DataStream IoT

CellPoint
Event Monitoring

In the field of event monitoring for utilities and industrial processes, traditional solutions face impediments with intricate installations, high costs, and limited scalability. The demand of power sources, communication lines, and intricate setups make these solutions impractical, especially in challenging outdoor environments. For effective event monitoring in industrial IoT scenarios, there's a need for a solution that's not just efficient but also versatile, scalable, and cost-effective.

Total devices	Online devices	Offline devices	Total alerts
23	16	1	8

DataStream's CellPoint Event Monitoring Device, a groundbreaking device tailored to address the challenges inherent in traditional event monitoring systems. This self-contained state of the art device eliminates the need for extensive infrastructure, complex installations, and high costs. With a robust field replaceable battery, and a built-in LTE cellular modem, CellPoint stands as a cost-effective, scalable, and easy-to-deploy solution for real-time event monitoring.
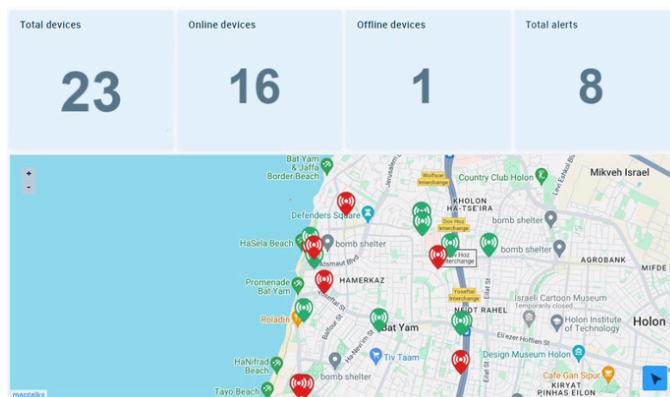
The CellPoint operates by detecting changes in switch closures, including reed switches, magnetic switches, relay contacts, or any electro-mechanical switch. It sends immediate alerts upon detecting a change in status and issues "Keep-Alive" messages daily when no events occur. The device is intelligently programmed to prevent false alarms, incorporating variable delay times to ensure responses align precisely with defined real events and to avoid false alerts of momentary changes.

Our highly scalable CellPoint Event Monitoring Device allows users to initiate deployment at critical nodes and expand as operational needs evolve. This scalability provides a holistic view of networks and processes, unlocking layers of insight and control in event monitoring; it's a transformative approach to real-time monitoring.

Key Features

- **Event Detection** | Identifies changes in switch closures, reed switches, magnetic switches, relay contacts, or electro-mechanical switches.

- **Immediate Alerts** | Sends instant notifications upon detecting a change in status.

- **Keep-Alive Messages** | Daily messages indicate normal status, including battery and network reception indicators.

- **Programmable Delay** | Variable delay times prevent false alarms for momentary changes.

- **Scalable Deployment** | Easily expands to cover comprehensive networks or process monitoring.

- **Versatile Applications** | Suited for a range of applications beyond traditional event monitoring.

CellPoint™
Data Logging

DataStream IoT

Traditional data logging solutions pose challenges with high costs and complex installations, limiting their practicality, especially in outdoor environments. DataStream IoT's revolutionary self-contained analog input CellPoint device is designed to overcome these hurdles, offering a scalable, cost-effective alternative.

DataStream's Analog Input CellPoint,™ an IoT micro-datalogger, collects real-time data from any 4-20mA analog sensor, transmitting it to the DataSense IoT portal. With easy deployment in under 10 minutes, this device monitors sensors at 5-minute intervals, sending immediate alerts for sustained anomalies, enabling instant responses to critical events. The Analog Input CellPoint device provides the following key advantages:

Analog Sensors

Key Advanteges

◆ **Real Time Analysis** | Continuous monitoring allows for early detection of problems, enabling timely intervention to prevent overflows.

◆ **Cost-Effectiveness** | Eliminates extensive infrastructure, significantly lowering data collection costs.

◆ **Rapid Deployment** | Ease of Installation without disrupting operations.

◆ **Versatility** | Adaptable to various applications, collecting data from any analog sensor.

◆ **Real-Time Alerts** | Provides immediate response, optimizing operational efficiency.

◆ **Scalability** | Allows gradual expansion for a complete view of networks or processes.

| Pressure | Voltage | Level | pH | Temperature | Moisture | CO₂ |

Our unique Analog Input CellPoint™ is not just a cost-effective data logging solution; it's a transformative approach to operations. Beyond immediate benefits, it unlocks new possibilities for insights, control, and proactive maintenance strategies across industries.

