CMi – BOX

M-Bus Metering Gateway for Mobile Network

The CMi-Box is a flexible solution for collection of meter values which can be customized to meet each individual customer's needs. CMi-Box is easy to mount and install and is ready to use with any meter following the M-Bus standard protocol. The enclosure provides good protection and can be sealed for extra safety.

FLEXIBLE

CMi-Box can be customized to meet a wide range of customer needs. The product communicates with meters by the M-Bus or the wireless M-Bus protocol. It can be equipped with a CMi2110, an integrated Meter Connecticity Module, to communicate with head-end systems using the mobile network. CMi-Box is available with 24 V or 230 V power supply.

INTEGRATED M-BUS MASTER

CMi-Box can be equipped with an integrated M-Bus Master, which drives up to 8 wired M-Bus slaves.

WIRELESS M-BUS

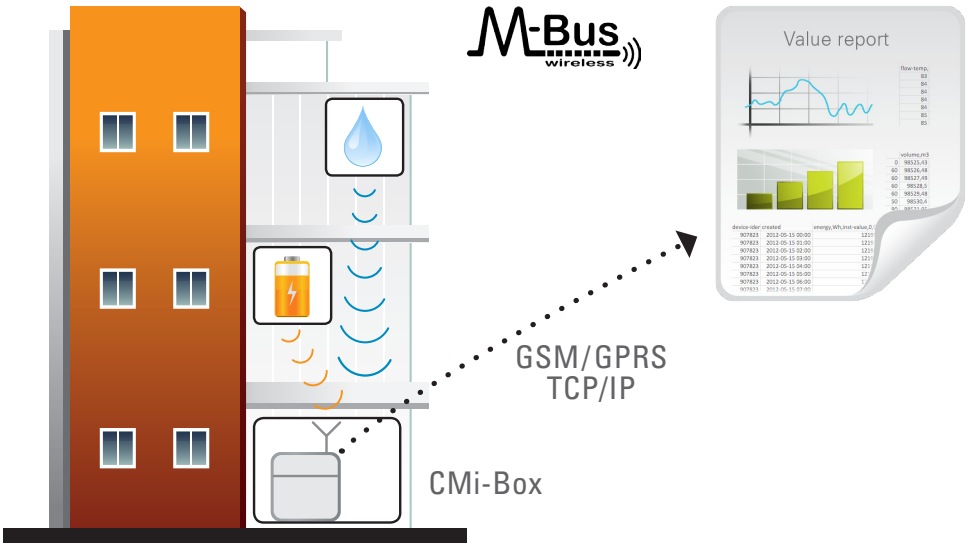
CMi-Box can be equipped with a wireless M-Bus Receiver to be able to communicate with meters using the wireless M-Bus protocol. All wireless M-Bus slaves within range can be automatically detected and configured for operation.

STANDARD OPEN PROTOCOLS

The standard open protocol design allows fast and easy integration into existing billing and reporting systems. Meter value reports can be delivered using FTP, HTTP and email. The email report feature prevents firewall and IT-structure implementation problems.

COST EFFECTIVE

The integrated solution reduces the amount of equipment necessary in field, which lowers both installation and initial setup costs. The quality and the number of options available serve to minimize the overall cost of the product over the course of its life-cycle.



Product	Art. No	Max. number of wired meters	Max. number of wireless meters	GSM/ GPRS	Storage of meter values	External antenna	Power supply	Slave port
CMi-Box Wireless M-Bus Int.antenna 24V	1100117	N/A	800[1]	No	No	No	12-35 VAC or 12-48 VDC	Yes
CMi-Box Wireless M-Bus Int.antenna 230V	1100118	N/A	800[1]	No	No	No	100-240 VAC	Yes
CMi-Box Wireless M-Bus Ext.antenna 24V	1100119	N/A	800[1]	No	No	Yes	12-35 VAC or 12-48 VDC	Yes
CMi-Box Wireless M-Bus Ext.antenna 230V	1100120	N/A	800[1]	No	No	Yes	100-240 VAC	Yes
CMi-Box Wireless M-Bus GPRS Int.ant 24V	1100121	7	128[2] (rec.)	Yes	Yes	No	12-35 VAC or 12-48 VDC	No
CMi-Box Wireless M-Bus GPRS Int.ant 230V	1100122	7	128[2] (rec.)	Yes	Yes	No	100-240 VAC	No
CMi-Box Wireless M-Bus GPRS Ext.ant 24V	1100123	7	128[2] (rec.)	Yes	Yes	Yes	12-35 VAC or 12-48 VDC	No
CMi-Box Wireless M-Bus GPRS Ext.ant 230V	1100124	7	128[2] (rec.)	Yes	Yes	Yes	100-240 VAC	No
CMi-Box Wireless M-Bus GPRS 2 x Int.ant 24V	1100174	7	128[2] (rec.)	Yes	Yes	No	12-35 VAC or 12-48 VDC	No
CMi-Box Wireless M-Bus GPRS 2 x Int.ant 230V	1100156	7	128[2] (rec.)	Yes	Yes	No	100-240 VAC	No
CMi-Box Wired M-Bus GPRS Ext.ant 24V	1100150	8	0	Yes	Yes	Yes	12-35 VAC or 12-48 VDC	No
CMi-Box Wired M-Bus GPRS Ext.ant 230V	1100149	8	0	Yes	Yes	Yes	100-240 VAC	No

