KYMASGARD® GW-wModbus

Modbus
W-Modbus

S+S REGELTECHNIK

**Gateway with W-Modbus module,
for radio-based connection to Modbus networks**

GW-wModbus

The gateway **KYMASGARD® GW-wModbus** with Modbus connection and W-Modbus module, in an impact-resistant plastic housing with quick-locking screws, for on-wall installation, serves as a transition between wired Modbus and radio-based W-Modbus.
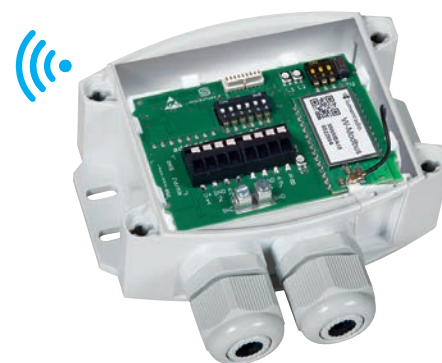
Up to 100 nodes can communicate with each other over a long distance (up to 500 m in a free field). An electrically isolated RS485 transceiver is used on the wired side (bus parameters can be set via DIP switches).

The simple **setup of the wireless network** and the connection stability enable existing systems to be easily expanded with wireless W-Modbus sensors. Even mixed configurations of wired and radio-based Modbus units can be easily integrated into existing network topologies via the W-Modbus gateway. For this purpose, there are two operating modes available depending on the unit type.

Gateway operation for connection to an existing Modbus topology or directly to a DDC/PLC, serves as a base station for W-Modbus sensors (max. 100 wireless nodes). **Node** operation enables a wired Modbus sensor to be connected wirelessly to a W-Modbus network (max. 1 wired sensor). The extended **Node Pro** mode (for "**GW-wModbusPro** unit type") is used to connect several wired Modbus sensors (max. 16 wired nodes).

The **innovative parametrisation** feature of the W-Modbus interface and the elimination of Modbus wiring means that the entire W-Modbus network can be pre-configured (pairing the W-Modbus nodes, parametrising the gateway). This means that the network can be installed and put into operation quickly and easily at the destination.

In **App mode**, the network setup can be checked and documented (PDF) using the **Lumenradio W-Modbus app** (Apple/Android). Other app functions also include installing firmware updates for the wireless module, changing unit names and recognising communication errors or duplicate addresses.
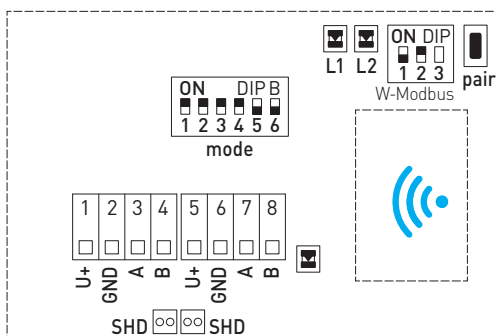
TECHNICAL DATA

Power supply:	24 V AC (± 20 %); 15...36 V DC
Power consumption:	< 1.0 W / 24 VDC; < 1.4 VA / 24 VAC
Communication:	**Modbus RTU** (RS485 interface for RTU cable) **and** **W-Modbus** (Wireless Modbus, AES-128 encrypted) frequency **2.4 GHz** ISM, transmission power **100 mW**
Range:	**max. 500 m** (open field) / approx. 50 - 70 m (inside buildings) between two wireless nodes
Wireless nodes:	max. 100 wireless nodess
Operating modes:	**Gateway** Basic function as a base station (DDC/PLC) **Node** Adapter function for max. 1 wired sensor **NodePro** Adapter function for max. 16 wired sensors (Type **GW-wModbusPro**) (can be changed via DIP switch)
Housing:	Plastic, UV-resistant, polyamide material, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016)
Housing dimensions:	108 x 78.5 x 43.3 mm (Tyr 3 without display)
Cable connection:	Cable gland, plastic (2x M 20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm)
Electrical connection:	0.2 - 1.5 mm², using push-in terminals
Ambient temperature:	−30…+70 °C
Permitted humidity:	< 95 % RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529)
Standards:	CE-conformity according to EMC directive 2014 / 30 / EU, Radio Directive 2014 / 53 / EU (W-Modbus)

Connection diagram   **GW-wModbus**

DIP B „mode":
     Bus parameters
     (Baud rate, parity...)

DIP „W-Modbus":
     Operating Mode
     (Gateway, Node)

Teach-in key (**pair**)

Network Status (**L1**)
Connection quality (**L2**)

Telegram Status

Shielding (**SHD**)

For further technical information,
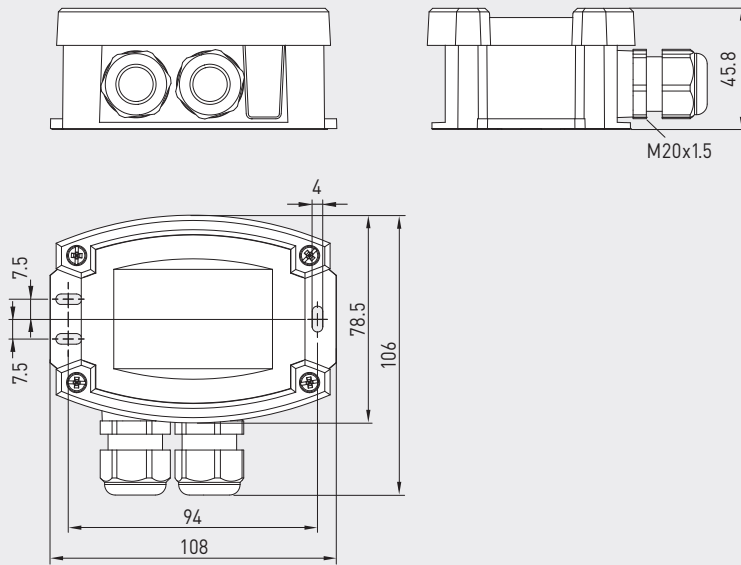see the operating instructions

