

# Typ FULLBORE S056

SENSORS



Installation manual

**DE**

Ausführliche Informationen finden Sie in der Bedienungsanleitung  
unter der Internetadresse:  
[country.burkert.com](http://country.burkert.com) > S056  
oder  
scannen Sie folgenden QR-Code ein:



**EN**

Detailed information can be found in the operating instructions  
at the Internet address:  
[country.burkert.com](http://country.burkert.com) > S056  
or  
scan the following QR code:



**FR**

Vous trouverez des informations détaillées dans le mode d'emploi  
à l'adresse Internet suivante :  
[country.burkert.com](http://country.burkert.com) > S056  
ou  
scannez le code QR suivant :



## INDEX

INTRODUCTION	2
START UP AND MAINTENANCE OF THE INSTRUMENTS	2
SAFETY	3
GENERAL INFORMATION ON THE SENSORS INSTALLATION	4
DEGREE OF PRODUCT CLEANLINESS	5
ELECTRICAL CONNECTIONS OF SENSOR TO TRANSMITTER	6
GROUNDING INSTRUCTIONS	6
OVERALL DIMENSIONS FOR DN 3 ÷ 20	7
OVERALL DIMENSIONS FOR DN 25 ÷ 100	9
INSPECTION SCREW (VALID ONLY FOR DN 3-20)	12
SENSOR SELF-DRAINING	12
VERSIONS	14

## INTRODUCTION

- This manual is integral part of the product. Read carefully the instructions contained since it contains important indications for the safety of use and of maintenance.
- The technical information and the relative products of this manual could be modified without any previous notice.
- The flowmeter must be used for the use it has been built for. The improper use, possible tampering of the instrument or parts of it and substitutions of any components not original, makes the warranty to decay automatically.
- The manufacturer is considered responsible only if the instrument is used in its original configuration and setting.
- The flowmeter makes measures of liquids with conductivity greater than 5 $\mu$ S/cm; it consists of a sensor (described in this manual) and a converter, for it see the manual provided.
- If the sensor is supplied in compact version to the converter, consider the operating temperatures more restrictive, otherwise refer to the respective manuals.
- When transporting, unpacking and handling the flowmeter, be careful and care.
- In the case of prolonged storage and of transport, use and store in the original container in a dry place, do not place more than 3 packs one above the other. It is possible pallets storage and transport (in case of wooden crates do not place one above the other).
- For the cleaning of the device use only a damp cloth, and for the maintenance/repairs, contact the customer service.
- For the disposal of the device and of the packaging make strict reference to the regulations.
- It is forbidden the reproduction of the present manual and of possible software supplied with the instrument.

## START UP AND MAINTENANCE OF THE INSTRUMENTS

- Before starting up the instrument, always make a secure connection to ground as suitable to page 6.
- Verify periodically: the cables integrity, the tightening of the sealing elements (cable glands, covers, etc.), the mechanical fixing of the instrument on the pipe or on the wall.

**SAFETY**

Before using the instrument, always make a secure connection to the ground



Avoid any attempt to repair the instrument. If the instrument is not functioning properly, please call the nearest assistance service



Pay maximum attention during the operations



ATTENTION !!



DANGER !!!

