Break new ground

- Data and connectivity
- Ease of use and installation
- Performance and protection
- Safety and reliability
SACE Tmax XT
The complete offering
Installation

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Temperature

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

Environmental conditions

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

Altitude

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

<table>
<thead>
<tr>
<th>Altitude</th>
<th>2000m/6561ft</th>
<th>3000m/9842ft</th>
<th>4000m/13123ft</th>
<th>5000m/16404ft</th>
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</thead>
<tbody>
<tr>
<td>Rated employ voltage, Ue [V AC]</td>
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<tr>
<td>Rated uninterrupted current %</td>
<td>100</td>
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<td>93</td>
<td>90</td>
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</tbody>
</table>

Electromagnetic compatibility

Protection is guaranteed in the presence of interference caused by electronic apparatus, atmospheric disturbances or electrical discharges by using the electronic trip units and the electronic residual current releases. No interference with other electronic apparatus near the place of installation is generated either. This is in compliance with the IEC 60947-2 Annex B + Annex F Standards, European Directive No. 89/336 regarding EMC - electromagnetic compatibility and UL489 Standard.
Installation environment

Degrees of protection

The IP degree of the circuit-breaker can vary depending on the area considered and on the presence of accessories such as a motor or terminal cover.

The following table indicates the degrees of protection guaranteed by Tmax XT circuit-breakers according to the prescriptions of the IEC 60529 Standard, in the different configurations. Furthermore, special kits are available to achieve IP54 with the MOE or RHD installed on the XT7.

<table>
<thead>
<tr>
<th></th>
<th>With front</th>
<th>Without front</th>
<th>With FLD</th>
<th>With RHD</th>
<th>With RHE</th>
<th>Motor operator MOD, MOE or MOE-E</th>
<th>Residual current devices</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>IP40</td>
<td>IP20</td>
<td>IP40</td>
<td>IP40</td>
<td>IP54*</td>
<td>IP30</td>
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<td>B</td>
<td>IP20</td>
<td></td>
<td>IP4</td>
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* XT7: IP65

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<tr>
<th></th>
<th>Without TC</th>
<th>With HTC</th>
<th>With LTC</th>
</tr>
</thead>
<tbody>
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<tr>
<td>C</td>
<td>NC</td>
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Residual current RCQ020

Automatic Transfer Switch ATS021, ATS022

On front

<table>
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<th>Protection kits for</th>
<th>RHE</th>
<th>RHD</th>
<th>MOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1, XT2, XT3, XT4</td>
<td>IP54</td>
<td>-</td>
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<td>XT7, XT7 M</td>
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<td>IP54</td>
<td>IP54</td>
</tr>
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</table>

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.
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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<thead>
<tr>
<th>XT1 - TMF</th>
<th>30°C</th>
<th>40°C</th>
<th>50°C</th>
<th>60°C</th>
<th>70°C</th>
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## Temperature performance

### XT3 - TMF

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### XT4 - TMF

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### XT2 - TMA

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<th>70°C</th>
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### XT4 - TMA

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</table>
Temperature performance

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

The electronic overcurrent trip units do not undergo any variations in performance as the temperature varies. However, even though heating does not affect the trip thresholds of the electronic trip units, in the case of temperatures exceeding +40°C it is advisable to reduce the maximum L (protection against overloads) setting to protect the copper parts of the circuit-breaker against high temperatures.

The same considerations can be made for the switch-disconnectors and magnetic only circuit-breakers. The table below shows the maximum value at which, with terminals and lugs, the threshold of I1 of the overcurrent protection (L) must be set according to the ambient temperature.

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<tr>
<th></th>
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</table>
Power losses

To ensure service continuity of the plants, careful assessment of how to keep temperatures within acceptable levels to guarantee operation of all devices is necessary (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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Values refer to fixed version
## Temperature performance

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<td>-</td>
<td>-</td>
<td>13.3</td>
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<td>250</td>
<td>-</td>
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<td>16.4</td>
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</table>

Values refer to fixed version

<table>
<thead>
<tr>
<th>Trip unit</th>
<th>In [A]</th>
<th>XT7-XT7 M [W/Pole]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic trip units: Ekip Dip, Ekip Touch</td>
<td>600</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>24</td>
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<td>37</td>
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<tr>
<td></td>
<td>1200</td>
<td>53</td>
</tr>
</tbody>
</table>

Values refer to fixed version

Power losses gives indication of the heat generated under specified conditions. Measurement of power losses are performed according to Annex G of IEC (free air, on new samples). These values shall be assumed as average values.
Insulation distances

Enclosure dimensions

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

<table>
<thead>
<tr>
<th>Frame size</th>
<th>XT1</th>
<th>XT2</th>
<th>XT3</th>
<th>XT4</th>
<th>XT7</th>
</tr>
</thead>
<tbody>
<tr>
<td>[A]</td>
<td>125</td>
<td>125</td>
<td>225</td>
<td>250</td>
<td>800-1000-1200</td>
</tr>
<tr>
<td>Rated F</td>
<td>100% rated TM up to 100A</td>
<td>up to 100A</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>100% rated Ekip</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>P, W 100% rated TM up to 100A</td>
<td>up to 100A</td>
<td>-</td>
<td>(a)</td>
<td>(b)</td>
<td>-</td>
</tr>
<tr>
<td>100% rated Ekip</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(b)</td>
<td>-</td>
</tr>
</tbody>
</table>

(1) 80% rated with HR/VR
(2) With HR/VR 100% rated up to 225A

Circuit-breaker dimensions (HxWxD) in/mm

| XT1 | 5.12/130 | 3 (4 4p)/76.2 (101.6 4p) | 2.75/70 |
| XT2 | 5.12/130 | 3.54 (4.72 4p)/90 (120 4p) | 3.25/82.5 |
| XT3 | 5.9/150 | 4.13 (5.51 4p)/105 (140 4p) | 2.75/70 |
| XT4 | 6.3/160 | 4.13 (5.51 4p)/105 (140 4p) | 3.25/82.5 |
| XT7 | 10.55/268 | 8.27 (11.02 4p)/210 (280 4p) | 6.53 (7) (166 (178) |

(3) For XT7 M
## Insulation distances

**AC-DC Minimum enclosure sizes for circuit-breakers (HxWxD)**

<table>
<thead>
<tr>
<th>Circuit-breaker</th>
<th>FIXED in/mm</th>
<th>PLUG IN in/mm</th>
<th>WITHDRAWABLE in/mm</th>
</tr>
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<tbody>
<tr>
<td>XT1 3p 80% rated</td>
<td>14.57 x 8.51 x 2.85/370 x 216.2 x 72.5</td>
<td>15.07 x 9.84 x 11.81/383 x 250 x 300</td>
<td>-</td>
</tr>
<tr>
<td>XT1 3p 100% rated</td>
<td>14.57 x 8.51 x 2.85/370 x 216.2 x 72.5*</td>
<td>15.07 x 9.84 x 11.81/383 x 250 x 300*</td>
<td>-</td>
</tr>
<tr>
<td>XT1 4p 80% rated</td>
<td>14.57 x 9.5 x 2.85/370 x 241.2 x 72.5</td>
<td>15.07 x 10.83 x 11.81/383 x 275 x 300</td>
<td>-</td>
</tr>
<tr>
<td>XT1 4p 100% rated</td>
<td>14.57 x 9.5 x 2.85/370 x 241.2 x 72.5*</td>
<td>15.07 x 10.83 x 11.81/383 x 275 x 300*</td>
<td>-</td>
</tr>
<tr>
<td>XT2 3p 80% rated</td>
<td>12.2 x 7.09 x 3.29/310 x 180 x 83.5</td>
<td>12.83 x 8.9 x 11.51/326 x 226 x 292.5</td>
<td>12.83 x 8.9 x 11.51/326 x 226 x 292.5</td>
</tr>
<tr>
<td>XT2 3p 100% rated</td>
<td>12.2 x 7.09 x 3.29/310 x 180 x 83.5</td>
<td>12.83 x 8.9 x 11.51/326 x 226 x 292.5</td>
<td>12.83 x 8.9 x 11.51/326 x 226 x 292.5</td>
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<tr>
<td>XT2 4p 80% rated</td>
<td>12.2 x 8.27 x 3.29/310 x 210 x 83.5</td>
<td>12.83 x 10.08 x 11.51/326 x 256 x 292.5</td>
<td>12.83 x 10.08 x 11.51/326 x 256 x 292.5</td>
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<tr>
<td>XT2 4p 100% rated</td>
<td>12.2 x 8.27 x 3.29/310 x 210 x 83.5</td>
<td>12.83 x 10.08 x 11.51/326 x 256 x 292.5</td>
<td>12.83 x 10.08 x 11.51/326 x 256 x 292.5</td>
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<tr>
<td>XT3 3p 80% rated</td>
<td>14.57 x 8.46 x 2.83/370 x 215 x 72</td>
<td>15.2 x 10.47 x 13.78/386 x 266 x 350</td>
<td>-</td>
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<tr>
<td>XT3 3p 100% rated</td>
<td>14.57 x 8.46 x 2.83/370 x 215 x 72*</td>
<td>15.2 x 10.47 x 13.78/386 x 266 x 350*</td>
<td>-</td>
</tr>
<tr>
<td>XT3 4p 80% rated</td>
<td>14.57 x 9.84 x 2.83/370 x 250 x 72</td>
<td>15.2 x 11.85 x 13.78/386 x 301 x 350</td>
<td>-</td>
</tr>
<tr>
<td>XT3 4p 100% rated</td>
<td>14.57 x 9.84 x 2.83/370 x 250 x 72*</td>
<td>15.2 x 11.85 x 13.78/386 x 301 x 350*</td>
<td>-</td>
</tr>
<tr>
<td>XT4 2-3p 80% rated</td>
<td>14.96 x 7.68 x 3.29/380 x 195 x 83.5</td>
<td>15.2 x 10.47 x 13.78/386 x 266 x 350</td>
<td>15.2 x 10.47 x 13.78/386 x 266 x 350</td>
</tr>
<tr>
<td>XT4 2-3p 100% rated</td>
<td>14.96 x 7.68 x 3.29/380 x 195 x 83.5*</td>
<td>15.2 x 10.47 x 13.78/386 x 266 x 350*</td>
<td>15.2 x 10.47 x 13.78/386 x 266 x 350*</td>
</tr>
<tr>
<td>XT4 4p 80% rated</td>
<td>14.96 x 9.05 x 3.29/380 x 230 x 83.5</td>
<td>15.2 x 11.85 x 13.78/386 x 301 x 350</td>
<td>15.2 x 11.85 x 13.78/386 x 301 x 350</td>
</tr>
<tr>
<td>XT4 4p 100% rated</td>
<td>14.96 x 9.05 x 3.29/380 x 230 x 83.5*</td>
<td>15.2 x 11.85 x 13.78/386 x 301 x 350*</td>
<td>15.2 x 11.85 x 13.78/386 x 301 x 350*</td>
</tr>
<tr>
<td>XT7 3p 80% rated</td>
<td>27.75 x 21.81 x 6.81/705 x 554 x 173</td>
<td>-</td>
<td>24.07 x 20.12 x 18.58/611.5 x 511 x 472</td>
</tr>
<tr>
<td>XT7 3p 100% rated</td>
<td>27.75 x 21.81 x 6.81/705 x 554 x 173*</td>
<td>-</td>
<td>24.07 x 20.12 x 18.58/611.5 x 511 x 472*</td>
</tr>
<tr>
<td>XT7 4p 80% rated</td>
<td>27.75 x 24.57 x 6.81/705 x 624 x 173</td>
<td>-</td>
<td>24.07 x 22.87 x 18.58/611.5 x 581 x 472</td>
</tr>
<tr>
<td>XT7 4p 100% rated</td>
<td>27.75 x 24.57 x 6.81/705 x 624 x 173*</td>
<td>-</td>
<td>24.07 x 22.87 x 18.58/611.5 x 581 x 472*</td>
</tr>
</tbody>
</table>

*With 90°C wire, 75°C ampacity
Minimum clearance between two side by side circuit-breakers

This section gives the clearances to be observed for side by side installation of SACE Tmax XT circuit-breakers in plants with voltages up to 600V.

The following table shows the minimum center distance between two circuit-breakers of the same size mounted side by side. In case of XT2, XT3 and XT4 this installation is obtained by breaking the internal part of back insulating plate supplied with the breaker.

Moreover in case of Tmax XT1 up to XT4, 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.

For further details about installation, please see the related instructions provided with the circuit-breaker.

