

Digitalization

Digital solutions & apps

SITRANS SCM IQ, SITRANS CC220, SITRANS MS200

Overview



SITRANS SCM IQ is a Siemens Insights Hub-based cloud application, used in conjunction with SITRANS MS200 and SITRANS CC220, for smart condition monitoring and predictive maintenance. SITRANS CC220 is an industrial IIOT gateway that collects measurement and status data from up to eight SITRANS MS200 multisensors. It then forwards the data, via the plant network or a secondary data channel, to the SITRANS SCM IQ cloud application. SITRANS MS200 is a battery-powered, wireless multisensor that provides process condition data that is not normally available for typical process control functions. MS200 can monitor conditions such as vibration states and temperature.

Benefits

- Detects changes to the normal operating conditions of industrial machinery such as pumps, motors, gears, etc., in industrial settings
- Detects the on/off state of each connected device
- Labels detected anomalies and sends notifications
- Allows for more efficient maintenance planning through early warnings
- Improves control, protection, and availability of machinery
- Can help to reduce plant downtime
- Built-in configuration tools and device management
- Easy commissioning, minimal training required, and long maintenance cycles

Application

SITRANS MS200 multisensors are suitable for use with a wide range of rotating equipment, within all industries that require rugged IIoT sensors. The sensors are suitable for measurement within any industrial environment and at extreme temperatures. They can be used indoors and outdoors.

SITRANS MS200 sensors and corresponding SITRANS SCM IQ application, can be used in process industries such as food and beverage, power generation, utilities, and chemical. Typical applications include filling stations, agitating vessels, and many types of pumps, gears, compressors, fans or bearings.

Design

SITRANS MS200 is contained within a rugged, IP69 enclosure for use with rotating equipment. SITRANS CC220 is an IP20 device and is typically mounted inside a cabinet.

SITRANS SCM IQ is designed for use on the Siemens cloud-based IoT ecosystem, Insights Hub. SITRANS SCM IQ can be combined with an array of Siemens cloud-based applications for complete plant supervision and control.

Function

SITRANS MS200, Battery powered clamp-on sensor

- Monitors temperature and vibration of rotating equipment

SITRANS CC220, IIOT gateway

- Cyclically polls data from MS200 multisensors
- Securely uploads data to SITRANS SCM IQ
- Can handle up to eight SITRANS MS200 sensors

SITRANS SCM IQ, Insights Hub application for smart condition monitoring

- Manages connected SITRANS CC220 gateways and SITRANS MS200 multisensors
- Intuitive training of machine learning models to automatically detect anomalies
- Supports labelling anomalies and sends notifications via email or push notification (when used with SIMATIC Notifier)

Selection and ordering data

| Selection and ordering data | Article No. |
|--|---|
| SITRANS MS200 A battery-powered, wireless multisensor that provides process condition data that is collected in addition to the core process control data. | 7MP2210-2AB21-2-AB1 |
| SITRANS CC220 A cloud connector that collects measurement and status data from up to eight SITRANS MS200 multisensors, then forwards it to the SITRANS SCM IQ cloud application | 7MP2200-2CB05-2-AA1 |
| SITRANS SCM IQ SITRANS SCM IQ is a Siemens Insights hub-based application, used in conjunction with SITRANS MS200 and SITRANS CC220, for smart condition monitoring and predictive maintenance | SITRANS SCM IQ is distributed by the Siemens Digital Exchange. Please visit: https://www.dex.siemens.com |
| Operating Instructions All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation . | |
| Spare Parts SITRANS MS200 replacement battery with plug, 3.6 V/2.6 Ah | 7MP2210-2AB21-2-AB8 |

Technical specifications

| SITRANS MS200 | |
|-------------------------------|--|
| Scope of measurement | Vibration and temperature |
| Data transmission | |
| Polling | Cyclic, via SITRANS CC220 |
| Vibration sensor | 3-axis accelerometer |
| Frequency range | 15 ... 3.3 kHz |
| Resolution | 0.122 mg (nominal at ± 4 g measurement range, 0.488 mg at ± 16 g) |
| Sampling rate | 6.6 kHz |
| Temperature sensor | |
| Temperature range | -30 ... +80 °C (-22 ... +176 °F) |
| Accuracy | ± 4 °C |
| Repeatability | 0.1 °C |
| Voltage supply | |
| Voltage | 3.6 V |
| Capacity | 2.6 Ah |
| Lithium content | 0.65 g (0.023 oz) |
| Weight of battery | 18 g (0.63 oz) |
| Battery life at 25 °C (77 °F) | 2 ... 5 years |
| Replacement | Replacement batteries are offered by Siemens. Please see spare parts for more details. |
| Communication | |
| Bluetooth | Bluetooth BLE 5.0 |
| Data transmission cycle | 1 per 100 seconds |
| Environment | |
| Storage temperature | -40 ... +85 °C (-40 ... +185 °F) |
| Ambient temperature | -30 ... +80 °C (-22 ... +176 °F) |
| Altitude | <ul style="list-style-type: none"> • Operation: -1 000 ... 2 000 m (3 280 ... 6 561.68 ft) • Pressure: 795 ... 1 080 hPa |
| Rating | IP69 2 m/24 h, according to IEC 60529 |

