TECHNICAL CHARACTERISTICS

SACE Tmax XT
Low voltage molded case circuit-breakers

Break new ground
• Data and connectivity
• Ease of use and installation
• Performance and protection
• Safety and reliability
SACE Tmax XT
The complete offering
Installation

**Installation environment**

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1/2 Environmental conditions
1/2 Shocks and vibrations
1/2 Electromagnetic compatibility
1/3 Degrees of protection
1/3 Installation position

**Temperature performance**

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1/6 Circuit-breaker with magnetic only or electronic trip units and switch-disconnectors
1/8 Power losses

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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, 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.

<table>
<thead>
<tr>
<th>Altitude</th>
<th>2000m</th>
<th>3000m</th>
<th>4000m</th>
<th>5000m</th>
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<tr>
<td>Rated service voltage, Ue [V]</td>
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<td>540</td>
<td>470</td>
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<tr>
<td>Rated uninterrupted current %</td>
<td>100</td>
<td>98</td>
<td>93</td>
<td>90</td>
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Shocks and vibrations
The Tmax XT circuit-breakers are unaffected by vibrations generated mechanically and due to electromagnetic effects, in compliance with the IEC 60068-2-6 Standards and the regulations of the major shipping registers including:
- RINA
- Det Norske Veritas
- Bureau Veritas
- Lloyd’s Register of Shipping
- Germanischer Lloyd
- ABS
- Russian Maritime Register of Shipping
- Nippon Kaiji Kyokai.
The Tmax XT circuit-breakers are also tested according to the IEC 60068-2-27 Standard to resist shocks up to 15g for 11 ms.

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 and European Directive No. 2014/30/EC regarding EMC - electromagnetic compatibility.
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.

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.

<table>
<thead>
<tr>
<th>With front</th>
<th>Without front</th>
<th>With FLD</th>
<th>With RHD</th>
<th>With RHE</th>
<th>Motor operator</th>
<th>Residual current devices</th>
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<td>IP40(1)</td>
<td>IP40(1)(2)</td>
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(1) XT5 W - XT6 W: IP30
(2) XT5-XT6-XT7: IP65

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<tr>
<th>Protection kits for</th>
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<th>With HTC</th>
<th>With LTC</th>
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Residual current RCQ020 Automatic Transfer Switch ATS021, ATS022

On front | IP41 | IP40
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.

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### XT4 with thermal-magnetic trip units

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### XT5 TMA/TMG

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<tbody>
<tr>
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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 the threshold of I1 of the overcurrent protection (L) must be set according to the ambient temperature and for the type of terminals used.

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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 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.

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Power losses gives indication of the heat generated under specified conditions. Measurement of power losses are performed on new samples in free air (according to Annex G of IEC).

The measurement of resistance cannot be directly related to the power loss of the device and is not enough to ascertain the quality of the contacts.

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Power losses gives indication of the heat generated under specified conditions. Measurement of power losses are performed on new samples in free air (according to Annex G of IEC).

The measurement of resistance cannot be directly related to the power loss of the device and is not enough to ascertain the quality of the contacts.
### Insulation distances

Clearances for installation in metallic cubicles

This section provides the compliance clearances for the installation of the circuit-breaker inside a metal cubicle. The cubicle is the reference for the metallic parts of the switchgear assembly adjacent to the circuit-breaker and is used as a reference to define the clearances to be observed to permit the free evacuation of ionized gases and metal vapors and to prevent the ignition of adjacent parts. The clearances refer to the tests carried out in compliance with the IEC 60947-2 Standard. The installation modality in relation to the type of circuit-breaker and the compulsory protections that must be used depending on the connection terminals is summarized in the tables below. For further details about installation, please see the related instructions provided with the circuit-breaker.

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(1) above 500V AC
(2) PBs 50mm for W/P versions
(3) For XT5 LTC height is 25mm
### Insulation distances

Alternating Current (AC) application

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<tr>
<td>XT7</td>
<td>U ≤ 440 V AC</td>
<td>50 10 20 50 10 20 5 0 5</td>
<td>- - -</td>
<td>0 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
<tr>
<td></td>
<td>440 V AC &lt; U &lt; 500V</td>
<td>100 10 20 100 10 20 40 10 5</td>
<td>- - -</td>
<td>50 20 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
<tr>
<td></td>
<td>500 V AC ≤ U ≤ 690 V</td>
<td>100 10 20 100 10 20 40 10 5</td>
<td>- - -</td>
<td>50 20 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
</tbody>
</table>

(1) In case of ES terminals this distance has to be considered starting from terminal edge
(2) XT4V only: 50mm with LTC and 25mm with PSs 25mm
(3) XT4V only: for application at 690V AC the insulation distances to be used are the same of XT4X
(4) Up to 200A with FC CuAl
Direct Current (DC) application

<table>
<thead>
<tr>
<th></th>
<th>No accessories</th>
<th>Low terminal cover (LTC)</th>
<th>High terminal cover (HTC)</th>
<th>Phase separators 25mm</th>
<th>Phase separators 100mm</th>
<th>Phase separators 200mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XT1</strong></td>
<td><strong>U ≤ 250V</strong></td>
<td>- - - 25 20 20 10 5 20</td>
<td>0 0 20 0 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
<tr>
<td></td>
<td><strong>250V &lt; U ≤ 500V</strong></td>
<td>- - - 50 45 50 40 35 50</td>
<td>25 20 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
</tr>
<tr>
<td><strong>XT2</strong></td>
<td><strong>U ≤ 250V</strong></td>
<td>- - - 50 45 50 40 35 50</td>
<td>25 20 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
</tr>
<tr>
<td></td>
<td><strong>250V &lt; U ≤ 500V</strong></td>
<td>- - - 50 45 50 40 35 50</td>
<td>25 20 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
</tr>
<tr>
<td><strong>XT3</strong></td>
<td><strong>U ≤ 250V</strong></td>
<td>- - - 50 20 20 45 15 20</td>
<td>25 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
<tr>
<td></td>
<td><strong>250V &lt; U ≤ 500V</strong></td>
<td>- - - 50 20 20 45 15 20</td>
<td>25 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
<tr>
<td><strong>XT4</strong></td>
<td><strong>U ≤ 250V</strong></td>
<td>- - - 30 25 20 25 20 20</td>
<td>5 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
<tr>
<td></td>
<td><strong>250V &lt; U ≤ 500V</strong></td>
<td>- - - 50 45 50 45 40 50</td>
<td>25 20 50</td>
<td>10 5 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
</tr>
<tr>
<td><strong>XT4V/X</strong></td>
<td><strong>U ≤ 500V</strong></td>
<td>- - - 50 45 50 45 40 50</td>
<td>25 20 50</td>
<td>10 5 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
</tr>
<tr>
<td></td>
<td><strong>500V &lt; U ≤ 750V</strong></td>
<td>- - - 100 100 50 45 40 50</td>
<td>75 75 50</td>
<td>10 5 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
</tr>
<tr>
<td><strong>XT5</strong></td>
<td><strong>U ≤ 250 V DC</strong></td>
<td>- - - 30 25 25 5 0 25</td>
<td>10 10 25</td>
<td>10 10 25</td>
<td>0 0 25</td>
<td>0 0 25</td>
</tr>
<tr>
<td></td>
<td><strong>U ≤ 500 V DC</strong></td>
<td>- - - 40 0 25 40 40 25</td>
<td>40 20 25</td>
<td>10 10 25</td>
<td>0 0 25</td>
<td>0 0 25</td>
</tr>
<tr>
<td></td>
<td><strong>500 V DC &lt; U ≤ 750 V DC</strong></td>
<td>- - - 40 20 25 60 60 50</td>
<td>60 60 50</td>
<td>10 10 50</td>
<td>0 0 50</td>
<td>0 0 50</td>
</tr>
<tr>
<td><strong>XT6</strong></td>
<td><strong>U ≤ 500 V DC</strong></td>
<td>- - - 35 20 25 35 20 25</td>
<td>35 20 25</td>
<td>0 0 25</td>
<td>0 0 25</td>
<td>0 0 25</td>
</tr>
<tr>
<td></td>
<td><strong>500 V DC &lt; U ≤ 750 V DC</strong></td>
<td>- - - 100 20 25 100 20 25</td>
<td>35 20 25</td>
<td>- - -</td>
<td>0 0 25</td>
<td>0 0 25</td>
</tr>
<tr>
<td><strong>XT7</strong></td>
<td><strong>U ≤ 500V</strong></td>
<td>- - - 50 10 20 50 10 20</td>
<td>5 0 5</td>
<td>- - -</td>
<td>0 0 20</td>
<td>0 0 20</td>
</tr>
<tr>
<td></td>
<td><strong>500V &lt; U ≤ 750V</strong></td>
<td>- - - 100 10 20 100 10 20</td>
<td>30 10 5</td>
<td>- - -</td>
<td>50 0 20</td>
<td>0 0 20</td>
</tr>
</tbody>
</table>

* Considered only FC CuAl with PB 25mm configuration

(1) in case of ES terminals this distance has to be considered starting from the terminal edge
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 690V AC.

The following table show the minimum center distance between two circuit-breaker side by side. When side by side breakers are different in size, the larger reference clearance should be considered.

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.*

<table>
<thead>
<tr>
<th>Circuit-breaker width (mm)</th>
<th>Centre distance I (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 poles</td>
</tr>
<tr>
<td>XT1</td>
<td>76</td>
</tr>
<tr>
<td>XT2</td>
<td>90</td>
</tr>
<tr>
<td>XT3</td>
<td>105</td>
</tr>
<tr>
<td>XT4</td>
<td>105</td>
</tr>
<tr>
<td>XT5</td>
<td>140</td>
</tr>
<tr>
<td>XT6</td>
<td>210</td>
</tr>
<tr>
<td>XT7</td>
<td>210(2)</td>
</tr>
</tbody>
</table>

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

---

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

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

---
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:

<table>
<thead>
<tr>
<th>Circuit-breaker</th>
<th>Terminals</th>
<th>D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1-XT3 F-P</td>
<td>ES</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Other types of terminals</td>
<td>25</td>
</tr>
<tr>
<td>XT2-XT4 F-P-W</td>
<td>ES</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Other types of terminals</td>
<td>25</td>
</tr>
<tr>
<td>XT5 F-P-W</td>
<td>ES</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Other types of terminals</td>
<td>50</td>
</tr>
<tr>
<td>XT6 F-W</td>
<td>ES</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Other types of terminals</td>
<td>50</td>
</tr>
<tr>
<td>XT7 F-W</td>
<td>ES</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Other types of terminals</td>
<td>0 fixed - 70 withdrawable</td>
</tr>
</tbody>
</table>

Here are some examples:
- Adjustable rear terminals R and low terminal covers LTC
- Circuit-breakers with front extended spread terminals ES
- Circuit-breakers with front extended terminals EF
Insulation distances

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 690Vac. 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.

<table>
<thead>
<tr>
<th>Circuit-breaker</th>
<th>H [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1</td>
<td>80</td>
</tr>
<tr>
<td>XT2</td>
<td>100</td>
</tr>
<tr>
<td>XT3</td>
<td>140</td>
</tr>
<tr>
<td>XT4</td>
<td>150</td>
</tr>
<tr>
<td>XT5</td>
<td>160</td>
</tr>
<tr>
<td>XT6</td>
<td>180</td>
</tr>
<tr>
<td>XT7</td>
<td>180</td>
</tr>
</tbody>
</table>

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.
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.
Insulation distances

For the moulded-case circuit-breakers SACE Tmax XT1, XT2, XT3 and XT4, the figure below gives an example of the maximum recommended distance (in mm) within which the first insulated anchor shall be positioned according to the highest admissible peak current value of the circuit-breaker and to the cross-sectional area of the cable. The maximum recommended distance is valid also with busbar connections. For further information and details reference must be made to the circuit-breaker technical catalogues and instruction manuals.

(*) Value valid also with rear terminals

SACE Tmax XT5

SACE Tmax XT6

SACE Tmax XT7
Special applications

Use of direct current apparatus

Variation in magnetic tripping
The thermal-magnetic trip units of the SACE Tmax XT circuit-breakers are suitable for use in direct current applications. For the protection thresholds against short-circuits, correction values (Km) must be used, according to the type of distribution network and to the number of poles to be connected in series (the thermal threshold does not undergo any alteration).

The correction value to be used can be found in the following tables.

Connection diagrams of poles in an insulated network

<table>
<thead>
<tr>
<th>Insulated network</th>
<th>Un</th>
<th>≤250</th>
<th>≤500</th>
<th>≤750</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1</td>
<td></td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XT2</td>
<td></td>
<td>1.5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>XT3</td>
<td></td>
<td>1.35</td>
<td>1.35</td>
<td></td>
</tr>
<tr>
<td>XT4</td>
<td></td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>XT5</td>
<td></td>
<td>1.1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>XT6</td>
<td></td>
<td>1.1</td>
<td>1.1</td>
<td>1</td>
</tr>
</tbody>
</table>

Connection diagrams of poles in a network with one grounded polarity

<table>
<thead>
<tr>
<th>Network with one grounded polarity</th>
<th>Un</th>
<th>≤250</th>
<th>≤500</th>
<th>≤750</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1</td>
<td></td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XT2</td>
<td></td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>XT3</td>
<td></td>
<td>1.35</td>
<td>1.35</td>
<td>1.35</td>
</tr>
<tr>
<td>XT4</td>
<td></td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>XT5</td>
<td></td>
<td>1.1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>XT6</td>
<td></td>
<td>1.1</td>
<td>1.1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: in the considered connections, the earthed polarity is the negative one.
### Special applications

#### Connection diagrams of poles in switch-disconnectors

<table>
<thead>
<tr>
<th>Switch-disconnectors</th>
<th>Un ≤250</th>
<th>Un ≤500</th>
<th>Un ≤750</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="#" alt="Diagram" /></td>
<td><img src="#" alt="Diagram" /></td>
<td><img src="#" alt="Diagram" /></td>
</tr>
</tbody>
</table>

| XT1 | ![Diagram](#) | ![Diagram](#) |
| XT3 | ![Diagram](#) | ![Diagram](#) |
| XT4 | ![Diagram](#) | ![Diagram](#) |
| XT5 | ![Diagram](#) | ![Diagram](#) |
| XT6 | ![Diagram](#) | ![Diagram](#) |
| XT7 | ![Diagram](#) | ![Diagram](#) |
Characteristic curves
Example of curves reading

Example 1 - XT3N 250
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 250 TMD In=250 A circuit-breaker. The trip time of the thermal protection varies considerably depending on the conditions when the overload occurs, i.e., whether the circuit-breakers is at the thermal regime (either cold or hot trip conditions). For example, for an overload current $3 \times I_1$, the trip time ranges from 107.9 s to 31.5 s for cold tripping and from 31.5 s to 7.0 s for hot tripping. For fault current values higher than 2500 A, the circuit-breaker trips with the instantaneous magnetic protection $I_3$.

