METZ CONNECT

We realize ideas

# Compact controller and data logger –

## Simple control and energy monitoring in buildings, machines, and systems


Node-RED

C | Logline

# Compact controller & data logger

## Simple control and energy monitoring in buildings, machines, and systems

**The $EWIO_2$ device families are high-performance data loggers and mini controllers (see variants) with numerous interfaces for applications in energy monitoring and energy management systems in accordance with DIN EN ISO 50001, as well as for automation tasks in buildings, machines, and systems. Small control tasks can be created intuitively and easily with the graphic programming interface "Node-RED", integrated in the web server via drag & drop.**

In the process, prefabricated nodes are linked together to form program flows. Countless flows and nodes from different manufacturers and categories (palettes) can be loaded from the large Node-RED community into the development environment and used.

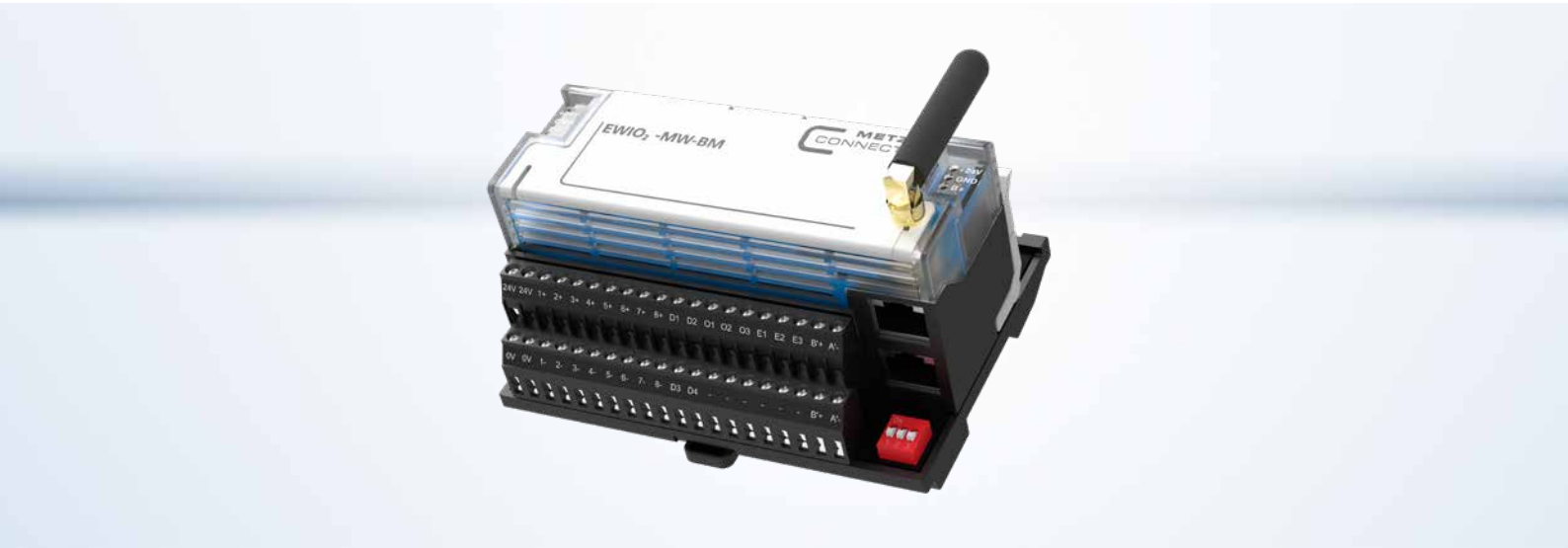
Two Ethernet-Ports with Daisy Chain function and the WLAN interface* are predefined for connection to a LAN or WLAN network and for daisy chaining several network participants. The $EWIO_2$ features the communication protocols Modbus TCP and BACnet/IP (*variants) for connection to the management (e.g., building management system) or automation level (e.g. controllers). Sensors and consumption meters of different media (e.g., energy, water, gas and heat) can be connected and read out via the interfaces M-Bus, S0, Modbus RTU and Modbus TCP. The consumption values of individual data points are stored in the database of the $EWIO_2$ with a time stamp.

