

# 7706

- 20 channels of analog input (w/automatic CJC) for general-purpose measurements
- 16 channels of digital output
- 2 analog outputs ( $\pm 12V$ , 5mA)
- 300V, 1A capacity; 60W, 125VA maximum
- Configurable as two independent banks of multiplexers
- Relay closures stored in onboard memory

## Ordering Information

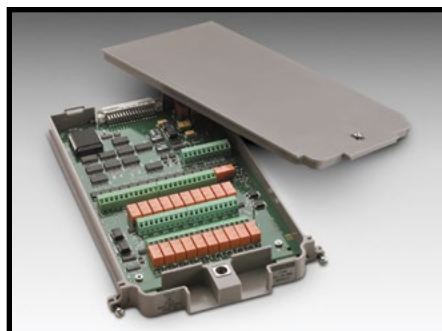
7706 All-in-One I/O Module

## SERVICES AVAILABLE

7706-3Y-EW 1-year factory warranty extended to 3 years from date of shipment

# All-in-One I/O Module

20-channel Differential Multiplexer w/Automatic CJC, 16 Digital Outputs, 2 Analog Outputs, a Counter/Totalizer, and Screw Terminals



The Model 7706 plug-in module offers 20 channels of 2-pole or 10 channels of 4-pole multiplexer switching with automatic CJC, as well as two analog output channels, 16 digital outputs, and one event counter/totalizer. The event counter/totalizer can be used to monitor and control system components, such as fixtures, limit switches, pass/fail indicators, external voltage sources, loads, door closures, revolutions, etc., while performing mixed signal measurements. The Model 7706 is ideal for RTD, thermistor, and thermocouple temperature applications.

## CAPABILITIES

**CHANNELS 1–20:** Multiplex one of 20 2-pole or one of 10 4-pole signals into DMM.

Channels 21–25 are referenced to chassis ground.

**CHANNELS 21–22:** 16 Digital Outputs.

**CHANNELS 23–24:** Analog Voltage Output (2).

**CHANNELS 25:** Totalize Input.

## INPUTS

**MAXIMUM SIGNAL LEVEL (Channels 1–20):** 300V DC or rms, 1A switched, 60W, 125VA maximum.

**CONTACT LIFE (typ.):**  $>10^5$  operations at max. signal level;  $>10^8$  operations no load<sup>1</sup>.

<sup>1</sup> Minimum signal level 10mV, 10 $\mu$ A.

**CONTACT RESISTANCE:**  $<1\Omega$  at end of contact life.

**CONTACT POTENTIAL:**  $\leq \pm 2\mu V$  typical per contact, 3 $\mu V$  max.

**OFFSET CURRENT:**  $<100$  pA.

**CONNECTOR TYPE:** Screw terminal, #20 AWG wire size.

**ISOLATION BETWEEN ANY TWO TERMINALS:**  $>10^9\Omega$ ,  $<100$  pF.

**ISOLATION BETWEEN ANY TERMINAL AND EARTH:**  $>10^9\Omega$ ,  $<200$  pF.

**CROSS TALK (10MHz, 50 $\Omega$  Load):**  $\leq -35$  dB.

**INSERTION LOSS (50 $\Omega$  Source, 50 $\Omega$  Load):**  $<0.1$  dB below 1MHz.  $<3$  dB below 2MHz.

**COMMON MODE VOLTAGE:** 300V between any terminal and chassis.

**TEMPERATURE ACCURACY USING INTERNAL CJC:** 1.0°C (see mainframe specification for details).

## TOTALIZE INPUT

**MAXIMUM COUNT:**  $2^{32}-1$ .

**TOTALIZE INPUT:** 100kHz (max), rising or falling edge, programmable.

**SIGNAL LEVEL:** 1Vp-p (min), 42Vpk (max).

**THRESHOLD:** 0V or TTL, jumper selectable.

**GATE INPUT:** TTL-Hi, TTL-Lo, or none.

**COUNT RESET:** Manual or Read+Reset.

**READ SPEED:** 50/s.

## ANALOG VOLTAGE OUTPUT

**DAC 1, 2:**  $\pm 12V$  in 1mV increments, non-isolated.

**RESOLUTION:** 1mV.

**I<sub>OUT</sub>:** 5mA max.

**SETTLING TIME:** 1ms to 0.01% of output.

**ACCURACY  $\pm$ (% of output + mV):**

1 year  $\pm 5^\circ C$ : 0.15% + 19mV;