Example 2 - XT2N 160
Specific let-through energy curves

The following figure shows an example of the graph of the specific let-through energy of the XT2N 160 In=160 A circuit-breaker at 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 $I_t$ equal to $0.76 \times 10^6 \cdot A^2s$ in correspondence with a short-circuit current of 20 kA.
**Characteristic curves**

**Example of curves reading**

**Example 3 - XT2N 160**

**Limitation curves**

The figure below gives the trend of the limitation curves of the XT2N 160 In=160 A circuit-breaker. The effective value of the prospective symmetrical short-circuit current is given on the x-axis of the graph, whereas the peak value of the short-circuit current is indicated on the y-axis.

The limiting effect can be evaluated by comparing the peak value corresponding to the prospective short-circuit current (curve A) with the peak limited value (curve B), at the same value of symmetrical short-circuit current.

For a fault current of 20 kA, the XT2N 160 circuit-breaker with a thermal magnetic trip unit In =160 A limits the peak prospective short-circuit current to 13.5 kA at a voltage of 500 V, with a reduction of 36.5 kA in relation to the peak value of the prospective short-circuit current.
Example 4 - XT4N 250 Ekip M-LIU
Cold trip / hot trip curves

The first curve shows the time of intervention of the trip unit in case of fault under cold conditions. Each curve is related to a single operating class defined by Standard IEC 60947-4-1 (3E, 5E, 10E or 10E). The second curve, hot trip, must be read in relation to the previous one. Considering the time the circuit-breaker has remained open after the first trip (t-off on the x-axis), the t-hot/t-cold ratio can be identified on the y-axis. Once the cold trip time has been identified on the first graph in relation to a fault current, the hot trip time can be calculated on the second graph, based on t-off and class of intervention. For a XT4N 250 In=200A in the operating class 10E, given a fault current of 0.8kA (4xIn), the cold trip time for intervention is 7s. If we consider a t_{off} = 90s, t-hot/t-cold = 0.4, the hot trip time results 2.8s.
**Characteristic curves**

Trip curves with thermal magnetic trip unit

Trip curves for distribution

**XT1 160 TMD In=16...63A**

**XT1 160 TMD In=80...160A**

**XT2 160 TMA In=1.6...50A**

**XT2 160 TMA In=63...160A**
Characteristic curves
Trip curves with thermal magnetic trip unit

XT6 800 TMA In=630A

XT6 800 TMA In=800A
Trip curves for motor protection

**XT1 125 MA ln=3.2...6.3A**

**XT1 125 MA ln=16...125A**

**XT2 160 MF/MA ln=1...160A**

**XT3 250 MA ln=100...250A**
Characteristic curves
Trip curves with thermal magnetic trip unit

XT4 200 MA In=10...200A

XT5 400-630 MA In=320...500A
Trip curves for generator protection

**XT2 160 TMG In=16...160A**

**XT3 250 TMG In=63...250A**

**XT5 400-630 TMG In=320...630A**
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
Characteristic curves
Trip curves with electronic trip unit Ekip Dip

XT5 630 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
Characteristic curves
Trip curves with electronic trip unit Ekip Dip

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SACE TMAX XT LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS

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XT7 - XT7 M Ekip Dip L5/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
Characteristics curves
Trip curves with electronic trip unit Ekip Dip

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

XT2 - XT4 Ekip M-LIU
I function

XT2 - XT4 Ekip M-LIU
U function (hot trip)
Characteristic curves
Trip curves with electronic trip unit Ekip Dip

**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

Trip curves for generator protection

XT2 Ekip G-LS/I
L-I functions

XT2 Ekip G-LS/I
L-S functions

XT4 Ekip G-LS/I
L-I functions

XT4 Ekip G-LS/I
L-S functions
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 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 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
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 • 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)
Characteristic curves
Trip curves with electronic trip unit Ekip Touch and Hi-Touch
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

XT7 – XT7 M 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
G function
Characteristic curves
Specific let-through energy curves

240V

XT1
240V

XT2
240V

XT3
240V

XT4
240V
Characteristic curves
Specific let-through energy curves

415V

XT1
415V

XT2
415V

XT3
415V

XT4 N-S-H-L
415V
Note: XT4X starting from In=32A
Characteristic curves
Specific let-through energy curves

440V

XT1

440V

XT2

440V

XT3

440V

XT4 N-S-H-L

440V
Note: XT4X starting from In=32A
Characteristic curves
Specific let-through energy curves

500V

XT1

XT2

XT3

XT4 N-S-H-L

500V
Note: XT4X starting from In=32A
Characteristic curves
Specific let-through energy curves

690V

XT1
690V

XT2
690V

XT3
690V

XT4 N-S-H-L
690V
Note: XT4X starting from In=32A
Characteristic curves
Limiting curves

240V
XT1
240V

XT2
240V

XT3
240V

XT4
240V
Characteristic curves
Limiting curves

415V

XT1
415V

XT2
415V

XT3
415V

XT4 N-S-H-L
415V
Note: XT4X starting from In=32A
Characteristic curves
Limiting curves

440V

XT1
440V

XT2
440V

XT3
440V

XT4 N-S-H-L
440V
Note: XT4X starting from In=32A
Characteristic curves
Limiting curves

500V

XT1
XT2

XT3
XT4 N-S-H-L

—
Note: XT4X starting from In=32A
Characteristic curves
Limiting curves

690V

XT1 690V

XT2 690V

XT3 690V

XT4 N-S-H-L 690V
Note: XT4X starting from In=32A
Overall dimensions

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2/6 Terminals for fixed circuit-breaker
2/9 Accessories for fixed circuit-breaker
2/17 Installation for plug-in circuit breaker
2/20 Terminals for plug-in circuit-breaker
2/23 Accessories for plug-in circuit-breaker

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2/27 Terminals for fixed circuit-breaker
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2/37 Installation for plug-in circuit breaker
2/41 Terminals for plug-in circuit-breaker
2/45 Accessories for plug-in circuit-breaker
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2/87 Terminals for fixed circuit-breaker
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2/98 Installation for plug-in circuit breaker
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2/106 Accessories for plug-in circuit-breaker
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2/200  Terminals for fixed circuit-breaker
2/206  Accessories for fixed circuit-breaker
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2/222  Terminals for fixed circuit-breaker
2/226  Accessories for fixed circuit-breaker
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2/229  Terminals for withdrawable circuit-breaker
2/232  Accessories for withdrawable circuit-breaker

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2/235  Terminals for fixed circuit-breaker
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**Tmax XT1 – Installation**

Installation for fixed circuit-breaker

**Fixing on support sheet**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bracket for fixing</td>
</tr>
<tr>
<td>2</td>
<td>Overall dimensions of wiring ducts</td>
</tr>
<tr>
<td>3</td>
<td>Phase separators 25mm</td>
</tr>
</tbody>
</table>

With standard flange

<table>
<thead>
<tr>
<th>A</th>
<th>3p - 4p</th>
<th>74</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>71</td>
</tr>
<tr>
<td>3p - 4p</td>
<td>79</td>
<td></td>
</tr>
</tbody>
</table>

**Fixing on DIN 50022 rail**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bracket for fixing</td>
</tr>
<tr>
<td>2</td>
<td>Overall dimensions of wiring ducts</td>
</tr>
<tr>
<td>3</td>
<td>Phase separators 25mm</td>
</tr>
<tr>
<td>4</td>
<td>Optional front cover for DIN rail</td>
</tr>
</tbody>
</table>

With standard flange

<table>
<thead>
<tr>
<th>A</th>
<th>3p - 4p</th>
<th>74</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>71</td>
</tr>
<tr>
<td>3p - 4p</td>
<td>79</td>
<td></td>
</tr>
</tbody>
</table>
Tmax XT1 – Installation
Installation for fixed circuit-breaker

Drilling templates for circuit-breaker fixing

Flanges

Key
1 Flange for circuit-breaker 3p
2 Flange for circuit-breaker 4p
3 Flange for circuit-breaker 3p with RC Sel - RC Inst residual current release
4 Flange for circuit-breaker 4p with RC Sel - RC Inst residual current release
5 Flange for fixed circuit-breaker 3p–4p with direct motor operator (MOD)
6 Flange for circuit-breaker 3p–4p with direct rotary handle (RHD)
7 Optional flange
Compartment door drilling templates

**With standard flange**

- **A=74**
  - 3 POLES

**Without flange**

- **A=71**
  - 3 POLES

**With optional flange**

- **A=79**
  - 3-4 POLES
**Tmax XT1 – Installation**

**Terminals for fixed circuit-breaker**

---

### Terminals F

**Key**
- 1 Front terminals for busbars connection
- 7 Phase separators 25mm

---

### Terminals EF

**Key**
- 2 Front extended terminals
- 3 High terminal covers with degree of protection IP40
- 5 Phase separators 100mm
- 9 Internal insulating plate

---

### Terminals ES

**Key**
- 4 Front extended spread terminals for busbar connection
- 6 Phase separators 200mm
OVERALL DIMENSIONS

1x1.5...50mm² terminals FCCuAl

- Key
  1 1x1.5...50mm² front terminal FCCuAl
  2 25
  3 Phase separators 25mm

1x35...95mm² terminals FCCuAl

- Key
  1 External terminal FCCuAI
  2 High terminal covers with degree of protection IP40

Terminals FCCu

- Key
  1 1x1.5...50mm² front terminal FCCuAl
  2 Phase separators 25mm

Terminals MC

- Key
  4 Terminal covers with degree of protection IP40
  5 Front terminal for multicable connection
Tmax XT1 – 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 circuit-breaker 3p fixing on sheet
4 Drilling template for circuit-breaker 4p 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 25mm
Tmax XT1 – Installation
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)

---

Key
1 Transmitted rotary handle
3 Door drilling template with transmitted rotary mandly
5 Transmission unit
6 Phase separators 25mm

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

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

MINIMUM DISTANCE FROM DOOR HINGE MIN 200

HEIGHTS FOR DOOR WITH MAXIMUM DISTANCE
**Tmax XT1 – Installation**

Accessories for fixed circuit-breaker

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

---

**Key**

1. Transmission unit
2. Phase separators 25mm
3. Optional wiring ducts 25mm
4. Wide type rotary handle
5. Door drilling template with transmitted rotary handle

---

HEIGHTS FOR DOOR WITH MINIMUM DISTANCE 158,5 mm
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 Cables connection
8 Phase separators 25mm
Tmax XT1 – Installation
Accessories for fixed circuit-breaker

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

Key
1 Front terminals for busbars 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 circuit-breaker fixing on sheet

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>3p</td>
<td>74</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p</td>
<td>71</td>
</tr>
</tbody>
</table>
RC Inst and RC Sel residual current release for 4 poles circuit-breaker

Key
1 Front terminals for busbars 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 circuit-breaker fixing on sheet

<table>
<thead>
<tr>
<th></th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>4p 74</td>
</tr>
<tr>
<td>Without flange</td>
<td>4p 71</td>
</tr>
</tbody>
</table>
Tmax XT1 – Installation
Accessories for fixed circuit-breaker

RC Sel 200 4 poles residual current release

Key
1 Front terminals for busbars connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle
4 Drilling template for circuit-breaker fixing on sheet
**Tmax XT1 – Installation**

Installation for plug-in circuit-breaker

**Fixing on support sheet**

- **Key**
  - 1 Fixed part
  - 2 Moving part

- **With standard 3p-4p 124 flange**
  - 3 POLES
  - 4 POLES

- **Without flange 3p-4p 129**
  - 3 POLES
  - 4 POLES

**Drilling templates for fixing circuit-breaker**

- **3 POLES**
  - With standard flange 3p-4p 124
  - Without flange 3p-4p 129

- **4 POLES**
  - With standard flange 3p-4p 124
  - Without flange 3p-4p 129
**Tmax XT1 – Installation**

Installation for plug-in circuit-breaker

**Flanges**

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

---

Key

1. Flange for plug-in circuit-breaker 3p
2. Flange for circuit-breaker 4p
5. Flange for plug-in circuit-breaker 3p-4p with direct motor operator (MOD)
6. Flange for plug-in circuit-breaker 3p-4p with direct rotary handle RHD
7. Optional flange
Compartment door drilling templates

With standard flange

B=124  C=144
3 POLES

B=124  C=144
4 POLES

Without flange

B=121  C=141
3 POLES

B=121  C=141
4 POLES

B=129  C=149
3-4 POLES

With optional flange

B=129  C=149
3-4 POLES
**Tmax XT1 – Installation**

Terminals for plug-in circuit-breaker

**Terminals EF**

**Terminals ES**

---

**Key**

4 Front extended terminals
5 Phase separators 100mm

---

**Key**

3 Front extended spread terminals
6 Phase separators 200mm
7 Adaptor
OVERALL DIMENSIONS

1x1.5...50mm² terminals FCCuAl

Key
1 1x1.5...50mm² front terminal FCCuAl
2 Adaptor
3 Terminals FCCuAl
4 Adaptor
5 Phase separators 25mm

1x35...95mm² terminals FCCuAl

Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40
3 Terminals FCCuAl
4 Adaptor
5 Phase separators 25mm

Terminals FCCu

Key
4 Terminals FCCu
5 Adaptor
6 Phase separators 25mm
Tmax XT1 – Installation
Terminals for plug-in circuit-breaker

Terminals MC

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

---

Terminals HR/VR

Key
2 Terminal covers with degree of protection IP40
3 Front terminal for multicable connection
5 Adaptor