This data can be sent (push) or read (pull) as a CSV file from the database via e-mail (SSL) or FTP (SFTP). The $EWIO_2$ can also be accessed via Modbus TCP, BACnet/IP, and TCP/IP, and the database queried. A REST-API interface enables direct access to the device from higher-level systems. The configuration, parameterization, and programming of the $EWIO_2$ is done by the web browser directly on the device, meaning no additional software is required.

The integrated digital and analog inputs and outputs of the $EWIO_2$-M are designed to connect sensors and actuators from different applications in building or industrial automation.

An integrated micro SD memory card extends the functionality of the $EWIO_2$-M and can be used for saving settings, data, and applications, as well as a boot drive. Optional expansion modules for converting of physical properties such as temperature or S0 pulses into M-BUS telegrams, the recording of S0 double tariff meters, or Modbus RTU I/Os create countless expansion possibilities for the system involving the $EWIO_2$-M. The $EWIO_2$ is available as a device variant with data logger function for energy control or management or as a pure small controller for building or industrial automation with or without WLAN connection.

* Device variant



# Benefits of data loggers

› Simple quick wiring with jumper plug for connection of extension/ function modules

› Buttons and LEDs for manual operation and display

› Multi-I/O with 24 digital and analog inputs and outputs

› Compact design for integration in an electrical installation distributor with 45 mm front height

› Minimal space requirement in the switch cabinet 125 mm width (7TE)

› Easy to install and maintain with hardware management, electronics detachable from termination unit without data loss

› WLAN interface for configuration and connection to a WLAN network (operating modes: infrastructure and ad-hoc)


› M-BUS interface with integrated level converter for 80 M-Bus loads

› Reading out M-Bus meters (parameterizable readout interval)


› 1 x Modbus RTU interface for 32 participants

› Controller with ARM-Cortex-A7 Dual Core processor 1Ghz, 512 MB RAM and 4 GB flash

