SIEMENS

8177

TX-I/O™

Relay module bistable TXM1.6RL

Use for
- Light control
- Control of subsystems with uninterruptible operation

- **6 volt-free relay outputs, bistable**
- **Configurable behavior in case of power failure and bus failure**
- **Individual I/O point signaling with green I/O status LED**
- **Compact DIN format, small footprint**
- **Separate terminal base and plug-in I/O module for convenient handling**
  - **Self-establishing bus connection for maximum ease of installation**
  - **Terminal isolation function for fast commissioning**
  - **I/O module replaceable in seconds, without rewiring and without affecting the full functioning of the remaining I/O modules**
- **Terminal strips are required to connect N and PE of the field devices**
- **Simple strategy for display**
  - **I/O status LED for each I/O point**
  - **LEDs for fast diagnostics**
- **Double-sided labels for identification of all I/O points**

Functions

The module supports the following I/O functions:

Signal type (TRA)	Signal type	Description
BO Bistable NO **BO Bistable NC**	**Q250B**	Maintained contact, single-pole, bistable N/O, N/C contact

For a detailed description of the function, please refer to document CM110561, "TX-I/O functions and operation".

Compatibility

Support of signal types and functions in different building automation and control systems: see TX-I/O Engineering and installation manual, CM110562

Type summary

ASN, SSN

Product no.	Stock no.	Designation
TXM1.6RL	S55661-J103	Relay module bistable

Delivery

The terminal base and the plug-in I/O module are interconnected and delivered in the same box.

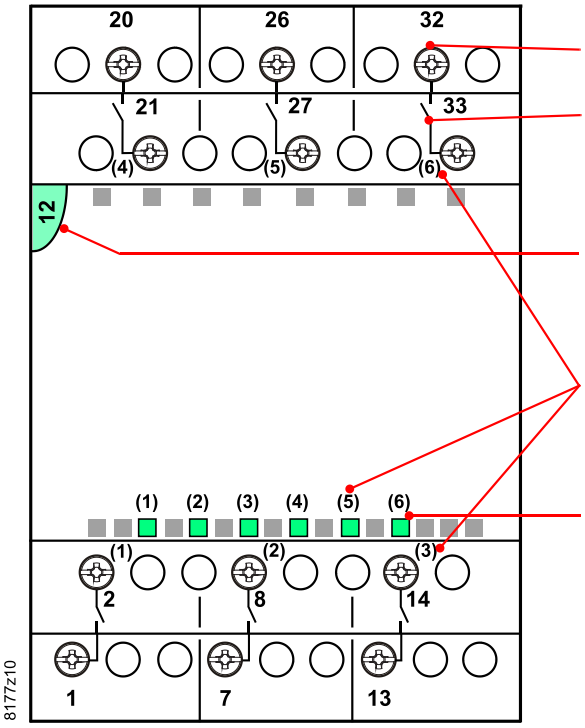
Accessories

The available accessories include address keys, label sheets, and spare transparent label holders. Refer to data sheet CM2N8170.

Technical and mechanical design

For a description of the features common to all TX-I/O™ modules, please refer to the TX-I/O™ Engineering and installation manual, document CM110562.

Indicators and operator controls



Connection terminals (No. 1 screwdriver for slotted or recessed-head * screws)
with test pickup (for 1.8...2 mm pins) and terminal number

Signal designation

Address key and module status LED

I/O point numbers

I/O status LEDs

* Combined slotted / recessed-head screws from mid-2012

I/O status LEDs

- The green I/O status LEDs indicate the status of the relays
- The LEDs are also used for diagnostics

Module status LEDs

- The module status LED illuminates the transparent address key
- The (green) LED shows the module status as a whole (as opposed to the I/O points)
- It is also used for diagnostics

Address key

- The module operates only with the address key inserted
- The module address is mechanically encoded in the address key
- When replacing the plug-in I/O module, the address key must be swiveled outward. It remains plugged into in the terminal base.

