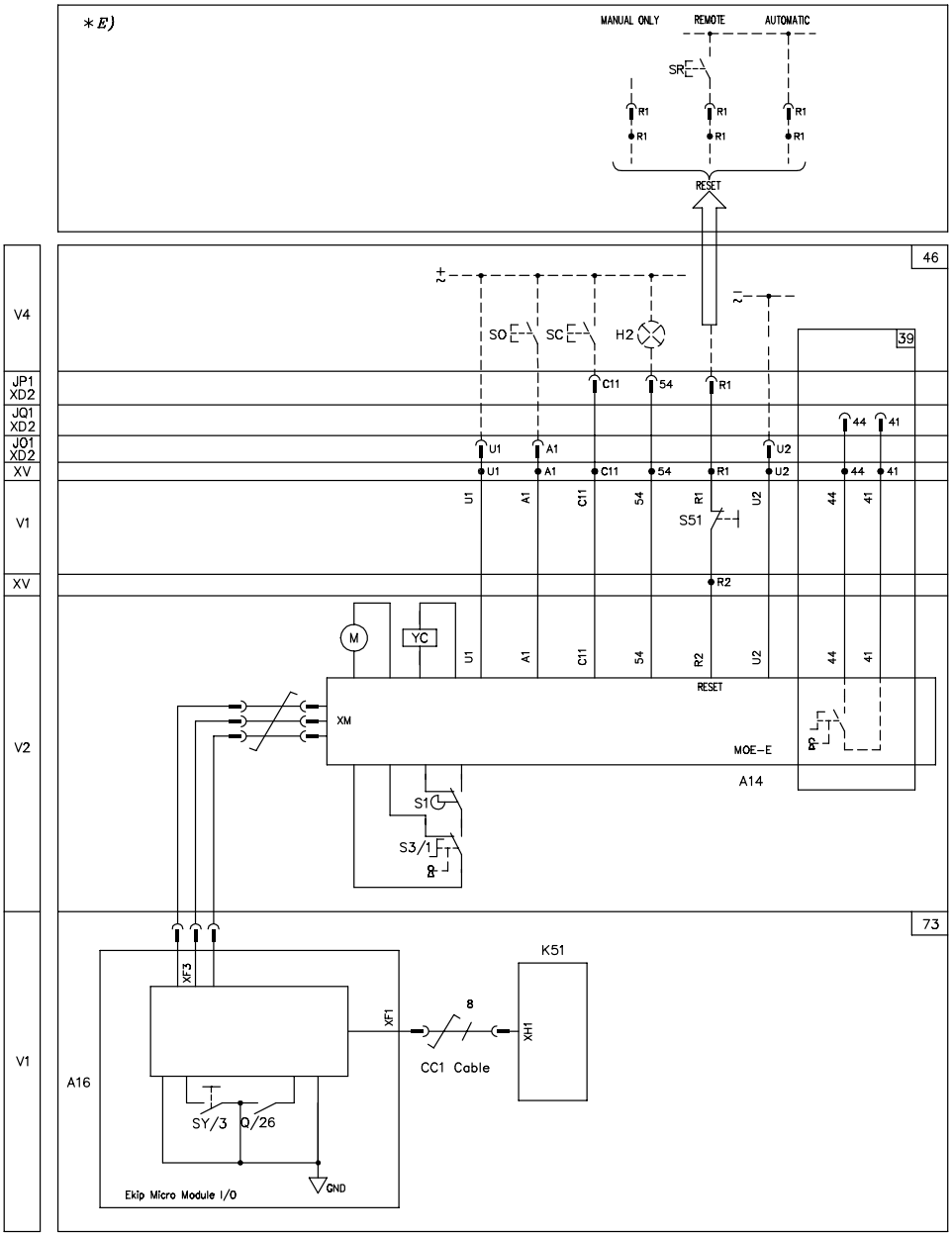


Wiring diagrams
Diagrams for XT5 and XT6

39) Auto/manual/lock status feedback
45) Interface unit type Ekip Com with direct supply to relay and MOE-E motor operator

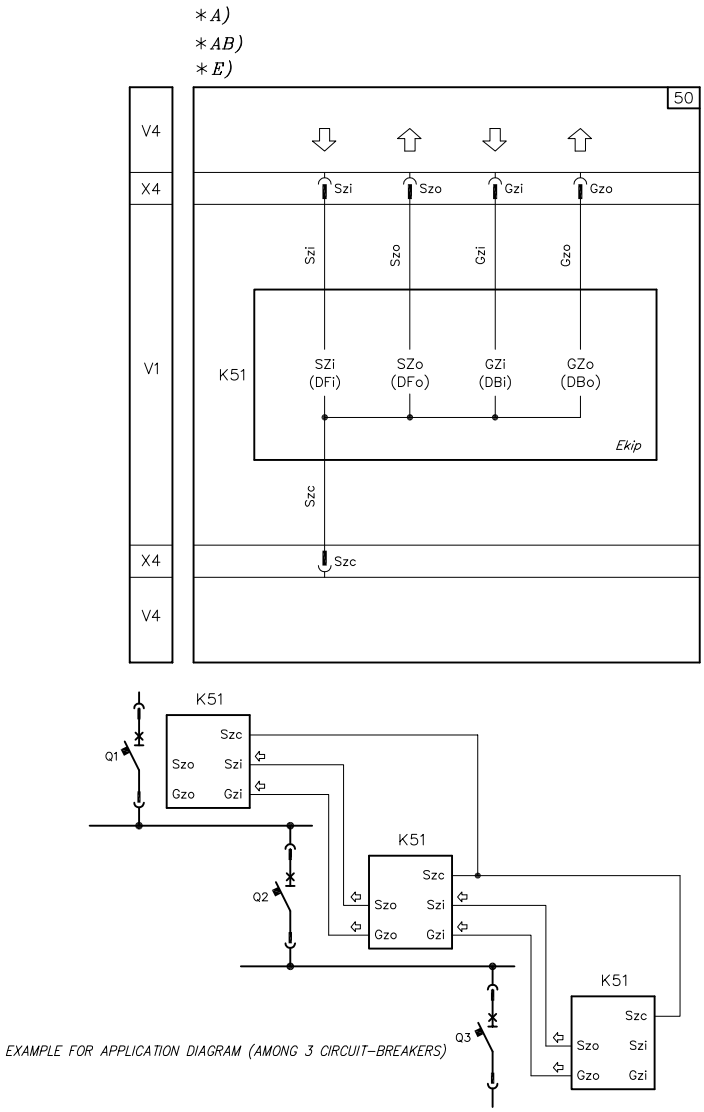


39) Auto/manual/lock status feedback
46) Interface unit type Ekip Micro Module I/O with MOE-E motor operator
47) Ekip Micro Module I/O



Wiring diagrams
Diagrams for XT5 and XT6

50) Zone selectivity



61) Modbus RTU STA interface of Ekip Com unit
62) Modbus RTU interface of Ekip Com unit
63) Modbus TCP STA interface of Ekip Com unit
64) Communication interface of Ekip Com unit (see table below)
65) Communication interface of Ekip Com unit (see table below)
66) Communication interface of Ekip Com unit (see table below)
67) Communication interface of Ekip Com unit (see table below)
68) Communication interface of Ekip Com unit (see table below)
69) Communication interface of Ekip Com unit (see table below)

