IPR Sensing

Sensing

QUAKELOGIC

IPR Sensing uses a common hardware and software platform for all products. The following data describes the specifications for this sensor platform.

Sensing Parameters

Strain	Axes	3-axial (0-45º-90º) rosette
	Range	+/-3000 microstrains
	Sampling Rate (Hz)	1, 2, 4, 8, 16, 32, 64, 125, 250, 500, 1000
	Accuracy	5%
	Resolution	8 - 18 bits
Acceleration	Axes	3-axial, range from +/-2 to +/-16g
	Sampling Rate	up to 5000 Hz
	Resolution	10 bits
	Accuracy	0.05 g
Barometric Pressure	Range	300-1100 hPa
	Sampling Rate	1 Hz
	Accuracy	1 hPa
Relative Humidity	Range	0-100%
	Sampling Rate	1 Hz
	Accuracy	3%
Temperature	Range	-60º to 115ºC
	Sampling Rate	1 Hz
	Accuracy	+/-0.5C

Memory and Processor

Memory	FRAM, 4Mb or 8Mb
Real Time Clock Accuracy	+/-20 ppm
Processor	24-80 MHz

Processing Parameters

Principal Strains	$\varepsilon 1$, $\varepsilon 2$
Angles	+/-(0-90º)
Fatigue Counts Matrix	Up to 40B counts in each bin, RainFlow
FFT	100 frames per second
Altitude	up to 80,000 feet
Velocity	0-100 m/s
Displacement	+/-1000 mm
Distance	0-100 m
User Defined Algorithms	Yes
Power Saving Algorithms	Yes
AI Algorithms	Yes

Connectivity (depending on model)

USB	up to 921.6 kbps
Logic Levels	1.8V, 3.3V, 5.0V
USB Cable Length	up to 15 m
USB network	up to 127 sensors
UART signals	Rx, Tx, CTL, RTS
UART Logic Levels	2V
Wi-Fi version	802.11n
Wi-Fi band	2.4 GHz
RF band	920 MHz
RF data rate	1504 kbps
RF range	Up to 6km, line of sight

Size and Weight

110 Series		
	Dimensions	W12.5 x L27.5 x H4.2 mm
	Weight	4 gm
	Cable & Connector Weight	9 gm

Electrical Specifications

Battery Voltage	2.3 - 5.0 VDC
Current Consumption	1.5-2.3 mA
Sleep Current	35 uA

Environmental

Normal Operational Range	-60º to +80ºC
Extended Operational Range	-60º to +115ºC

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