› 2-port Ethernet switch with Daisy Chain function


› Simple programming and visualization of applications by Drag & Drop

## Benefits of Node-RED

› Web-based graphic programming interface

› Data flow orientated programming by Drag & Drop

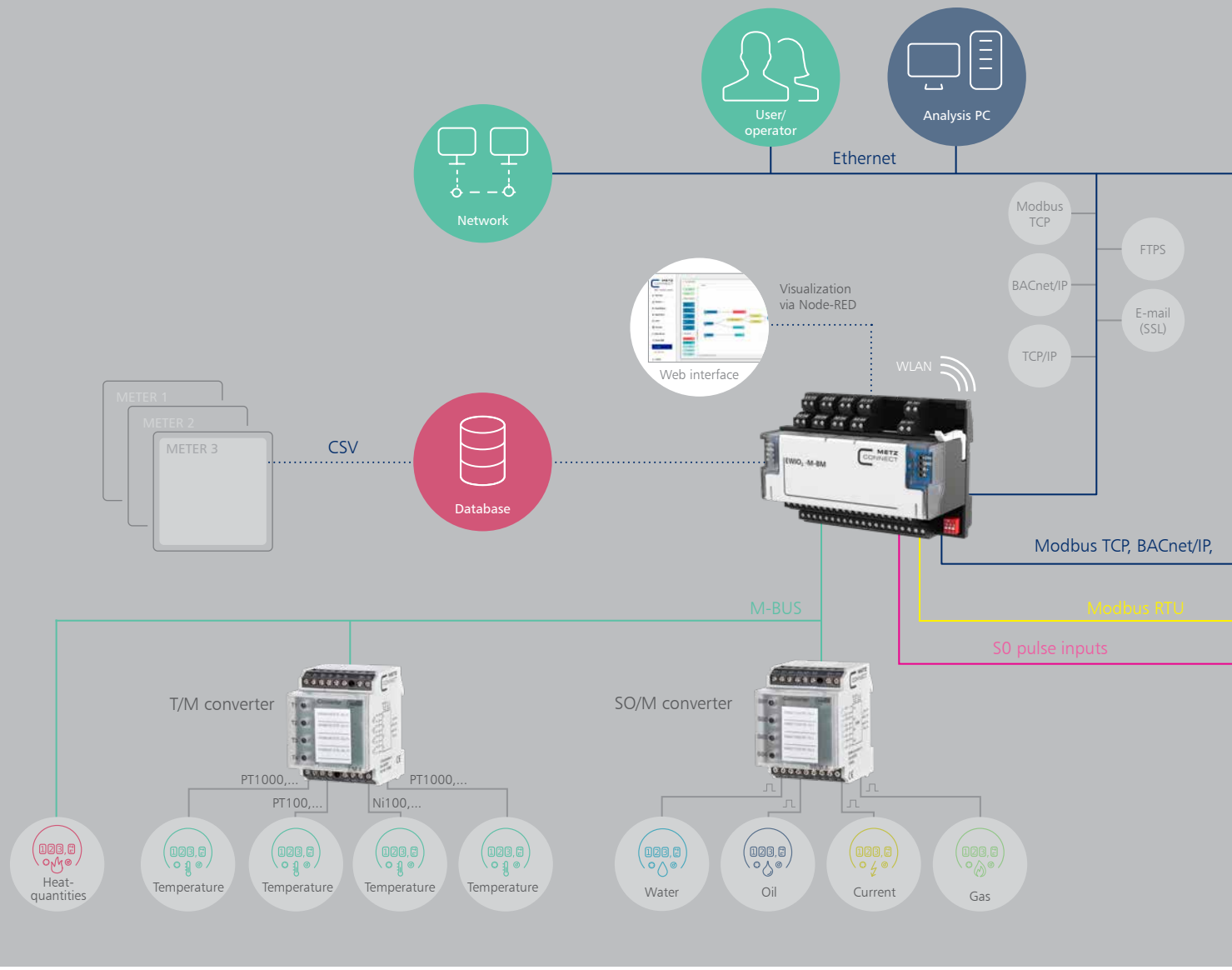
› Simple creation of dashboards

› Prefabricated nodes for interfaces and I/Os

› Countless freely available applications (flows) available in the Node-RED Community