<table>
<thead>
<tr>
<th>Circuit-breaker width (in/mm)</th>
<th>Centre distance l (in/mm)</th>
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<tbody>
<tr>
<td></td>
<td>3 poles</td>
</tr>
<tr>
<td>XT1</td>
<td>2.99/76</td>
</tr>
<tr>
<td>XT2</td>
<td>3.54/90</td>
</tr>
<tr>
<td>XT3</td>
<td>4.13/105</td>
</tr>
<tr>
<td>XT4</td>
<td>4.13/105</td>
</tr>
<tr>
<td>XT7</td>
<td>8.26/210</td>
</tr>
</tbody>
</table>

(1) with phases separators or HTC between two circuit-breakers (see Fig. 1 and Fig. 2)
(2) for installations with F terminals only. With other connections refer to distances fixed by dimensions of back insulating plates requested

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

---

Fig. 1
Side by side XT1...
XT4 with HTC

Fig. 2
Side by side XT1...XT4 with phase separators
Insulation distances

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

<table>
<thead>
<tr>
<th>Circuit-breaker</th>
<th>Terminals</th>
<th>D [in/mm]</th>
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</thead>
<tbody>
<tr>
<td>XT1-XT3 F-P</td>
<td>ES</td>
<td>1.37/35</td>
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<tr>
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<td>EF</td>
<td>1.37/35</td>
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<tr>
<td></td>
<td>Other types of terminals</td>
<td>0.98/25</td>
</tr>
<tr>
<td>XT2-XT4 F-P-W</td>
<td>ES</td>
<td>4.72/120</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>1.37/35</td>
</tr>
<tr>
<td></td>
<td>Other types of terminals</td>
<td>0.98/25</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
Minimum clearance between two superimposed circuit-breakers

This section gives the clearances H to meet for superimposed mounting of the SACE Tmax XT circuit-breakers in installations with voltages up to 600V. Verify that the bare bars or connection cables do not reduce the recommended clearances.

The distances given in the table refer to the maximum overall dimensions of the circuit-breakers in the different versions (F/W/P), with terminals and metallic lugs of insulated cables included, for example. When superimposed circuit-breakers are different in size, the larger reference clearance should be considered.

<table>
<thead>
<tr>
<th>Circuit-breaker</th>
<th>H [in/mm]</th>
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<tr>
<td>XT1</td>
<td>3.14/80</td>
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<tr>
<td>XT2</td>
<td>3.94/100</td>
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<tr>
<td>XT3</td>
<td>5.51/140</td>
</tr>
<tr>
<td>XT4</td>
<td>5.9/150</td>
</tr>
<tr>
<td>XT7</td>
<td>7.09/180</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.
Use of direct current apparatus

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

Connection diagrams of poles in a grounded/ungrounded network

<table>
<thead>
<tr>
<th>Grounded/ungrounded network</th>
<th>Up to 250V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1</td>
<td></td>
</tr>
<tr>
<td>XT2</td>
<td></td>
</tr>
<tr>
<td>XT3</td>
<td></td>
</tr>
<tr>
<td>XT4</td>
<td></td>
</tr>
</tbody>
</table>

*Ungrounded only

<table>
<thead>
<tr>
<th>Grounded/ungrounded network</th>
<th>Up to 500V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1</td>
<td></td>
</tr>
<tr>
<td>XT2</td>
<td></td>
</tr>
<tr>
<td>XT3</td>
<td></td>
</tr>
<tr>
<td>XT4</td>
<td></td>
</tr>
</tbody>
</table>

*Ungrounded only

<table>
<thead>
<tr>
<th>Grounded/ungrounded network</th>
<th>Up to 600V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>XT1</td>
<td></td>
</tr>
<tr>
<td>XT2</td>
<td></td>
</tr>
<tr>
<td>XT3</td>
<td></td>
</tr>
<tr>
<td>XT4</td>
<td></td>
</tr>
</tbody>
</table>
Characteristic curves
Example of curves reading

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

Let us consider an XT3N TMF In = 225A circuit-breaker. According to the conditions the overload is found in; i.e., with the circuit-breaker at thermal regime or not, thermal protection tripping varies considerably. For example, for an overload current 3xI1, the trip time is between 152.7s and 40.2s for cold tripping and between 40.2s and 6.9s for hot tripping. For fault current values higher than 225A, the circuit-breaker trips with the instantaneous magnetic protection I3.

Example 2 – XT2H 125
Specific let-through energy curves

This figure shows a sample graph of the specific let-through energy of the XT2H 125 circuit-breaker at a voltage of 220/230V. The prospective symmetrical short-circuit current is indicated on the abscissas, whereas the values of the specific let-through energy expressed in A^2s are shown on the ordinates. The circuit-breaker lets through a value of I^2t equal to 0.42 · 10^6 · A^2s relative to a short-circuit current of 14kA.
Example 3 – XT2L 125
Limitation curves

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

Trip curves for distribution

XT1 125 TMF In=15...30A

XT1 125 TMF In=35...50A

XT1 125 TMF In=60...110A

XT1 125 TMF In=125A
Characteristic curves
Trip curves with thermal magnetic trip unit

XT2 125 TMA In=110...125A

XT3 225 TMF In=60..100A

XT3 250 TMF In=110..150A
XT3 250 TMF In=175..225A
Characteristic curves
Trip curves with thermal magnetic trip unit

XT4 250 TMF In=175...225A

XT4 250 TMF In=250A

XT4 250 TMA In=80...100A

XT4 250 TMA In=110...150A
Characteristic curves
Trip curves with thermal magnetic trip unit

Trip curves for motor protection

**XT1 125 MA In=3...125 A**

**XT2 125 MA In=3...100 A**

**XT2 125 MA In=125 A**

**XT3 225 MA In=100...200 A**

Overload limit
Characteristic curves
Trip curves with electronic trip unit Ekip Dip

Trip curves for distribution

XT2 Ekip LS/I
L-I functions

XT2 Ekip LS/I
L-S functions

XT2 Ekip LIG
L-I functions

XT2 Ekip LIG
G function
XT2 Ekip LSI
L-S-I functions

XT2 Ekip LSIG
L-S-I functions

XT2 Ekip LSIG
G function

XT4 Ekip LS/I
L-I functions
Characteristic curves
Trip curves with electronic trip unit Ekip Dip

XT4 Ekip LS/I
L-S functions

XT4 Ekip LIG
L-I functions

XT4 Ekip LIG
G function

XT4 Ekip LSI
L-S-I functions
Characteristic curves
Trip curves with electronic trip unit Ekip Dip

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
Characteristic curves
Trip curves with electronic trip unit Ekip Dip

Trip curves for motor protection

XT2 Ekip I
I function

XT4 Ekip I
I function

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

XT2 - XT4 Ekip M-LIU
(hot trip)
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

Trip curves for generator protection

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

XT7 - XT7 M Ekip G Dip LS/I  
L-S functions
Characteristic curves
Trip curves with electronic trip unit Ekip Touch and Hi-Touch

Trip curves for distribution

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

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

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

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

XT7 – XT7 M • Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function
Trip curves for motor protection

**XT2 Ekip M Touch LRIU**

- **L function (cold trip)**
- **R function**
- **I function**
- **U function**
Characteristic curves
Trip curves with electronic trip unit Ekip Touch and Hi-Touch

XT4Ekip M Touch LRIU
L function (cold trip)

XT4 Ekip M Touch LRIU
R function

XT4 Ekip M Touch LRIU
I function

XT4 Ekip M Touch LRIU
U function
XT7 – XT7 M Ekip M Touch LRIU
L function (cold trip)

XT7 – XT7 M Ekip M Touch LRIU
R function

XT7 – XT7 M Ekip M Touch LRIU
I function

XT7 – XT7 M Ekip M Touch LRIU
U function
Characteristic curves
Trip curves with electronic trip unit Ekip Touch and Hi-Touch

Trip curves for generator protection

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

XT7 – XT7 M Ekip G Touch LSIG / Ekip G Hi-Touch LSIG
G function
Characteristic curves
Specific let-through energy curves

480V

XT2H

XT2L

XT2V

XT4H
Characteristic curves
Specific let-through energy curves
600V

**XT2H**

**XT2L**

**XT2V**

**XT4H**
Characteristic curves
Specific let-through energy curves

XT4L

XT4V

XT4X

XT7L
Characteristic curves
Limiting curves

480V

XT2H

XT2L

XT2V

XT4H
Characteristic curves
Limiting curves

**XT4L**

**XT4V**

**XT4X**

**XT7L**
600V

**XT2H**

**XT2L**

**XT2V**

**XT4H**
Characteristic curves
Limiting curves

XT4L

XT4V

XT4X

XT7L
# Overall dimensions

## Tmax XT1

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<tr>
<th>Section</th>
<th>Description</th>
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<td>Terminals for fixed circuit-breaker</td>
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<td>2/17</td>
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<td>2/20</td>
<td>Terminals for plug-in circuit-breaker</td>
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<td>2/23</td>
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## Tmax XT2

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<td>2/38</td>
<td>Installation for plug-in circuit-breaker</td>
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<td>2/42</td>
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<tr>
<td>2/53</td>
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<td>2/57</td>
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## Tmax XT3

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<td>Terminals for fixed circuit-breaker</td>
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<td>2/68</td>
<td>Accessories for fixed circuit-breaker</td>
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<tr>
<td>2/74</td>
<td>Installation for plug-in circuit-breaker</td>
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<td>2/77</td>
<td>Terminals for plug-in circuit-breaker</td>
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<td>2/80</td>
<td>Accessories for plug-in circuit-breaker</td>
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## Tmax XT4

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<td>Terminals for fixed circuit-breaker</td>
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<td>2/87</td>
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<tr>
<td>------</td>
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<tr>
<td>2/93</td>
<td>Installation for plug-in circuit-breaker</td>
</tr>
<tr>
<td>2/97</td>
<td>Terminals for plug-in circuit-breaker</td>
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<td>2/101</td>
<td>Accessories for plug-in circuit-breaker</td>
</tr>
<tr>
<td>2/105</td>
<td>Installation for withdrawable circuit-breaker</td>
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<tr>
<td>2/109</td>
<td>Terminals for withdrawable circuit-breaker</td>
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<tr>
<td>2/113</td>
<td>Accessories for withdrawable circuit-breaker</td>
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</table>

**Tmax XT7 – Installation**

<table>
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<tr>
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<tbody>
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<td>Installation for fixed circuit-breaker</td>
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<td>2/119</td>
<td>Terminals for fixed circuit-breaker</td>
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<tr>
<td>2/123</td>
<td>Accessories for fixed circuit-breaker</td>
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<tr>
<td>2/125</td>
<td>Installation for withdrawable circuit-breaker</td>
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<tr>
<td>2/127</td>
<td>Terminals for withdrawable circuit-breaker</td>
</tr>
<tr>
<td>2/130</td>
<td>Accessories for withdrawable circuit-breaker</td>
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</table>

**Tmax XT7 M – Installation**

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<th>Section</th>
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<td>Installation for fixed circuit-breaker</td>
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<tr>
<td>2/133</td>
<td>Terminals for fixed circuit-breaker</td>
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<tr>
<td>2/137</td>
<td>Installation for withdrawable circuit-breaker</td>
</tr>
<tr>
<td>2/138</td>
<td>Terminals for withdrawable circuit-breaker</td>
</tr>
</tbody>
</table>

**Tmax XT – Common accessories**

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
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</thead>
<tbody>
<tr>
<td>2/139</td>
<td>Horizontal interlock XT series</td>
</tr>
<tr>
<td>2/140</td>
<td>Vertical interlock XT series</td>
</tr>
</tbody>
</table>
Tmax XT1 - Installation
Installation for fixed circuit-breaker

Mounting on the backplate

Key
1. Insulating plate (compulsory)
2. Overall dimension of optional wiring ducts 12.79"/325mm insulating barriers between phases (compulsory) provided
3. Front carter obligatory for through door of the panel ≤ 0.98"/25mm

Mounting on DIN 50022 rail

Key
1. Mounting bracket
2. Overall dimension of optional wiring ducts
3. 0.98"/25mm insulating barriers between phases (compulsory) provided
4. Optional front cover for DIN rail
5. Insulating plate (compulsory)
**Tmax XT1 - Installation**

**Installation for fixed circuit-breaker**

Drilling template for circuit-breaker mounting

Flanges

---

**Key**

1. Flange for circuit breaker III
2. Flange for circuit breaker IV
3. Flange for fixed III-IV with direct motor operator (MOD)
4. Flange for III-IV with direct rotary handle (RHD)
5. Optional flange
Drilling templates for compartment door

**With standard flange**

A=2.91/74
3 POLES

A=2.91/74
4 POLES

**Without flange**

A=2.79/71
3 POLES

A=2.79/71
4 POLES

A=3.11/79
3-4 POLES

**With optional flange**

A=3.11/79
3-4 POLES
**Tmax XT1 - Installation**

**Terminals for fixed circuit-breaker**

### Terminals F

- **Key**
  1. Front terminals for busbar connection
  2. Insulating barriers between phases (compulsory) provided

### Terminals EF

- **Key**
  1. Front terminals for busbar connection
  2. Insulating barriers between phases (compulsory) provided

### Terminals ES

- **Key**
  1. Front terminals for busbar connection
  2. Insulating barriers between phases (compulsory) provided

### OVERALL DIMENSIONS

**Terminals FCCu**

- **Key**
  - 2 Front terminal FCCu

**Terminals MC**

- **Key**
  - 4 Terminal covers with degree of protection IP40 (compulsory) provided
  - 5 Front terminal for multi-cable 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 (optional) not provided
3. Drilling template for mounting circuit-breaker III on sheet
4. Drilling template for mounting circuit-breaker IV fixing on sheet

---

3 POLES

**4 POLES**
Tmax XT1 - Installation
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breakers (RHD)

---

**Key**

1. Rotary handle operating mechanism on circuit-breaker RHD
2. Door drilling template with direct rotary handle
3. 0.98/25mm insulating barriers between phases (compulsory) provided

