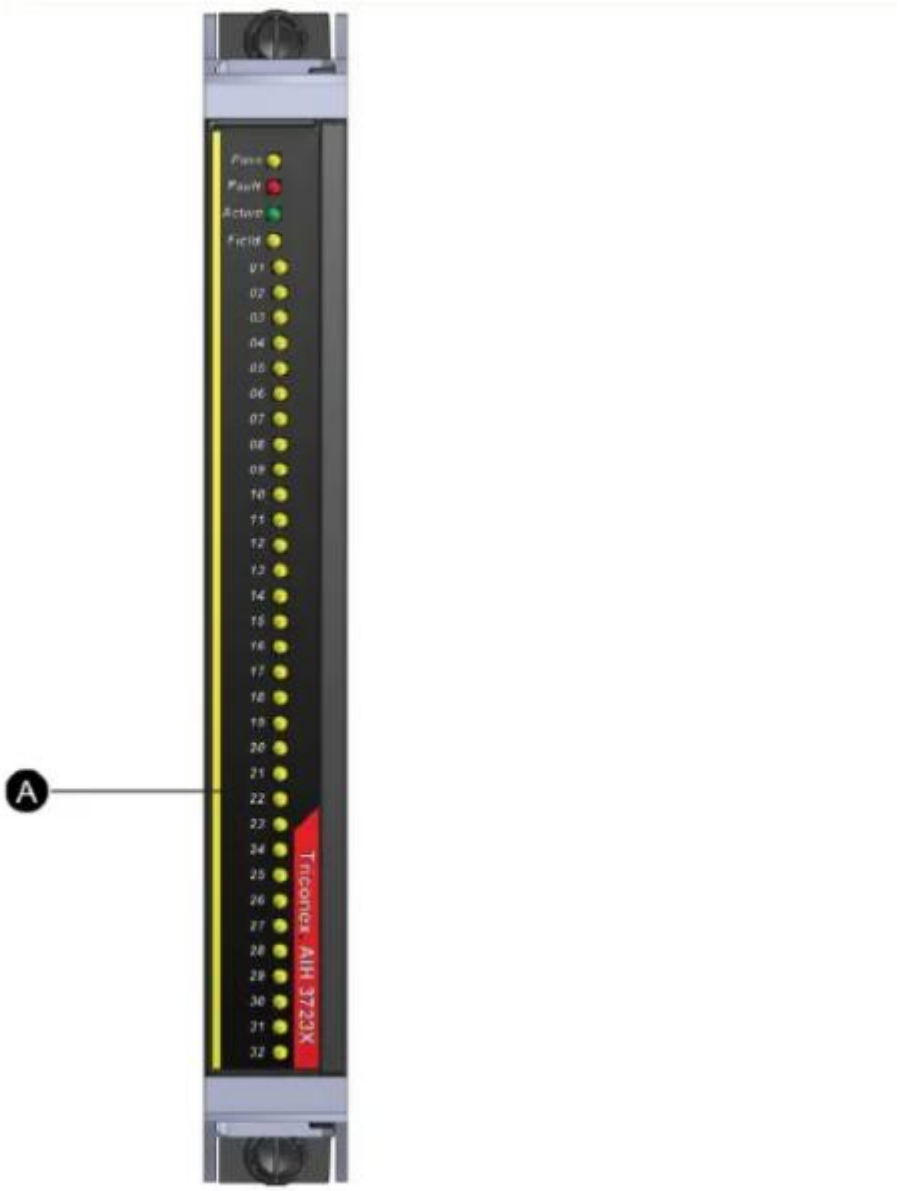
3723X Analog Input Input Module with HART Data Sheet

I. Product Overview

Model 3723X is a TMR (Triple Module Redundancy) analog input module with a voltage range of 0 to 5 VDC. It provides HART communication (pass-through function) to connected HART-enabled field devices. This module can only be installed in the Tricon CX I/O expansion chassis.

