

- Internal 4G LTE Cat. 1 modem with 2G support
- Ethernet port: 100Base-TX/10Base-T with auto MDI/MDI-X
- Dual-SIM technology (passive mode) – access to 2 independent GSM networks provides redundancy for the transmission infrastructure
- Configuration via a dedicated WebGUI and SSH
- Built-in WebGUI with data visualisation functionality
- 2 serial ports for communication with external devices:
 - » isolated RS-232/485
 - » isolated RS-485
- 4 binary inputs/2 configurable as binary outputs
- Data logger (supports microSD cards)
- Protocol converter (supports Modbus RTU, Modbus TCP, UDP, MQTT)
- Built-in Modbus Master and Slave functionality
- Optional built-in wM-Bus port, supporting up to 20 wM-Bus devices
- Modbus packet routing
- Support for SNMP v2c/v3 and SNMP Trap protocols
- Diagnostic LEDs
- Advanced self-diagnostics with a watchdog mechanism
- Built-in event processor for data transmission rules
- SMS gateway
- Remote configuration, programming, diagnostics and software updates via 2G/LTE network



- Redundant power inputs
- Optional MIM card
- 12–48 V DC power supply
- Real-time clock (RTC)
- Industrial design, DIN rail mounting, screw terminals

The MTX-2050 v4 is a state-of-the-art industrial telemetry gateway designed for remote monitoring, data acquisition and the integration of automation devices in LTE networks. It combines the functions of a communication gateway, a protocol converter and a data concentrator, enabling the construction of reliable communication systems for critical infrastructure: power generation, district heating, water and wastewater management, industry and municipal infrastructure. Thanks to its support for Ethernet, RS-232, RS-485, M-Bus and wM-Bus interfaces, the device can work with both modern automation systems and existing metering infrastructure.

The MTX-2050 v4 enables the local collection, processing and sharing of data from field devices. Built-in Modbus Master and Slave functions, protocol conversion, data routing and resource mirroring mechanisms allow for the integration of multiple devices within a single communication platform. The device can periodically read data, detect status changes and alarms, execute event-driven logic and log information with a timestamp. This makes it possible to reduce system response times and increase the reliability of monitoring and control processes.

The built-in LTE Cat.1 modem with 2G support and Dual-SIM technology ensure stable communication even in locations with variable transmission conditions. Extensive security features, including support for VPN, SNMPv3, authentication mechanisms and advanced access control, enable secure integration with master systems. Additionally, remote configuration, diagnostics and software update functions help to reduce the maintenance costs of distributed installations.

Version v4 has been enhanced to support M-Bus devices and an optional wM-Bus interface, enabling the integration of

electricity, heat, water and gas meters. The device supports automatic detection of M-Bus devices, configuration of communication addresses and selective data sharing with host systems. Thanks to its combination of advanced communication functions, Smart Metering support and local data processing, the MTX-2050 v4 provides a versatile platform for modern telemetry, IoT and industrial systems.

Resources:

- 100Base-TX/10Base-T Ethernet port with auto MDI/MDI-X
- Isolated RS-232 or RS-485 serial port
- Isolated RS-485 serial port
- 4 binary inputs/2 configurable binary outputs
- USB-C port for local configuration and programming
- Internal flags and registers
- Remote firmware update (FOTA)
- Data logger supporting a microSD card
- Option to solder in a MIM card
- Slots for 2 SIM cards (2G/4G network redundancy)
- RTC clock with external synchronisation functions
- Integrated interface for microSD/SDHC/SDXC cards up to 256 GB

Functionality:

- Communication standards: 2G/LTE packet transmission, SMS, Ethernet, MQTT (Publisher)
- Network functionality: IPv4, port forwarding, NAT, DHCP client/server/relay
- Data management and visualisation via WebGUI
- Secure Shell (SSH) access
- Secure remote software updates
- Redundant rootfs partitions
- Protocol converter (supports Modbus RTU, Modbus TCP, UDP, MQTT)
- Access to remote resources via standard Modbus RTU and Modbus TCP protocols



4DI/2DO



DIN RAIL

RS-485

RS-232/485

4G


M-Bus /
M-Bus
option

- Packet routing and Multimaster support in Modbus mode
- Data transmission from external devices connected to the serial port, Ethernet port, M-Bus port and wM-Bus
- Mapping of external resources (mirroring) for event detection and triggering
- MT2MT buffer for direct data sharing between other MT telemetry modules
- Multicast in transparent mode
- Data transmission to an MQTT broker
- Zabbix support
- Data logger with recording to a microSD card
- Support for the SNMP v2c/v3 protocol (including SNMP Trap and query functionality). The module acts as an SNMP agent – a device that can be queried by a server and can send events spontaneously
- Remote configuration and programming via the 2G/LTE network
- Event-based transmission triggered by a change in the state of a binary input/output or the internal flag status
- Configurable access controls – list of authorised IP addresses and telephone numbers
- Configurable SMS messages triggered by alarms, with dynamic values inserted into the SMS text; support for symbolic names and macros
- Firewall support (iptables)
- Support for multi-level user permissions to ensure the security of transmitted data
- DIN rail mounting
- Built-in advanced self-diagnostics
- Screw terminals
- User-friendly configuration tools and communication driver (support for OPC and RDB) – MTDataProvider