---

OVERALL DIMENSIONS

---

OVERALL DIMENSIONS

---
Tmax XT1 - Installation

Accessories for fixed circuit-breaker

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

Key
1 Transmitted rotary handle
3 Door drilling template with transmitted rotary handle
5 Transmission unit
6 0.98/25mm insulating barriers between phases provided with circuit-breaker
Large rotary handle operating mechanism with padlock on the compartment door (RHE-LH)

Key
1. Transmission unit
2. 0.98"/25mm insulating barriers between phases provided with circuit-breaker
3. Optional wiring ducts
4. Wide type rotary handle
5. Door drilling template with extended rotary handle
Tmax XT1 - Installation
Accessories for fixed circuit-breaker

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

Key
3 Key lock (not provided)
4 Direct motor operator (MOD)
5 Drilling template of door with MOD without flange
6 Drilling template of door with MOD with flange
7 Cable connections
8 0.98"/25mm phase barriers
Tmax XT1 - Installation
Accessories for fixed circuit-breaker

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

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

<table>
<thead>
<tr>
<th>A [in/mm]</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>III 2.91/74</td>
<td>III 2.79/71</td>
</tr>
</tbody>
</table>

With standard flange III 2.91/74
Without flange III 2.79/71
RC Inst and RC Sel residual current release for 4-pole circuit-breaker

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

<table>
<thead>
<tr>
<th>A [in/mm]</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>2.91/74</td>
<td>2.79/71</td>
</tr>
</tbody>
</table>
**Tmax XT1 - Installation**

**Accessories for fixed circuit-breaker**

RC Sel 200 4-pole residual current release

---

**Key**

1. Front terminals for busbar connection
2. Terminal covers with degree of protection IP40
3. Drilling template of door with direct rotary handle
4. Drilling template for mounting circuit-breaker on sheet
Tmax XT1 - Installation
Installation for plug-in circuit-breaker

Mounting on the backplate

Drilling template for mounting circuit-breaker

---

Key
1 Fixed part
2 Moving part

<table>
<thead>
<tr>
<th>Fixing at</th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.97&quot;/50 mm</td>
<td>III-IV 4.88/124 flange</td>
</tr>
<tr>
<td>2.76&quot;/70 mm</td>
<td>III-IV 5.67/144 flange</td>
</tr>
</tbody>
</table>

With standard flange:
<table>
<thead>
<tr>
<th>Fixing at</th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.97&quot;/50 mm</td>
<td>III-IV 4.88/124 flange</td>
</tr>
<tr>
<td>2.76&quot;/70 mm</td>
<td>III-IV 5.67/144 flange</td>
</tr>
</tbody>
</table>

Without standard flange:
<table>
<thead>
<tr>
<th>Fixing at</th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.97&quot;/50 mm</td>
<td>III-IV 5.08/129 flange</td>
</tr>
<tr>
<td>2.76&quot;/70 mm</td>
<td>III-IV 5.87/149 flange</td>
</tr>
</tbody>
</table>
**Tmax XT1 - Installation**

Installation for plug-in circuit-breaker

**Flanges**

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

---

**Key**
1. Flange for plug-in circuit-breaker III
2. Flange for circuit breaker IV
3. Flange for plug-in circuit-breaker III-IV with direct motor operator (MOD)
4. Flange for plug-in circuit-breaker III-IV with direct rotary handle RHD
5. Optional flange
Drilling templates for compartment door

**With standard flange**

B=4.88/124 C=5.67/144

3 POLES

B=4.88/124 C=5.67/144

4 POLES

**Without flange**

B=4.76/121 C=5.55/141

3 POLES

B=4.76/121 C=5.55/141

4 POLES

B=5.08/129 C=5.87/149

3-4 POLES

**With optional flange**

B=5.08/129 C=5.87/149

3-4 POLES
### Tmax XT1 - Installation

#### Terminals for plug-in circuit-breaker

**Terminals EF**

**Key**

4 Front extended terminals
5 3.94"/100mm insulating barriers between phases (compulsory) provided

**Terminals ES**

**Key**

3 Front extended spread terminals
6 7.87"/200mm insulating barriers between phases (compulsory) provided
7 Adapter (compulsory) not provided
### Terminals FCCu

**Key**

- 1. Terminals FCCu
- 2. Terminal covers with degree of protection IP40 (optional) provided
- 3. Front terminal for multi-cable connection
- 4. Adapter (compulsory) not provided
- 5. Insulating barriers between phases (compulsory) provided

### Terminals MC

**Key**

- 1. Terminals MC
- 2. Terminal covers with degree of protection IP40 (optional) provided
- 3. Front terminal for multi-cable connection
- 4. Adapter (compulsory) not provided

---

**OVERALL DIMENSIONS**

**MOUNTING AT 1.97"/50mm**
### Tmax XT1 - Installation

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

**Terminals HR/VR**

---

**Key**
1. Rear vertical terminals
2. Rear horizontal terminals
3. 3.54"/90mm insulating barriers between phases (compulsory) not provided
**Tmax XT1 - Installation**

*Accessories for plug-in circuit-breaker*

**Direct motor operator (MOD)**

**MOUNTING AT 1.97”/50mm**

---

Key
1. Fixed part
2. Moving part
3. Key lock (not provided)
4. Direct motor operator (MOD)
5. Drilling template of door with MOD without flange
6. Drilling template of door with MOD with flange
7. Cable connection
**Tmax XT2 - Installation**

**Installation for fixed circuit-breaker**

Fixed circuit-breaker mounting on the backplate

---

**Key**
1. Insulating plate
2. Optional wiring ducts
3. 0.98'/25mm insulating barriers between phases (compulsory) provided
4. Front carter compulsory for through door of the panel ≤ 0.98'/25mm

---

**A [in/mm]**

<table>
<thead>
<tr>
<th></th>
<th>III - IV</th>
<th>III - IV</th>
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<tbody>
<tr>
<td>With standard flange</td>
<td>3.38/86</td>
<td>3.38/86</td>
</tr>
<tr>
<td>Without flange</td>
<td>3.29/83.5</td>
<td>3.60/91.5</td>
</tr>
</tbody>
</table>

---

With side connector for Ekip Touch trip units

---

**Key**
1. Front terminals
2. Flange for IV circuit-breaker (always supplied with IV cb)
3. Flange for III circuit-breaker (always supplied with III cb)
4. Tightening torque
   - 1.1 Nm
5. Optional wiring duct
6. Interphase insulating barriers 0.98'/25mm (compulsory)
7. Rear plate insulating III (only UL version)
8. Rear plate insulating IV (only UL version)
9. Connection kit F/P IntBus/ExtNeut/Se
Fixed circuit-breaker mounting on DIN EN 50022 rail

Key
1 Mounting bracket
2 Insulating plate compulsory
3 0.98/25mm insulating barriers between phases (compulsory) provided

Drilling templates

3 POLES
4 POLES
Tmax XT2 - Installation
Installation for fixed circuit-breaker

Flanges

Key
1. Flange for fixed circuit-breaker III
2. Flange for fixed circuit-breaker IV
3. Flange for fixed circuit-breaker III-IV with MOE and FLD
4. Flange for circuit breaker III-IV with direct rotary handle RHD
5. Optional flange
Drilling templates for compartment door

**With standard flange**

![Diagram with standard flange specifications]

**Without flange**

![Diagram without flange specifications]

**With optional flange**

![Diagram with optional flange specifications]

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>With fixed</td>
<td>3.62/92</td>
<td>3-4 poles</td>
<td>3-4 poles</td>
</tr>
<tr>
<td>With optional flange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>plug-in, mounting at 1.97'/50mm</td>
<td>5.59/142</td>
<td>3-4 poles</td>
<td>3-4 poles</td>
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<tr>
<td>plug-in, mounting at 2.76'/70mm</td>
<td>6.38/162</td>
<td>3-4 poles</td>
<td>3-4 poles</td>
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</tbody>
</table>

**Key**

1. Optional flange
Tmax XT2 - Installation

Terminals for fixed circuit-breaker

Terminals F

Key
1. 0.98”/25mm insulating barriers between phases (compulsory) provided
2. Front terminals for busbar connection

Terminals EF

Key
3. Front extended terminals
4. Terminal covers with degree of protection IP40 (optional) not provided
5. 3.94”/100mm insulating barriers between phases (compulsory) provided
6. Insulated plate (compulsory) provided for XT2 Ue>440V
7. Drilling template for 3p circuit-breaker Ue>440V (compulsory)
8. Drilling template for 4p circuit-breaker Ue>440V (compulsory)
Terminals ES

Key
1 Drilling template for 3p circuit-breaker Ue>440V (compulsory)
2 Drilling template for 4p circuit-breaker Ue>440V (compulsory)
3 Front extended spread terminals
4 7.87”/200mm insulating barriers between phases (compulsory) provided for Ue>440V
5 Insulated plate (compulsory) provided for XT2 Ue>440V
**Tmax XT2 - Installation**

**Terminals for fixed circuit-breaker**

**Terminals FCCu**

- Key
  - 3 0.98”/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
  - 6 Terminals FCCu

**1x14...1/0AWG terminals FCCuAl**

- Key
  - 1 1x14...1/0AWG terminals FCCuAl
  - 3 0.98”/25mm insulating barriers between phases (compulsory) provided

**Terminals MC**

- Key
  - 6 Multi-cable terminals
**Terminals R**

Key

1. Rear adjustable terminals
2. Bottom terminal covers with degree of protection IP30 (optional) provided
3. Drilling template for mounting circuit-breaker III sheet
4. Drilling template for mounting circuit-breaker IV 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 0.98’/25mm insulating barriers between phases provided with circuit-breaker

MINIMUM ROTATION RADIUS FOR DOOR FULCRUM

[Diagram with dimensions and notes]
Rotary handle operating mechanism with padlock on the compartment door (RHE-PL)

Key
1 Extended rotary handle operating mechanism
3 Door drilling template with extended rotary handle
5 Transmission unit
6 0.98"/25mm insulating barriers between phases provided with circuit-breaker
Tmax XT2 - Installation
Accessories for fixed circuit-breaker

Stored energy motor operator (MOE)

---

Key
1 Stored energy motor operator (MOE)
2 Key lock (not provided)
3 Drilling template of door with MOE with flange
4 Door drilling template with MOE without flange
5 Drilling template for mounting 3p circuit breaker on the backplate
6 Drilling template for mounting 4p circuit breaker on the backplate
7 0.98’/25mm insulating barriers between phases provided with circuit-breaker
Front for lever operating mechanism (FLD)

Key
1. Key lock optional
2. Front for lever operating mechanism (FLD)
3. Drilling template of door with FLD with flange
4. Drilling template of door with FLD without flange
5. 0.98"/25mm Insulating barriers between phases provided with circuit-breaker
**Tmax XT2 - Installation**

**Accessories for fixed circuit-breaker**

Ekip Display or Ekip LED Meter

---

**Key**

1. 0.98”/25mm insulating barriers between phases provided with circuit-breaker
2. Ekip Display or Ekip LED Meter
Residual current RC Sel

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

<table>
<thead>
<tr>
<th>A [in/mm]</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>3.39/86</td>
<td>32.87/83.5</td>
</tr>
</tbody>
</table>
Tmax XT2 - Installation
Installation for plug-in circuit-breaker

Plug-in circuit-breaker mounting on sheet

Key
1 Fixed part
2 Moving part

With side connector for Ekip Touch trip units

Fixing at 1.97”/50mm

<table>
<thead>
<tr>
<th></th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>III - IV</td>
</tr>
<tr>
<td>Without flange</td>
<td>III - IV</td>
</tr>
</tbody>
</table>

Fixing at 2.76”/70mm for extended front terminals

<table>
<thead>
<tr>
<th></th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>III - IV</td>
</tr>
<tr>
<td>Without flange</td>
<td>III - IV</td>
</tr>
</tbody>
</table>

Key
9 Optional wiring duct
10 Interphase insulating barriers 0.98”/25mm (COMPULSORY)
15 Connection kit F/P IntBus/ExtNeut/Se
Drilling templates for the backplate

3 POLES

4 POLES

3-4 POLES
Tmax XT2 - Installation
Installation for plug-in circuit-breaker

Flanges

Key
1 Flange for withdrawable circuit breaker III
2 Flange for circuit-breaker IV
3 Flange for plug-in circuit-breaker III-IV with MOE and FLD
4 Flange for circuit-breaker III-IV with direct rotary handle (RHD)
5 Optional flange
Drilling templates for compartment door

With standard flange

With optional flange

Without flange
Tmax XT2 - Installation

Terminals for plug-in circuit-breaker

Terminals EF

Key
4 Front extended terminals
5 3.94"/100 mm insulating barriers between phases (compulsory) provided

Terminals ES

Key
1 Front extended spread terminals
2 7.87"/200mm insulating barriers between phases (compulsory) provided
3 Insulated plate (compulsory) provided
4 Drilling template for 3p circuit-breaker Ue>440V (compulsory)
5 Drilling template for 4p circuit-breaker Ue>440V (compulsory)
OVERALL DIMENSIONS