| SITRANS CC220 | |
|-----------------------|--|
| Functions | |
| Connecting | Connects SITRANS MS200 multisensor with SITRANS SCM IQ cloud application |
| Polling | Cyclic polling of SITRANS MS200 |
| Cloud connect | Forwards data to SITRANS SCM IQ cloud. Connection through plant network or Internet Access Point (e.g. SCALANCE M876-4). |
| Voltage supply | |
| Voltage | 24 V nominal |
| Fuse | No |
| Fan | Passive cooling |
| Communication | |
| To sensor | Bluetooth BLE 5.0 |
| To cloud | MQTT |
| Environment | |
| Storage temperature | -20 ... +70 °C (-4 ... +158 °F) |
| Ambient temperature | 0 ... +50 °C (-32 ... +122 °F) |
| Altitude | <ul style="list-style-type: none"> • Operation: -1 000 ... 2 000 m (3 280 ... 6 561.68 ft) • Pressure: 795 ... 1 080 hPa |
| Rating | IP20, according to IEC 60529 |

Technical specifications (continued)

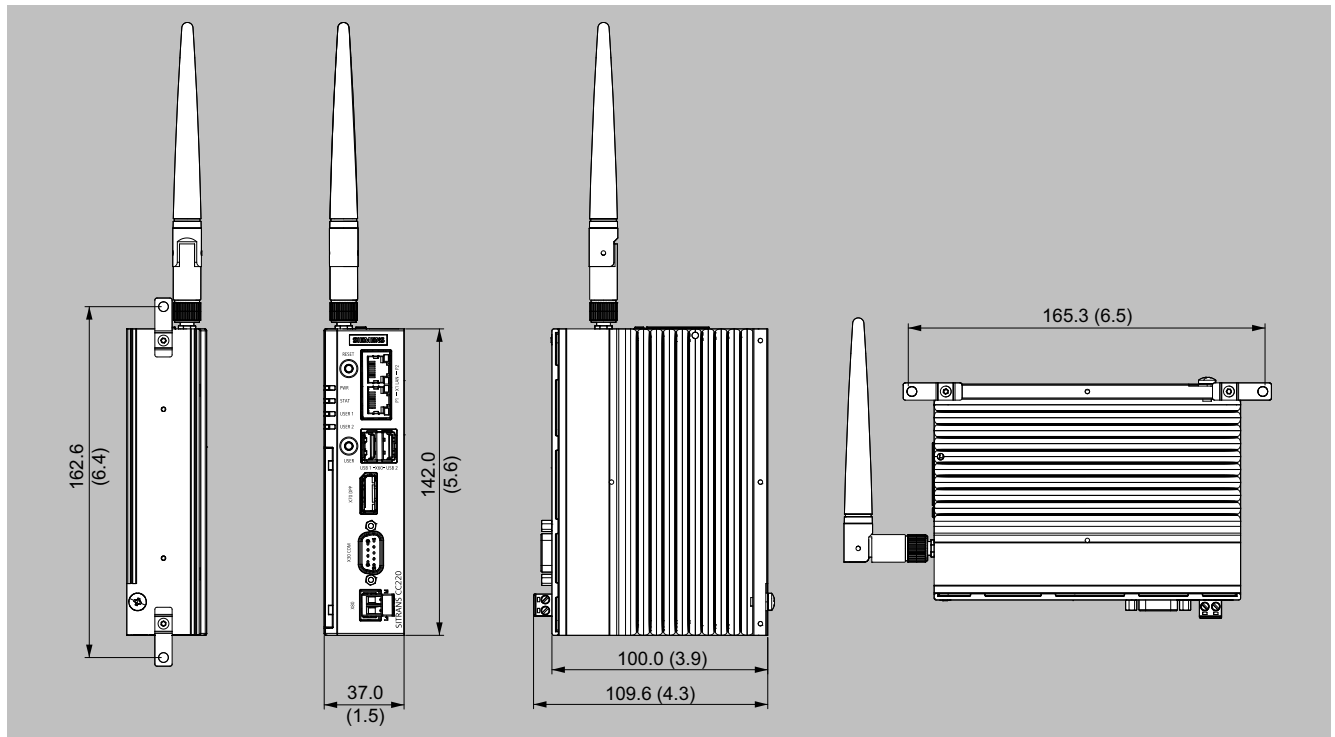
| SITRANS SCM IQ | |
|-----------------------------|---|
| Device connectivity | Manages connection of SITRANS MS200 and SITRANS CC220 through a convenient user interface |
| Sensor data modeling | Activation and management of machine learning models |
| Anomaly management | Documentation and management of detected anomalies |
| Notifications | Provides notification of detected anomalies via email or push notification (when used with SIMATIC Notifier). |

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Dimensional drawings



SITRANS CC220, dimensions in mm (inch)

