APTER■POWER

PRODUCT TECHNICAL REFERENCE

INDUSTRIAL AUTOMATION PRODUCT

3704E

64-Point 0-5/0-10 VDC Analog Input Module

Triconex 3704E is a sixty-four-point high-density TMR analog input module. It digitizes commoned 0-5 or 0-10 VDC process signals for voted safety-control processing.

IDENTITY	VERIFIED VALUE
Manufacturer	Triconex
System family	Tricon high-density analog input
Part number	3704E
Country	USA
HS code	8537101190

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2 Technical Specifications

Technical values below are limited to the named Triconex product record.

PARAMETER	VALUE
Module type	TMR analog input
Input points	64 commoned
Configured range	0-5 VDC or 0-10 VDC plus 6%
Isolated points	No
Input update rate	75 ms
Resolution	12 bit
Accuracy	<0.25% FSR, 0 to 60 degC
Input resistance	30 MOhm DC minimum
Power-off resistance	30 kOhm DC typical
Leg-to-leg isolation	200 kOhm typical

PARAMETER	VALUE
Normal-mode rejection	-1 dB at 8 Hz; -12 dB at 60 Hz; -18 dB at 120 Hz
Input overrange protection	150 VDC / 115 VAC continuous
0-5 V current option	0-20 mA with 250 Ohm shunt
0-10 V current option	0-20 mA with 500 Ohm shunt
Indicators	PASS; FAULT; ACTIVE
0-5 V panel	9760-210
0-10 V panel	9760-410
Basic voltage panel	9750-810
Basic current panel	9750-210

VERIFIED PRODUCT RECORD

DATA GROUP	VERIFIED VALUE
Installed host / carrier	Tricon I/O chassis and hot spare
Companion hardware	range-matched external termination panel
Field connection	0-5 or 0-10 V field circuits
Primary system function	Samples sixty-four commoned analog inputs through three TMR channels
Controlled acceptance duty	High-density safety transmitter acquisition

3 System Role and Architecture

Triconex 3704E is a sixty-four-point high-density TMR analog input module. It digitizes commoned 0-5 or 0-10 VDC process signals for voted safety-control processing.

FUNCTION 1

Samples sixty-four commoned analog inputs through three TMR channels

FUNCTION 2

Selects 0-5 V or 0-10 V operation through the approved TriStation configuration

FUNCTION 3

Converts current loops with voltage-range-specific precision shunts at the termination panel

FUNCTION 4

Supports online hot-spare replacement with continuous channel diagnostics

Matched system components

- Tricon I/O chassis and hot spare
- range-matched external termination panel
- 0-5 or 0-10 V field circuits
- 250- or 500-ohm current-conversion shunts

SYSTEM INTEGRATION RECORD

INTEGRATION ITEM	DOCUMENTED ROLE
Installed host / carrier	Tricon I/O chassis and hot spare
Companion hardware	range-matched external termination panel
Field connection	0-5 or 0-10 V field circuits
Primary system function	Samples sixty-four commoned analog inputs through three TMR channels
Controlled acceptance duty	High-density safety transmitter acquisition

4 Applications and Engineering Context

High-density safety transmitter acquisition

Samples sixty-four commoned analog inputs through three TMR channels

Sixty-four-channel process measurement

Selects 0-5 V or 0-10 V operation through the approved TriStation configuration

Selectable 0-5/0-10 V modernization

Converts current loops with voltage-range-specific precision shunts at the termination panel

Hot-spare analog-input maintenance

Supports online hot-spare replacement with continuous channel diagnostics

TECHNICAL NOTE

Set the voltage range in TriStation, match the corresponding panel and shunt value, preserve commoned-channel wiring, and prove accuracy plus voted channel agreement after installation.

MODEL-SPECIFIC ACCEPTANCE EVIDENCE

CHECK	ACCEPTANCE CONDITION
Identity	3704E / 3704E recorded
Physical interface	Tricon I/O chassis and hot spare
Companion check	range-matched external termination panel
Functional proof	Samples sixty-four commoned analog inputs through three TMR channels
Application test	High-density safety transmitter acquisition

5 Engineering Precautions

1. Verify 3704E and the configured 0-5 or 0-10 V range before replacement.
2. Place all affected analog safety functions in the approved maintenance state.
3. Isolate field signals and record sixty-four channel assignments plus scaling.
4. Match 250-ohm shunts to 0-5 V current service and 500-ohm shunts to 0-10 V service.
5. Keep input overrange inside the published continuous protection limit.

RELATED PRODUCTS ON APTER POWER

MODEL	SYSTEM ROLE	APTER POWER PAGE
Triconex 3504E	High-Density Digital Input Module	**Open product page**
Triconex 3008	Main Processor Module	**Open product page**
Triconex 4210	Remote Extender Module Set	**Open product page**
Triconex 4119A	Enhanced Intelligent Communication Module	**Open product page**

MANUFACTURER SOURCE RECORD

Tricon Systems Technical Product Guide

9791007-013

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