---

FIXING AT 50mm
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

FIXING AT 50mm
Tmax XT2 – Installation

Installation for fixed circuit-breaker

Fixed circuit-breaker fixing on sheet

Key
1. Bracket for fixing
2. Optional wiring ducts
3. Phase separators 25mm

With standard 3p-4p 86 flange
Without flange 3p-4p 83.5

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 - 10 In.Lbs
8. Tightening torque 6 Nm - 53 In.Lbs
9. Optional wiring duct
10. Phase separators 25mm
11. Rear plate insulating 3p (UL version only)
12. Rear plate insulating 4p (UL version only)
15. Connection kit F/P IntBus/ExtNeut/Sel

Fixed circuit-breaker fixing on DIN EN 50022 rail

Key
1. Bracket for fixing
3. Phase separators 25mm
Drilling templates and support sheet

**Flanges**

<table>
<thead>
<tr>
<th>Flange</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flange for fixed circuit-breaker 3p</td>
</tr>
<tr>
<td>2</td>
<td>Flange for fixed circuit-breaker 4p</td>
</tr>
<tr>
<td>3</td>
<td>Flange for fixed circuit-breaker 3p–4p with MOE and FLD</td>
</tr>
<tr>
<td>4</td>
<td>Flange for circuit-breaker 3p–4p with direct rotary handle RHD</td>
</tr>
<tr>
<td>8</td>
<td>Flange for circuit-breaker 4p with fixed residual current and front terminals</td>
</tr>
<tr>
<td>9</td>
<td>Optional flange</td>
</tr>
</tbody>
</table>
**Tmax XT2 – Installation**

Installation for fixed circuit-breaker

Compartment door drilling templates

<table>
<thead>
<tr>
<th>Execution</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>With</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standard flange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without flange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With optional flange</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **With standard flange**
  - **3 POLES**
  - **4 POLES**

- **Without flange**
  - **3 POLES**
  - **4 POLES**

- **With optional flange**
  - **3-4 POLES**

---

**Key**

1. Optional flange
Tmax XT2 – Installation
Terminals for fixed circuit-breaker

Terminals F

Key
1 Phase separators 25mm
2 Front terminals for busbars connection

Terminals EF

Key
3 Front extended terminals
4 Terminal covers with degree of protection IP40
5 Phase separators 100mm
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 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 200mm
5. Insulated plate

1x1...95mm$^2$ terminals FCCuAl

Key
1. 1x1...95mm$^2$ terminals FCCuAl
3. Phase separators 25mm
OVERALL DIMENSIONS

1x70...185mm² terminals FCCuAl

Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40

2x35...70mm² terminals FCCuAl

Key
2 2x35...70mm² terminals FCCuAl
4 Terminal covers with degree of protection IP40

Terminals FCCu

Key
3 Phase separators 25mm
6 Terminals FCCu
**Tmax XT2 – Installation**

**Terminals for fixed circuit-breaker**

**Terminals MC**

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

**Terminals R**

**Key**
1. Rear adjustable terminals
2. Bottom terminal covers with degree of protection IP30
3. Drilling template for circuit-breaker 3p fixing on sheet
4. Drilling template for circuit-breaker 4p fixing 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 25mm
**Tmax XT2 – Installation**

**Accessories for fixed circuit-breaker**

Rotary handle operating mechanism on the compartment door (RHE)

---

**Key**

1. Transmission mechanism
2. Rotary handle operating mechanism for compartment door
3. Compartment door drilling template
4. Tightening torque 1.1Nm
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 circuit-breaker 3p fixing on sheet
6 Drilling template for circuit-breaker 4p fixing on sheet
7 Phase separators 25mm

3 POLES

4 POLES
**Tmax XT2 – Installation**

**Accessories for fixed circuit-breaker**

**Front for lever operating mechanism (FLD)**

---

**Key**

1. Key lock
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 25mm
Key
1 Phase separators
25mm
2 Ekip Display or Ekip LED Meter

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
3. Drilling template of door with direct rotary handle and fixing with flange
4. Drilling template of door with direct rotary handle and fixing without flange
5. Drilling template for circuit-breaker fixing on sheet

<table>
<thead>
<tr>
<th></th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>4p 86</td>
</tr>
<tr>
<td>Without flange</td>
<td>4p 83.5</td>
</tr>
</tbody>
</table>
**Tmax XT2 – Installation**

Installation for plug-in circuit-breaker

Plug-in circuit-breaker fixing on sheet

---

**Key**

1. Fixed part
2. Moving part

**Fixing at A**

<table>
<thead>
<tr>
<th>With standard 3p-4p flange</th>
<th>50mm</th>
<th>3p-4p 136</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>3p-4p 133.5</td>
<td></td>
</tr>
</tbody>
</table>

**Fixing at 70mm for extended A front terminals**

<table>
<thead>
<tr>
<th>With standard flange</th>
<th>3p-4p 156</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>3p-4p 153.5</td>
</tr>
</tbody>
</table>

---

**With side connector for Ekip Touch trip units**

---

**Key**

9. Optional wiring duct
10. Phase separators 25mm
15. Connection kit F/P IntBus/ExtNeut/Sel
**Tmax XT2 – Installation**

Installation for plug-in circuit-breaker

Drilling templates for support sheet

---

[Diagram showing drilling templates for 3, 4, and 3-4 pole configurations]
Flanges

Key
1 Flange for removable circuit-breaker 3p
2 Flange for circuit-breaker 4p
3 Flange for plug-in circuit-breaker 3p–4p with MOE and FLD
4 Flange for circuit-breaker 3p–4p with direct rotary handle (RHD)
8 Flange for circuit-breaker 4p with residual current and plug-in with front terminals
9 Optional flange
**Tmax XT2 – Installation**

Installation for plug-in circuit-breaker

Compartment door drilling templates

**With standard flange**

<table>
<thead>
<tr>
<th>POLES</th>
<th>Dimensions</th>
<th>3 POLES</th>
<th>4 POLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>B=136</td>
<td>C=156</td>
<td>94 47</td>
<td>124 47</td>
</tr>
</tbody>
</table>

**Without flange**

<table>
<thead>
<tr>
<th>POLES</th>
<th>Dimensions</th>
<th>3 POLES</th>
<th>4 POLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>B=133.5</td>
<td>C=153.5</td>
<td>86 43</td>
<td>116 43</td>
</tr>
</tbody>
</table>

**With optional flange**

<table>
<thead>
<tr>
<th>POLES</th>
<th>Dimensions</th>
<th>3-4 POLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>B=142</td>
<td>C=162</td>
<td>142 30 30</td>
</tr>
</tbody>
</table>
**Tmax XT2 – Installation**

Terminals for plug-in circuit-breaker

Terminals EF

---

**Key**

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

---

Terminals ES

---

**Key**

4. Front extended terminals
5. Phase separators 100mm
**Tmax XT2 – Installation**

Terminals for plug-in circuit-breaker

1x1...95mm² terminals FCCuAl

Key
1 1x1...95mm² front terminal FCCuAl
2 Phase separators 25mm
6 Adaptor

1x70...185mm² terminals FCCuAl

Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40

2x35...70mm² terminals FCCuAl

Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40
Terminals FCCu

Key
3 Terminals FCCu
4 Adaptor

Note:
Phase separators 25mm

Terminals MC

Key
3 High terminal covers with degree of protection IP40
4 Multicable terminals
6 Adaptor
Tmax XT2 – Installation
Terminals for plug-in circuit-breaker

Terminals HR/VR

Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 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
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

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 100mm
6. Drilling template of door with direct rotary handle with flange
7. Drilling template of door with direct rotary handle without flange
Ekip Display or Ekip LED Meter

Key
1 Phase separators 100mm
2 Ekip Display or Ekip LED Meter
Tmax XT2 – Installation
Accessories for plug-in circuit-breaker

Residual current RC Sel

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

<table>
<thead>
<tr>
<th>A</th>
<th>With standard flange</th>
<th>4p</th>
<th>136</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without flange</td>
<td>4p</td>
<td>133.5</td>
</tr>
</tbody>
</table>

---

---
Tmax XT2 – Installation
Installation for withdrawable circuit-breaker

Fixing on sheet

- **Key**
  1. Fixed part
  2. Moving part
  3. FLD (FLD o RHD o RHE o MOE) mandatory for withdrawable version
  6. Optional wiring ducts
Tmax XT2 – Installation
Installation for withdrawable circuit-breaker
With side connector for Ekip Touch trip units

<table>
<thead>
<tr>
<th>Key</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Fixed part</td>
<td></td>
</tr>
<tr>
<td>2 Moving part</td>
<td></td>
</tr>
<tr>
<td>3 FLD (FLD o RHD o RHE o MOE)</td>
<td>mandatory for withdrawable version</td>
</tr>
<tr>
<td>10 Optional Wiring Duct</td>
<td></td>
</tr>
<tr>
<td>13 Connection Kit W</td>
<td>IntBus/ExtNeut/Sel</td>
</tr>
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<table>
<thead>
<tr>
<th>A</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>3p - 4p Fixing at 50mm 170</td>
</tr>
<tr>
<td></td>
<td>3p - 4p Fixing at 70mm for extended front terminals 190</td>
</tr>
</tbody>
</table>
Drilling templates for support sheet

3 POLES

4 POLES

3-4 POLES

Flanges

Key
5 Flange for circuit-breaker 3p-4p withdrawable
6 Flange for circuit-breaker withdrawable 3p-4p with direct rotary handle RHD
7 Flange for residual current release (4p) with front extended terminals

<table>
<thead>
<tr>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHD</td>
<td>111</td>
</tr>
<tr>
<td>FLD - MOE</td>
<td>114.3</td>
</tr>
</tbody>
</table>
**Tmax XT2 – Installation**

Installation for withdrawable circuit-breaker

Compartment door drilling templates

**With standard flange**

- 3 POLES
  - B = 136, C = 156

- 4 POLES
  - B = 136, C = 156

**Without flange**

- 3 POLES
  - B = 133.5, C = 153.5

- 4 POLES
  - B = 133.5, C = 153.5

**With standard flange**

- 3-4 POLES
  - B = 142, C = 162

- 3-4 POLES
  - B = 141.5, C = 101.5
**Tmax XT2 – Installation**
Terminals for withdrawable circuit-breaker

**Terminals EF**

---

Key

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

---

Note:
Insulated plate
Tmax XT2 – Installation
Terminals for withdrawable circuit-breaker

Terminals ES

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

FIXING AT 50mm
OVERALL DIMENSIONS

1x1...95mm² terminals FCCuAl

1x70...185mm² terminals FCCuAl

2x35...70mm² terminals FCCuAl

---

Key
1 External terminal FCCuAl
2 Phase separators 25mm
4 1x1...95mm² front terminals FCCuAl
5 Adaptor

---

Key
1 External terminal FCCuAl 2x70mm
2 High terminal covers with degree of protection IP40

---

Key
1 External terminal FCCuAl 2x70mm²
2 High terminal covers with degree of protection IP40
Tmax XT2 – Installation
Terminals for withdrawable circuit-breaker

Terminals FCCu

Key
1 Multicable terminals
2 Terminals FCCu
3 High terminal covers with degree of protection IP40
4 Adaptor
5 Phase separators 25mm

Terminals MC

Key
1 Multicable terminals
2 Terminals FCCu
3 High terminal covers with degree of protection IP40
4 Adaptor
Terminals HR/VR

Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 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 100mm
5 Extended terminals
6 Drilling template of door with direct rotary handle
Rotary handle operating mechanism on the compartment door (RHE)

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

MINIMUM ROTATION RADIUS FOR DOOR FULCRUM

HEIGHTS FOR DOOR WITH MAXIMUM DISTANCE

HEIGHTS FOR DOOR WITH MINIMUM DISTANCE
**Tmax XT2 – Installation**

*Accessories for withdrawable circuit-breaker*

Stored energy motor operator (MOE)

---

**Key**

1. Fixed part
2. Moving part
4. Phase separators
5. Extended terminals
6. Key lock
7. Stored energy motor operator (MOE)

---

**Motor operator MOE**

<table>
<thead>
<tr>
<th>A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3p-4p</td>
<td>222</td>
</tr>
</tbody>
</table>
Front for lever operating (FLD)

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

| A | Front for lever operating FLD 3p-4p 170 |
Tmax XT2 – Installation
Accessories for withdrawable circuit-breaker

Residual current RC Sel 4 poles

Key
1 Fixed part
2 Moving part
3 Front for lever operating
4 Residual current connector (optional)
5 Phase separators 100mm
6 Residual current
7 Extended terminals
8 Fixing screws for fixed part of connector
9 Door drilling template and flange fixing
Tmax XT3 – Installation
Installation for fixed circuit-breaker

Fixing on sheet

Key
1 Bracket for fixing
2 Optional wiring ducts
3 Optional front cover for DIN rail
4 Phase separators 25mm

<table>
<thead>
<tr>
<th>A</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>3p - 4p</td>
<td>3p - 4p</td>
</tr>
<tr>
<td>separators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25mm</td>
<td>74</td>
<td>71</td>
</tr>
<tr>
<td>79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fixing on DIN EN 50022 rail

Key
1 Bracket for fixing
2 Optional wiring ducts
3 Optional front cover for DIN rail
4 Phase separators 25mm
**Tmax XT3 – Installation**

Installation for fixed circuit-breaker

Drilling templates for circuit-breaker fixing

---

**Flanges**

**Key**
1. Flange for fixed circuit-breaker 3p
2. Flange for fixed circuit-breaker 4p
3. Flange for circuit-breaker with direct motor operator MOD
4. Flange for circuit-breaker with direct rotary handle (RHD)
5. Flange for circuit-breaker 3p with residual current
6. Flange for circuit-breaker 4p with residual current
7. Optional flange
Compartment door drilling templates

With standard flange

A = 74
3 POLES

A = 74
4 POLES

Without flange

A = 71
3 POLES

A = 71
4 POLES

A = 79
3-4 POLES

With optional flange

A = 79
3-4 POLES

Key
1 Optional flange
**Tmax XT3 – Installation**

Terminals for fixed circuit-breaker

**Terminals F**

- **Key**
  1. Front terminals for busbars connection
  7. Phase separators 25mm

**Terminals EF**

- **Key**
  2. Front extended terminals
  3. Terminal covers with degree of protection IP40 (optional) not provided
  5. Phase separators 100mm

**Terminals ES**

- **Key**
  4. Front extended spread terminals for busbars connection
  6. Phase separators 200mm
1x95...185mm² terminals FCCuAl

