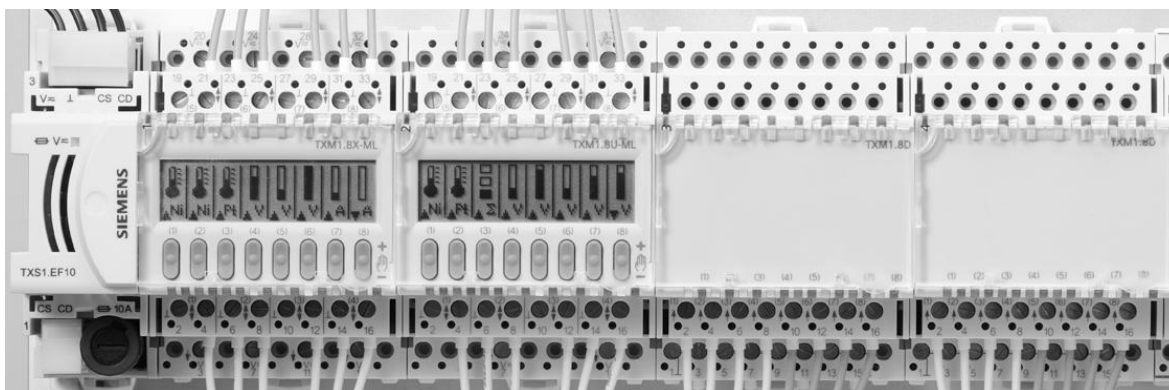


TX-I/O Product Range



Description

TX-I/O™ is a range of I/O modules, with associated power and communication modules, for use within the TALON system. The TX-I/O product range includes the following:

- Eight types of I/O modules, which act as signal converters. The I/O modules communicate between the TC Modular or the TC-36 and the related devices in the building services plant.
- TX-I/O Power Supply for the TX-I/O modules.
- TX-I/O Bus Connection Module, which bridges communication and power from one DIN rail to another.

TX-I/O Modules provide I/O points for TALON based upon TX-I/O Technology. TX-I/O Technology provides flexibility of point types, tremendous flexibility of signal types and support for manual operation.

There are eight types of TX-I/O modules:

- 8 point DI module (TXM1.8D)
- 16 point DI module (TXM1.16D)
- 6 point DO with Relay module (TXM1.6R)
- 6 point DO with Relay and Manual Override module (TXM1.6R-M)
- 8 point Universal module (TXM1.8U)
- 8 point Universal with local override/identification device (LOID) module (TXM1.8U-ML)
- 8 point Super Universal module (TXM1.8X)
- 8 point Super Universal with LOID module (TXM1.8X-ML)

Features

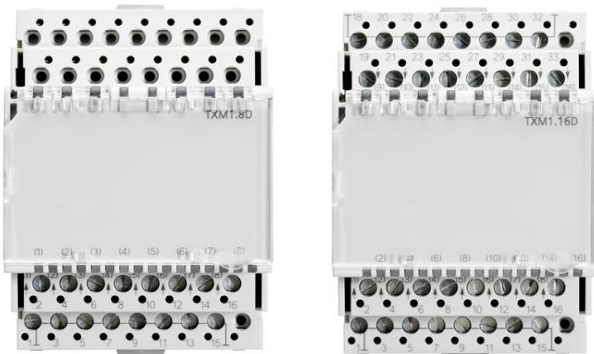
- The *self-forming TX-I/O bus* transmits power as well as communication signals. The TX-I/O bus can be extended a maximum of 160 feet (50 meters).
- *Hot-swappable electronic components* allow powered electronics to be disconnected and replaced without removing terminal wiring or disturbing the self-forming bus.

