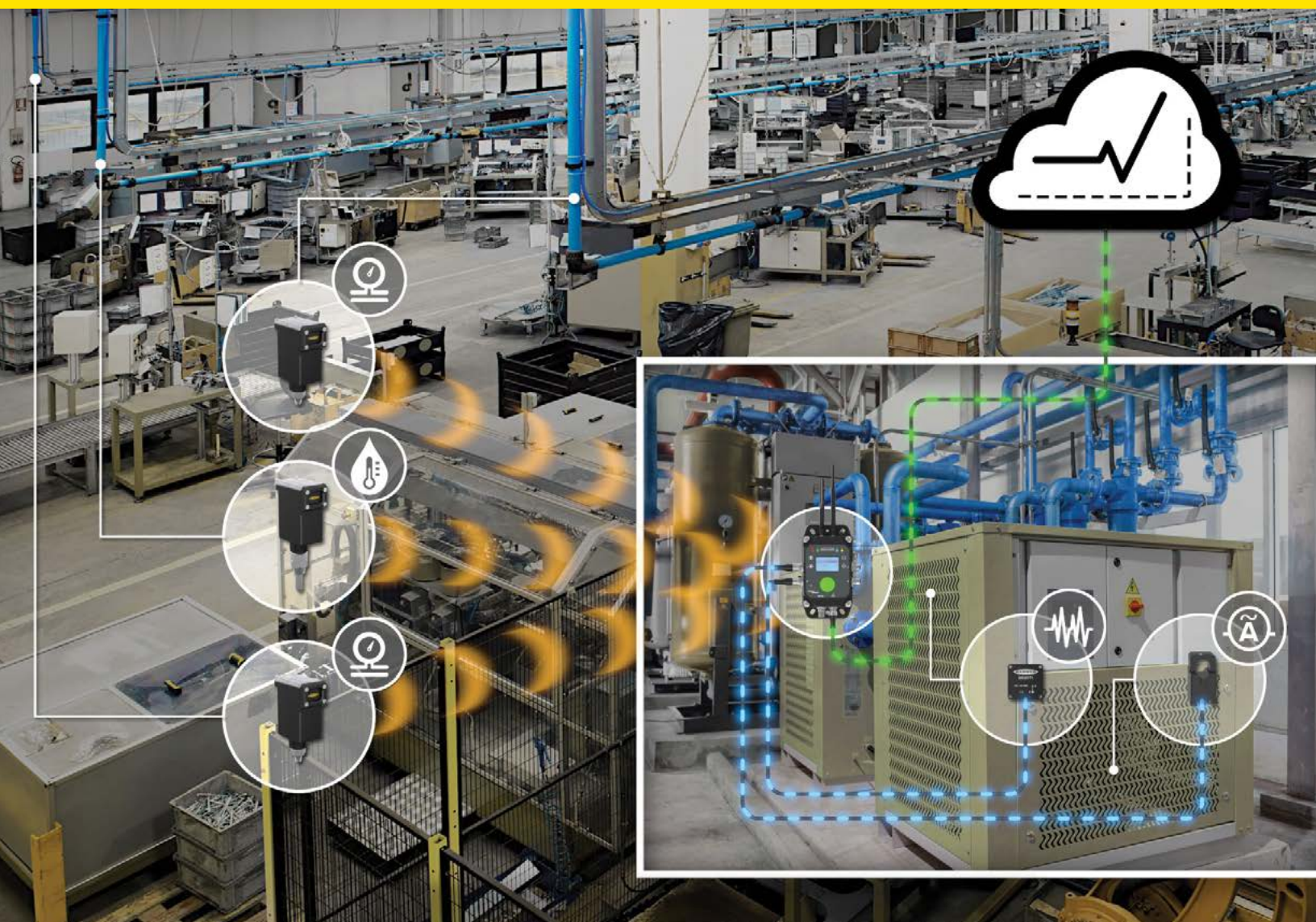


Compressed Air Monitoring



Maximize Uptime and Efficiency in Compressed Air Systems

- Easily monitor health and performance of an entire compressed air system with multiple sensor types
- Combine both wired and wireless technology for maximum installation and application flexibility, with sensors working on most equipment regardless of age, type, or brand
- Get clear, real-time insights into the entire system with an easy-to-use web dashboard
- Maximize uptime by quickly correcting potential issues before they become larger problems
- Increase efficiency and reduce energy consumption by identifying and addressing sources of waste



Wireless and Wired Sensors Offer Maximum Flexibility

Compressed air systems play a crucial role in manufacturing, providing a versatile and reliable power source for a wide range of industrial processes. These systems power pneumatic tools, equipment, and machinery, which enables efficient production, assembly, and packaging. A continuous monitoring solution for compressed air helps facilities achieve greater productivity, reduce manual labor needs, and enhance overall efficiency. By detecting abnormalities and potential issues before they lead to failures or downtime, monitoring solutions support the success and competitiveness of the operation.