Terminals

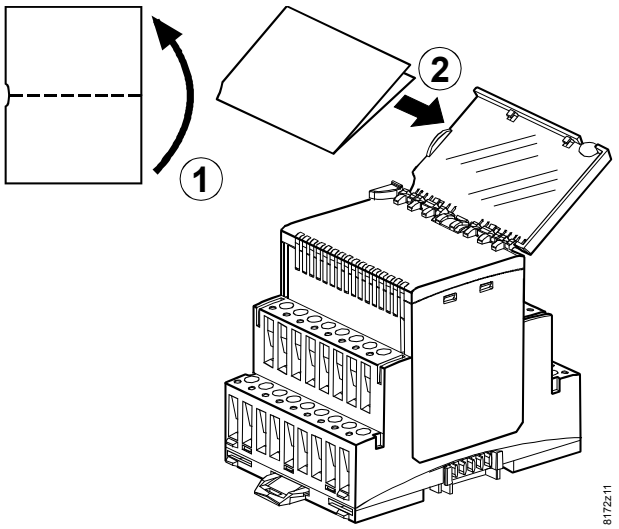
- The relay contacts of the individual I/O points are volt-free, and are not interconnected. The switched voltage must be provided separately for each I/O point.
- Mixed phases are permitted on adjacent I/O points of the module.

Note: UL916

Restriction for UL916: I/O points 1...3 and 4...6 must have the same phase.

Module labeling

The plug-in I/O module has a removable transparent cover (the label holder) for insertion of a label.



Disposal

The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Engineering, mounting, installation and commissioning

Please refer to the following documents

Document	Number
TX-I/O™ functions and operation	CM110561
TX-I/O™ Engineering and installation manual	CM110562

Mounting

Permitted orientation

The TX-I/O™ devices can be installed in any orientation:

It is important to provide adequate ventilation so that the admissible ambient temperature (max. 50°C) is not exceeded.

Technical data

Supply (bus connector on side)	Operating voltage range		DC 21.5...26 V (SELV / PELV) or DC 24 V class 2 (US)
	Max. power consumption *(for the sizing of power supplies, see CM110562)*		2.3 W
Protection	Bus connector on side		No protection against shortcut and incorrect wiring with AC / DC 24 V
Switching outputs	Number of switching outputs		6 (one pole bistable contact)
	Contact data		
	Type		W pre-make + AgSnO2
	Switching voltage		Max. AC 277 V Min. AC 24 V
	Current rating	AC1 (cosφ=0.8) EN 60947-4-1	Max. AC 10 A (resistive)
		Life cycles (277V 50/60 Hz)	> 30,000 switching operations
		AC3 (cosφ=0.45) EN 60947-4-1	Not recommended for AC3
		Inrush current (20 μs)	Max. 800 A
		Inrush current (20 ms)	Max. 165 A
		Minimum current	Min. 100 mA at AC 24 V
	Fluorescent lamps	EN 60669-1	Max. 10 A (140 μF)
		Life cycles (277V 50/60 Hz)	> 30,000 switching operations
	Number of ballasts	OSRAM QTI 1x28 / 54W	Max. 27
		OSRAM QTP5 1x24 / 39W	Max. 33
		OSRAM QTP5 2x24 / 39W	Max. 20
		OSRAM QTP5 1x54W	Max. 20
		OSRAM QTP5 2x54W	Max. 15
		OSRAM QT-FIT8 1x58 / 70W	Max. 42 / 36
		OSRAM QT-FIT8 2x58 / 70W	Max. 21 / 18
	Other types / other manufacturers: check if inrush currents are admissible!		
	Filament lamps	Life cycles (230V, 1'500W)	> 40,000 switching operations
	External fuse protection for incoming cable		
	• Slow blow fuse		Max. 16 A
	• Circuit breaker		Max. 16 A
	Tripping characteristic to EN 60898		Type B, C or D
Insulation resistance	Reinforced insulation between relay outputs and system electronics		AC 3280 V, to EN 60 730-1
	Mixed phases are permitted on adjacent I/O points of the module. *Restriction for UL916: I/O points 1...3 and 4...6 must have the same phase.*		
Connection terminals	Mechanical design		Cage clamp terminals
	Solid conductors		1 x 0.5 mm^2 to 4mm^2 or 2 x 0,6 mm∅ to 1.5 mm^2
	Stranded conductors without connector sleeves		1 x 0.5 mm^2 to 2.5 mm^2 or 2 x 0,6 mm∅ to 1.5 mm^2
	Stranded conductors with connector sleeves (DIN 46228/1)		1 x 0.25 mm^2 to 2.5 mm^2 or 2 x 0,6 mm∅ to 1.5 mm^2
	Screwdriver		No. 1 Screwdriver for slotted or recessed-head * screws *with shaft diameter ≤ 4.5 mm* * Combined slotted / recessed-head screws from mid-2012
	Max. tightening torque		0.6 Nm
Test pickups (terminals)	For pin diameter		1 x 1.8 … 2.0 mm