1x14...1/0AWG terminals FCCuAl

Key
1 1x14...1/0AWG front terminal FCCuAl
2 0.98'/25mm insulating barriers between phases (compulsory) provided
6 Adapter (compulsory) not provided

Terminals FCCu

Key
3 Terminals FCCu
4 Adapter (compulsory) not provided

Note:
0.98'/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

Terminals MC

Key
3 High terminal covers with degree of protection IP40 (optional) provided
4 Multi-cable terminals
6 Adapter (compulsory) not provided

MOUNTING AT 1.97'/50mm
Tmax XT2 - Installation

Terminals for plug-in circuit-breaker

Terminals HR/VR

---

**Key**
1. Rear vertical terminals
2. Rear horizontal terminals
3. 3.54"/90mm insulating barriers between phases (compulsory) not provided
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 (not provided)
5 3.94”/100mm insulating barriers between phases (compulsory) provided
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 (not provided)
5. 3.94"/100mm insulating barriers between phases (compulsory) provided
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

MOUNTING AT 1.97”/50mm

Key
1 3.94”/100mm insulating barriers between phases
2 Ekip Display or Ekip LED Meter

MOUNTING AT 1.97”/50mm
Tmax XT2 - Installation
Accessories for plug-in circuit-breaker

Residual current RC Sel

Key
1 Residual current
3 Fixed part
4 Moving part
5 3.94\"/100mm insulating barriers between phases (compulsory) provided
6 Extended terminals
7 Drilling template of door with direct rotary handle and mounting with flange
8 Drilling template of door with direct rotary handle and mounting without flange
9 Drilling template for mounting circuit-breaker on sheet

<table>
<thead>
<tr>
<th>A [in/mm]</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>5.35/136</td>
<td>5.26/133.5</td>
</tr>
</tbody>
</table>
Tmax XT2 - Installation
Installation for withdrawable circuit-breaker

Fixing on the backplate

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

<table>
<thead>
<tr>
<th>A [in/mm]</th>
<th>III - IV Fixing at 1.97&quot;/50mm</th>
<th>6.69/170</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>III - IV Fixing at 2.76&quot;/70mm for extended front terminals</td>
<td>7.48/190</td>
</tr>
</tbody>
</table>

With standard flange
## Tmax XT2 - Installation

Installation for withdrawable circuit-breaker

With side connector for Ekip Touch trip units

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

### Isolating Distance

<table>
<thead>
<tr>
<th>A [in/mm]</th>
<th>III - IV Fixing at 1.97&quot;/50mm</th>
<th>6.69/170</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>Fixing at 2.76&quot;/70mm for extended front terminals</td>
<td>7.48/190</td>
</tr>
</tbody>
</table>
Drilling templates for the backplate

Key
5 Flange for circuit-breaker III-IV withdrawable
6 Flange for withdrawable circuit-breakers III IV with direct rotary handle RHD
7 Flange for withdrawable circuit-breakers III IV with front extended terminals

Flanges

<table>
<thead>
<tr>
<th></th>
<th>C [in/mm]</th>
<th>D [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHD</td>
<td>4.37/111</td>
<td>4.90/124.5</td>
</tr>
<tr>
<td>FLD - MOE</td>
<td>4.5/114.3</td>
<td>5.29/134.5</td>
</tr>
</tbody>
</table>
Tmax XT2 - Installation
Installation for withdrawable circuit-breaker

Drilling templates compartment door

**With standard flange**

**Without flange**

**With optional flange**

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

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

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

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

B=5.26/133.5 C=6.12/155.5
3-4 POLES

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

B=5.59/142 C=6.38/162
3-4 POLES
Tmax XT2 - Installation
Terminals for withdrawable circuit-breaker

Terminals EF

MOUNTING AT 1.97”/50mm

MOUNTING AT 2.76”/70mm

Key
2 Moving part
3 FLD (FLD or RHD or RHE or MOE) compulsory for withdrawable version
4 Front extended terminals
5 3.94”/100mm insulating barriers between phases (compulsory) provided

Note:
insulated plate (compulsory) provided
**Tmax XT2 - Installation**

Terminals for withdrawable circuit-breaker

**Terminals ES**

---

Key

1 7.84"/200mm insulating barriers between phases (compulsory) provided

2 Front extended spread terminals

3 Adapter (compulsory) not provided

4 Insulated plate (compulsory) provided

5 Drilling template for 3p circuit-breaker Ue>440V (compulsory)

6 Drilling template for 4p circuit-breaker Ue>440V (compulsory)

---

**Mounting at 1.97"/50mm**
OVERALL DIMENSIONS

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

Key
2 0.98”/25mm insulating barriers between phases (compulsory) provided
4 1x14...1/0AWG front terminals FC CuAl
5 Adapter (compulsory) not provided

MOUNTING AT 1.97”/50mm

Terminals FCCu

Key
2 Terminals FCCu
4 Adapter (compulsory) not provided
5 0.98”/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

MOUNTING AT 1.97”/50mm

Terminals MC

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

MOUNTING AT 1.97”/50mm
Tmax XT2 - Installation

Terminals for withdrawable circuit-breaker

Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 3.54"/90mm insulating barriers between phases (compulsory) not provided

MOUNTING AT 1.97"/50mm

MOUNTING AT 1.97"/50mm
**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. 3.94"/100mm insulating barriers between phases (compulsory) provided
5. Extended terminals
6. Drilling template of door with direct rotary handle
Tmax XT2 - Installation

Accessories for withdrawable circuit-breaker

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

---

Key
1 Fixed part
2 Moving part
3 3.94”/100 mm insulating barriers between phases (compulsory) provided
4 Extended terminals
5 Key lock (not provided)
6 Stored energy motor operator (MOE)
Stored energy motor operator (MOE)

Key
1 Fixed part
2 Moving part
3 Front for lever operating (FLD)
4 3.94"/100mm insulating barriers between phases (compulsory) provided
5 Extended terminals
6 Key lock (not provided)

<table>
<thead>
<tr>
<th>A (in/mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor operator MOE III-IV 8.74/222</td>
</tr>
</tbody>
</table>
### Tmax XT2 - Installation

**Accessories for withdrawable circuit-breaker**

**Front for lever operating (FLD)**

---

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fixed part</td>
</tr>
<tr>
<td>2</td>
<td>Moving part</td>
</tr>
<tr>
<td>3</td>
<td>Front for lever operating (FLD)</td>
</tr>
<tr>
<td>4</td>
<td>3.94&quot;/100mm insulating barriers between phases (compulsory) provided</td>
</tr>
<tr>
<td>5</td>
<td>Extended terminals</td>
</tr>
<tr>
<td>6</td>
<td>Key lock (not provided)</td>
</tr>
</tbody>
</table>

---

**Table**

<table>
<thead>
<tr>
<th>A (in/mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front for lever operating FLD III - IV</td>
</tr>
</tbody>
</table>
**Tmax XT3 - Installation**

Installation for fixed circuit-breaker

### Mounting on the backplate

Key
1. Insulating plate compulsory
2. Overall dimension of optional wiring ducts
3. 0.98”/25mm insulating barriers between phases (compulsory) provided
4. Front carter compulsory for through door of the panel ≤ 0.98”/25mm

### Mounting on DIN EN 50022 rail

Key
1. Mounting bracket
2. Optional wiring ducts
3. Optional front cover for DIN rail
4. 0.98”/25mm insulating barriers between phases (compulsory) provided

<table>
<thead>
<tr>
<th>A [in/mm]</th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>II IV</td>
<td>2.91/74</td>
<td>2.79/71</td>
</tr>
<tr>
<td>III - IV</td>
<td></td>
<td>3.11/79</td>
</tr>
</tbody>
</table>
Tmax XT3 - Installation
Installation for fixed circuit-breaker

Drilling template

Flanges

Key
1 Flange for fixed circuit-breaker III
2 Flange for fixed circuit-breaker IV
3 Flange for circuit-breaker with direct motor operator MOD
4 Flange for circuit-breaker with direct rotary handle (RHD)
5 Optional flange
Drilling templates for compartment door

**With standard flange**

- **A=2.91/74**
  - 3 POLES
  - 
  - 
  - 

- **A=2.91/74**
  - 4 POLES
  - 
  - 
  - 

**Without flange**

- **A=2.79/71**
  - 3 POLES
  - 
  - 
  - 

- **A=2.79/71**
  - 4 POLES
  - 
  - 
  - 

- **A=3.11/79**
  - 3-4 POLES
  - 
  - 
  - 

**With optional flange**

- **A=3.11/79**
  - 3-4 POLES
  - 
  - 
  - 

---

**Key**

1. Optional flange
Tmax XT3 - Installation
Terminals for fixed circuit-breaker

Terminals F

Key
1 Front terminals for busbar connection
7 0.98”/25mm insulating barriers between phases (compulsory) provided

Terminals EF

Key
2 Front extended terminals
3 Terminal covers with degree of protection IP40 (optional) not provided
5 3.94”/100mm insulating barriers between phases (compulsory) provided
OVERALL DIMENSIONS

**Terminals ES**

Key

4 Front extended spread terminals for busbar connection

6 7.87"/200mm insulating barriers between phases (compulsory) provided

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

Key

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

9 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
Tmax XT3 - Installation

Terminals for fixed circuit-breaker

1 x 4AWG...300kcmil terminals FCCuAl

Key
1 1 x 4AWG...300kcmil terminals FCCuAl
2 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

Terminals FCCu

Key
6 Front terminals FCCu
9 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

Terminals MC

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

---

SACE TMAX XT UL/CSA LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS UL489 AND CSA CS22.2 STANDARDS

---

SACE TMAX XT UL/CSA LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS UL489 AND CSA CS22.2 STANDARDS

---

SACE TMAX XT UL/CSA LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS UL489 AND CSA CS22.2 STANDARDS

---

SACE TMAX XT UL/CSA LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS UL489 AND CSA CS22.2 STANDARDS
Terminals R

Key
1 Adjustable rear terminals
2 Bottom terminal covers with degree of protection IP30 (optional) provided
3 Drilling template for mounting circuit-breaker IV on sheet
4 Drilling template for mounting circuit-breaker III on sheet
**Tmax XT3 - Installation**

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breaker (RHD)

---

**Key**

2 Rotary handle operating mechanism on circuit-breaker RHD

4 Drilling template of door with direct rotary handle

6 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

---

MINIMUM ROTATION RADIUS FOR DOOR FULCRUM

DRILLING: SEE DET. "A"
Rotary handle operating mechanism with padlock on the compartment door (RHE-PL)

Key
1 Rotary handle operating mechanism on the compartment door (RHE)
3 Drilling template of door with extended rotary handle (RHE)
5 Transmission unit
6 0.98”/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
Tmax XT3 - Installation

Accessories for fixed circuit-breaker

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

Key
1 Transmission unit
2 0.98”/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
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 (not provided)
4  Direct motor operator MOD
5  Drilling template of door with MOD with flange
6  Drilling template of door with MOD without flange
7  0.98"/25mm insulating barriers
Tmax XT3 - Installation

Accessories for fixed circuit-breaker

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

---

**Key**

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

---

<table>
<thead>
<tr>
<th></th>
<th>A [ln/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>III 2.91/74</td>
</tr>
<tr>
<td>Without flange</td>
<td>III 2.79/71</td>
</tr>
</tbody>
</table>
RC Inst and RC Sel residual current release for 4-pole circuit-breaker

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

<table>
<thead>
<tr>
<th>With standard flange</th>
<th>IV</th>
<th>2.91/74</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>IV</td>
<td>2.79/71</td>
</tr>
</tbody>
</table>
**Tmax XT3 - Installation**

Installation for plug-in circuit-breaker

Mounting on the backplate

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

### Fixing at 1.97”/50mm

<table>
<thead>
<tr>
<th>With standard flange</th>
<th>II - IV</th>
<th>4.88/124</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>III - IV</td>
<td>4.76/121</td>
</tr>
<tr>
<td></td>
<td>III - IV</td>
<td>5.08/129</td>
</tr>
</tbody>
</table>

### Fixing at 2.76”/70mm for extended front terminals

<table>
<thead>
<tr>
<th>With standard flange</th>
<th>II - IV</th>
<th>5.67/144</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>III - IV</td>
<td>5.55/141</td>
</tr>
<tr>
<td></td>
<td>III - IV</td>
<td>5.87/149</td>
</tr>
</tbody>
</table>
Drilling templates for the backplate

Flanges

Key
1. Flange for plug-in circuit-breaker III
2. Flange for plug-in circuit-breaker IV
3. Flange for plug-in circuit-breaker with direct motor operator MOD
4. Optional flange
Tmax XT3 - Installation
Installation for plug-in circuit-breaker

Drilling templates for compartment door

With standard flange

With optional flange

A=4.88/124 C=5.67/144 3 POLES
A=4.88/124 C=5.67/144 4 POLES
A=4.76/121 C=5.55/141 3 POLES
A=4.76/121 C=5.55/141 4 POLES
A=2.79/129 C=5.87/149 3-4 POLES
A=2.79/129 C=5.87/149 3-4 POLES
Tmax XT3 - Installation
Terminals for plug-in circuit-breaker

Terminals EF

Key
4 Front extended terminals
5 3.94"/100mm insulating barriers between phases (compulsory) provided