1: Please note that CMe3100 currently supports up to 256 slaves (actual number determined by license used)
2: When using the WMBUS GPRS solution, 128 is the recommended maximum number of slaves to use

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CMi5110

Wireless M-Bus Receiver

CMi5110 is a wireless M-Bus Receiver, integrated in a CMi-Box, which can be used by any existing wired M-Bus solution or together with Elvaco CMe Series products. CMi5110 communicates with meters via the wireless modes S1, T1 and C1, and is compatible with all widely used wireless M-Bus meters on the market. The product handles up to 800 meters, which can be individually secured by encryption keys.

AUTOMATIC INSTALLATION

By enabling the CMi5110 Automatic installation mode, all wireless M-Bus meters within range can be automatically detected and configured for operation. Installed wireless M-Bus meters can later be edited and configured to use encryption for secure connections.

SIMPLE CONFIGURATION

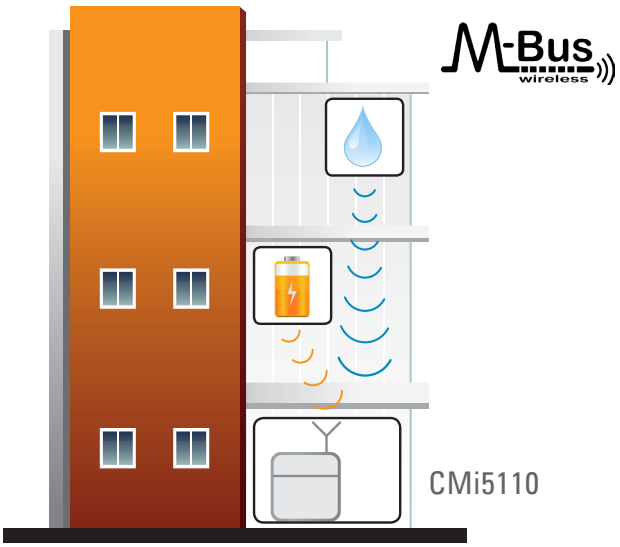
CMi5110 can easily be configured by sending it standard M-Bus commands.

USE IN EXISTING M-BUS SYSTEM

All installed wireless M-Bus meters are easily read by sending standard M-Bus commands to the CMi5110 M-Bus slave port. This functionality makes the CMi5110 fully compatible with any existing wired M-Bus solution.

FUTURE PROOF

The CMi5110 can be remotely configured using standard M-Bus commands. When new M-Bus wireless modes or M-Bus standard updates are available, the firmware can be remotely updated to meet new market demands. By using CMi5110 configured in OMS mode together with CMe Series products, a fully compliant MUC concept can be achieved.



Mechanics

Protection class	IP20
Dimensions (w x h x d)	84 x 37 x 12 mm (CMi-Box: 141 x 157 x 44 mm)
Weight	15 g (CMi Box: 250 g)
Mounting	In CMi-Box module slot

Electrical connections

Power supply	Board connector 2 mm
M-Bus slave port	Screw terminal 0.5-2.5 mm²
Antenna	Built-in, or optionally external via SMA-f

Electrical characteristics

Nominal voltage	230 V power supply: 100-240 VAC, 24 V power supply: 12-35 VAC or 12-48 VDC, Internal power supply: 4 VAC
Frequency	50/60 Hz
Power consumption	<0.2 W
Installation category	CAT 2

Environmental specifications

Operating temperature	-20 to +55 °C
Operating humidity max	80 % RH at temperatures up to 31 °C, decreasing linearly to 50 % RH at 40 °C
Operating altitude	0-2000 m
Pollution degree	Degree 2
Usage environment	Inside of a CMi-Box
Storage temperature	-40 to +85 °C

M-Bus

Interfaces	Wireless M-Bus Receiver
Maximum number of M-Bus devices (software limit)	Up to 800
Decryption	Yes

Wireless M-Bus Receiver

M-Bus standard	EN 13757-4
Wireless M-Bus modes	S1, T1, C1
Maximum number of wireless M-Bus devices	800
Radio frequency band	868 MHz
Encryption	AES-128
RF sensitivity	-105 dBm
OMS compliant	Yes

M-Bus slave interface

M-Bus standard	EN 13757
M-Bus baud rate	300 and 2400 bit/s
Nominal voltage	21-42 VDC
Power consumption	1T/1.5 mA
M-Bus search modes	Primary, secondary, enhanced secondary
M-Bus default address	251

Approvals

EMC	EN 61000-6-2, EN 61000-6-3
Safety	EN 61010-1, CAT 2

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