## GENERAL INFORMATION ON THE SENSORS INSTALLATION

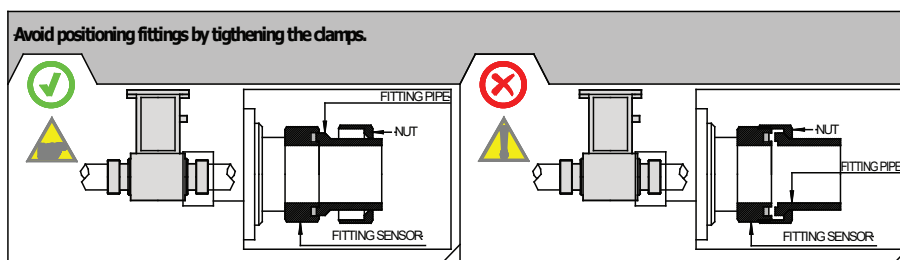
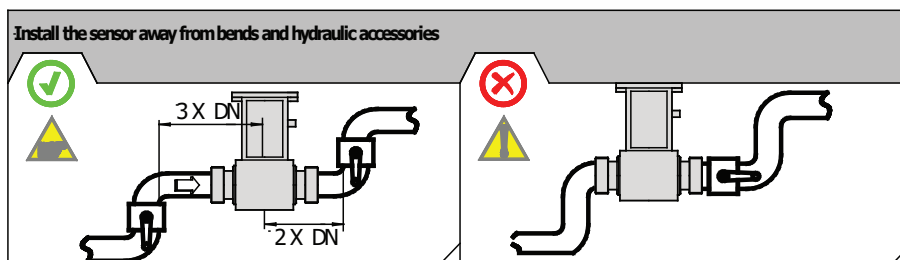
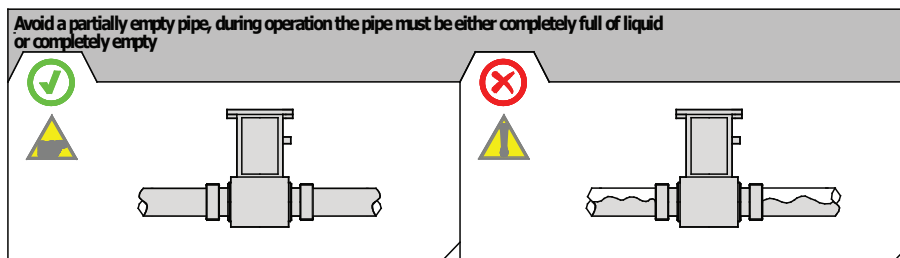
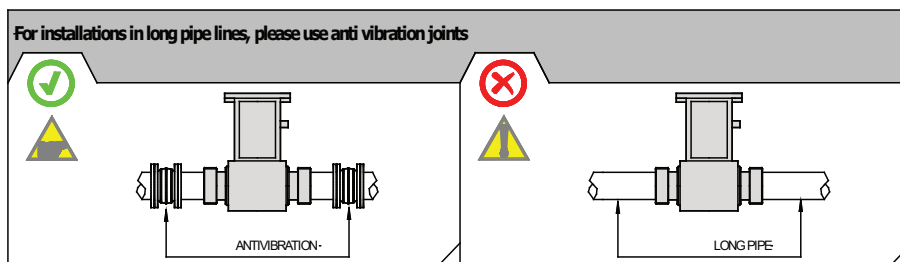
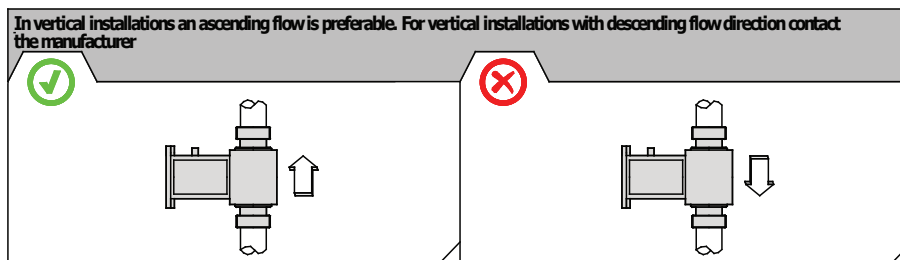
The manufacturer recommends cleaning the instruments before use.

### Flow direction

Before install the sensor locate the direction of the liquid in the piping

The sign of the flow rate is **positive**, when the flow direction is from **- to +** as printed on the tag plate.

If after the installation, for plant request becomes necessary reverse the sign of the flow, it is enough reverse the sign of the coefficient KA



## DEGREE OF PRODUCT CLEANLINESS

The degree of cleaning of the product has been determined in accordance with the following standards

**ASTM G 93-03:** Cleaning Methods and Cleanliness Levels for Material and Equipment Used in Oxygen-Enriched Environments;

**ASTM F331-05:** Standard Test Method for Nonvolatile Residue of Solvent Extract from Aerospace Components (Using Flash Evaporator);

**ASTM G 144-01:** Standard Test Method for Determination of Residual Contamination of Materials and Components by Total Carbon Analysis Using a High Temperature Combustion Analyzer.

### Par. 11.4.2.2 Total Organic Carbon:

When water is used as a quantitative verification, the ultrasonic extraction in aqueous phase is used to release organic substances and particulate from the surfaces of the fittings and from the piece to determine the total organic carbon.

**G 136:** Practice for Determination of Soluble Residual Contaminants in Materials by Ultrasonic Extraction

### Non Volatile Residue (NVR)

#### Gravimetric test

From the evaluation of the NVR parameter, as gravimetric determination of processing residues, there is a level of cleaning of D band level for diameters up to DN 20 mm

For  $DN \geq 20$  mm it is less than 33 mg / m<sup>2</sup> classifiable as band B.

