WM-i 4-20mA

WM SYSTEMS

Long-life battery powered cellular IoT data logger and DCU for analog sensors

Robust, ultra low-power cellular IoT data logger and data concentrator (DCU), which comes with a built-in LTE Cat.M, NB-IoT cellular module ensuring reliable data transfer in any environment. The device can be connected to two sensors due to its analog inputs (4..20mA or 0-10V).

Easily upgrade existing meters and sensors with cellular connectivity, safeguarding your investments without the need for costly replacements!

Offering a standalone operation, it performs reliable automated sensor or meter readings. The device allows connection of 2 analogue sensors through its inputs.

The WM-i receives and collects signals of connected two sensors, then it transfers all data at predetermined intervals via MQTT to the Microsoft® Azure IoT platform with TLS encryption through the LTE Cat.M / NB-IoT network.

The easily installable device was designed for long-term, maintenance-free operation, the WM-i boasts a high-capacity battery lasting up to 10 years and an IP68 waterproof casing, making it ideal for challenging environments. Optionally, add-on extension possibilities are available to extend capabilities for PoCs, unique orders (e.g. different connections, adding sensors).

MAIN FEATURES

- IP68-protected casing with fastening points
- LTE Cat.M / Cat.NB / 450MHz cellular module with Nano SIM slot
- Replaceable, high-capacity battery with up to 10 years lifetime
- Connections:
  - 2pcs analog inputs, which supports 0..20mA / 4..20mA current loop output sensors or 0..10V / 1..10V voltage output sensors
  - USB-C port (for local configuration and installation)
- Internal antenna (mounted inside of casing)
- Tamper protection (security alarm if cover is tampered) – optional
- Cold start (supporting the installation)
- Automatic / configurable mobile operator, bands, access technology
- Automatic data transmission at preconfigured intervals to to Microsoft® Azure platform (MQTT protocol, TLS encryption)
- Transfer of sensor identifier, location
- Pre-configured settings at manufacturing
- WM-E Term® software for local configuration, FW updates
- Secure remote configuration / firmware updates via Cloud (TLS)
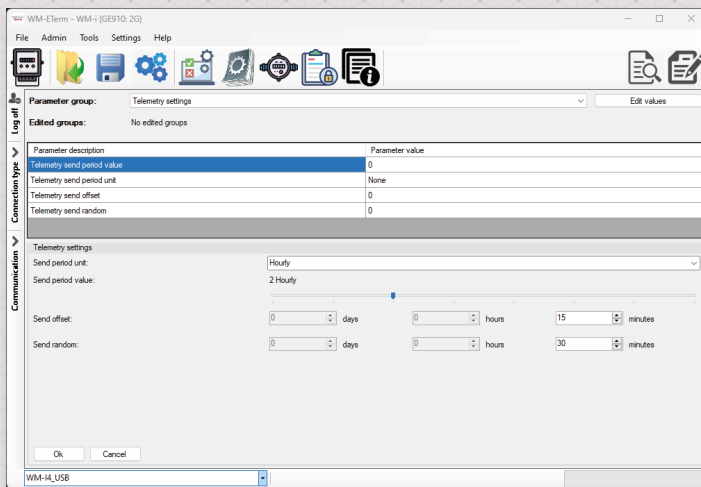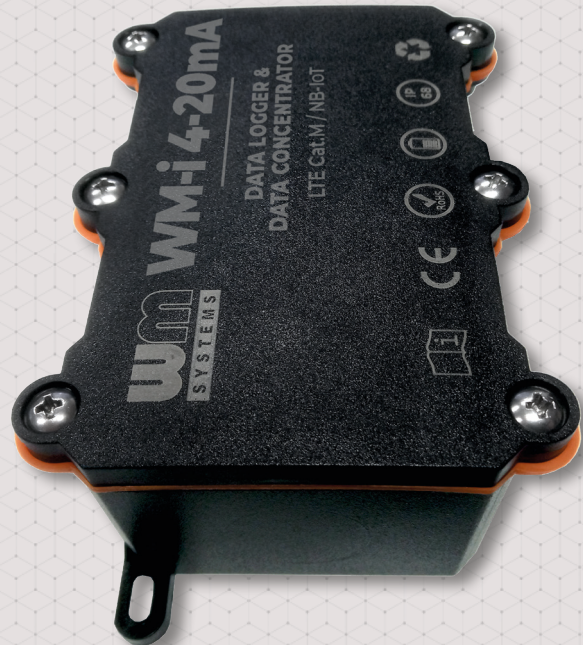- "Deployment mode" supports local installation (status checking)