—
61 - 62 - 63 - 64 - 65 - 66 - 67 - 68 - 69
As in alternative to each other

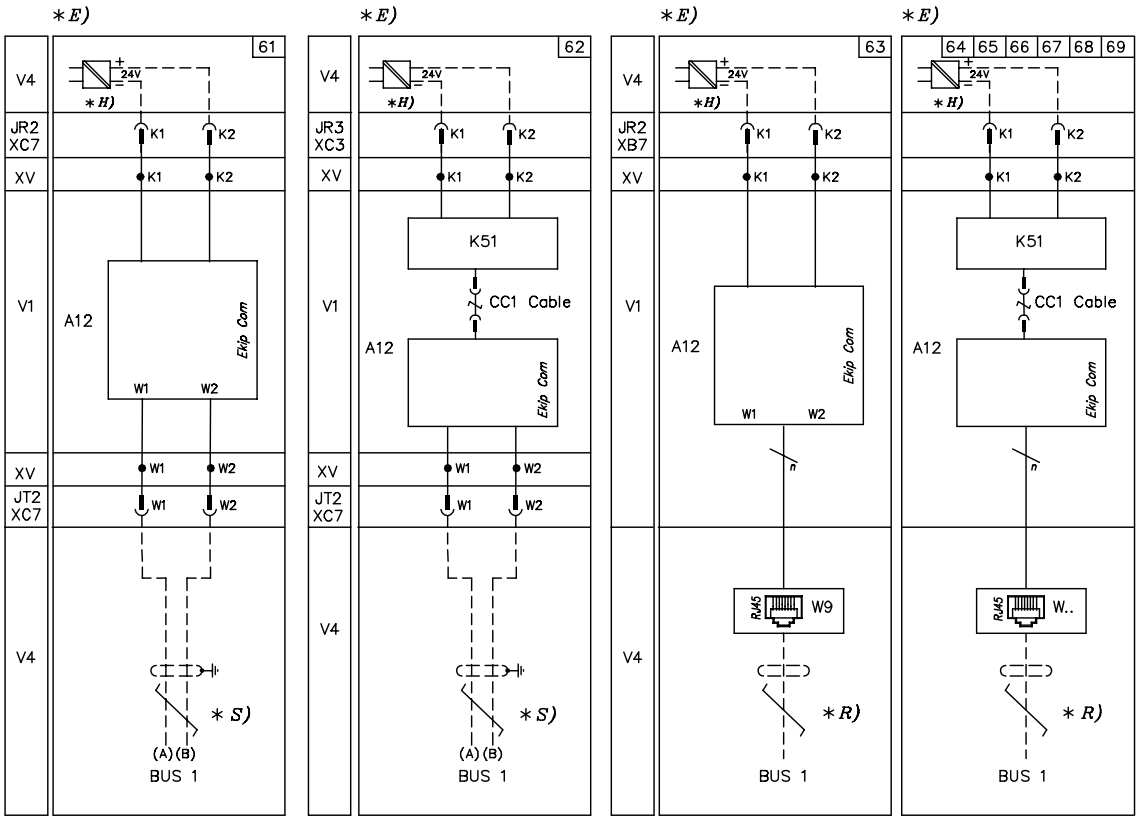
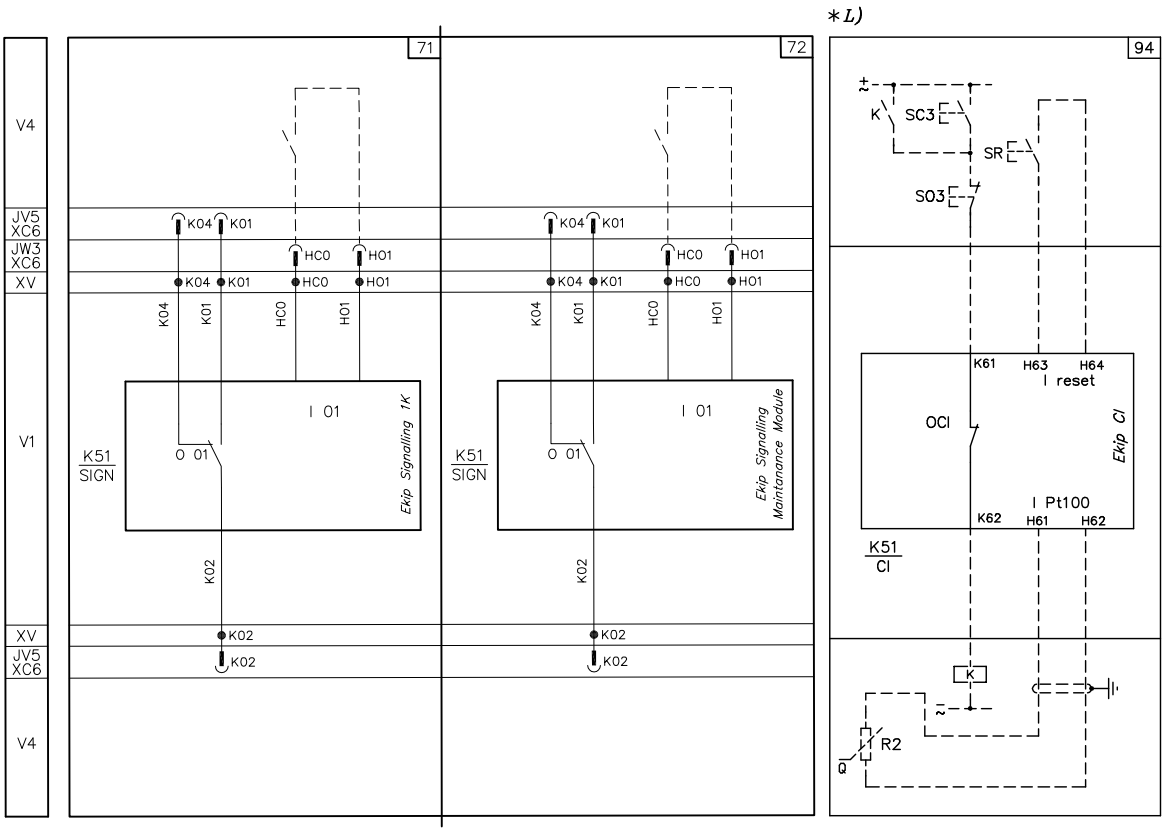


FIG.	DESCRIZIONE / DESCRIPTION	BUS
64	MODBUS TCP	W9
65	PROFINET	W10
66	ETHERNET I/P ™	W11
67	IEC61850	W12
68	LINK	W13
69	HUB	W14

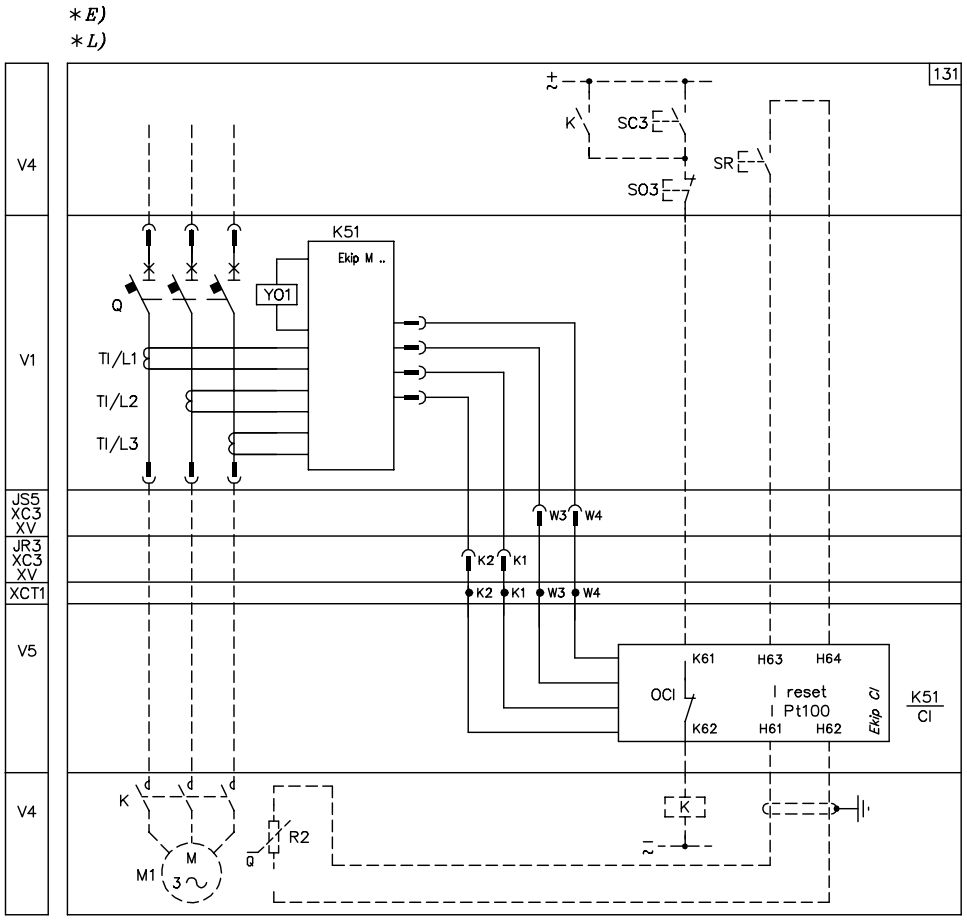
Wiring diagrams
Diagrams for XT5 and XT6

