

LoRaWAN Differential Pressure Sensor

Intelligent industrial wireless sensor
for remote monitoring in hazardous environments

PATENTED DESIGN



Performance features

- Compact, robust and weather-proof
- Quick and cost-effective installation
- Wide differential pressure ranges up to 4 Mpa / 16,050 inchH2O
- Cortex® 150 Mhz - M4 for analytics at edge
- LoRaWAN global frequency plans
- End-to-End Security: Inc. 128-bit AES encryption + MFA
- Bluetooth® 5 low energy
- Ultra-low power up to 10 years battery life ²
- Intrinsically safe design for hazardous area (Zone 0/1)

Applications

- Filtration Monitoring
- Ventilation Optimization
- Gas Leak Detection
- Level Measurement
- Air System
- Fluid Distribution
- HVAC Systems
- Flow Measurement

Specifications

Measuring principle	Piezoresistive technology	
Measuring ranges	±1 kPa up to ±4 Mpa / ±4 inchH2O up to ±16,050 inchH2O	
Accuracy ¹	Up to 40 kPa / 160 inchH2O	0.20% FS
	Up to 400 kPa / 1,605 inchH2O	0.16% FS
	Up to 4 MPa / 16,050 inchH2O	0.20% FS
Refer page 2		
Type	Differential pressure	
Longterm stability	≤0.03% FS / Year	
Process connection	Page 2	

Environment

Operating temperature	-40 ... +72 °C / -40 ... +161.6 °F	
Storage temperature (recommended)	+ 25 °C / 77 °F	
Protection rating	IP65/67	
Vibration	20 g, 5 ... 2000 Hz, X/Y/Z	
Endurance @ 25 °C / 77 °F	>10 millions FS cycles	
Shock	50 g / 11 ms - 100 g / 6 ms	
Humidity	0 to 100% non-condensing	

Material

Wetted part	Stainless steel 316L or stainless steel 316L gold plating	
Housing option	Aluminum powder coated light weight	1.0 kg
	Stainless steel 316L	1.5 kg
Antenna	Reinforced anti-static polymer (ESD protection and UV stabilized)	

Communication

Bluetooth® 5	Bluetooth
Operating OS	Android 11 and greater or IOS 12 and greater
Beacon mode	Available for live pulling data
Class	LoRaWAN
Range	Up to 10 km
Baud rate range	From 0.3 kbps to 50 kbps
Adaptative data rate (ADR)	Available
Interference immunity	Very high
Mode	OTAA with External Join Server
Update rate ²	100 frames/per day (default)
Frequency plans	Please see page 4 for options
RF Power	Max. 14 dBm ERP
Security	Dedicated trusted secure element AES 128 bits encryption Roaming activation via HSM
Antenna	Omni-directional multiband

Battery

Format	Field replaceable D-size format
Type	Primary Li-MnO2
Nominal capacity @ 20 °C / 68 °F	12.4 Ah
Nominal voltage @ 20 °C / 68 °F	3.0 V
Storage temperature	+25 °C / 77°F recommended

Approvals

Conformity	RoHS directive 2011/65/EU - RED directive 2014/53/EU ATEX directive 2014/34/EU - PED directive 2014/68/EU IEC61010-1:2020 + A1:2016
Safety	ATEX II 1 GD, ATEX I M1, Ex ia I Ma, UKCA IECEX Ex ia IIC T4 Ga, Ex ia IIIB T135 °C Da Class I/II/III Groups ABCDEFG T4

¹ Including linearity, hysteresis and repeatability. Linearity calculated as best straight line through zero.

² Changing default parameters can impact the battery life.