90 day  $\pm 5^\circ C$ : 0.1% + 19mV;

24 hour  $\pm 1^\circ C$ : 0.04% + 19mV.

**TEMPERATURE COEFFICIENT:**

$\pm(0.015\% + 1mV)/^\circ C$ .

## DIGITAL OUTPUT

**V<sub>OUT</sub>(L):**  $<0.8V$  @ I<sub>out</sub> = 400mA.

**V<sub>OUT</sub>(H):**  $>2.4V$  @ I<sub>out</sub> = 1mA.

**V<sub>OUT</sub>(H)MAX.:**  $<42V$  with external open drain pull-up.

**WRITE SPEED:** 50/s.

## GENERAL

**20 CHANNELS:** 20 channels of 2-pole relay input. All channels configurable to 4-pole.

**RELAY TYPE:** Latching electromechanical.

**ACTUATION TIME:**  $<3$ ms.

**FIRMWARE:** Specified for Model 2700 rev. A02 or B01, 2701 rev. A01, and 2750 rev. A01 or higher.

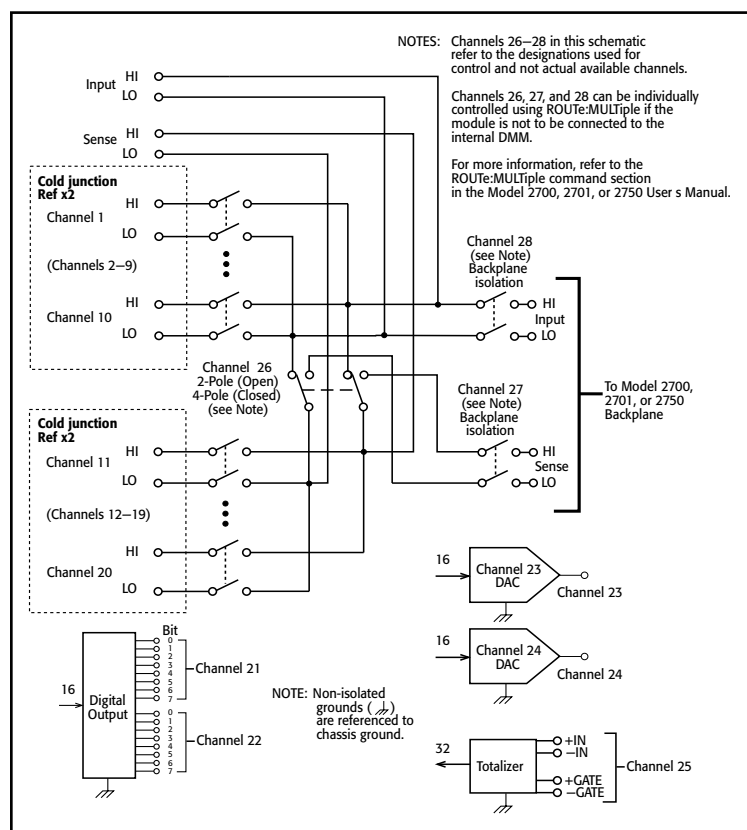
## ENVIRONMENTAL

**OPERATING ENVIRONMENT:**

Specified for 0° to 50°C. Specified to 80% R.H. at 35°C.

**STORAGE ENVIRONMENT:**  $-25^\circ$  to  $65^\circ C$ .

**WEIGHT:** 0.5kg (1.1 lbs).



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