Most compressed air monitoring systems include both wired and wireless sensors with a gateway mounted near the compressor room. Sensors wired directly to the gateway can gather large amounts of actionable data from air compressors, while wireless sensors can monitor compressed air line conditions throughout the plant. All data is consolidated by the gateway and routed via Ethernet or cellular to a cloud dashboard, SCADA system, or industrial control system.



Wireless

Wired

Pressure Sensors

Pressure sensors installed both near air compressors and throughout the plant provide insights into this critical element of compressed air systems. By detecting leaks and other issues that may impact proper delivery of compressed air, these sensors help maintain necessary pressure across the system and ensure reliable operation of tools and equipment without energy waste due to overpressure or reduction of productivity and quality from insufficient pressure needs.

Description	Range	Frequency	Model
Wireless D-cell battery powered pressure sensor	0-150 PSI	900 GHz	DX80N9Q45PSD150G
		2.4 GHz	DX80N2Q45PSD150G NB
Wired pressure sensor	0-150 PSI	–	S15C-PS150C-MQ



Wireless

Wired

Dew Point Sensors

Dew point sensors help detect moisture in compressed air systems that lead to corrosion, blockages, and other damages to downstream equipment and the compressed air system itself. Install near air compressors and throughout the plant to thoroughly understand the presence of water vapor in the system.

Description	Range	Frequency	Model
Wireless D-cell battery powered dew point sensor	-116°C to 85°C -176°F to 185°F	900 GHz	DX80N9Q45DEW
		2.4 GHz	DX80N2Q45DEW NB
Wired dew point sensor	-116°C to 85°C -176°F to 185°F	–	S24AS-D-MQP

Vibration and Temperature Sensors

Combining vibration and temperature monitoring in one device, this sensor tracks the data most vital to predictive maintenance systems that monitor motors, pumps, and other rotating equipment. It detects early signs of mechanical issues and overheating, allowing maintenance to be scheduled before costly failures occur. This ultimately extends equipment life and reduces downtime.



Wired

Wireless

Wireless

Description	Frequency	Model
Wireless C-cell battery powered vibration and temperature sensor	900 GHz	DX80N9Q45VTPD
	2.4 GHz	DX80N2Q45VTPD NB
	900 MHz	DX80N9Q45VAC
	2.4 GHz	DX80N2Q45VAC NB
Wired vibration and temperature sensor	–	QM30VT2 QM30VT1*

*Requires a node



Wireless

Wired

Current Sensors

Changes in the current consumption patterns of an air compressor can indicate potential issues such as motor overload, worn components, or air leaks. Monitoring current consumption can help ensure the air compressor is operating at its optimal performance levels. By identifying potential issues, energy-saving opportunities can be identified and operation cost reduction can be achieved.

Description	Range	Frequency	Model
Wireless (2 AA) battery powered current transformer sensor	20 and 150 Amps	900 GHz	DX80N9Q45CT
		2.4 GHz	DX80N2Q45CT NB
Wired current transformer sensor	0-20 Amps		S15C-CT20A-MQ
	0-150 Amps	–	S15C-CT150A-MQ
	0-600 Amps		S15C-CT600A-MQ



Wireless

Wired

Ambient Temp/Humidity Sensors

One often overlooked element of a compressed air system health is the temperature and humidity of the compressor room. Ventilation systems are intended to keep these measurements within a specific range, but if they fail or begin to deteriorate, the air compressors begin to draw in warmer and more humid air, causing downstream problems. By installing these sensors, maintenance teams can ensure they remain in an ideal range and immediately address problems when readings exceed thresholds.

Description	Range	Frequency	Model
Wireless (2 AA) battery powered temperature and humidity sensor	-40°C to 85°C -40°F to 185°F	900 GHz	DX80N9Q45THA
		2.4 GHz	DX80N2Q45THA NB
Wired temperature and humidity sensor	-40°C to 85°C -40°F to 185°F	–	S15S-TH-MQ



Wireless

Wired

Temperature Differential Sensors

Temperature differential sensors provide additional information about the health of compressed air systems by monitoring items such as aftercoolers or heat exchangers to ensure these components are functioning as intended. Early notification of temperature readings out of range can help maintenance teams address problems early before they lead to productivity or quality issues on downstream equipment.