Terminals ES

Key
3 Front extended spread terminals for busbar connection
5 Adapter for fixed part (compulsory) not provided
6 7.87"/200mm insulating barriers between phases (compulsory) provided
Tmax XT3 - Installation

Terminals for plug-in circuit-breaker

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

Key
1 1 x 14...1/0AWG front terminal FCCuAl
2 0.98"/25mm insulating barriers between phases (compulsory) provided
3 Adapter for fixed part (compulsory) not provided

Terminals FCCu

Key
4 Front terminals FCCu
5 Adapter for fixed part (compulsory) not provided
6 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

1x4AWG...300kcmil terminals FCCuAl

Key
1 1x4AWG...300kcmil terminals FCCuAl
2 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
3 Adapter for fixed part (compulsory) not provided
Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 3.54”/90mm Insulating barriers between phases (compulsory)
   not provided
**Tmax XT3 - Installation**

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

**Direct motor operator (MOD)**

---

Key
1. Fixed part
2. Moving part
3. Key lock (not supplied)
4. Direct motor operator MOD
5. Drilling template of door with MOD with flange
6. Drilling template of door with MOD without flange

---

MOUNTING AT 1.97”/50mm
**Tmax XT4 - Installation**

*Installation for fixed circuit-breaker*

Mounting on the backplate

---

**Fixing at 1.97”/50mm A [in/mm]**

<table>
<thead>
<tr>
<th>With standard flange</th>
<th>II IV</th>
<th>3.39/86</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without flange</td>
<td>III - IV</td>
<td>3.29/83.5</td>
</tr>
<tr>
<td></td>
<td>III - IV</td>
<td>3.60/91.5</td>
</tr>
</tbody>
</table>

---

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

---

### Overall Dimensions

**OVERALL DIMENSIONS**

- **Tmax XT4 - Installation**
- **Installation for fixed circuit-breaker**
- **Mounting on the backplate**
- **Fixing at 1.97”/50mm**
- **With side connector for Ekip Touch trip units**

---

**Key**

1. Insulating plate (compulsory)
2. Overall dimension of optional wiring ducts
3. 0.98”/25mm insulating barriers between phases (compulsory) provided
4. Front carter (compulsory for through door of the panel ≤25mm/0.98”)

---

**Diagram**

- **With standard flange**
  - II IV
  - 3.39/86
- **Without flange**
  - III - IV
  - 3.29/83.5
  - III - IV
  - 3.60/91.5

---

**Diagram**

- **With side connector for Ekip Touch trip units**
Tmax XT4 - Installation
Installation for fixed circuit-breaker

Mounting on DIN 50022 rail

Drilling templates for the backplate

Flanges
Drilling templates for compartment door

With standard flange

<table>
<thead>
<tr>
<th>With standard flange</th>
<th>A=3.39/86</th>
<th>3 POLES</th>
<th>A=3.39/86</th>
<th>4 POLES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A=3.29/83.5</td>
<td>3 POLES</td>
<td>A=3.29/83.5</td>
<td>3-4 POLES</td>
</tr>
<tr>
<td></td>
<td>A=3.62/92</td>
<td>3-4 POLES</td>
<td>A=3.62/92</td>
<td>3-4 POLES</td>
</tr>
</tbody>
</table>

Without flange

With optional flange
Tmax XT4 - Installation

Terminals for fixed circuit-breaker

Terminals F

Key
1. 0.98”/25mm insulating barriers between phases (compulsory) provided
2. Top terminal covers with degree of protection IP30 (optional) not provided

Terminals EF

Key
3. Front extended terminals
4. Terminal covers with degree of protection IP40 (optional) not provided
5. 3.94”/100mm insulating barriers between phases (compulsory) provided
6. Insulated plate provided compulsory for Ue>440V
7. Drilling template for 3p circuit-breaker
8. Drilling template for 4p circuit-breaker
## Terminals ES

**Key**
1. Drilling template for 3p circuit-breaker
2. Drilling template for 4p circuit-breaker
3. Front extended spread terminals
4. 7.87"/200mm insulating barriers between phases (compulsory) provided
5. Insulated plate provided compulsory for Ue>440V

### 3 POLES

### 4 POLES

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

**Key**
1. 1 x 14...1/0AWG terminals FCCuAl
2. 0.98°/25mm insulating barriers between phases (compulsory) provided

---

**OVERALL DIMENSIONS**

163 | 6.42 |
139 | 5.47 |
17.5 | 0.69 |
77.5 | 3.05 |
155 | 6.10 |
195 | 7.68 |
17.5 | 0.69 |
52.5 | 2.07 |
115 | 4.53 |
139 | 5.47 |
163 | 6.42 |
55 | 2.17 |
30 | 1.18 |
25 | 0.98 |
10 | 0.39 |
80 | 3.15 |
30 | 1.18 |
165 | 6.50 |
30 | 1.18 |
30 | 1.18 |
30 | 1.18 |
30 | 1.18 |
130 | 5.12 |
10 | 0.39 |
130 | 5.12 |
10 | 0.39 |
10 | 0.39 |
10 | 0.39 |
**Tmax XT4 - Installation**

**Terminals for fixed circuit-breaker**

1x4AWG...300kcmil terminals FCCuAl

---

**Key**
1. 1x4AWG...300kcmil terminals FCCuAl
2. 0.98"/25mm insulating barriers between phases (compulsory) provided

---

**Terminals FCCu**

---

**Key**
1. Terminals FCCu
2. 0.98"/25mm insulating barriers between phases (compulsory) provided

---

**Terminals MC**

---

**Key**
2. Multi-cable terminals
3. Terminal covers with degree of protection IP40 (optional) provided
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 0.98’/25mm insulating barriers between phases
Tmax XT4 - Installation
Accessories for fixed circuit-breaker

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

Key
1 Rotary handle operating mechanism of the compartment door
3 Drilling template for RHE
5 Transmission unit
6 0.98”/25mm insulating barriers between phases

---

SACE TMAX XT UL/CSA LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS UL489 AND CSA CS22.2 STANDARDS
Stored energy motor operator (MOE)

Key
1 Stored energy motor operator (MOE)
2 Key lock (not provided)
3 Drilling template of door with direct rotary handle with flange (MOE)
4 Drilling template of door with direct rotary handle without flange (MOE)
5 Drilling template for mounting circuit breaker III on the backplate
6 Drilling template for mounting circuit breaker IV on the backplate
7 0.98"/25mm insulating barriers between phases

- Ø 4.5 - M4
- Ø 0.18
Tmax XT4 - Installation
Accessories for fixed circuit-breaker

Front for lever operating mechanism (FLD)

Key
1. Front for lever operating mechanism (FLD)
2. Key lock (not provided)
3. Drilling template of door with direct rotary handle with flange (FLD)
4. Drilling template of door with direct rotary handle without flange (FLD)
5. Drilling template for mounting circuit breaker III on the backplate
6. Drilling template for mounting circuit breaker IV on the backplate
7. 0.98”/25mm insulating barriers between phases
Ekip Display or LED Meter

Key
1  Ekip Display or LED Meter
2  Optional wiring ducts
3  0.98”/25mm insulating barriers between phases
**Tmax XT4 - Installation**

Accessories for fixed circuit-breaker

Residual current RC Sel

---

**Key**

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

<table>
<thead>
<tr>
<th>A [ln/mm]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>IV</td>
</tr>
<tr>
<td>Without flange</td>
<td>IV</td>
</tr>
</tbody>
</table>
**Tmax XT4 - Installation**

Installation for plug-in circuit-breaker

Mounting on the backplate

---

**Key**
1. Fixed part
2. Moving part

---

<table>
<thead>
<tr>
<th>Fixing at 1.97”/50mm</th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>II IV 5.35/136</td>
</tr>
<tr>
<td>Without flange</td>
<td>III - IV 5.26/133.5</td>
</tr>
<tr>
<td></td>
<td>III - IV 5.57/141.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixing at 2.76”/70mm for extended front terminals</th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td>II IV 6.14/156</td>
</tr>
<tr>
<td>Without flange</td>
<td>III - IV 6.04/153.5</td>
</tr>
<tr>
<td></td>
<td>III - IV 6.36/161.5</td>
</tr>
</tbody>
</table>

---

With side connector for Ekip Touch trip units

---

**Key**
1. Front terminals
2. Flange for iv circuit-breaker (always supplied with IV CB)
9. Optional wiring duct
10. Interphase insulating barriers 0.98”/25mm (compulsory)
15. Connection kit F/P IntBus/ExtNeut/Se

---
Tmax XT4 - Installation

Installation for plug-in circuit-breaker

Drilling templates
Flanges

Key
1 Flange for plug-in circuit-breaker III
2 Flange for plug-in circuit-breaker IV
3 Flange for plug-in circuit-breaker III-IV with MOE and FLD
4 Flange for circuit-breaker III-IV with direct rotary handle
5 Optional flange
**Tmax XT4 - Installation**

Installation for plug-in circuit-breaker

Drilling templates compartment door

**With standard flange**

- **3 POLES**
  - $B=5.35/136$ $C=6.14/156$

- **4 POLES**
  - $B=5.35/136$ $C=6.14/156$

**Without flange**

- **3 POLES**
  - $B=5.26''/133.5$ $C=6.04/153.5$

- **4 POLES**
  - $B=5.26''/133.5$ $C=6.04/153.5$

**With optional flange**

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

---

*SACE TMAX XT UL/CSA LOW VOLTAGE MOLDED CASE CIRCUIT-BREAKERS UL489 AND CSA CS22.2 STANDARDS*

**Drilling templates compartment door**

- **With standard flange**
  - **3 POLES**
    - $B=5.35/136$ $C=6.14/156$
  - **4 POLES**
    - $B=5.35/136$ $C=6.14/156$

- **Without flange**
  - **3 POLES**
    - $B=5.26''/133.5$ $C=6.04/153.5$
  - **4 POLES**
    - $B=5.26''/133.5$ $C=6.04/153.5$

- **With optional flange**
  - **3-4 POLES**
    - $B=5.60/142$ $C=6.38/162$
Tmax XT4 - Installation
Terminals for plug-in circuit-breaker

Terminals EF

Key
4 Front extended terminals
5 3.94"/100mm insulating barriers between phases (compulsory) provided

Note:
insulated plate to be provided by customer
**Tmax XT4 - Installation**

Terminals for plug-in circuit-breaker

**Terminals ES**

- **Key**
  1. Front extended spread terminals
  2. 7.87’/200mm insulating barriers between phases (compulsory) provided
  3. Insulated plate (compulsory) provided
  4. Drilling template for 3p circuit-breaker
  5. Drilling template for 4p circuit-breaker
  6. Adapter (compulsory) not provided

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

- **Key**
  1. 1 x 14...1/0 AWG front terminals FCCuAl
  2. 0.98”/25mm insulating barriers between phases (compulsory) provided
  6. Adapter (compulsory) not provided
OVERALL DIMENSIONS

1x4AWG...300kcmil terminals FCCuAl

Key
1 1x4AWG...300kcmil front terminals FCCuAl
2 0.98"/25mm insulating barriers between phases (compulsory) provided
6 Adaptor (compulsory) not provided

Terminals FCCu

Key
2 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
5 Terminals FCCu
6 Adaptor (compulsory) not provided

Terminals MC

Key
3 Provided high terminal covers with degree of protection IP40 (compulsory for multicables terminals)
4 Multicable terminals
6 Adapter (compulsory) not provided
**Tmax XT4 - Installation**

Terminals for plug-in circuit-breaker

**Terminals HR/VR**

---

**Key**
1. Rear vertical terminals
2. Rear horizontal terminals
3. 3.54"/90mm insulating barriers between phases (compulsory)

---

**MOUNTING AT 1.97"/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 (not provided)
5 3.94"/100mm insulating barriers between phases (compulsory) provided
6 Drilling template of door with direct rotary handle with flange
7 Drilling template of door with direct rotary handle without flange
8 Extended terminals
**Tmax XT4 - 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. 3.94’/100mm insulating barriers between phases (compulsory) provided
5. Drilling template of door with direct rotary handle with flange
6. Drilling template of door with direct rotary handle without flange
### Ekip Display or LED Meter

**Key**

1. 3.94"/100mm insulating barriers between phases (compulsory) provided
2. Ekip Display or LED Meter

---

**OVERALL DIMENSIONS**

---

**OVERALL DIMENSIONS**

MOUNTING AT 1.97"/50mm

MOUNTING AT 2.76"/70mm
Tmax XT4 - Installation
Accessories for plug-in circuit-breaker

Residual current RC Sel

---

Key
1 Residual current
3 Fixed part
4 Moving part
5 3.94”/100mm insulating barriers between phases (compulsory) provided
6 Extended terminals
7 Drilling template of door with direct rotary handle and mounting with flange
8 Drilling template of door with direct rotary handle and mounting without flange
9 Drilling template for mounting circuit-breaker on sheet

---

A [in/mm]

<table>
<thead>
<tr>
<th></th>
<th>With standard flange</th>
<th>Without flange</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IV</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>5.35/136</td>
<td>52.56/133.5</td>
</tr>
</tbody>
</table>