Consequently, for  $DN < 20$ mm, an additional washing cycle may be required by the user, according to methods considered suitable for the use to which the product is destined and with liquids that are compatible with the materials of the product

### Non Volatile Residue (NVR) - TOC

From the evaluation of the NVR parameter, such as determination of organic residues, the level of cleanliness is of band A, therefore the cleaning process carried out can be considered adequate and sufficient.

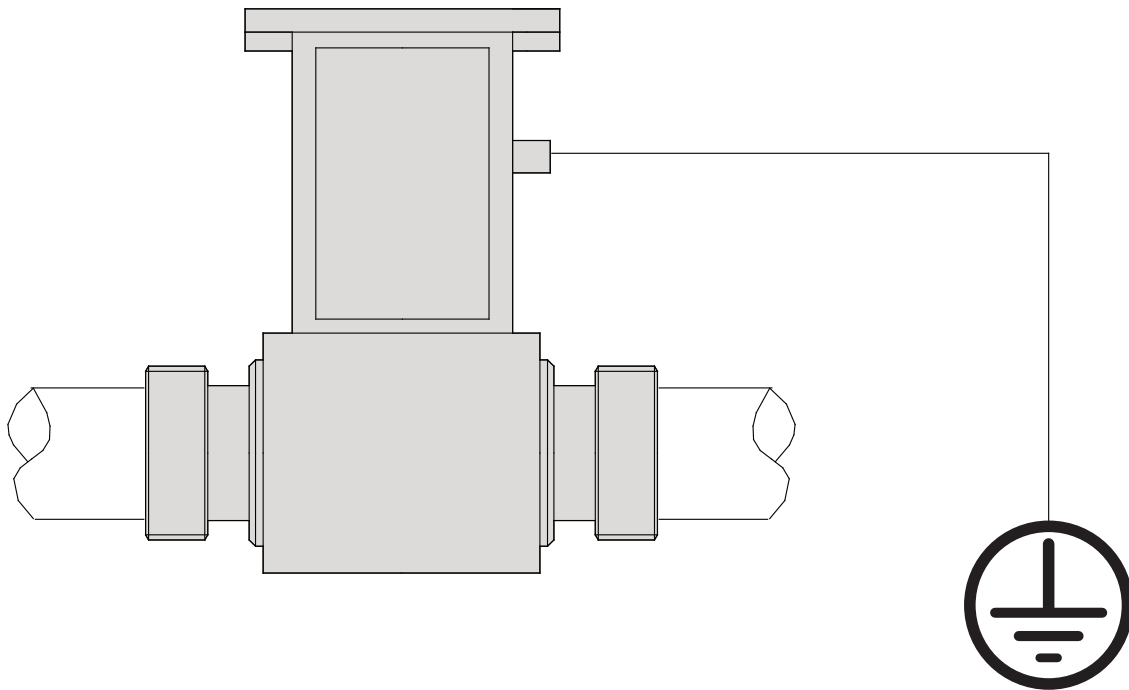
In any case, it is left to the discretion of the user to provide for additional cleaning deemed suitable for the use to which the product is destined and with liquids that are compatible with the materials of the product