71) Ekip signalling 1K
72) Ekip signalling maintenance module
94) Ekip CI

—
71 - 72
As in alternative
to each other

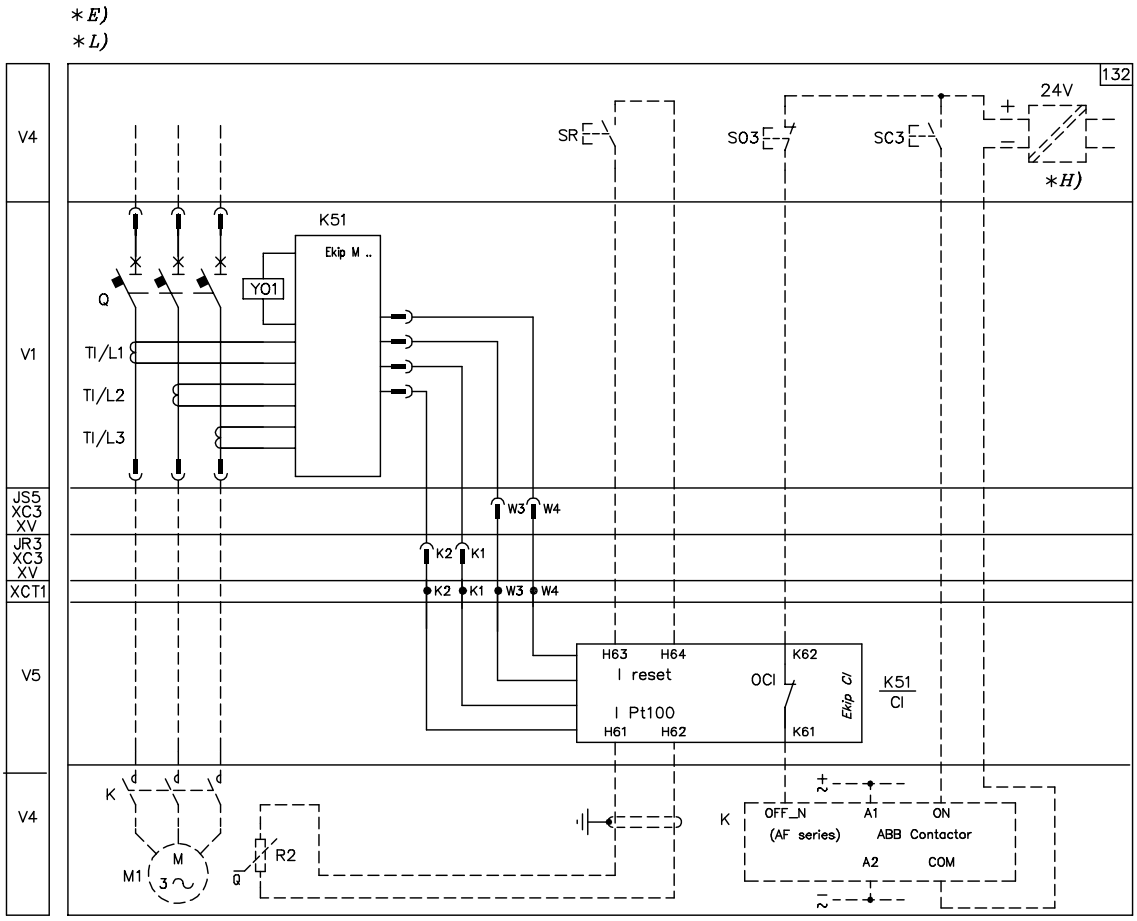


131) Motor starting module Ekip CI

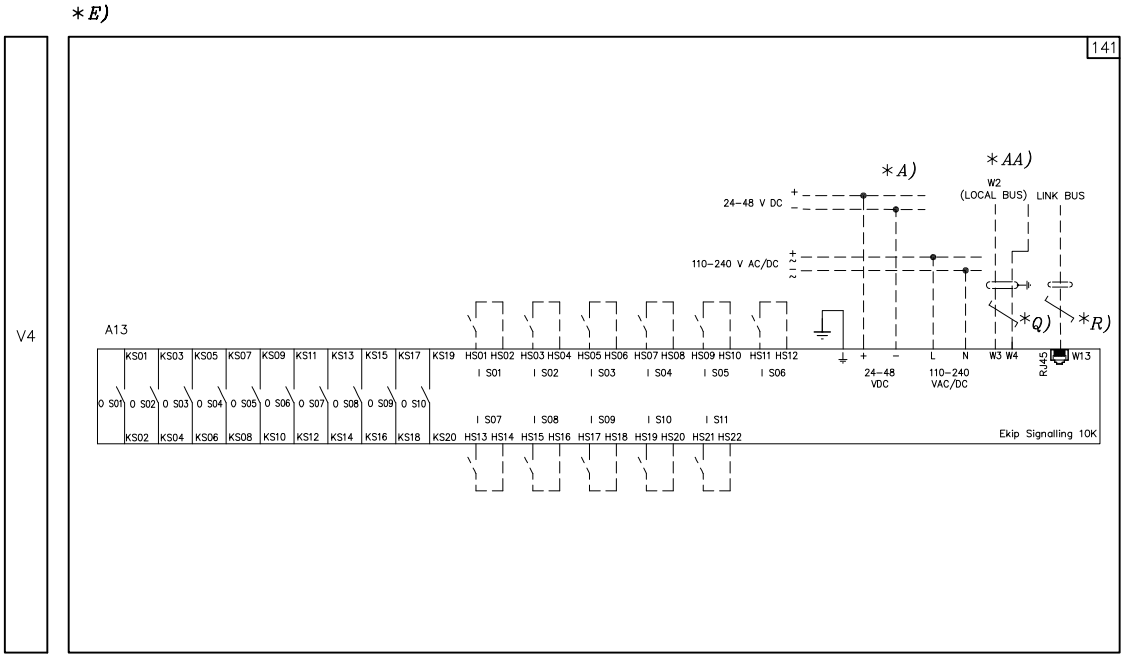


Wiring diagrams
Diagrams for XT5 and XT6

132) Motor starting module Ekip CI with ABB contactor series AF

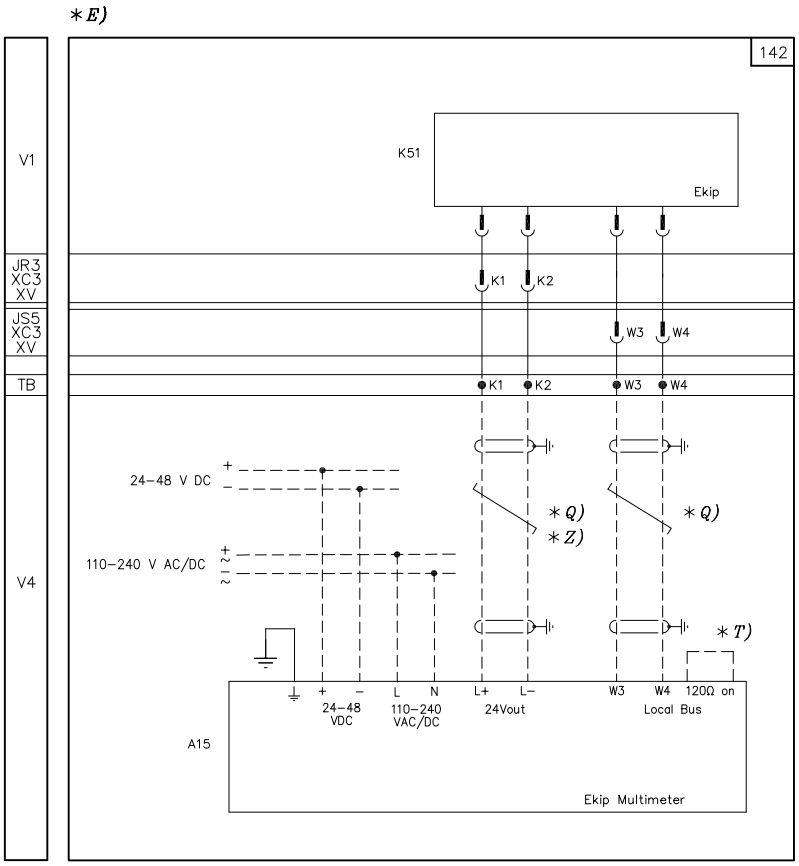


141) Ekip signalling 10K signalling unit

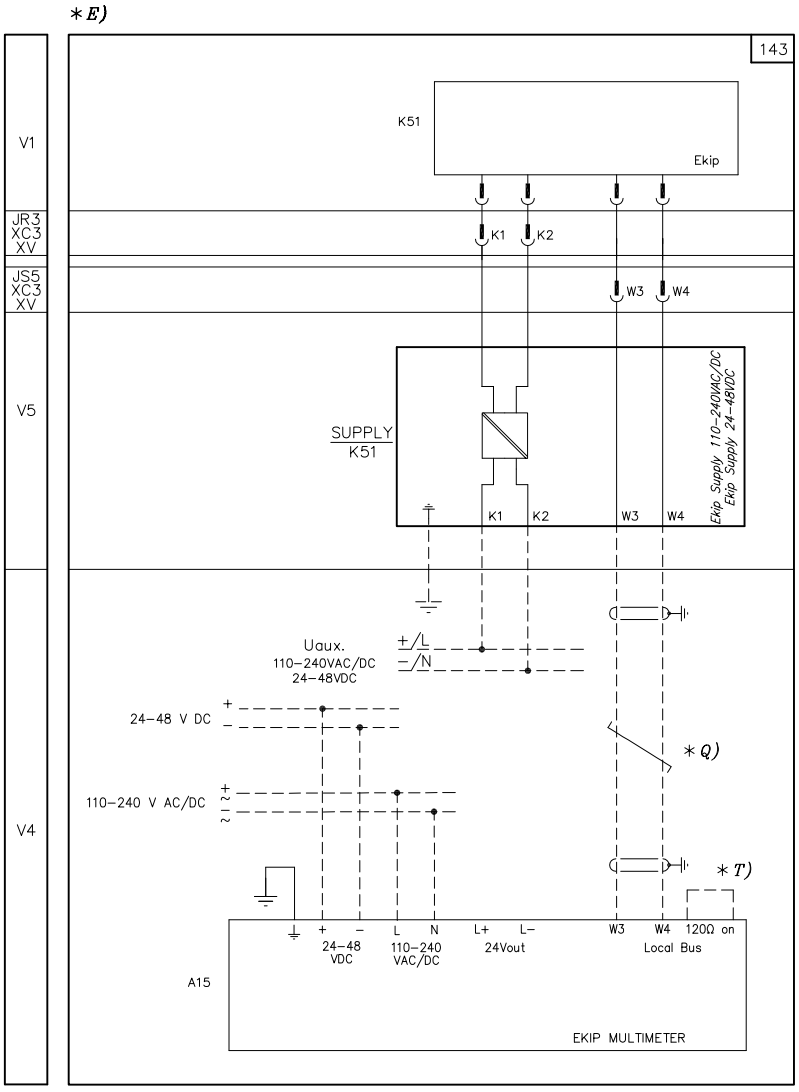


Wiring diagrams
Diagrams for XT5 and XT6

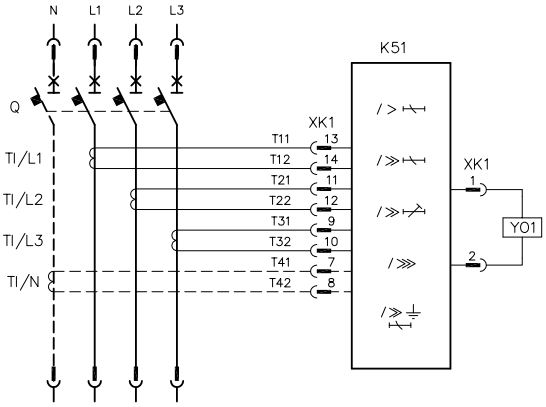
142) Ekip Multimeter unit with relay and direct auxiliary supply 24Vdc



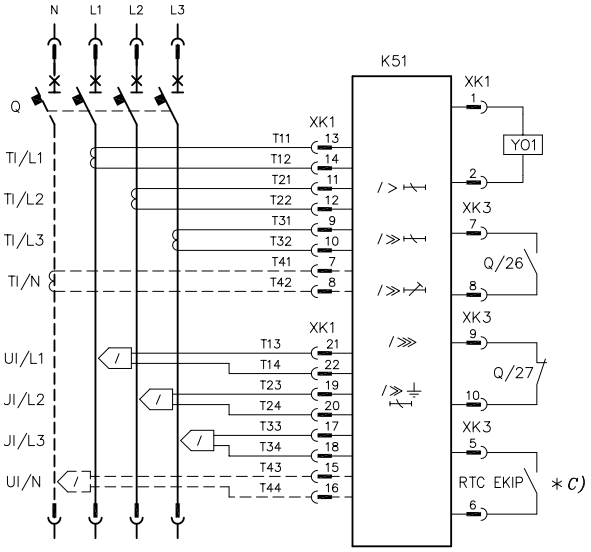
143) Ekip Multimeter unit with relay and auxiliary supply through module 110-240Vac/dc or 24-48Vdc



