TX I/O™; Desigo™ Open

TX Open RS232/485 modules (TXI2.OPEN, TXI2-S.OPEN)

To integrate third-party systems and devices in Desigo (V4.1 or higher)

- Platform to integrate third-party systems and device to the Desigo building automation and control system Desigo (Version 4 or higher)
- Suitable for operation using predefined applications from Siemens or using in-house developed applications
- TXI2.OPEN supports up to 160 data points
- TXI2-S.OPEN supports up to 40 data points
- Compact construction per DIN 43 880
- Easy installation and setup
  - Plug-in screw terminal
  - Power from Island bus (DC 24 V)
- Simple, fast diagnostics
- Two Ethernet ports (Hub Functionality)
- Reset (power) push button
Application

Integrates third-party systems and devices in Desigo (V4.1 or higher)

Functions

The TX Open RS232/485 module integrates third-party systems via RS232 or RS485 interface to the Desigo building automation and control system. The required applications are loaded onto the module via the USB interface.

Siemens offers finished applications for the following systems:

- Modbus Engineering instructions CM110571
- M-bus Engineering instructions CM110572
- USS (SED2, G120P) Engineering instructions CM110573
- Grundfos Engineering instructions CM110574
- G120P Engineering instructions CM110576
- Danfoss See Modbus engineering instructions CM110571
- WILO See Modbus engineering instructions CM110571
- Workflow document A6V10963119

Simple commissioning using prepared solutions:

- Solutions for G120P, Grundfos, WILO and Danfoss are supplied in the library (HQ CAS library).
- For the protocols M-Bus and Modbus, example solutions are available in the CAS library that are used as templates on device descriptions ((IO Open templates).

You can also develop your own applications. Contact your regional company.

The TX Open RS232/485 module is powered directly with DC 24 V from the island bus.

A webpage that may be viewed in the web browser via the Ethernet interface, displays the interface configuration and values from the third-party system / device.

The TX Open Tool supports the download of firmware and applications as well as the configuration data.
Overview

A Plug-in screw terminal for RS232 and RS485 (Changeover via software)

<table>
<thead>
<tr>
<th>Terminal</th>
<th>RS232</th>
<th>RS485</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TX</td>
<td>+</td>
</tr>
<tr>
<td>2</td>
<td>RX</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td>-</td>
</tr>
</tbody>
</table>

(Potential equalization)

B LED "RUN" Power OK
C LED "COM" Communication (RS)
D Know to set module address
E Bus connector
F Attachment slider for standard rails
G RJ45 Ethernet connections
H Reset (power) push button

Mechanical properties
Housing
- The housing complies with DIN 43880 and is 96 mm wide.
- During mounting, ensure sufficient convection (max. ambient temperature 50°C).

Electrical properties
Power supply
- The TX Open RS232/485 module is powered directly with DC 24 V from the island bus.
  No separate power required.

Interfaces
- Plug-in screw terminal for serial interfaces RS232 and RS485
- Dual Ethernet for connecting TX Open Tools

Island bus
- The TX Open RS232/485 module has contacts on the left and right side of the housing for the island. The module is plugged in between existing modules or attached at the end of an I/O row.

System neutral
- The serial interfaces RS232 / RS485 are electrically isolated from the island bus side. The connected third-party system may require grounding.

Protection against incorrect wiring
- All terminals are protected against short circuit and incorrect wiring using AC/DC 24 V.
  - **Side bus connector: No protection**
  - **Power greater than AC / DC 24 V: No protection**

Interfaces
General
- Serial interfaces are electrically isolated
- The serial interfaces use the same connection terminals.
  You can use either RS232 or RS485 (changeover via software).

RS232
- The interface supports baud rates from 300 to 115200 Baud.
- The signals RXD and TXD available, but without handshake signals.

RS485
- The interface supports baud rates from 300 to 115200 Baud.

Bus termination
- A bus termination (1nF, 120 Ohm in sequence) can be switched on in the TX Open module.

