

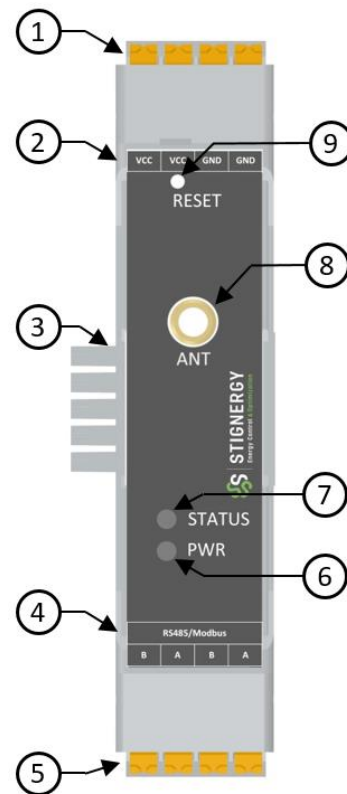
### Description

SEMS Bridge is used to transmit, with its radio frequency modem, the data received on its RS485 interface. Thus, SEMS Bridge enables the radio communication between one or many SEMS Terminals, pulse counters, RS485/Modbus sensors and the SEMS Gateway. SEMS Bridge is also able to receive through its radio frequency modem data, parameters, commands to execute or new embedded software for remote updates.

### Features

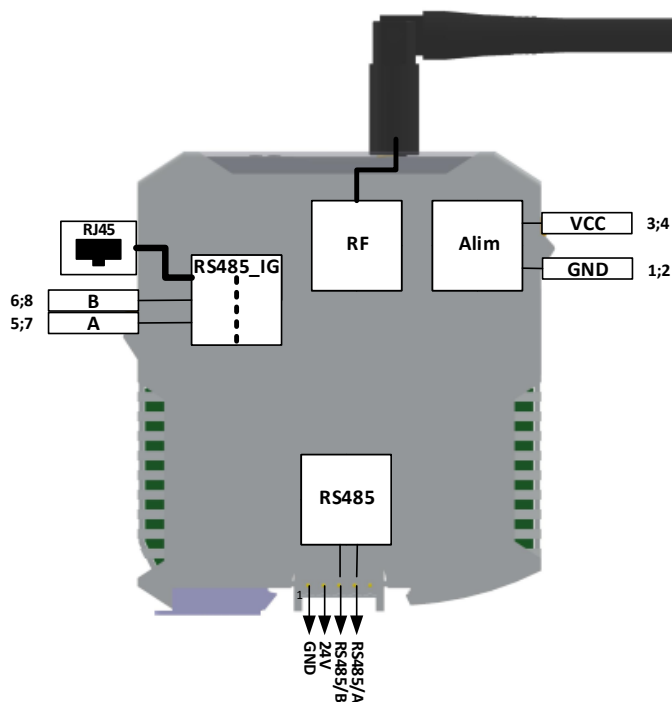
- Modular structure, due to the TBUS connectors.
- RS485/Modbus communication with galvanic isolation up to 1200m.
- Up to 255 SEMS Terminals can be connected to the RS485 interface of the SEMS Bridge.
- Bi-directional radio communications.
- ISM 868MHz frequency band.
- Radio communications range up to 20km.
- Transmitting power between 25 and 500mW (between 80 and 4 times less than a mobile phone)

### Assembly



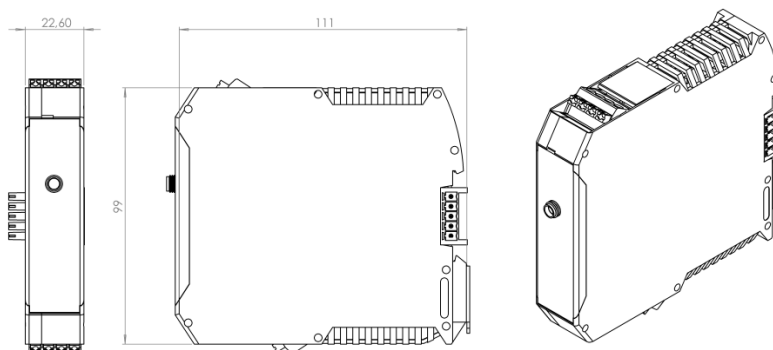
Position	Designation
1, 5	Push-in spring connections
2, 4	Mapping of input/output
3	TBUS connector
6	LED PWR (Power supply)
7	LED STATUS (Program running)
8	RF antenna connector for SEMS Bridge

## Connections



## Technical specifications

### Dimensions



### Dimensions

W x H x D 22.6 mm x 99 mm x 111 mm

### Main specifications

Overvoltage category	III
Mounting position	Any, on 35 mm DIN mounting rail acc. to EN 60715
Degree of protection according to VDE 0470-1	
Housing	IP20
Connection terminal	IP20
Mounting position	IP54 min
Housing material	Polyamide PA non-reinforced
Degree of pollution	2
Flammability rating according to UL 94	V0

