

LoRaWAN 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 pressure ranges up to 1,000 bar / 14,500 Psi
- ✓ Cortex® 150Mhz-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

- ✓ Oil, gas and mining
- ✓ Chemical and petrochemical
- ✓ Biomass, geothermal & hydrogen
- ✓ Energy, utilities and transport
- ✓ Recycling & waste treatment
- ✓ Pharmaceutical
- ✓ Aerospace

Specifications

Measuring Principle	Piezoresistive technology	
Measuring ranges	-1 bar up to 1000 bar / -14.5 psi up to 14,500 psi	
Accuracy ¹	Up to 400 bar / 5,800 Psi	0.15%FS
	Up to 600 bar / 8,700 Psi	0.25%FS
Refer page 2	Up to 1000 bar / 14,500 Psi	0.35%FS
Type	Absolute or Relative	
Long term stability	Max 0.2% FS / Year	
Process connection	Page 2	

Environment

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

Material

Wetted Part	Stainless Steel 316L or Inconel 625	
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 7.0 or IOS 12 or greater
Beacon mode	Available for Live pulling data
Class	LoRaWAN
Range	A – lowest power bi-directional up to 10km
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. 14dBm ERP

Security	Dedicated trusted secure element AES 128 bits encryption Roaming activation via HSM
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Antenna	Omni-directional multiband
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Battery

Format	Field replaceable D-size format
Type	Primary Li-MnO2
Nominal capacity @ 20°C	12.4 Ah
Nominal voltage @ 20°C	3.0 V
Storage Temperature	+25 °C 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
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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
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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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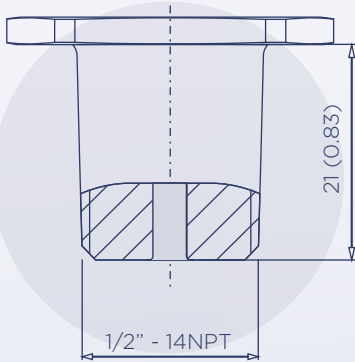
SENSA.iO
INTELLIGENT SENSORS DRIVING CONNECTIVITY

Pressure ranges

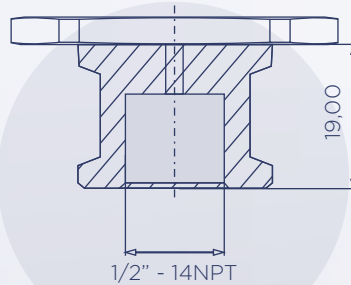
Ranges rel. PR	-0,5 ... 0,5	-1 ... 30					Bar
	-7,25 ... 7,25	-14,5 ... 435					Psi
Ranges abs. PA	0 ... 10	0 ... 100	0 ... 200	0 ... 400	0 ... 600	0 ... 1000	Bar
	0 ... 145	0 ... 1,450	0 ... 2,900	0 ... 5,800	0 ... 8,700	0 ... 14,500	Psi
Accuracy	0.15%				0.25%	0.35%	Full Scale
Over pressure	1.2 times max pressure						
Burst pressure	1500 bar / 21,755 Psi @ 80°C						

