

Digital Input Module

The following digital input components are available.

Model	Description	Voltage	Type
3301	Digital Input Module	24 V DC	Commoned
2301	Digital Input Baseplate		Direct Termination

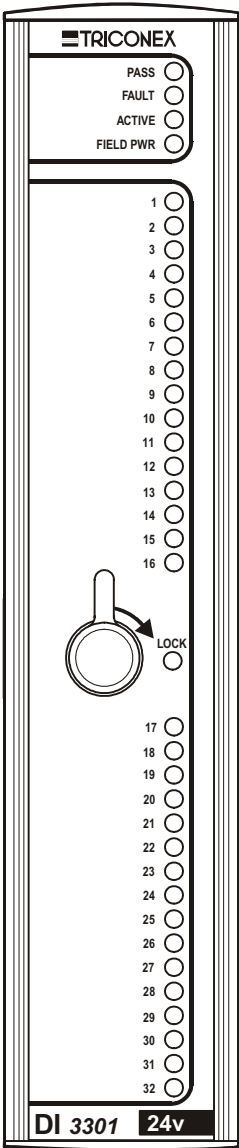
The Digital Input (DI) Module has three independent channels which process all data sent to the module. An ASIC on each channel scans each input point, compiles data, and transmits it to the MPs upon demand. Input data is voted at the MPs before processing to ensure the highest integrity.

The DI Module sustains complete, ongoing diagnostics for each channel. If the diagnostics detect a failure on any channel, the Fault indicator is activated, which in turn activates the system alarm. The Fault indicator points to a channel fault, *not* a complete module failure. The DI Module is guaranteed to operate properly in the presence of a single fault and may continue to operate properly with certain multiple faults.

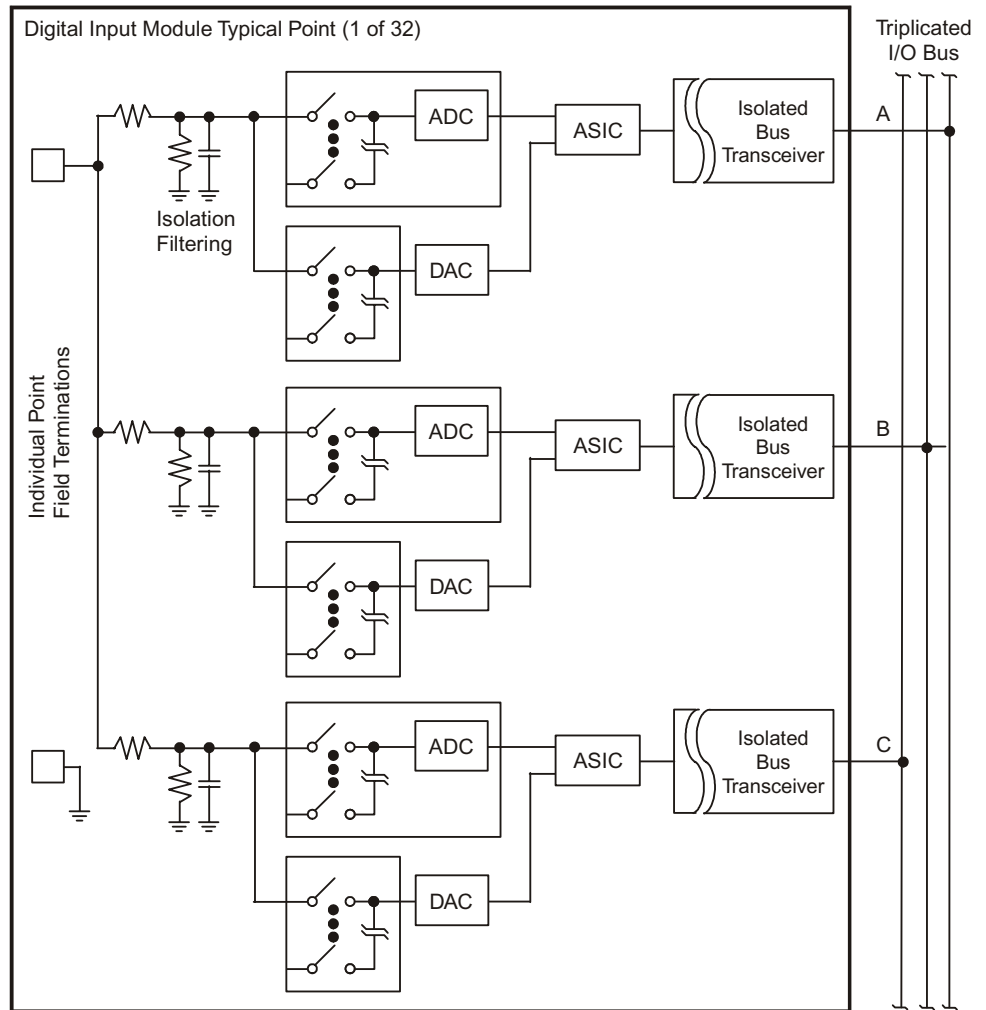
The DI Module continuously verifies the ability of the system to detect transitions to the opposite state. The DI Module supports hot sparing for online replacement of a faulty module or continuous back-up to an active module. The DI Module is mechanically keyed to prevent improper installation in a baseplate.

Model 3301 Digital Input Module

DI Module
Front Panel



Model 3301 Digital Input Module Simplified Schematic



Model 3301 Digital Input Module Specifications

Feature	Specification
Points	32, commoned
Nominal input voltage	24 V DC
Operational voltage range	15–30 V DC
Absolute maximum input voltage	33 V DC
Absolute maximum reverse input voltage	–0.6 V DC
Input delay	<10 ms, On to Off or Off to On TC = 6.4 ms, –3dB @ 25Hz
Input impedance	>30 k Ω without baseplate $\approx$ 3 k Ω with baseplate
Input power	0.2 W/pt, @ 24 V DC 0.5 W/pt, @ 33 V DC
Input threshold	0–5 V DC = Off region 6–14 V DC = transition region 15–30 V DC = On region
Diagnostic (loss of view)	Force-to-value diagnostic (FVD), <2 ms/test
Maximum input toggle rate to maintain diagnostic fault coverage	<20/sec
FVD Off-state glitch	
Duration	<2 ms
Magnitude	$\approx$ 36% test voltage
Output Impedance	0–5 V DC, $\approx$ 100 k Ω
ADC scan time	<1 ms for all 32 points
Functional-to-protective-earth isolation	500 V DC, minimum
Functional-to-functional-earth (logic) isolation	800 V DC, minimum

Model 2301 Digital Input Baseplate

The following table lists the short circuit current specifications for field short-to-ground faults.

Feature	Specification
Fault current	130 mA, typical 200 mA, maximum

