

# 7706

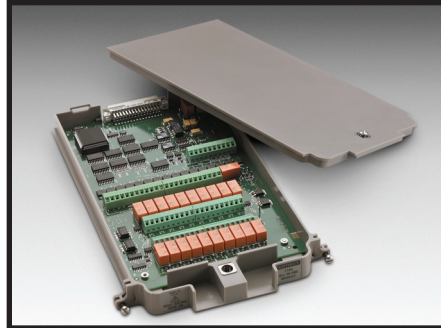
# All-in-One I/O Module

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

- 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



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 cold switching.
- 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:**  $<100pA$ .
- CONNECTOR TYPE:** Screw terminal, #20 AWG wire size.
- ISOLATION BETWEEN ANY TWO TERMINALS:**  $>10^9\Omega$ ,  $<100pF$ .
- ISOLATION BETWEEN ANY TERMINAL AND EARTH:**  $>10^9\Omega$ ,  $<200pF$ .
- CROSS TALK (10MHz, 50 $\Omega$  Load):**  $<-35dB$ .
- INSERTION LOSS (50 $\Omega$  Source, 50 $\Omega$  Load):**  $<0.1dB$  below 1MHz,  $<3dB$  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
- $I_{OUT}$ :** 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

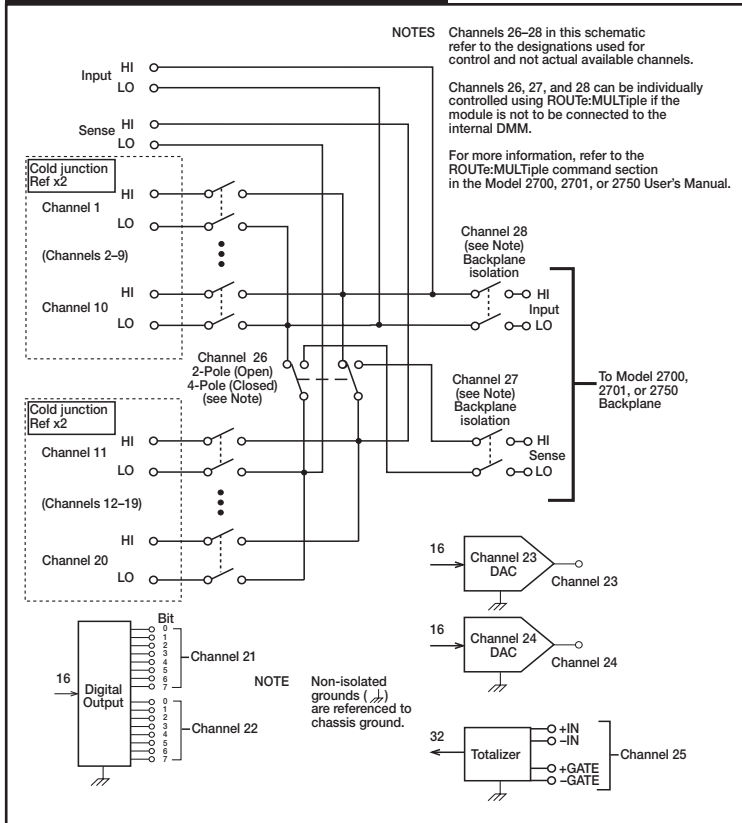
- $V_{OUT(L)}$ :**  $<0.8V$  @  $I_{out} = 400mA$ .
- $V_{OUT(H)}$ :**  $>2.4V$  @  $I_{out} = 1mA$ .
- $V_{OUT(H)MAX}$ :**  $<42V$  with external open drain pull-up.
- WRITE SPEED:** 50/s.

## GENERAL

- 20 CHANNELS:** 20 channels of 2-pole relay input. All channels configurable to 4-pole.
- RELAY TYPE:** Latching electromechanical.
- ACTUATION TIME:**  $<3ms$ .
- FIRMWARE:** Specified for Model 2700 rev. A02 or B01, 2701 rev. A01, and 2750 rev. A01 or higher.

## ENVIRONMENTAL

- OPERATING ENVIRONMENT:** Specified for  $0^\circ C$  to  $50^\circ C$ . Specified to 80% R.H. at  $35^\circ C$ .
- STORAGE ENVIRONMENT:**  $-25^\circ C$  to  $65^\circ C$ .
- WEIGHT:** 0.5kg (1.1 lbs).



Use with Integra Series Mainframes: 2700, 2701, 2750

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