II. Front Panel Description (Figure 25-3723X AI with HART Front Panel)



A Yellow Stripe

3723X Analog Input with HART Specifications

Table 28-3723X Analog Input with HART Specifications

Feature	Specification
	0.75% of FSR

Color code	Yellow
Number of input signals	32, single-ended
Input type	0 – 23 mA
Input update rate	50 ms (input filter = 47.5 ms, update rate = 2.5 ms)
Resolution	16 bits
Accuracy	<1% of Full Scale Range (FSR)(a) from – 4° to 140° F (– 20° to 60° C)
Repeatability	<0.2% for 1 minute (for a fixed input value)
Input resistance (load)	10 MΩ (DC), minimum
Channel-to-channel isolation	420 kΩ, typical
Normal mode rejection	– 3 dB @ 25 Hz – 17 dB @ 60 Hz – 23 dB @ 120 Hz
Input voltage range	0 to 5 VDC
Input over-range measurement	14%, 0 to 5.75 V
Logic power	<11 watts
Input over-range protection	150 VDC continuous, 115 VAC continuous
Input current range	0 to 23 mA with 250 Ω I/V

	resistor
Field to system ground isolation	400 Vrms (566 V peak) continuous, 1500 VDC for 60 seconds
Status indicator: Module status	Pass, Fault, Active, Field
Status indicator: On or Off State	1 load fault (over-range or under-range field input per Namur NE 43 and HART field device faults) LED per point
Minimum input change	
Input change sample period	2.5 ms
Minimum period of mis-compares	50 samples

Table 28-3723X Analog Input with HART Specifications (Continued)

Feature	Specification
Compatible termination options	9760X-210RF ETP kit(a), 32 pts. 9761X-210RF ETP kit, 16 pts. 9765X-210RF ETP kit(b), 32 pts. 9771X-210RF ETP kit, 16 pts. 9789X-610RF Nonincentive ETP kit(c), 32 pts. 9791X-610RF ETP kit, 16 pts.
Compatible field external termination (FET) connector	9769X FET(d), 32 pts.

(a) When a module becomes active during a board switch, accuracy can be decreased momentarily to <3% of FSR. Consider adding debouncing to your application to reduce the chances of spurious events.

(b) Rapidly or continuously changing inputs may cause the time to detect a fault to increase. If an input sample changes by more than 0.75 percent of FSR from the previous sample, the readings will not be compared.

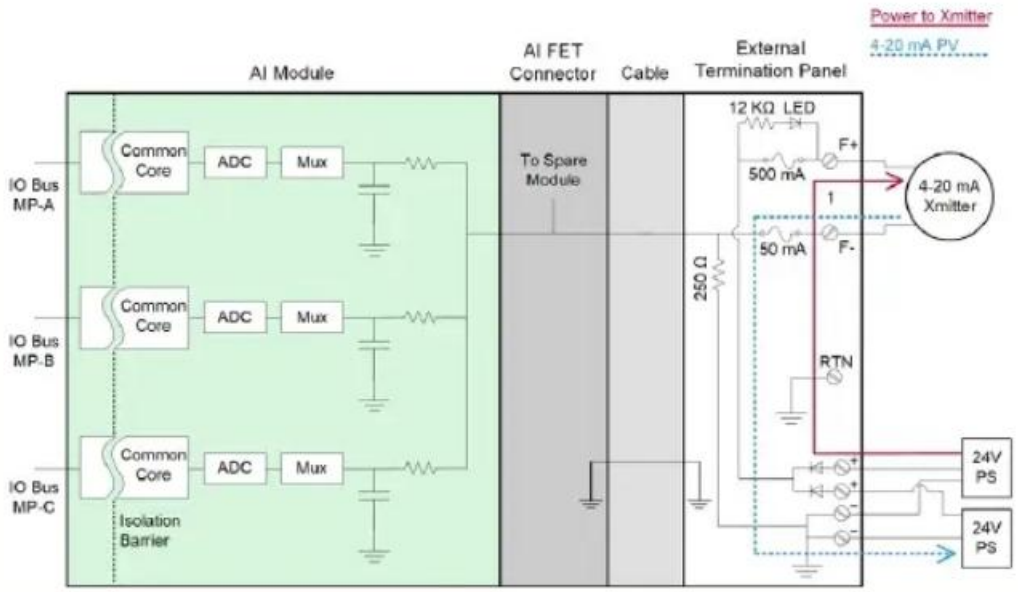
(c) Individual field power monitoring is not supported and must be turned off in TriStation. The module will detect a fault if it is turned on.

(d) FETs are required for installing I/O modules in the Model 8131X I/O Expansion Chassis and for connecting ETPs to the I/O modules in the Model 8131X I/O Expansion Chassis.

3723X Simplified Schematics

This figure is a simplified schematic of a Model 3723X module with a 9769X FET and a 9760X-210RF ETP.

