

Technical datasheet

Connection Module IOT

siemens.com/cm-iot



General information	
Product brand name	Connection Module IOT
Hardware version	Feature State FS02
Product category	Sensor and communication module
Product description	The Connection Module IOT monitors the condition of various drivetrain components (motors, gear boxes, pumps, etc.) using multiple built-in sensors to capture relevant data. This data is either transmitted to the cloud via Wi-Fi, where it is visualized and analyzed using the Insights Hub application Drivetrain Analyzer Cloud, or it is transmitted by Wi-Fi to a MQTT broker using the MQTT interface of the Connection Module IOT, but without the data being subjected to further analysis or evaluation.
Measured parameters	Temperature, radial/tangential/axial vibration, electrical stator frequency, slip frequency, acoustic emission
Calculated parameters <i>* partially calculated in DTA cloud</i>	Motor state (on/off), rotation speed, torque, electrical power, number of motor starts, energy consumption, energy cost, CO2 emission, energy efficiency, hours of operation, operating points based on speed/load-vibration profiles, sound level
Supported drive train components <i>* amount of calculated values depends on specific asset type</i>	3-phase asynchronous (ASM) and synchronous (SynRM, PM) low-voltage motors in line operation (DOL) and/or converter operation (VSD) in IEC frame sizes 80 to 450 and NEMA frame sizes 48 to 680. Various drivetrain components (e.g., gearboxes, pumps, fans, compressors, etc.) as well as other rotating and non-rotating parts.
Installation/mounting	
Mounting type and position	Externally mounted (glued) with a mounting bracket (on motors' cooling fins) or a mounting plate (on flat or curved surfaces). <i>As described in the installation instructions</i>
Qualified adhesives	Henkel LOCTITE® HY 4090™, Weicon Fast Metal Minute Adhesive, 3M Scotch-Weld DP 8407 NS
Power supply	
Type of supply	Dual-power supply: 24V DC power supply and/or 4 cells 3.6V size AA lithium batteries (non-rechargeable).
Battery lifetime	Operating time up to 4 years*, replaceable <i>*At an environmental temperature of 0° C to 40° C, a measurement interval of 5 minutes and a transmission of the stored data once every 24 hours</i>
Internal data storage	
Internal flash	Data storage of min. 48 hours*, when Insights Hub connection is interrupted <i>*At measurement interval of 1 minute</i>
Communication	
Bluetooth®	Bluetooth module used for configuration and commissioning*, Compliance with Bluetooth® v5.2 RF output power: 2400 MHz to 2483.5 MHz / 11.1 dBm (max. EIRP), Range: up to 10 m <i>* Commissioning consists of integration into the local Wi-Fi network and onboarding to Insights Hub</i>
Wi-Fi	Wi-Fi communication module for data transmission* via an encrypted HTTPS connection using the TLS 1.2 protocol, IEEE 802.11 a/b/g/n, Dual Mode: 2.4 GHz and 5 GHz RF output power: 2412 MHz to 2472 MHz / 16.3 dBm (max. EIRP), RF output power: 5180 MHz to 5825 MHz / 15.1 dBm (max. EIRP), Range: up to 100 m <i>* Insights Hub synchronization interval adjustable between 1 hour and 48 hours (default: 24 hours)</i>

Status information	
Indication LED (blue, red)	Status information during configuration process
Integrated sensors	
Measurement interval	Configurable between 1 minute and 1 hour (default: 5 minutes)
Temperature measurement	
Range	-40° C to +85° C
Resolution	0.03° C <i>Temperature measured at the contact between connectivity module and mounting bracket</i>
Vibration measurement	
Measuring principle and sensor type	Overall vibration v_{RMS}, a_{RMS} 3-axial MEMS sensor
Range	Measuring range 0.02 to 300 mm/s (v_{RMS}) and 0g to 2g (a_{RMS}) Frequency range 10 Hz to 6.6 kHz (sampling rate up to 26.7 kHz)
Magnetic field measurement	
Range	0.01 Hz to 300 Hz Rotary stray field
Acoustic measurement	
Range	35 Hz to 80 kHz (with future firmware update)
Standards, approvals, certificates	
CE, FCC, IC, UKCA, SRRC, MIC, CRC, ICT, IMDA, NBTC, SUBTEL, TDRA, WPC	
Degree and class of protection	
Degree of protection acc. to EN 60529	IP66
Shock resistance	max. 100 m/s ² (tested acc. class 3M4)
Ambient conditions	
Temperature during operation	-40 °C to +40 °C (ambient)
Ambient temperature during storage/ transportation	-40 °C to +80 °C (dry heat) -40 °C to +55 °C (damp heat relative humidity 95%)
Relative humidity	5% to 95% (without condensation)
Software	
Mobile app for commissioning and configuration	Connection Module IOT Config (iOS, Android)
Connection Module IOT Firmware Update	Supports remote firmware update via Insights Hub
Mechanics/material	
Housing material	Industrial Plastic Durethan® (polyamide, halogen-free, glass-fiber reinforced)
Material of the mounting bracket // screws	stainless steel // steel, galvanized and passivated
Dimensions	
Length x height x depth	125 mm x 85 mm x 35 mm
Weight	
Weight connectivity module, approx.	0.3 kg
Weight connectivity module including mounting material, approx.	0.56 kg
Documentation and information	
More technical product information and documentation is available at: https://siemens.com/cm-iot	

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