**Gateway with W-Modbus module,
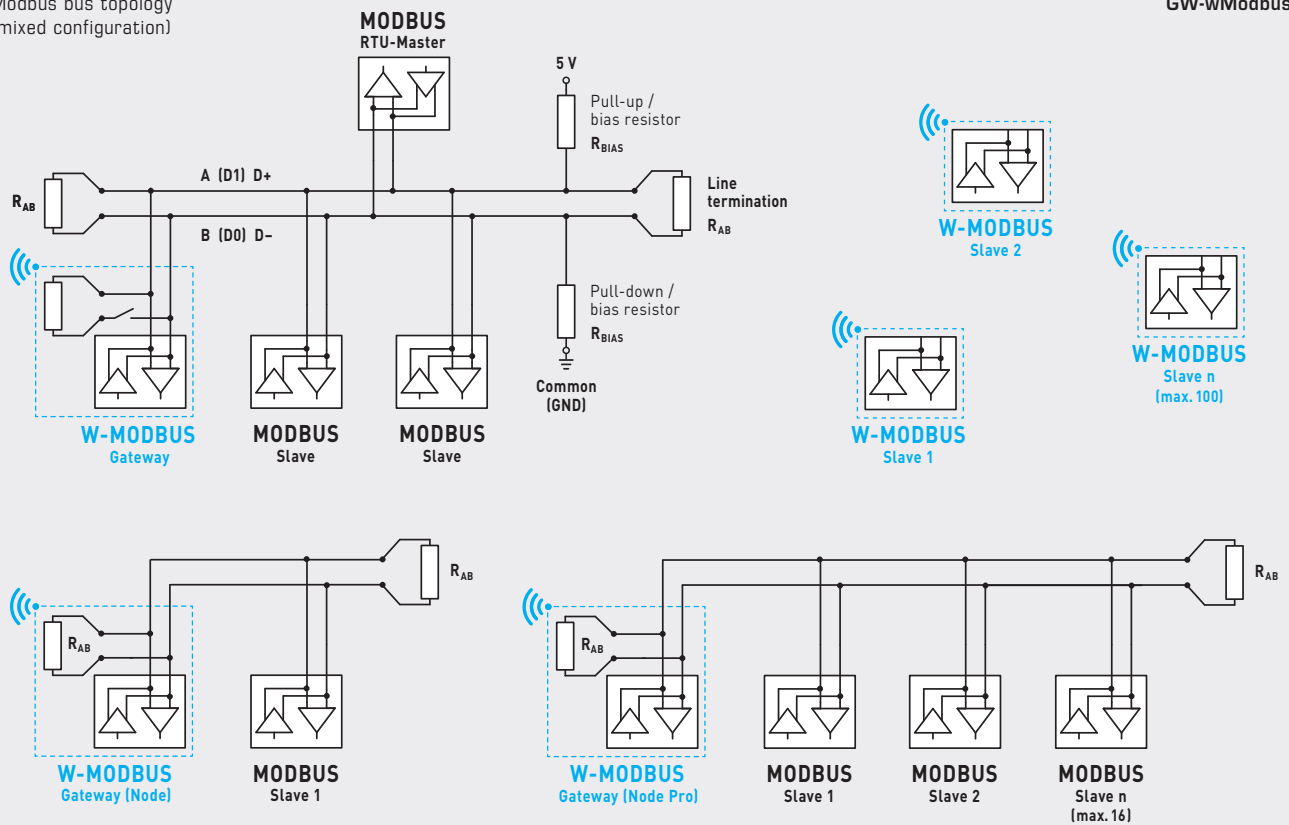for radio-based connection to Modbus networks**

NEW

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Dimensional drawing [mm]

GW-wModbus

GW-wModbus

45.8

M20x1.5

4

7.5

7.5

78.5

106

94

108

Modbus bus topology (mixed configuration)

GW-wModbus

MODBUS
RTU-Master

5 V

Pull-up / bias resistor
R_{BIAS}

A (D1) D+

R_{AB}

B (D0) D−

Line termination
R_{AB}

Pull-down / bias resistor
R_{BIAS}

Common (GND)

W-MODBUS
Gateway

MODBUS
Slave

MODBUS
Slave

W-MODBUS
Slave 1

W-MODBUS
Slave 2

W-MODBUS
Slave n
(max. 100)

R_{AB}

R_{AB}

W-MODBUS
Gateway (Node)

MODBUS
Slave 1

R_{AB}

R_{AB}

W-MODBUS
Gateway (Node Pro)

MODBUS
Slave 1

MODBUS
Slave 2

MODBUS
Slave n
(max. 16)

KYMKASGARD® GW-wModbus	Gateway with W-Modbus module, for radio-based connection to Modbus networks			
Type / WG02	Communication	Operating modes	Item no.	Price
GW-wModbus				
GW-wModbus	Modbus RTU / W-Modbus (Wireless)	Gateway + Node	1801-1211-1101-000	**238,16 €**
GW-wModbus **Pro**	Modbus RTU / W-Modbus (Wireless)	Gateway + Node **Pro**	1801-1211-1101-100	**322,40 €**
Note:	"Pro" extends node operation from 1 to a maximum of 16 wired nodes			