APPLICATION

- SMART METERING
- SMART CITIES
- INDUSTRIAL MEASUREMENT
- INDUSTRIAL AUTOMATION
- IoT APPLICATIONS

WM-i 4-20mA

ACCESSORIES

- Internal high-capacity battery (19 000 mAh)
- Cable for sensors (order option)
- USB-C cable for configuration (order option)
- WM-E Term® configuration software (for local configuration and FW updates)

WM-i 4-20mA®		LTE Cat.M / Cat.NB	
Power	Nominal	· 3.6V DC voltage (powered from an internal battery)	
Performance	System	· Cortex-M33 ultra-low powered processor / 2MB Flash / 768kbyte memory	
Communication Module	Cellular module	· Quectel BG95-M2	· Quectel BG95-M4
	Mobile technology	· LTE Cat.M / Cat.NB	· LTE Cat.M / Cat.NB / 450MHz
	Band / Frequency (MHz)	· LTE Cat M1: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85 · LTE Cat NB2: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85	· LTE Cat M1: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B31/B66/B72/B73/B85 · LTE Cat NB2: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B31/B66/B72/B73/B85
	Speed (DL/UL)	· LTE Cat.M1: 588Kbps (DL) / 1118Kbps (UL) · LTE Cat.NB2: 127Kbps (DL) / 158 Kbps (UL) · LTE Cat.NB1: 32Kbps (DL) / 70Kbps (UL)	· LTE Cat.M1: 588Kbps (DL) / 1118Kbps (UL) · LTE Cat.NB2: 127Kbps (DL) / 158 Kbps (UL) · LTE Cat.NB1: 32Kbps (DL) / 70Kbps (UL)
SIM card	SIM slot	· Nano SIM card slot (optional eSIM)	
Antenna	Antenna	· Internal LTE antenna (mounted inside of casing)	
Connectivity	Interfaces	· 2pcs analog inputs, which supports 0..20mA / 4..20mA current loop output sensors or 0..10V / 1..10V voltage output sensors · USB-C port (for local configuration and installation)	
	Cabling	· Cable outfit for sensor connections (2 sensors, USB connection, wire end sleeves, internal connector to the device PCB)	
Operation	Operation behaviour	· Automatic data transmission at predetermined intervals to the Microsoft® Azure Cloud IoT platform with MQTT protocol, TLS encryption · Transfer of sensor identifier, location · "Deployment mode" that supports local installation (status checking)	
	Communication	· Microsoft® Azure platform support · Protocols: SNTP (multiple time servers), HTTP(S) for firmware downloads · Optional protocol support: LwM2M, etc. (in case of PoC)	
	Battery	· High-capacity battery with up to *10 years battery lifetime (depending on settings): D-size (type ER34615, Lithium Thionyl Chloride, 19 000mAh capacity, 3.6V voltage) - *up to settings	
Security	Security features	· Alarm thresholds (min/max consumption) · Cold start (supporting the installation) · Device displacement sensor – activable for PoC · Secure firmware updates (via Cloud IoT platform) · TLS encrypted communication	
Configuration	Setup	· Automatic / configurable mobile operator, bands, access technology · WM E-Term® configuration software (password protected local configuration and firmware updates) · Secure remote configuration / firmware updates via Microsoft® Azure (with TLS)	
Environment	Operating / Storage	· from -25'C to +70'C at 0 to 95 rel. humidity · -40'C to +80'C at 0 to 95 rel. humidity	
Design	Casing	· IP68-protected design (ABS case, cable outfit) · Mounting with fastening points	
	Dimensions / Weight	· Dimensions - top (W x D x H): 120 x 88 x 50mm · Dimensions - bottom (W x D x H): 155 x 90 x 50mm (with pedestal mount and cable outfit) · Weight: 315 gr	

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