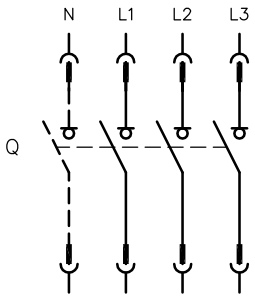
Wiring diagrams
Diagrams for XT7 and XT7 M



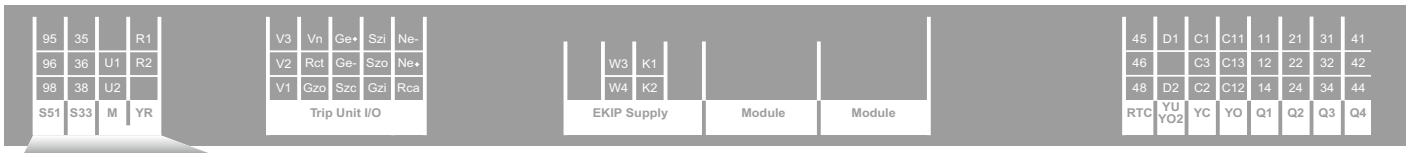
Three-pole or four-pole circuit-breaker with Ekip Dip trip unit

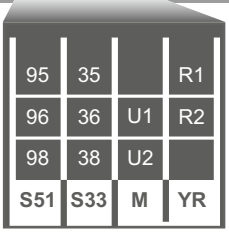


Three-pole or four-pole circuit-breaker with Ekip Touch trip unit



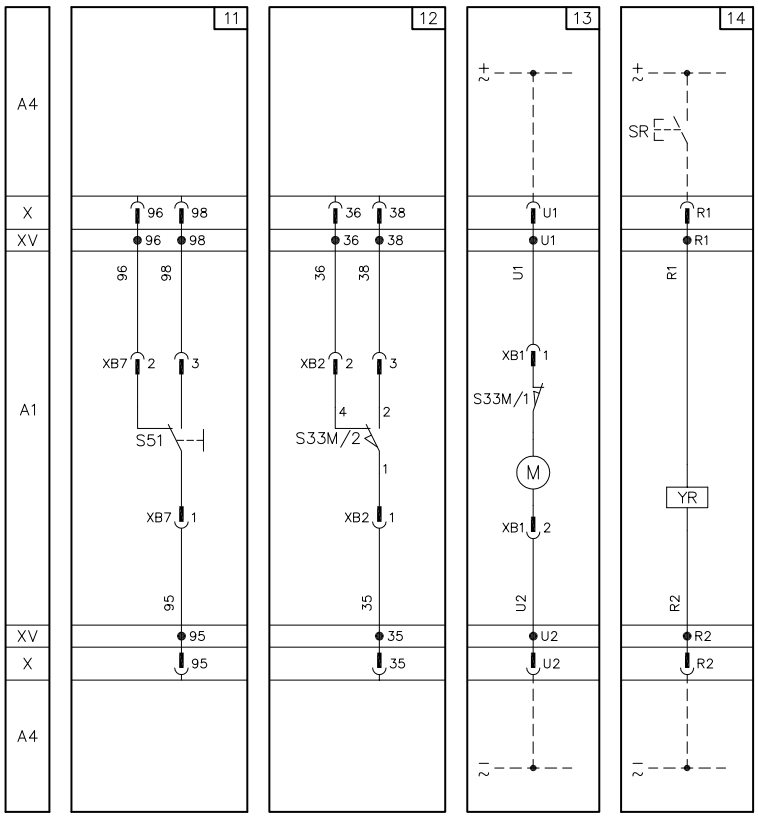
Three-pole or four-pole molded case switch





11a) Protection trip unit tripped signaling contact – S51
12a) Contact for signaling position of loaded springs – S33M
13a) Motor for loading closing springs – M
14a) Trip contact reset coil – YR

—
12 - 13 - 14 only for XT7 M circuit-breakers

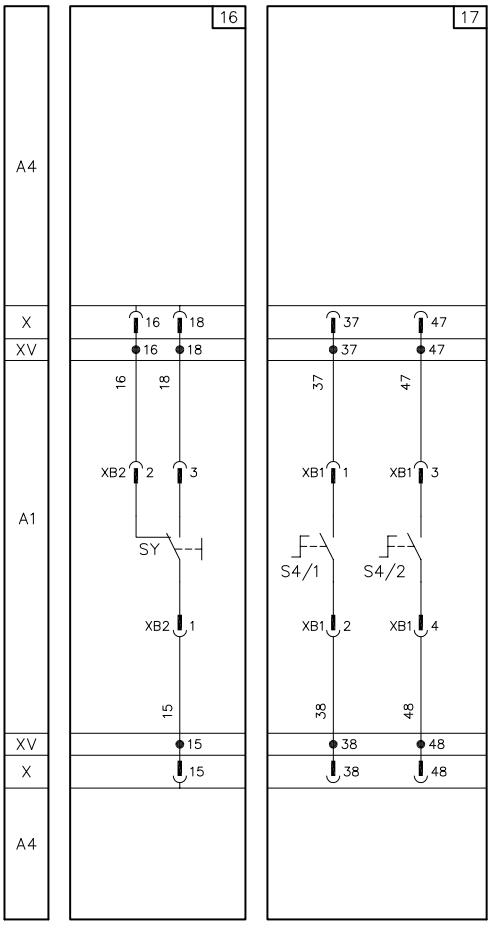


Wiring diagrams
Diagrams for XT7 and XT7 M



16) Tripped position breaker signaling contact SY
17) Auxiliary early contacts – S4

—
16 - 17 only for XT7 circuit-breakers

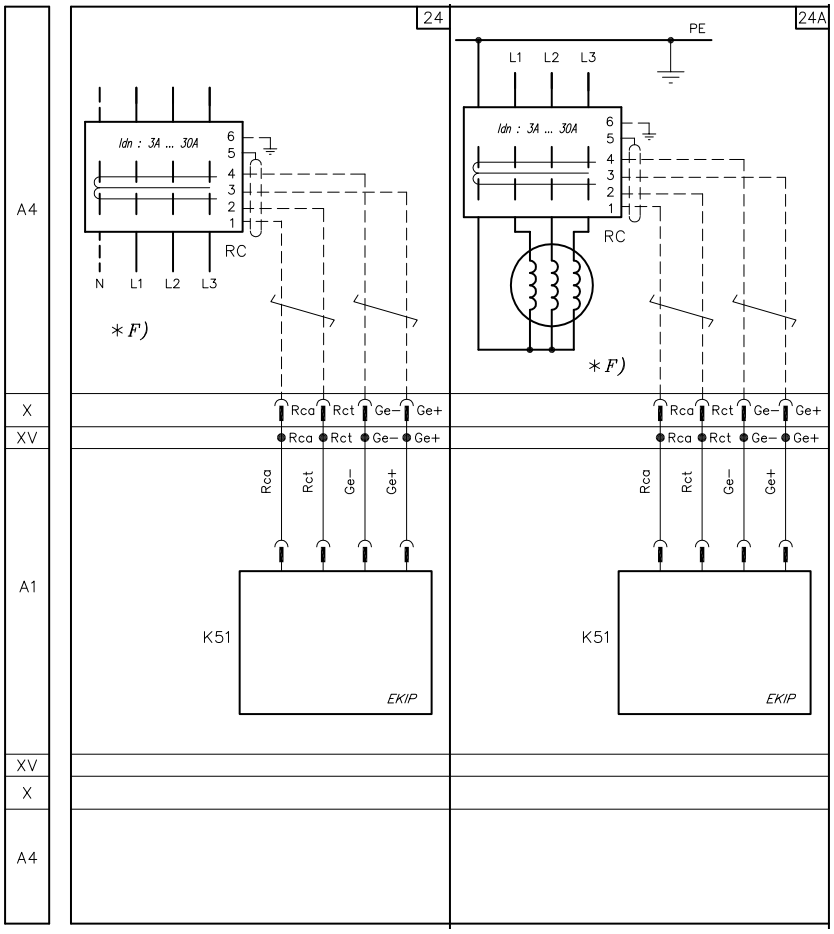




24) RC residual current sensor input (ANSI 64&50N TD)

24a) RC differential ground fault protection sensor input (ANSI 87N)

—
24 - 24a as an alternative to each other and to figure 25

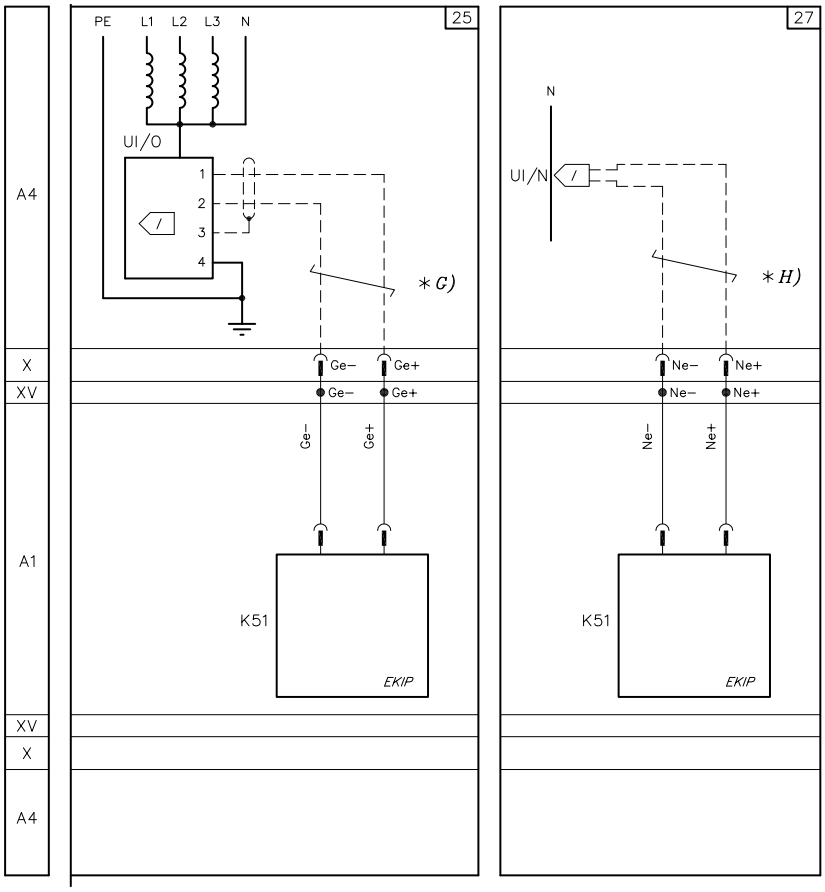


Wiring diagrams
Diagrams for XT7 and XT7 M



25) Transformer star centre sensor input
27) Current sensor input on external neutral (only for 3-pole circuit-breaker)