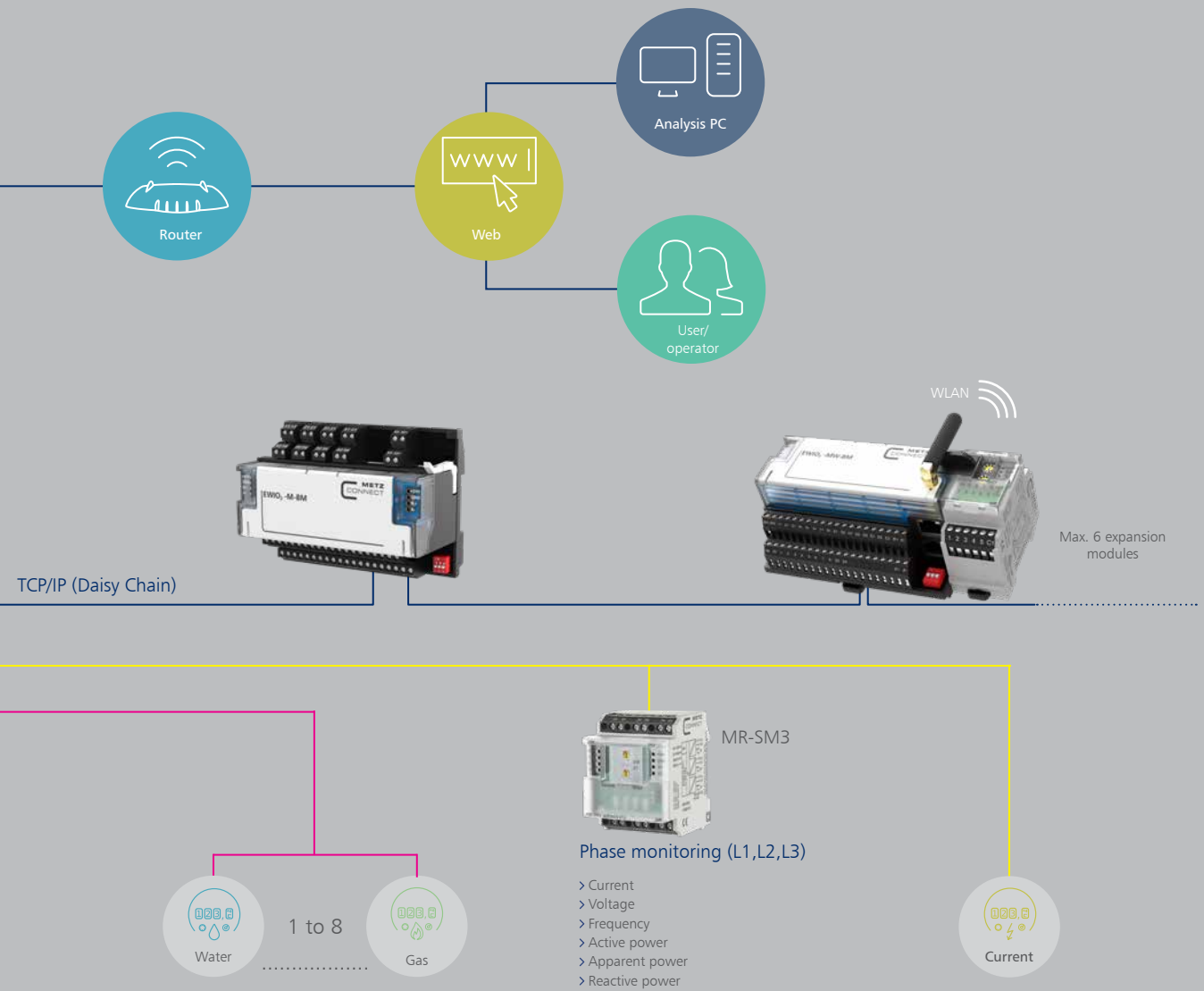
› Open Source, www.nodered.org

› Node-RED access using nodes to $EWIO_2$ I/Os and in the $EWIO_2$ configured meter data




# Product overview

| | | | |
|---|---|---|---|
| |  |  |  |
| Type | EWIO$_2$-M | EWIO$_2$-M-BM | EWIO$_2$-MW |
| P/N | 110930 | 110935 | 110931 |
| Data logger | x | x | x |
| Ethernet-I/O controller | x | x | x |
| M-Bus | x | x | x |
| Modbus | - | x | - |
| BACnet | - | x | - |
| WLAN | - | - | x |