All TX-I/O modules include the following features:

- DIN rail mounting.
- High density (point count to physical dimensions).
- Hardware addressed with address keys.
- Removable label holder that allows for customized point labels.
- LEDs that provide status indication and diagnostic information for the I/O module, as well as for each point on the module.
- Separable into terminal base and plug-in I/O module electronics for:
 - Improved installation workflow, allowing field wiring to be terminated prior to installation of electronics.
 - Optimum diagnostics - connected peripheral devices can be measured without affecting or being affected by the I/O module.
 - Quick replacement of electronics for service.

Module Introduction

Digital Input Modules (TXM1.8D and TXM1.16D)

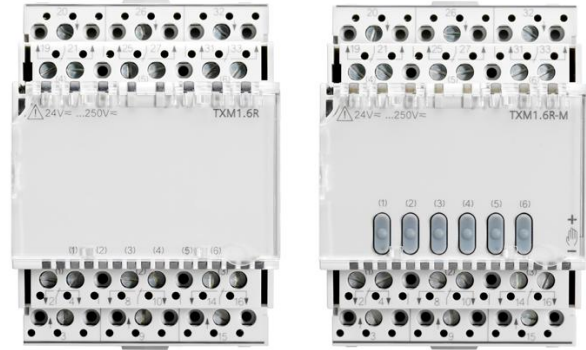


The TXM1.8D and TXM1.16D are dedicated to monitoring, respectively, 8 and 16 digital input points.

- They monitor status signals from normally open (NO) or normally closed (NC), latched voltage free/dry contacts.
- All 8 points on the TXM1.8D module as well as 8 of the 16 points on the TXM1.16D module may be used as pulse counters up to 10 Hz.
- Each input point has a green LED for status indication.

NOTE: No potential (dry contact) for all points.

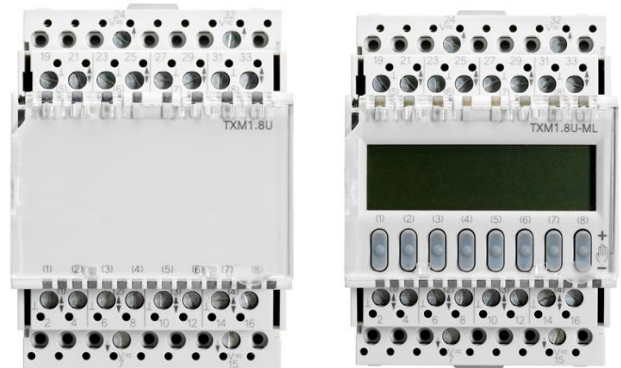
Digital Output Modules (TXM1.6R and TXM1.6R-M)



The TXM1.6R and TXM1.6R-M Digital Output Modules provide six NO or NC (form C), maintained or pulsed, voltage free/dry contacts.

- The contacts are rated for a maximum of 250 Vac at 4A.
- Each I/O point has a green LED for status indication.
- The TXM1.6R-M module is also equipped with manual override switches. An orange LED per override switch indicates override status individually per point.

Universal Modules (TXM1.8U and TXM1.8U-ML)



The TXM1.8U and TXM1.8U-ML Universal I/O modules provide 8 points, which can be individually software configured as digital input, analog input, or analog output to best meet the specific application needs.

All Universal I/O modules provide:

- AC supply voltage for peripheral devices, such as valves and actuators.
- Green LED status per I/O point that varies in intensity according to the voltage and current (directly proportional).

Digital input support includes:

- Voltage free/dry contacts
- Pulse counters up to 25 Hz

Analog input sensor support includes:

- 1K Nickel – Landis & Gyr curve
- 1K Platinum – 375 and 385 coefficient
- 10K and 100K Thermistor – Type II Curve

Active input and output support includes:

- Analog input voltage 0-10 Vdc
- Analog output voltage 0-10 Vdc

NOTE: Active inputs and outputs are permitted on the same module when connected sensors are powered from that module. When sensors are externally powered, active inputs and outputs should be on separate modules.

