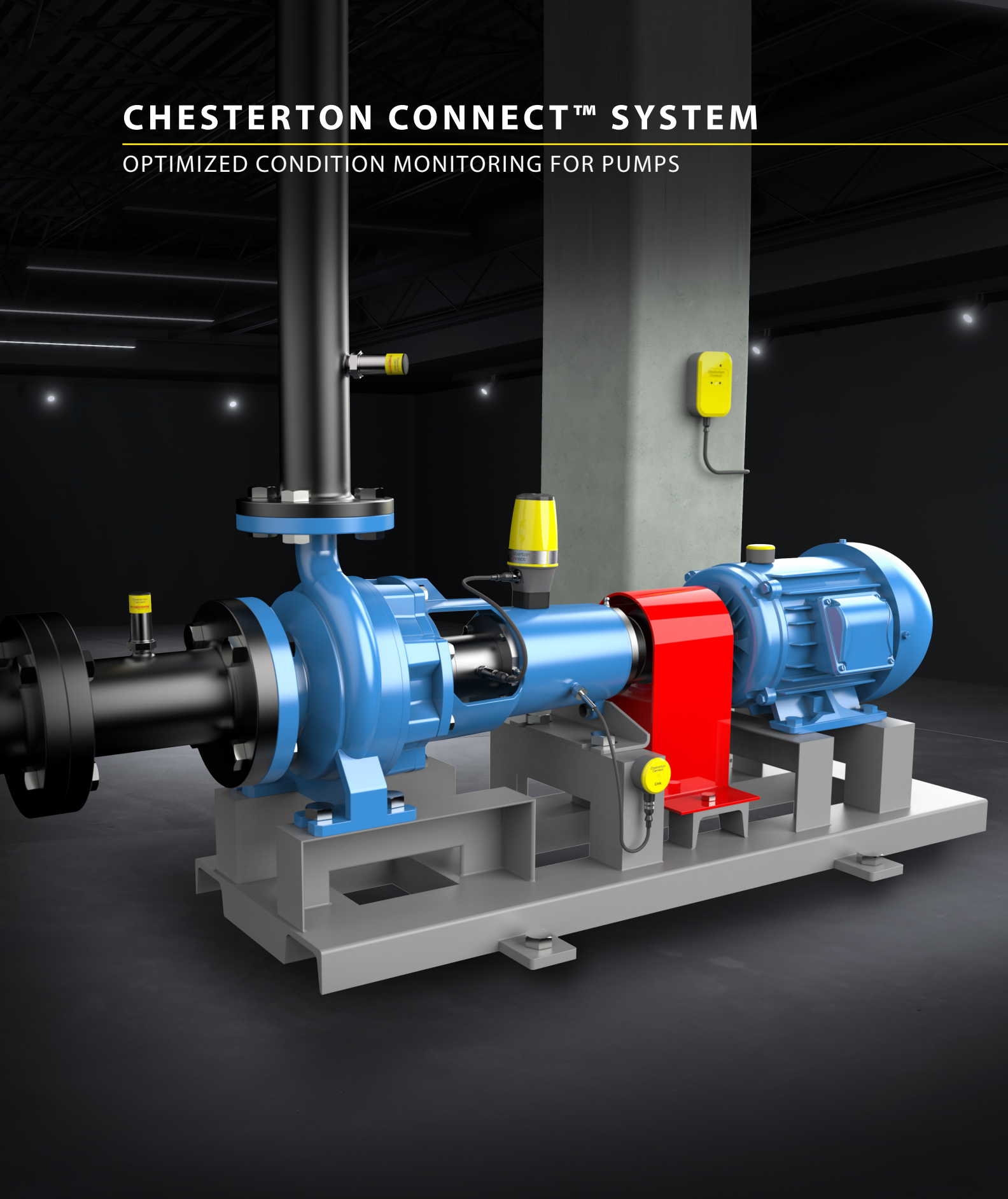


CHESTERTON CONNECT™ SYSTEM

OPTIMIZED CONDITION MONITORING FOR PUMPS

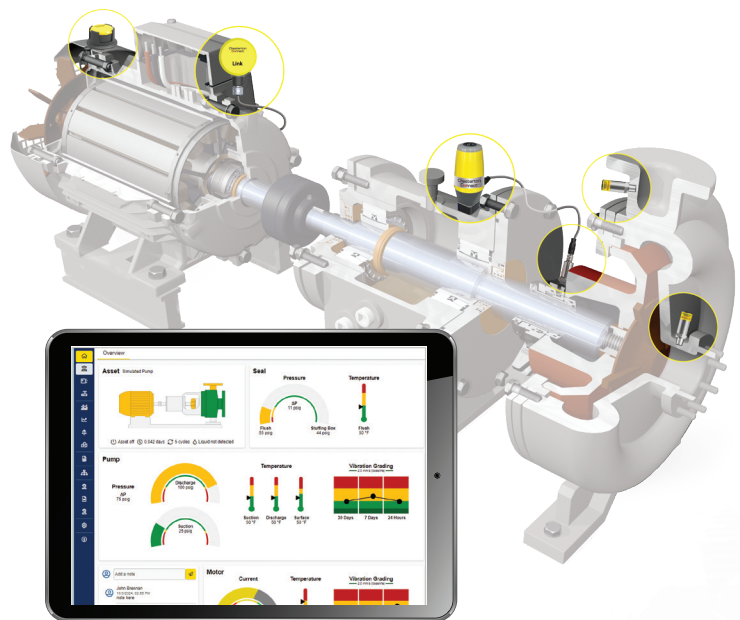


Increase Operational Efficiency by Virtually Monitoring Pump Systems

Industries and commercial businesses increasingly depend on reliable pumps as plants have fewer personnel monitoring pump conditions. Maintaining pump system performance, ensuring reliability, and optimizing operational costs are crucial to plant output. Building on the success as the world's first Industrial Internet of Things (IIoT) condition monitoring device for mechanical seals, Chesterton now offers solutions to monitor an entire pump system. The Chesterton Connect™ system helps identify potential issues before they lead to failure. The system meticulously and continuously monitors equipment, enabling automatic and scalable 24/7 monitoring to improve pump reliability, extend equipment life, and maintain a safer work environment.

Notification-Based Equipment Monitoring with IIoT Twin

The Chesterton Connect system is a wireless condition-based monitoring solution with a proven approach to proactively manage equipment reliability. This pump-focused IIoT solution collects and organizes sensor data into intuitive visualizations to make it easy to understand and detect operational issues in pumps and equipment. The IIoT twin solution provides anomaly notifications through visual alerts, automated emails, and push notifications. Flashing lights and color-coded graphics indicate system anomalies, allowing action to be taken quickly and effectively. The Chesterton Connect system operates independently of plant networks by using global cellular communications, helping to ensure ISO 27001 certified security and reliability without interference to the controlled process.