—
25 as an alternative to figures 24 - 24a



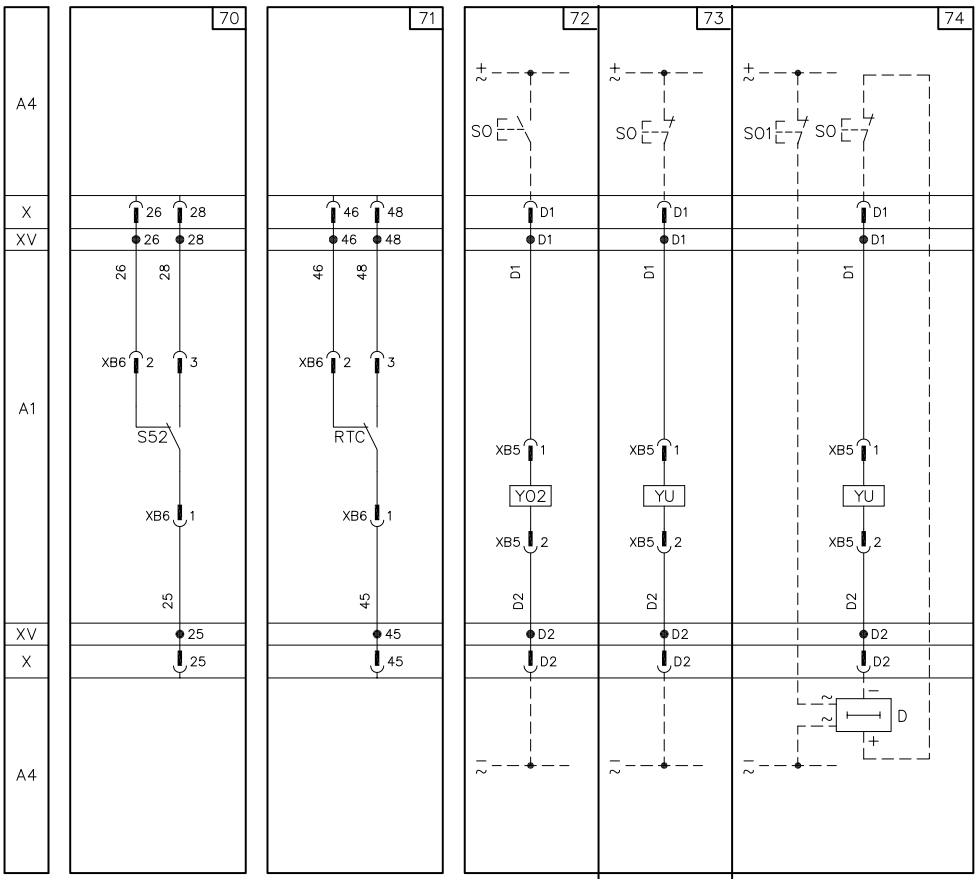


70) Y02/YU opening coil state signaling contact – S52
71) Ready to close contact – RTC
72) Second opening coil – YO2
73) Undervoltage coil – YU
73) Undervoltage coil with externa time-lag device YU, D

—
70 only for XT7 circuit-breakers

71 only for XT7 M circuit-breakers

72 - 73 - 74 as an alternative to each other



Wiring diagrams
Diagrams for XT7 and XT7 M

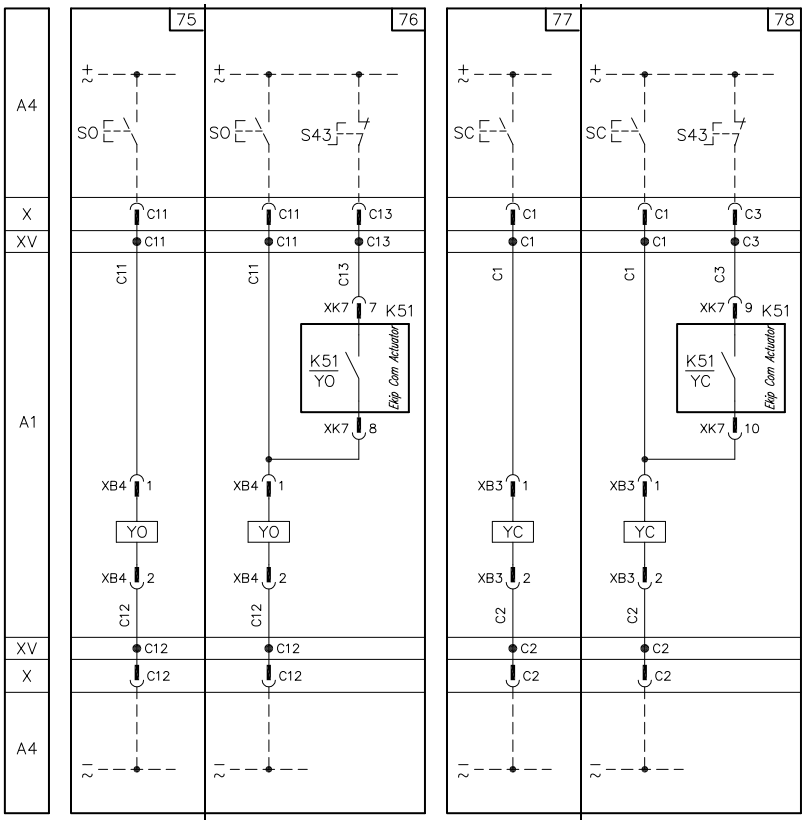


75) First opening coil – YO
76) First opening coil with control from protection trip unit – YO, Ekip Com Actuator
77) First closing coil – YC
78) First opening coil with control from protection trip unit – YC, Ekip Com Actuator