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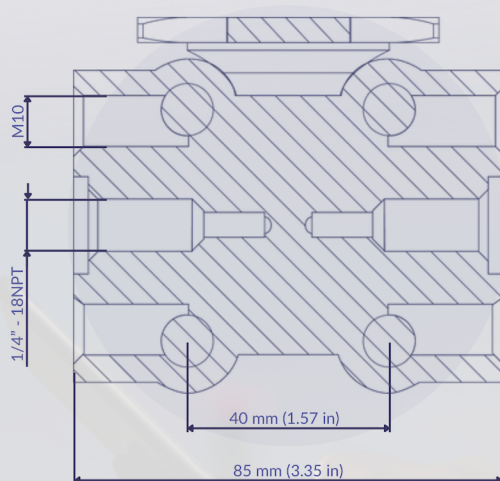
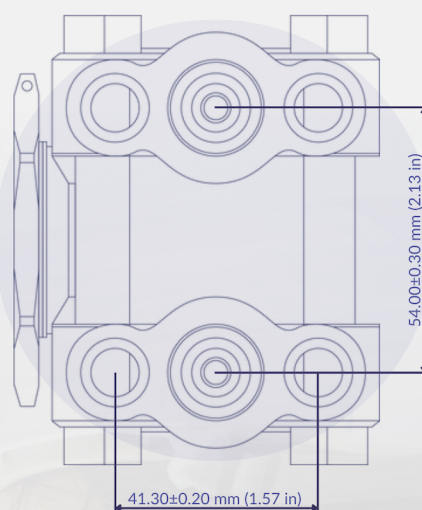
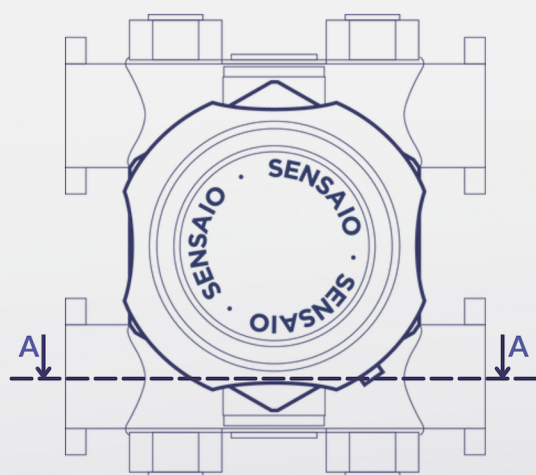
SENSA.iO
INTELLIGENT SENSORS DRIVING CONNECTIVITY

Pressure ranges

Differential pressure Ranges	-1 ... 1 -4 ... 4	-6 ... 6 -24 ... 24	-40 ... 40 -160 ... 160	-100 ... 100 -401 ... 401	-400 ... 400 -1,605 ... 1,605	-4,000 ... 4,000 -16,500 ... 16,050	kPa inchH2O
Accuracy	≤0.2%	≤0.2%	≤0.2%	≤0.16%	≤0.16%	≤0.2%	Full scale
Single side overload	1 4,014	2 8,029	7 28,102	10 40146	10 40146	10 40146	MPa inchH2O

Process Connections

DIN 19213



SECTION A-A

Provided equipment

Bleed plug

Part Number	Description
438-00017	1/4 NPT Bleed Plug



Extra equipment

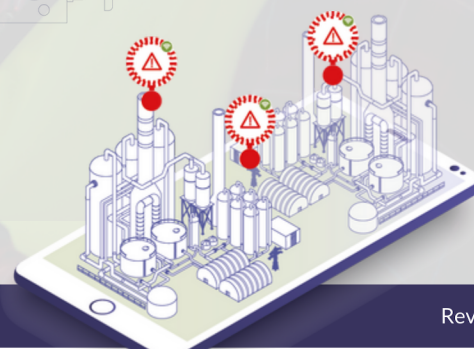
Manifold

Part Number	Description
995-00001	3-way manifold



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Scroll down for further information

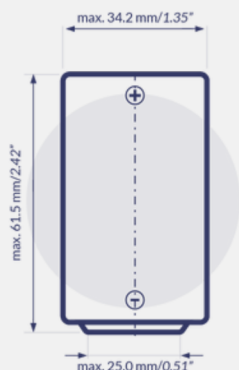


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Battery characteristics : SAFT M 20 EX SV ³

