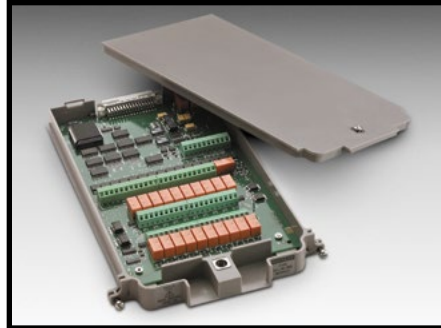


7706

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



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

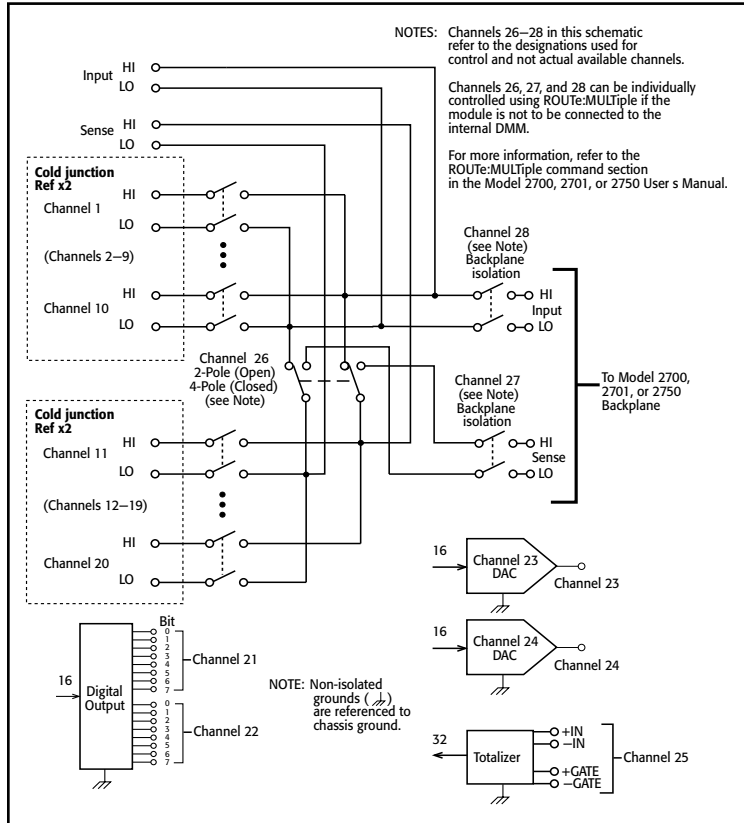
MAXIMUM SIGNAL LEVEL (Channels 1–20): 300V DC or rms, 1A switched, 60W, 125VA maximum.
CONTACT LIFE (typ.): $>10^5$ operations at max. signal level; $>10^8$ operations no load¹.
¹Minimum signal level 10mV, 10 μ A.
CONTACT RESISTANCE: $<1\Omega$ at end of contact life.
CONTACT POTENTIAL: $\leq \pm 2\mu V$ typical per contact, 3 μV 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 Ω Load): $<-35dB$.
INSERTION LOSS (50 Ω Source, 50 Ω 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).

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



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

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DIGITAL MULTIMETERS & SYSTEMS