Description	Frequency	Model
Wireless (2 AA) battery powered dual temperature sensor	900 GHz	DX80N9Q45DT
	2.4 GHz	DX80N2Q45DT NB
Wired dual temperature sensor	–	S15C-DTMS-MQ

Connect Your Sensors and Send Data Where You Need It

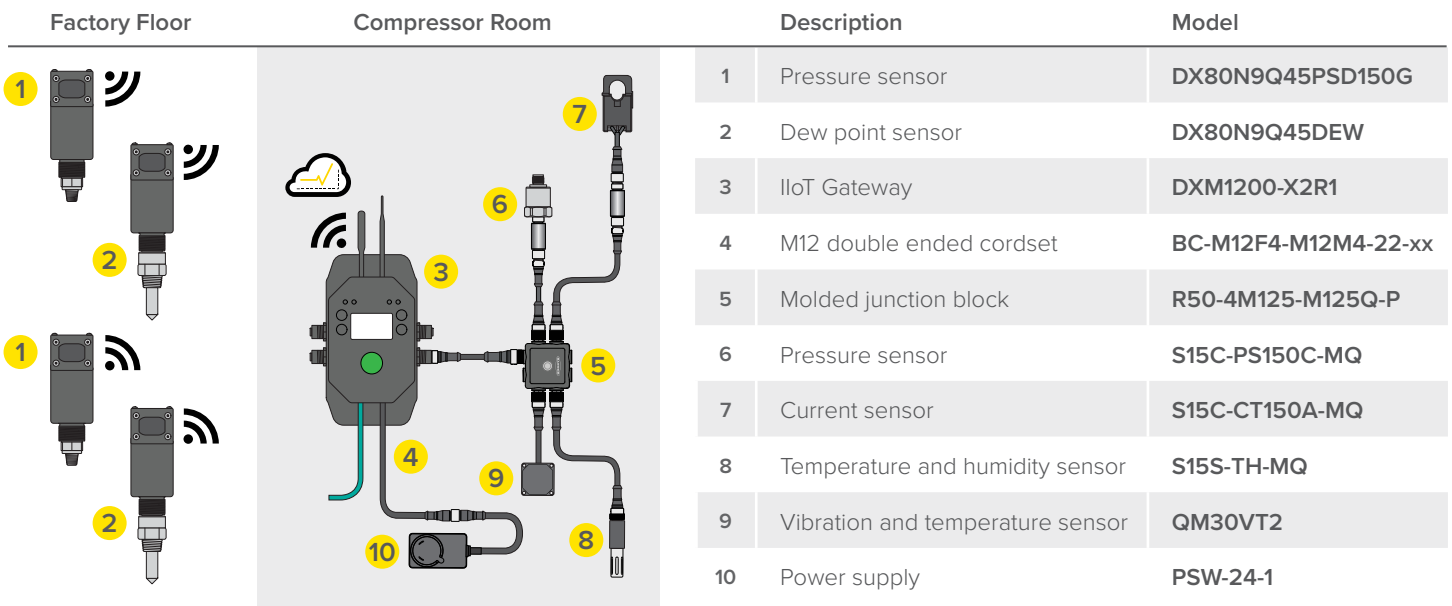


DXM1200-X2 IIoT Gateway

- Connect up to 40 of your wireless compressed air monitoring sensors and up to 200 wired sensors to this single gateway
- On-board display for checking sensor signal and other diagnostics
- Connect to SCADA systems, industrial control systems, and Banner Cloud Data Services (CDS) via the standard Ethernet connection
- Optional cellular modems provide a great alternative when corporate IT policies restrict Ethernet connections

Description	Model
900 MHz, 500 mW PE5 Performance Radio	DXM1200-X2R1
2.4 GHz, 65 mW PE5 Performance Radio	DXM1200-X2R3

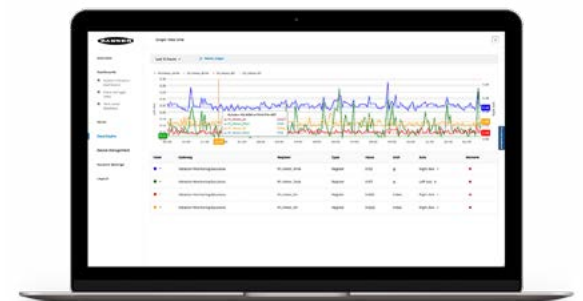
Example Compressed Air System



Need to add a third-party sensor to your monitoring system? Check out Banner's line of Snap Signal converters that can be used to connect nearly any sensor into your monitoring system. For more information, visit snapsignal.bannerengineering.com

A dashboard to monitor your compressed air system, from anywhere in the world

Banner Cloud Data Services (CDS) is a user-friendly platform designed to help manufacturers easily monitor their compressed air systems and more. Banner CDS sets up quickly, and can be up in running in minutes, not months. Dashboards are built easily, and users can choose from widgets such as gauges and bar graphs, among many others, to display data.



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