

Specifications

(preliminary)

PMD-1616LS



**MEASUREMENT
COMPUTING™**

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Specifications

Typical for 25 °C unless otherwise specified.

Analog input section

Parameter	Conditions	Specification
A/D converter type		ADS1110 Delta-Sigma
Absolute maximum input voltage	CHx to GND	±40V max
Input current (Note 1)	V _{in} = +10V	70µA typ
	V _{in} = 0V	-12µA typ
	V _{in} = -10V	-94µA typ
Number of channels		16 single ended
Input ranges		±10.0V, ±1.0V
Throughput	Software paced	50 S/s
	Continuous scan	1.2 kS/s
	Burst scan to 4K sample FIFO	8 kS/s
Resolution		16 bits, no missing codes
Trigger Source	Software selectable	External Digital: TRIG_IN

Note 1: Input current is a function of applied voltage on the analog input channels. For a given input voltage, V_{in}, the input leakage is approximately equal to (8.181*V_{in}-12) µA

Table 1. Accuracy

Range	Accuracy (LSB)
±10V	tbd
±1V	tbd

Digital input/output

Digital type	CMOS
Number of I/O	8
Configuration	2 banks of 4
Pull up/pull-down configuration	All pins pulled up to Vs via 47K resistors (default). Positions available for pull down to ground. Hardware selectable via zero ohm resistors as a factory option.
Input high voltage	2.0V min, 5.5V absolute max
Input low voltage	0.8V max, -0.5V absolute min
Output high voltage (IOH = -2.5mA)	3.0V min
Output low voltage (IOL = 2.5mA)	0.4V max

External trigger

Parameter	Conditions	Specification
Trigger Source (Note 4)	External Digital	TRIG_IN
Trigger mode	Software selectable	Level Sensitive: user configurable for TTL level high or low input.
Trigger latency	Burst	25 μ s min, 50 μ s max
Trigger pulse width	Burst	40 μ s min
Input high voltage		3.0V min, 15.0V absolute max
Input low voltage		0.8V max
Input leakage current		\pm 1.0 μ A

Note 4: TRIG_IN is protected with a 1.5KOhm series resistor.

Counter section

Counter type	Event counter
Number of Channels	1
Input source	CTR screw terminal
Resolution	32 bits
Schmidt Trigger Hysteresis	20mV to 100mV
Input Leakage Current	\pm 1 μ A
Maximum input frequency	1 MHz
High pulse width	500ns min
Low pulse width	500ns min
Input low voltage	0V min, 1.0V max
Input high voltage	4.0V min, 15.0V max

Non-volatile memory

Memory size	8192 bytes		
Memory configuration	Address Range	Access	Description
	0x0000 – 0x17FF	Read/Write	A/D Data (4K samples)
	0x1800 – 0x1EFF	Read/Write	User data area
	0x1F00 – 0x1FEF	Read/Write	Calibration Data
	0x1FF0 – 0x1FFF	Read/Write	System Data

Power

Parameter	Conditions	Specification
Supply Current (Note 5)		35mA
+5V USB power available (Note 6)	Connected to Self-Powered Hub	4.5V min, 5.25V max
	Connected to Bus-Powered Hub	4.1V min, 5.25V max
Output Current (Note 7)	Connected to Self-Powered Hub	450mA min, 500mA max
	Connected to Bus-Powered Hub	50mA min, 100mA max

Note 5: This is the total current requirement for the PMD-1616LS, which includes up to 5mA for the status LED.

Note 6: Self-powered refers to USB hubs and hosts with a power supply. Bus-powered refers to USB hubs and hosts without their own power supply.

Note 7: This refers to the total amount of current that can be sourced from the USB +5V, analog outputs and digital outputs.

General

Parameter	Conditions	Specification
USB Controller Clock Error	25 °C	±30 ppm max
	0 to 70 °C	±50 ppm max
	-40 to 85 °C	±100 ppm max
Device type		USB 1.1 low-speed
Device compatibility		USB 1.1, USB 2.0

Environmental

Operating Temperature Range	-40 to 85 °C
Storage Temperature Range	-40 to 85 °C
Humidity	0 to 90% non-condensing

Mechanical

Dimensions	79mm(L) x 82mm(W) x 25mm(H)
USB Cable Length	3 Meters max
User Connection Length	3 Meters max

Main connector

Connector type	Screw Terminal
Wire gauge range	16 AWG to 30 AWG

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