SOLUTION-DRIVEN SYSTEM FEATURES

■ Maintenance Optimization

Identify potential issues before they lead to failures, allowing for timely maintenance and reducing the risk of unexpected breakdowns.

■ Simple Installation

Sensor installation location is per API plans, so only a smartphone and a magnetic mount are needed. Most process fittings are standardized using 1/4-inch male NPT.

■ Intuitive Views

Root causes of issues are easily visualized with sensor-driven data and color-coded views.

■ Automated Alerts

Email notifications of anomalies are reported and monitored 24/7.

■ Robust Design

Optimized range of pump sensors which are engineered to endure harsh industrial environments with IP66 protection ratings and optional hazardous Zone 0 support.

■ Universal Gateways

State-of-the-art cellular gateways enable robust and reliable global connectivity with optional support for Ethernet bridging in difficult connectivity locations.

■ Plant Integration Option

Supervisory Control and Data Acquisition (SCADA) systems integrate with Chesterton Connect technology using MODBUS TCP, providing data to the control room. Users can now expand wirelessly using a secured connection.



Engineered for Pump Systems

Pump downtime is commonly attributed to mechanical seal and bearing failures, with vibration monitoring frequently relied upon for indication of a problem. However, vibration monitoring alone does not encompass process-related factors, which account for over 70% of pump failures.