Classification to EN 60730	Mode of operation of automatic electrical controls	Type 1
	Contamination level	2
	Mechanical design	The device is suitable for use in equipment with protective class I and II
Housing protection standard	Protection standard to EN 65029	
	Front-plate components in DIN cut-out	IP30
	Terminal base	IP20
Ambient conditions	Operation	To IEC 60721-3-3
	Climatic conditions	Class 3K5
	Temperature	-5...50 °C
	Humidity	5…95 % rh
	Mechanical conditions	Class 3M2
	Transport / storage	To IEC 60721-3-2
	Climatic conditions	Class 2K3
	Temperature	-25…70 °C
	Humidity	5…95 % rh
	Mechanical conditions	Class 2M2
Standards, directives and approvals	Product standard EN 60730-1	Automatic electrical controls for household and similar use
	Electromagnetic compatibility (Applications)	For use in residential, commercial, light-industrial and industrial environments
	EU conformity (CE)	CM1T10870xx *)
	UL certification (US)	UL 916, http://ul.com/database
	RCM-conformity (EMC)	CM1T10870en_C1 *)
	EAC conformity	Eurasia conformity
Environmental compatibility	Product environmental declaration (contains data on RoHS compliance, materials composition, packaging, environmental benefit, disposal)	CM2E8177 *)
Color	Terminal base and plug-in I/O module	RAL 7035 (light gray)
Dimensions	Housing to DIN 43 880, see "Dimensions"	
Weight	Without / with packaging	246 / 268g

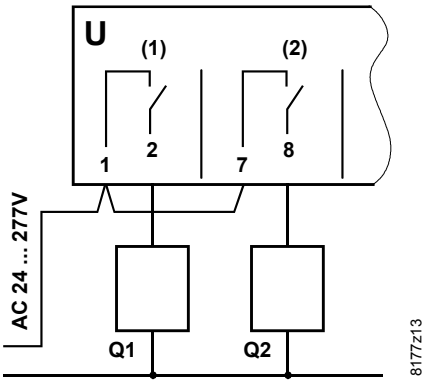
*) The documents can be downloaded from http://siemens.com/bt/download.

Connection diagrams (examples)

Terminal layout

I/O point	TXM1.6RL (1)	(2)	(3)	(4)	(5)	(6)
Supply	1	7	13	20	26	32
N/O contact, bistable (fail-safe behavior can be parameterized)	2	8	14	21	27	33

Maintained contact

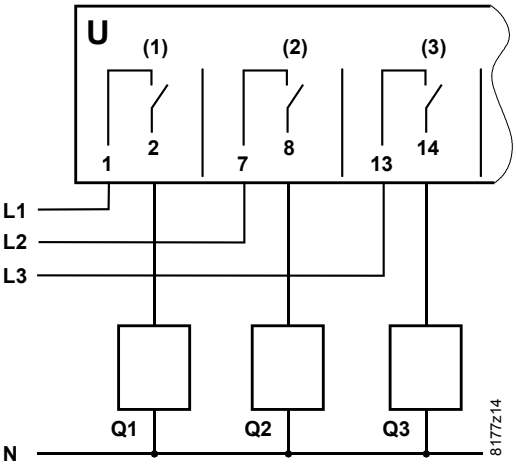


U Relay module bistable

Q1, Q2 Switched load

Mixed phases
permitted on adjacent I/O points of the module.

Restriction for UL916: I/O points 1...3 and 4...6 must have the same phase.