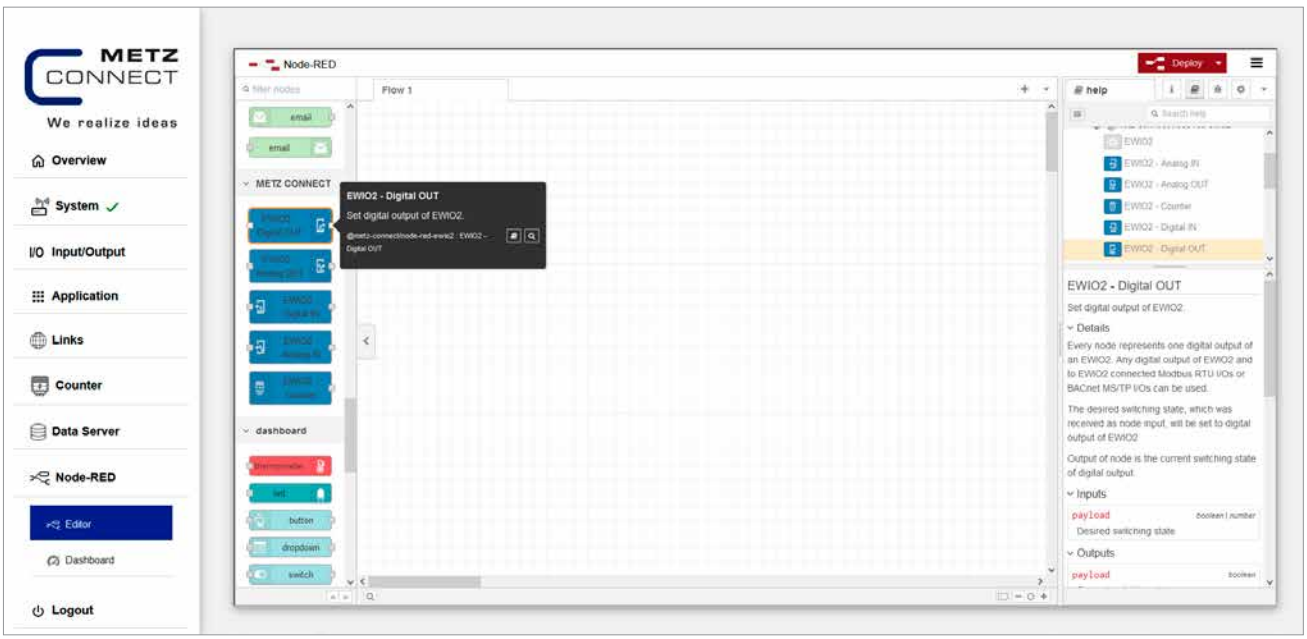



| | | | |
|---|---|---|---|
| |  |  |  |
| Type | EWIO$_2$-MW-BM | EWIO$_2$-BM | EWIO$_2$-W-BM |
| P/N | 110934 | 110904 | 110909 |
| Data logger | x | - | - |
| Ethernet-I/O controller | x | x | x |
| M-Bus | x | - | - |
| Modbus | x | x | x |
| BACnet | x | x | x |
| WLAN | x | - | x |