—
75 - 76 as an alternative to each other

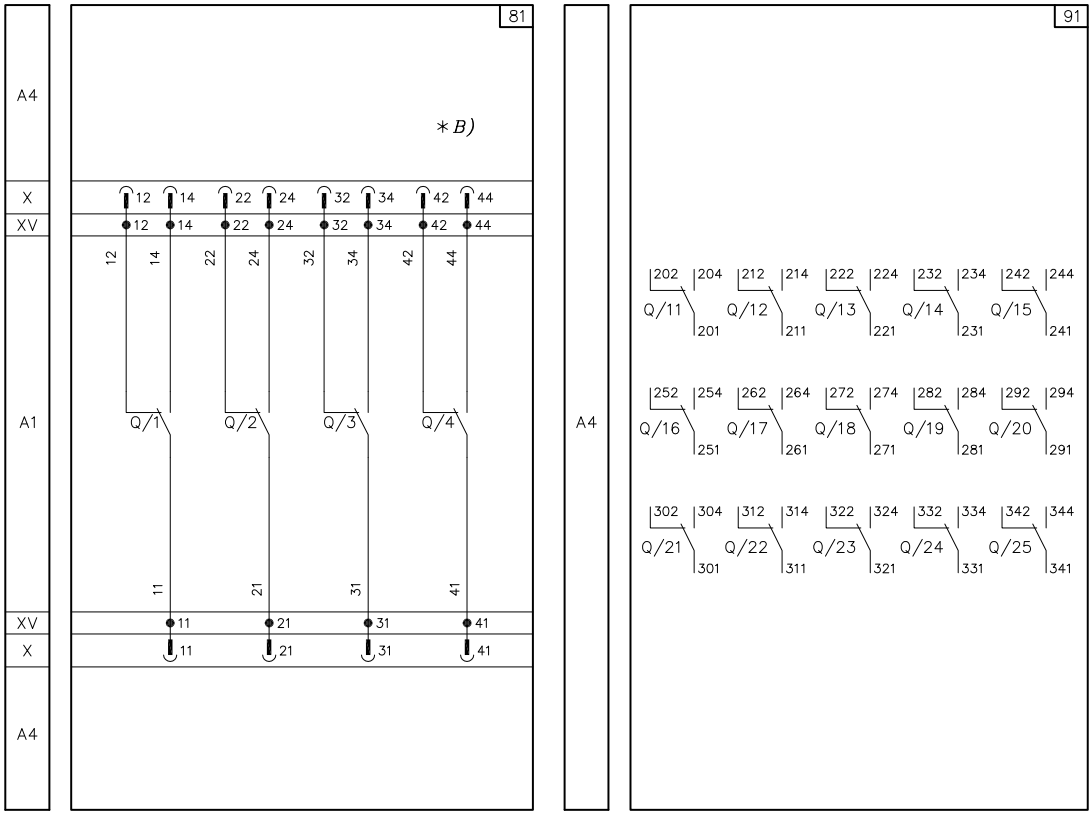
77 - 78 only for XT7 M circuit-breakers

77 - 78 as an alternative to each other





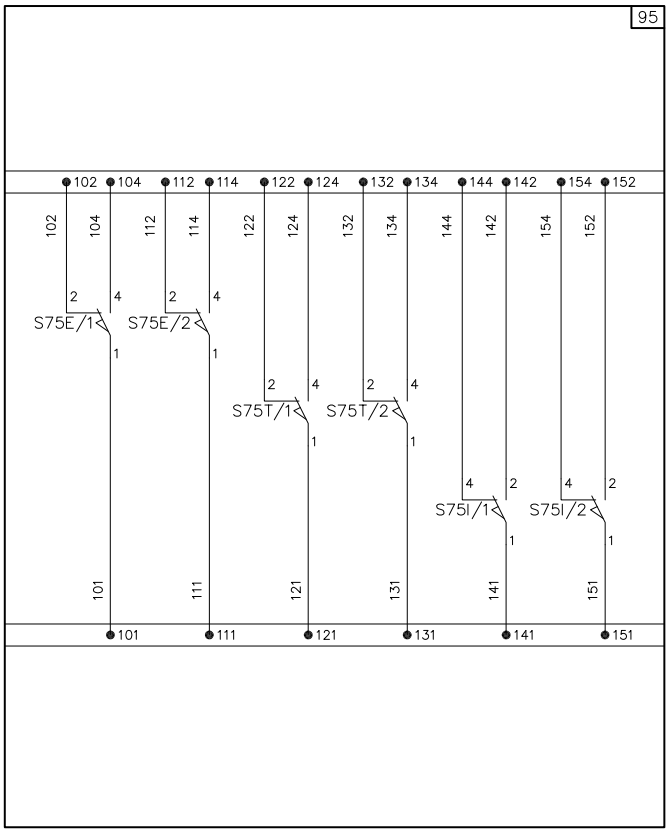
81) Open/Close auxiliary contacts of the circuit-breaker (first set)
91a) Supplementary open/close auxiliary contacts outside the circuit-breaker



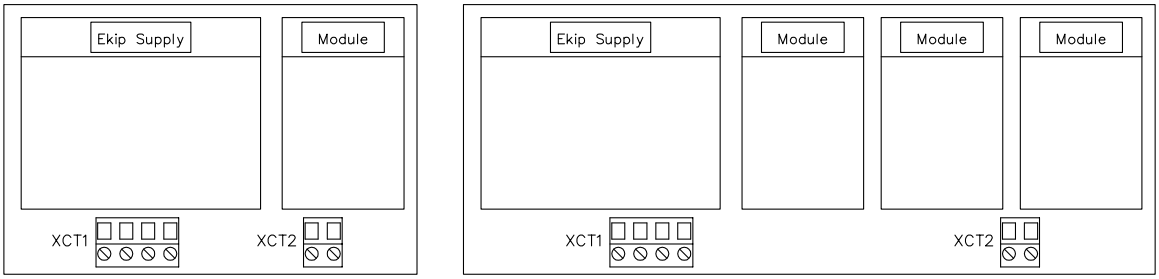
Wiring diagrams
Diagrams for XT7 and XT7 M

95a) Contacts for signaling of circuit-breaker in racked-in, test, racked-out position

—
only for withdrawable version

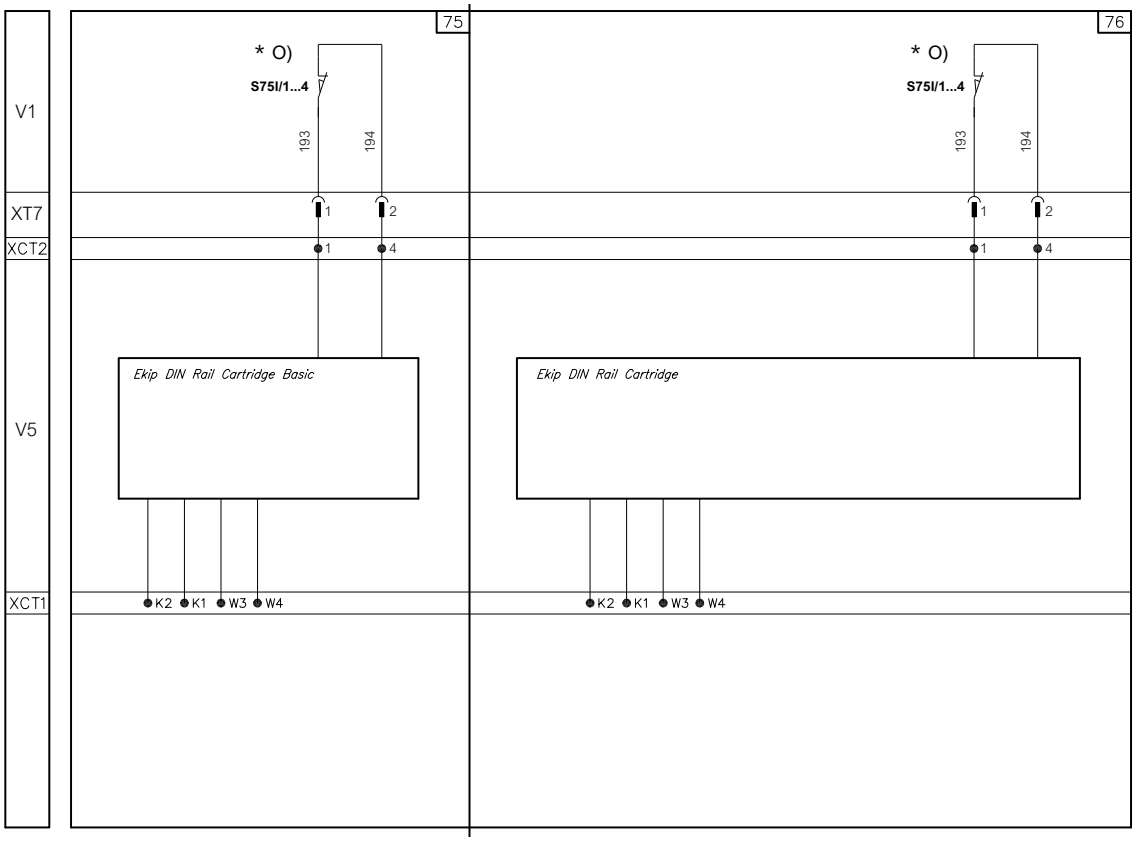


Wiring diagrams
XT2-XT4-XT5-XT7-XT7 M modules



75a) Ekip Cartridge for one module and one Ekip Supply
76a) Ekip Cartridge for three modules and one Ekip Supply

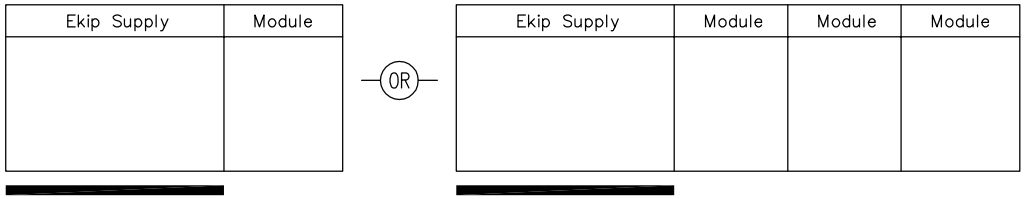
—
75 - 76 as an alternative to each other



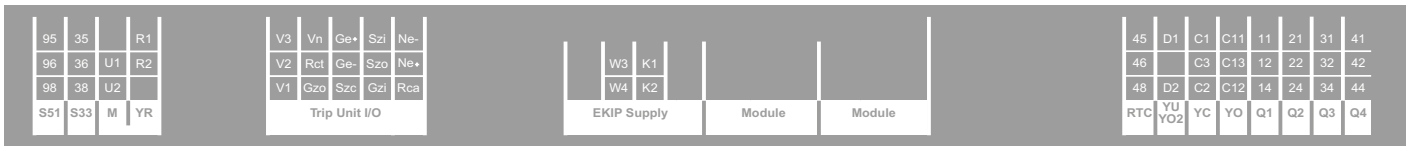
Wiring diagrams
XT2-XT4-XT5-XT7-XT7 M modules

