

## 3700A

### 32-Point 0-5 VDC Analog Input Module

Triconex 3700A is a thirty-two-point differential TMR analog input module. It digitizes 0-5 VDC process signals with overrange measurement and voted channel selection.

#### PRODUCT SNAPSHOT

##### BRAND

Triconex

##### FAMILY

Tricon analog input

##### PART

3700A

##### ORIGIN / HS

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# PRODUCT OVERVIEW

Triconex 3700A is a thirty-two-point differential TMR analog input module. It digitizes 0-5 VDC process signals with overrange measurement and voted channel selection.

- 1

Samples thirty-two differential analog inputs through three independent channels
- 2

Converts field voltage to digital values and performs mid-value selection each scan
- 3

Measures a six-percent extension above the nominal 0-5 V range
- 4

Supports online hot-spare replacement through a separate termination panel

## SYSTEM COMPONENTS

- 9761-210, 9771-210, or other listed termination panel
- 0-5 V differential transmitters
- Tricon I/O chassis and hot spare
- shielded analog field wiring

### RELATED PRODUCTS ON APTER POWER

| MODEL          | SYSTEM ROLE                               | APTER POWER PAGE                  |
|----------------|-------------------------------------------|-----------------------------------|
| Triconex 3504E | High-Density Digital Input Module         | <a href="#">Open product page</a> |
| Triconex 3008  | Main Processor Module                     | <a href="#">Open product page</a> |
| Triconex 4210  | Remote Extender Module Set                | <a href="#">Open product page</a> |
| Triconex 4119A | Enhanced Intelligent Communication Module | <a href="#">Open product page</a> |

## TECHNICAL DATA

| PARAMETER            | VALUE                        |
|----------------------|------------------------------|
| Module type          | TMR analog input             |
| Input points         | 32 differential; DC coupled  |
| Input range          | 0 to 5 VDC plus 6% overrange |
| Isolated points      | No                           |
| Input update rate    | 55 ms                        |
| Resolution           | 12 bit                       |
| Accuracy             | <0.15% FSR, 0 to 60 degC     |
| Input resistance     | 30 MOhm DC minimum           |
| Power-off resistance | 30 kOhm DC typical           |

| PARAMETER                       | VALUE                                            |
|---------------------------------|--------------------------------------------------|
| Common-mode rejection           | -80 dB DC to 100 Hz typical                      |
| Common-mode range               | -12 to +12 V peak                                |
| Leg-to-leg isolation            | 200 kOhm typical                                 |
| Normal-mode rejection           | -3 dB at 8 Hz; -17 dB at 60 Hz; -23 dB at 120 Hz |
| Input overrange protection      | 150 VDC / 115 VAC continuous                     |
| Current-input option            | 0-20 mA with 250 Ohm shunt                       |
| Indicators                      | PASS; FAULT; ACTIVE                              |
| 2-wire current panel            | 9761-210                                         |
| User-configurable current panel | 9771-210                                         |

### TECHNICAL NOTE

Match the panel and shunt arrangement to voltage or current service, preserve differential polarity and common-mode limits, then prove scaling and mid-value channel agreement.

# APPLICATIONS & PRECAUTIONS

## COMMON APPLICATIONS

### Safety transmitter 4-20 mA conversion

Samples thirty-two differential analog inputs through three independent channels

### Differential 0-5 V process measurement

Converts field voltage to digital values and performs mid-value selection each scan

### Shared transmitter integration through 9771-210

Measures a six-percent extension above the nominal 0-5 V range

### Hot-spare analog-input maintenance

Supports online hot-spare replacement through a separate termination panel

## PRODUCT PRECAUTIONS

- 1 Verify 3700A and the thirty-two-point differential input assignment before work.
- 2 Place affected analog safety functions in the approved maintenance condition.
- 3 Isolate transmitter supplies and record polarity, shielding, and channel scaling.
- 4 Confirm any 250-ohm shunt and termination-panel jumper arrangement.
- 5 Keep common-mode voltage and input overrange inside the published limits.
- 6 Use ESD controls and inspect the keyed module and hot-spare slot.
- 7 Inject controlled values across the range and compare all three channel readings.
- 8 Verify PASS/FAULT/ACTIVE state, scaling, alarms, and safety action before release.

# ENGINEER FAQ

## Q1 How is differential common-mode limits handled during a 3700A replacement?

Record the installed state first, isolate the associated process function, reproduce only the approved model-specific arrangement, and verify it before energization.

## Q3 Can 3700A be substituted for a similar Triconex model without a configuration review?

No. Confirm the exact model, companion hardware, signal execution, system version, and approved configuration before any substitution.

## Q5 Which installed hardware must be matched before fitting 3700A?

Match 3700A to 9761-210, 9771-210, or other listed termination panel and 0-5 V differential transmitters, then confirm the complete physical marking and assigned Tricon analog input position.

## Q7 What check is required for 250-ohm current-input conversion when commissioning 3700A?

Apply a controlled signal or command within the documented range and compare the field result, controller indication, and product diagnostics before normal operation.

## Q2 Which diagnostics should be reviewed after installing 3700A?

Review the applicable point, module, power, communication, or load indicators for 3700A, then confirm the intended role: samples thirty-two differential analog inputs through three independent channels.

## Q4 What evidence should be retained after mid-value selection validation testing on 3700A?

Retain the full 3700A identity, as-left connections or settings, final diagnostics, measured functional-test result, and authorization to return the affected process function to service.

## Q6 How should an engineer verify 0-5 V plus six-percent overrange for 3700A?

Use the approved connection drawing and the model-specific values in Tricon Systems Technical Product Guide; preserve the as-found terminal, connector, polarity, shield, and channel identity.

## Q8 Which installation error is most important to prevent on 3700A?

Do not interchange 3700A with an adjacent execution or alter its matched 9761-210, 9771-210, or other listed termination panel; the exact electrical, channel, and connector arrangement must be retained.