INSTALLATION INSTRUCTION

Switch Disconnector Fuse
Slimline XRG00
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Use of symbols

⚠️ Hazardous voltage
Warns about a situation where a hazardous voltage may cause physical injury to a person or damage to equipment.

⚠️ General warning
Warns about a situation where something other than electrical equipment may cause physical injury to a person or damage to equipment.

❗️ Caution
Provides important information or warns about a situation that may have a detrimental effect on equipment.

ℹ️ Information
Provides important information about the equipment.
Receiving, handling and storage

Receiving and handling
Upon receipt, carefully inspect the switch for damage that may have occurred during transit. If damage is evident, or there is visible indication of rough handling, immediately file a damage claim with the transportation company, and notify your local ABB sales office.

Do not remove the shipping package until ready to install the switch.

Storage
If the unit will not be placed into service immediately, store the switch on its original package in a clean, dry location. To prevent condensation, maintain a uniform temperature. Store the unit in a heated building, allowing adequate air circulation and protection from dirt and moisture. Storing the unit outdoors could cause harmful condensation inside the switch enclosure.

HAZARD OF EQUIPMENT OVERTURNING

When moving with a fork lift, do not remove the shipping package until the device is in its final location.

Failure to follow this instruction will result in personal injury or equipment damage.
Read these safety instructions carefully before using this product!

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment and follow safe electrical work practices.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Before performing visual inspections, tests, or maintenance on the equipment, disconnect all sources of electric power. Assume that all circuits are live unless they are completely deenergized, tested, grounded, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Turn off switch before removing or making load side connections.
- Always use a properly rated voltage sensing device at all line and load to confirm switch is off.
- Turn off power supplying switch before doing any other work on or inside switch.

Failure to follow these instructions could result in death or serious injury.
Busbar overview

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>50/5-2p</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>75</td>
<td>5</td>
</tr>
<tr>
<td>50/5-3p</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>75</td>
<td>5</td>
</tr>
<tr>
<td>50/5-4p</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>75</td>
<td>5</td>
</tr>
<tr>
<td>50/10-2p</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>50/10-3p</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>50/10-4p</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>75</td>
<td>10</td>
</tr>
</tbody>
</table>
Busbar overview

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>185/10-2p</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>370</td>
<td>77.5</td>
<td>10</td>
</tr>
<tr>
<td>185/10-3p</td>
<td>185</td>
<td>185</td>
<td>-</td>
<td>-</td>
<td>77.5</td>
<td>10</td>
</tr>
<tr>
<td>185/10-4p</td>
<td>185</td>
<td>185</td>
<td>97.5</td>
<td>-</td>
<td>77.5</td>
<td>10</td>
</tr>
</tbody>
</table>
Manual operation
Motor operation
Motor operation

Signal: >0.5 sec or permanent

Hexagon socket head cap screw 3mm -40 revolutions approximately

Front cover must be locked before operating
Motor operation

(*) Will go to NO at loss of +24V power supply, even when the XR apparatus is in closed position. For indication purposes only.

(*) Motor multiplug connect diagram is different from ITS+Motor configurations. Refer to the ITS page of instruction.

<table>
<thead>
<tr>
<th>Technical data:</th>
<th>XRG00 MOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Voltage:</td>
<td>24V DC ±1 volt</td>
</tr>
<tr>
<td>Operational consumption:</td>
<td>1,1 A</td>
</tr>
</tbody>
</table>
For possible connection to your PC/laptop using the software Ekip Connect, use the USB connector at the bottom side of the Ekip Display.

The connection cable has to be the T&P cable kit (Order code: 1SDA066989R0001).

The TCP Module (Order code: 1SDR002136A1801) has to use Ethernet cable RJ45, Shielded Twisted Pair, CAT5 or above.

For possible connection to your PC/laptop using the software Ekip Connect, use the USB connector at the bottom side of the Ekip Display.

The connection cable has to be the T&P cable kit (Order code: 1SDA066989R0001).

