

Vibration and Temperature Sensor



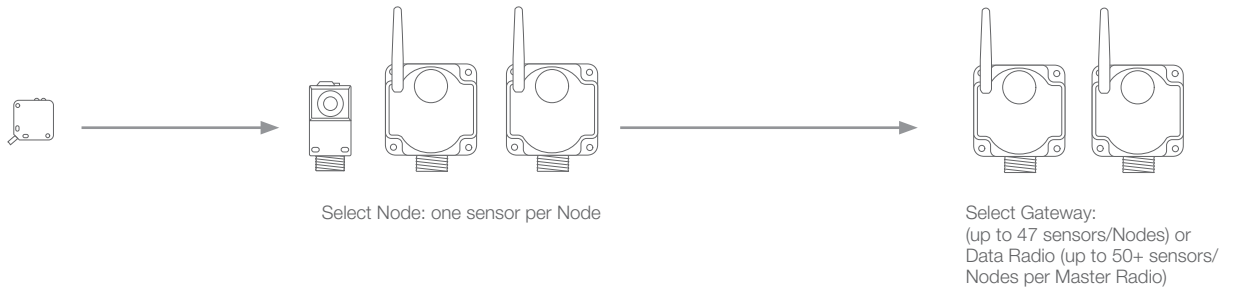
QM42VT1



The QM42VT1 Vibration and Temperature Sensor makes it easy to monitor a machine's health. It measures RMS velocity and temperature so that problems can be detected before they become too severe and cause additional damage or result in unplanned downtime. Paired with a Banner wireless Node, it can provide local indication, wirelessly send the signal to a central location, and send the vibration and temperature data to the Gateway for collection and trending.

Key Features:

- Easily monitor machine health by sending info wirelessly to wherever you need it
- Avoid machine failures and delays by detecting problems early
- Reduce downtime and plan maintenance more efficiently
- Monitor a variety of machines to suit your needs
 - Motors
 - Fans
 - Pumps
 - Blowers
 - Compressors
 - Gear Boxes



Sensor with Serial Interface

Model	Description
QM42VT1	Vibration and temperature via a 1-wire serial interface

Nodes with Serial Interface

Models	Description	
DX80N9Q45VT	Q45 Vibration/Temperature Node with integrated batteries	see page 14
DX80N2Q45VT		
DX80N9X1S-P6	1-wire serial Performance Node with integrated battery	see page 48
DX80N2X1S-P6		
DX80N9X6S-P6	1-wire serial Performance Node	see page 48
DX80N2X6S-P6		
DX80DR9M-H6	1-wire serial Modbus MultiHop Slave with integrated battery	see page 52
DX80DR2M-H6		

QM42VT1 Vibration and Temperature Sensor Specifications

Supply Voltage	3.6 to 5.5 V dc	
Current	Active comms: 11.9 mA at 5.5 V dc	
Communication Hardware	Interface: 1-wire serial interface Baud rates: 9.6k, 19.2k (default), or 38.4k Data format: 8 data bits, no parity (default), 1 stop bit (even or odd parity available)	
Communication Protocol	Sure Cross® DX80 Sensor Node 1-wire serial Interface	
Communications Line	Level Receive ON: Greater than 2 V Level Receive OFF: Less than 0.7 V	Level Transmit ON: 2.7 to 3 V Level Transmit OFF: 0 V (pulldown resistor of 10 kOhm)
Vibration Sensor	Mounted base resonance: 5.5 kHz nominal Measuring Range: 0–65 mm/sec or 0–6.5 in/sec RMS Frequency Range: 10–1000 Hz Accuracy: ±10% and 25 °C	
Connector	3 m cable with 5-pin M12 fitting	
Indicators	Green flashing: Power ON	Amber flicker: Serial Tx
Temperature Sensor	Measuring Range: –40 °C to +105 °C (–40 °F to +221 °F) Resolution: 0.1 °C Accuracy: ± 3 °C	
Environmental Rating	NEMA 6P, IEC IP67	
Operating Conditions	–40 to 85 °C (–40 to 185 °F)	
Shock and Vibration	400G	
Mounting Options	The VT1 sensor can be mounted using a variety of methods, including 1/4 inch 28 hex screw, epoxy, thermal tape, or magnetic mount	

Q45 Vibration and Temperature



Q45VT

The Q45VT provides a simple solution for predictive maintenance monitoring. Designed to pair with the QM42VT1, it easily connects with a 5-pin Euro connector. Vibration thresholds can be set using DIP switches and a built-in LED is pre-mapped to illuminate when a threshold has been exceeded.

Key Features:

- Easily connects using the 5-pin Euro connector
- Set vibration thresholds using DIP switches
- Built in LED is pre-mapped to illuminate when a threshold has been exceeded
- Integrated lithium batteries
- Available in 2.4 GHz and 900 MHz

Q45VT Node

Models	Description	Frequency
DX80N9Q45VT	Q45 Vibration/Temperature Node	900 MHz
DX80N2Q45VT		2.4 GHz

Vibration Sensor

QM42VT1	Vibration and temperature via a 1-wire serial interface	see page 8
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Q45VT Specifications

	900 MHz	2.4 GHz
Radio Range	Up to 3.2 Km (2 miles) with line of sight	Up to 1000 m (3280 ft) with line of sight
Minimum Separation Distance	4.57 m (15 ft)	0.3 m (1 ft)
Transmit Power	1W (25 dBm)	65 mW
Compliance	FCC ID UE3RM1809 - This device complies with FCC Part 15, Subpart C, 15.247 ETSI EN 300 328 V1.8.1 IC: 7044A-RM1809	FCC ID UE300DX80-2400 - This device complies with FCC Part 15, Subpart C, 15.247 ETSI EN 300 328 V1.8.1 (2012-06) IC: 7044A-DX8024
Spread Spectrum Technology	FHSS (Frequency Hopping Spread Spectrum)	
Default Sensing Interval	5 minutes	
Indicators	Red and green LEDs (radio function)	
Connection	One 5-pin threaded M12/Euro-style female quick-disconnect	
Construction	Molded reinforced thermoplastic polyester housing, oring-sealed transparent Lexan® cover, molded acrylic lenses, and stainless steel hardware. Q45s are designed to withstand 1200 psi washdown.	
Battery Life at Default Sensing Interval	Up to 2.5 years	Up to 3 years
Environmental Rating	NEMA 6P, IEC IP67	
Operating Conditions	-40 °C to 70 °C (-40 °F to 158 °F); 90% relative humidity at 50 °C (non-condensing)	