



Specifications

All specifications are subject to change without notice.
 Typical for the range -40 to 70 °C unless otherwise noted.
 All voltages are relative to COM unless otherwise noted.

Analog output

Table 1. Analog output specifications

Parameter	Conditions	Specification
Number of channels		4
D/A converter resolution		16-bit
D/A converter type		String
Output range		± 10 V
Operating voltage		± 10.7 V, nominal ± 10.3 V, minimum ± 11 V, maximum
Current drive		± 1 mA per channel, maximum
Output impedance		0.1Ω
Stability	Offset drift	$\pm 80 \mu\text{V}/^\circ\text{C}$
	Gain drift	$6 \text{ ppm}/^\circ\text{C}$
Protection	Overvoltage	± 30 V
	Short-circuit	Indefinitely
Update time	One channel	$3 \mu\text{s}$
	Two channels	$5 \mu\text{s}$
	Three channels	$7.5 \mu\text{s}$
	Four channels	$9.5 \mu\text{s}$
Update rate		100 kS/s per channel, maximum
Noise		$260 \mu\text{V}_{\text{rms}}$
Slew rate		$4 \text{ V}/\mu\text{s}$
Crosstalk		76 dB
Settling time	100 pF load, to 1 LSB	FS step: $20 \mu\text{s}$
		3 V step: $10 \mu\text{s}$
		0.1 V step: $8 \mu\text{s}$
Glitch energy	256 steps, worst case	2 mV for $2 \mu\text{s}$
Capacitive drive		$1,500 \text{ pF}$, minimum
Monotonicity		16-bits
Differential non-linearity		-1 to 2 LSBs, maximum
Integral non-linearity (endpoint)		16 LSBs, maximum

Accuracy

Table 2. Analog input accuracy

Measurement conditions	Percent of reading	Percent of range (Note 1)
Calibrated, maximum (–40 to 70 °C)	0.35%	0.75%
Calibrated, typical (25 °C, ±5 °C)	0.01%	0.1%
Uncalibrated, maximum (–40 to 70 °C)	2.2%	1.7%
Uncalibrated, typical (25 °C, ±5 °C)	0.3%	0.25%

Note 1: The range is equal to ± 10.7 V.

Power

Table 3. Power specifications

Parameter	Specification
Power on voltage	0 V
Power consumption	625 mW, maximum
Thermal dissipation at 70 °C	625 mW, maximum

Bus interface

Table 4. General specifications

Parameter	Specification
USB specification	USB 2.0 Hi-Speed mode (480 Mbps) is recommended. Otherwise, USB 1.1 Full-Speed mode (12 Mbps).

Environmental

Table 5. Environmental specifications

Parameter	Specification
Operating temperature range	–40 to 70 °C
Storage temperature range	–40 to 85 °C
Ingress protection	IP 40
Operating humidity	10 to 90% relative humidity, non-condensing
Storage humidity	5 to 95% relative humidity, non-condensing
Maximum altitude	2000 meters (6561.679 feet)
Pollution degree (IEC60664)	2

Safety voltages

Table 6. Safety voltage specifications

Parameter	Conditions	Specification
Channel-to-COM		± 11 V maximum
Isolation	Channel-to-channel	No isolation between channels
Channel-to-earth ground	Continuous	250 V _{rms} , Measurement Category II (Note 2)
	Withstand	2,300 V _{rms} , verified by a 5 second dielectric withstand test

Note 2: Measurement Category II is for measurements performed on circuits directly connected to the electrical distribution system. This category refers to local-level electrical distribution, such as that provided by a standard wall outlet, for example 115 V for U.S. or 230 V for Europe.

Caution! Do not connect the device to signals or use for measurements within Measurement Categories III or IV.

Mechanical

Table 7. Mechanical specifications

Parameter	Specification
Dimensions	4.5" L x 5.5" W x 1.5" H
Weight	1.2 lbs. (544 grams)

Screw terminal connector

Table 8. Screw terminal connector specifications

Connector type	Screw terminal
Screw terminal wiring	12 to 24 AWG copper conductor wire with 10 mm (0.39 in.) of insulation stripped from the end.
Torque for screw terminals	0.5 to 0.6 N · m (4.4 to 5.3 lb. · in.)

Connector pin out

Terminal	Signal
0	AO 0
1	Common (COM)
2	AO 1
3	Common (COM)
4	AO 2
5	Common (COM)
6	AO 3
7	Common (COM)
8	NC (No connection)
9	Common (COM)

Accessory products

Table 9. Screw terminal connector specifications

ACC-121	10-position detachable screw terminal connector blocks (quantity 10)
ACC-107	Backshell with 10-position connector block (quantity 1)