Security:

- Available VPN security mechanisms: OpenVPN, STRONGSWAN (IPsec)
- RADIUS (Remote Authentication Dial-In User Service)
- 802.1X-based port authentication
- Private keys stored in TPM2
- SNORT intrusion detection and prevention

General

Dimensions (L x W x H)	105 x 86 x 59 mm
Weight	200 g
Mounting method	DIN Rail 35 mm
Operating temperature	-30° to +65 °C
Ingress protection rating	IP20
Humidity	up to 95 %, non-condensing
Status indicators	15 green, 1 red

System

Processor	Cortex A5 500 MHz
Operating system	Linux
Random access memory (RAM)	256 MB
Internal memory (FLASH)	512 MB

Modem

Type	SIMCOM A7672G
Region	Global
2G band	850/900/1800/1900 MHz
LTE band	Band 1, 2, 3, 4, 5, 7, 8, 12, 13, 18, 19, 20, 25, 26, 28, 38, 39, 40, 41, 66
External antenna connector	SMA-F 50 Ω

wM-Bus interface

Type	EFR32ZG23
Region	Europe
Communication type	S,T lub C
Security	Profiles A and B (Mod 5 and Mod 7 encryption)
Standard	OM5v4.5.1, EN 13757-3/-4/-7
Frequency	868,95 MHz
Receiver sensitivity	> -108dBm
wM-Bus antenna connector	SMA-F 50 Ω
Number of supported devices	up to 20

M-Bus Port

Port type	M-Bus
Maximum number of devices	4
Data transfer rate	300 to 9600 Bods
Standard load per peripheral device	do 1,5 mA

Binary inputs IQ1, IQ2, I3, I4

Input voltage range	0–58 V
ON state (I)	>8 V @ 2 mA
OFF state (O)	<5 V @ 1,5 mA
Maximum pulse frequency	2 kHz
Minimum detectable pulse width	0,25 ms

Binary outputs IQ1, IQ2

VQ+ supply voltage range	7–53 V		
Recommended load current	0,2 A		
Maximum load current	0,5 A		
Current limit (max.)	1,5 A		
Voltage drop (VQ+ - IQx)			
@0,2 A	<1,9 V		1,25 V (typ.)
@0,5 A	<3,4 V		1,9 V (typ.)

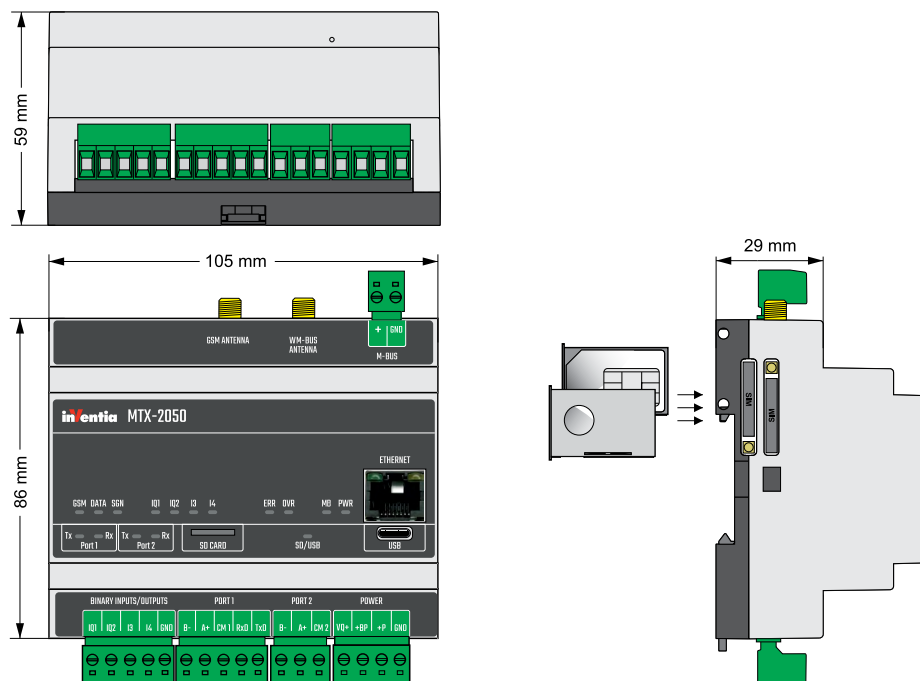
Interfaces

Ethernet	1 x RJ45
Serial ports	1 x RS-232/RS-485 isolated combo 1 x RS-485 isolated
USB interface	USB 2.0, USB-C
SD card slot	micro-SD/SDHC/SDXC up to 256 GB

Power supply

Direct current DC 12V/24V/48V	10,8–53 V		
Input current (@ 25°C)	Idle	Active	Max.
12 V DC	0,15 A	0,33 A	2,00 A
24 V DC	0,07 A	0,16 A	1,00 A
48 V DC	0,04 A	0,09 A	0,50 A

Drawings and dimensions (all dimensions in millimeters)



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