Sensile Technologies

SENS.5

USER MANUAL v1.2

ENGLISH

Sensile Technologies SA

Contents

Document revision

v1.2 November 14, 2022 Update of the notified body CE number
This document applies to the following products: SENS.5

In this document

Indicates safety advice that must be strictly followed

Indicates useful information and advice

Circled numbers in the text refer to the parts described in Figure 1 (See page 4)

Acronyms

RMA Return Material Authorization

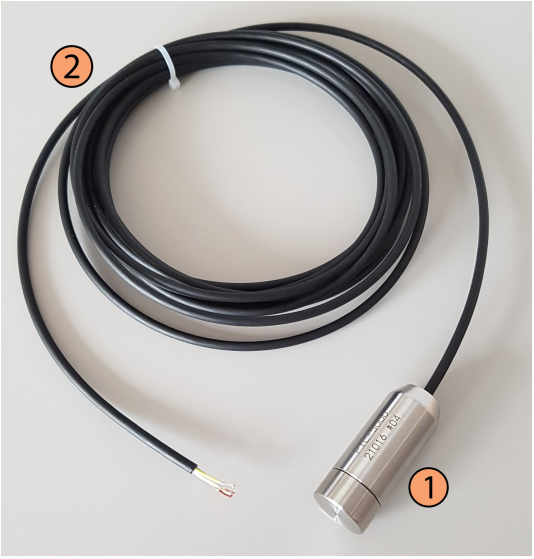

Figure 1: *SENS.5* parts

1. Pressure sensor (membrane + electronic)
2. Sensor cable

Function	**Ground**	**Supply**	**Output Signal**
Color of the wires	**white**	**brown**	**green**

Table 1: *SENS.5* cable

1 Introduction

1.1 Product family

The *SENS.5* product family are absolute pressure sensors used as a submersible gauge to measure the liquid level. The measured pressure value is amplified and translated into an analog ratiometric voltage.

1.2 Specifications

Dimensions	Ø22 mm × 58 mm
Weight	220 g
Connections	3 × 0.25 mm^2 / 23 AWG
Operating temperature	-40 °C...60 °C
Pressure range	800 mbar...1400 mbar absolute
Total error band	±3% of full span
Cable length	5 m
Operating supply voltage	5 V ±5%
Output ratiometric signal	0.5 V...4.5 V
Current consumption	2.5 mA

1.3 Contact information

Sensile Technologies SA
Headquarter

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Mexico

2 Health, Safety, Security & Environment

2.1 Qualified personnel

The protection level is guaranteed only if the *SENS.5* has been installed by trained qualified technicians.

2.2 Explosion protection

***SENS.5* are designed and certified for use in hazardous locations as defined in ATEX directive or IECEx standards (For details see Chapter 4.2 page 8).**

2.3 Recycling

According to local laws and regulations, they should be disposed of separately from household waste. When they reach their end of life, they should be taken to a collection point specified by local authorities. Some collection points accept such items free-of-charge. The separate collection and recycling of such items at the time of disposal helps preserve natural resources and ensures that recycling is carried out in a way that protects human health and the environment.

3 Sensor mounting

3.1 Pressure sensors

A pressure sensor must be placed at the bottom of the tank for monitoring tanks with liquid products. If the tank is hermetically sealed an additional reference sensor is needed at the top of the tank. Additional tight cable glands needs to be used in order to avoid a leak of the liquid. Requirements for the sensor may vary based on the liquid to be monitored. It is, therefore, indispensable to choose the correct sensor to ensure that the installation runs reliably.
In case of a hazardous location or explosible atmosphere, the sensor must be connected to an intrinsically safe device providing a limited and know power, current and voltage.

To work the sensor requires a connection to a power-supply and the output value can be measured on the ratiometric output. The color of connection of the cable is defined in the table 1. The insulation of the wires have to be stripped on the connection side in order to ensure a good contact.

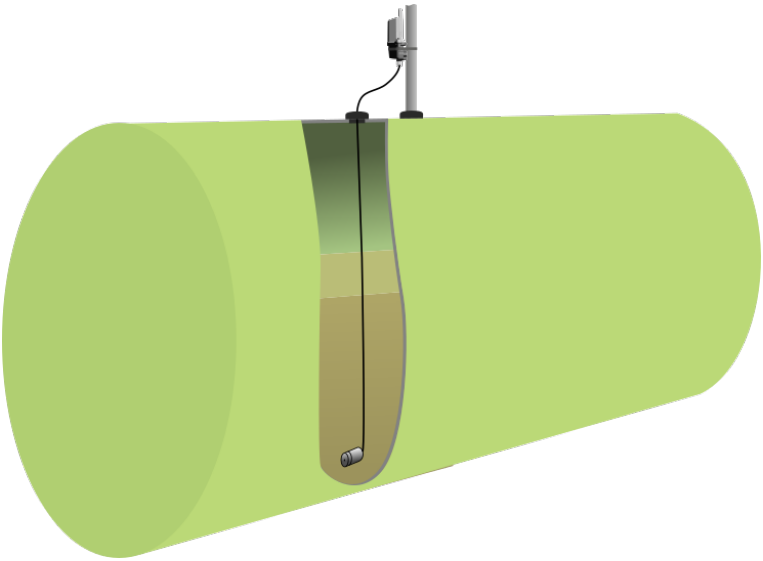

Figure 2: Sensor installed at the bottom of a tank

4 Support

4.1 Return

Only return *SENS.5* under warranty after attribution of a Return Material Authorization (RMA) by *Sensile Technologies SA* 's helpdesk. The returned *SENS.5* must be clearly marked with the RMA number.

4.2 Hazardous location certification

4.2.1 Applied standards

EN IEC 60079-0:2018	EN 60079-11:2012
IEC 60079-0 Edition 7.0	IEC 60079-11 Edition 6.0

4.2.2 ATEX product classification

Ⓔx II 1 G Ex ia IIB T4 Ga

4.2.3 IECEx product classification

Ex ia IIB T4 Ga

4.3 Sensor input parameters

U_i	=	15 V
I_i	=	250 mA
P_i	=	937 mW
C_i	=	1.89 µF
L_i	=	0 mH

Table 4: Sensor parameters

Before installing the sensor into a explosible atmosphere the following parameters must be compared to the entity parameters of the measuring device. Those parameters must follow the rules shown in Table 5.

Intrinsically Safe Equipment		**Associated Apparatus**
U_i	$\geqslant$	U_o
I_i	$\geqslant$	I_o
P_i	$\geqslant$	P_o
$C_i + C_{cable}$	$\leqslant$	C_o
$L_i + L_{cable}$	$\leqslant$	L_o

Table 5: Safety parameters rules

4.3.1 *SENS.5* marking

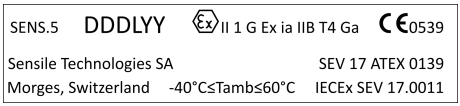

Figure 3: *SENS.5* for use in hazardous locations