**Supply**

Rated voltage	24V DC via TBUS connector
Voltage range	20V to 30V DC
Max. current consumption	150mA / 24V DC at 25°C
Protection against transient overvoltage	Yes (bidirectional TVS Diode)

**External supply**

Connection method	Push-in spring connection
Rated voltage	24V DC: 1A
Voltage range	20V to 30V DC
Protection against transient overvoltage	Yes (bidirectional TVS Diode)

**2 wires RS485 interface**

Connection	TBUS connector
Baud rate	Up to 1Mbps

**2 wires RS485 interface with galvanic isolation**

Connection method	Push-in spring connection RJ45 connection
Baud rate	Up to 500kbps
Isolation voltage	2.5kV (for 1 minute)
ESD protection performance	±15Kv

**Radio Frequency specifications**

	Short range	Long range
Frequency	ISM 868MHz	ISM 869MHz
Transmission power	25mW / 14dBm	500Mw / 27dBm
RF signal range (line of sight)	Up to 2km	Up to 20km

**Connection data**

Connection method	Push-in spring connection
Conductor cross section solid	0,2mm <sup>2</sup> to 2,5mm <sup>2</sup>
Conductor cross section flexible	0,2mm <sup>2</sup> to 2,5mm <sup>2</sup>
Conductor cross section	14AWG/kcmil to 24AWG/kcmil
Stripping length	10 mm

**Ambient conditions**

Ambient temperature (operation)	-20°C to 70 °C
Ambient temperature (storage/transport)	-40°C to 80 °C
permissible relative humidity (operation)	10% to 95%

**Standards**

Conformance	CE-compliant
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**Directive conformity**

Electromagnetic compatibility	R & TTE Directive 1999/5/EC
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Operating mode and diagnostic LEDs of SEMS Bridge

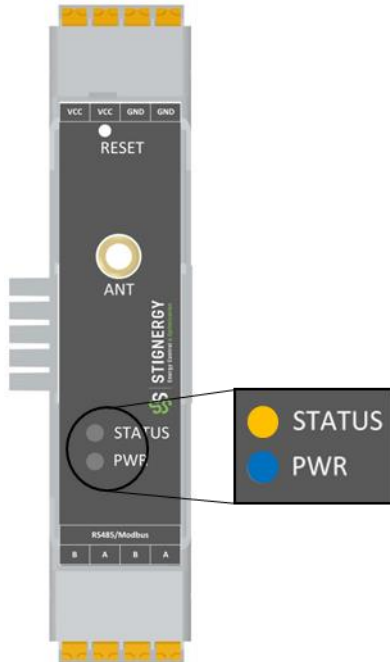


Table 1. Operating mode of SEMS Bridge

Operating mode	Meaning
Normal	SEMS Bridge in normal mode
Warning	SEMS Bridge is out of radio range
Boot	SEMS Bridge in initialization mode

Status display

Two LEDs to indicate the different states of the SEMS Bridge.

LEDs symbols means:

LED OFF ●

LED ON ⚙

Blinking LED ●/⚙

Slow blinking: f = 0.5Hz

Normal blinking: f = 1Hz

fast blinking: f = 2Hz

Table 2. LED state

LED	State	Meaning
PWR	●	Power supply OFF
	⚙ Blue	Power supply ON
STATUS	●	Power supply OFF
	●/⚙ Yellow	Program is running

Table 3. Status of SEMS Bridge

PWR	STATUS	Meaning
●	●	⌚ Power is off. No power supply from the TBUS
⚙ Blue	●/⚙ Yellow f = 1Hz	⌚ SEMS Bridge is working in Normal mode

### Connection Terminals

Designation	Terminal bloc N°	Function
VCC	1	Positive input for external power supply
	2	
GND	3	Negative input for external power supply
	4	
A	5	A input for RS485
B	6	B input for RS485
A	7	A input for RS485
B	8	B input for RS485

### Accessories

- **TRACO - TBL 030-124**  
Power module for SEMS Bridge : 24VDC rated output currents up to 1.25A via the TBUS connector.
- **DIN Rail Terminal Blocks, PHOENIX CONTACT, ME 22.5TBUS1.5/5-ST 5P DIN RAIL BUS CONN – 2713722**  
Plug component with nominal current  $I_n = 8\text{ A}$
- **Printed-Circuit board connector, PHOENIX CONTACT, IMC 1,5/ 5-ST-3,81 – 1857919**  
Type : Plug component, Nominal current:  $I_n 8\text{ A}$  , Rated voltage (III/2): 160V,  
Number of positions: 5, Pitch: 3.81mm , Connection method: Screw connection with tension sleeve  
Color: Green  
Contact surface: pewter