The Chesterton Connect system goes beyond vibration monitoring, by offering a complete diagnostic overview of the pump system, focused on operational and process factors which impact pump reliability. This new pump focused solution provides:

- **Process-Focused Condition Monitoring**

Dedicated to pump systems using embedded intelligence, allowing users to clearly visualize correct pump operation.

- **Remote Reliability Management of Critical Assets**

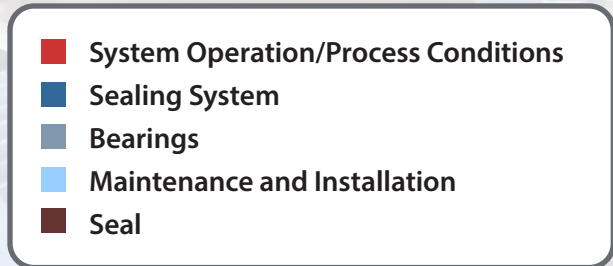
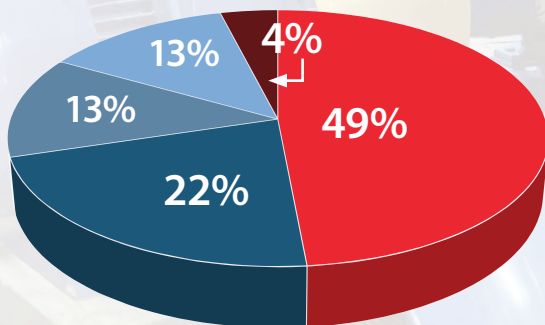
Suitable for either mechanical seals or packing, with optional wear monitoring solution for packing installations.

- **Pre-Packaged Pump Configurations**

Engineered to detect common failure modes and recommend configured solutions—basic to ultimate—which include API plan installation recommendations, helping to simplify and standardize installations.

- **Industry First Environmental Monitoring**

Engineered for support systems, including flush water monitoring or gearbox oil humidity, to help increase comprehensive monitoring of factors that impact pump reliability.



2011 ImechE Study: 11,000 seal failures across 143 process plants

■ + ■ = 71%

Vibration monitoring alone does not consider process-related factors, which account for over 70% of pump failures.

Pump Confidence in Four Configurations

Reduce the guesswork in pump performance by leveraging Chesterton Connect configurations based on your monitoring needs. All configurations are supported by API plan installation recommendations.

Chesterton Connect Pump – Basic

Identifies over 15 pump anomalies. Part number 435728 includes (1) Connect v1, (2) Gauge.

- Complete process monitoring of the sealing system.
- Monitors pump vibration and surface temperature.
- Pump process monitoring of suction and discharge.
- Temperature monitoring of process in 3 locations.

Chesterton Connect Pump – Enhanced

Identifies over 20 pump or pump-related anomalies. Part number 435729 includes (1) Connect v1, (2) Gauge, (1) Nano.

- All Chesterton Connect Pump Basic features.
- Motor vibration and temperature monitors.
- Water monitoring for excessive leaks or floods.
- On/Off monitoring plus runtime and cycle count.

Chesterton Connect Pump – Ultimate

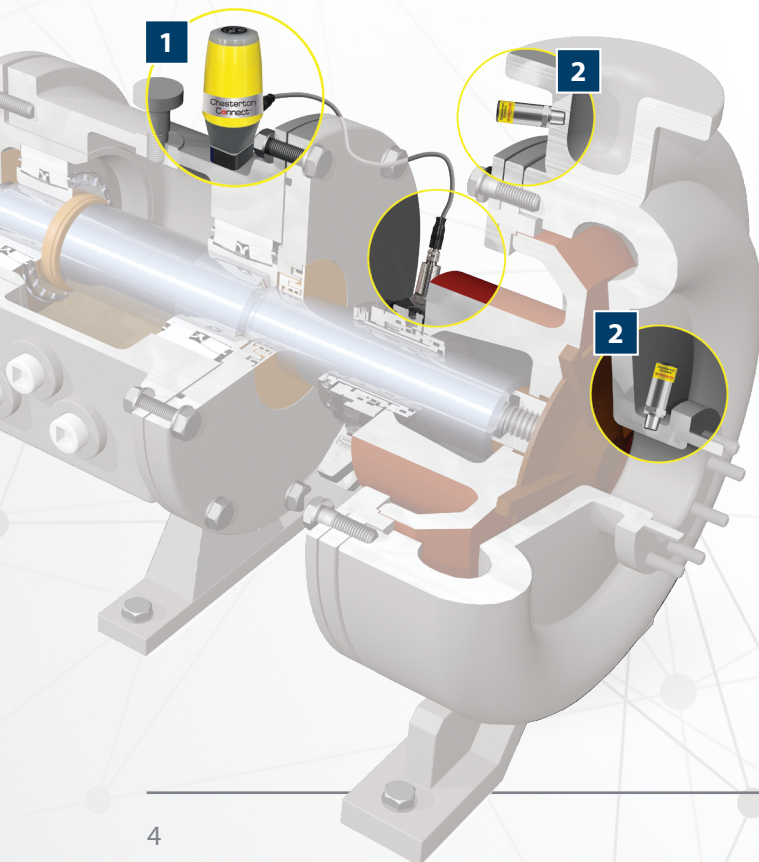
Identifies over 25 pump, pump-related, or support systems anomalies. Part number 435370 includes (1) Connect v1, (2) Gauge, (1) Nano, (1) Humidity Link, (1) Analog Link.