Key
1 1x95...185mm² terminals FCCuAl
9 Phase separators 25mm

2x35...120mm² terminals FCCuAl

Key
2 2x35...120mm² terminals FCCuAl
3 Terminal covers with degree of protection IP40
4 Rear insulated plate
7 Drilling template for circuit-breaker fixing on sheet 3p with rear insulated plate
8 Drilling template for circuit-breaker fixing on sheet 4p with rear insulated plate
Tmax XT3 – Installation
Terminals for fixed circuit-breaker

30...150mm² terminals FCCuAl

---

Key
1 30...150mm² terminals FCCuAl
2 Phase separators 25mm

---

Terminals FCCu

---

Key
6 Front terminals FCCu
9 Phase separators 25mm

---

Terminals MC

---

Key
3 Terminal covers with degree of protection IP40
5 Front terminal for multicable connection
### Terminals R

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

**OVERALL DIMENSIONS**

- **3 POLES**
  - 35
  - D
  - 6.1
  - 1.16
  - 11.2

- **4 POLES**
  - 35
  - D
  - 6.1
  - 1.16
  - 11.2

**Dimensions:**
- 154
- 36
- 35
- 35
- 35
- 18.8
- 55
- 22.5
- 52.5
- 42.5
- 1.65
- 1.16
- 18.5
- 36
- D
- 35
- 35
- 35
- 35
- 35
- 35
- 35
- 35

**Drilling Template:**
- 8.25

**Degree of Protection:**
- IP30
**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 25mm
Rotary handle operating mechanism on the compartment door (RHE)

Key
1 Transmission mechanism
2 Rotary handle operating mechanism for compartment door (RHE)
3 Compartment door drilling template
4 Tightening torque 1.1 Nm

OVERALL DIMENSIONS
**Tmax XT3 – Installation**

Accessories for fixed circuit-breaker

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

---

Key

1. Transmission unit
2. Phase separators 25mm
3. Optional wiring ducts
4. Large transmitted rotary handle
5. Drilling template of door with large transmitted rotary handle
Direct motor operator (MOD)

Key
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
7 Phase separators 25mm
Tmax XT3 – Installation
Accessories for fixed circuit-breaker

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

Key
1 Front terminals for cables 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 circuit-breaker fixing on sheet

<table>
<thead>
<tr>
<th></th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>3p 74</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p 71</td>
</tr>
</tbody>
</table>
RC Inst and RC Sel residual current release for 4 poles circuit-breaker
**Tmax XT3 – Installation**

Installation for plug-in circuit-breaker

Fixing on support sheet

<table>
<thead>
<tr>
<th>Fixing at 50mm</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>3p-4p 124</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p-4p 121</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixing at 70mm for extended front terminals</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>3p-4p 144</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p-4p 141</td>
</tr>
</tbody>
</table>

**Key**
1. Fixed part
2. Moving part
Drilling templates for support sheet

Flanges

Key
1 Flange for plug-in circuit-breaker 3p
2 Flange for plug-in circuit-breaker 4p
3 Flange for plug-in circuit-breaker with direct motor operator MOD
7 Optional flange
**Tmax XT3 – Installation**

Installation for plug-in circuit-breaker

Compartment door drilling templates

**With standard flange**

![Diagram of Tmax XT3 with standard flange](image)

**Without flange**

![Diagram of Tmax XT3 without flange](image)

**With optional flange**

![Diagram of Tmax XT3 with optional flange](image)
Tmax XT3 – Installation
Terminals for plug-in circuit-breaker

Terminals EF

Key
4 Front extended terminals
5 Phase separators

Terminals ES

Key
3 Front extended spread terminals for busbars connection
5 Adapter for fixed part (compulsory) not provided
6 Phase separators

FIXING AT 50mm

FIXING AT 70mm

FIXING AT 50mm
### Tmax XT3 – Installation

**Terminals for plug-in circuit-breaker**

1x95...185mm² terminals FCCuAl

2x35...120mm² terminals FCCuAl

---

**Key**

1. 1x95...185mm² front terminal FCCuAl
2. 2x35...120mm² external terminal FCCuAl
3. High terminal covers with degree of protection IP40
4. Rear insulated plate
5. Drilling template for fixing circuit-breaker 3p with rear insulated plate
6. Drilling template for fixing circuit-breaker 4p with rear insulated plate
OVERALL DIMENSIONS

30...150mm² terminals FCCuAl

---

Key
1  30...150mm² terminals FCCuAl
2  Phase separators 25mm
3  Adapter for fixed part

---

Terminals FCCu

---

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

---

Terminals MC

---

Key
2  High terminal covers with degree of protection IP40
3  Front terminal for multicable connection
5  Adapter for fixed part
**Tmax XT3 – Installation**

Terminals for plug-in circuit-breaker

**Terminals HR/VR**

---

Key

1. Rear vertical terminals
2. Rear horizontal terminals
3. Rear phase separators 90mm

---

FIXING AT 50mm
**Tmax XT3 – 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 with flange  
6. Drilling template of door with MOD without flange
**Tmax XT4 – Installation**

**Installation for fixed circuit-breaker**

**Fixing on sheet**

**Key**
1. Front terminals
2. Flange for 4p circuit-breaker
3. Flange for 3p circuit-breaker
4. Tightening torque 1,1 Nm - 10 In.Lbs
5. Tightening torque 8 Nm - 70.3 In.Lbs
6. Optional wiring duct
7. Phase separators 25mm
8. Rear plate insulating 3p (only ul version)
9. Rear plate insulating 4p (only ul version)
10. Connection kit F/P IntBus/ExtNeut/Sel

**With standard 3p-4p 86 flange**

**Without flange**

**3p-4p 83.5**

**3p-4p 91.5**

**Fixing on DIN 50022 rail**

**Key**
1. Bracket for fixing
2. Phase separators 25mm
Drilling templates for support sheet

Flanges

Key
1 Flange for fixed circuit-breaker 3p
2 Flange for fixed circuit-breaker 4p
3 Flange for fixed circuit-breaker 3p–4p with MOE and FLD
4 Flange for circuit-breaker 3p–4p with direct rotary handle RHD
7 Flange for fixed circuit-breaker 4p with front extended terminals and residual current
8 Optional flange
**Tmax XT4 – Installation**

Installation for fixed circuit-breaker

Compartment door drilling templates

**With standard flange**

- **A=86**
  - 3 POLES
  - 4 POLES

**Without flange**

- **A=83.5**
  - 3 POLES
  - 4 POLES

**With optional flange**

- **A=92**
  - 3-4 POLES
**Tmax XT4 – Installation**  
Terminals for fixed circuit-breaker

**Terminals F**

- **Key**
  1. Phase separators 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 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**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Drilling template for 3p circuit-breaker</td>
</tr>
<tr>
<td>2</td>
<td>Drilling template for 4p circuit-breaker</td>
</tr>
<tr>
<td>3</td>
<td>Front extended spread terminals</td>
</tr>
<tr>
<td>4</td>
<td>Phase separators 200mm</td>
</tr>
<tr>
<td>5</td>
<td>Insulating plate</td>
</tr>
</tbody>
</table>

**1x1...185mm² terminals FCCuAl**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1x1...185mm² terminals FCCuAl</td>
</tr>
<tr>
<td>2</td>
<td>Phase separators 25mm</td>
</tr>
</tbody>
</table>
OVERALL DIMENSIONS

2x35...120mm² terminals FCCuAl

Key
2 2x35...120mm² terminals FCCuAl
4 Terminal covers with degree of protection IP40
5 Rear insulated plate
6 Drilling template for circuit-breaker 4p fixing with insulating plate
7 Drilling template for circuit-breaker 3p fixing with insulating plate
Tmax XT4 – Installation
Terminals for fixed circuit-breaker

Terminals FCCu

Key
1 Terminals FCCu
4 Phase separators 25mm

Terminals MC

Key
2 Multicable terminals
3 Terminal covers with degree of protection IP40
Terminals R

Key
1 Adjustable rear terminals
2 Bottom terminal covers with degree of protection IP40
3 Drilling template for circuit-breaker 3p fixing on sheet
4 Drilling template for circuit-breaker 4p fixing on sheet
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 25mm
Rotary handle operating mechanism of the compartment door (RHE)

Key
1 Rotary handle operating mechanism of the compartment door
3 Drilling template for RHE
5 Transmission unit
6 Phase separators
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 (MOE)
4. Drilling template of door without flange (MOE)
5. Drilling template for circuit-breaker 3p fixing on sheet
6. Drilling template for circuit-breaker 4p fixing on sheet
7. Phase separators 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 (FLD)
4 Drilling template of door without flange (FLD)
5 Drilling template for circuit-breaker 3p fixing on sheet
6 Drilling template for circuit-breaker 4p fixing on sheet
7 Phase separators 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
25mm
Residual current RC Sel

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Residual current</td>
<td>4p 86</td>
<td>4p 83.5</td>
</tr>
<tr>
<td>2</td>
<td>Front terminals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Drilling template of door with flange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Drilling template of door and fixing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>without flange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Drilling template for circuit breaker</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>fixing on sheet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key**
- Residual current
- Front terminals
- Drilling template of door with flange
- Drilling template of door and fixing without flange
- Drilling template for circuit breaker fixing on sheet
Tmax XT4 – Installation
Installation for plug-in circuit-breaker

Fixing on sheet

<table>
<thead>
<tr>
<th>Key</th>
<th>1 Fixed part</th>
<th>2 Moving part</th>
</tr>
</thead>
</table>

Fixing at 50mm

| A | With standard flange | 3p-4p 136 |
|   | Without flange       | 3p-4p 133.5 |

Fixing at 70mm for extended front terminals

| A | With standard flange | 3p-4p 156 |
|   | Without flange       | 3p-4p 153.5 |

With side connector for Ekip Touch trip units

<table>
<thead>
<tr>
<th>Key</th>
<th>1 Front terminals</th>
<th>2 Flange for 4p circuit-breaker</th>
<th>9 Optional wiring duct</th>
<th>10 Phase separators 25mm</th>
<th>15 Connection kit F/P IntBus/ExtNeut/Sel</th>
</tr>
</thead>
</table>
Drilling templates for support sheet

3 POLES

4 POLES

3-4 POLES
**Tmax XT4 – Installation**

Installation for plug-in circuit-breaker

**Flanges**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flange for plug-in circuit-breaker 3p</td>
</tr>
<tr>
<td>2</td>
<td>Flange for plug-in circuit-breaker 4p</td>
</tr>
<tr>
<td>3</td>
<td>Flange for plug-in circuit-breaker 3p–4p with MOE and FLD</td>
</tr>
<tr>
<td>4</td>
<td>Flange for circuit-breaker 3p–4p with direct rotary handle</td>
</tr>
<tr>
<td>7</td>
<td>Flange for plug-in circuit-breaker 4p with front extended terminals and residual current</td>
</tr>
<tr>
<td>8</td>
<td>Optional flange</td>
</tr>
</tbody>
</table>
Compartment door drilling templates

With standard flange

With optional flange

Without flange
Tmax XT4 – Installation
Terminals for plug-in circuit-breaker

Terminals EF

Key
4 Front extended terminals
5 Phase separators 100mm

Note:
Insulated plate
Terminals ES

Key
1 Front extended spread terminals
2 Phase separators 200mm
3 Insulated plate provided
4 Drilling template for 3p circuit-breaker
5 Drilling template for 4p circuit-breaker
6 Adaptor
Tmax XT4 – Installation
Terminals for plug-in circuit-breaker

1x1...185mm² terminals FCCuAl

Key
1 1x1...185mm² front terminals FCCuAl
2 Phase separators 25mm
6 Adaptor

2x35...120mm² terminals FCCuAl

Key
1 2x120mm² external terminal FCCuAl
2 High terminal covers with degree of protection IP40

Terminals FCCu

Key
2 Phase separators 25mm
5 Terminals FCCu
6 Adaptor

Fixing at 50mm
OVERALL DIMENSIONS

Terminals MC

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

Terminals HR/VR

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

FIXING AT 50mm
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 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 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
2. Ekip Display or LED Meter
Residual current RC Sel

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

Fixing at 50mm

<table>
<thead>
<tr>
<th>B</th>
<th>Fixing at 50mm</th>
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<tbody>
<tr>
<td>4p</td>
<td>With standard flange</td>
</tr>
<tr>
<td>4p</td>
<td>Without flange</td>
</tr>
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</table>
Tmax XT4 – Installation
Installation for withdrawable circuit-breaker

Fixing on sheet

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Fixed part</td>
</tr>
<tr>
<td>2</td>
<td>Moving part</td>
</tr>
<tr>
<td>3</td>
<td>FLD (FLD or RHD or RHE or MOE)</td>
</tr>
<tr>
<td></td>
<td>mandatory with withdrawable version</td>
</tr>
<tr>
<td>6</td>
<td>Optional wiring ducts</td>
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</table>

<table>
<thead>
<tr>
<th>With standard flange</th>
<th>3p - 4p Fixing at 50mm</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixing at 70mm for front extended terminals</td>
<td>190</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>A</th>
<th>3p - 4p Fixing at 50mm</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>3p - 4p Fixing at 70mm for front extended terminals</td>
<td>190</td>
</tr>
</tbody>
</table>
**Tmax XT4 – Installation**

Installation for withdrawable circuit-breaker

Drilling templates for support sheet

**Flanges**

---

**Key**

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

6 Flange for residual current release (withdrawable 4p circuit-breaker) with front extended terminals

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHD</td>
<td>111</td>
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</tr>
<tr>
<td>FLD - MOE</td>
<td>114.3</td>
<td>134.5</td>
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</table>
Compartment door drilling templates

With standard flange

![Diagram showing dimensions for 3 POLES and 4 POLES with standard flange]

With optional flange

![Diagram showing dimensions for 3 POLES and 4 POLES with optional flange]

Without flange

![Diagram showing dimensions for 3 POLES and 4 POLES without flange]
Tmax XT4 – Installation
Terminals for withdrawable circuit-breaker

Terminals EF

Key
4 Front extended terminals
5 Phase separators 100mm

Note:
Insulated plate
**Terminals ES**

**Key**

1. Front extended spread terminals
2. Phase separators 200mm
3. Insulated plate
4. Drilling template for 3p circuit-breaker
5. Drilling template for 4p circuit-breaker
6. Adaptor
Tmax XT4 – Installation
Terminals for withdrawable circuit-breaker

