- Internal 4G LTE Cat. 1 or Cat. 4 modem with 2G/3G Fallback
  - » Penta-Band LTE: 1, 3, 8, 20, 28 (700, 800,900, 1800, 2100 MHz),
  - » Dual-Band UMTS/HSPA+: Bands 8, 1 (900, 2100 MHz),
  - » Dual-Band GSM 900 and 1800 MHz
- Ethernet port: 100Base-TX/10Base-T with auto MDI/MDI-X
- Configure using dedicated MT-Manager software, WebGUI interface and SSH
- Embedded WebGUI interface, with data visualization functionality
- 2 serial ports to communicate with external devices:
  - » isolated RS-232/485
  - » non-isolated RS-485
- Programmable logic controller (PLC)
- 4 configurable binary inputs/outputs
- Data logger with 0,1 s resolution (microSD card support)
- Protocol converter (supports Modbus RTU, Modbus TCP, UDP)
- Built-in Modbus Master and Slave functionality
- Modbus packet routing
- SNMP v2c/v3 and SNMP Trap protocols support
- Diagnostic LEDs
- Advanced self-diagnstic with watchdog
- Built-in event processor for data rules transmission
- SMS gateway

- Optional external uninterrupted power supply (UPS)
- Remote configuration, programming, diagnostics and firmware upgrade via 2G/3G/LTE network
- Optional MIM card
- Power supply 9-48 VDC
- Real time clock (RTC)
- Industrial design, DIN rail mounting, screw terminal blocks
- LTE Rx auxillary antenna to improve signal reliability and quality

MTX-2050 module has been designed for wireless integration over 2G/3G/LTE network of various remote devices (eg. measuring units, PLC controllers, I/O stations, operator panels) equipped with serial port RS-232, RS-485 and Ethernet port.

With compact, robust design, attractive technical features and easy to use configuration tools, the MTX-2050 gateway is an optimal solution for demanding wireless telemetry, control, diagnostic, surveillance and alarm systems. Module is equipped with LTE modem and optionally can be produced with MIM (Machine Identification Module) replacing or backing-up standard SIM card. It can be powered from a wide range DC voltage sources (9-48 V).

MTX-2050 can be used as wireless gateway for Ethernet and serial port, but it can also play a role of local Master querying periodically an external device for user defined recourses. In such case MTX-2050 creates mirror of the external resources in the memory and detects alarms, state changes and fulfilled logic conditions incorporating raw and calculated values. Data are transmitted via 2G/3G/LTE network according to user defined rules. Data may be logged with precise timestamp on micro-SD card according to configured schedule or on event.

Resources:

- Ethernet port 100Base-TX/10Base-T with auto MDI/MDI-X
- Isolated RS-232 or RS-485 serial port
- Non-isolated RS-485 serial port
- 4 configurable binary inputs/outputs
- USB-C port for local configuration and programming
- Internal flags and registers for user application program

- Firmware Over The Air (FOTA)
- Data logger supporting micro-SD card
- Option of soldered MIM card
- RTC with external synchronization functions
- Integrated interface for micro-SD/SDHC/SDXC cards up to 256 GB

Functionality:

- Transmission standard: 2G/3G/LTE packet transmission, SMS, Ethernet
- Network functionality: IPv4, port forwarding, NAT, DHCP client/server/relay
- WebGUI management and data visualization
- Secure Shell (SSH) access
- Secure remote firmware update
- Robust dual rootfs partition layout
- Protocol converter (supports Modbus RTU, Modbus TCP, UDP)
- Access to remote resources using standard protocols MODBUS RTU and MODBUS TCP
- Packet routing and Multimaster support in MODBUS mode
- Transmission of data from external devices connected to serial and Ethernet port
- External resources mapping (mirroring) for event detection and triggering
- MT2MT buffer for direct data sharing between other MT telemetry modules
- Multibroadcast for transparent mode
- SNMP v2c/v3 protocol support (included traps and polling functionality). Module operates as a SNMP agent – device which can be polled by server and can send unsolicited
- Zabbix support