- All Chesterton Connect Pump Enhanced features.
- Motor power monitoring using external current information from sensor or VFD.
- Barrier fluid, gearbox, and bearing box humidity monitoring.
- On/Off monitoring plus runtime and cycle count.

AMPS™ (Automated Mechanical Packing System)

For any of the Connect configurations, AMPS Monitor can be used as an option or by itself. AMPS Monitor part number 435731 includes (1) AMPS Link, (1) Gauge.

- AMPS Link monitors packing wear, vibration, and surface temperature.
- Gauge monitors a plant's air system, and air temperature, which activate the device.
- On/Off monitoring plus runtime and cycle count.



EXAMPLE OF CHESTERTON CONNECT PUMP – BASIC

- 1 Chesterton Connect v1 Sensor
- 2 Chesterton Connect Gauge (x2)

Talk to your Chesterton Specialist for a briefing on the pre-packaged configurations available.

Critical Insights Right at Your Fingertips

The Chesterton Connect user interface is available in two formats: a mobile app for sensor installation, commissioning, and local interaction and a cloud-based portal managed by Chesterton which functions as your pump IIoT Twin, remotely monitoring your critical pump assets using the cloud.

Chesterton Connect Mobile App

The Chesterton Connect mobile app is available for iOS and Android. This Bluetooth® app allows users to set up and view sensor data and make configuration changes.

With the Chesterton Connect v1 or Chesterton Connect IS sensor, the solution can function independent of the cloud as a mobile local mode diagnostic tool, offering trending, alarms, notifications, export, and live diagnostics. The smartphone or tablet app is a simple and effective diagnostic tool for pump reliability monitoring.



Chesterton Connect Cloud

The Chesterton Connect cloud is a subscription-based service that offers remote access and long-term data storage. The cloud allows for 24/7 visibility of pump systems, viewed as a complete asset. The cloud is a web-based solution that provides an intuitive, interactive, and comprehensive view of a pump beyond the sensor view and local mode. The cloud is managed by site administrators who establish user access and configure cloud settings. Secure and permission-based access allows users to monitor pumps in real time, anywhere. The identification of anomalies and the planning of operational improvements enhance reliability and reduce unplanned downtime.

SOLUTION-DRIVEN CLOUD FEATURES

■ Software Maintained by Chesterton

The cloud runs on any browser and is fully maintained and updated by Chesterton with new features and capabilities for continuous enhancements.

■ IIoT Twin

Replicated digital sensing representation of your pump installation for real time remote viewing.

■ Clear Indicators

The cloud provides an intuitive user experience with color-coded visualizations that highlight problem areas quickly and effectively.

■ Performance Comparisons

View up to 5 devices simultaneously to compare performance and optionally export results to CSV for further analysis.