1x1...185mm$^2$ terminals FCCuAl

2x35...120mm$^2$ terminals FCCuAl

---

Key
1 2x35...120mm$^2$ terminals FCCuAl
2 Terminal covers with degree of protection IP40
3 Rear insulated plate
4 Drilling template for circuit-breaker 3p fixing with insulating plate
5 Drilling template for circuit-breaker 4p fixing with insulating plate
OVERALL DIMENSIONS

Terminals FCCu

Key
1. Phase separators 25mm
2. Terminals FCCu
3. Adaptor

Terminals MC

Key
1. Multicable terminals
2. High terminal covers with degree of protection IP40
3. Adaptor

FIXING AT 50 mm
Tmax XT4 – Installation
Terminals for withdrawable circuit-breaker

Terminals HR/VR

Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 Rear phase separators 90mm
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 and fixed flange
5 Phase separators 100mm
6 Extended terminals
Tmax XT4 – Installation

Accessories for withdrawable circuit-breaker

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 100mm
6 Extended terminals
7 Key lock
Rotary handle operating mechanism on circuit-breakers (RHD)

---

**Key**

1. Fixed part
2. Moving part
4. Tightening torque 1.1 Nm
5. Flange for the compartment door
6. Rotary handle operating mechanism for circuit-breaker
Tmax XT4 – Installation
Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)

---

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<td>Moving part</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Compartment door drilling template for fixed part</td>
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<tr>
<td>4</td>
<td>Tightening torque 1.1 Nm</td>
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<tr>
<td>5</td>
<td>Tightening torque 1.4 Nm</td>
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<tr>
<td>6</td>
<td>Transmission mechanism</td>
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<td>7</td>
<td>Rotary handle operating mechanism for compartment door</td>
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<td></td>
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</tr>
<tr>
<td>8</td>
<td>Compartment door drilling template</td>
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</table>

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**F**

<p>| | |</p>
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<tbody>
<tr>
<td>Fixing 3 poles</td>
<td>107</td>
</tr>
<tr>
<td>Fixing 4 poles</td>
<td>142</td>
</tr>
</tbody>
</table>
Residual current RC Sel 4 poles

Key
1 Fixed part
2 Moving part
3 Front for lever operating mechanism
4 Connector residual current (optional)
5 Phase separators 100mm
6 Residual current
7 Extended terminals
8 Fixing screws for fixed part of connector
9 Drilling template of door and fixed flange
**Tmax XT5 – Installation**

Installation for fixed circuit-breaker

Fixing on sheet

---

**Drilling templates for support sheet**

---

**Key**
1. Front terminals for flat connection
2. Busbar
3. Flange without gasket for the compartment door
4. 6 Tightening torque 36Nm
5. 7 Tightening torque 2Nm
6. 9 Phase separators 25mm
11. Cable rack
12. Rear insulating plate
Flange

Key
3 Flange without gasket for the compartment door

Drilling template compartment door

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Compartment door drilling template with/without flange</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With flange</td>
<td>3p - 4p</td>
<td>174</td>
<td>152</td>
<td>87</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>165</td>
<td>143</td>
<td>82.5</td>
</tr>
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</table>
**Tmax XT5 – Installation**

**Terminals for fixed circuit-breaker**

**Terminals EF**

---

**Key**
1. Extended front terminals
2. Flange for the compartment door
3. Tightening torque 36Nm
4. Tightening torque 2Nm
5. High terminal cover
6. Phase separators 100mm
7. Cable rack
8. Rear insulating plate
Key
1 Extended front terminals
2 Flange for the compartment door
5 Tightening torque 18Nm
6 Tightening torque 2Nm
8 Rear insulating plate
9 Phase separators 200mm
10 Cable rack
12 Rear insulating plate

OVERALL DIMENSIONS
Tmax XT5 – Installation
Terminals for fixed circuit-breaker

1 x 120…240mm² and 1 x 35…185mm² terminals FC CuAl

---

Key
1. Terminals FCCuAl
   1x120…240mm²
2. Flange for the compartment door
3. Tightening torque
   23Nm
4. Tightening torque 2Nm
5. Terminals FCCuAl
   1x35…185mm²
6. Tightening torque
   23Nm
7. Cable rack
8. Rear insulating plate
9. Phase separators 25mm
**OVERALL DIMENSIONS**

2 x 70...240mm² terminals FC CuAl

---

Key
1. Terminals FCCuAl
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 100mm
9. Tightening torque 31Nm
10. Cable rack
13. High terminal cover
14. Segregation form
4. (optional)
**Tmax XT5 – Installation**

Terminals for fixed circuit-breaker

***Terminals R***

---

**Key**

1. Rear terminals (horizontal and vertical)
2. Flange without gasket for the compartment door
5. Tightening torque 18Nm
7. Compartment door drilling template with/without flange
8. Low terminal cover
9. Cable rack
**Tmax XT5 – Installation**

**Accessories for fixed circuit-breaker**

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

![Diagram showing installation and accessories for fixed circuit-breaker]

**Drilling templates for support sheet**

![Diagram showing drilling templates]

**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
**OVERALL DIMENSIONS**

**Flange**

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

**Drilling template compartment door**

<table>
<thead>
<tr>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With flange</td>
<td>3p - 4p</td>
<td>147.5</td>
<td>124.3</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>140.5</td>
<td>115.3</td>
</tr>
</tbody>
</table>

**Flange IP54**

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

**Drilling template compartment door with flange IP54**
Tmax XT5 – Installation
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)

Key
1. Circuit-breaker
2. Base of rotary handle operating mechanism
3. Connection rod
4. Rotary handle operating mechanism of compartment door
5. Compartment door drilling template
6. Drilling template 3p
7. Drilling template 4p
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
### Tmax XT5 – Installation

Accessories for fixed circuit-breaker

#### Flange

Key

- 8 Flange without gasket for the compartment door

#### Drilling template compartment door

<table>
<thead>
<tr>
<th></th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
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<tbody>
<tr>
<td>With flange</td>
<td>3p - 4p</td>
<td>147.5</td>
<td>124.3</td>
<td>85.8</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>140.5</td>
<td>115.3</td>
<td>81.3</td>
</tr>
</tbody>
</table>
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
**Tmax XT5 – Installation**

Accessories for fixed circuit-breaker

**Flange**

Key:

3. Flange for the compartment door

**Drilling template compartment door**

Key:

7. Compartment door drilling template with/without flange

---

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>With flange 3p-4p</td>
<td>147.5</td>
<td>84.8</td>
<td>-</td>
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<td>147.5</td>
<td>269.5</td>
<td></td>
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<tr>
<td>Without flange 3p-4p</td>
<td>163.5</td>
<td>141.5</td>
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<td>101.5</td>
<td>80.3</td>
<td>141.5</td>
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</tbody>
</table>
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
Tmax XT5 – Installation
Accessories for fixed circuit-breaker

Flange

Drilling template compartment door

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

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>With flange</td>
<td>3p - 4p</td>
<td>147.5</td>
<td>124.3</td>
<td>85.6</td>
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<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>140.5</td>
<td>115.3</td>
<td>81.3</td>
</tr>
</tbody>
</table>
Lateral rotary handle operating mechanism on the compartment door (RHL)

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 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**

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 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
Flange

Key
6 Flange without gasket for the compartment door

Drilling template compartment door

<table>
<thead>
<tr>
<th>Key</th>
</tr>
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<tbody>
<tr>
<td>5 Compartment door drilling template with/without flange</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With flange 3p - 4p</td>
<td>174</td>
<td>152</td>
<td>87</td>
<td>76</td>
</tr>
<tr>
<td>Without flange 3p - 4p</td>
<td>165</td>
<td>143</td>
<td>82.5</td>
<td>71.5</td>
</tr>
</tbody>
</table>
**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 100mm
Terminals HR

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
Tmax XT5 – Installation
Terminals for plug-in circuit-breaker 400A

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)

Drilling templates for support sheet

---

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

---

Key
8 Drilling template 3p
9 Drilling template 4p
**Tmax XT5 – Installation**

**Accessories for plug-in circuit-breaker 400A**

**Flange**

**Drilling template compartment door**

---

**Key**

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

---

**Flange IP54**

**Compartment door drilling template with flange IP54**

---

<table>
<thead>
<tr>
<th></th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
</tr>
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<tbody>
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<td>73.75</td>
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<tr>
<td>Without flange 3p - 4p</td>
<td>140.5</td>
<td>115.3</td>
<td>81.3</td>
<td>70.25</td>
</tr>
</tbody>
</table>
Lateral rotary handle operating mechanism on the compartment door (RHL)

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 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 400A

Stored energy motor operator (MOE)

---

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

---

Drilling templates for support sheet

---

Key
8 Drilling template 3p
9 Drilling template 4p
OVERALL DIMENSIONS

Flange

Key
7 Flange without gasket for the compartment door

Drilling template compartment door

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
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<tbody>
<tr>
<td>6 Compartment door drilling template with/without flange</td>
<td>With flange</td>
<td>3p - 4p</td>
<td>147.5</td>
<td>124.3</td>
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<tr>
<td></td>
<td>Without flange</td>
<td>3p - 4p</td>
<td>140.5</td>
<td>115.3</td>
<td>81.3</td>
</tr>
</tbody>
</table>
Tmax XT5 – Installation
Accessories for plug-in circuit-breaker 400A

Front for lever operating mechanism (FLD)

Drilling templates for support sheet

Key:
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating system (FLD)
5 Phase separators 100mm
6 Flange without gasket for the compartment door
10 Door lock
### OVERALL DIMENSIONS

**Flange**

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

<table>
<thead>
<tr>
<th></th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
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<tr>
<td>With flange 3p - 4p</td>
<td>147.5</td>
<td>124.3</td>
<td>85.8</td>
<td>73.75</td>
</tr>
<tr>
<td>Without flange 3p - 4p</td>
<td>140.5</td>
<td>115.3</td>
<td>81.3</td>
<td>70.25</td>
</tr>
</tbody>
</table>
Tmax XT5 – Installation

Accessories for plug-in circuit-breaker 400A

Rotary handle operating mechanism on the compartment door (RHE)

---

**Key**
1. Fixed part
2. Moving part
3. Tightening torque 2Nm
4. Phase separators 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

Drilling template for support sheet

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Residual current release
5 Terminal cover for residual current release
8 Fixing on sheet steel
Tmax XT5 – Installation
Accessories for plug-in circuit-breaker 400A

Flange

Drilling template compartment door

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>With flange</td>
<td>3p - 4p</td>
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<td>84.8</td>
<td>-</td>
<td>147.5</td>
<td>269.5</td>
</tr>
<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>163.5</td>
<td>141.5</td>
<td>81.8</td>
<td>101.5</td>
<td>80.3</td>
<td>141.5</td>
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</tbody>
</table>
**Tmax XT5 – Installation**

Installation for plug-in circuit-breaker 630A

**Fixing on sheet**

- **Key**
  1. Fixed part
  2. Moving part
  3. Tightening torque 2Nm
  4. Phase separators 100mm

**Drilling templates for support sheet**

- **Key**
  7. Drilling template 3p
  8. Drilling template 4p
Tmax XT5 – Installation
Installation for plug-in circuit-breaker 630A

Flange

Drilling template compartment door

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
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<tbody>
<tr>
<td>5</td>
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<tr>
<td>6</td>
<td>Flange without gasket for the compartment door</td>
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**Tmax XT5 – Installation**

Terminals for plug-in circuit-breaker 630A

Terminals EF

---

**Key**

1. Fixed part
2. Moving part
3. Tightening torque 2Nm
4. Phase separators 100mm
Tmax XT5 – Installation
Terminals for plug-in circuit-breaker 630A

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 630A

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 100mm
5 Direct rotary handle operating mechanism (RHD)

Key
8 Drilling template 3p
9 Drilling template 4p
### Overall Dimensions

**Flange**

![Flange Diagram](image)

**Drilling template compartment door**

![Drilling Template Diagram](image)

<table>
<thead>
<tr>
<th></th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
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<td>147.5</td>
<td>124.3</td>
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<tr>
<td>Without flange 3p - 4p</td>
<td>140.5</td>
<td>115.3</td>
<td>81.3</td>
<td>70.25</td>
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</tbody>
</table>

---

**Flange IP54**

![Flange IP54 Diagram](image)

**Drilling template compartment door with flange IP54**

![Drilling Template with IP54 Diagram](image)
Tmax XT5 – Installation
Accessories for plug-in circuit-breaker 630A

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

---

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 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 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 630A

**Flange**

---

**Drilling template compartment door**

---

<table>
<thead>
<tr>
<th></th>
<th>A [mm]</th>
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<td>140.5</td>
<td>115.3</td>
<td>81.3</td>
<td>70.25</td>
</tr>
</tbody>
</table>

---

Key
7 Flange without gasket for the compartment door
6 Compartment door drilling template with/without flange
Front for lever operating mechanism (FLD)

Drilling templates for support sheet

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 100mm
5 Front for lever operating mechanism (FLD)
6 Compartment door drilling template with/without flange
7 Flange without gasket for the compartment door
8 Drilling template 3p
9 Drilling template 4p
10 Door lock
Tmax XT5 – Installation
Accessories for plug-in circuit-breaker 630A

Flange

<table>
<thead>
<tr>
<th>Key</th>
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<tbody>
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Drilling template compartment door

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>6</td>
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</tbody>
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<table>
<thead>
<tr>
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<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
</tr>
</thead>
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<tr>
<td>3p - 4p</td>
<td>147.5</td>
<td>124.3</td>
<td>85.8</td>
<td>73.75</td>
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<tr>
<td>Without flange</td>
<td>140.5</td>
<td>115.3</td>
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<td>70.25</td>
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</table>
Rotary handle operating mechanism on the compartment door (RHE)

Key
1. Fixed part
2. Moving part
3. Tightening torque 2Nm
4. Phase separators 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 630A

Residual current RC

Drilling template for support sheet

---

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 100mm
5 Residual current release
6 Terminal cover for residual current release
9 Fixing on sheet steel
OVERALL DIMENSIONS