Installation slot

For XT2-XT4-XT5 Ekip Cartiridge

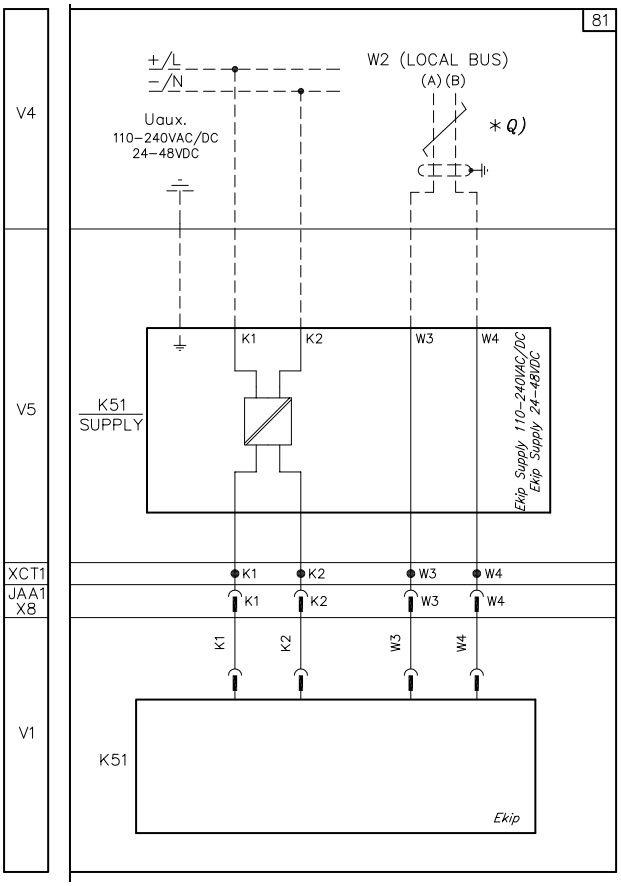


For XT7-X7M terminal box

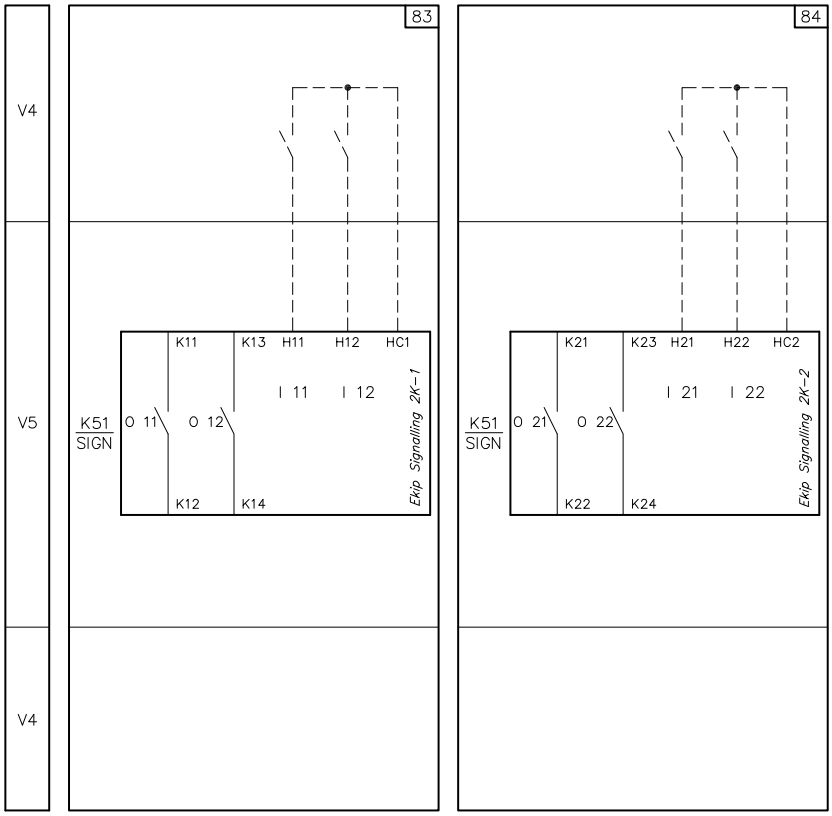


81a) Ekip Supply: auxiliary supply through module 110-240Vac/dc or 24/48Vdc and local bus

—
81 as an alternative to figure 49

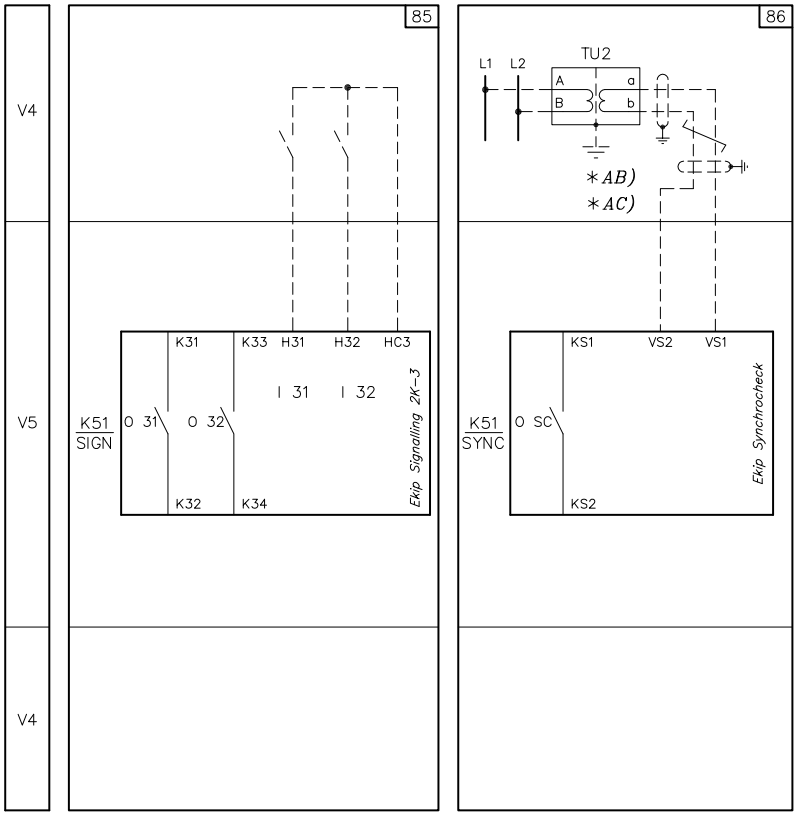


83) Ekip Signalling 2K-1
84) Ekip Signalling 2K-2

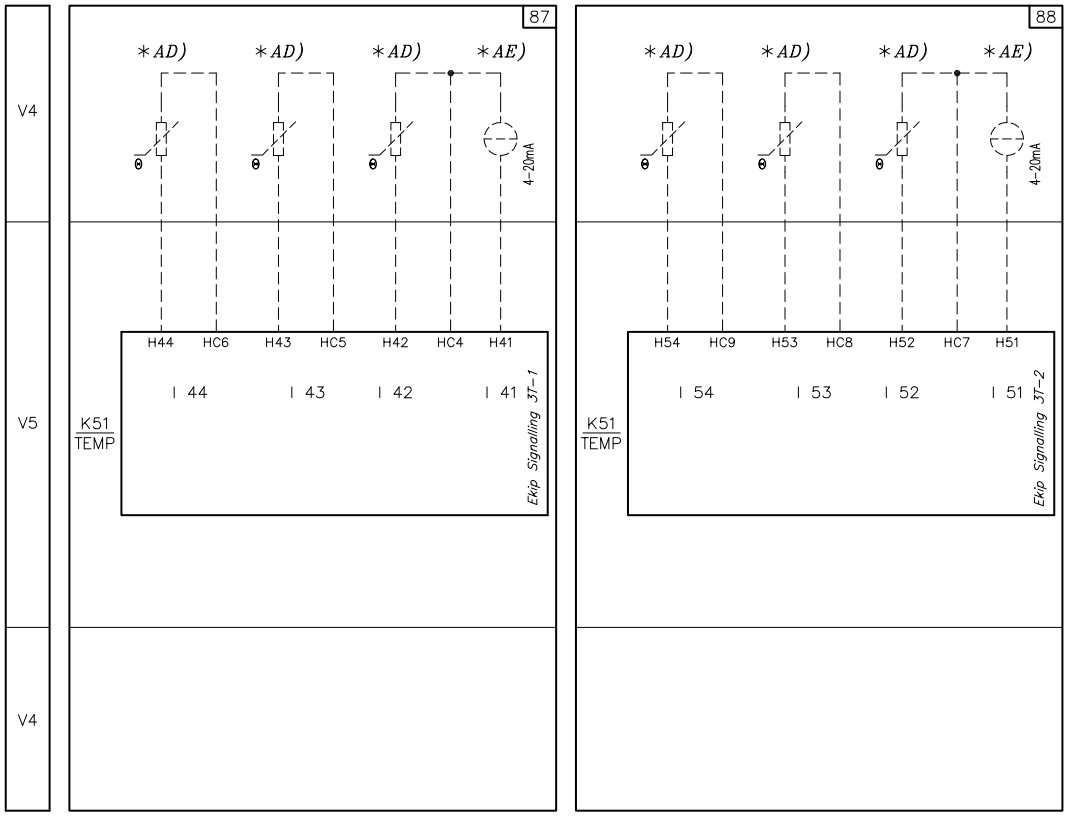


Wiring diagrams
XT2-XT4-XT5-XT7-XT7 M modules

85) Ekip Signalling 2K-3
86) Ekip Synchrocheck



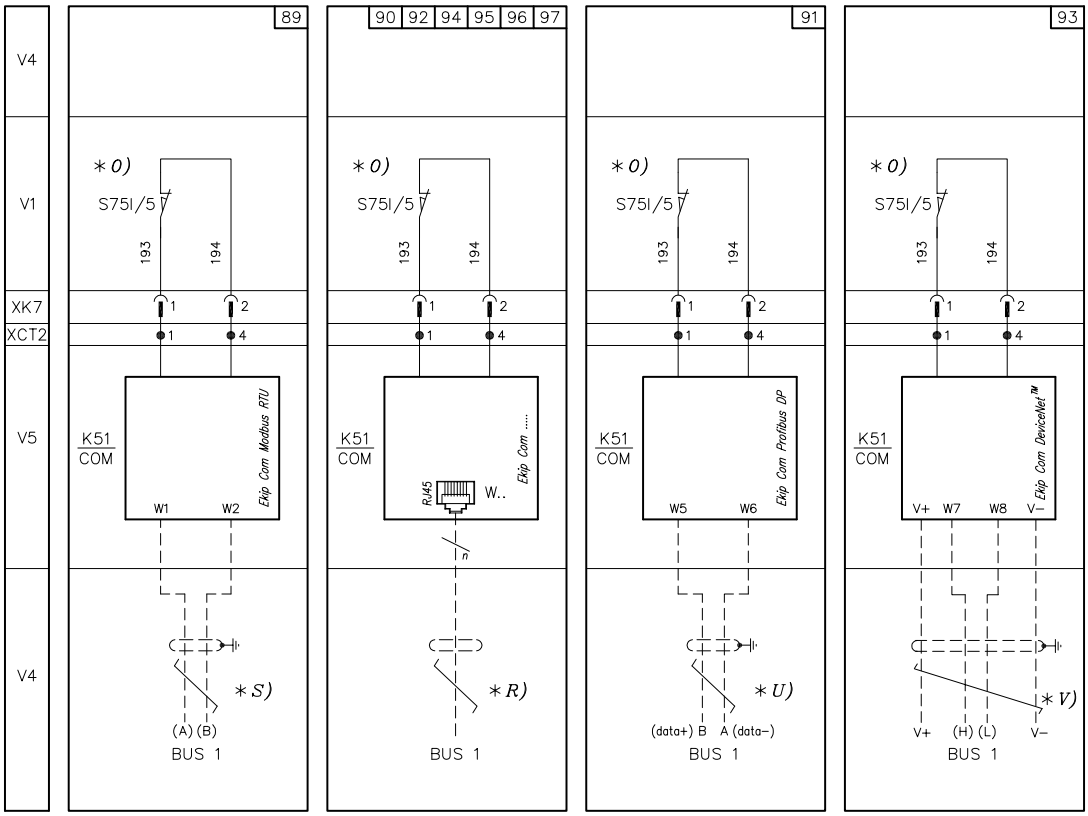
87) Ekip Signalling 3T-1
88) Ekip Signalling 3T-2



