ABB MEASUREMENT & ANALYTICS | DATA SHEET

Expansion module - overview

XSeries, RMC, and XIO

Overview

Hardware functionality of XSeries, RMC, and XIO devices can be extended in a flexible and simple way by adding modular I/O as needed. Totalflow's TFIO modules are designed to accommodate low power, harsh environments at economical cost. The system recognizes the module types automatically and configures the I/O Scanner subsystem accordingly.

The modules are interfaced to the engine card by an I2C bus. On top of this bus, Totalflow has implemented an efficient I/O protocol to exchange information between the modules and the engine card. The bus operates in a master/slave mode, with the engine card acting as master.

The I/O module hardware is packaged in DIN mountable enclosures that employ Phoenix Contact technology for field wiring (see back of this datasheet). The modules also interconnect with each other to provide the necessary power and interface signals along their bus. Installation consists of snapping the Phoenix connector onto the DIN rail and moving the module into position directly beside and snapped to the next module.

Hot Pluggable

The new TFIO module are hot-pluggable and can be inserted, replaced or removed during the normal operation of the device with no restart required. The system will detect the changes in the TFIO bus and reflect the state of the modules that can be verified on PCCU. User should take power precaution measurements when execution this action. All modules are designed to meet Class 1, Division 2, Groups C & D.

All modules have 4 LED annunciator lights; a manual reset button and an address range from 0 through 7. On the faceplate of each module (see page 3 of this datasheet) you will see:

- Type of module
- LED light panel
- Reset button switch
- Module address selector

LED annunciators

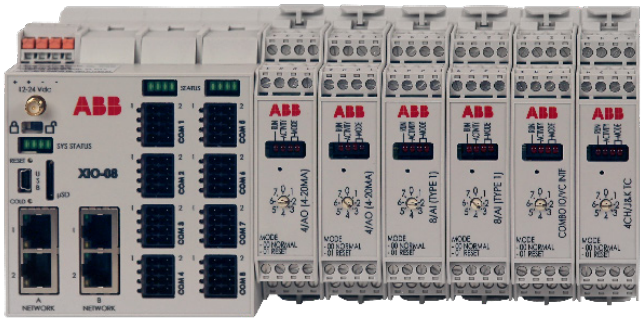
The first light (RUN) is blinking when the engine card recognizes the module.
The second light (ACTIVITY) toggles on or off with each communication from the engine card.
The third and fourth lights (MODE) reflect one of two possible statuses of the module as shown on the bottom of the faceplate.

Reset button

Inside a small hole on the front of the module is the reset button switch. You should reset the module anytime you change the address of the module. This constitutes a warm start of the module's internal program. To reset the module, use a fine point instrument, such as the end of a paper clip, inserted into the hole until the module resets.

Address selector

Each module of the same type must have a unique physical address, 0-7, selected prior to powering up the module. Different types of modules may share the same address. If you change the address of a module, you must do a reset.



See next page for depiction of TFIO module package and summary of module types.

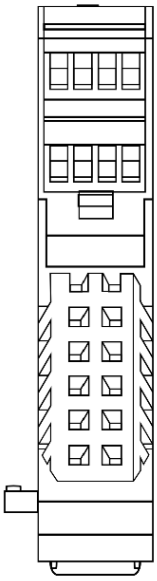
TFIO module specifications

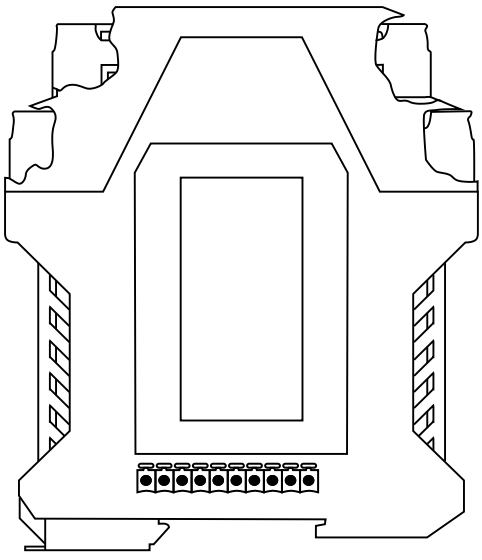
Module type	I/O points per module	Max modules per engine card
Analog input	8	8
Analog output	4	8
Digital input/output, pulse input	8 (individually programmable)	8
Valve control combo-I/O	2 DO, 4DI/DO/PI, 1AO	8
Communications	RS232/RS485 programmable	8
Millivolt input (thermocouple)	4	8
Millivolt input (RTD)	4	8

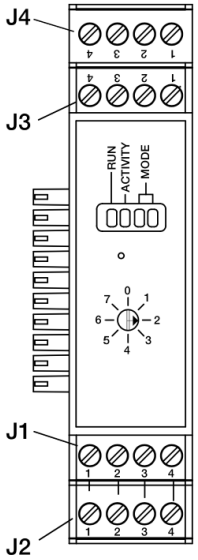
Note: This module is only supported in XFC/XRC

XSeries, RMC, XIO specifications

	Integral multivariable transducer	On Board I/O	Max TFIO modules per enclosure
eXtendable flow computers (XFC)			
XFC 6413	DPMVX=DP.SP.Tf	Batt, Chrgr, 2AI, 2DI/PI, 2DO	3
XFC 6713	DPMVX=DP.SP.Tf	Batt, Chrgr, 2AI, 2DI/PI, 2DO	6
XFC 6414	PIMVX=PI.SP.Tf	Batt, Chrgr, 2AI, 2DI/PI, 2DO	3
XFC 6714	PIMVX=PI.SP.Tf	Batt, Chrgr, 2AI, 2DI/PI, 2DO	6
eXtendable remote controllers (XRC)			
XRC 6490		Batt, Chrgr, 5AI, 4DI/2PI, 4DO	3
XRC 6790		Batt, Chrgr, 5AI, 4DI/2PI, 4DO	6
XRC 6890		Batt, Chrgr, 5AI, 4DI/2PI, 4DO	14
RMC-100/RMC-100 LITE		Batt, Chrgr, 4AI, 1AO, 6DI/DO, 2PI	22 TFIO per bus (2 buses)
XIO			22 TFIO







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