---
Tmax XT4 - Installation

Installation for withdrawable circuit-breaker

Fixing on sheet

---

**OVERALL DIMENSIONS**

---

**Key**

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

---

<table>
<thead>
<tr>
<th>Key</th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard flange</td>
<td></td>
</tr>
<tr>
<td>III - IV Fixing at 1.97'/50mm</td>
<td>6.69/170</td>
</tr>
<tr>
<td>III - IV Fixing at 2.76'/70mm for extended front terminals</td>
<td>7.48/190</td>
</tr>
</tbody>
</table>
Tmax XT4 - Installation
Installation for withdrawable circuit-breaker

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
11 Fkd (FLD o RHD o RHE o MOE) Compulsory with withdrawable version
12 Connection kit W IntBus/ExtNeut/Sel

---

<table>
<thead>
<tr>
<th></th>
<th>A [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>III - IV</td>
<td>6.69/170</td>
</tr>
<tr>
<td>III - IV</td>
<td>2.76/70mm for extended front terminals</td>
</tr>
</tbody>
</table>

---

Fixing at 1.97"/50mm

---

---
Drilling templates for the backplate

3 POLES

4 POLES

3-4 POLES

Flanges

Key
1 Flange for withdrawable circuit-breaker III-IV

<table>
<thead>
<tr>
<th></th>
<th>C [in/mm]</th>
<th>D [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHD</td>
<td>4.37/111</td>
<td>4.90/124.5</td>
</tr>
<tr>
<td>FLD-MOE</td>
<td>4.5/114.3</td>
<td>5.29/134.5</td>
</tr>
</tbody>
</table>
Tmax XT4 - Installation
Installation for withdrawable circuit-breaker

Drilling templates for compartment door

With standard flange

Without flange

With optional flange

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

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

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

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

B=5.60/142 C=6.37/162
3-4 POLES
Tmax XT4 - Installation
Terminals for withdrawable circuit-breaker

Terminals EF

Key:
4 Front extended terminals
5 3.94"/100mm Insulating barriers between phases (compulsory) provided

Note:
Insulated plate (compulsory) provided

MOUNTING AT 2.76"/70mm
MOUNTING AT 1.97"/50mm
Tmax XT4 - Installation
Terminals for withdrawable circuit-breaker

Terminals ES

MOUNTING AT 1.97”/50mm

3 POLES

4 POLES

---

Key
1 Front extended spread terminals
2 7.87”/200mm Insulating barriers between phases (compulsory) provided
3 Insulated plate provided compulsory for Ue>440V
4 Drilling template for 3p circuit-breaker
5 Drilling template for 4p circuit-breaker
6 Adapter (compulsory) not provided
1 x 14...1/0 AWG terminals FCCuAl

Key
2 0.98"/25mm insulating barriers between phases (compulsory) provided
4 Front terminals FCCuAl
5 Adapter (compulsory) not provided

MOUNTING AT 1.97"/50mm

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

Key
2 0.98"/25mm insulating barriers between phases (compulsory) provided
4 Front terminals FCCuAl
5 Adapter (compulsory) not provided

MOUNTING AT 1.97"/50mm

Terminals FCCu

Key
1 0.98"/25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
2 Terminals FCCu
3 Adapter (compulsory) not provided

MOUNTING AT 1.97"/50mm
Tmax XT4 - Installation
Terminals for withdrawable circuit-breaker

Terminals MC

Key
1 Multicable terminals
2 Rear horizontal terminals
3 3.54"/90mm insulating barriers between phases (compulsory) not provided
4 Adapter (compulsory) not provided

MOUNTING AT 1.97"/50mm

Terminals HR/VR

Key
1 Rear vertical terminals
2 3.54"/90mm insulating barriers (optional) provided
4 Adapter (compulsory) not provided

MOUNTING AT 1.97"/50mm
Tmax XT4 - Installation
Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on circuit-breakers (RHD)

---

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

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

---

Key
1 Fixed part
2 Moving part
3 Rotary handle operating mechanism on the compartment door (RHE)
4 3.94"/100mm Insulating barriers between phases (compulsory) provided
5 Extended terminals
6 Door drilling template with extended rotary handle
7 Transmission unit
Front for lever operating mechanism (FLD)

Key
1 Fixed part
2 Moving part
3 Front for lever operating mechanism FLD
4 Drilling template of door with direct rotary handle and fixed flange
5 3.94*/100mm insulating barriers between phases (compulsory) provided
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. 3.94"/100mm insulating barriers between phases (compulsory) provided
6. Extended terminals
7. Key lock (not provided)
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 3.94"/100mm insulating barriers between phases (compulsory) provided
6 Residual current
7 Extended terminals
8 Mounting screws for fixed part of connector
9 Drilling template of door with direct rotary handle and fixed flange
**Tmax XT7 - Installation**

Installation for fixed circuit-breaker

**Fixing on sheet**

**Drilling templates for support sheet**

<table>
<thead>
<tr>
<th></th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front terminals for flat connection</td>
</tr>
<tr>
<td>2</td>
<td>Extended front terminals</td>
</tr>
<tr>
<td>3</td>
<td>Flange for the compartment door</td>
</tr>
<tr>
<td>4</td>
<td>Flange fixing screws</td>
</tr>
<tr>
<td>5</td>
<td>Tightening torque 0.5Nm</td>
</tr>
<tr>
<td>6</td>
<td>Fixing on sheet steel III</td>
</tr>
<tr>
<td>7</td>
<td>Fixing on sheet steel IV</td>
</tr>
<tr>
<td>8</td>
<td>Tightening torque 18Nm</td>
</tr>
<tr>
<td>9</td>
<td>Key look (optional)</td>
</tr>
<tr>
<td>10</td>
<td>Padlock device (optional)</td>
</tr>
<tr>
<td>11</td>
<td>Tightening torque 2Nm</td>
</tr>
<tr>
<td>12</td>
<td>Compartment door sheet steel drilling for flange</td>
</tr>
<tr>
<td>13</td>
<td>Compartment door sheet steel drilling for 206x204 frontal</td>
</tr>
<tr>
<td>14</td>
<td>Clamp for auxiliary contacts</td>
</tr>
</tbody>
</table>

**Drilling templates compartment door**

**Table**

| With standard flange | III-IV | 5.12÷5.55/130÷141 |
| Without flange | III-IV | 5.78/147 |

**Diagram**

- **Legend**
  - A
  - B
  - C
  - D
  - X

- **Dimensions**
  - 5.51 X 168.5
  - 6.63 X 168.5
  - 9.33 X 2018-09-13
  - 142
  - 244
  - 0.16Ø N°6 HOLES
  - 4 N°6 FORI

- **Notes**
  - con divieto di riprodurlo, utilizzarlo o renderlo disclosure to third parties without express authority
  - We reserve all rights in this document and in the apparatus.
Tmax XT7 - Installation
Terminals for fixed circuit-breaker

Terminals EF

Key
1. Extended front terminals EF
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5Nm
5. Tightening torque 18Nm
6. Key look (optional)
7. Padlock device (optional)
8. Clamp for auxiliary contacts
9. Insulating plate
10. Separating partitions
11. High terminal cover with IP40 protection degree
Tmax XT7 - Installation

Terminals for fixed circuit-breaker

Terminals ES

---

Key
1. Spread extended front terminals ES
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5Nm
5. Tightening torque 18Nm
6. Key look (optional)
7. Padlock device (optional)
8. Clamp for auxiliary contacts
9. Insulating plate
10. Separating partitions 7.87~/200mm

---

With standard flange III-IV 5.12~/5.55~/130~/141
Without flange III-IV 5.78~/147
4 x 500 kcmil and 2 x 500 kcmil (IEC only) FC CuAl

Key
1. Fc Cu-Al terminal 4x500 kcmil
2. Fc Cu-Al terminal 2x500 kcmil (IEC only)
3. Flange for the compartment door
4. Flange fixing screws
5. Tightening torque 0.5Nm
6. Tightening torque 18Nm
7. Tightening torque 43Nm
8. Tightening torque 8.19 Nm
9. Padlock device (optional)
10. Key look (optional)
11. Insulating plate
12. Clamp for auxiliary contacts
13. High terminal cover with IP40 protection degree
14. Low protection cover with IP30 protection degree
15. Tightening torque 18Nm

A [in/mm]

| With standard flange | III-IV | 5.12÷5.55/130÷141 |
| Without flange | III-IV | 5.78/147 |
Tmax XT7 - Installation

Terminals for fixed circuit-breaker

Terminals R

Terminals HR upper

Terminals VR lower

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

<table>
<thead>
<tr>
<th></th>
<th>III [in/mm]</th>
<th>IV [in/mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>2.76/70</td>
<td>5.51/140</td>
</tr>
<tr>
<td>C</td>
<td>7.58/192.5</td>
<td>10.33/262.5</td>
</tr>
</tbody>
</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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>With flange</td>
<td>7.91/201 4.57/116 0.95/24.25</td>
<td></td>
</tr>
<tr>
<td>Without flange</td>
<td>7.56/192 4.21/107 0.78/19.75</td>
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</table>
Tmax XT7 - Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)
**Tmax XT7 - Installation**

Installation for withdrawable circuit-breaker

Fixing on sheet

---

**Key**

1. EF front terminal
2. ES front terminal
3. Flange for the compartment door
4. Flange fixing screws
5. Tightening torque 0.5Nm
8. Tightening torque 9Nm
10. Key lock (optional)
11. Padlock (optional)
12. Clamp for auxiliary contacts
13. Tightening torque 9Nm
**Tmax XT7 - Installation**  
Installation for withdrawable circuit-breaker

Drilling templates for support sheet

<table>
<thead>
<tr>
<th>III [in/mm]</th>
<th>IV [in/mm]</th>
</tr>
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<tr>
<td>B</td>
<td>8.11/206</td>
</tr>
<tr>
<td>C</td>
<td>8.62/219</td>
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</table>

**Flange**

**Drilling template compartment door**

---

**Key**

3 Flange for the compartment door  
6 Compartment door sheet steel drilling for flange  
7 Fixing on sheet steel drilling template  
9 Mounting at wall
Tmax XT7 - Installation
Terminals for withdrawable circuit-breaker

Terminals EF and ES

Key
1 EF front terminal
2 ES front terminal
4 Flange fixing screws
5 Tightening torque 0.5Nm
8 Tightening torque 9Nm
10 Key lock (optional)
11 Padlock (optional)
12 Clamp for auxiliary contacts
13 Tightening torque 9Nm
**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 0.5Nm
6. Tightening torque 0.35Nm
7. Compartment door sheet steel drilling for flange
8. Compartment door sheet steel drilling for flange
9. Mounting at wall
10. Keylock (optional)
11. Padlock (optional)
12. Clamp for auxiliary contacts
13. Tightening torque 9Nm
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
Rotary handle operating mechanism on the compartment door (RHE)
**Tmax XT7 M - Installation**

Installation for fixed circuit-breaker

Fixing on sheet

Drilling templates for support sheet

Flange

Drilling templates compartment door

---

**Key**

1. Front terminals for flat connection
2. Extended front terminals
3. Flange for the compartment door
4. Flange fixing screws
5. Tightening torque 0.5Nm
6. Fixing on sheet steel III
7. Fixing on sheet steel IV
8. Tightening torque 18Nm
9. Key lock (optional)
10. Tightening torque 2 Nm
11. Compartment door sheet steel drilling for flange
12. Compartment door sheet steel drilling for 206x204 frontal
13. Clamp for auxiliary contacts

---

*Table:*

<table>
<thead>
<tr>
<th></th>
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</tr>
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<tr>
<td>With standard flange III-IV</td>
<td>5.12+5.55/130+141</td>
</tr>
<tr>
<td>Without flange III-IV</td>
<td>5.78/147</td>
</tr>
</tbody>
</table>

---

*Diagram:*
**Tmax XT7 M - Installation**

**Terminals for fixed circuit-breaker**

Terminals EF

---

**Key**
1. Extended front terminals EF
2. Flange for the compartment door
3. Flange fixing screws
4. Tightening torque 0.5Nm
5. Tightening torque 18Nm
6. Key look (optional)
7. Tightening torque 2Nm
8. Clamp for auxiliary contacts
9. Insulating plate
10. Separating partitions 100mm
11. Flange fixing screws
12. Flange for the compartment door
13. High terminal cover with IP40 protection degree
Tmax XT7 M - Installation

Terminals for fixed circuit-breaker

Terminals ES

<table>
<thead>
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<tbody>
<tr>
<td>1</td>
<td>Spreaded extended front terminals ES</td>
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<tr>
<td>2</td>
<td>Flange for the compartment door</td>
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</tr>
<tr>
<td>3</td>
<td>Flange fixing screws</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tightening torque 0.5Nm</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Tightening torque 18Nm</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Key look (optional)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Tightening torque 2 Nm</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Clamp for auxiliary contacts</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Insulating plate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>With standard flange III-IV</th>
<th>Without flange III-IV</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>5.12÷5.55/130÷141</td>
<td>5.78/147</td>
</tr>
</tbody>
</table>
4 x 500 kcmil and 2 x 500 kcmil (IEC only) FC CuAl

Key
1 FC Cu-Al terminal 4x500kcmil
2 FC Cu-Al terminal 2x500kcmil (IEC only)
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5Nm
6 Tightening torque 18Nm
7 Tightening torque 2 Nm
8 Flange fixturing screws
9 Insulating plate
10 Key look (optional)
11 Insulating plate
12 High terminal cover with IP40 protection degree
13 Clamp for auxiliary contact
14 Low protection cover with IP30 protection degree
15 Flange fixing screws
16 Tightening torque 18 Nm
17 Low protection cover with IP30 protection degree
18 Tightening torque 18 Nm