TXM1.8U-ML modules are also equipped with a local override/identification device (LOID), which includes an LCD signal display. The LCD displays the following information for each I/O point:

- Configured signal type
- Symbolic display of process value
- Notification of faulty operation, short circuit, or sensor open circuit

Orange LEDs indicate override status individually per point.

Super Universal Modules (TXM1.8X and TXM1.8X-ML)

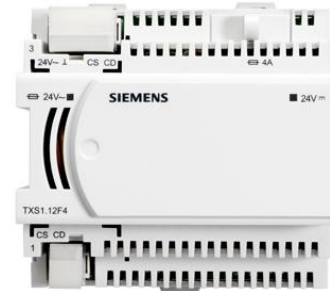


The TXM1.8X and TXM1.8X-ML Super Universal modules share all of the Universal module features, and also provide:

- Analog input current 4-20 mA
- Analog output current 4-20 mA (four current outputs maximum per module on Points 5 through 8)
- 24 Vdc supply voltage for sensors at a maximum of 200 mA per module

NOTE: Active inputs and outputs are permitted on the same module when connected sensors are powered from that module. When sensors are externally powered, active inputs and outputs should be on separate modules.

TX-I/O Power Supply (TXS1.12F4)



The TX-I/O Power Supply generates 24 Vdc at 1.2A to power TX-I/O modules and peripheral devices.

- An LED provides an indication of 24 Vdc on the TX-I/O bus.
- Up to 4 TX-I/O Power Supplies can be operated in parallel, with a maximum of two per DIN rail.
- It can be located within a row of TX-I/O modules or at the beginning of a new DIN rail.

The TX-I/O Power Supply performs the following functions:

- Transfers 24 Vac at 4A to power TX-I/O modules and peripheral devices.
- Routes CS (+24 Vdc Communication Supply) and CD (Communication Data signal) between DIN rails.
- Provides an input point for 24 Vac to power additional peripheral devices.
- Isolates the 24 Vac peripheral device supply in case of overload or short-circuit. The replaceable AC fuse can be accessed from an installed module.
- Indicates the AC fuse status (via LED) for easy diagnostics.

TX-I/O Bus Connection Module (TXS1.EF4)



The Bus Connection Module transfers 24 Vac at 4A to power TX-I/O modules and peripheral devices.

- It can be located within a row of TX-I/O modules or at the beginning of a new DIN rail.

The TX-I/O Bus Connection Module performs the following functions:

- Routes CS (+24 Vdc Communication Supply) and CD (Communication Data Signal) between DIN rails.
- Provides an input point for 24 Vac to power additional peripheral devices.
- Isolates the 24 Vac peripheral device supply in case of overload or short-circuit. The replaceable AC fuse can be accessed from an installed module.
- Indicates the AC fuse status (via LED) for easy diagnostics.

