

# MIVO CONNECT

## Meter Collection Cabinet IC21

IC21 including the MIVO Connect LTE (4G/5G) and one MIVO M-Bus Extender 256 allowing for even faster installations for up to 288 M-Bus meters. The cabinet is made from ABS impact resistant plastic and conforms to IP65. The central unit is installed with automatic fuse.

### **MIVO CONNECT DATA GATEWAY LTE**

MIVO Connect Data Gateway LTE (4G/5G) is a M-Bus Gateway for data collection from up to 2000 meters or sensors. The data is collected using internal or external interfaces which include M-Bus, M-Bus over IP or Modbus RTU/TCP.

The collected data can be communicated to one or more user defined services, these include cloud-based services and local building management systems.

To prevent data loss in case of network or power failures the device contains local storage. The device also features router functionality and a user-friendly web interface to simplify the administration and troubleshooting process.

### **MIVO M-BUS EXTENDER 256**

The MIVO Connect M-Bus Extender 256 is an add-on module for the MIVO Connect Data Gateway and expands the system's M-Bus capacity with an additional 256 M-Bus loads.

The system is easily expanded with the included expansion cable and can be forwarded with up to 10 M-Bus or Wireless M-Bus units.

The module indicates errors and measures nominal bus voltage and current for easier diagnostics both visually and via the MIVO Connect Data Gateway.



# TECHNICAL SPECIFICATION

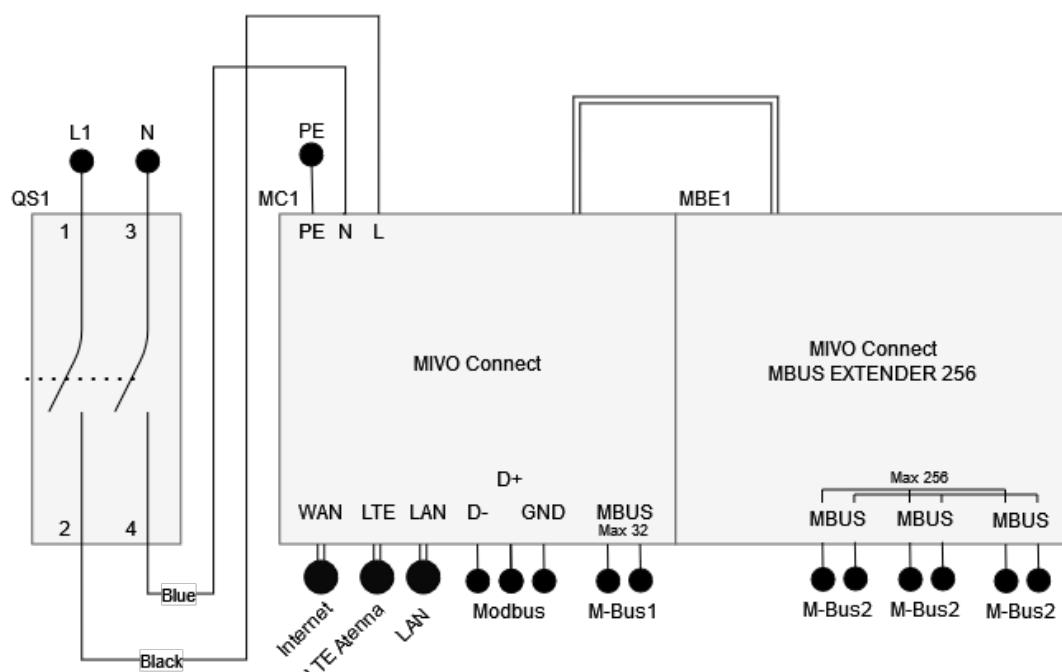
## MIVO CONNECT DATA GATEWAY LTE / MIVO M-BUS EXTENDER 256

See separate data sheet.

### METER COLLECTION CABINET IC21

Dimension	214x303x118 mm
IP-class	IP65
IK-Class	IK08
Material	Plastic (ABS)
Nr of cable entries	12
DIN-Modules	13
Room for additional expansions	Yes (1)
Included accessories	Magnetic mount LTE Antenna, 5x cable rubber grommets

Circuit diagram:



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## SMART DATA GATEWAY LTE-M 4G/5G

MIVO Connect Smart Data Gateway collects data from up to 2000 meters or sensors. The data is collected using internal or external interfaces which include M-Bus, M-Bus over IP or Modbus RTU/TCP.

The collected data can be communicated to one or more user defined services, these include cloud-based services and local building management systems.

To prevent data loss in case of network or power failures the device contains local storage. The device also features router functionality and a user friendly web interface to simplify the administration and troubleshooting process.

The built in expansion bus provides an easily expandable and future proof solution.

### Modern web interface for easy installation, configuration, and troubleshooting

In the web interface you can read data, check connections, and retrieve historical data.

### Flexible scheduled reports for one or more external systems

Each scheduled export is entirely individual and can be configured with different meters, delivery formats, data resolution and reporting intervals. The intelligent data collection engine optimizes data in the most efficient way.