<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>5.12-5.55</td>
<td>5.78/147</td>
<td></td>
</tr>
</tbody>
</table>
Tmax XT7 M - Installation

Terminals for fixed circuit-breaker

Terminals R

Terminals HR upper

Terminals VR lower

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

<table>
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<tr>
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<th>IV [in/mm]</th>
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<td>5.51/140</td>
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<tr>
<td>C</td>
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<td>10.33/262.5</td>
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</table>
Tmax XT7 M - Installation
Installation for withdrawable circuit-breaker

Fixing on sheet

Drilling template for support sheet

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

Flange

Drilling template compartment door
**Tmax XT7 M - Installation**

**Terminals for withdrawable circuit-breaker**

**Terminals R**

**Terminals VR lower**

**Terminals HR lower**

---

**Key**

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

---

**Abbreviations**

- **UL/CSA**: Underwriters Laboratories/Canadian Standards Association
- **SACE**: Società Italiana di Apparecchi Elettrici e Comunicazioni
- **TMAX**: Tmax circuit-breakers
- **XT7**: XT7 series
- **UL489**: UL Standard for Molded-Case Circuit-Breakers
- **CS22.2**: CSA Standard for Low Voltage Circuit-Breakers
- **N°**: Number
- **Nm**: Newton meters
- **lbs**: Pounds
Tmax XT - Common accessories
Horizontal interlock XT series

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

<table>
<thead>
<tr>
<th></th>
<th>B [in/mm]</th>
<th>C [in/mm]</th>
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</thead>
<tbody>
<tr>
<td>XT1</td>
<td>4.10/104.25</td>
<td>5.09/129.25</td>
</tr>
<tr>
<td>XT2</td>
<td>4/101.75</td>
<td>5.19/131.75</td>
</tr>
<tr>
<td>XT3</td>
<td>3.92/99.75</td>
<td>5.26/133.75</td>
</tr>
<tr>
<td>XT4</td>
<td>3.91/99.25</td>
<td>5.28/134.25</td>
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</tbody>
</table>
Tmax XT - Common accessories
Vertical interlock XT series

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

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

Reading information
3/2 Circuit-breakers
3/10 Wiring diagrams
3/12 Diagrams for XT2 - XT4
3/30 Diagrams for XT7 and XT7 M
3/39 XT2-XT4-XT7-XT7 M modules
Reading information
Circuit-breakers

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.

Description of figures
Fig. 1 = Shunt opening release.
Fig. 2 = Supplementary shunt opening release (only for four-pole circuit-breakers).
Fig. 4 = Supplementary permanent shunt opening release (only for four-pole circuit-breakers).
Fig. 5 = Instantaneous undervoltage release (see Notes B and F).
Fig. 6 = Undervoltage release with electronic time delay device outside the circuit-breaker, see note B).
Fig. 7 = Instantaneous undervoltage release in the version for machine tools with one contact in series (see notes B, C and F).
Fig. 8 = Instantaneous undervoltage release in the version for machine tools with two contacts in series (see Notes B, C and F).
Fig. 9 = First auxiliary early contact operated by the crank handle.
Fig. 10 = Second auxiliary early contact operated by the crank handle.
Fig. 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.
Fig. 11a = Protection relay tripped signaling contact – S51
Fig. 12 = Residual current release circuits type RC Sel, RC B Type or RC Sel 200.
Fig. 12a = Contact for signaling position of loaded springs – S33M
Fig. 13 = Two contacts for electrical signaling of residual current release pre-alarm and alarm type RC Sel, RC B Type or RC Sel 200.
Fig. 13a = Motor for loading closing springs – M
Fig. 14a = Trip contact reset coil – YR
Fig. 16 = Tripped position breaker signaling contact SY
Fig. 17 = Auxiliary early contacts – S4
Fig. 21 = Direct control motor operator (MOD) (only for XT1 and XT3 fixed or plug-in circuit-breakers) (see note I).
Fig. 22 = Motor operator with stored energy (MOE) (only for circuit-breakers XT2 and XT4).
Fig. 23 = A contact for electrical signaling of stored energy motor operator that can be operated remotely.
Fig. 24 = RC residual current sensor input (ANSI 64&50N TD)
Fig. 24a = RC differential ground fault protection sensor input (ANSI 87N)
Fig. 25 = Transformer star centre sensor input
Fig. 27 = Current sensor input on external neutral (only for 3-pole circuit-breaker)
Fig. 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).
Fig. 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 thermal magnetic or electronic trip unit (only for voltages up to 250V).
Fig. 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 (trip position) (only for voltages up to 250V).

Fig. 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 (trip position) (only for voltages up to 250V).

Fig. 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).

Fig. 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 (trip position) (only for voltages up to 250V).

Fig. 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 (trip position) (only for voltage up to 400V).

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

Fig. 39 = Three supplementary changeover contacts for electrical signaling of circuit-breaker open or closed (only for fixed or plug-in version circuit-breakers).

Fig. 41 = First changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).

Fig. 42 = Second changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).

Fig. 43 = Third changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).

Fig. 44 = Fourth changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).

Fig. 45 = First changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).

Fig. 46 = Second changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).

Fig. 47 = Current transformer circuit on the neutral conductor outside the circuit-breaker (for plug-in or withdrawable version circuit-breaker).

Fig. 48 = Auxiliary circuits of the 24V auxiliary power supply unit and of the HMI030 type interface unit (see note E).

Fig. 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).

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

Fig. 53 = Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG connected to interface unit type Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.
Reading information
Circuit-breakers

Fig. 54a = Stand alone interface unit type Ekip Com with MOE-E motor operator.
Fig. 55a = Interface unit type Ekip Com with direct supply to relay and MOE-E motor operator.
Fig. 61 = Modbus RTU STA interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 62 = Motor thermistor circuit.
Fig. 62a = Modbus RTU interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 63 = Circuit of the voltage socket on the neutral conductor outside the circuit-breaker.
Fig. 63a = Modbus TCP STA interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 64 = Modbus TCP interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 65 = Profinet interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 66 = Ethernet IP interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 67 = IEC61850 interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 68 = Ekip Link interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 69 = Ekip Com Hub interface of Ekip Com Unit to install inside the circuit-breaker.
Fig. 75 = First opening coil – YO
Fig. 75a = Ekip Cartridge for one module and one Ekip Supply
Fig. 76 = First opening coil with control from protection trip unit – YO, Ekip Com Actuator
Fig. 76a = Ekip Cartridge for three modules and one Ekip Supply
Fig. 77 = First closing coil – YC
Fig. 78 = First opening coil with control from protection trip unit – YC, Ekip Com Actuator
Fig. 81 = Open/Close auxiliary contacts of circuit-breaker (first set)
Fig. 81a = Ekip Supply: auxiliary supply through module 110-240Vac/dc or 24/48Vdc and local bus
Fig. 83 = Ekip Signalling 2K-1
Fig. 84 = Ekip Signalling 2K-2
Fig. 85 = Ekip Signalling 2K-3
Fig. 86 = Ekip Synchrocheck
Fig. 87 = Ekip Signalling 3T-1
Fig. 88 = Ekip Signalling 3T-2
Fig. 89 = Ekip Com Modbus RTU
Fig. 90 = Ekip Com Modbus TCP
Fig. 91 = Ekip Com Profibus DP
Fig. 91a = Supplementary open/close auxiliary contacts outside the circuit-breaker
Fig. 92 = Ekip Com Ethernet IP
Fig. 93 = Ekip Com Devicenet™
Fig. 94 = Ekip Com IEC61850
Fig. 95 = Ekip Link
Fig. 95a = Contacts for signaling of circuit-breaker in racked-in, test, racked-out position
Fig. 96 = Ekip Com Hub
Fig. 97 = Ekip Com Profinet
Fig. 104 = Auxiliary circuits of Ekip Com or Kit of 24V DC auxiliary voltage for electronic trip units and of Ekip Multimeter display.
Fig. 110 = Ekip Com Modbus RTU redundant
Fig. 111 = Ekip Com Modbus TCP redundant
Fig. 112 = Ekip Com Profibus DP redundant
Fig. 113 = Ekip Com Profinet redundant
Fig. 114 = Ekip Com Devicenet™ redundant
Fig. 115 = Ekip Com Ethernet IP redundant
Fig. 116 = Ekip Com IEC61850 redundant
Fig. 132 = Motor starting module Ekip CI with ABB contactor series AF
<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
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<tbody>
<tr>
<td>□</td>
<td>Diagram figure number</td>
</tr>
<tr>
<td>*</td>
<td>See the note indicated by the letter</td>
</tr>
<tr>
<td>A1</td>
<td>Applications located on the moving part of the circuit-breaker</td>
</tr>
<tr>
<td>A4</td>
<td>Indicative devices and connections for control and signaling, outside the circuit-breaker</td>
</tr>
<tr>
<td>A11</td>
<td>Display unit type Ekip Display (display) or Ekip LED Meter (current display)</td>
</tr>
<tr>
<td>A12</td>
<td>Interface unit type Ekip Com (with MODBUS serial communication)</td>
</tr>
<tr>
<td>A13</td>
<td>Signaling unit type LD030 DO</td>
</tr>
<tr>
<td>A14</td>
<td>Actuator unit type MOE-E for the stored energy motor operator</td>
</tr>
<tr>
<td>A15</td>
<td>Ekip Multimeter.</td>
</tr>
<tr>
<td>A17</td>
<td>Actuator unit type MOE for the stored energy motor operator</td>
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<tr>
<td>A18</td>
<td>24V auxiliary power supply unit (see note E)</td>
</tr>
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<td>D</td>
<td>Undervoltage release electronic time delay device (outside the circuit-breaker) (only for voltages up to 250V)</td>
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<tr>
<td>H1</td>
<td>Signaling lamp</td>
</tr>
<tr>
<td>H2</td>
<td>Signaling lamp for stored energy motor operator blocked</td>
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<tr>
<td>J.</td>
<td>Connectors for the auxiliary contacts of the withdrawable version circuit-breaker; extraction of the connectors takes place at the same time as that of the circuit-breaker.</td>
</tr>
<tr>
<td>K</td>
<td>Contactor for starting the motor</td>
</tr>
<tr>
<td>K51</td>
<td>Electronic trip unit:</td>
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<td></td>
<td>– overcurrent release type Ekip LS/I, Ekip N-LS/I, Ekip LSI, Ekip LSIG,</td>
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<td>– of motor protection type Ekip I, Ekip M-I, Ekip M-LIU</td>
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<td>– of generator protection Ekip G-LSI</td>
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<td>Residual current release type RC Inst, RC Sel, RC Sel 200, RC B Type</td>
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<tr>
<td>KO</td>
<td>Auxiliary opening relay</td>
</tr>
<tr>
<td>M</td>
<td>Motor with excitation in series for opening and closing the circuit-breaker (fig. 21)</td>
</tr>
<tr>
<td>M1</td>
<td>Three-phase asynchronous motor</td>
</tr>
<tr>
<td>Q</td>
<td>Main circuit-breaker</td>
</tr>
<tr>
<td>Q/0..3</td>
<td>Circuit-breaker auxiliary contacts</td>
</tr>
<tr>
<td>Q/0..7</td>
<td>Circuit-breaker auxiliary contacts</td>
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<tr>
<td>Q/1...25</td>
<td>Open/close auxiliary contacts of the circuit-breaker</td>
</tr>
<tr>
<td>R</td>
<td>Resistor (see note F)</td>
</tr>
<tr>
<td>R1</td>
<td>Resistor (see note H)</td>
</tr>
<tr>
<td>R2</td>
<td>Motor thermistor</td>
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<tr>
<td>RC</td>
<td>RC (residual current) protection sensor</td>
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<tr>
<td>RTC</td>
<td>Contact for signaling circuit-breaker is ready to close</td>
</tr>
<tr>
<td>S1</td>
<td>Contact controlled by the cam of the motor operator</td>
</tr>
<tr>
<td>S2</td>
<td>Contact controlled by the key lock of the motor operator with direct action</td>
</tr>
<tr>
<td>S3/1-2</td>
<td>Contacts controlled by the Auto/Manual selector and key lock of the stored energy motor operator</td>
</tr>
<tr>
<td>S33M/1-2</td>
<td>Limit contacts of spring loading motor</td>
</tr>
<tr>
<td>S4</td>
<td>Contact controlled by the cam of the motor operator with direct action</td>
</tr>
<tr>
<td>S4/1-2</td>
<td>Early auxiliary contacts</td>
</tr>
<tr>
<td>S4/1-4</td>
<td>Auxiliary early contacts operated by the circuit-breaker mounted crank handle (see note C)</td>
</tr>
<tr>
<td>S43</td>
<td>Switch for presetting remote/local control</td>
</tr>
<tr>
<td>S51</td>
<td>Contact for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic or electronic trip unit</td>
</tr>
<tr>
<td>S52</td>
<td>Contact for signaling circuit-breaker open due to tripping of opening coil and of undervoltage coil</td>
</tr>
<tr>
<td>S6/1-2</td>
<td>Contacts controlled by the Auto/Manual selector of the motor operator with direct action</td>
</tr>
<tr>
<td>S87/1</td>
<td>Contact for electrical signaling of pre-alarm of the residual current release type RC Sel, RC B or RC Sel 200</td>
</tr>
</tbody>
</table>
# Reading Information

