7707 32-channel Digital I/O Module
with 10-channel Differential Multiplexer

Datasheet

The 7707 plug-in module offers 10 channels of 2-pole or 5 channels of 4-pole multiplexer switching that can be configured as two independent banks of multiplexers. The 7707 also provides 32 digital input/output channels (four 8-bit ports) for I/O control. Connect the 7707 to industry standard solid-state relays to switch up to 980 VA.
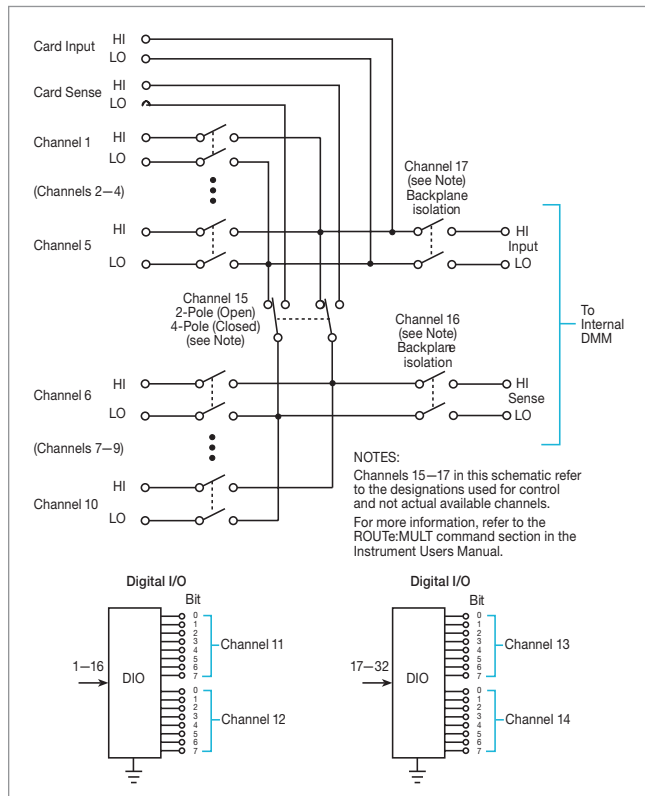
Key Features
- 300 V, 1 A capacity; 60 W, 125 VA maximum (analog)
- 33 V, 100 mA capacity (digital)
- Digital outputs are short circuit protected
- Relay closures stored in onboard memory

Ordering Information

7707	32-channel Digital I/O Module with 10-channel Differential Multiplexer
Warranty	1 year

Specifications

Capabilities

Channels 1–10	Multiplex one of 10 2-pole or one of 5 4-pole signals into DMM.
Channels 11–14	32 Digital Inputs/Outputs referenced to chassis ground.
Thermal Protection	Channels 11–14 are thermally protected to 1 A up to 25 V.

Inputs (Channels 1–10)

Maximum Signal Level: Any Channel to Any Channel (1–10): 300 VDC or 300 Vrms (425 V peak) for AC waveforms, 1 A switched, 60 W, 125 VA maximum.	
Contact Life (typ.)	>10^5 operations at max. signal level >10^8 operations no load[1].

1. Minimum signal level 10 mV, 10 µA.

Contact Resistance	<1 Ω any path and additional 1 Ω at end of contact life.
Contact Potential	<6 µV typical per contact pair and additional 5 µV with Channels 11–14 at rate V_{OUT}(L).
Offset Current	<100 pA.
Connector Type:	50-pin male D-shell, Channels 11–14. 25-pin female D-shell, Channels 1–10. Supplied with female and male IDC ribbon cable connectors.
Isolation Between Any Two Terminals	>10^9 Ω, <100 pF with isolation channels 16 and 17 open.
Isolation Between Any Terminal and Earth:	>10^9 Ω, <200 pF.
Cross Talk (1 MHz, 50 Ω Load):	<–35 dB.
Insertion Loss (50 Ω Source, 50 Ω Load)	<0.1 dB below 1 MHz. <3 dB below 2 MHz.
Common Mode Voltage:	300 VDC or 300 Vrms (425 V peak) for AC waveforms between any terminal and chassis.

Digital Input/Output (Channels 11–14)

V_{IN}(L): <0.8 V (TTL). V_{IN}(H): >2 V (TTL).

V_{out}(L): <1.0 V @ I_{out} = 100 mA. V_{out}(H): >2.4 V @ I_{out} = 1 mA.

V_{out}(H)MAX.: <40 V with external open drain pull-up.

Read/Write Speed	50/s.

General

10 Channels	10 channels of 2-pole relay input. All channels configurable to 4-pole.
Relay Type	Latching electromechanical.
Actuation Time	<3 ms.
Capacity	**2700:** (1) 7707 and (1) 77XX, except 7706. **2701:** Any combination of 77XX modules. **2750:** (4) 7707 and (1) 77XX, except 7706. A 7706 module may be substituted for a 7707 module.
Environmental and Safety	
	Operating Environment: Specified for 0° to 50°C. Specified to 80% R.H. at 35°C.
	Storage Environment: –25° to 65°C.
	EMC: Conforms to European Union EMC Directive.
	Safety: Conforms to European Union Low Voltage Directive
	RoHS: Conforms to European Union RoHS Directive
Weight	<0.5 kg (1.16 lb).

Supplied Accessories

7707-306A	50-pin D-Sub Female IDC Connector Kit
7709-307A	25-pin D-Sub Male IDC Connector Kits

Available Accessories

7790	50-pin Male, 50-pin Female, 25-pin Male D-shell IDC Connectors
7705-MTC-2	50 Pin Male to Female D-sub Cable, 2 m (6.6 ft).
7707-MTC-2	25 Pin Male to Female D-sub Cable, 2 m (6.6 ft).

Available Services

7707-3Y-EW	1-year factory warranty extended to 3 years from date of shipment.

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