

Modbus Module

sonico® EDGE

Your benefits

- Detailed volume and flow rate information:
  Cumulative, forward and reverse volume incl. information about actual flow rate
- Temperature information:
  Precise water and environmental temperature measurements
- Alarm status and version information:
  Alarm status of the flow meter and information about actual firmware version installed
- High flexibility:
  Multiple communication modules attached to the meter can operate simultaneously
- Water proof design:
  Sealed housing (IP68)
- Plug & Play:
  Easy and fast on-site installation with automatic NFC interface detection

Properties

- Modbus RTU/ASCII protocol with extended flow meter data
- Compatible with sonico® EDGE flow meter
- DC powered over Modbus cable
- Simple installation and automatic start-up after connecting to meter
- Continuous and tamper-proof connection, thoroughly reliable results
- Can be factory fitted or retrofitted at installation site without breaking metrological seal
- Snap-in NFC module slots – no connectors or cables needed
- CE Approval

Applications

- Industrial application
- Building management system
- Data logging in combination with various data loggers
- Installation in harsh and flooded environment

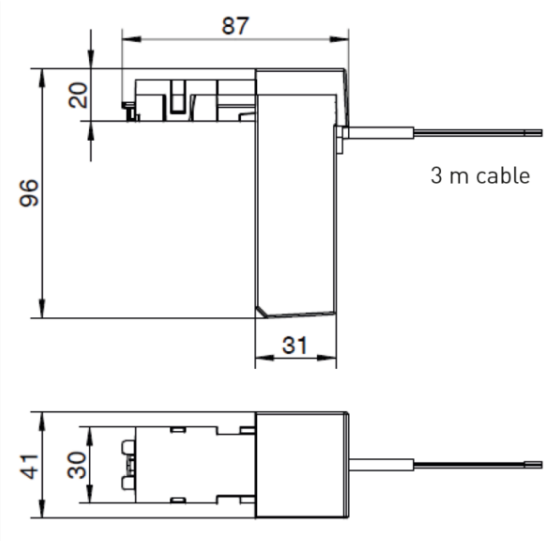
GWF AG
Obergrundstrasse 119
6005 Lucerne, Switzerland

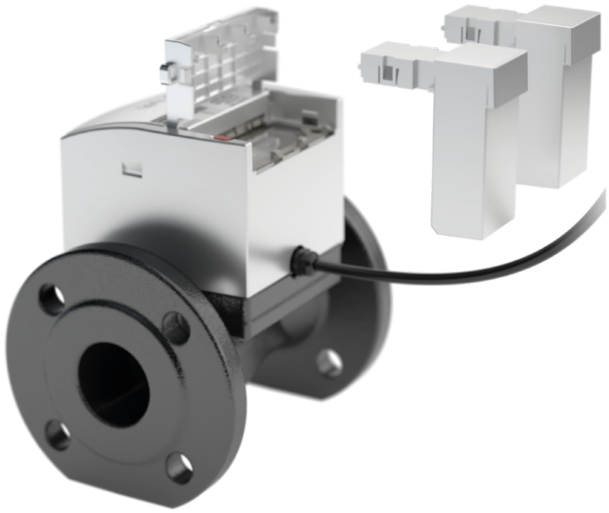
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Dimensions (mm)





Technical Data

General	
Operating temperature	-25 to + 70 °C
Storage temperature	-25 to + 70 °C (dry environment)
Weight potted module with cable	app. 290 g

Electrical data	
Voltage supply	+ 12 VDC to + 24 VDC (+/- 10%)
Standby current	4 mA
Operating current	<30 mA
Relative humidity	0 to 90 % (IP68)
Min. req. FW version sonico® EDGE	COM 2.XX
Bus termination	Line termination 120 Ohm

Cable connection	
Cable	Twisted pair RS485 (2 x 2 x 0,25 shielded)
Length	3 m
Max. allowed cable length (default installation conditions)	30 m
RS485 cable interface	Terminal A, B and shield (Ground or PE)

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Protocol information

Protocol value	
Value	**Corresponding Protocol**
7	ASCII
8	RTU (default)

