Q-Daq

High Performance Industrial Pressure Scanner

Chell Instruments

- ***16 and channel rugged industrial pressure scanner.***
- ***Up to 0.04% FS accuracy output.***
- ***Integrated SQDC quick disconnect interface.***
- ***Power-over-Ethernet.***
- ***Complete with IEEE 1588 PTPv2 time stamping***
- ***Thermally compensated from -40 to 100ºC.***
- ***Integrated software controlled heater.***
- ***Output over Ethernet (100Mbit TCP / UDP) and CAN.***
- ***Rugged enclosure for on-vehicle applications. Sealed to IP67***
- ***Fully configurable over Ethernet with embedded web server.***

The Q-Daq is a revolutionary pressure scanner development which builds on our experience of producing high performance pressure scanners and rugged quick disconnects (SQDC's).

The Q-Daq combines the technology of the pressure scanner and the SQDC quick disconnect into one miniature unit. This reduces the complexity of measurement systems by being able to place the sensing element close to the measurement point.

The Q-Daq has been developed to both provide low-uncertainty measurements and an extremely rugged package to suit the environments in which these measurements are typically made in.

The Q-Daq is thermally compensated from -40 to 100ºC and it should be noted that the accuracy specifications include any thermal effects across the entire temperature range. It also features an in-built heater to extend the temperature range further to -55 to 100ºC.

The Q-Daq contains 16 precision absolute sensors which are coupled with the acquisition electronics to provide a configurable Ethernet interface.

Using the embedded web-server, the Q-Daq can be configured to output absolute or differential pressures relative to one of the 16 ports (user selectable).

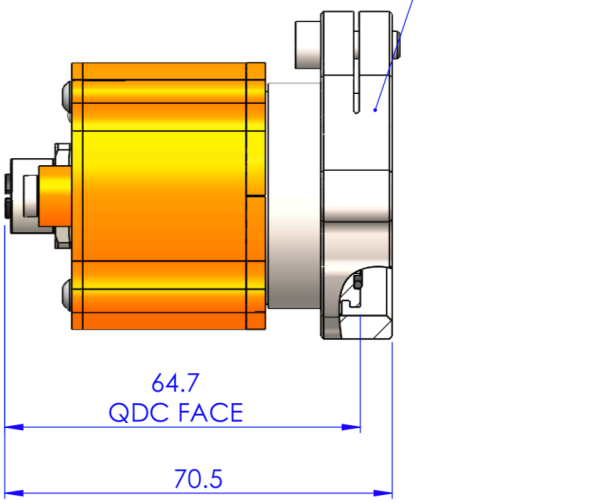
The Q-Daq features a hardware implementation of the IEEE 1588 PTPv2 time stamping protocol which allows the pressure data to be time stamped to a resolution of 1µSecond.

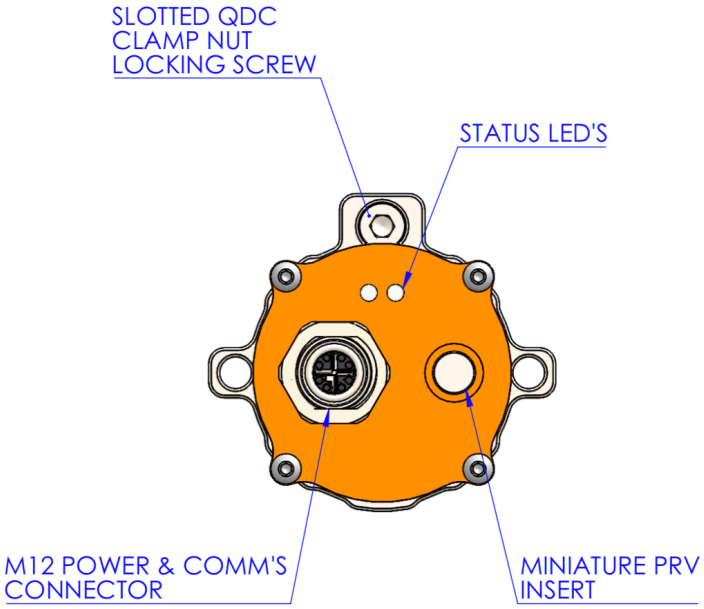
The integrated SQDC interface gives the user to option of using flexible or solid tubing of various sizes. The quick disconnect aspect enables the Q-Daq to be added and removed from the measurement system easily.

To further simplify integration, the Q-Daq is equipped with Power-over-Ethernet (PoE) using an industry standard M12 connector.

Q-Daq Specifications		
Number of channels		16
Data output.		Ethernet (TCP/IP, UDP and IENA)
System accuracy* (Range = 55 kPa / 8 psi)		± 0.1% Full Scale
System accuracy* (Range = 35 kPa / 5 psi)		± 0.1% Full Scale
System accuracy* (Range = 17 kPa / 2.5 psi)		± 0.2% Full Scale
System accuracy* (Range = 7 kPa / 1 psi))		± 0.5% Full Scale
System accuracy* (absolute measurement)		± 0.04% Full Scale
Resolution		16 bit or ±range / 65536
Absolute range		15,000 Pa to 115,000 Pa (2.2 psia to 16.8 psia)
Optional extended absolute range		13,000 Pa to 160,000 Pa (1.89 psia to 23.2 psia)
Proof pressure		50 psig (64.5 psia)
16 Channel dimensions (width x depth x height in mm)		59.4 x 27 x 9 excluding tubulations
Weight (excluding mating SQDC)		340g
Enclosure sealing		IP67
Maximum acquisition Speed (measurements / channel / second).		180
Power supply		PoE IEEE 802.3at
System resolution		16 Bit
Ethernet specification		Auto-negotiating 100Mbit TCP/IP or UDP (user configurable)
Time stamping		IEEE 1588 PTPv2
Time stamping resolution		1µS
Mating connector		M12 X-Coded TE2232331-1
Pneumatic connections : SQDC Interface - available mating halves:		
	SQDC-R-16-20	1/16” complete with Gyrolok® double ferrule and compression nuts for solid tube
	SQDC-R-16-30	1mm bulged tubulation for flexible tubing
	SQDC-R-16-40	1.5mm bulged tubulation for flexible tubing
	SQDC-R-16-50	Blank (mates with removable half), stainless steel, all ports sealed
	SQDC-R-16-60	Plastic cap
	SQDC-R-16-70	0.040” (1mm) double ferrule and compression nut for solid tube
	SQDC-R-16-D	Bulkhead to bulkhead connector
*** Accuracy figure includes nonlinearity, hysteresis, non-repeatability and thermal gain error over the full operating temperature range.**		

Q-Daq Dimensions





Q-Daq Environmental Specifications	
Ambient altitude	100 mbar abs or nominally 52000 ft
Vibration	Engine standard vibration test to DO160E category S, curve W with duration of 1 hr/axis. Fan blade out case to DO160E category S, curve P.
	Fan blade out to DO160F section 7 (40g 11m/s)
	Engine load to +/- 40g per axis
Operating temperature range	-55 to+100°C
Storage temperature range	-55 to+100°C
Maximum relative humidity	95% at 50ºC (non-condensing)
Radiated emissions	MIL standard 461-E: RE102
Conducted emissions	MIL standard 461-E/MIL standard 461-C

Chell Instruments Ltd
Folgate House
Folgate Road
North Walsham
Norfolk NR28 0AJ
England

ISO 9001:2015
BSI membership number 41103115

Tel.: +44 (0)1692 500555
Fax: +44 (0)1692 500088

E-mail : sales@chell.co.uk

0687