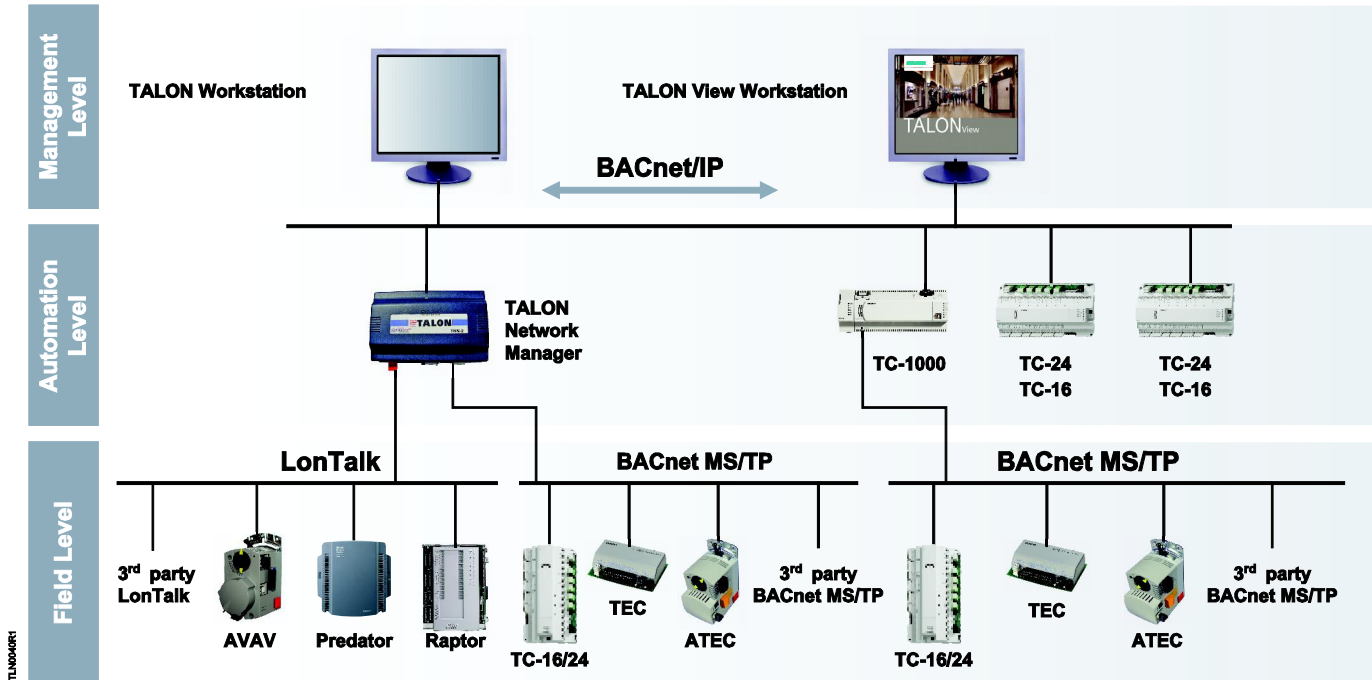
I/O Functions by Module

TX-I/O™ function	Description	Module type							
		TXM1.8D	TXM1.16D	TXM1.8U	TXM1.8U-ML	TXM1.8X	TXM1.8X-ML	TXM1.6R	TXM1.6R-M
		Maximum number of functions per module							
Digital inputs									
Binary Input	Status indication, voltage-free/dry contact	8	16	8	8	8	8		
Counter	Count/accumulator, voltage-free/dry pulse contact	8	8	8	8	8	8		
Analog Inputs									
	Temperature LG-Ni1000			8	8	8	8		
	Temperature Pt 1000 375			8	8	8	8		
	Temperature Pt 1000 385			8	8	8	8		
	Temperature (NTC) 10 K			8	8	8	8		
	Temperature (NTC) 100 K			8	8	8	8		
	Voltage, DC 0 ... 10V *			8	8	8	8		
	Current DC 4... 20 mA *					8	8		
Digital outputs									
BO OnOff	Latched contact, AC/DC 250V, 4A							6	6
BO Pulse	Pulse							6	6
Analog Outputs									
	DC 0..10 V *			8	8	8	8		
	DC 4 ... 20 mA *					4	4		

* Active inputs and active outputs (0-10V and 4-20 mA) must be located on different modules if sensors are externally powered.