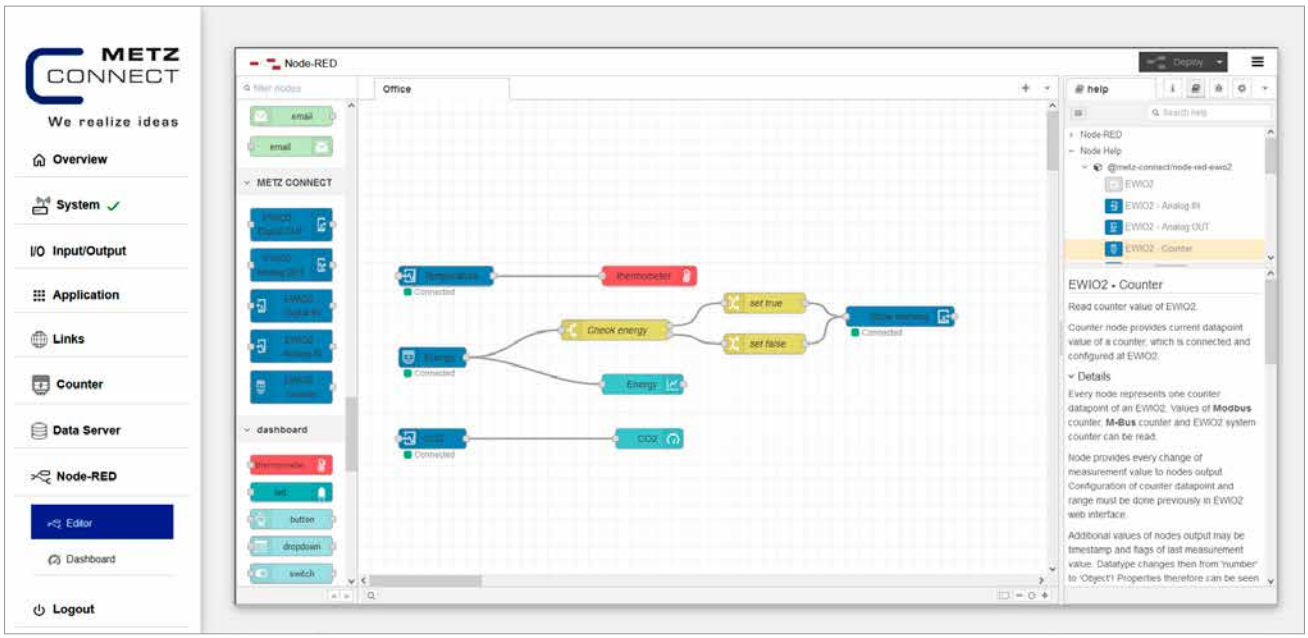
# Node-RED


## Node-RED Editor

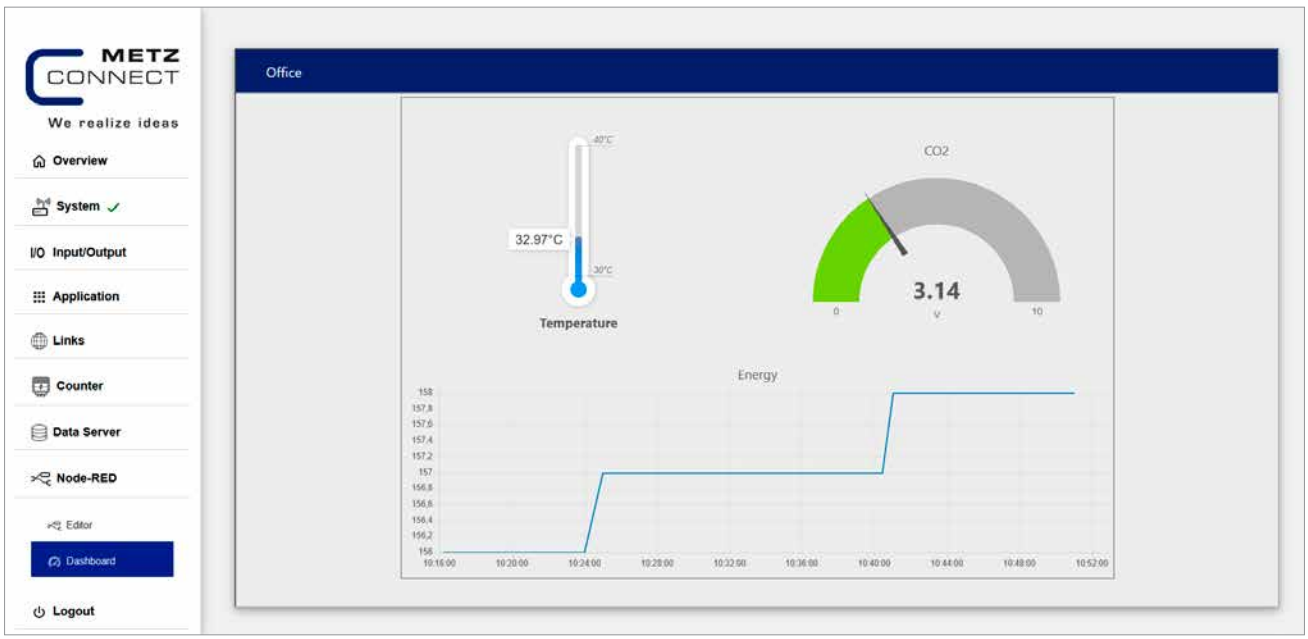
Web-based graphical programming interface