Process Connections

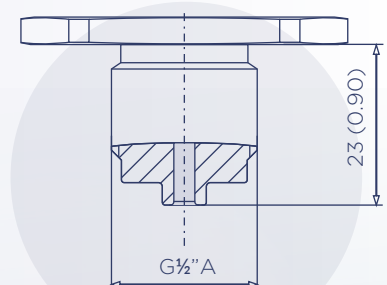
ASME 1/2" NPTM



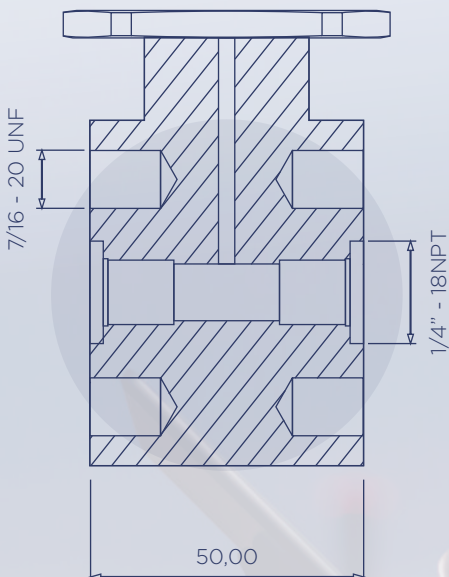
ASME 1/2" NPTF



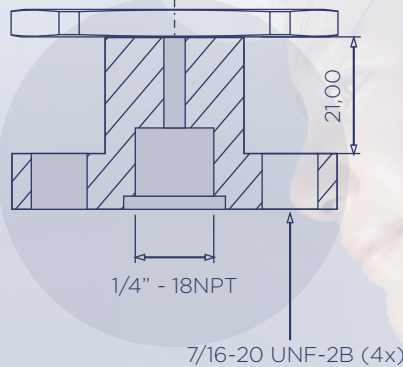
ISO 228 G1/2" EN



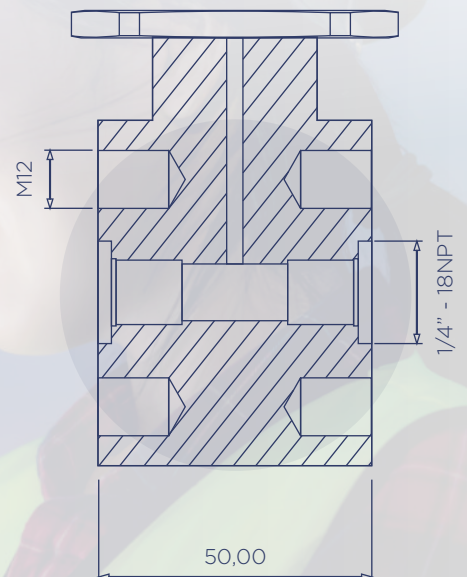
DIN EN/IEC 61518 Dual Port



DIN EN/IEC 19213/61518 Flange



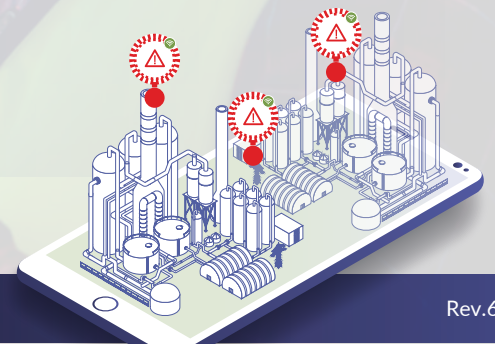
DIN EN/IEC 19213 Dual Port



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Scroll down for further information

Other on demand

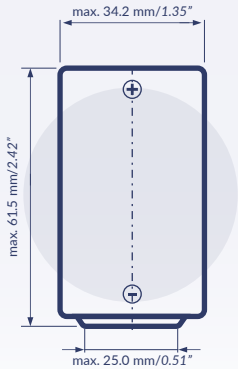


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Battery Characteristics : SAFT M 20 EX SV³

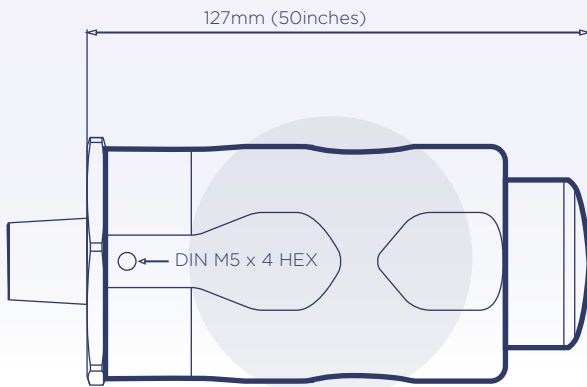


- ✓ Stainless steel container
- ✓ Hermetic glass-to-metal sealing
- ✓ Built-in safety vent
- ✓ Made in Germany
- ✓ ATEX and IECEx certified