RJ45
- RJ45 connector for use of Modbus TCP integration
Ethernet interface (Hub Functionality)

**NOTICE** We highly recommend that you do not attach cables to the Ethernet port if you do not intend to use remote access. The devices are furnished with a default IP address and would go to an undefined state if they are connected to the network.

Module status RUN LED
- The module status RUN LED indicates the status of the module as a whole:

<table>
<thead>
<tr>
<th>Meaning</th>
<th>LED (green)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>ON</td>
<td>Module OK, all functions working properly</td>
</tr>
<tr>
<td>Inactive</td>
<td>OFF</td>
<td>Module without power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Defective module (hardware fault)</td>
</tr>
<tr>
<td>Note/Faults</td>
<td>Flashing</td>
<td>For detailed information, see Section &quot;Display, operation, and diagnostics&quot; in document &quot;TX-I/O™™ Engineering and installation&quot;</td>
</tr>
</tbody>
</table>

Module COM LED
- The module COM LED indicates communication on the RS side:

<table>
<thead>
<tr>
<th>Meaning</th>
<th>LED</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM</td>
<td>Green</td>
<td>Receiving data</td>
</tr>
<tr>
<td>COM</td>
<td>Red</td>
<td>Sending data</td>
</tr>
</tbody>
</table>

Address switch
- Rotary switch to set the module address

<table>
<thead>
<tr>
<th>Meaning</th>
<th>Switches</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Positions 0…9 (on each switch) Position 0 (both switches)</td>
<td>The module address is switched using the two address switches. The factory setting is 00 (the TX Open RS232/485 module is inactive). It corresponds to an open address key in an I/O module.</td>
</tr>
</tbody>
</table>

Reset (power) push button

<table>
<thead>
<tr>
<th>Meaning</th>
<th>Push button activation time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Off reset</td>
<td>Min. 2 seconds</td>
<td>The device restarts using the existing configuration.</td>
</tr>
<tr>
<td>Factory reset</td>
<td>Until the red LED is continuously lit (a minimum of 10 secs is needed)</td>
<td>The device is reset to delivery status. Engineering steps must be repeated (password setting, load protocol application and configuration).</td>
</tr>
</tbody>
</table>

Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Stock number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TXI2.OPEN</td>
<td>S55661-J120</td>
<td>TX Open RS232/485 module (supporting 160 data points)</td>
</tr>
<tr>
<td>TXI2-S.OPEN</td>
<td>S55661-J123</td>
<td>TX Open RS232/485 module (supporting 40 data points)</td>
</tr>
</tbody>
</table>

When ordering, please specify the quantity, designation, product number and stock number.

*Example:*

10 TX Open RS232/485 modules TXI2.OPEN, S55661-J120

Equipment combinations

The TX Open RS232/485 module is suitable for using an island-bus capable automation station, i.e. in plants with version 4 or higher.
### Product documentation

<table>
<thead>
<tr>
<th>Topic/Title</th>
<th>Document ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1] TX Open Modbus engineering</td>
<td>CM110571</td>
</tr>
<tr>
<td>[2] TX Open M-bus engineering</td>
<td>CM110572</td>
</tr>
<tr>
<td>[3] TX Open USS (SED2, G120P) engineering</td>
<td>CM110573</td>
</tr>
<tr>
<td>[4] TX Open Grundfos engineering</td>
<td>CM110574</td>
</tr>
<tr>
<td>[5] TX Open G120P engineering</td>
<td>CM110576</td>
</tr>
<tr>
<td>[6] TX Open Tool online help</td>
<td>---</td>
</tr>
<tr>
<td>[7] TX-I/O modules, datasheets</td>
<td>CM1N817...</td>
</tr>
<tr>
<td>[8] TX-I/O engineering and installation guide</td>
<td>CM110562</td>
</tr>
</tbody>
</table>

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:

http://siemens.com/bt/download

### Notes

#### Safety

⚠️ **CAUTION**

**National safety regulations**

Failure to comply with national safety regulations may result in personal injury and property damage.

- Observe national provisions and comply with the appropriate safety regulations.