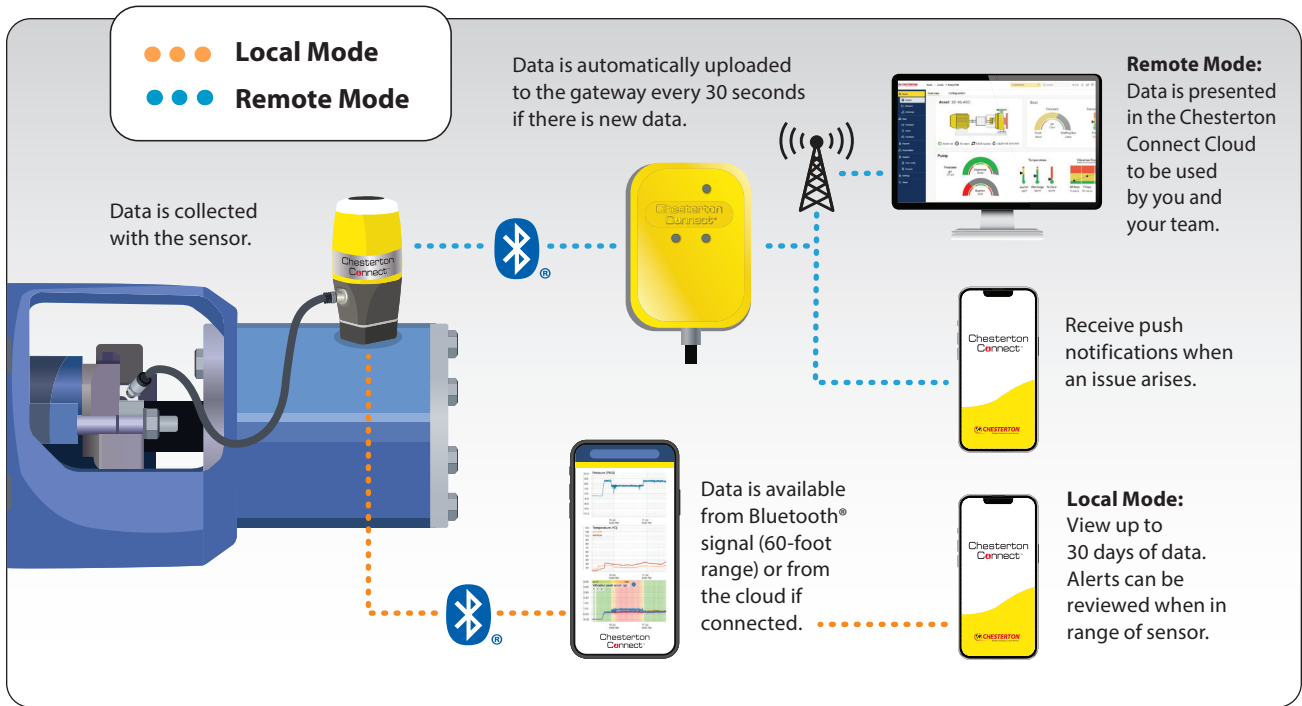
■ Automated Reporting

Schedule daily, weekly, or monthly reports of individual sensor or complete pump asset conditions, including min/max, average, alarms, trends, and more.

■ Flexible Administration

Administrators can create sites, manage users, set permissions, create reports, move sensors, and organize information for specific assets.

Local or Remote Monitoring of Equipment



Local Mode: All you need is your smartphone to see trend data and collect alarms from your Connect v1, or IS sensor, with no internet or cloud required.

Remote Mode: Data from sensors is automatically uploaded to the cloud while, simultaneously, the smartphone app is updated with the most recent sensor data.

Connect IS for Hazardous Environments



Connect IS is intrinsically safe for hazardous environments. Install on seals, motors, suction, and discharge for ultimate monitoring in local or remote mode.







Optional Power Up Cap for motors or vibration-only applications.