## ELECTRICAL CONNECTIONS OF SENSOR TO TRANSMITTER (Connections to transmitter: see related manual)

### GROUNDING INSTRUCTIONS



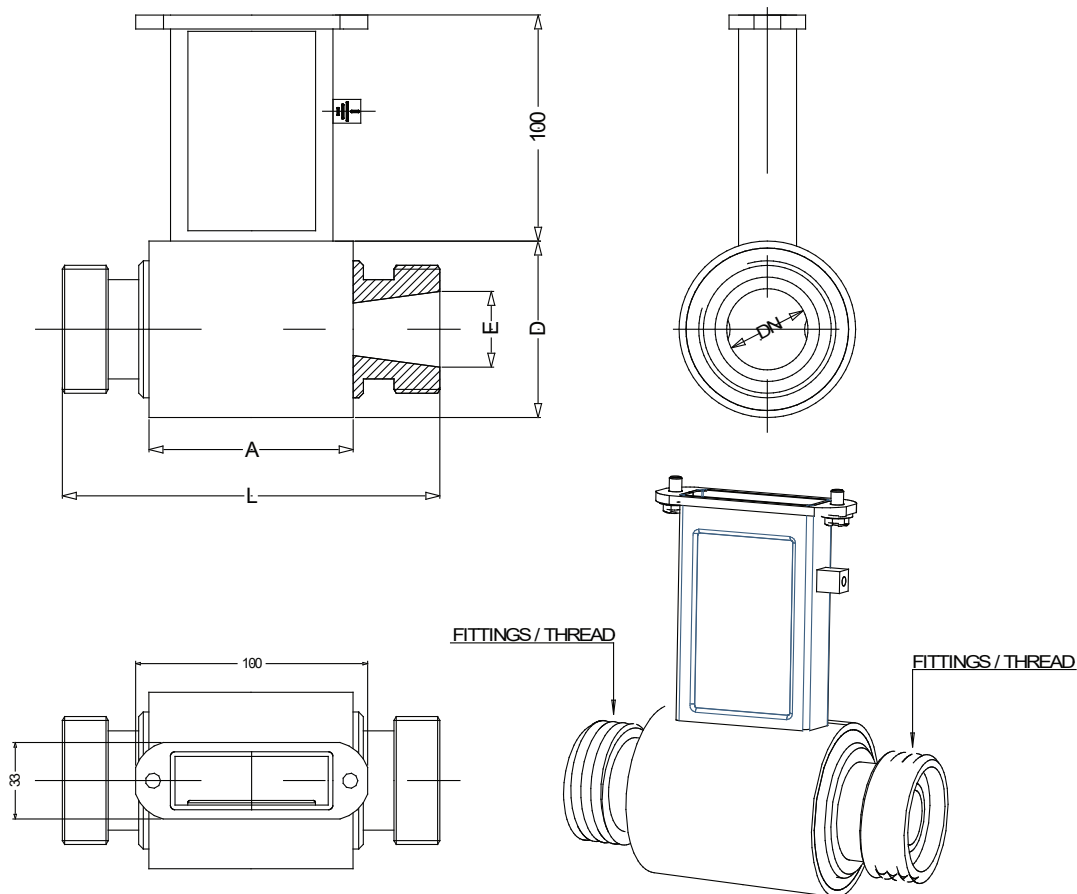
For correct operation of the meter, it is **NECESSARY** that the sensor and the liquid are equipotential, so **ALWAYS** connect the sensor and converter to ground:





## OVERALL DIMENSIONS FOR DN 3 ÷ 20

### Threaded Connections



#### DIN 11851

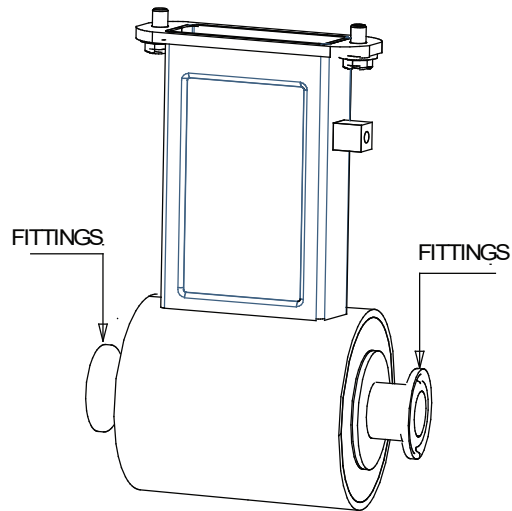
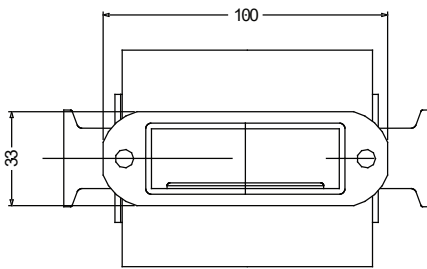
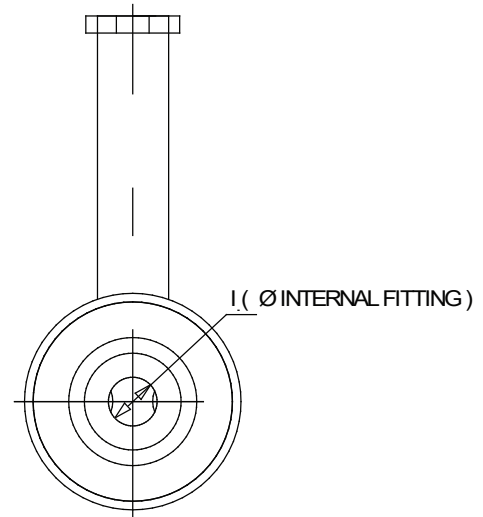
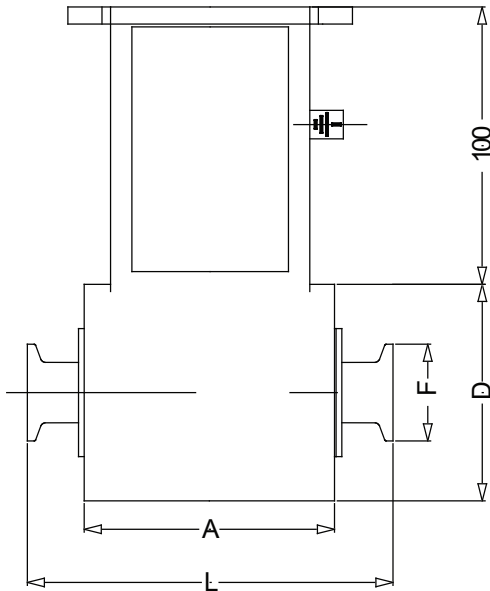
DIMENSIONS mm	DN				
	3 (1/8")	6 (1/4)	10 (3/8)	15 (1/2")	20 (3/4")
A	77 (3.03)	77 (3.03)	77 (3.03)	77 (3.03)	77 (3.03)
L	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)
D	76 (3)	76 (3)	76 (3)	76 (3)	76 (3)
E	10 (0.39)	10 (0.39)	10 (0.39)	16 (0.63)	20 (0.79)
THREAD	RD28-8	RD28-8	RD28-8	RD34-8	RD44-6
FITTINGS	DN 10	DN 10	DN 10	DN 15	DN 20

