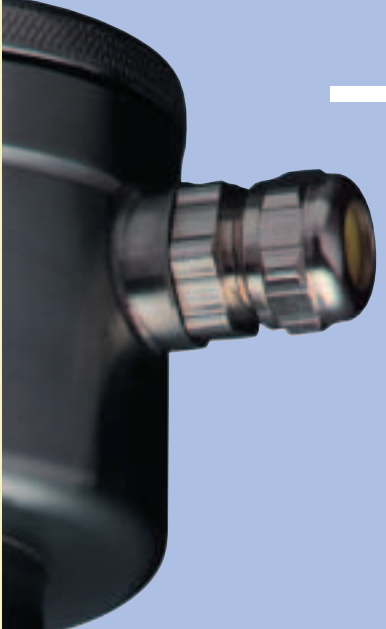


## Pressure and Level transmitters “All stainless”

### 8000-SAN



Variable area flowmeters
Vortex flowmeters
Flow controllers
Electromagnetic flowmeters
Ultrasonic flowmeters
Mass flowmeters
Level measuring instruments
Communications technology
Engineering systems & solutions
Switches, counters, displays and recorders
Heat metering
<b>Pressure and temperature</b>



#### Description

The **series 8000-SAN** are solid-state pressure and level transmitters based upon a piezo resistive sensor and a strong flush mounted diaphragm.

The transmitters are fully temperature compensated.

The **series 8000-SAN** units are specially designed to be non-clogging and capable of being cleaned in-place. They fully meet the needs of the food and beverage, chemical and pharmaceutical industries. In order to be fully compatible with the process they are monitoring, the series 8000-SAN units offer a wide range of process connections and a choice of materials from which the wetted parts are fabricated.

All versions enjoy CENELEC approval for intrinsically safe applications.

## Pressure and Level transmitters Series 8000-SAN

- Output 4 ... 20 mA / 2-wire
- Zero and span adjustable
- All forms of hygienic/sanitary connections available
- Very strong flush mounting diaphragm
- EHEDG and 3A
- Large rangeability
- Integral 3<sup>1</sup>/<sub>2</sub> digit LCD indicator (option)
- Truly non-interactive zero and span
- Intrinsically safe EEx ia IIC T4



## Overview of process connections series 8000-SAN



### CODE M (DN 25, 40 or 50) milk coupling

Series 8000-SAN-RANGE-M offers a choice of three dairy fittings in accordance with DIN 11851. The DN25 or 1" version has a very strong diaphragm developed specifically for pressure measurement in the food and pharmaceutical industries.

This model is available in pressure ranges from 0 ... 1 bar (code E) to 0 ... 16 bar (code G). Higher pressure versions available on special request.

The DN40 or DN50 (1½" and 2") versions which can be used for level measurement are available from 0 ... 0.08 bar (30" water column).

When ordering, always specify code letter and size. The matching weld-on nipple can also be ordered.



### CODE W (85 mm) Sanitary weld-on nipple

The best connection for level measurement. The nipple (diam. 85 mm) is welded directly into the tank and the transmitter is connected to it by means of a locking ring. This results in the diaphragm being virtually flush with the tank wall.

The standard packing rings between the weld-on nipple and the transmitter are made of PTFE. The standard flange size is diam. 85 mm. Other sizes can be made on request. Please indicate the required size when ordering.



### CODE L (1", 1½" or 2") TRI-CLAMP

Several Tri-clamp connections are available for the food and pharmaceutical industries.

The 1" and 1½" versions are for pressure measurement only and are only available for units within the ranges 0 ... 1 bar (Range E) to 0 ... 16 bar (Range G).

For low pressure and level measurements, from 0 ... 0.08 bar, the 2" Tri-clamp connection is available. Please indicate the required size when ordering and do not forget the matching parts and clamp.



### CODE F flange connection

The flange fittings contain a weld-on nipple (as Code W) already welded into the flange. Therefore these models are easily interchangeable.

All standard flanges are available, DIN (DN 40, 50 or 80) and ANSI (1½", 2" or 3"). Special versions at request.

Note: More than 30 different process connections are available, example: SMS 2", IDF 2", G 1½" or Varivent.

See code X at ordering code and specify process connection.