Key Features

- Data logging from any 4-20mA analog sensor.
- Ease of installation, supported by a mobile app.
- User defined alerts generated upon hi and lo- events.
- Status data updated daily and upon alert.
- No external power required - field replaceable battery.
- DataSense™ portal provides detailed historical data for analysis.
- The CellPoint™ sends the information to the portal once a day (or more frequently, if required). When coverage is limited, the device retains the logged data and attempts to retransmit the information

CellPoint
Water Consumption Monitoring

The Water Consumption Monitoring device is part of DataStream IoT's CellPoint product line.

The CellPoint is a battery-powered endpoint. This device is designed for collecting consumption data from any utility water meters. The CellPoint is compatible with practically any water meter model (pulse or encoder). The device provides real-time monitoring of events such as slow leak or pipe burst.

The CellPoint operates on the cellular LTE network (Cat-M or NB-IoT). The device is designed to meet extreme outdoor ambient conditions and may be also used indoors, in basements or in underground pit applications.

The meter reading is saved once an hour, so the device sends 24 readings a day. The leak definitions are programable. All critical events are transmitted to the web server when they occur, while hourly readings are stored and transmitted once per day.

Application

The CellPoint device offers a solution for various sub-metering applications, as well as for utility metering. This product is a very cost effective consumption monitoring solution for private and public entities such as factories, university campuses, hotels, shopping centers, RV camping sites, and many other sub-metering use cases.

DataStream's DataSense web-based Metering Data Management (MDM) platform provides the operator with a comprehensive set of reports and queries as well as with a CSV file export and an API capability for interfacing with billing and CRM systems.

Key Features

- Compatibility with a wide range of meters.
- User defined alerts and reports.
- Long life of 5-10 years (replaceable battery).
- IP68 rating.
- Integrated (embedded) antenna.
- External antenna for manhole installations.
- Easy to install using an Android technician app.
- Metering Data Management web application.

Pressure Monitoring

DataStream IoT

DataStream IoT stands at the forefront of utility and industrial IoT solutions, offering a comprehensive range of telemetry, RF, and cellular solutions. Our innovative products are the culmination of over two decades of engineering and product development expertise, led by our Israeli R&D subsidiary specializing in water related telemetry solutions. With a track record of successful system deployments in numerous countries, we have established ourselves as a trusted and reliable partner in the field of Industrial IoT solutions.

DataStream's CellPoint™ Pressure Monitoring device, is designed to accommodate a wide range of 4-20mA analog sensors including various pressure transmitter. Our real-time pressure monitoring technology solution equips water utilities with enhanced operational capabilities, which are paramount for ensuring the dependable delivery of water, compliance with regulatory requirements, early detection of leaks, the maintenance of high service standards for customers, asset protection, and cost-effective maintenance management, ultimately benefiting both the utility itself and its valued customers. The CellPoint™ Pressure Monitoring device provides the following key advantages:

Key Advanteges

◆ Reduce unaccounted for non-revenue water (NRW).

◆ Early identification of infrastructure failures related to pressure fluctuations which can lead to significant repair costs.

◆ Improve pump management and reduce energy costs.

◆ Detection of pump malfunction, faulty valves, pipe cracks and other infrastructure failures.

◆ Improve response time and increase customer service level.

Our unique CellPoint™ Pressure Monitoring device provides accurate real-time pressure 15-minute data logging, alert notifications, insightful reporting as a plug and play cost effective addition to a full-scale utility SCADA systems, or as a stand-alone entry-level infrastructure monitoring platform.

Key Features

- Compatible with any 4-20Ma analog sensor.
- Ease of installation, supported by a mobile app.
- User defined hi/lo thresholds for event alerting.
- Installable at a hot-tap, or meter vault placement.
- Field replaceable battery powered device - no external power required.
- DataSense™ portal provides event reporting, trend analysis, networks reception data and GIS information.
- The CellPoint™ sends the information to the portal once a day (or more frequently, if required). When coverage is limited, the device retains the logged data and attempts to retransmit the information.

DataStream IoT

The EPA estimates that there are at least 23,000- 75,000 Sanitary Sewer Overflows (SSOs) per year (not including sewage backups into buildings) in the U.S. It's crucial for municipalities and industries to be aware of and comply with local environmental regulations to avoid fines and contribute to the protection of water resources. Preventing sewage overflows with IoT monitoring and alert devices is a cost-effective and efficient approach.