## Circuit-breakers

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>S87/2</td>
<td>Contact for electrical signaling of alarm of the residual current release type RC Sel, RC B or RC Sel 200</td>
</tr>
<tr>
<td>S87/3</td>
<td>Contact for electrical signaling of circuit-breaker open due to tripping of the residual current release type RC Sel, RC Inst, RC B or RC Sel 200</td>
</tr>
<tr>
<td>S75I/1..4</td>
<td>Contacts for electrical signaling of circuit-breaker in the connected position (only provided with plug-in or withdrawable version circuit-breakers)</td>
</tr>
<tr>
<td>S75E/1-2</td>
<td>Contacts for electrical signaling of circuit-breaker in racked-out position (only provided with withdrawable version circuit-breakers)</td>
</tr>
<tr>
<td>S75I/1-2-5</td>
<td>Contacts for signaling circuit-breaker in racked-in position (only provided with withdrawable circuit-breakers)</td>
</tr>
<tr>
<td>S75S/1-2</td>
<td>Contacts for electrical signaling of circuit-breaker in the racked-out position (only provided with withdrawable version circuit-breakers)</td>
</tr>
<tr>
<td>S75T/1-2</td>
<td>Contact for signaling circuit-breaker in test position (only provided with withdrawable circuit-breakers)</td>
</tr>
<tr>
<td>SC</td>
<td>Pushbutton or contact for closing the circuit-breaker</td>
</tr>
<tr>
<td>SC3</td>
<td>Pushbutton for starting the motor</td>
</tr>
<tr>
<td>SD</td>
<td>Power supply switch-disconnector of the residual current release type RC Inst, RC Sel 200 or RC B Type</td>
</tr>
<tr>
<td>SO</td>
<td>Pushbutton or contact for opening the circuit-breaker</td>
</tr>
<tr>
<td>SO1</td>
<td>Pushbutton or contact for opening circuit-breaker with time-delayed trip</td>
</tr>
<tr>
<td>SO1,S02</td>
<td>Pushbuttons or contacts for opening the circuit-breaker (see “Instructions for resetting the circuit-breaker following release tripping”)</td>
</tr>
<tr>
<td>SO3</td>
<td>Pushbutton for stopping the motor</td>
</tr>
<tr>
<td>SR</td>
<td>Pushbutton or contact for electrical resetting of S51 trip contact</td>
</tr>
<tr>
<td>SY</td>
<td>Contact for signaling circuit-breaker open due to tripping of overcurrent protection release and of YO, YO2, YU coils (tripped position)</td>
</tr>
<tr>
<td>SY/1</td>
<td>Contacts for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)</td>
</tr>
<tr>
<td>SY/1..2</td>
<td>Contacts for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)</td>
</tr>
<tr>
<td>SY/1..3</td>
<td>Contacts for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)</td>
</tr>
<tr>
<td>SC</td>
<td>Contact for signaling circuit-breaker open due to tripping of overcurrent protection release and of YO, YO2, YU coils (tripped position)</td>
</tr>
<tr>
<td>TI</td>
<td>Toroidal current transformer</td>
</tr>
<tr>
<td>TI/L1</td>
<td>Current transformer placed on phase L1</td>
</tr>
<tr>
<td>TI/L2</td>
<td>Current transformer placed on phase L2</td>
</tr>
<tr>
<td>TI/L3</td>
<td>Current transformer placed on phase L3</td>
</tr>
<tr>
<td>TI/N</td>
<td>Current transformer placed on the neutral</td>
</tr>
<tr>
<td>UI/N</td>
<td>Current sensor on neutral</td>
</tr>
<tr>
<td>UI/O</td>
<td>Single-pole current sensor</td>
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<td>V1</td>
<td>Circuit-breaker applications</td>
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<td>V2</td>
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<td>V4</td>
<td>Indicative apparatus and connections for control and signaling, outside the circuit-breaker</td>
</tr>
<tr>
<td>WI</td>
<td>Serial interface with the trip unit accessories</td>
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<tr>
<td>WS</td>
<td>Serial interface with the control system (MODBUS EIA RS485 interface)</td>
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<tr>
<td>X</td>
<td>Delivery connector for auxiliary circuits of withdrawable circuit-breaker</td>
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<td>X3</td>
<td>Connector of the circuit for the 24V auxiliary power supply unit</td>
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<tr>
<td>X5</td>
<td>Circuit connector towards PR212/CI unit</td>
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<tr>
<td>X41</td>
<td>Circuit connector for external neutral</td>
</tr>
<tr>
<td>X42</td>
<td>Circuit connector for the motor thermistor</td>
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</tbody>
</table>
X11-X3-X4 = Trip unit connectors
XB.. = Three-way connector for the plug-in version circuit-breaker auxiliary circuits
XB1...7 = Connectors for circuit-breaker applications
XC.. = Six-way connector for the plug-in version circuit-breaker auxiliary contacts
XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit-breaker
XE.. = Fifteen-way connector for the auxiliary circuits of the plug-in version circuit-breaker
XG-XH = Electronic trip unit connectors
XH1 = Electronic trip unit contacts
XK7 = Connector for auxiliary circuits of communication modules
XV = Terminal boxes of the circuit-breaker applications
YC = Shunt closing release of the stored energy motor operator
YO = Shunt opening release
YO1 = Opening solenoid of the microprocessor-based overcurrent release
YO2 = Opening solenoid of the residual current release
YR = Coil for electrical resetting of trip contact S51
YU = Undervoltage release (see note B)

Notes

B) The undervoltage release is supplied for power supply branched on the supply side of the circuit-breaker or from an independent source: closing is only possible with the release energised (the lock on closing is made mechanically).

C) Contacts S4/1 and S4/2 shown in figures 7-8 open the circuit with the circuit-breaker open and reclose it when a manual closing command is given by means of the rotary handle, in accordance with the Standards regarding machine tools (in any case closing does not take place if the undervoltage release is not supplied).

E) The 24V auxiliary power supply unit of fig. 48 must necessarily be installed in the circuit-breaker seats marked SY/1 and Q/2. Therefore, should you want to install the unit in fig. 48 and the contacts in fig. 31 at the same time, the contacts of fig. 31 must be installed in the adjacent slots; that is, contact SY/1 in the slot marked SY/2 and contact Q/2 in the slot marked Q/1.

F) Additional external resistor for undervoltage supplied at 380/440V AC and 480/525V AC.

G) In the case of a three-pole fixed version circuit-breaker with a current transformer on the neutral conductor outside the circuit-breaker, when you want to remove the circuit-breaker it is necessary to short-circuit the terminals of the T/N transformer.

H) Having requested a Uaux insulated from earth, one must use "galvanically separated converters" in compliance with IEC 60950 (UL 1950) or equivalent Standards that ensure a common mode current or leakage current (see IEC 478/1, CEI 22/3) no greater than 3.5 mA, IEC 60364-4-1 and CEI 64-8.

I) If MOD (application in figure 21) and auxiliary contacts 1Q+1SY (in figure 31) are installed at the same time, contact Q/2 must be installed in the slot marked as Q/1.
Reading information
Circuit-breakers

Graphical symbols for electrical diagrams (Standards IEC 617)

- Thermal effect
- Electromagnetic effect
- Timing
- Mechanical connection
- Manual mechanical operating mechanism (general case)
- Rotary handle operating mechanism
- Pushbutton operating mechanism
- Converter separated galvanically
- Conductors in shielded cable (example two conductors)
- Watt-hour meter
- Conductors with cored cables (example two conductors)
- Key operating mechanism
- Cam operating mechanism
- Ground (general symbol)
- Connection of conductors
- Terminal or clamp
- Socket and plug (female and male)
- Resistor (general symbol)
- Resistor dependent on the temperature
- Motor (general symbol)
- Three-phase asynchronous motor, with short-circuited rotor (cage)
- Current transformer
- Current transformer with primary consisting of 4 passing conductors and with wound secondary, with socket
- Closing contact
- Voltmeter
- Opening contact
- Changeover contact with momentary break
- Closing position contact (limit switch)
- Opening position contact (limit switch)
- Changeover contact with momentary break (limit switch)
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

Overcurrent release with long inverse adjustable time delay characteristic

Overcurrent release with short adjustable time delay characteristic

Overcurrent release with short inverse adjustable time delay characteristic

Motor with excitation in series

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

Ideal current source

Voltage transformer

Winding of three-phase transformer, connection star

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

Wattmeter

Brush

Thermal trip unit

Instantaneous overcurrent release

Ammeter

Contactor (closing contact)

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

Switch-disconnector

Control coil (general symbol)

Overcurrent release for unbalance between phases

Contactor

Overcurrent release with short inverse adjustable time delay characteristic

Overcurrent release with short adjustable time delay characteristic

Motor with excitation in series

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

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

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

Three-pole circuit-breaker with magnetic trip unit

Three-pole or four-pole molded case switch

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

Diagrams for XT2 and XT4

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

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

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

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

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

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

Diagrams for XT2 and 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).
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.
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 thermomagnetic 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).**

![Diagram of signaling contacts](image)
Wiring diagrams
Diagrams for XT2 and XT4

Signalizing 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).
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).
Wiring diagrams
Diagrams for XT2 and XT4

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 LSI, Ekip LSIG, connected with Ekip Display or Ekip LED Meter

51) Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip MLRIU connected to display unit type Ekip Display (display) or Ekip LED Meter (current display).
Wiring diagrams
Diagrams for XT2 and 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 or Ekip LSIG connected to interface unit Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.

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

53) Auxiliary circuits of the electronic trip unit type Ekip LSI or Ekip LSIG connected to interface unit type Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.
Wiring diagrams
Diagrams for XT2 and 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 S02. 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 S02.

NB: If the magnetic, thermal magnetic or electronic trip unit is present, it is necessary to find the causes which led to the circuit-breaker being in the tripped position so as to prevent reclosing under short-circuit conditions. In all cases, manual resetting is always allowed.
Wiring diagrams
Diagrams for XT2 and 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 XT2 and 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
132) Motor starting module Ekip CI with ABB contactor series AF
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 molded case switch

Three-pole or four-pole circuit-breaker with Ekip Touch trip unit
11a) Protection trip unit tripped signaling contact – S51
12a) Contact for signaling position of loaded springs – S33M
13a) Motor for loading closing springs – M
14a) Trip contact reset coil – YR

12 - 13 - 14 only for XT7 M circuit-breakers
Wiring diagrams
Diagrams for XT7 and XT7 M

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

16 - 17 only for XT7 circuit-breakers
24) RC residual current sensor input (ANSI 64&50N TD)

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

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

Diagrams for XT7 and XT7 M

25) Transformer star centre sensor input

27) Current sensor input on external neutral (only for 3-pole circuit breaker)
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 external time-lag device YU, D

70 only for XT7 circuit-breakers
71 only for XT7 M circuit-breakers
72 - 73 - 74 as an alternative to each other
Wiring diagrams
Diagrams for XT7 and XT7 M

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

75 - 76 as an alternative to each other
77 - 78 only for XT7 M circuit-breakers
77 - 78 as an alternative to each other
81) Open/Close auxiliary contacts of the circuit-breaker (first set)
91a) Supplementary open/close auxiliary contacts outside the circuit-breaker
Wiring diagrams

Diagrams for XT7 and XT7 M

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

only for withdrawable version
Wiring diagrams
XT2-XT4-XT7-XT7 M modules

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

75 - 76 as an alternative to each other
# Wiring diagrams

## XT2-XT4-XT7-XT7 M modules

### Installation slot

**For XT2-XT4 Ekip Cartridge**

<table>
<thead>
<tr>
<th>Ekip Supply</th>
<th>Module</th>
</tr>
</thead>
<tbody>
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### For XT7-X7M terminal box

<table>
<thead>
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<th>R1</th>
<th>R2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
<th>V1</th>
<th>K1</th>
<th>K2</th>
<th>W3</th>
<th>W4</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>35</td>
<td>35</td>
<td>95</td>
<td>96</td>
<td>97</td>
<td>98</td>
<td>36</td>
<td>35</td>
<td>35</td>
</tr>
</tbody>
</table>

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
83) Ekip Signalling 2K-1
84) Ekip Signalling 2K-2
Wiring diagrams
XT2-XT4-XT7-XT7 M modules

85) Ekip Signalling 2K-3
86) Ekip Synchrocheck
87) Ekip Signalling 3T-1
88) Ekip Signalling 3T-2
Wiring diagrams

XT2-XT4-XT7-XT7 M modules

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
Installation slot
For XT7-X7M terminal box

For XT2-XT4 Ekip Cartridge

110) Ekip Com Modbus RTU redundant
111) Ekip Com Modbus TCP redundant
113) Ekip Com Profinet redundant
115) Ekip Com Ethernet IP redundant

116) Ekip Com IEC61850 redundant
112) Ekip Com Profibus DP redundant
114) Ekip Com DeviceNet™ redundant