Smart data concentrator

Smart Metering can be easy and intuitive: the data concentrators of the MUC.easy^{plus} series in a compact design, with various meter interfaces and an intuitive and flexible operating software facilitate the automatic acquisition of consumption and load profiles in your property. Real plug'n'play saves your time and effort.

Integral functionality

MUC.easy^{plus} serves as a powerful data concentrator. It reads out data autonomously from sensors and utility meters for all types of media. The incoming data is processed, stored and provided automatically. The MUC.easy^{plus} comes with an M-Bus, wM-Bus and an RS-485 interface. M-Bus and wM-Bus are implemented according to EN 13757. The wired master can deal with up to 80 unit loads on the bus. The wM-Bus receiver supports the OMS specification. The RS-485 interface can be used directly for i.e. IEC 62056-21 (61107) protocol or other meters or measurement systems. Other serial protocols are also available.

The integrated software for meter reading is very comprehensive. All types of meters on the market which are compliant to EN 13757 can be read out without extensive configuration. The values, their units and meta data are interpreted automatically and are available at the MUC.easy^{plus}.

Your automated metering system can be connected via the integrated Ethernet interface or via an integrated modem for mobile networks (4G or NBIoT).

Compact design

The very compact design and the power of the MUC.easy^{plus} are unique and one of its strengths. With a modular with of only 4 units it fits in almost every switching cabinet. The power supply is already included.

Smart data management

MUC.easy^{plus} supports different XML data formats. So, it is compatible to many systems for automated meter reading (AMR) and energy data management (EDM). It is also possible to generate CSV data, the most general data format to exchange data between different systems. For data bases and cloud connectivity a JSON format is at your disposal. The export interface has been

extended by a scripting system. This allows the customer to use a versatile tool to individualize the data export even more and to make it more flexible.

MUC.easy^{plus} uses services like TCP, HTTPS, FTPS, SFTP, MQTT or email communication for transferring the data to a remote system and can be secured by VPN if necessary. An access for requesting the log data can still be done via FTP(S). The devices come with 4 GB memory for local data storage.

The MUC.easy^{plus} has a so-called system meter, which offers monitoring or logging system states like in addition to the other meter values. For a better fault analysis, the time of the last readout is visualized. With the MUC.easy^{plus}, an index column now provides a quick overview of the amount of parameterized / configured meters.
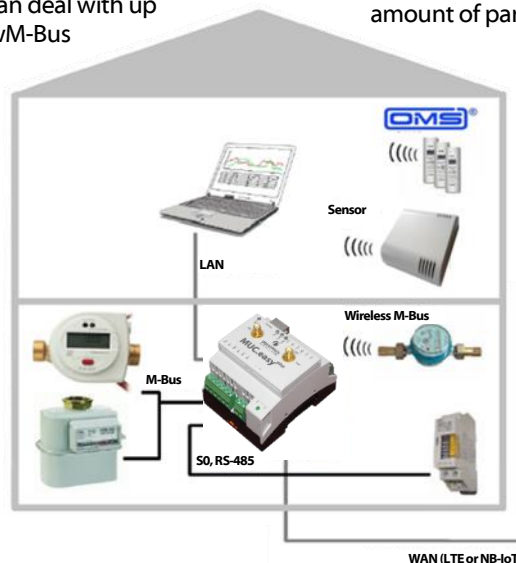
Easy operation

The MUC.easy^{plus} has an integrated web server. This offers the possibility to configure the whole device by simply using a common web browser. There is no need for additional software.

The intuitive and clear navigation on the web site enables the user a fast set-up of the devices even without deep previous knowledge. Usually the standard configuration as supplied to the customer is sufficient to read out the meters and the sensors for gathering the data.

The web site also facilitates service and maintenance of the MUC.easy^{plus}. There is status information available, like warnings for communication errors. It also eases remote access.

Access rights to this web site can be set for different users. This allows customization or role based views and also meets demands regarding privacy.

We are also offering customization of this web site. So, additional functions can be integrated into the MUC.easy^{plus} depending on your needs.

Transparent mode

The transparent mode enables the direct access to the M-Bus meters to parameterize them. For example, it is possible to set the primary address or the baud rate remotely from the PC.

Technical data MUC.easy^{plus}

General data

Supply voltage for internal power supply	90..260 VAC, 50..60 Hz, screw terminals
Power consumption	2 W (idle state), max. 10 W
Dimensions of housing	4 TE, 72 x 90 x 61 (W x H x D) in mm without antenna
Installation, protection class	DIN rail 35 mm, IP 20
Temperature range, humidity	-20..70 ° C, permanent and average value over 24 hours: 0..50 ° C, 0..95 % relative
Integrated web server	Configuration web site and local data presentation
Processor platform	ARM9-Core i.MX283, 454 MHz, 128 MB RAM
Operating system	Linux
Memory for local data storage	4 GB
Real time clock	Yes, buffering of up to 7 days, accuracy 20 ppm
Status indication	LEDs signaling power, status, activity and WAN information
Firmware update	Directly or via WAN (Internet) incl. integrity check and authentication
Configuration via WAN	Complete remote control via WAN (Internet), role-based rights

Metering

M-Bus interface	Compliant to EN 13757, up to 80 unit loads, search and parallel creation
Wireless M-Bus interface	AES decryption, auto-scan, compliant to OMS, modes S, T, C, C/T, External antenna, different frequencies available (preselect on order: 169 / 433 / 868 MHz)
Antenna connector for wM-BUS	SMA
Serial interface	RS-485, 32 devices, up to 250 kbps, two-wire, IEC 62056-21, SML, Modbus RTU
Ethernet interface	Modbus TCP
S0 pulse input	3 channels, IEC 62053-31
Digital output	1 digital output, 24 VDC
Number of meters	Ca. 5000 meters are supported logically

Communication

Ethernet interface	100 MBit, RJ45, support for OpenVPN
4G modem (LTE) (only for model 4G)	External antenna, slot for Micro-SIM, 4G (LTE Cat-1), 2G/3G fallback
NB-IoT modem (only for model NB-IoT)	External antenna, slot for Mini-SIM, LTE Cat-M1/Cat-NB1
Other modem technologies	On request
Antenna connector for LTE	SMA
WAN connection to server system (push)	TCP / HTTP connection (XML), optionally extensible
Security for WAN (server communication)	TLS, SSH, OpenVPN
E-Mail transmission (push)	XML data, CSV data optional, security options available
FTP / SFTP transfer (push, pull)	CSV data, security options available
Fallback routing (alternative connection on failure)	Declaration of further servers and communication paths
Further available protocols / interfaces	MQTT, JSON, InfluxDB

Variants

MUC.easy^{plus}	Standard	4G	NB-IoT
Article number (with 868 MHz)	500361	500367	500373
Integrated power supply for 230 VAC	x	x	x
M-Bus	x	x	x
wM-Bus, preselect on order: 169 / 433 / 868 MHz for S, T and C mode	x	x	x
S0 inputs	3	3	3
RS-485 and Ethernet	x	x	x
Modem		4G, 2G/3G fallback	NB-IoT
Digital output	1	1	1
Magnet mount antennas supplied	1	2	2
Option	Software extension Modbus TCP or BACnet/IP		

You can find the vast software functionalities on the information sheet: "Overview of the software features for our data concentrators (data loggers) and gateways".