#### Mounting

**Fixings**

The device is mounted on a standard rail 35 x 7.5 mm (tophat rails TH35-7.5 per EN60715)

**Order**

The device can be plugged into any position on the I/O row.

**Exchange**

One TX Open RS232/485 module may be removed from the row of modules. Please note, however, that the island bus and power is interrupted for all subsequent modules.

**Permissible mounting positions**

TX-I/O™ devices can be mounted in any position. You must ensure, however, that sufficient ventilation is available to maintain the permissible ambient temperature (max. 50°C).
## Disposal

The device is considered an electronic device for disposal in terms of the European Directive and may not be disposed of as domestic waste.

- Use only designated channels for disposing the devices.
- Comply with all local and currently applicable laws and regulations.

## Technical data

### Power supply

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
</table>
| Operating voltage | DC 24 V  
Power on the island bus. No separate power required. |
| Power consumption | 100 mA, 2.4 W |
| Short-circuit protection/incorrect wiring side bus connector RJ45 connectors | No protection!  
No protection! |

### Interfaces

<table>
<thead>
<tr>
<th>Interface Type</th>
<th>Specification</th>
</tr>
</thead>
</table>
| Ethernet (Hub Functionality) | Plugs: 2 x RJ45, screened  
Interface type: 100BASE-TX, IEEE 802.3 compatible  
Bitrates: 10/100 Mbps, autosensing |

### Wiring connections

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
</table>
| Plug-in screw terminal Cu wire or Cu strand **with** end sleeve  
1 x 0.6 mm ø to 2.5 mm² or  
2 x 0.6 mm ø to 1.0 mm²  
Cu wire or Cu strand **without** end sleeve  
1 x 0.6 mm ø to 2.5 mm² or  
2 x 0.6 mm ø to 1.5 mm² |
| Slotted screws | Size 1, with shaft ø ≤ 4.5 mm  
Tightening torque: 0.6 Nm |
| Wiring lengths for signals RS485 RS232 | 1000 m (3280.1 ft)  
80 m (262.5 ft) |

### Ambient conditions and protection classification

| Classification per EN 60730 Function of automatic control devices Degree of contamination Design type | Type 1  
Protection class III |
| Degree of protection of housing to EN 60529 Front parts in DIN excerpt Terminal part | IP30  
IP20 |
| Climatic ambient conditions Transportation (packaged for transportation) to EN 60721-3-2 Operation as per EN 60721-3-3 | Class 2K3  
Temperature: -25..70 °C  
Air humidity: 5..95 % |
| | Class 3K5  
Temperature: -5..50 °C  
Air humidity: 5..95 % (non-condensing) |
| Mechanical ambient conditions Transport as per EN 60721-3-2 Operation as per EN 60721-3-3 | Class 2M2  
Class 3M2 |
### Standards, directives and approvals

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Product standards**                         | EN 60730-1  
Automatic electrical controls for household and similar use                                                                               |
| **Product family standard**                   | EN 50491  
General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS)                |
| **Electromagnetic compatibility (EMC)**       | For residential, commercial, and industrial environments                                                                                   |
| **EU conformity (CE)**                        | see CM2T8185xx                                                                                                                             |
| **RCM conformity**                            | see CM2T8185en_C1                                                                                                                           |
| **UL approbation (US)**                       | UL916, [http://database.ul.com](http://database.ul.com)                                                                                   |
| **UL Approbation (CA)**                       | C22.2, FCC CFR 47 Part 15 Class B                                                                                                          |
| **EAC compliance**                            | Eurasian conformity                                                                                                                        |
| **Environmental compatibility**               | The product environmental declaration CM1E8187 contains data on environmentally compatible product design and assessments  
(RoHS compliance, materials composition, packaging, environmental benefit, disposal)                                            |
|                                               | See Product Environmental Declaration CM2E8187.                                                                                             |

### Housing

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>Housing as per DIN 43880, see dimensions</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Light gray, RAL 7035</td>
</tr>
<tr>
<td><strong>Weight with/without packaging</strong></td>
<td>161 g / 199 g</td>
</tr>
</tbody>
</table>