

FIELD INSTALLATION QUICK GUIDE

Installation Instructions

3704E

High-density analog input module

Product Specifications		
Aiming Target (Bolt) Specifications		
Model	200M	200
Weight	1.95 lb (0.88 kg)	1.95 lb (0.88 kg)
Length	24.5 in (620 mm)	24.5 in (620 mm)
Height	10.5 in (267 mm)	10.5 in (267 mm)
Max. Range	1000 yds (914 m)	1000 yds (914 m)
Max. Wind	15 mph (24 km/h)	15 mph (24 km/h)
Max. Rain	Yes	Yes
Max. Humidity	Yes	Yes
Max. Temperature	Yes	Yes
Max. Altitude	Yes	Yes
Max. Elevation	Yes	Yes
Max. Slope	Yes	Yes
Max. Wind Speed	15 mph (24 km/h)	15 mph (24 km/h)
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PRODUCT	3704E
FAMILY	Triconex safety system
FUNCTION	High-density analog input module
STATUS	Verify exact installed equipment

Prepared by Amikon Limited from Triconex documentation. This guide supplements the complete manufacturer manual and site procedure.

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CONFIRM THE ORDERED CONFIGURATION

Component Type	High-density analog input module
Order Reference	3704E
System Platform	Triconex safety control system
Primary Function	Acquires high-density analog voltages
Channel or Port Capacity	64 differential input points
Electrical Classification	0–5 V or 0–10 V DC

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PREPARATION AND CONNECTION

- Confirm the complete 3704E article number and installed revision.
- Isolate applicable electrical and process energy using the approved site procedure.
- Record every connector, cable, terminal, shield and protective-earth connection before removal.
- Install without forcing keyed parts, then secure terminals, latches, fasteners and cable supports.

Product Specifications

Analog Input Module Specifications

Model Number	3704E	3720	3721
Voltage	0-5V or 0-10V ^a , + 6%	0-5VDC, + 6%	0 to 5 VDC or -5 to +5 VDC ^a , + 6%
Type	TMR, AI	TMR, AI	TMR, AI
No. of Input Points	64, commoned	64, single-ended	32 differential, DC-coupled
Isolated Points	No	Yes	Yes
Input Update Rate	75 ms	10 ms	10 ms
Resolution	12 bits	12 bits or 14 bits programmable	12 bits or 14 bits programmable
Accuracy	< 0.25% of FSR from 0° to 60° C	< 0.15% of FSR from 0° to 60° C	< 0.15% of FSR from 0° to 60° C
Input Resistance (load)	30 MΩ (DC), min.	10 MΩ (DC), min.	10 MΩ (DC), min.
Power-Off Resistance	30 kΩ (DC), typical	140 kΩ (DC), typical	140 kΩ (DC), typical
Common Mode Rejection	n/a	n/a	-85 dB (DC - 100 Hz)
Common Mode Range	n/a	n/a	-12V to +12V peak
Leg-to-Leg Isolation	200 kΩ typical	420 kΩ typical	420 kΩ typical
Normal Mode Rejection	-1 dB @ 8Hz -12 dB @ 60Hz -18 dB @ 120Hz	-3 dB @ 8Hz -17 dB @ 60Hz -23 dB @ 120Hz	-3 dB @ 23 Hz -8 dB @ 60 Hz -14 dB @ 120 Hz
Input Overrange Protection	150 VDC/115 VAC continuous	150 VDC/115 VAC continuous	150 VDC/115 VAC continuous
Current Range	0-20 mA, 250 Ω shunt for 5V 500 Ω shunt for 10V	0-20 mA (plus 6% over-range) with 250 Ω shunt resistor	0-20 mA with 250 Ω shunt resistor
Diagnostic Indicators			
Module Status	PASS, FAULT, ACTIVE	PASS, FAULT, ACTIVE, FIELD	PASS, FAULT, ACTIVE, FIELD
Color Code	Copper	Yellow	Yellow

a. The voltage is selected using the TriStation 1131 software.

Analog Output Modules

Analog Output (AO) modules receive output signals from the Main Processor module on each of three channels. Each set of data is then voted and a healthy channel is selected to drive the outputs. Each module monitors its own current outputs (as input voltages) and maintains an internal voltage reference to provide self-calibration and module health information.

Each channel on a module has a current loopback circuit which verifies the accuracy and presence of analog signals independently of load presence or channel selection. The module's design prevents a non-selected channel from driving an analog signal to the

field. In addition, ongoing diagnostics are performed on each channel and circuit of the module. Failure of any diagnostic test deactivates the faulty channel and activates the Fault indicator and the chassis alarm. The module Fault indicator merely indicates a channel fault, not a module failure. The module continues to operate properly with as many as two channels failed. Open loop detection is provided by a LOAD indicator which activates if the module is unable to drive current to one or more outputs.

The module provides for redundant loop power sources with individual power and fuse indicators called PWR1 and PWR2. External loop power

supplies for analog outputs must be provided by the user. A LOAD indicator activates if an open loop is detected on one or more output points. PWR1 and PWR2 are on if loop power is present.

AO modules support hot- spare capability, which allows online replacement of a faulty module.

AO modules require a separate external termination panel (ETP) with a cable interface to the Tricon controller backplane. Each module is mechanically keyed to prevent improper installation in a configured chassis.

04 COMMISSIONING CHECKS

- 01 Confirm product identity and mechanical seating.
- 02 Verify the documented supply before energising.
- 03 Inspect polarity, shielding and protective-earth connections.
- 04 Restore power in the approved sequence and observe status indications.
- 05 Test each connected input, output or communication path.
- 06 Record diagnostics and functional-test results before return to service.

05 CONTROLLED DOCUMENT

Official source	Tricon Technical Product Guide
Product record	3704E
Manufacturer	Triconex
Warranty	12 months from AMIKON
Support	INFO@AMIKON.CN

AMIKON PRODUCT SUPPORT

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