Flange

Drilling template compartment door

<table>
<thead>
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**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 100mm
8. Drilling template 3p
9. Drilling template 4p
10. Door lock
11. Key lock for fixed part
Flange

Key
7 Flange without gasket for the compartment door

Drilling template compartment door

Key
6 Compartment door drilling template with 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 100mm
10. Door lock
11. Key lock for fixed part
Terminals HR

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism (FLD)
9 Door lock
**Tmax XT5 – Installation**

Terminals for withdrawable circuit-breaker 400A

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
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
9 Door lock plate
10 Plug and socket adapter for residual current release
Tmax XT5 – Installation
Terminals for withdrawable circuit-breaker 400A

Drilling template for support sheet

Drilling template compartment door

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 100mm
8. Drilling template 3p
9. Drilling template 4p
10. Door lock
**Tmax XT5 – Installation**

Accessories for withdrawable circuit-breaker 400A

**Flange**

- Key 7: Flange without gasket for the compartment door

**Drilling template compartment door**

- Key 6: Compartment door drilling template with flange
Lateral rotary handle operating mechanism on the compartment door (RHL)
**Tmax XT5 – Installation**

**Accessories for withdrawable circuit-breaker 400A**

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 100mm
8. Drilling template 3p
9. Drilling template 4p
Flange

Key
7 Flange without gasket for the compartment door

Drilling template compartment door

Key
6 Compartment door drilling template with flange
**Tmax XT5 – Installation**

Accessories for withdrawable circuit-breaker 400A

Rotary handle operating mechanism on the compartment door (RHE)

---

Key
1. Fixed part
2. Moving part
3. Tightening torque 2Nm
4. Phase separators 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 630A

Fixing on sheet

Drilling templates for support sheet

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Phase separators 100mm
5 Front for lever operating mechanism
8 Drilling template 3p
9 Drilling template 4p
10 Door lock
Tmax XT5 – Installation
Installation for withdrawable circuit-breaker 630A

Flange

Drilling template compartment door

Key
7 Flange without gasket for the compartment door
6 Compartment door drilling template with flange
**Tmax XT5 – Installation**

Terminals for withdrawable circuit-breaker 630A

**Terminals EF**

---

**Key**

1. Fixed part
2. Moving part
3. Tightening torque 2Nm
4. Phase separators 100mm
5. Front for lever operating mechanism
Tmax XT5 – Installation
Terminals for withdrawable circuit-breaker 630A

Terminals HR

Key
1 Fixed part
2 Moving part
3 Tightening torque 2Nm
4 Front for lever operating mechanism
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 630A

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

---

**Key**

1. Fixed part  
2. Moving part  
3. Tightening torque 2Nm  
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  
9. Door lock plate  
10. Plug and socket adapter for residual current release
Drilling template for support sheet

Drilling template compartment door

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 630A

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 100mm
5 Rotary handle operating mechanism (RHD)
8 Drilling template 3p
9 Drilling template 4p
10 Door lock
Flange

Key
7 Flange without gasket for the compartment door

Drilling template compartment door

Key
6 Compartment door drilling template with flange
**Tmax XT5 – Installation**

Accessories for withdrawable circuit-breaker 630A

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

---

Key

1. Fixed part
2. Moving part
3. Tightening torque 2Nm
4. Phase separators 100mm
5. Base of rotary handle operating mechanism
6. Lateral handle
7. 500mm Connection rod
8. Rotary handle on compartment door
9. 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. Phase separators 100mm
5. Stored energy motor operator (MOE)
8. Drilling template 3p
9. Drilling template 4p
Tmax XT5 – Installation

Accessories for withdrawable circuit-breaker 630A

Flange

Drilling template compartment door
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 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
3. Tightening torque 9Nm
4. Tightening torque 2Nm
5. Cable rack

**Drilling templates for support sheet**

Key

4. Drilling template 3p
5. Drilling template 4p

---

**A [mm]**

<table>
<thead>
<tr>
<th></th>
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<th>3p - 4p</th>
<th>108</th>
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<tbody>
<tr>
<td>Without flange</td>
<td>3p - 4p</td>
<td>103.5</td>
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Flange

<table>
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<tbody>
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<td>3</td>
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Drilling template compartment door

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**Tmax XT6 – Installation**

Terminals for fixed circuit-breaker

**Terminals EF**

---

**Key**

1. Extended front terminals
2. Tightening torque 9Nm
3. Tightening torque 2Nm
4. Phase separators 100mm
5. High terminal cover with IP40 protection degree
6. Cable rack

---

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Without flange 3p-4p 103.5</td>
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**Terminals ES**

![Diagram of Terminals ES]

**Key**
1. Extended front terminals
2. Tightening torque 9Nm
3. Tightening torque 2Nm
4. Phase separators 200mm
5. Cable rack

<table>
<thead>
<tr>
<th>A [mm]</th>
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<tr>
<td>With flange 3p - 4p</td>
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<tr>
<td>Without flange 3p - 4p</td>
<td>103.5</td>
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</table>
Tmax XT6 – Installation
Terminals for fixed circuit-breaker

2 x 120…240mm² and 3 x 70…185mm² terminals FC CuAl

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<tr>
<th>Key</th>
<th>Description</th>
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<tr>
<td>2</td>
<td>Terminal FCCuAl 800A</td>
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<tr>
<td>6</td>
<td>Tightening torque 9Nm</td>
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<td>7</td>
<td>Tightening torque 2Nm</td>
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<td>9</td>
<td>High terminal cover with IP40 protection degree</td>
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<td>Tightening torque 31Nm</td>
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<td>Tightening torque 43Nm</td>
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<td>13</td>
<td>Cable rack</td>
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<table>
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<th>Without flange</th>
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<tbody>
<tr>
<td>3p - 4p</td>
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<td>103.5</td>
</tr>
</tbody>
</table>
Terminals EF and 4 x 70…150mm² terminals FC CuAl (1000A)

---

**Key**

1. Extended front terminals
2. Terminal FCCuAl 1000A
3. Tightening torque 9Nm
4. Tightening torque 2Nm
5. Phase separators 200mm
6. High terminal cover with IP40 protection degree
7. Tightening torque 43Nm
8. Cable rack

---

### A [mm]

<table>
<thead>
<tr>
<th></th>
<th>With flange</th>
<th>Without flange</th>
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</thead>
<tbody>
<tr>
<td>3p - 4p</td>
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</table>
**Tmax XT6 – Installation**

**Terminals for fixed circuit-breaker**

**Terminals R**

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<tbody>
<tr>
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<td>103.5</td>
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</tbody>
</table>

**Terminals HR upper**

---

**Key**

1. Rear terminals (horizontal or vertical)
2. Tightening torque 18Nm
3. Tightening torque 2Nm
4. Terminals cover with IP20 protection degree (included in the supply of rear terminals)
5. Cable rack
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)

---

**Key**

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

**Drilling templates for support sheet**
Flange

Drilling template compartment door

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
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<td>4</td>
<td>Without flange 3p - 4p</td>
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<td>85.9</td>
<td>104.5</td>
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</tbody>
</table>
Tmax XT6 – Installation

Accessories for fixed circuit-breaker

Stored energy motor operator (MOE)

Drilling templates for support sheet

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

Key
4 Flange for the compartment door

Drilling template compartment door

Key
5 Compartment door drilling template with/without flange

<table>
<thead>
<tr>
<th></th>
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<th>B [mm]</th>
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<td>85.9</td>
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</table>
**Tmax XT6 – Installation**

**Accessories for fixed circuit-breaker**

Front for lever operating mechanism (FLD)

---

**Key**

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

---

**Drilling templates for support sheet**
Flange

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

Drilling template compartment door

<table>
<thead>
<tr>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
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<td>91</td>
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<td>149.8</td>
<td>85.9</td>
</tr>
</tbody>
</table>
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
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
4. Drilling template 3p-4p
5. Drilling template
6. Tightening torque 8Nm
7. FLD

---

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<tr>
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<th>A [mm]</th>
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**Tmax XT6 – Installation**

Installation for withdrawable circuit-breaker

**Flange**

**Drilling template compartment door**

---

**Key**

4 Drilling template 3p

7 Compartment door drilling template 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)

---

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</table>
Flange

Key
4 Flange for the compartment door

Drilling template compartment door

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
5. Base of rotary handle operating mechanism
6. Connection rod
7. Rotary handle operating mechanism of the compartment door
8. Compartment door drilling template

---

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<tr>
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<td>210</td>
<td>284</td>
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</table>
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

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Tmax XT6 – Installation
Accessories for withdrawable circuit-breaker

Flange

Drilling template compartment door
Max XT7 – Installation
Installation for fixed circuit-breaker

Fixing on sheet

Drilling templates for support sheet

Flange

Compartment door drilling templates

Key
1 Front terminals for flat connection
2 Extended front terminals
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
6 Drilling template 3p
7 Drilling template 4p
8 Tightening torque 18 Nm - 159 lbs in
9 Key lock
10 Padlock device
11 Tightening torque 2 Nm - 18 lbs in
12 Compartment door drilling template for flange
13 Compartment door drilling template for 206x204 frontal
14 Clamp for auxiliary contacts

---

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<tr>
<td>Without flange</td>
<td>3p-4p 147</td>
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</table>
**Tmax XT7 – Installation**

Terminals for fixed circuit-breaker

**Terminals EF**

1. Extended front terminals EF
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5 nm - 4.4 lbs in
5. Key lock
6. Padlock device
7. Tightening torque 2 Nm - 18 lbs in
8. Slot for external signaling
9. Insulating plate
10. Phase separators 100mm
11. High terminal cover with IP40 protection degree

**Terminals ES**

1. Spreadead extended front terminals ES
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5 nm - 4.4 lbs in
5. Key lock
6. Padlock device
7. Tightening torque 2 Nm - 18 lbs in
8. Slot for external signaling
9. Insulating plate
10. Phase separators 200mm

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<tr>
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<tr>
<td>5</td>
<td>Key lock</td>
</tr>
<tr>
<td>6</td>
<td>Padlock device</td>
</tr>
<tr>
<td>7</td>
<td>Tightening torque 2 Nm - 18 lbs in</td>
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<tr>
<td>8</td>
<td>Slot for external signaling</td>
</tr>
<tr>
<td>9</td>
<td>Insulating plate</td>
</tr>
<tr>
<td>10</td>
<td>Phase separators 100mm</td>
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<td>A [mm]</td>
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4 x 380mm$^2$ and 2 x 240mm$^2$ FC CuAl

Key
1 Fc Cu-Al terminal
4x240mm$^2$
2 Fc Cu-Al terminal
2x240mm$^2$
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque
0.5 Nm - 4.4 lbs in
8 Tightening torque
18 Nm - 159 lbs in
9 Tightening torque
43 Nm - 380 lbs in
10 Key lock
11 Padlock device
12 Tightening torque
2 Nm - 18 lbs in
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
18 Nm - 159 lbs in

---

<table>
<thead>
<tr>
<th>A [mm]</th>
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<td>147</td>
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</tbody>
</table>
**Tmax XT7 – Installation**

**Terminals for fixed circuit-breaker**

**Terminals HR/VR adjustable**

---

**Key**

1. HR horizontal rear terminal HR
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5 Nm - 4.4 lbs in
5. Key lock
6. Padlock
7. Slot for external signaling
8. Tightening torque 20 Nm - 177 lbs in
9. Tightening torque 2 Nm - 18 lbs in

---

**Terminals HR upper**

---

**Terminals VR lower**

---

**Key**

8. Drilling template support plate
Termsals HR and VR

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
9 Key lock
10 Padlock
11 Clamp for auxiliary contacts
11 Low protection cover with IP30 protection degree
12 Tightening torque 9Nm

Termsals HR upper

Termsals VR lower

<table>
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<tr>
<th>A [mm]</th>
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</tr>
<tr>
<td>C</td>
<td>192.5</td>
<td>262.5</td>
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</table>
**Tmax XT7 – Installation**

**Accessories for fixed circuit-breaker**

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

Drilling templates for support sheet

Flange

Drilling template compartment door

---

**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

<table>
<thead>
<tr>
<th></th>
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<th>B</th>
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<tr>
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<td>192</td>
<td>107</td>
<td>19.75</td>
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</tbody>
</table>
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

Drilling templates for support sheet

Flange

Drilling template compartment door

Key
1. EF front terminal
2. ES front terminal
3. Flange for the compartment door
4. Flange fixing screws
5. Tightening torque 0.5 Nm - 4.4 lbs in
6. Compartment door drilling template for flange
7. Fixing on sheet steel drilling template
8. Tightening torque 9 Nm - 79.6 lbs in
9. Mounting at wall
10. Key lock
11. Padlock
12. Clamp for auxiliary contacts
13. Tightening torque 9 Nm - 79.6 lbs in
**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 0.5 Nm - 4.4 lbs in
8. Tightening torque 9 Nm - 79.6 lbs in
10. Key lock
11. Padlock
12. Clamp for auxiliary contacts
13. Tightening torque 9 Nm - 79.6 lbs in
**Tmax XT7 – Installation**

Terminals for withdrawable circuit-breaker

**Terminals R**

**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 0.5 Nm - 4.4 lbs in
8. Tightening torque 9 Nm - 79.6 lbs in
9. Mounting at wall
10. Key lock
11. Padlock
12. Slot for external signaling
13. Tightening torque 9 Nm - 79.6 lbs in
Terminals SHR

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 0.5 Nm - 4.4 lbs in
8 Tightening torque 9 Nm - 79.6 lbs in
9 Mounting at wall
10 Key lock
11 Padlock
12 Slot for external signaling
13 Tightening torque 9 Nm - 79.6 lbs in
Tmax XT7 – Installation
Accessories for withdrawable circuit-breaker

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

Drilling templates for support sheet

Flange

Drilling template compartment door

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
4 500mm Connection rod
5 Rotary handle operating mechanism of the compartment door
6 Compartment door drilling template
**Tmax XT7 M – Installation**

Installation for fixed circuit-breaker

### Fixing on sheet

- **Drilling templates for support sheet**

### Drilling templates for support sheet

<table>
<thead>
<tr>
<th>A [mm]</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>3p-4p</td>
<td>130÷141</td>
<td>147</td>
</tr>
</tbody>
</table>

