

### 1 XI824116

The potential distribution terminal XI824116 is used to discharge 24 V and GND from the periphery circuit ( $U_P$ ). The terminal is equipped with 8 connection points without state display per potential on a removable periphery connector and is not part of the local bus. The logic and peripheral supply as well as the EtherCat module communication are routed through the module.

For the integration into the parent system, the respective ESI files are available. For the ESI files, go to <https://www.boschrexroth.com/electrics>.

Ensure that the current documentation is consulted. For the current documentations, go to <https://www.boschrexroth.com/mediadirectory>.



Fig. 1: Module XI824116

### 2 Ordering data

Type	Part number	Description
XI824116	R911406122	Potential distribution terminal 8 × DC 24 V, 8 × GND

For more ordering data (accessories), go to the product catalog under [www.boschrexroth.com/electrics](https://www.boschrexroth.com/electrics).

### 3 Technical data

XI824116	
Connection method	Push-in
Number of outputs	8 × DC 24 V, 8 × GND
Nominal voltage ( $U_P$ / $U_{OUT}$ 24 V)	DC 24 V (-15 %, +20 %) PELV/SELV (safety extra-low voltage)
Maximum current drawn from a power output pin	1 A per pin, sum current max. 4 A
Maximum current fed in an GND output pin	1 A per pin, sum current max. 4 A
Fuse protection	Internally with a protective fuse, 5 A ( $U_{OUT}$ 24 V)
Configuration	No address or configuration setting required
Mounting position	Vertical, on a horizontal support rail
Dimensions	12 mm × 105 mm × 99 mm (Width × height × depth)
Weight	95 g (module including connector)
Electrical isolation	1200 V $U_P$ to $U_L$ , 707 V $U_P/U_L$ to FE
EMC resistance	Acc. to EN 61000-6-2 and EN 61000-6-4
Labeling, approvals	CE, UKCA

Table 1: Technical data of the module

Clamping point	Assignment	Color
1	1 - $U_{OUT}$ 24V	Red
2	2 - $U_{OUT}$ 24V	Red
3	3 - $U_{OUT}$ 24V	Red
4	4 - $U_{OUT}$ 24V	Red
5	5 - $U_{OUT}$ 24V	Red
6	6 - $U_{OUT}$ 24V	Red
7	7 - $U_{OUT}$ 24V	Red
8	8 - $U_{OUT}$ 24V	Red
9	9 - $U_{OUT}$ GND	Dark blue
10	10 - $U_{OUT}$ GND	Dark blue
11	11 - $U_{OUT}$ GND	Dark blue
12	12 - $U_{OUT}$ GND	Dark blue
13	13 - $U_{OUT}$ GND	Dark blue
14	14 - $U_{OUT}$ GND	Dark blue
15	15 - $U_{OUT}$ GND	Dark blue
16	16 - $U_{OUT}$ GND	Dark blue

Table 2: Clamping point assignment

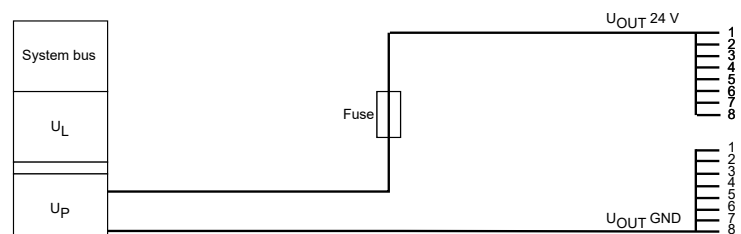


Fig. 2: Internal schematic diagram

XI824116

Ambient temperature	
Up to 2000 m	-25 ... 55 °C
From 2000 m	-25 ... 50 °C
From 3000 m	-25 ... 45 °C
From 4000 m	-25 ... 40 °C
Maximum operating altitude: 5000 m	
Ambient temperature (storage and transport)	-40 ... 70 °C
Permitted air humidity Acc. to DIN EN 61131-2	
Operation	5-85 %
Storage	10-100 %
Transport	45-95 %
Degree of protection Acc. to DIN EN 60 529	IP20
Protection class Acc. to DIN EN 61010-2-201	III
Overtoltage category Acc. to IEC 60664-1	2
Contamination level Acc. to IEC 61010-1	2, no condensation

Table 3: Ambient conditions

**NOTICE**

**Failure of the product due to contaminated air!**

- The ambient air must not contain acids, alkaline solutions, corrosive agents, salts, metal vapors and other electrically conductive contaminants in high concentrations
- The devices to be installed into the housing and installation compartments must at least comply with the degree of protection IP 54 according to DIN EN 60529.
- The device shall be provided in a suitable fire enclosure in the end-use application.

**NOTICE**

**Defective product due to gases jeopardizing functions**

Due to the risk of corrosion, avoid sulphurous gases (e.g. sulphur dioxide (SO<sub>2</sub>) and hydrogen sulphide (H<sub>2</sub>S)). The product is not resistant against these gases.

