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

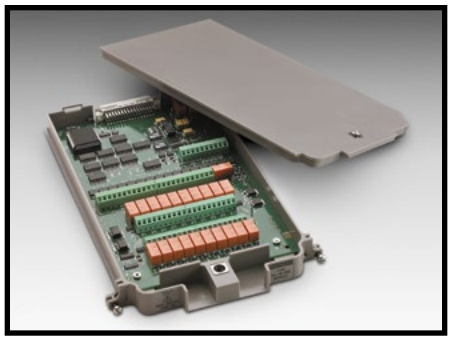
- **20 channels of analog input (w/automatic CJC) for general-purpose measurements**
- **16 channels of digital output**
- **2 analog outputs (±12V, 5mA)**
- **300V, 1A capacity; 60W, 125VA maximum**
- **Configurable as two independent banks of multiplexers**
- **Relay closures stored in onboard memory**

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



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[1].

[1] Minimum signal level 10mV, 10μA.

CONTACT RESISTANCE: <1Ω at end of contact life.

CONTACT POTENTIAL: <±2μV typical per contact, 3μV max.

OFFSET CURRENT: <100pA.

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

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

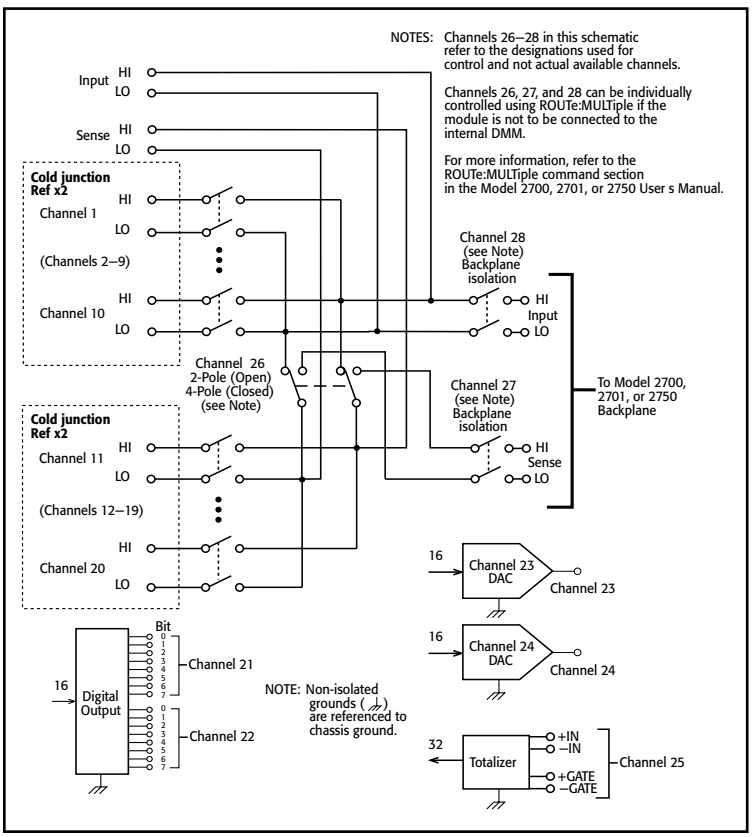
ISOLATION BETWEEN ANY TERMINAL AND EARTH: $>10^9\Omega$, <200pF.

CROSS TALK (10MHz, 50Ω Load): <–35dB.

INSERTION LOSS (50Ω Source, 50Ω 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: ±12V in 1mV increments, non-isolated.

RESOLUTION: 1mV.

I_{OUT}: 5mA max.

SETTLING TIME: 1ms to 0.01% of output.

ACCURACY ±(% of output + mV):
1 year ±5°C: 0.15% + 19mV;
90 day ±5°C: 0.1% + 19mV;
24 hour ±1°C: 0.04% + 19mV.

TEMPERATURE COEFFICIENT: ±(0.015% + 1mV)/°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° to 50°C. Specified to 80% R.H. at 35°C.

STORAGE ENVIRONMENT: –25° to 65°C.

WEIGHT: 0.5kg (1.1 lbs).

Use with Integra Series mainframes: 2700, 2701, 2750

DIGITAL MULTIMETERS & SYSTEMS