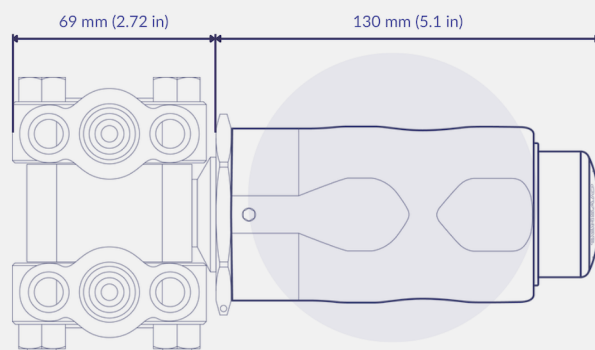


- Stainless steel container
- Hermetic glass-to-metal sealing
- Built-in safety vent
- Made in Germany
- ATEX and IECEX certified

Diameter (max)	34.2 mm (1.35 in)
Height (max)	61.5 mm (2.42 in)
Typical weight	115 g

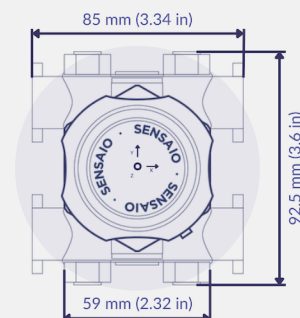
³ Only use the correct battery model for this device SAFT M 20 EX SV. There is a risk of damage if you replace the battery with an incorrect model. Restricted for transport (Class 9). Battery is sold separately

Dimensions

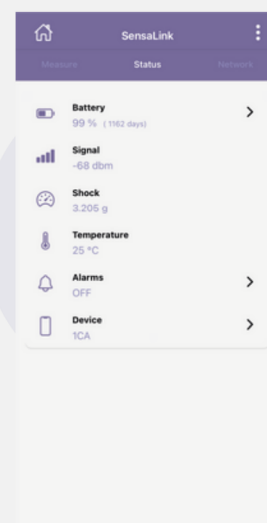
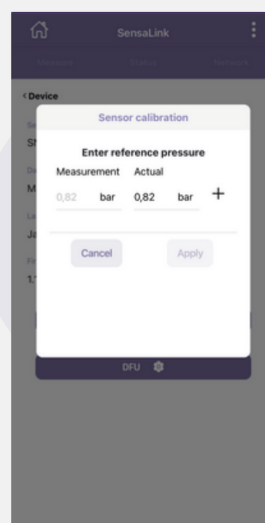
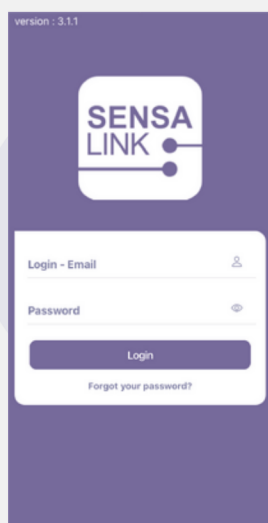


Tool kit

- Flat spanner 59 mm
- Allen key 2.5 mm
- Max torque 50 Nm



Sensalink



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Ordering details / part number creation chart

SENSA.

Model

Differential pressure sensor

PRES

DPRE

XXX

X

X

X

X

X

X

X

Type

Piezoresistive

PRT

Measurement range

1 kPa (= 4 inchH2O)

1

6 kPa (= 24 inchH2O)

2

40 kPa (= 160 inchH2O)

3

100 kPa (= 401 inchH2O)

4

400 kPa (= 1,605 inchH2O)

5

4 MPa (= 16,050 inchH2O)

6

Process connection

DIN 19213 dual port (ASME ¼" NPT)

1

Process material

Stainless steel 316L

1

Stainless steel 316L gold plating

2

Housing material

Aluminium powder coated L

L

Stainless steel 316L (mandatory for mining)

H

Safety standard

ATEX/IECEX/UKCA (gas/dust)

1

HAZLOC NEC USA

2

ATEX/IECEX/UKCA (mining)

3

INMETRO

4

HAZLOC/CSA Canada

5

Frequency plan

Channel plan

ID plan

Channel plan

ID plan

Channel plan

ID plan

Channel plan

ID plan

EU863-870

1

AS923-1

7

KR920-923

10

AS923-4

13

US902-928

2

AS923-2

8

IN865-867

11

AU915-928

5

AS923-3

9

RU864-870

12

> Choose ID plan

Options*

Null

N

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