Wiring diagrams
XT2-XT4-XT5-XT7-XT7 M modules

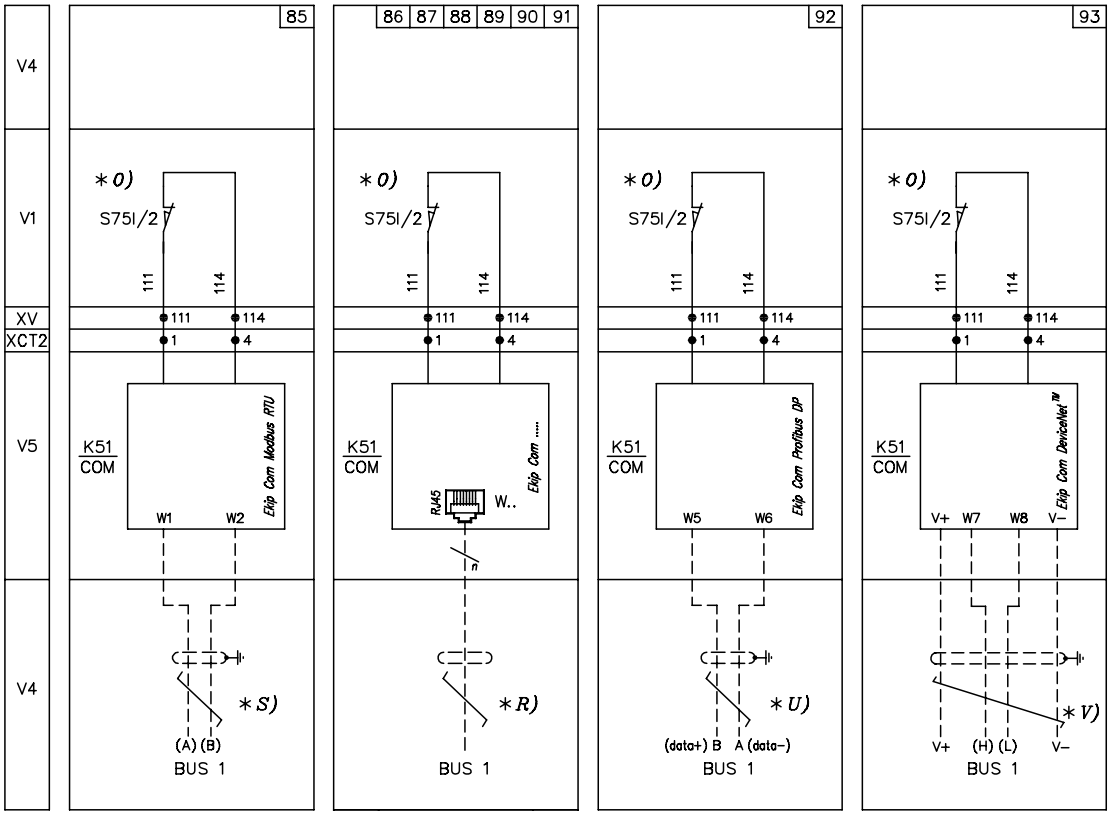
XT2-XT4-XT7-XT7 M

89) Ekip Com Modbus RTU
90) Ekip Com Modbus TCP
92) Ekip Com Ethernet/IP
94) Ekip Com IEC61850
95) Ekip Link
96) ABB Ability™ Edge Industrial Gateway
97) Ekip Com Profinet
91) Ekip Com Profibus DP
93) Ekip Com DeviceNet



XT5

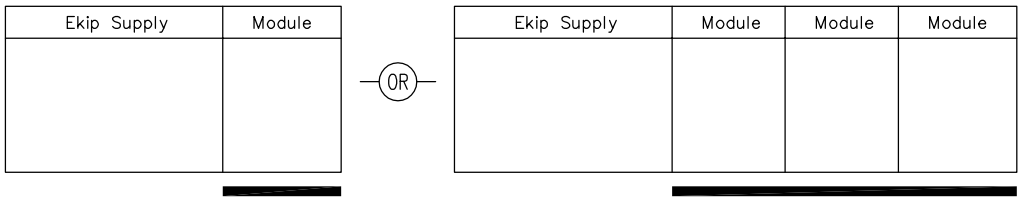
85) Ekip Com Modbus RTU
86) Ekip Com Modbus TCP
87) Ekip Com Profinet
88) Ekip Com I/P™
89) Ekip Com IEC61850
90) Ekip Com Link
91) ABB Ability™ Edge Industrial Gateway
92) Ekip Com Profibus DP
93) Ekip Com DeviceNet™



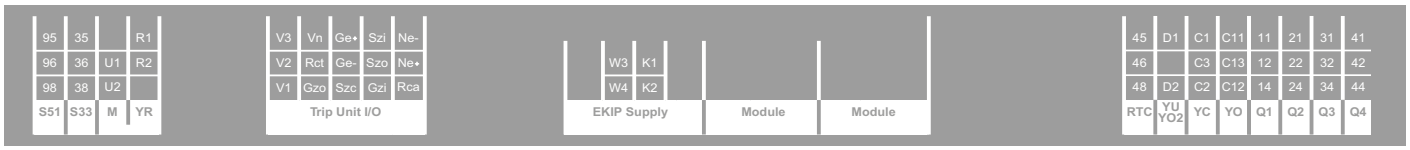
Wiring diagrams
XT2-XT4-XT5-XT7-XT7 M modules

Installation slot

For XT2-XT4-XT5 Ekip Cartiridge



For XT7-X7M terminal box



110) Ekip Com Modbus RTU redundant
111) Ekip Com Modbus TCP redundant
113) Ekip Com Profinet redundant
115) Ekip Com Ethernet IP redundant
116) Ekip Com IEC61850 redundant
112) Ekip Com Profibus DP redundant
114) Ekip Com Devicenet™ redundant

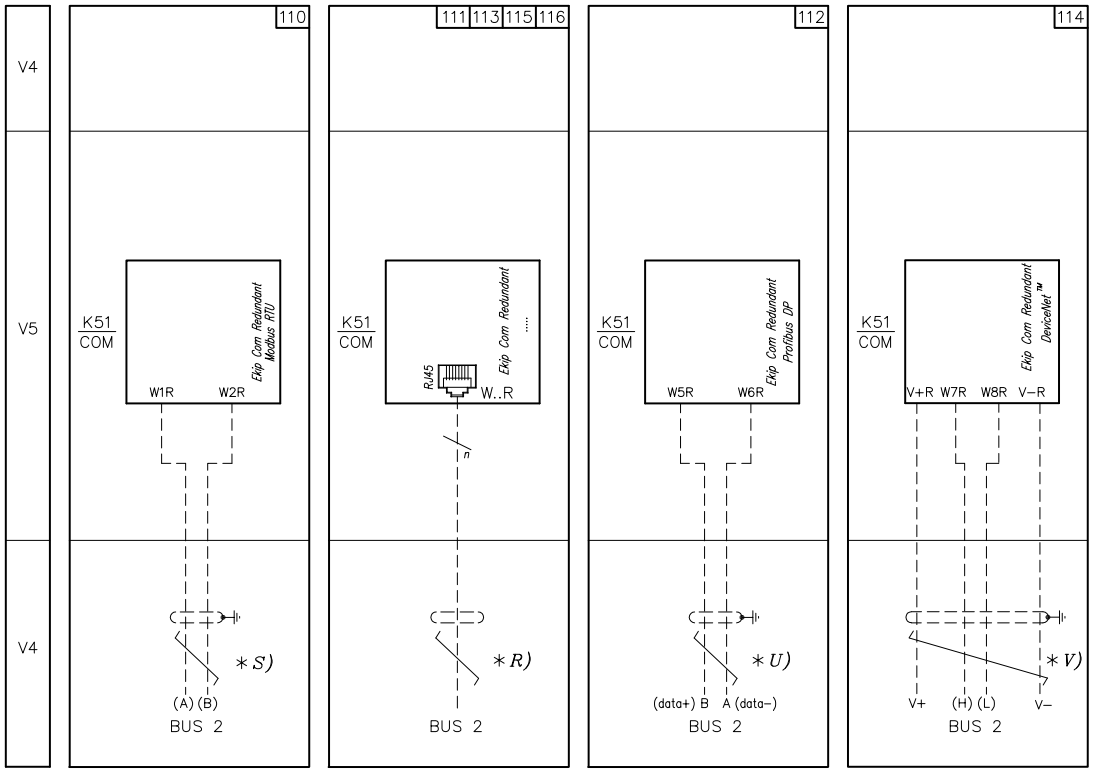


ABB SACE S.p.A.
Electrification Business Area
Smart Power Division
5, Via Pescaria
I-24123 Bergamo - Italy
Phone: +39 035 395.111

new.abb.com/low-voltage/products/circuit-breakers/xt

Stay tuned. Discover more by visiting the webpage reserved to SACE Tmax XT and be always up-to-date with the latest edition of the catalogue.

© Copyright 2020 ABB. All rights reserved.
The data and illustrations are not binding. We reserve the right to modify the contents of this document on the basis of technical development of the products, without prior notice.

1SDC210199D0205 annex to 1SDC210200D0205 - 2020.09