**ICS Triplex T8431 Trusted TMR 24 Vdc Analog Input Module**

**Brand: ICS Triplex**

**Module Number:T8431**

**Unit Price: $5500**

**Country Of Origin: United States**

**Weight: 2kg**

**Certificate: C/O from the Chamber of Commerce**

**C/Q from the manufacturer**

**Warranty: 12 Months**

**Inventory Qty: 10**

## Description:

**ICS Triplex T8431 Key parameters**

**Redundant Architecture & Input Channels**

Employs Triple Modular Redundancy (TMR) across 40 independent analog input channels, ensuring fault tolerance by triplicating signal processing paths for continuous operation even during hardware failures.

**Input Signal Ranges & Precision**

Accepts voltage inputs (0–6 VDC) and current signals (0–22 mA) with a resolution of 3.9 µA (1/256 mA). Calibration accuracy is maintained at 0.03%, while safety-critical operations adhere to ±1% full-scale accuracy.

**Diagnostics & Monitoring**

Integrated self-test routines and channel-specific line monitoring detect open/short circuits in field wiring. Thresholds for fault detection are user-configurable per channel, enhancing proactive maintenance.

**一．ICS Triplex T8431 Core Function**

**High-Resolution Sigma-Delta Conversion**

The module employs sigma-delta analog-to-digital conversion with a resolution of 3.9 µA (1/256 mA) and a sample update time of 0.5 ms, enabling precise voltage (0–6 Vdc) and current (0–22 mA) measurements. Safety accuracy is maintained at ±1% of full scale, while calibration accuracy reaches 0.03%, validated through user-defined thresholds stored in non-volatile memory.

**Dynamic Line Monitoring and Fault Tolerance**

Each of the 40 TMR input channels supports per-channel line monitoring, detecting open circuits and short circuits via configurable voltage thresholds. The module withstands ±2.5 kVdc transient surges with reinforced isolation barriers between field commons and channels, ensuring signal integrity in electrically noisy environments like petrochemical plants.

**Event Logging with Microsecond Precision**

Beyond standard SOE reporting (1 ms resolution), the T8431 integrates a 100 µs real-time clock for timestamp synchronization. This enables forensic analysis of events like voltage threshold breaches or calibration drifts, logging up to 4,000 timestamped events for compliance audits or failure root-cause analysis.