DataStream's CellPoint™ Sewer Level Monitoring device is part of DataStream IoT's series of cellular IoT endpoints. This device is designed for monitoring fluid levels and providing an alert when the fluid level rises to a predefined level, or when the level reaches a low threshold. This same device can be utilized for additional fluid level monitoring applications such as grinder pump monitoring, and reservoir level monitoring. Our real-time sewer level monitoring technology solution equips water utilities with enhanced operational capabilities, which are paramount for early detection of sewer overflows, environmental compliance, public health benefits, and prevention of infrastructure damage enabling cost-effective maintenance management.

Key Advanteges

◆ Continuous monitoring allows for early detection of problems, enabling timely intervention before overflows occur.

◆ Effective solution to monitor and report compliance with environmental regulations.

◆ Generate system alerts as sewer level is above predefined level.

◆ Designed to meet extreme outdoor ambient conditions for applications under the ground and may also be used indoors in basements applications.

Our unique CellPoint™ Sewer Level Monitoring device samples the float sensor continuously. The device sends a level alert when the sensor reaches the high (or low) threshold. Once a day the device sends a "Keep Alive" signal to the control center as a status signal that indicates the device is still in operation.

Key Features

• User defined alerts generated upon sewer level status change.
• Status data updated daily and upon alert.
• DataSense™ portal provides detailed historical data for analysis.
• Ease of installation, supported by a mobile app.
• No external power required - field replaceable battery.
• Two float switches - optional.

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DataStream IoT

CellPoint
Chlorine Monitoring

DataStream IoT stands at the forefront of utility and industrial IoT solutions, offering a comprehensive range of telemetry, RF, and cellular solutions. Our innovative products are the culmination of over two decades of engineering and product development expertise, led by our Israeli R&D subsidiary specializing in water related telemetry solutions. With a track record of successful system deployments in numerous countries, we have established ourselves as a trusted and reliable partner in the field of Industrial IoT solutions.

DataStream's CellPoint Chlorine Monitoring device, is designed to accommodate a wide range of 4-20mA analog sensors. Our real-time chlorine monitoring technology solution equips water utilities with chlorine monitoring that plays a crucial role in maintaining water quality, safeguarding public health, and ensuring the efficient operation of water treatment systems.

Key Advanteges

◆ **Water Safety:** Monitoring chlorine levels ensures that the water remains safe for consumption by effectively controlling the growth of bacteria, viruses, and parasites.

◆ **Public Health:** Maintaining proper chlorine levels helps prevent waterborne diseases, protecting public health.

◆ **Process Optimization:** Monitoring chlorine levels allows water treatment facilities to optimize their disinfection processes.

◆ **Early Detection of Issues:** Monitoring chlorine levels can help detect problems in water treatment systems early on.

◆ **Compliance:** Many regulatory agencies require water treatment facilities to monitor chlorine levels and adhere to specific standards. Regular monitoring helps ensure compliance with these regulations, avoiding fines and penalties.

◆ **Preventing Chlorine Residuals:** Monitoring chlorine levels helps prevent the overuse of chlorine, which can lead to the formation of harmful disinfection byproducts.

◆ **Emergency Response:** Monitoring chlorine levels enables rapid response to emergencies such as contamination events or infrastructure failures.

1 - Connection box
2 - Chlorine sensor
3 - Circular chart recorder (plotter)
4 - Chlorine analyzer unit
5 - CellPoint IOT device
6 - Signal splitter

Our unique CellPoint Chlorine Monitoring Device provides accurate real-time 15-minute data logging, alert notifications, insightful reporting as a plug and play cost effective addition to a full-scale utility SCADA systems, or as a stand-alone entry-level infrastructure monitoring platform.

Key Features

- Compatible with any 4-20Ma analog sensor and the CLX Online Residual Chlorine Analyzer For Free or Total Chlorine.
- Ease of installation, supported by a mobile app.
- User defined hi/lo thresholds for event alerting.
- Field replaceable battery powered device - no external power required.
- DataSense portal provides event reporting, trend analysis, networks reception data and GIS information.
- The CellPoint sends the information to the portal once a day (or more frequently, if required). When coverage is limited, the device retains the logged data and attempts to retransmit the information.

There are approximately 6 million fire hydrants in the United States according to the National Fire Protection Association (NFPA). Fire hydrants are vital for urban safety but face challenges stemming from improper maintenance. Issues like dry hydrants and frozen hydrants, as well as a lack of real-time information hinder their efficiency and create potential safety hazards. Current manual inspections contribute to delayed responses and increased downtime, limiting firefighting infrastructure efficiency. Monitoring pressure continuously at a fire hydrant is a valuable tool for optimizing maintenance and protecting the fire hydrant asset.