#### SMS 1146

DIMENSIONI mm	DN		
	10 (3/8)	15 (1/2")	20 (3/4")
A	77 (3.03)	77 (3.03)	77 (3.03)
L	128 (5.04)	128 (5.04)	128 (5.04)
D	76 (3)	76 (3)	76 (3)
E	22.6 (0.89)		
THREAD	RD40-6		
FITTINGS	DN 25	DN 25	DN 25

**NB : With DIN connection use suitable gasket for cleaning in place (CIP) applications  
SMS 1146 connection is only suitable for cleaning out of place (COP)**

**Clamp connections**



**CLAMP ISO 2852**

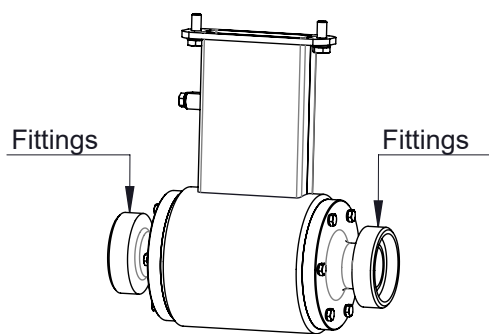
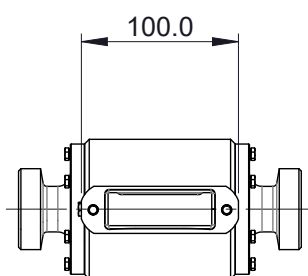
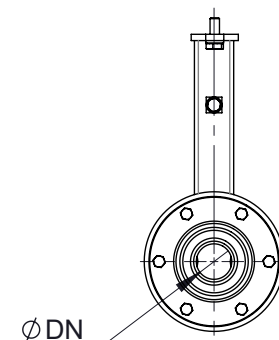
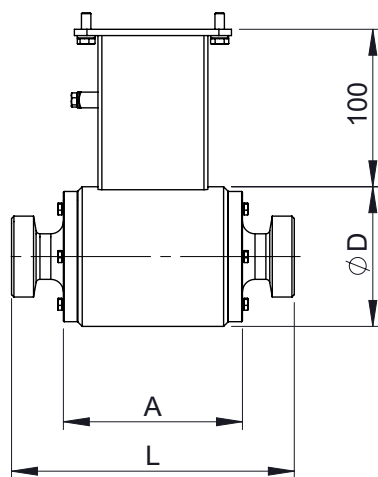
DIMENSIONS mm	DN				
	3 (1/8")	6 (1/4)	10 (3/8)	15 (1/2")	20 (3/4")
A	77 (3.03)	77 (3.03)	77 (3.03)	77 (3.03)	77 (3.03)
L	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)
D	76 (3)	76 (3)	76 (3)	76 (3)	76 (3)
I	12.7 (0.5)	12.7 (0.5)	12.7 (0.5)	17.2 (0.68)	21.3 (0.84)
F	34 (1.34)	34 (1.34)	34 (1.34)	34 (1.34)	34 (1.34)

