

USB-PDISO8

Specifications

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All specifications are subject to change without notice.

Typical for 25°C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

Relay specifications

Table 1. Relay output specifications

Number	8
Contact configuration	8 FORM C (SPDT) NO, NC and Common available at connector
Contact rating	<i>6 A @ 30 VAC or 28 VDC resistive¹</i>
Contact resistance	100 mΩ max
Operate time	<i>10 ms max</i>
Release time	<i>5 ms max</i>
Vibration	<i>10 Hz to 55 Hz (dual amplitude 1.5 mm)</i>
Shock	<i>10 G (11 ms)</i>
Dielectric isolation	<i>Functional isolation</i>
Life expectancy	<i>10 million mechanical operations, min</i>
Power on RESET state	Not energized. NC in contact to Common.

Isolated inputs

Table 2. Isolated input specifications

Number	8	
Isolation	<i>Functional isolation</i>	
Resistance	1.6 KΩ min	
Voltage range	DC	Input high: +5.0 VDC min or –5.0 VDC min
		Input low: +1.5 VDC max or –1.5 VDC max
		Input range: +/-30 VDC max
	AC (with filter)	Input high: 6.0 V _{rms} min (50 Hz to 1000 Hz)
		Input low: 1.5 V _{rms} max (50 Hz to 1000 Hz)
Response	Filter disabled	20 μs
	Filter enabled	5 ms
Filters	Time constant	5 ms (200 Hz)
	Filter control	Software-selectable for each input.
	Power-up /reset	Filters disabled

¹ Do not connect to voltages above these levels; product is not certified for hazardous voltages.

Power

Table 3. Power specifications

Parameter	Conditions	Specification
USB +5 V input voltage range		4.75 V to 5.25 V
USB +5 V supply current	All modes of operation	10 mA max
External power input		9 V nominal
External power supply (required)	MCC p/n CB-PWR-9	9 V @ 1.67 A
Voltage supervisor limits - PWR LED	$6.5\text{ V} > V_{\text{ext}}$ or $V_{\text{ext}} > 12.5\text{ V}$ (Note 1)	PWR LED = Off (power fault)
	$6.5\text{ V} \leq V_{\text{ext}} < 12.5\text{ V}$	PWR LED = On
External power consumption	All relays on, 100 mA downstream hub power	820 mA typ, 900 mA max
	All relays off, 0 A downstream hub power	200 mA typ, 230 mA max

Note 1: The USB-PDISO8 monitors the external +9 V power supply voltage with a voltage supervisory circuit. If this power supply exceeds its specified limit, the **PWR** LED turns off, indicating a power fault condition.

External power output

Table 4. External power output specifications

Parameter	Conditions	Specification
External power output - current range (Note 2)		4.0 A max
External power output	Voltage drop between power input and daisy chain power output	0.5 V max

Note 2: The daisy chain power output option allows multiple Measurement Computing USB products with a USB hub output port to be powered from a single external-power source in a daisy-chain fashion. The voltage drop between the device power supply input and the daisy-chain output is 0.5 V maximum. Users must plan for this drop to assure the last device in the chain receives at least 6.5 VDC. A user-supplied custom cable is required to daisy chain multiple devices.

USB specifications

Table 5. USB specifications

USB "B" connector	Input
USB device type	USB 2.0 (full speed)
Device compatibility	USB 1.1, USB 2.0 (hardware revision F and later are also compatible with USB 3.0; see Note 3 for information on how to determine the hardware revision)
USB "A" connector	Downstream hub output port
USB hub type	Supports USB 2.0 high-speed, full-speed and low-speed operating points
	Self-powered, 100 mA max downstream VBUS capability
Compatible products	MCC USB products with a USB hub output port
USB cable type (upstream and downstream)	A-B cable, UL type AWM 2527 or equivalent. (min 24 AWG VBUS/GND, min 28 AWG D+/D-)
USB cable length	3 meters max

Note 3: The board revision may be determined from the part number label on the housing that states "197241X-01," where X is the board revision.

Mechanical

Table 6. Mechanical specifications

Board dimensions (L × W × H)	304.3 × 121.9 × 20.0 mm (12.0 × 4.8 × 0.8 in.)
Enclosure dimensions (L × W × H)	342.9 × 125.7 × 58.9 mm (13.5 × 4.95 × 2.32 in.)

Environmental

Table 7. Environmental specifications

Operating temperature range	0 °C to 70 °C
Storage temperature range	-40 °C to 100 °C
Humidity	0% to 95% non-condensing
Hazardous locations	Not certified for use in hazardous locations.

Main connector

Table 8. Main connector specifications

Connector type	Screw terminal
Wire gauge range	12 AWG to 22 AWG

Screw terminal pinouts

Pin	Signal Name	Pin	Signal Name
IP0A	Input 0 terminal A	IP4A	Input 4 terminal A
IP0B	Input 0 terminal B	IP4B	Input 4 terminal B
IP1A	Input 1 terminal A	IP5A	Input 5 terminal A
IP1B	Input 1 terminal B	IP5B	Input 5 terminal B
IP2A	Input 2 terminal A	IP6A	Input 6 terminal A
IP2B	Input 2 terminal B	IP6B	Input 6 terminal B
IP3A	Input 3 terminal A	IP7A	Input 7 terminal A
IP3B	Input 3 terminal B	IP7B	Input 7 terminal B
0-NC	Relay 0 Normally Closed contact	4-NC	Relay 4 Normally Closed contact
0-C	Relay 0 Common contact	4-C	Relay 4 Common contact
0-NO	Relay 0 Normally Open contact	4-NO	Relay 4 Normally Open contact
1-NC	Relay 1 Normally Closed contact	5-NC	Relay 5 Normally Closed contact
1-C	Relay 1 Common contact	5-C	Relay 5 Common contact
1-NO	Relay 1 Normally Open contact	5-NO	Relay 5 Normally Open contact
2-NC	Relay 2 Normally Closed contact	6-NC	Relay 6 Normally Closed contact
2-C	Relay 2 Common contact	6-C	Relay 6 Common contact
2-NO	Relay 2 Normally Open contact	6-NO	Relay 6 Normally Open contact
3-NC	Relay 3 Normally Closed contact	7-NC	Relay 7 Normally Closed contact
3-C	Relay 3 Common contact	7-C	Relay 7 Common contact
3-NO	Relay 3 Normally Open contact	7-NO	Relay 7 Normally Open contact

Certifications

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