DataStream's CellPoint Fire Hydrant Monitoring device, a revolutionary solution poised to transform fire hydrant monitoring. In the realm of urban safety, this standalone cellular device stands out by seamlessly integrating data logging and telemetry functionalities. It consolidates pressure sensor readings, logging data at hourly intervals, while its continuous monitoring capabilities ensure real-time awareness. The CellPoint goes beyond conventional monitoring by recording readings and scrutinizing pressure values at 5-minute intervals.

Notably, if pressure drops below predefined thresholds for an extended period, the device intensifies its sampling to 1-minute intervals, showcasing a remarkable sensitivity to pressure fluctuations. This innovative approach ensures that potential issues, especially those rendering fire hydrants non-operational, trigger immediate alerts within minutes of detection. The CellPoint's capability to log pressure data across key nodes, coupled with daily in-depth data analysis, empowers utility companies to elevate service standards and optimize overall infrastructure efficiency. This sophisticated tool marks a significant advancement in smart fire hydrant management, promising a new era of reliability and responsiveness in urban firefighting infrastructure.

Our unique CellPoint Fire Hydrant Monitoring Device elevates firefighting efficiency, optimize preventive maintenance, and ensure unparalleled operational efficiency with CellPoint - a sophisticated tool for smart fire hydrant management. Evolving alongside changing needs, it sets a new standard for reliability and resilience in modern smart cities.

Key Features

- Real-time Monitoring - 5-minute interval pressure sampling, escalating to 1-min intervals
- Real-time alert notifications are distributed to operational teams.
- Ease of installation, supported by a mobile app.
- User defined hi/lo thresholds for event alerting.
- Installable at a hot-tap, or meter vault placement.
- No external power required - field replaceable battery.
- DataSense portal provides event reporting, trend analysis, networks reception data and GIS information.

A sudden power failure can pose a significant threat to critical operations in any industry or commercial setting. The impact of these disruptions may vary across industries like industrial manufacturing, healthcare, telecommunications, finance, food facilities, or retail. Traditional outage detection systems often rely on intermittent checks, leading to delayed notifications and potential damage. These systems may lack real-time monitoring, hindering a proactive response.

DataStream's CellPoint™ Event Monitoring Device offers timely outage detection for effective and targeted outage notification in diverse applications and for practically any industry. The outage detection relay is sampled continuously by the CellPoint™ device. The device sends an outage alert once the relay detects a power disruption. To ensure that the system is up and running, once a day the device sends a "Keep Alive" message to the DataSense portal as a status signal that indicates that the device is operative. When the device senses that the relay trips, this indicates loss of power. The CellPoint™ continues to monitor the relay status, and if the relay remains "open" for longer than a predefined time, the CellPoint™ device will trigger a message to the DataSense portal. The alert is cleared once the power is back for more than a predefined clear time.
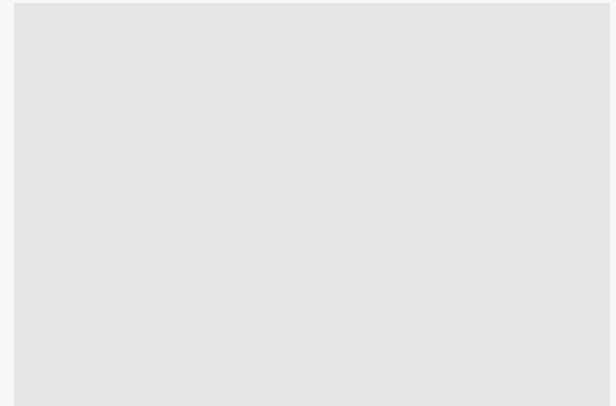
Once DataSense IoT receives an alert from any of the CellPoint™, the system sends an SMS and/or email notification to the relevant operators.

One of the key advantages of the CellPoint™ solution is that it's easy to install. The device is IP68 rated, and it can be installed outdoors without any special enclosure. The product is protected against the elements and even if the enclosure screws are opened, the device is fully encapsulated so that any water ingress cannot cause any corrosion or degradation of performance. The device can be supplied with a wide assortment of installation accessories for pit, wall, and pole installation. The installation process is simple and quick, providing low cost of deployment.

Key Features

- **Cost-Effectiveness** | The absence of the need for infrastructure, coupled with ease of installation, significantly lowers costs compared to alternative solutions.

- **Rapid Deployment** | No need for special expertise. Installation by field tech in less than 15-minutes.

- **Real-Time Alerts** | Immediate notification of power outage enables quick response.

- **Versatile Applications** | Flexible software supports implementation in various applications that require power outage monitoring.

- **Efficiency in Harsh Environments** | The self-contained design and robust construction make CellPoint™ ideal for deployment in any scenario.

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DataStream IoT