**NOTICE**

**Failure of the product due to overheating**

To avoid overheating and a trouble-free operation of the product, the ambient air has to circulate. Also refer to the section "Installation notes".

XI824116

Vibration resistance Acc. to DIN EN 61131-2	Oscillations, sinusoidal in all three axes, 5 Hz - 8.4 Hz with 3.5 mm amplitude 8.4 Hz -150 Hz with 1 g peak acceleration
Shock test Acc. to DIN EN 60068-2-27	Shock stress: Shock resistance in all three axes 11 ms semi-sinusoidal 15 g
Broadband noise Acc. to DIN EN 60068-2-64	5-20-150 Hz with 0.572 g, 5 h per axis

Table 4: Mechanical tests

## 4 For your safety

### Intended use

Only use the module as specified in the data sheet.

## User qualification

The product use described in this data sheet is only intended for qualified electricians and staff trained by these qualified electricians. The user has to be familiar with the known safety concepts on automation technology, applicable standards and other guidelines.

## Electric safety

**NOTICE**

**Loss of electric safety**

Unintended handling can affect the device safety! Observe the notes in the present data sheet during installation, commissioning and operation.

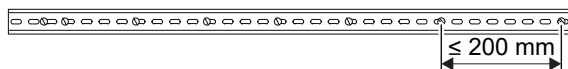
## 5 Installation notes

**NOTICE**

**Device destruction due to electrostatic discharge**

The device contains components that can be damaged or destroyed by electrostatic discharge. Comply with the required safety measures against electrostatic discharge (ESD) acc. to EN 61340-5-1 when operating the module.

- Mounting location  
The module has the degree of protection IP 20 and is thus intended for use in a closed control cabinet or control box (terminal box) with the degree of protection IP 54 or higher. The control cabinet has to be provided with sufficient stability and rigidity (acc. to UL 61010-1, 61010-2-201).
- End clamps  
Fasten end clamps of the type SUP-M01-ENDHALTER on both sides of the station. End clamps ensure the correct fastening on the support rail and are used as lateral end elements. Always fasten one end clamp of the station before mounting the station. This ensures the following:
  - It impedes the shifting of the modules
  - The installation place for the end clamps is secured.
- Support rail  
Mount the module on a 35 mm standard support rail. Use only a TH 35-7.5 support rail acc. to EN 60715. The fastening distance of the support rails may not exceed 200 mm. This distance is required to ensure stability while mounting and dismantling the module.



- Provide the following minimum distances for sufficient cooling:

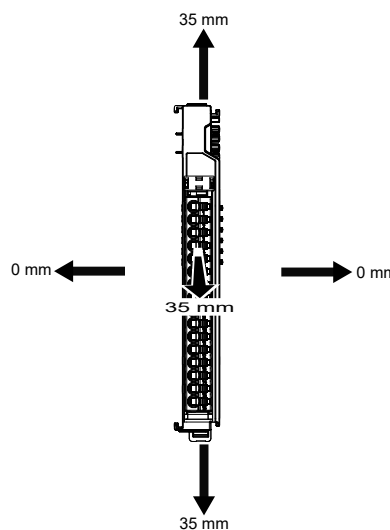


Fig. 3: Ventilation distance

- Additionally, provide sufficient distance for mounting, dismounting, plugs and cables.
- If more devices are connected in series to the station on the left or right, the surface temperature may not exceed 60° C
- In case of a several line design, the supply air has to be measured under each line and its limit value may not be exceeded. For the permitted ambient temperatures, refer to the chapter "Ambient conditions".

## 6 Mounting the ctrlX I/O module

### NOTICE

#### Damage of the device by plug mounting under voltage!

Disconnect the module and all connected module components from voltage before mounting or dismounting.

### NOTICE

#### Possible damage to property due to unintended mounting of the support rail

- Connect the support rail to a functional ground.
- Mount the module on a support rail.
- Install the module in a control cabinet or an appropriate housing.

### NOTICE

#### Module is not fixed correctly due to engaged support arm mounting!

Before mounting, ensure that the support arm mounting of the control is not in open position. If required, release the clamping of the open position using the locking lever, refer to the following figure 4.

### NOTICE

#### Damage of the device by short circuit of patch connectors

There is an endcover on the right of the bus coupler upon delivery. Remove this endcover to connect the modules in series at the bus coupler. Position the endcover on the last module of the station to protect it against short circuit and contamination.