### Key

1. Front terminals for flat connection
2. Extended front terminals
3. Flange for the compartment door
4. Flange fixing screws
5. Tightening torque 0.5 Nm - 4.4 lbs in
6. Drilling template 3p
7. Drilling template 4p
8. Tightening torque 18 Nm - 159 lbs in
9. Key lock
10. Tightening torque 2 Nm - 18 lbs in
11. Compartment door drilling template for flange
12. Compartment door drilling template for 206x204 frontal
13. Clamp for auxiliary contacts
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 0.5 Nm - 4.4 lbs in
5. Tightening torque 18 Nm - 159 lbs in
6. Key lock
7. Tightening torque 2Nm - 18 lbs in
8. Slot for external signaling
9. Insulating plate
10. Phase separators 100mm
11. High terminal cover with IP40 protection degree

---

Terminals ES

Key
1. Spreadead extended front terminals ES
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5 Nm - 4.4 lbs in
5. Tightening torque 18 Nm - 159 lbs in
6. Key lock
7. Tightening torque 2Nm - 18 lbs in
8. Slot for external signaling
9. Insulating plate

---

A [mm]

<table>
<thead>
<tr>
<th>Description</th>
<th>With standard flange 3p-4p</th>
<th>Without flange 3p-4p</th>
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<tr>
<td>With standard flange</td>
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<td>147</td>
</tr>
<tr>
<td>Without flange</td>
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</table>
Tmax XT7 M – Installation
Terminals for fixed circuit-breaker

4 x 380mm² and 2 x 240mm² FC CuAl

Key
1 Fc Cu-Al terminal 4x240mm²
2 Fc Cu-Al terminal 2x240mm²
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
6 Tightening torque 18 Nm - 159 lbs in
7 Tightening torque 43 Nm - 380 lbs in
8 Key lock
9 Tightening torque 2 Nm - 18 lbs in
10 Slot for external signalling
11 Insulating plate
12 High terminal cover with IP40 protection degree
13 Low terminal cover with IP30 protection degree
14 Slot for external signalling
15 Tightening torque 18 Nm - 159 lbs in

With standard flange 3p-4p 130÷141
Without flange 3p-4p 147
Terms HR/VR adjustable

---

Key:
1. HR horizontal rear terminal HR
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5 Nm - 4.4 lbs in
5. Key lock
6. Padlock
7. Slot for external signaling
8. Key lock
9. Padlock
10. Slot for external signaling

---

### Terminals HR upper

---

### Terminals VR lower

---

**Key**

8. Drilling template support plate

---

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<thead>
<tr>
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<tr>
<td>C</td>
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<td>262.5</td>
</tr>
</tbody>
</table>
Tmax XT7 M – Installation
Terminals for fixed circuit-breaker

Terminals HR and VR

---

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
9. Key lock
10. Clamp for auxiliary contacts
11. Low protection cover with IP30 protection degree
12. Tightening torque 9Nm

---

Key
8. Drilling template support plate

---

**Terminals HR upper**

**Terminals VR lower**

---

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<tr>
<th>A [mm]</th>
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</table>
**Tmax XT7 M – Installation**

Installation for withdrawable circuit-breaker

Fixing on sheet

**Drilling template for support sheet**

**Flange**

**Drilling template compartment door**

---

**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
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 0.5 Nm - 4.4 lbs in
6 Tightening torque 9 Nm - 79.6 lbs in
7 Mounting at wall
8 Key lock
9 Padlock
10 Slot for external signaling
11 Tightening torque 9 Nm - 79.6 lbs in
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 3Nm
6 Tightening torque 2.5Nm
7 Interlocking plate for circuit breakers
8 Provision for 4p circuit-breaker
9 A = 35mm XT4 withdrawable with key lock for fixed part
   A = 25mm XT2 withdrawable with key lock for fixed part

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**Tmax XT – Common accessories**

**Horizontal interlock XT series**

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 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 mounting only
12. Hole for rear mounting only

---

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<th>Type</th>
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<td>Plate B</td>
<td>XT4 P/W</td>
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<td>Plate C</td>
<td>XT5 F</td>
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<tr>
<td>Plate D</td>
<td>XT5 400 P/W</td>
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<tr>
<td>Plate E</td>
<td>XT5 630 P/W</td>
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</table>
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
Horizontal interlock XT series

Drilling template

Interlocking plate

Key
9 - 4×Ø3-M8 hole for front mounting only
10 - 4×Ø3 hole for rear mounting only

<table>
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Tmax XT – Common accessories
Vertical interlock XT series

Key
1 Interlock device
2 Drilling template for fixing the interlock device on sheet
3 Drilling template for all rear terminal version
4 Tightening torque 9Nm
6 Tightening torque 1Nm
7 Tightening torque under customer’s responsibility
9 Provision for 4p circuit-breaker
10 A=35mm for XT4 fixed part Withdrawable with padlock device
A=30mm for XT2 fixed part withdrawable with padlock device

Note:
For the overall dimensions of the circuit-breaker see the relevant dimension tables and the configuration
**Tmax XT – Common accessories**

**Vertical interlock XT series**

Vertical interlock between two circuit breakers (MIR-V)

---

Key

1. Interlocking mechanism
2. Tightening torque 3,7Nm
3. Tightening torque 3Nm
4. Tightening torque 2,5Nm
5. Interlocking plate for circuit-breakers
6. Provision for 4p circuit-breaker
7. A = 26mm XT4 withdrawable with key lock for fixed part
8. A = 29,5mm XT5 withdrawable with key lock for fixed part
Drilling template

Interlocking plate

Key
2 Drilling template for fixing interlocking system
3 Drilling template for all version with rear terminals
10 Hole for front mounting only
11 Hole for rear mounting only

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>B</th>
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</thead>
<tbody>
<tr>
<td>Plate A</td>
<td>XT4 F</td>
<td>40.25</td>
</tr>
<tr>
<td>Plate B</td>
<td>XT4 P/W</td>
<td>40.25</td>
</tr>
<tr>
<td>Plate C</td>
<td>XT5 F</td>
<td>23.25</td>
</tr>
<tr>
<td>Plate D</td>
<td>XT5 400 P/W</td>
<td>23.25</td>
</tr>
<tr>
<td>Plate E</td>
<td>XT5 630 P/W</td>
<td>23.25</td>
</tr>
</tbody>
</table>
Tmax XT – Common accessories
Vertical interlock XT series

Vertical interlock between two circuit breakers (MIR-V)

Key
1 Interlocking mechanism
2 Tightening torque 18Nm
3 Tightening torque 3Nm
4 Tightening torque 3Nm
5 Interlocking plate for circuit-breakers
6 Pre-drilling for 4P version
Drilling template

Interlocking plate

### Key

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

### Coupling plate type

<table>
<thead>
<tr>
<th>Coupling plate type</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIR-P XT5 F</td>
<td>67.1</td>
<td>210.75</td>
<td>237.25</td>
</tr>
<tr>
<td>MIR-P XT5 P/W 400</td>
<td>67.1</td>
<td>210.75</td>
<td>237.25</td>
</tr>
<tr>
<td>MIR-P XT5 P/W 630</td>
<td>67.1</td>
<td>210.75</td>
<td>237.25</td>
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<tr>
<td>MIR-P XT6 F</td>
<td>32.5</td>
<td>224</td>
<td>224</td>
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<tr>
<td>MIR-P XT6 W</td>
<td>32.5</td>
<td>224</td>
<td>224</td>
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</tbody>
</table>
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
3/35 Diagrams for XT5-XT6
3/60 Diagrams for XT7 and XT7 M
3/68 XT2-XT4-XT5-XT7-XT7 M modules
### Graphical symbols for electrical diagrams (Standards IEC 60617)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Thermal effect" /></td>
<td>Thermal effect</td>
</tr>
<tr>
<td><img src="image2" alt="Electromagnetic effect" /></td>
<td>Electromagnetic effect</td>
</tr>
<tr>
<td><img src="image3" alt="Timing" /></td>
<td>Timing</td>
</tr>
<tr>
<td><img src="image4" alt="Mechanical connection" /></td>
<td>Mechanical connection</td>
</tr>
<tr>
<td><img src="image5" alt="Manual mechanical operating mechanism" /></td>
<td>Manual mechanical operating mechanism (general case)</td>
</tr>
<tr>
<td><img src="image6" alt="Rotary handle operating mechanism" /></td>
<td>Rotary handle operating mechanism</td>
</tr>
<tr>
<td><img src="image7" alt="Pushbutton operating mechanism" /></td>
<td>Pushbutton operating mechanism</td>
</tr>
<tr>
<td><img src="image8" alt="Converter separated galvanically" /></td>
<td>Converter separated galvanically</td>
</tr>
<tr>
<td><img src="image9" alt="Conductors in shielded cable" /></td>
<td>Conductors in shielded cable (example two conductors)</td>
</tr>
<tr>
<td><img src="image10" alt="Watt-hour meter" /></td>
<td>Watt-hour meter</td>
</tr>
<tr>
<td><img src="image11" alt="Conductors with cored cables" /></td>
<td>Conductors with cored cables (example two conductors)</td>
</tr>
<tr>
<td><img src="image12" alt="Key operating mechanism" /></td>
<td>Key operating mechanism</td>
</tr>
<tr>
<td><img src="image13" alt="Cam operating mechanism" /></td>
<td>Cam operating mechanism</td>
</tr>
<tr>
<td><img src="image14" alt="Ground" /></td>
<td>Ground (general symbol)</td>
</tr>
<tr>
<td><img src="image15" alt="Connection of conductors" /></td>
<td>Connection of conductors</td>
</tr>
<tr>
<td><img src="image16" alt="Terminal or clamp" /></td>
<td>Terminal or clamp</td>
</tr>
<tr>
<td><img src="image17" alt="Socket and plug" /></td>
<td>Socket and plug (female and male)</td>
</tr>
<tr>
<td><img src="image18" alt="Resistor" /></td>
<td>Resistor (general symbol)</td>
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<tr>
<td><img src="image19" alt="Resistor dependent on the temperature" /></td>
<td>Resistor dependent on the temperature</td>
</tr>
<tr>
<td><img src="image20" alt="Motor" /></td>
<td>Motor (general symbol)</td>
</tr>
<tr>
<td><img src="image21" alt="Three-phase asynchronous motor" /></td>
<td>Three-phase asynchronous motor, with short-circuited rotor (cage)</td>
</tr>
<tr>
<td><img src="image22" alt="Current transformer" /></td>
<td>Current transformer</td>
</tr>
<tr>
<td><img src="image23" alt="Current transformer with primary consisting of 4 passing conductors" /></td>
<td>Current transformer with primary consisting of 4 passing conductors and with wound secondary, with socket</td>
</tr>
<tr>
<td><img src="image24" alt="Closing contact" /></td>
<td>Closing contact</td>
</tr>
<tr>
<td><img src="image25" alt="Voltmeter" /></td>
<td>Voltmeter</td>
</tr>
<tr>
<td><img src="image26" alt="Opening contact" /></td>
<td>Opening contact</td>
</tr>
<tr>
<td><img src="image27" alt="Changeover contact with momentary break" /></td>
<td>Changeover contact with momentary break</td>
</tr>
<tr>
<td><img src="image28" alt="Closing position contact" /></td>
<td>Closing position contact (limit switch)</td>
</tr>
<tr>
<td><img src="image29" alt="Opening position contact" /></td>
<td>Opening position contact (limit switch)</td>
</tr>
<tr>
<td><img src="image30" alt="Changeover contact with momentary break" /></td>
<td>Changeover contact with momentary break (limit switch)</td>
</tr>
</tbody>
</table>
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

Motor with excitation in series

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
| Pt100 = Analog input from Pt100 temperature sensor of motor
I reset = Digital input for resetting tripped motor 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/Cl = Motor starting contactor operator module
K51/COM = Communication module
K51/MEAS = Measurement module
K51/SIGN = Signaling module
K51/SUPPLY = Auxiliary supply module (110-240VAC/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 = Synchronization 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 cam
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
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>86/1-2</td>
<td>Contacts controlled by Auto/Manual selector switch of direct action motor operator</td>
</tr>
<tr>
<td>S75E/1-2</td>
<td>Contacts for signaling circuit-breaker in withdrawn position (only applicable to withdrawable circuit-breaker versions)</td>
</tr>
<tr>
<td>S75l/1-2-5</td>
<td>Contacts for signaling circuit-breaker in racked-in position (only applicable to withdrawable or plug-in circuit-breaker versions)</td>
</tr>
<tr>
<td>S87/1</td>
<td>Contact for electrical signaling of residual current relay prealarm</td>
</tr>
<tr>
<td>S87/2</td>
<td>Contact for electrical signaling of residual current relay alarm</td>
</tr>
<tr>
<td>S87/3</td>
<td>Contact for electrical signaling of circuit-breaker open due to residual current relay trip</td>
</tr>
<tr>
<td>SC</td>
<td>Pushbutton or contact for closing the circuit-breaker</td>
</tr>
<tr>
<td>SC3</td>
<td>Motor start pushbutton</td>
</tr>
<tr>
<td>SD</td>
<td>Residual current relay supply disconnector</td>
</tr>
<tr>
<td>SO</td>
<td>Pushbutton or contact for opening circuit-breaker</td>
</tr>
<tr>
<td>SO3</td>
<td>Motor stop pushbutton</td>
</tr>
<tr>
<td>SR</td>
<td>Electrical reset pushbutton or contact</td>
</tr>
<tr>
<td>SY/1...3</td>
<td>Contacts for signaling circuit-breaker open due to tripped overcurrent protection relay, thermomagnetic release and coils Y0, YO1, YO2, YU (tripped position)</td>
</tr>
<tr>
<td>Ti</td>
<td>Toroidal current transformer</td>
</tr>
<tr>
<td>Ti/L1-L2-L3</td>
<td>L1-L2-L3 phase current transformer</td>
</tr>
<tr>
<td>Ti/N</td>
<td>Current transformer on neutral</td>
</tr>
<tr>
<td>TU2</td>
<td>Insulation voltage transformer (outside circuit-breaker)</td>
</tr>
<tr>
<td>Uaux</td>
<td>Auxiliary supply voltage</td>
</tr>
<tr>
<td>V1</td>
<td>Circuit-breaker applications</td>
</tr>
<tr>
<td>V2</td>
<td>Motor operator applications</td>
</tr>
<tr>
<td>V4</td>
<td>Indicative switchgear and connections for operation and signaling, outside circuit-breaker</td>
</tr>
<tr>
<td>V5</td>
<td>Ekip DIN Rail Cartridge Basic or Ekip DIN Rail Cartridge applications</td>
</tr>
<tr>
<td>W2</td>
<td>Serial interface with internal bus (local bus)</td>
</tr>
<tr>
<td>W9...14</td>
<td>Connector RJ45 for interface unit and for communication modules</td>
</tr>
<tr>
<td>W9R...12R</td>
<td>Connector RJ45 for redundant communication modules</td>
</tr>
<tr>
<td>X3-X4-X8</td>
<td>Protection relay connectors</td>
</tr>
<tr>
<td>X41</td>
<td>Connector of current circuit for external neutral</td>
</tr>
<tr>
<td>XB..</td>
<td>Three-way connector for auxiliary circuits of plug-in circuit-breaker</td>
</tr>
<tr>
<td>XC..</td>
<td>Six-way connector for auxiliary circuits of plug-in circuit-breaker</td>
</tr>
<tr>
<td>XC2-3</td>
<td>Six-way connector for auxiliary circuits of plug-in circuit-breaker for voltage up to 400V</td>
</tr>
<tr>
<td>XCT1-2</td>
<td>Terminal box of Ekip DIN Rail Cartridge Basic or Ekip DIN Rail Cartridge</td>
</tr>
<tr>
<td>XD..</td>
<td>Nine-way connector for auxiliary circuits of plug-in circuit-breaker</td>
</tr>
<tr>
<td>XE..</td>
<td>Fifteen-way connector for auxiliary circuits of plug-in circuit-breaker</td>
</tr>
<tr>
<td>XF..</td>
<td>Ekip Com type interface unit connector</td>
</tr>
<tr>
<td>XG</td>
<td>Protection relay connector</td>
</tr>
<tr>
<td>XH1</td>
<td>Protection relay connector</td>
</tr>
<tr>
<td>XK7</td>
<td>Connector of contact S75l/5</td>
</tr>
<tr>
<td>XM</td>
<td>MOE-E actuator unit connector</td>
</tr>
<tr>
<td>XV</td>
<td>Terminal box of circuit-breaker applications</td>
</tr>
<tr>
<td>YC</td>
<td>Closing coil of stored energy motor operator</td>
</tr>
<tr>
<td>YO</td>
<td>Opening coil</td>
</tr>
<tr>
<td>YO1</td>
<td>Coil for opening due to overcurrent</td>
</tr>
<tr>
<td>YO2</td>
<td>Opening coil of residual current relay</td>
</tr>
<tr>
<td>YU</td>
<td>Undervoltage coil</td>
</tr>
</tbody>
</table>