## Flow example
Data stream oriented programming via drag & drop




## Dashboard with Node-RED
Web-based creation of simple dashboards




www.metz-connect.com

# System and expansion components

## M-Bus modules and accessories

**S0/M converter 4x**
**S0/M-F converter 4x**

110556
11055670

4 S0 inputs

S0/M-Bus converter with 4 channels for recording pulses generated by energy meters via a standardized interface according to DIN EN 62053-31 class A

**T/M converter 4x**
**T/M-F converter 4x**

110562
11056270

4 temperature inputs

Temperature/M-Bus converter with 4 individually adjustable channels. Selectable characteristic curves for sensors: PT100, PT500, PT1000, Ni100, Ni1000, NTC1k8, NTC10k, NTC 20k, KTY10

**MYD-4M-IP65**

P/N 11056301

6 x M-Bus,
2 x voltage

M-Bus distributor in IP65 surface mount housing for structured M-Bus cabling. With removable spring clamp terminal blocks in the conductor color. For maintenance, uninterruptible current measurement is possible. The cover has quick-release fasteners and can be sealed.

6 x M-Bus, 2 x voltage

**Power supply unit NG4 24 V DC**
**Power supply unit NG4-F 24 V DC**

110561
11056170

In 110-240 V AC 50/60 Hz,
Out 24 V DC (SELV)/
700 mA; 16 W

The NG4 power supply unit provides a regulated DC voltage of 24 V DC/16 W for supplying devices from the METZ CONNECT I/O product family. The secondary voltage can be tapped via a plug-in terminal block or screw type terminal blocks

**M-Bus CT software**

www.metz-connect.com

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M-BUS CT
Configuration tool for
METZ CONNECT M-Bus components

**WLAN antenna**

P/N 11094830

Antenna with magnetic base
Cable length 3 m, SMA socket

# I/O expansion modules

MR-DI4
MR-F-DI4

1108341319
110834131970

4 digital inputs

MR-DI10
MR-F-DI10

1108311319
110831131970

10 digital inputs

MR-SI4
MR-F-SI4

11083913
1108391370

4 S0 inputs

MR-AI8
MR-F-AI8

11083213
1108321370

8 configurable temperature
or voltage inputs

MR-CI4
MR-CI4

1108401332
110840133270

4 current inputs 0-20 mA,
4 voltage inputs 0-10 V

MR-DO4
MR-F-DO4

1108361321
110836132170

4 relay outputs,
manual control level

MR-DOA4
MR-F-DOA4

110836132101
11083613210170

4 relay outputs

MR-TO4
MR-F-TO4

11083013
1108301370

4 triac outputs,
manual control level

MR-AOP4
MR-F-AOP4

1108371302
110837130270

4 voltage outputs 0-10 V,
manual control level

MR-AO4
MR-F-AO4

1108351302
110835130270

4 voltage outputs 0-10 V

MR-DIO4/2
MR-F-DIO4/2

1108331326
110833132670

4 digital inputs,
2 relay outputs, converter,
manual control level

MR-DIO4/2S
MR-F-DIO4/2S

10833132601
1083313260170

4 digital inputs,
2 relay outputs, normally open contact,
manual control level

MR-TP
MR-F-TP

11083813
1108381370

6 digital inputs,
2 two-phase relay outputs,
manual control level

MR-SM3
MR-F-SM3

11084113
1108411370

3 analog outputs (230 V)

For recording three 230 volt circuits current, voltage and power can be measured and determined

MR-LD6
MR-F-LD6

11084413
1108441370

6 analog inputs,
2 relay outputs

For monitoring levels and leakages, as well as switching of solenoid valves

MR-Multi I/O

P/N 11084313

4 digital outputs (photo MOS)
4 digital outputs (relay)
11 digital inputs
6 universal inputs (temperature/voltage)
1 analog input (current)
2 analog outputs (voltage)
1 S0 input

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