**CLAMP BS 4825 Part 3**

DIMENSIONS mm	DN				
	3 (1/8")	6 (1/4)	10 (3/8)	15 (1/2")	20 (3/4")
A	77 (3.03)	77 (3.03)	77 (3.03)	77 (3.03)	77 (3.03)
L	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)
D	76 (3)	76 (3)	76 (3)	76 (3)	76 (3)
I	9.5 (0.37)	9.5 (0.37)	9.5 (0.37)	15.85 (0.62)	22.2 (0.87)
F	25.4 (1)	25.4 (1)	25.4 (1)	25.4 (1)	50.5 (1.99)

## OVERALL DIMENSIONS FOR DN 25 ÷ 100

### Threaded Connections



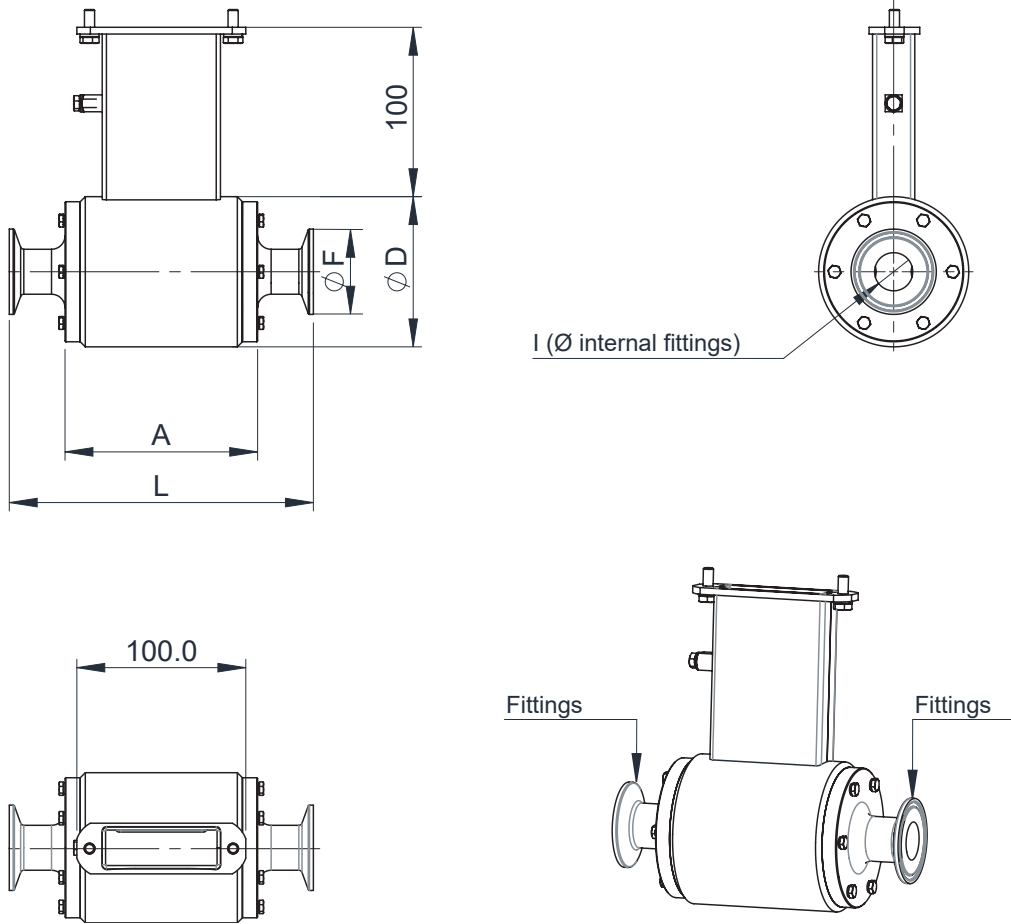
DIN 11851							
DIMENSIONS mm (inches)	DN						
	25 (1")	32 (1" 1/4")	40 (1" 1/2")	50 (2")	65 (2" 1/2")	80 (3")	100 (4")
A	115		121				
L	180				200		
D	89		108	129	140	156	168
THREAD	Rd 52 x 1/6	Rd 58 x 1/6	Rd 65 x 1/6	Rd 78 x 1/6	Rd 95 x 1/6	Rd 110 x 1/4	Rd 130 x 1/4
CONNECTIONS	25	32	40	50	65	80	100