WARRANTY 3 YEARS

PLC

MIM option

SMS

4DI/DO

DIN RAIL

RS-485

RS-232/485

4G

- Data logger recording on microSD card with 0.1 s res.
- Programmable control logic using I/Os, timers, counters, flags and register for triggering events (data transmission/logging, SMS transmission, e-mail transmission, setting output and internal register etc.
- Configurable SMS messages triggered by alarms and scheduled Dynamic Fields in SMS text, support for symbolic names and macros
- Event based transmission (unsolicited messaging) triggered by change of: binary input/output state, internal flag state, logic condition.
- Remote configuration and programming via 2G/3G/LTE network
- Configurable access security – list of authorized IPs and telephone numbers
- Firewall support (iptables)
- Support multi-level user permission to ensure the security of data transmission
- DIN rail mounting
- 9-48 VDC Power supply
- Built-in advanced auto-diagnostics
- Screw terminal blocks
- User friendly configuration tools and communication driver (OPC and RDB support) - MT DataProvider suppport
- Simple Network Time Protocol (SNTP)

Security:

- Multiple VPN network security mechanisms: IPSec, OpenVPN
- RADIUS (Remote Authentication Dial-In User Service)
- 802.1x port-based authentication

General

Dimensions (L x W x H)	105 x 86 x 59 mm / 4,13 x 3,39 x 2,31 in
Weight	200 g / 0,44 lb
Fixing	DIN Rail 35 mm
Operating temperature	-30° to +65 °C
Protection class	IP 40
Humidity	up to 95 % non condensing
Status indicators	17 green and 1 red indicators

System

CPU	Cortex A5 500 MHz
Operating system	Linux
Main memory (RAM)	256 Mbytes
Internal memory (FLASH)	512 Mbytes
Program	65535 lines, 10240 internal registers available for users, (backed-up in the NVRAM)

Modem

Type	Thales ELS61-E Cat. 1 or ELS81-E Cat. 4 (option)
Frequencies and bands	
2G	Dual-Band GSM 900 and 1800 MHz
3G	Dual-Band UMTS/HSPA+: Bands 8, 1 (900, 2100 MHz)
LTE	Penta-Band LTE: 1, 3, 8, 20, 28 (700, 800,900, 1800, 2100 MHz)
Main antenna	SMA-M 50 Ω
Auxillary antenna	SMA-M 50 Ω

Interfaces

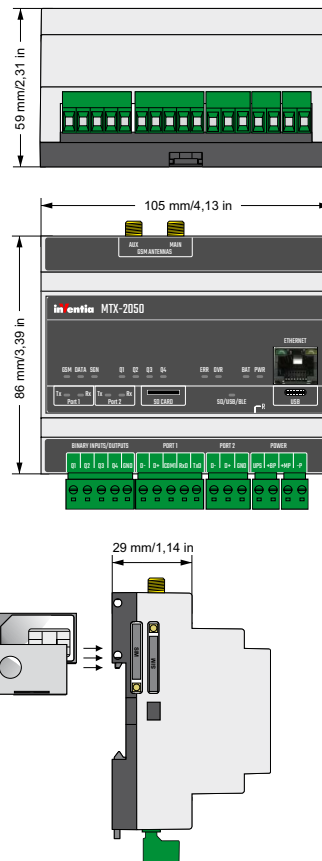|	
Ethernet	1 x RJ45
Serial	1 x RS-232/RS-485 isolated combo serial
	1 x RS-485 non-isolated serial
USB interface	USB 2.0 USB-C
SD card slot	microSD/SDHC/SDXC up to 256 GB

Power Supply

Direct Current DC	9-48 V DC
Input current	12 V DC, 0,15 A @ 25 °C 24 V DC, 0,07 A @ 25 °C 48 V DC, 0,034 A @ 25 °C

Binary Inputs/Outputs Q1-Q4

Input voltage	0-24 V DC
Input resistance	5 kΩ
Input voltage ON (1)	>9 V
Input voltage OFF (0)	<3 V
Maximum input frequency	500Hz
Output type transistor	"open drain" type
Recommended mean current for a single Output	100 mA
Maximum current for a single Output	250 mA
Output Resistance in ON state	500 mΩ
Wire size	0,25-2,5 mm² (22-14 AWG) solid or stranded copper wire rated
Terminal screw torque	0,5-0,6 Nm

Drawings and dimensions

MTX-2050

INVENTIA employs certified Quality Assurance System ISO 9001:2015

TÜV SÜD