

FIELD INSTALLATION QUICK GUIDE

Installation Instructions

3721N

Nuclear analog input module

Product Specifications		
Average Travel Distance Specifications		
	Model	Size
Model	Model 1000	1000
Model	Model 2000	2000
Model	Model 3000	3000
Model	Model 4000	4000
Model	Model 5000	5000
Model	Model 6000	6000
Model	Model 7000	7000
Model	Model 8000	8000
Model	Model 9000	9000
Model	Model 10000	10000
Model	Model 11000	11000
Model	Model 12000	12000
Model	Model 13000	13000
Model	Model 14000	14000
Model	Model 15000	15000
Model	Model 16000	16000
Model	Model 17000	17000
Model	Model 18000	18000
Model	Model 19000	19000
Model	Model 20000	20000
Model	Model 21000	21000
Model	Model 22000	22000
Model	Model 23000	23000
Model	Model 24000	24000
Model	Model 25000	25000
Model	Model 26000	26000
Model	Model 27000	27000
Model	Model 28000	28000
Model	Model 29000	29000
Model	Model 30000	30000
Model	Model 31000	31000
Model	Model 32000	32000
Model	Model 33000	33000
Model	Model 34000	34000
Model	Model 35000	35000
Model	Model 36000	36000
Model	Model 37000	37000
Model	Model 38000	38000
Model	Model 39000	39000
Model	Model 40000	40000
Model	Model 41000	41000
Model	Model 42000	42000
Model	Model 43000	43000
Model	Model 44000	44000
Model	Model 45000	45000
Model	Model 46000	46000
Model	Model 47000	47000
Model	Model 48000	48000
Model	Model 49000	49000
Model	Model 50000	50000
Model	Model 51000	51000
Model	Model 52000	52000
Model	Model 53000	53000
Model	Model 54000	54000
Model	Model 55000	55000
Model	Model 56000	56000
Model	Model 57000	57000
Model	Model 58000	58000
Model	Model 59000	59000
Model	Model 60000	60000
Model	Model 61000	61000
Model	Model 62000	62000
Model	Model 63000	63000
Model	Model 64000	64000
Model	Model 65000	65000
Model	Model 66000	66000
Model	Model 67000	67000
Model	Model 68000	68000
Model	Model 69000	69000
Model	Model 70000	70000
Model	Model 71000	71000
Model	Model 72000	72000
Model	Model 73000	73000
Model	Model 74000	74000
Model	Model 75000	75000
Model	Model 76000	76000
Model	Model 77000	77000
Model	Model 78000	78000
Model	Model 79000	79000
Model	Model 80000	80000
Model	Model 81000	81000
Model	Model 82000	82000
Model	Model 83000	83000
Model	Model 84000	84000
Model	Model 85000	85000
Model	Model 86000	86000
Model	Model 87000	87000
Model	Model 88000	88000
Model	Model 89000	89000
Model	Model 90000	90000
Model	Model 91000	91000
Model	Model 92000	92000
Model	Model 93000	93000
Model	Model 94000	94000
Model	Model 95000	95000
Model	Model 96000	96000
Model	Model 97000	97000
Model	Model 98000	98000
Model	Model 99000	99000
Model	Model 100000	100000
Model	Model 101000	101000
Model	Model 102000	102000
Model	Model 103000	103000
Model	Model 104000	104000
Model	Model 105000	105000
Model	Model 106000	106000

PRODUCT	3721N
FAMILY	Triconex safety system
FUNCTION	Nuclear 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	Nuclear analog input module
Order Reference	3721N
System Platform	Triconex safety control system
Primary Function	Differential process-signal acquisition
Channel or Port Capacity	32 TMR analog input points
Electrical Classification	0–5 V or –5 to +5 V DC

02

PREPARATION AND CONNECTION

- Confirm the complete 3721N 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.

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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.

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CONTROLLED DOCUMENT

Official source	Tricon Technical Product Guide
Product record	3721N
Manufacturer	Triconex
Warranty	12 months from AMIKON
Support	INFO@AMIKON.CN

AMIKON PRODUCT SUPPORT

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