**Specifications**

Measuring ranges	: 0.08 bar ... 50 bar
Output signal	: 4 ... 20 mA, 2-wire
Overall accuracy	: 0.2% of adjusted span
Power supply	: 13 ... 40 VDC (Exi: 17 ... 28 VDC)
Electrical connection	: PG9 / 1/2" NPT
External load (max.)	: 550 Ohm / 24 V ... 1250 Ohm / 40 V
Process temperature	: -20°C ... +100°C (140°C/45mins.) (8000-SAN-cable -20°C ... +140°C)
Temperature sensitivity	: +/- 0.015%/K
Ambient temperature	: -20°C ... +70°C
Adjustment	: Zero and span internally
Process connections	: See pages 2 and 3
Wetted parts	: AISI 316 (standard) other materials may be specified
Electronics housing	: AISI 304 (standard) other materials may be specified
Vacuum ranges available (see order code)	

Specifications subject to change without notice



Model 8000-SAN-Cable with separate electronics

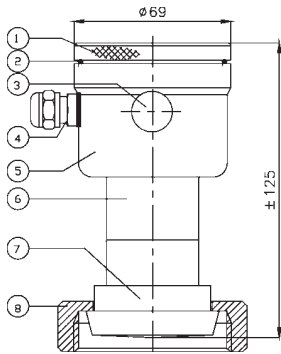
**Description 8000-SAN-Cable**

This version has been developed for applications where space does not allow easy adjustment of a standard model and for applications with a process temperature continuously above 95°C with a max. temperature of 140°C.

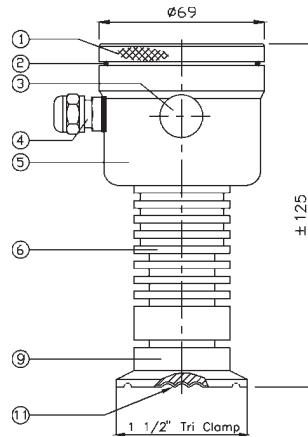
The pressure sensor and transmitting electronics are physically separate but are joined by an interconnecting cable. The zero and span can easily be set at a convenient mounting area while the actual sensor is measuring at the desired point. The standard cable length is 3 m. (Specify cable length in order code.)

**Dimensions (mm)**

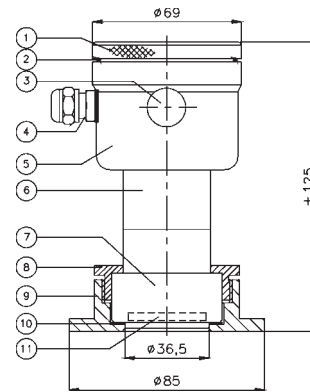
**Code M**



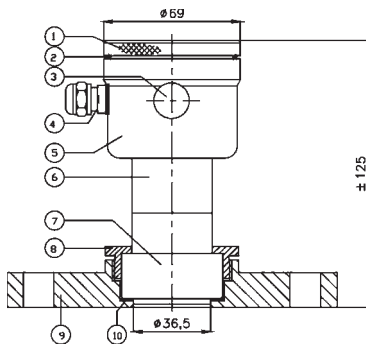
**Code L**



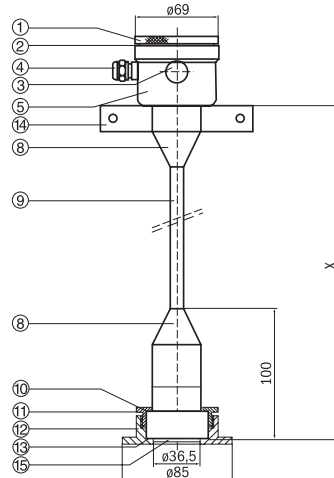
**Code W**



**Code F**



**8000-SAN-Cable**



**Parts description:**

1. Cover	AISI 304
2. O-ring	EPDM
3. Vent	
4. Cable entry	
5. Electr. compartment	AISI 304
6. Connecting part	AISI 304
7. Diaphragm ring	AISI 316
8. Locking ring	AISI 304
9. Weld-on nipple / flange	AISI 316
10. Packing ring	PTFE
11. Temperature compensation sensor	

**General information**

**Laser welded diaphragms**

All transmitters from the **8000-SAN series** have a strong, flush mounted diaphragm. In order to provide proper sealing while retaining ease of cleaning, all diaphragms are laser welded. Normally AISI 316 L is used in the production of the diaphragms. Other materials such as Hastelloy C, Titanium or Ceramic can be supplied on request.

**Temperature compensated sensor**

All **series 8000** units are fully temperature compensated. A temperature sensor, which monitors the process temperature, is mounted directly behind the diaphragm. The output of this sensor is used to compensate the electronic transmitter for temperature variations.

**RFI/EMC and CE**

All pressure and level transmitters are manufactured according to the new European RFI/EMC and CE rules. All transmitters are equipped with RFI filters as standard.

**Compact electronics in a stainless steel housing**

The electronic transmitters contain a minimum number of electronic components. The signal conditioning is performed by a single integrated circuit which provides a very linear output. The electronics are fully encapsulated and are therefore unaffected by vibrations and moisture.

**Intrinsically safe certificate**

All transmitters from the **8000-SAN series** can be supplied with the intrinsically safe certificate, according to ATEX II 1G EEx ia IIC T4.