The Ekip Connect software tool can be downloaded for free at: http://library.abb.com
Technical data for XR ITS2.1 and ITS2.D

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24 VDC</td>
</tr>
<tr>
<td>2</td>
<td>24 V GND (0V)</td>
</tr>
<tr>
<td>3</td>
<td>RS-485 0V</td>
</tr>
<tr>
<td>4</td>
<td>RS-485 + (A)</td>
</tr>
<tr>
<td>5</td>
<td>RS-485 - (B)</td>
</tr>
</tbody>
</table>

Input voltage limits

- Power supply: 24 VDC ±20%
- Power consumption: 2W

Functional characteristics

- Voltage measuring range: 10 - 900 VAC
- Measured current range: 0 - 1.3 x In
- Measuring range temperature: 0 - 127°C
- Measuring accuracy (Voltage and current): ±1 %
- Electronic Fuse Monitoring detection level: Nominal line to line voltage-20%
- Electronic Fuse Monitoring operating time: ≥1 s

Signaling output terminals/multiplug

- Conductor cross section stranded min.: 0.25 mm²
- Conductor cross section stranded max.: 1.5 mm²
- Conductor cross section stranded, with ferrule without plastic sleeve max.: 1.5 mm²
- Conductor cross section stranded, with ferrule with plastic sleeve max.: 0.75 mm²

Modbus communication and configuration

- Default setting: 19200 E.8.1
- Default Modbus addr: 247
- Baudrates: 9600, 19200
- Parity, stop-start bits: E, 8, 1 - D, 8, 1 - N, 8, 2 - N, 8, 1
- Modbus address range: 1 - 247
- Configuration tool: Ekip connect
- SACE Ekip T&P needed when connecting a laptop to the ITS2.1 or ITS2.D unit for configuration

Termination resistor

- No internal resistor. If needed, place on terminal 4,5 on last ITS2.1 or ITS2.D unit in multidrop line.

Insulation test

- The ITS2.1 or ITS2.D unit must be removed during dielectric test.

If a termination resistor is needed, it must be fitted to terminals 4 and 5 in the last ITS2.1 or ITS2.D unit in the multi drop line.
**EFM**

Red LED: One or more fuses are blown
Green LED: All fuses are OK

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**Diagram XR DC 110/500 EFM**

Q1: Switch disconnector Fuse
K1: Electronic Fuse Monitor (EFM)
V1: Fuse OK
V2: Fuse(s) Blown
X1: Multiplug Terminals

Q1 in open state

---

**Diagram XR AC EFM**

Q1: Switch disconnector Fuse
K1: Electronic Fuse Monitor (EFM)
V1: Fuse OK
V2: Fuse(s) Blown
X1: Multiplug Terminals

Q1 in open state
EFM

Technical data for XR EFM

<table>
<thead>
<tr>
<th>Input voltage limits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Application AC voltage $U_a$</td>
<td>280-880V</td>
</tr>
<tr>
<td>DC 110: Rated DC voltage $U_e$</td>
<td>40-140V</td>
</tr>
<tr>
<td>DC 500: Rated DC voltage $U_e$</td>
<td>135-550V</td>
</tr>
<tr>
<td>Power consumption</td>
<td>2W</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Functional characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating time $t_o$</td>
<td>≤ 4 s</td>
</tr>
<tr>
<td>Measuring accuracy</td>
<td>±5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signaling output terminals (multiplug)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally open</td>
<td>Terminals 11 – 12</td>
</tr>
<tr>
<td>Normally closed</td>
<td>Terminals 12 - 13</td>
</tr>
<tr>
<td>Rated load, inductive</td>
<td>2A at 24 VDC</td>
</tr>
<tr>
<td>Rated load, resistive</td>
<td>4A at 24 VDC</td>
</tr>
<tr>
<td>Wiring capacity [mm²]</td>
<td>Stranded / solid : 0.08 – 0.5/</td>
</tr>
<tr>
<td></td>
<td>0.08 – 0.75</td>
</tr>
<tr>
<td></td>
<td>Stranded with ferrule, no plastic sleeve : 0.25 – 0.34</td>
</tr>
<tr>
<td></td>
<td>Stranded with twin ferrule, plastic sleeve : 0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EFM unit’s dielectric properties (IEC 60947-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated impulse withstand voltage ($U_{imp}$)</td>
<td>6.0kV</td>
</tr>
<tr>
<td>All poles connected together/Earth</td>
<td>1.89 kV/1 min 50 Hz</td>
</tr>
<tr>
<td>All poles connected together/Aux. contacts</td>
<td>1.89 kV/1 min 50 Hz</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>1 MΩ, 500 VDC</td>
</tr>
</tbody>
</table>

Insulation test

The EFM unit will survive an insulation test voltage of 1.6kV. However, by insulation test, we recommend that the EFM module can be completely removed by also disconnecting the internal plug to the rear side of the Multiplug. This will also avoid leakage current between the main phases.