Parity	
Value	**Corresponding Parity**
0	None (default)

Stop Bit	
Value	**Corresponding Stop bit**
1	1 (default)
2	2

Baud rate [BPS] (The Protocol value defines the data bits)	
Value	**Corresponding Baud rate**
1	600
2	1200
3	2400
4	4800
5	9600
6	19200 (default)
7	34800
8	57600
9	115200

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Holding Register (Big Endian Encoding)

Read Holding Register = Function Code 3
Write Single Register = Function Code 6

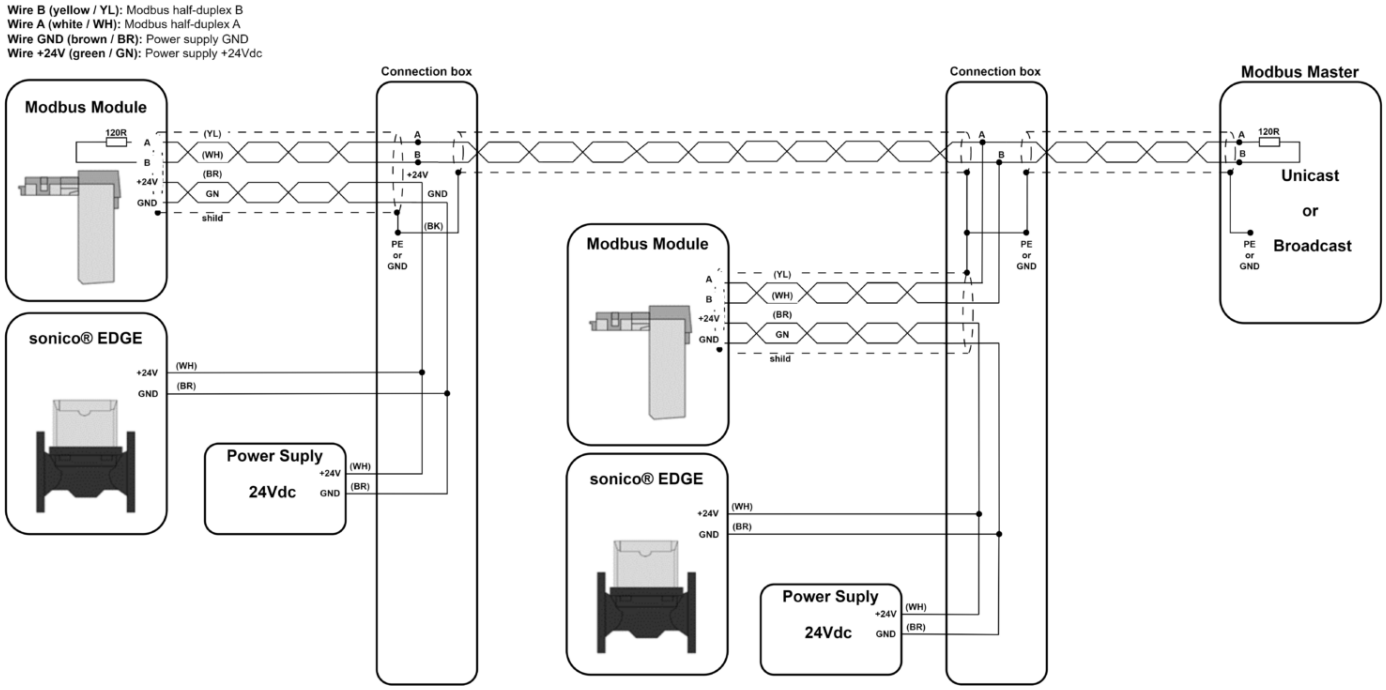
Address	Size [bit]	Access [R/W]	FCN Code	Values / parameters /	Description
1000	16	R	3	Module readout with fixed hex value: - Default value 0x1EE6 for GWF	Manufacturer ID
1001	16	R	3	Module readout with fixed unsigned value, FW Version = readout value / 100	Firmware Version
1002	16	R	3	Module readout with fixed unsigned value type 7	Device Type
1003	16	R	3	Meter readout with fixed unsigned value	Volume Unit
1004	16	R	3	Meter readout with fixed unsigned value	Volume Decimals
1005	16	R	3	Meter readout with fixed unsigned value	Flow Unit
1006	16	R	3	Meter flow decimal display with fixed unsigned value	Flow Decimals
1007	16	R	3	Meter readout with fixed unsigned value: - Operation = 2 - Testbench = 3	Meter Mode
1008	16	R	3	Meter readout with fixed unsigned value: - No flow direction set = 0 - Arrow direction from right to left = 1 - Arrow direction from left to right = 2	Flow Direction
1009	16	R	3	Meter readout with fixed unsigned value - Meter 24 VDC powered = 0 - Meter Battery powered = 1	Battery Symbol
1010	4x16	R	3	64-bit meter value readout: - In Operation Mode = 2 with 3 decimals - In Testbench Mode = 3 with 4 decimals	Cumulative Volume
1014	4x16	R	3	64-bit meter value readout, no decimals	Volume Flow
1018	4x16	R	3	64-bit meter value readout: - In Operation Mode = 2 with 3 decimals - In Testbench Mode = 3 with 4 decimals	Forward Volume
1022	4x16	R	3	64-bit meter value readout: - In Operation Mode = 2 with 3 decimals - In Testbench Mode = 3 with 4 decimals	Reverse Volume
1026	16	R	3	Air Temperature in °C = EDGE value readout / 100	Air Temperature
1027	16	R	3	Water Temperature in °C = EDGE value readout / 100	Water Temperature
1028	16	R	3	Meter hex value readout: - No error 0x00 - Module not physically attached on an EDGE 0x30 - Module physically attached on an EDGE but EDGE not responding at all 0xB0 - Wrong messages received 0x50 - Any Edge Alarm - Alarm Bank 1-2 0x13	Module Status