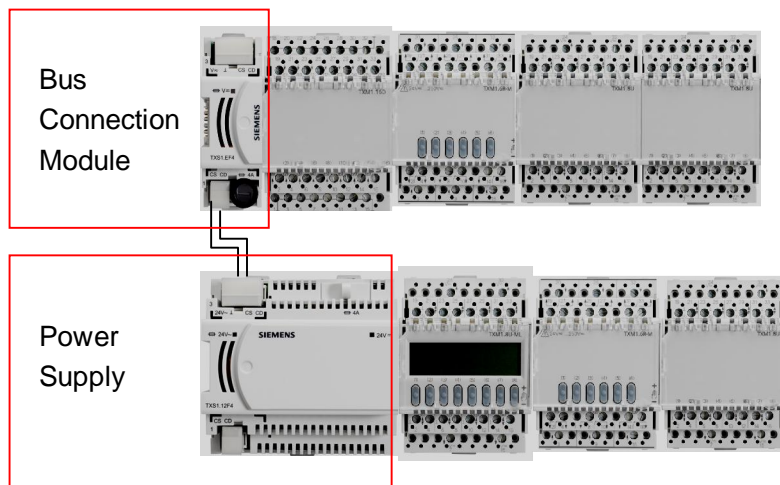
TX-I/O Network Architecture Examples

The following architecture picture shows TX-I/O modules connected to a TC Modular located on the Automation Level Network.



TX-I/O Bus Extension

The following picture shows the TX-I/O bus extended using a Bus Connection Module and TX-I/O Power Supply. The TX-I/O bus can be a maximum of 160 feet (50 meters) and may extend outside an enclosure.



Specifications:

Dimensions (L x W x D)

TX-I/O Modules	2.52" x 3.54" x 2.75" (64 mm x 90 mm x 70 mm)
TX-I/O Power Supply	3.78" x 3.54" x 2.75" (96 mm x 90 mm x 70 mm)
TX-I/O Bus Connection Module	1.26" x 3.54" x 2.75" (32 mm x 90 mm x 70 mm)

Electrical

Power Requirements 24 Vac +/-20% input @ 50 or 60 Hz

Power Consumption

TX-I/O Power Supply 35 VA

With the above power consumption, the Power Supply produces 28.8 W (1.2A at 24 Vdc) and the P1 BIM provides 14.4 W (0.6A at 24 Vdc) to be used by the following:

TXM1.8D	1.1 W
TXM1.16D	1.4 W
TXM1.8U	1.5 W
TXM1.8U-ML	1.8 W
TXM1.8X	2.2 W
TXM1.8X-ML	2.3 W
TXM1.6R	1.7 W
TXM1.6R-M	1.9 W

Terminations

I/O Terminals 20-12 AWG Solid
20-14 AWG Stranded

Power Supply 2 or 3 position screw terminal pluggable blocks

Operating Environment

32°F to 122°F (0°C to 50°C), 5 to 95% rh, non-condensing

Agency Listings

UL 864 UUKL Smoke Control Equipment
ULC/ORD-C100-1992 UUKL7 Smoke Control Equipment
UL 916 PAZX
CSA 22.2 No. 205 PAZX7

Agency Compliance

FCC Compliance
Australian EMC Framework (C-Tick)
European EMC Directive (CE)
European Low Voltage Directive (LVD)
RoHS Compliant

Ordering Information

TX-I/O I/O Modules

Product Number	Description
TXM1.8D	TX-I/O Module, 8 DI points
TXM1.16D	TX-I/O Module, 16 DI points
TXM1.8U	TX-I/O Module, 8 Universal points
TXM1.8U-ML	TX-I/O Module, 8 Universal points with LOID
TXM1.8X	TX-I/O Module, 8 Super Universal points
TXM1.8X-ML	TX-I/O Module, 8 Super Universal points with LOID
TXM1.6R	TX-I/O Module, 6 DO with Relay points
TXM1.6R-M	TX-I/O Module, 6 DO with Relay points with manual override

TX-I/O Power Supply and Bus Modules

Product Number	Description
TXS1.12F4	TX-I/O Power Supply, 1.2 A, 4A Fuse
TXS1.EF4	TX-I/O Bus Connection Module, 4A Fuse

Accessories

Product Number	Description
TXA1.K12	2 sets, Address Keys 1-12
TXA1.K24	Address Keys 1-24
TXA1.K-48	Address Keys 25-48
TXA1.K-72	Address Keys 49-72
TXA1.LLT-P100	Labels for TX-I/O 100 sheets/pack Letter format
TXA1.LH	Replacement Label Holders

Regions where this Product is Sold

(US, Asia Pacific, Canada, Latin America, UK)

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