SMS 1146						
DIMENSIONS mm (inches)	DN					
	25 (1")	40 (1" 1/2")	50 (2")	65 (2" 1/2")	80 (3")	100 (4")
A	115	121				
L	180				200	
D	89	108	129	140	156	168
THREAD	Rd 40-6	Rd 60-6	Rd 70-6	Rd 85-6	Rd 98-6	Rd 125-4
CONNECTIONS <small>ACCORDING TO SMS 1146*</small>	25	38	51	63	76	104

\*Except for DN100

**NB : With DIN connection use suitable gasket for cleaning in place (CIP) applications  
SMS 1146 connection is only suitable for cleaning out of place (COP)**

**Clamp connections**

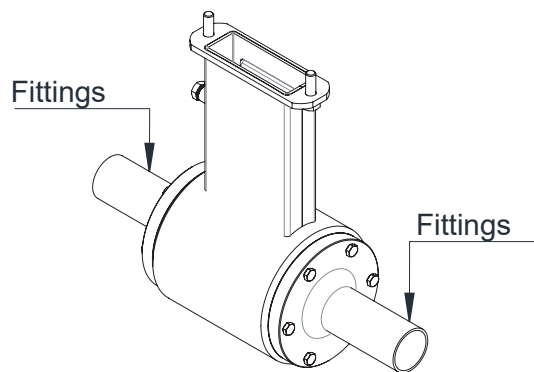
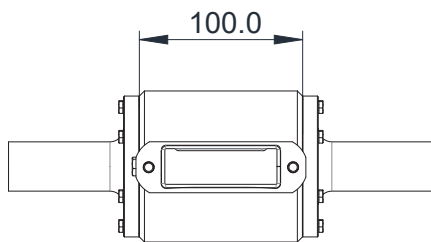
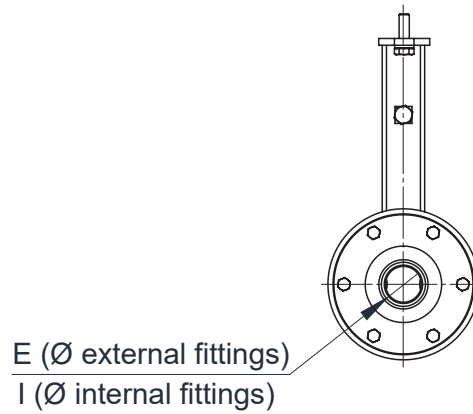
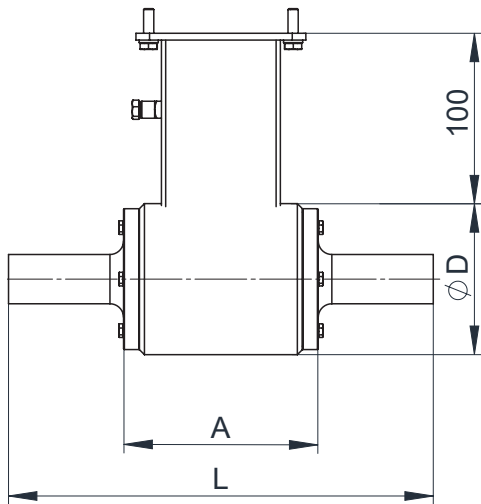


CLAMP ISO2852						
DN						
DIMENSIONS mm (inches)	25 (1")	40 (1" 1/2")	50 (2")	65 (2" 1/2")	80 (3")	100 (4")
<b>A</b>	115	121				
<b>L</b>	180			200		
<b>D</b>	89	108	129	140	156	168
<b>I</b>	22.6	35.6	48.6	60.3	72.9	97.6
<b>F</b>	50.5		64	77.5	91	119

CLAMP BS4825 PART3						
DN						
DIMENSIONS mm (inches)	25 (1")	40 (1" 1/2")	50 (2")	65 (2" 1/2")	80 (3")	100 (4")
<b>A</b>	115	121				
<b>L</b>	180			200		
<b>D</b>	89	108	129	140	156	168
<b>I</b>	22.2	34.9	47.6	60.3	73	97.6
<b>F</b>	50.5		64	77.5	91	119