**3A Sanitary Standards / EHDEG**

Most of the transmitters from the **8000-SAN series** are manufactured according to the 3A Sanitary Standards for liquid pressure and level sensing devices formulated by the IAMFES, US PHS and DIC, and according to the European Hygienic Equipment Design Group (EHEDG).

### Applications

#### Level measurement:

The **8000-SAN series** can be used for all kinds of level measurement on storage tanks in the food, dairy (milk storage tanks), beverage, pharmaceutical, chemical and paper industry.

Various process connections can be used, such as a DIN milk coupling, Tri-clamp or a DIN/ANSI flange. For sanitary applications we advise to use our sanitary weld-on nipple (diam. 62 mm or 85 mm) code W.

#### Pressure measurement:

The **8000-SAN series** can also be used as a pressure transmitter. Applications are for example: protection of pumps and installations for under or over pressure. Process connections are: DIN, SMS and IDF couplings and Tri-clamps from 1" ... 3".

All pressure transmitters from **series 8000-SAN** have a flush mounted diaphragm. For applications on steam, water, gasses and vapours, the ceramic pressure transmitter Peramic with 1/2" BSP/NPT process connection can be used.

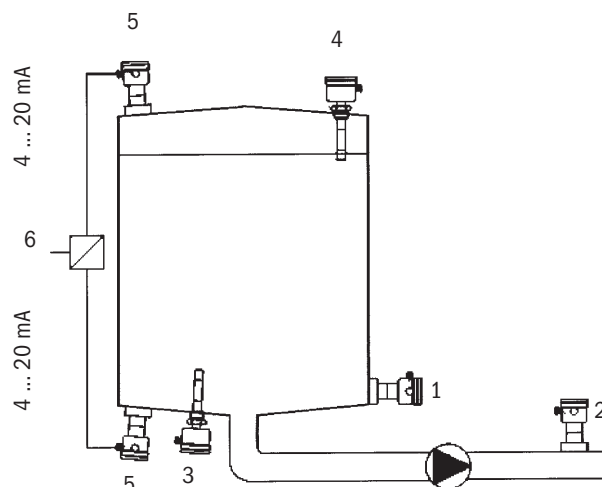
#### Level control:

A lot of tank levels must be automatically controlled. For example the CIP (Cleaning In Place) tanks in the food, dairy and beverage need level transmitters to measure and control the level (continuously).

For this application the same process connections can be used as described for storage tanks, such as DN 40 milk coupling, 2" Tri-clamp or sanitary weld-on nipple diam. 85 mm (code W85).

### Application examples

1. Level transmitter, 8000-SAN series
2. Pressure transmitter, 8000-SAN series
3. KROHNE Low level switch
4. KROHNE High level switch
5. Pressure/level transmitters, for level measurement on pressurized tanks (diff. pressure). (Example: Breweries).  
Use 2 transmitters, calibrated at the same span, the 2 output signals (4 ... 20 mA) will be subtracted in calculator (6) or PLC.



**Ordering Code**

Order code basic transmitter			SERIES 8000-SAN										
Order code with cable			SERIES 8000-SAN-Cable (. . . m)										
measuring range bar	max. overpressure bar	Adjustable span-range bar min. - max.											
0 - 0.08 ...0.4	6.4	0 - 0.08 ... 0 - 0.4	B										
0 - 0.4 ...0.7	6.4	0 - 0.4 ... 0 - 0.7	C										
0 - 0.7 ...1.5	10.5	0 - 0.7 ... 0 - 1.5	D										
0 - 1 ...4	16	0 - 1 ... 0 - 4	E										
0 - 2.5 ...10	30	0 - 2.5 ... 0 - 10	F										
0 - 7.5 ...16	60	0 - 7.5 ... 0 - 16	G										
0 - 16 ...50	120	0 - 16 ... 0 - 50	H										
<b>PROCESS CONNECTIONS:</b>							M..						
- Milk coupling DIN 11851, DN 25 (ranges E, F or G only), DN 40, DN 50 (all ranges)							W..						
- Hygienic weld-on nipple, diam. 85 mm (other diameters on request)							L..						
- Tri-clamp connection 1", 1 1/2" or 2" (please specify)							F						
- Flange (AISI 316) DIN or ANSI, all sizes available (please specify size)							X						
- Other process connections i.e. SMS 2", IDF 2", 1 1/2", Varivent, etc. (specify)													
<b>OPTIONS:</b>													
- Digital local Indicator 3 1/2 digit, programmable (EEx i, not programmable)							I						
- Vacuum Ranges (Specify relative or absolute). Compound range available (example -1 / +1 bar)								V					
- Intrinsically safe: ATEX II 1G EEx ia IIC T4									Ex				
- Special versions: Example: Special wetted parts; Hasteloy C												G	