

Triconex DI3301

32-Point 24 VDC Digital Input Module

Manufacturer	Triconex
Model / order number	DI3301
Product identification	32-Point 24 VDC Digital Input Module
System / family context	Trident v2 Systems

Verified scope

32 commoned input points; nominal 24 VDC; 15-30 VDC operating range; less than 10 ms input delay. The original manufacturer front-panel label identifies base model 3301.

Engineering checks before replacement

- Confirm the DI3301 designation against base model 3301.
- Check ON/OFF thresholds and the field-supply tolerance.
- Allow for force-to-value diagnostic test behavior.
- Identify the baseplate and any external high-voltage interface.

Original manufacturer source reference

Technical Product Guide for Trident v2 Systems, product specifications extract; revision not shown. Original PDF pages 19.

Open manufacturer document (hosted copy)

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Request model verification or a quotation

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Digital Input Module

Each TMR Digital Input Module has three isolated sets of electronics, called channels, which independently process field data to the module. Each channel places the processed data in an array and transmits this array, on request, to the MP associated with that channel. The MPs vote on the data before passing it to the application.

DI Modules include complete, ongoing diagnostics for each channel. If the diagnostics detect a failure on any channel, the Fault indicator turns on and activates the system alarm. The Fault indicator identifies a channel fault, not a complete module failure. The DI Module continuously verifies the ability of the system to detect transitions to the opposite state. DI Modules are guaranteed to operate properly in the presence of a single fault and may continue to operate properly with multiple faults.

DI Modules support a hot-spare module. Each DI Module is mechanically keyed to prevent improper installation in a configured baseplate.

The Model 3301 DI Module can be used with these baseplates:

- Model 2301, which is used with typical applications.
- DI External Termination Baseplate, which is used with the Solid State Relay Input External Termination Panel in high-voltage applications, or the Model 9573-610 DI Hazardous Location External Termination Panel.

Model 3301 Digital Input Module Specifications

Feature	Specification
Points	32, commoned
Nominal input voltage	24 VDC
Operational voltage range	15–30 VDC
Absolute maximum input voltage	33 VDC
Absolute maximum reverse input voltage	– 0.6 VDC
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 VDC 0.5 W/pt, @ 33 VDC
Input threshold	0–5 VDC = Off region 6–14 VDC = transition region 15–30 VDC = 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 VDC, $\approx$ 100 k Ω
ADC scan time	<1 ms for all 32 points
Functional earth to protective earth isolation	500 VDC, minimum
Functional earth to functional earth (logic ground) isolation	800 VDC, minimum