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Address	Size [bit]	Access [R/W]	FCN Code	Values / parameters /	Description
1029	16	R	3	Meter hex value readout: - Air in pipe 0x0001 - Reverse flow 0x0004 - Leak detection 0x0008 - Burst pipe 0x0010 - No usage 0x0020 - Water temperature 0x0080 - Electronics temperature 0x0100 - No external power supply 0x2000 - Internal error (Any MET alarm) 0x8000	Alarm 1
1030	16	R	3	Meter hex value readout: - AES encryption 0x0001	Alarm 2
1031	2x16	R	3	EDGE SN readout with max. 8 numeric characters	EDGE Serial Number
1033	16	R	3	TOF = EDGE value readout / 2^52	Time of flight path 1 forward
1037	16	R	3	TOF = EDGE value readout / 2^52	Time of flight path 1 reverse
1041	16	R	3	TOF = EDGE value readout / 2^52	Time of flight path 2 forward
1045	16	R	3	TOF = EDGE value readout / 2^52	Time of flight path 2 reverse
1049	16	R	3	Amplitude = EDGE value readout	Amplitude path 1 forward
1050	16	R	3	Amplitude = EDGE value readout	Amplitude path 1 reverse
1051	16	R	3	Amplitude = EDGE value readout	Amplitude path 2 forward
1052	16	R	3	Amplitude = EDGE value readout	Amplitude path 2 reverse
2000	16	R/W	3/6	Set C: Stop Bits, B: Parity and AA: Baud Rate acc. UART Data Setup: 0xCBAA, default 19200, 8, n, 1	UART Setup
2001	16	R/W	3/6	1 to 247, default address 1 Reserved Addresses (do not use): - Broadcast 0 - Modbus specific 248-255	Modbus Address
2002	16	R/W	3/6	0 = ASCII 1 = RTU, default (1 = RTU)	Modbus Protocol
2003	16	W	6	KEY: 12345	Safe & Reboot

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Electrical scheme



Standards

IEC 61000-4-5	1,2/50-µs surge	±4,000 [kV]
IEC 61000-4-2	Contact discharge	±15,000 [kV]
IEC 61000-4-2	Air-gap discharge	±15,000 [kV]
IEC 61000-4-4	Electrical fast transient	±4,000 [kV]

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