Hazardous Ratings

ATEX/IECEX	Ⓢ II 1 G Ex ia IIB T4 Ga Ⓢ II 1 D Ex ia IIIB T ₂₀₀ 166°C Da
Zone	Class I Zone 0 AEx ia IIB T4 Ga Zone 20 AEx ia IIIB T166°C Da
Division	Class I Div 1 Groups C D T4 Class II Div 1 Groups F G T4
Rated Temp	-20°C ≤ Ta ≤ +85°C

Local App Mode	Feature Description	Remote Cloud Mode
✓	Sensor and Account Setup	✓
✓	Interactive Phone App/ Local Data Storage	✗
✓	Live Mode Debug/ Sensor Alarm LEDs	✗
✓	Interactive Phone App – Time-Based Trends	✗
✓	Condition Monitoring Threshold Settings	✓
✗	3 Years Data Storage/ Automated Uploads	✓
✗	Comparative Analysis/ Email Alerts	✓
✗	Customizable Reporting/ Data Export	✓
✗	Asset Management/ Organization by Site	✓
✗	Asset-Specific Actionable Views	✓

Chesterton Connect™ System Product Comparison Table

Chesterton Connect Sensor	Metrics	Installation	Power Details	IP Rating	Order #	
	Connect v1¹	Vibration, Surface Temperature, Corded Process Pressure (1K psig/ 70 bar), and Temperature	1/4" MNPT	Replaceable Battery, D-Size, Li-SOCl ₂	IP66	403700
	Connect IS¹	Vibration, Surface Temperature, Corded Process Pressure (1K psig/ 70 bar), and Temperature	1/4" MNPT	Replaceable Battery, D-Size, Li-SOCl ₂	IP66	403699
	Gauge 1K³	Wireless Pressure (1K psig/70 bar) and Temperature	1/4" MNPT	Replaceable Battery, Coin, CR2050W	IP65	418217
	Gauge 10K³	Wireless Pressure (10K psig/700 bar) and Temperature	1/4" MNPT	Replaceable Battery, Coin, CR2050	IP65	424552
	Nano (2 Pack)³	Vibration, Surface Temperature, Water Contact, Runtime, and Cycles	N/A	Non-Replaceable Battery	IP66	435719
	Humidity Link³	Humidity (%) Temperature, Vibration, Surface Temperature, Runtime, and Cycles	M14 or 1/2" MNPT Tee	Non-Replaceable Battery, Optional DC Powered	IP66	435722
	AMPS Link³	Wear (%). Vibration, Surface Temperature, Runtime, and Cycles	Customized for AMPS	Non-Replaceable Battery, Optional DC Powered	IP66	435723
	Analog Link³	0 to 10 VDC. Vibration, Surface Temperature, Runtime, and Cycles	N/A	Non-Replaceable Battery, Optional DC Powered	IP66	435724
	Pressure Link³	Pressure (400 psig/27 bar), Temperature, Vibration, Surface Temperature, Runtime, and Cycles	G 1/2" Male Flush Style	Non-Replaceable Battery, Optional DC Powered	IP66	435720
Chesterton Connect Gateway	Features	Installation	Power Details	IP Rating	Order #	
	Gateway - LTE-M Cellular	Bluetooth --> Cellular Gateway for 50 Devices	Magnetic, zip-tie, screws	110 VAC, 8 Hours Automatic Rechargeable Battery Backup	IP66	415198
	Universal Gateway - 4G Cellular or Ethernet	Bluetooth --> Cellular Gateway for 100 Devices	Zip-tie, screws	110/220 VAC with Country-Specific Power Plugs	IP64	NA/LATAM: 434853 EMEA/ROW 434854

1 - Connect v1 and Connect IS operate in Local or Remote Mode, all others are remote mode.
 2 - Temperature range of device is -20°C – +85°C (-4°F – 185°F).
 3 - Requires Gateway and Cloud subscription.

Please refer to the individual product data sheets for more information and detailed specifications.

The Link also allows sensing extensibility by providing an interface to a variety of installed or commercially available digital or analog sensors used in plants, adding that sensor's information to the cloud.





Global Solutions, Local Service

Since its founding in 1884, the A.W. Chesterton Company has successfully met the critical needs of its diverse customer base. Today, as always, customers count on Chesterton solutions to increase equipment reliability, optimize energy consumption, and provide local technical support and service wherever they are in the world.

Chesterton's global capabilities include:

- Servicing plants in over 113 countries
- Global manufacturing operations
- More than 500 Service Centers and Sales Offices worldwide
- Over 1200 trained local Service Specialists and Technicians

Visit our website at chesterton.com



Chesterton ISO certificates available on chesterton.com/corporate/iso

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Form No. EN350655
Chesterton Connect System
Brochure – English
10/24