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)
S75l/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, YO1, YO2, 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 S75l/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.
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 T1/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 according to 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.
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 1SDCO0741ZGO201 “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 thermocouples 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

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>See note indicated by the letter</td>
</tr>
<tr>
<td>A12</td>
<td>Ekip Com type Interface unit</td>
</tr>
<tr>
<td>A13</td>
<td>Ekip Signaling 10K type signaling unit</td>
</tr>
<tr>
<td>A14</td>
<td>MOE-E type stored energy motor actuating unit</td>
</tr>
<tr>
<td>A15</td>
<td>Ekip Multimeter type measurement unit</td>
</tr>
<tr>
<td>A16</td>
<td>Ekip Micro Module I/O type interface unit</td>
</tr>
<tr>
<td>A17</td>
<td>MOE type stored energy motor actuating unit</td>
</tr>
<tr>
<td>A18</td>
<td>Ekip DIN Rail Cartridge Basic</td>
</tr>
<tr>
<td>A19</td>
<td>Ekip DIN Rail Cartridge</td>
</tr>
<tr>
<td>BUS1</td>
<td>Serial interface with external bus</td>
</tr>
<tr>
<td>BUS2</td>
<td>Redundant serial interface with external bus</td>
</tr>
<tr>
<td>LINK BUS</td>
<td>Interface with external Link bus</td>
</tr>
<tr>
<td>D</td>
<td>Electronic time delay device for undervoltage release coilYU, outside circuit-breaker (only for voltages up to 250V)</td>
</tr>
<tr>
<td>H2</td>
<td>Signaling lamp for stored energy motor operator blocked</td>
</tr>
<tr>
<td>I 01-11...32</td>
<td>Programmable digital inputs</td>
</tr>
<tr>
<td>I 41-51</td>
<td>Analog inputs from 4-20mA sensor</td>
</tr>
<tr>
<td>I 42-44 52...54</td>
<td>Analog inputs temperature sensor</td>
</tr>
<tr>
<td>I Pt 100</td>
<td>Analog input from Pt 100 temperature sensor of motor</td>
</tr>
<tr>
<td>I reset</td>
<td>Digital input for resetting tripped motor startin contactor operating unit</td>
</tr>
<tr>
<td>J...</td>
<td>Connectors for auxiliary circuits of a withdrawable circuit-breaker. Withdrawal of connectors occurs at the same time as that of circuit-breaker</td>
</tr>
<tr>
<td>K</td>
<td>Motor starting contactor</td>
</tr>
<tr>
<td>K51</td>
<td>Ekip type electronic relay for overcurrent protection</td>
</tr>
<tr>
<td>K51/CI</td>
<td>Motor starting contactor operator module</td>
</tr>
<tr>
<td>K51/COM</td>
<td>Communication module</td>
</tr>
<tr>
<td>K51/SIGN</td>
<td>Signaling module</td>
</tr>
<tr>
<td>K51/SUPPLY</td>
<td>Auxiliary supply module (110-240VAC/DC and 24-48Vdc)</td>
</tr>
<tr>
<td>K51/SYNC</td>
<td>Synchronizing module</td>
</tr>
<tr>
<td>KS1/TEMP</td>
<td>Temperature monitoring</td>
</tr>
<tr>
<td>K87</td>
<td>Residual current release type RC Inst, RC Sel, RC Sel 200, RC B Type</td>
</tr>
<tr>
<td>KO</td>
<td>Auxiliary opening relay</td>
</tr>
<tr>
<td>M</td>
<td>Motor for opening circuit-breaker and loading closing springs</td>
</tr>
<tr>
<td>O 01-11...32</td>
<td>Programmable signaling contacts</td>
</tr>
<tr>
<td>OCI</td>
<td>Contact for motor starting contactor operating mechanism</td>
</tr>
<tr>
<td>O SC</td>
<td>Synchronism monitoring contact</td>
</tr>
<tr>
<td>Q</td>
<td>Main circuit-breaker</td>
</tr>
<tr>
<td>Q/0.7</td>
<td>Auxiliary contacts of the circuit-breaker open/closed</td>
</tr>
<tr>
<td>Q/26</td>
<td>Open/Close auxiliary used internally by protection release</td>
</tr>
<tr>
<td>R</td>
<td>Resistor</td>
</tr>
<tr>
<td>R2</td>
<td>Pt100 temperature sensor of motor</td>
</tr>
<tr>
<td>S1</td>
<td>Contact controlled by the motor operator cam</td>
</tr>
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<td>S3/1-2</td>
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[3/8] **SACE TMAX XT LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS**
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.
F) 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.
G) "Galvanically separated converters" conforming to standards IEC 60950 (UL 1950) or equivalent must be used since an earthed Uaux is required.
H) Mandatory in the presence of any sort of Ekip module.
I) 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.
O) 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.
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 thermocouples 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
- **BUS** = Interface with the external Link bus
- **D** = Electronic time-lag device of YU under voltage coil, outside the circuit-breaker
- **GZ(DB)** = 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 overcurrent protection
- **K51/COM** = Communication module
- **K51/MEAS** = Measurement module
- **K51/SIGN** = Signaling module
- **K51/SUPPL** = 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
- **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 (AE1-2)
- S33M/1-2 = Limit contacts of spring loading motor
- S43 = Switch for resetting 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)
- S75E/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 withdrawable 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)
- **SZ(DF)** = 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

T1/L1-L2-L3 = Current transformer phase L1-L2-L3

T1/N = Current transformer on neutral

TU1-2 = Insulation voltage transformer (outside circuit-breaker)

Uaux = Auxiliary supply voltage

UI/L1-L2-L3 = Current sensor phase L1-L2-L3

UI/N = Current sensor on neutral

UI/O = Single-pole current sensor

W2 = Serial interface with internal bus (local)

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 UI/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.
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.


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 1m 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 or four-pole switch-disconnector

Three-pole circuit-breaker with magnetic trip unit

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
Three-pole or four-pole XT4 circuit-breaker with Ekip E-LSIG microprocessor based release

Fixed version three-pole XT4 circuit-breaker with Ekip E-LSIG with current transformer on neutral conductor, external to 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

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

Recommended 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 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) 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.
Electronic trip unit Ekip E-LSIG connected with Ekip Display or Ekip LED Meter

50) Auxiliary circuits of the Ekip E-LSIG microprocessor-based release connected to the Ekip Display (display) or Ekip LED Meter (current display) display unit.
Electronic trip unit Ekip LSI, Ekip LSIG, Ekip M-LRIU 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).
Wiring diagrams
Diagrams for XT1...XT4

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).
Electronic trip unit Ekip LSI, Ekip LSIG or Ekip M-LRIU 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, Ekip LSIG or Ekup M-LRIU connected to interface unit type Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.
Wiring diagrams
Diagrams for XT1...XT4

Auxiliary circuits of the electronic trip unit Ekip M-LRIU connected to the contactor control unit for starting the motor PR212/CI (the circuit to the motor thermistor is optional)

54) Auxiliary circuits of the electronic trip unit type Ekip M-LRIU connected to the contactor control unit for starting the motor type PR212/CI (the circuit to the motor thermistor is optional).
62) Motor thermistor circuit.
Electronic trip unit Ekip M-LRIU connected to the contactor control unit for starting the motor PR212/CI and with ABB AF series contactor (the circuit to the motor thermistor is optional)

55) Auxiliary circuits of the electronic trip unit type Ekip M-LRIU connected to the contactor control unit for starting the motor type PR212/CI and with ABB AF series contactor (the circuit to the motor thermistor is optional).

62) Motor thermistor circuit.
Wiring diagrams
Diagrams for XT1...XT4

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 SO2. Such contact shall be protected to avoid unwanted activation and can be used only if the information received by the operator makes 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 SO2.

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.
MOD

MOE or MOE-E
Wiring diagrams
Diagrams for XT1...XT4

55a) Interface unit type Ekip Com with direct supply to the trip unit and MOE-E motor operator
54a) Stand-alone interface unit type Ekip Com with MOE-E motor operator
Wiring diagrams
Diagrams for XT1...XT4

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) Ekip Com Hub 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
131) Motor starting module Ekip Cl
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 - YQ (2)

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

(1) Up to 380-440V YU version
15) Instantaneous undervoltage coil in the version for machine tools with two contact in series - YU
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)
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)
Wiring diagrams
Diagrams for XT5 and XT6

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
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
Wiring diagrams
Diagrams for XT5 and XT6

39) Auto/manual/lock status feedback
40) Stored energy motor operator (MOE)
41) Direct auxiliary supply 24Vdc and local bus

As an alternative to figure 78
Wiring diagrams
Diagrams for XT5 and XT6

42) Interface unit type Ekip Com
43) Stand alone interface unit type Ekip Com
Wiring diagrams
Diagrams for XT5 and XT6

39) Auto/manual/lock status feedback
44) Stand alone interface unit type Ekip Com with MOE-E motor operator
39) Auto/manual/lock status feedback
45) Interface unit type Ekip Com with direct supply to relay and MOE-E motor operator
Wiring diagrams
Diagrams for XT5 and XT6

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
50) Zone selectivity
Wiring diagrams
Diagrams for XT5 and XT6

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

As in alternative to each other
Wiring diagrams
Diagrams for XT5 and XT6

131) Motor starting module Ekip Cl

[Diagram image]
132) Motor starting module Ekip CI with ABB contactor series AF
Wiring diagrams
Diagrams for XT5 and XT6

141) Ekip signalling 10K signalling unit
142) Ekip Multimeter unit with relay and direct auxiliary supply 24Vdc
Wiring diagrams
Diagrams for XT5 and XT6

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 switch-disconnector
Wiring diagrams
Diagrams for XT7 and XT7 M

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

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16 - 17 only for XT7 circuit-breakers
**Wiring diagrams**

Diagrams for XT7 and XT7 M

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

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

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24 - 24a as an alternative to each other and to figure 25
25) Transformer star centre sensor input

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

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25 as an alternative to figures 24 - 24a
Wiring diagrams
Diagrams for XT7 and XT7 M

70) YO2/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
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
Wiring diagrams
Diagrams for XT7 and XT7 M

81) Open/Close auxiliary contacts of the circuit-breaker (first set)
91a) Supplementary open/close auxiliary contacts outside the circuit-breaker
95a) Contacts for signaling of circuit-breaker in racked-in, test, racked-out position

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only for withdrawable version---

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Wiring diagrams

XT2-XT4-XT5-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
Installation slot

For XT2-XT4-XT5 Ekip Cartridge

<table>
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For XT7-X7M terminal box

<table>
<thead>
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<th>V3</th>
<th>V2</th>
<th>V1</th>
<th>V0</th>
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81a) Ekip Supply: auxiliary supply through module 110-240Vac/dc or 24/48Vdc and local bus

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81 as an alternative to figure 49
Wiring diagrams
XT2-XT4-XT5-XT7-XT7 M modules

83) Ekip Signalling 2K-1
84) Ekip Signalling 2K-2
85) Ekip Signalling 2K-3
86) Ekip Synchrocheck
Wiring diagrams
XT2-XT4-XT5-XT7-XT7 M modules

87) Ekip Signalling 3T-1
88) Ekip Signalling 3T-2
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) Ekip Com HUB
97) Ekip Com Profinet
91) Ekip Com Profibus DP
93) Ekip Com DeviceNet
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XT2-XT4-XT5-XT7-XT7 M modules

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) Ekip Com HUB
92) Ekip Com Profibus DP
93) Ekip Com DeviceNet™
Installation slot
For XT2-XT4-XT5 Ekip Cartiridge

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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

112) Ekip Com Profibus DP redundant
114) Ekip Com DeviceNet™ redundant