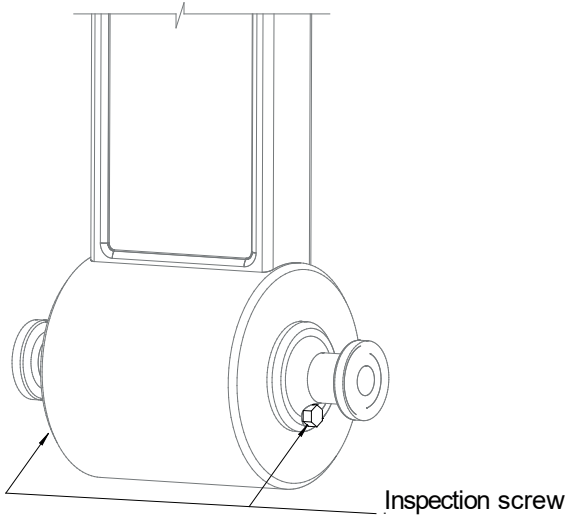
**NB: with ISO2852 connection use suitable gasket for cleaning in place (CIP) application  
with BS4825 connection use suitable gasket for cleaning in place (CIP) application**

**Welded connections**



DIN 10357 (EX DIN 11850) RANGE 2							
DIMENSIONS mm (inches)	25 (1")	32 (1" 1/4")	40 (1" 1/2")	50 (2")	65 (2" 1/2")	80 (3")	100 (4")
A	115		121				
L	250					258	
D	89		108	129	140	156	168
E	29.0	35.0	41.0	53.0	70.0	85.0	104.0
I	26.0	32.0	38.0	50.0	66.0	81.0	100.0

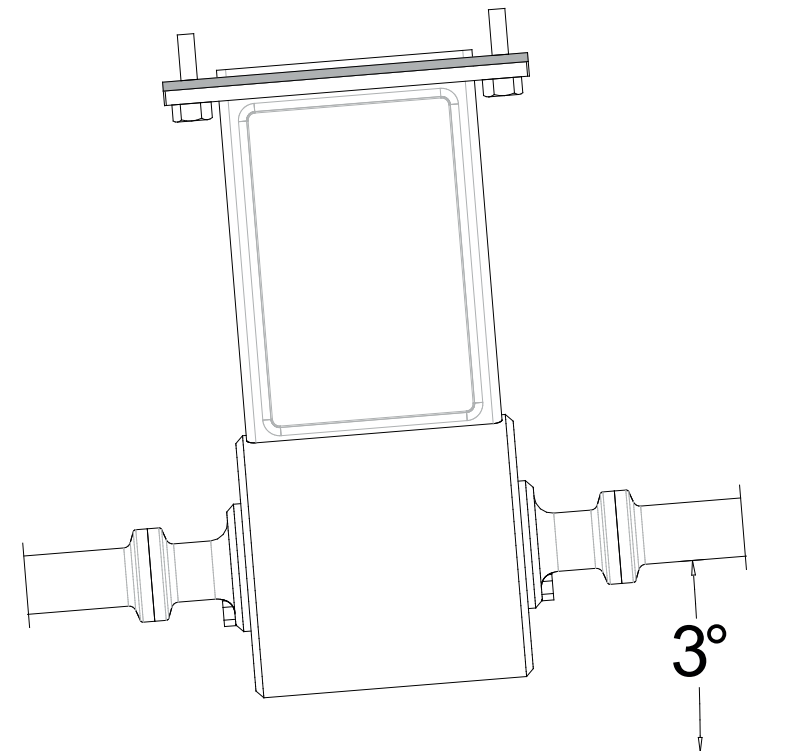
## INSPECTION SCREW (VALID ONLY FOR DN 3-20)



Verify periodically the sensor's seals integrity: with piping full of liquid, unscrew the Inspection screws (see drawing aside) and verify the total absence of liquid from inspection hole!  
After the above operation, REMEMBER to close again the holes.

In case of leakage contact immediately our Customer Service.

## SENSOR SELF-DRAINING



When flowmeter is installed horizontally, ensure minimum angle of 3° for self draining purposes

At the end of its useful life, this product must be disposed of in full compliance with the environmental regulations of the country in which it is located.

## VERSIONS

<b>REVIEW</b>	<b>DATE</b>	<b>DESCRIPTION</b>
MAN_S056_EN_BU_R02	23/03/2021	GRAPHIC UPDATE AND CONTENT CORRECTIONS
MAN_S056_EN_BU_R03	30/05/2022	ADDED PAGE 5
MAN_S056_EN_BU_R04	05/11/2024	ADDED 3A LOGO
MAN_S056_EN_BU_R05	11/12/2024	FITTINGS TABLES UPDATED