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

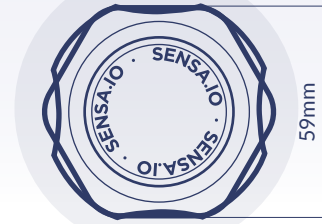
3 Only use the correct battery model for this device SAFT M 20 EX SV. There is a risk of damage if you replace the battery with an incorrect model. Restricted for transport (Class 9). Battery is sold separately.

Dimensions

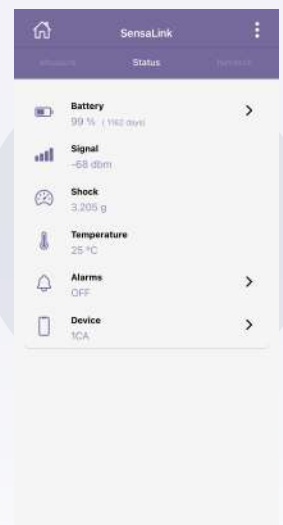
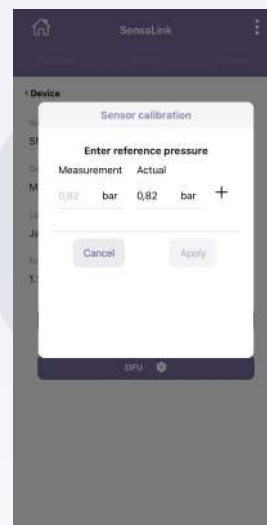
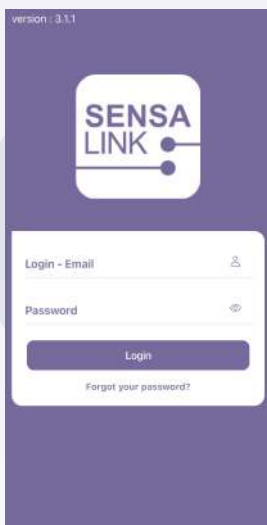


Tool Kit

- ✓ Flat Spanner 59mm
- ✓ Allen key 2.5mm
- ✓ Max torque 50Nm



Sensalink



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Ordering details / part number creation chart

SENSA.		PRES	XXX	X	X	X	X	X	X	X
Model										
Pressure sensor		PRES								
Type										
Piezoresistive			PRT							
Measurement Range										
0...10 bar (=145 psi) Abs. only				1						
0...100 bar (=1450 psi) Abs. only				2						
0...200 bar (=2900 psi) Abs. only				3						
0...400 bar (=5800 psi) Abs. only				4						
0...600 bar (=8700 psi) Abs. only				5						
0...1000 bar (=14500psi) Abs. only				6						
-0,5...0,5bar (=7,25psi) Rel. only				7						
-1...30bar (=435psi) Rel. only				8						
Process Connection										
ISO 228 G1/2 EN					1					
ASME ½" NPTM					2					
ASME ½" NPTF					3					
DIN EN/IEC 19213 Dual Port					4					
DIN EN/IEC 61518 Dual Port					5					
DIN EN/IEC 19213/61518 Flange					6					
Other on demand					C					
Process Material										
Stainless Steel 316L							S			
Inconel 625							I			
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 / CSA Canada									2	
ATEX/IECEX/UKCA (Mining)									3	
INMETRO									4	
Frequency Plan										
Channel Plan	ID Plan	Channel Plan	ID Plan	Channel Plan	ID Plan	Channel Plan	ID Plan	<div style="border: 1px solid gray; border-radius: 50%; padding: 10px; display: inline-block;"> > Choose ID Plan </div>		
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					

Options*

- Null
- High Temp (up to 400DegC)
- Hydrogen

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