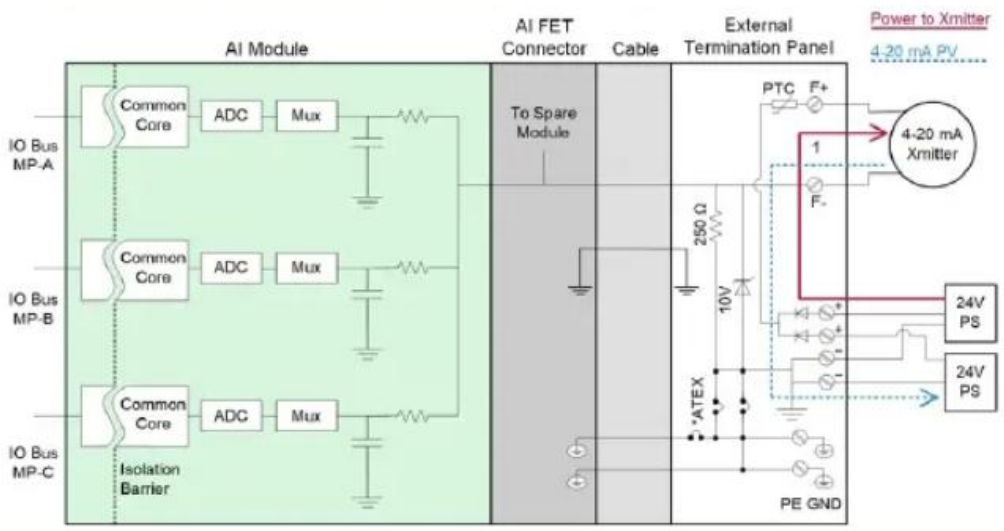
Figure 26-Simplified Schematic of a 3723X AI Module with a 9760X-210RF ETP



NOTE: ETP 9761X-210RF also is compatible with the 3723X AI module. See the Termination Panel portion of the "Simplified Schematic of a 3700, 3700A, or 3721 AI Module with a 9761-210F Panel" in the *Field Terminations Guide for Tricon Systems* for ETP 9761X-210RF details.

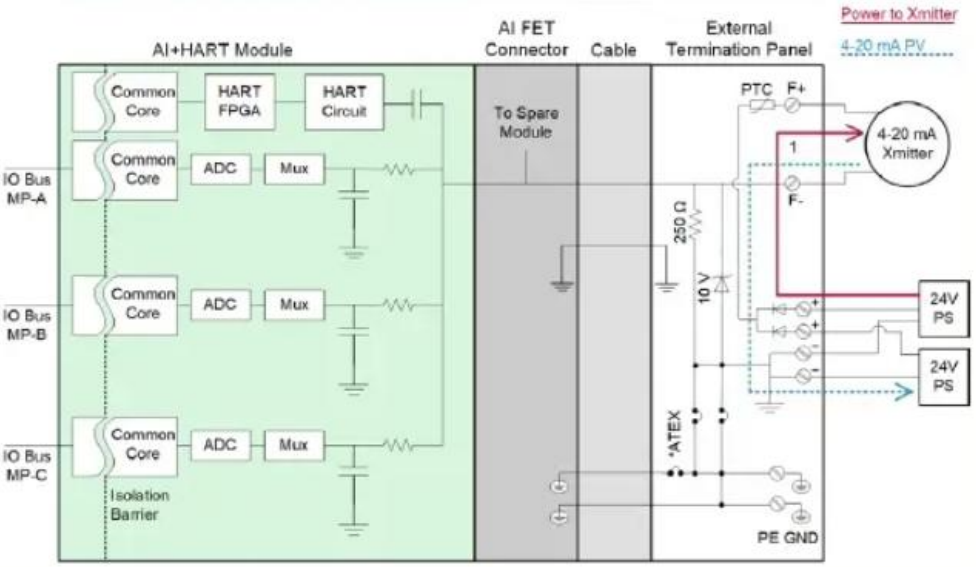
This figure is a simplified schematic of a Model 3723X module with a 9769X FET and a 9765X - 210RF ETP.

Figure 27 - Simplified Schematic of a 3723X AI Module with a 9765X - 210RF ETP



NOTE: ETP 9771X - 210RF also is compatible with the 3723X AI module. See the Termination Panel portion of the "Simplified Schematic of a 3700, 3700A, or 3721 AI Module with a 9771 - 210F Panel" in the Field Terminations Guide for Tricon Systems for ETP 9771X - 210RF details.

This figure is a simplified schematic of a Model 3723X module with a 9769X FET and a 9789X - 610RF ETP.



NOTE: ETP 9791X - 610RF also is compatible with the 3723X AI module. See the Termination Panel portion of the "Simplified Schematic of a 3700A or 3721

Analog Input Module with a 9791 - 610F Panel" in the *Field Terminations Guide for Tricon Systems* for 9791X - 610RF details.