Power supply

EFM is powered by the XR busbar contacts, and it starts to operate once the XR switch is in close position.
Fuse replacement

NH

BS

Fuse replacement

NH

BS

Fuse replacement

NH

BS
Accessory

Guide rail
Accessory

Multiplug

<table>
<thead>
<tr>
<th></th>
<th>M2</th>
<th>M2.5/M3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tightening torque Min (Nm)</td>
<td>0.22</td>
<td>0.5</td>
</tr>
<tr>
<td>Tightening torque Max (Nm)</td>
<td>0.25</td>
<td>0.6</td>
</tr>
<tr>
<td>Connection capacity (mm²)</td>
<td>1.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Aux / Motor
CT
Wires with connector
EFM
Rear side view
Accessory
Contact extension

M6: 9Nm
M8: 15Nm
2.5Nm
2Nm
Accessory CT
Accessory

A-meter
Accessory

Auxiliary switch

1: Plug in the connector to the back of the multi plug.

2: Run wires through the cable-pass through hole.

3: Turn around the SLIMLINE switch.
   Insert and fasten position arm(s) with the enclosed screws.

4: Fasten the two wire ends to the auxiliary switch
   and insert the switch in position.

5: Attach the cable-tie.

6: Attach transparent cover.(Screw torque: 1.5Nm).
Accessory

Auxiliary switch

Diagram for multiplug with motor

Diagram for multiplug without motor

1 Reserved for current transformers.

Additional auxiliary switch installation for SLIMLINE XRG00

Take out the connector for aux switches located back on the multi plug. Attach the two wires provided with the additional aux.switch kit by inserting the terminals to the connector for aux switch 2 and eventually aux switch 3.

Push the wire terminals into the connector, pull the wires gently to ensure that the terminals are locked to the connector.

Run the wires through the insulating sleeve and use the same path as the main auxiliary switch, fix with cable-tie.

Insert the auxiliary switch in one of the free position and fasten the wires to the terminals, pull the wires to ensure they are properly attached.
Accessory

Switch replacement tool
Cable shrouds installation

1. Install the three cables.

2. Open the 3 pole cable shroud and cover it onto the cables.

3. Close the 3 pole cable shroud.

4. Insert the 3 pole cable shroud.

5. Install the 4th pole cable.

6. Insert the 4th pole cable shroud.
MNS arc protection back cover for XRG

1. Install the MNS arc protection back cover to the electrical cabinet.

2. Install 3 pole switch to the electrical cabinet.

Note:
For XRG00-50/5-3P
3P version needs to mount one back cover.

4P version needs to mount two back covers.
RBBS arc protection back cover for XRG

1. Install the RBBS arc protection back cover for XRG to the electrical cabinet.

2. Install 3 pole switch to the electrical cabinet.

Note:
For XRG00-50/10-3P mounts one back cover in Xline 50mm Compact cabinets.

For XRG00-50/10-3P with contact extensions mounts one back cover in Xline 50mm Enlarged cabinets.
SWITCH DISCONNECTOR FUSE, XRG00

Warning! Beware of high voltage! Disconnect power before touching. Use only trained personnel.

FRA: Attention! Danger d'électricité! Déconnexion du câblage avant de procéder. Utiliser uniquement du personnel qualifié.


POL: Ostrzeżenie! Niebezpieczna napięcie! Odłącz włącznik przed rozpoczęciem pracy. Wykonaj prace tylko przez kwalifikowanych pracowników.

EST: Hoiatus! Ohtlik pingi! Seadmete töötlemise eest väljastage kõvandik. Lisandke tööde ajal ainult kvaliteetne pool.


BUL: Предупреждение! Опасно напрежение! Днеските вашата мрежа е изключена. Използвайте само електронски специалисти.


CRO: UPOZORENJE! OPASNOST! PREKLOPNI VODLJIVE SLIKE IZVJEŠTANJE. KORISTITE ŽE NIKADA NEKVALIFIKIRANIH ELEKTRIKERA.


SWE: Varning! Farlig electricitet! Avstyckningsnipp vid_NUMBER avstycks nipp vid_NUMBER. Använd endast kvalificerad personal.


RUS: Осторожно! Опасное напряжение! Монтаж должен выполняться только специалистами-электриками.

CHN:警告！危险电压！只能由专业电工进行安装。

JAP: 警告！危险电压！只能由专业电工进行安装。

KOR: 경고! 위험 전압! 전기공사 전문가만 사용할 수 있습니다.
SWITCH DISCONNECTOR FUSE, XRG00

Notes
SWITCH DISCONNECTOR FUSE, XRG00
Contact us

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FI-65101 Vaasa
Finland

https://new.abb.com/contact-centers
> Low Voltage Products and Systems