### Built-in M-Bus decoding for easy integration

MIVO Connect Smart Data Gateway has a complete M-Bus decoder that has been tested for many years in operation with most meter manufacturers on the market. When delivering data to higher-level systems, meter readings can be normalized to the desired unit and scaling, simplifying integration.

### Delivery of meter readings via standardized transport protocols

The device supports the most common transport protocols: HTTP(S), FTP(S), MQTT, and has predefined report formats and is regularly expanded with new formats.



### Easy integration with local control systems

The Device can integrate with DUCs ( Data Utilization Center) via M-Bus over IP, ModBus RTU, and ModBus TCP. The built-in web interface makes it easy to configure and generate Modbus mappings and associated Excel documentation.

### Internal storage safeguards against data loss

The internal storage protects against data loss in case of internet connection issues or potential data loss in higherlevel systems.

### Expandable, upgradeable and future-proof

MIVO Connect Smart Data Gateway features a smart modular system, allowing the device to be expanded with new physical interfaces or software functions as future needs arise.

## TECHNICAL SPECIFICATION

### Mechanics

Dimensions (w x h x d)	70 x 85 x 57 mm (4 DIN-modules)
Montage	35mm DIN
Weight	200g
Protection class	IP20

### Environmental

Storage temperature	-25 to +55 C
Operating temperature	-25 to +55 C
Operating humidity	5 till 90% Non-Condensing
Max. operating altitude	2000m
Pollution degree	2
Operating environment	Indoors

### Power

Input voltage	230 VAC ( $\pm 10\%$ ), 50Hz
Power consumption (max)	<5W (20W)
Overtoltage category	CAT 3 (OVC III)
Connection terminals	Spring loaded terminals 0.75 - 1.5mm <sup>2</sup>

### Ethernet - 2st (WAN / LAN)

Connection	RJ45
Speed	10/100MBit
Router functionality	Yes

### LTE \*

Typ	LTE Cat-M
SIM	Mini-SIM (2FF)
Connection	SMA

### M-Bus Master

Standard	EN 13757
Speed	300/2400/9600 Baud
Nominal voltage	30V
Maximum output current	85mA
Unit loads	32**
Maximum cable length	1000m
Electrical isolation	1500V

### RS485 (Modbus RTU)

Type	Isolated
Speed	9600 to 115200 Baud
Termination	None
Biasing	Weak (1kOhm)
Maximum number of nodes	256
Connection	Spring Loaded Terminals (0.75 - 1.5 mm <sup>2</sup> )

### Other Connections

Expansion bus	MIVO-Link
USB Connection Front	USB-C
USB Connection Bottom	USB-A

### Other

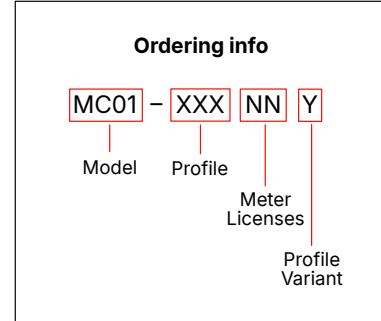
Maximum Number of Sensors	2000
Collecting Period	1 min - 24h
Storage Examples **	
- 100 sensors, hourly values -> 20 years	
- 1000 sensors, hourly values -> 2 years	
- 2000 sensors, hourly values -> 1 year	

### Approvals

EMC	EN 61000-6-2, EN 61000-6-3
RED	EN 301489-1, EN 301489-7
Safety	EN 62368-1 (OVC III)
Environment	RoHS, WEEE

\* Optional

\*\* Can be increased with expansion modules.



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## M-BUS EXTENDER 256

An add-on module for the MIVO Connect Smart Data Gateway and expands the systems M-Bus capacity with an additional 256 M-Bus loads.

The system is easily expanded with the included expansion cable and can be forwarded with up to 10 expansion units.

The module indicates errors and measures nominal bus voltage and current for easier diagnostics both visually and via the MIVO Connect Smart Data Gateway.



## TECHNICAL SPECIFICATION

### Mechanics

Dimensions (wxhxd)	70 x 85 x 57 mm (4 DIN-modul)
Montage	35mm DIN
Weight	200g

### Environmental

Storage temperature	-25 to +55 C
Operating temperature	-25 to +55 C
Operating humidity	5 to 90% non-condensing
Max.operating altitude	2000m
Pollution degree	2
Operating environment	Indoors

### Power

Input voltage	Via expansion port
Power consumption (max)	<5W (20W)
Oversupply category	CAT 3 (OVC III)
Connection terminals	Spring loaded terminals

### M-Bus Master

Standard	EN 13757
Speed	300 / 2400 / 9600
Baud Nominal voltage	40V
Maximum output current	500mA
Unit loads	256
Maximum cable length	5000m
Electrical isolation	1500V

### Other

LED	Status, Error, TX, RX
Error codes	Short circuit, Overload, No load
Accuracy current measurement	3% +1mA
Maximum number of expansion modules	10

### Approvals

EMC	EN 61000-6-2, EN 61000-6-3
Safety	EN 62368-1 (OVC III)
Environment	RoHS, WEEE