U Relay module bistable

Q1, Q2, Q3
Switched loads on 3 phases

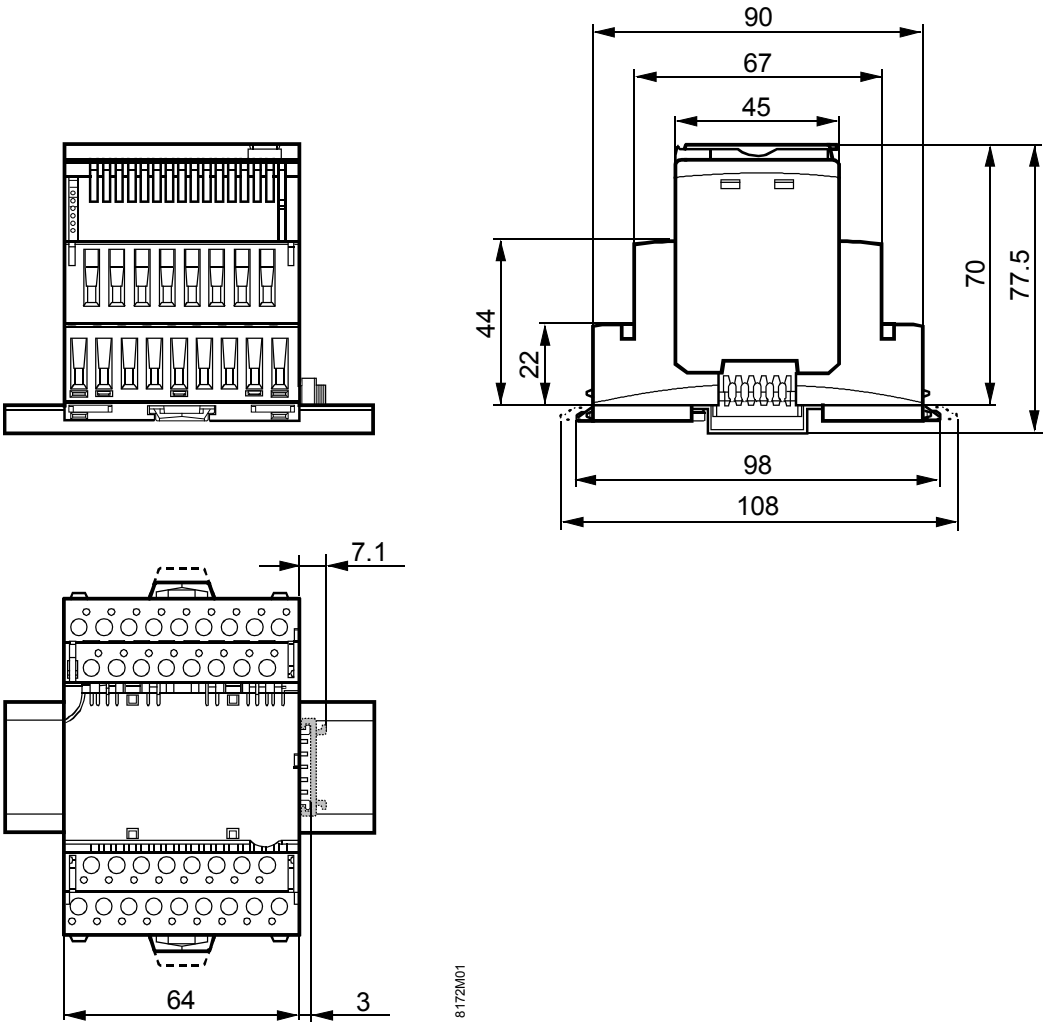
Note!

With modules from Series D it is compulsory to feed AC 24 V to bus terminal "V**Fehler! Es ist nicht möglich, durch die Bearbeitung von Feldfunktionen Objekte zu erstellen.**" (field supply) if there is a bus connection module. TXM1.6RL always monitors this supply.
Simatic: it is also admissible to connect DC 24 V.

When AC / DC 24 V returns after a failure, the module reports the state of every configured output to the bus master. This guarantees that BACnet clients and light switches correctly display the state of the outputs.

Dimensions

Dimensions in mm



Published by:
Siemens Switzerland Ltd.
Building Technologies Division
International Headquarters
Gubelstrasse 22
6301 Zug
Switzerland
Tel. +41 41-724 24 24
www.siemens.com/buildingtechnologies

© Siemens Switzerland Ltd 2010
Delivery and technical specifications subject to change