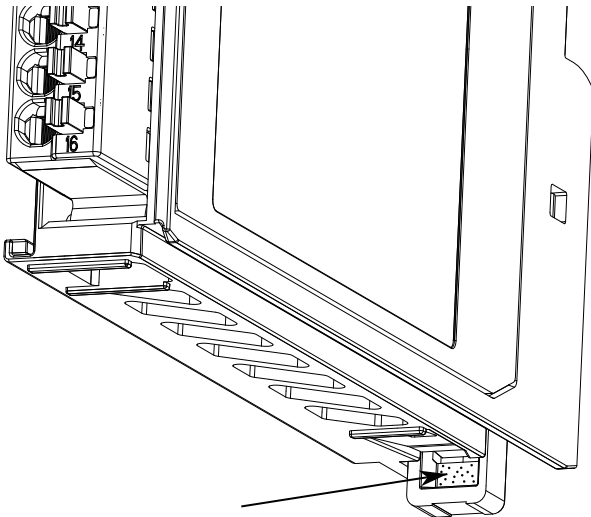


Fig. 4: Locking lever to release the clamping of the open position

Each module has to be snapped separately.

## 7 Positioning connector

1. Position the connector on the connector holder, see ①.
2. Engage the connector, see ②.

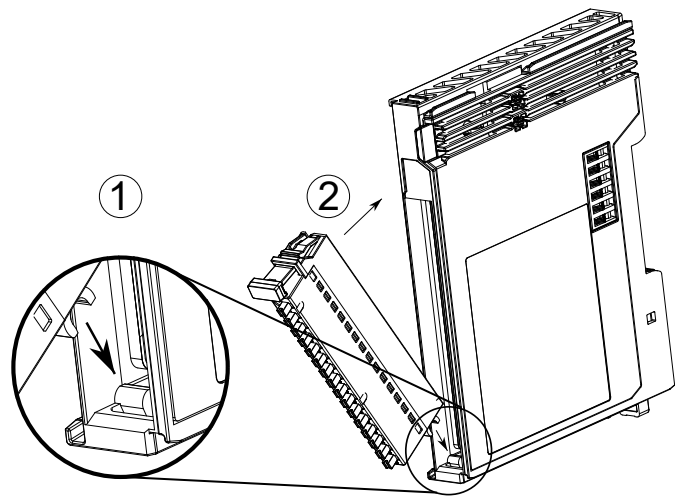


Fig. 5: Positioning connector

## 8 Notes on the electrical connection

- For the front connector, one-wire cables and stranded cables can be used with or without wire end ferrule (acc. to DIN 46228). These wire end ferrules can be with or without plastic collar. The contact surface has to be 8 mm.
- The wire ends may not have any burrs.
- The cable cross-section allowed is between 0.25 mm<sup>2</sup> and 1.5 mm<sup>2</sup> (AWG 24 to 16).
- The stripping length is 8 mm.
- To use stranded cables without wire end ferrules, twist the strand between 180° and 360°. The stripped area has to be 8 mm after twisting. If stranded cables are introduced, keep the pushbutton of the push-in terminal pressed.
- To remove the cables, press the pushbutton of the push-in terminal.
- To guarantee an UL/CSA-compliant operation, the following conditions have to be met:
  - Use only insulated copper wires suitable for at least 60 °C

## 9 Dismounting module

For dismounting, use a common tool such as a slotted screwdriver with a 2.5 mm blade.

### NOTICE

#### Destruction of components and devices due to mounting and dismounting under voltage!

Disconnect the module and all connected module components from voltage before mounting or dismounting.

#### Removing module from support rail

1. Use a suitable tool (e.g. slotted screwdriver) and put it into the lower disengaging mechanism (base latch) of the module and disengage the module (see (A) in the following figure). The base latch is locked in the open position.
2. Remove the module vertically to the support rail [see (B) in the following figure].

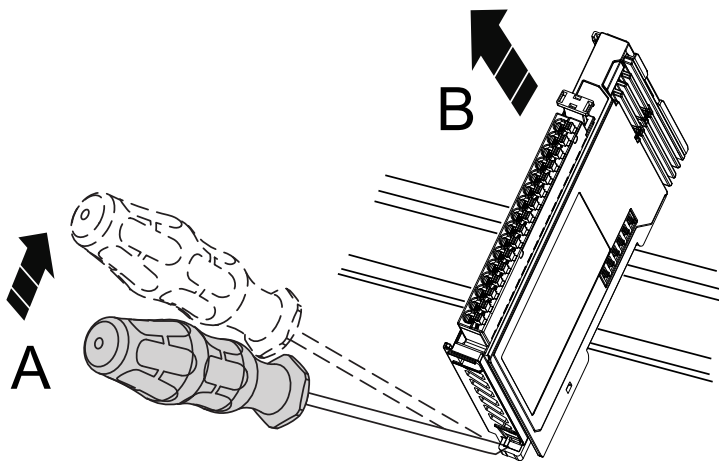


Fig. 6: Removing module from support rail

Before mounting the module on the support rail again, release the clamping of the open position again. Press the locking lever, refer to the figure 4.

## 10 EtherCAT®



The ctrlX I/O modules use EtherCAT® technology. "EtherCAT®" is a registered trademark and patented technology licensed by the Beckhoff Automation GmbH, Germany. EtherCAT is an open, internationally standardized standard and developed further by the "EtherCAT Technology Group" (ETG).

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