



BM26A-5000 Handbook

Bypass chamber for level transmitters

- 244LD Displacer-Type
- LR54 24 GHz FMCW Radar
- LR74 24 GHz FMCW Radar
- LR75 80 GHz FMCW Radar

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SAFETY INSTRUCTIONS

Intended use

The BM26A-5000 is a bypass chamber designed for use with a Displacer-type or a FMCW Radar (non- contact radar), TDR (guided radar) level transmitter.

This bypass chamber is connected to open or pressurized tanks. With the applicable options, it is resistant to difficult service conditions and liquids that are poisonous, flammable, or that cause corrosion.

CAUTION

Responsibility for the use of the measuring devices with regard to suitability, intended use and corrosion resistance of the used materials against the measured fluid lies solely with the operator.

INFORMATION

The manufacturer is not liable for any damage resulting from improper use or use for other than the intended purpose.

This document does not have data about the level transmitters. For more data, refer to the related handbook:

SAFETY INSTRUCTIONS

Product marking



Figure 1-1: Examples of marking logo

The manufacturer certifies successful testing of the product by applying the conformity mark on the device.

This device fulfils the statutory requirements of the relevant directives.

For more information on the directives, standards and the approved certifications, please refer to the declaration of conformity supplied with the device or downloadable from the manufacturer's website.

DANGER

The bypass chamber cannot cause ignition of gases and dust because the bypass chamber does not have parts that move. Thus, the bypass chamber does not have an Ex approval option.

DANGER

Level transmitter options: If a level transmitter is used in a potentially explosive atmosphere, then it must have the appropriate Ex approval option.

For more data, refer to the applicable Ex supplementary instructions.

SAFETY INSTRUCTIONS

Pressure equipment regulations

PED

These devices are designed, assembled and tested to agree with the EU Pressure Equipment Directive (PED). The CE mark on the nameplate shows that the manufacturer did a conformity assessment. The PED conformity assessment is approved by a Notified Body. The identification number of the Notified Body is given on the nameplate.

PE(S)R

These devices are designed, assembled and tested to agree with the UK Pressure Equipment (Safety) Regulations (PE(S)R). The UKCA mark on the nameplate shows that the manufacturer did a conformity assessment. The PE(S)R conformity assessment is approved by an Approved Body. The identification number of the Approved Body is given on the nameplate.

A code on the nameplate gives data about the PED or PE(S)R rating of the device:

Example: PED/G1/III	
G	Gases and vapours
1	Fluid group 1
III	Category III

Table 1-1: Example of PED or PE(S)R rating

For more data about the nameplate refer to Bypass chamber nameplate on page 14 ("Namur").

ASME B31.3

If the device has the "ASME B31.3" option, it is designed, assembled and tested to agree with the ASME B31.3 Code for Process Piping. A special nameplate is used for ASME B31.3 data. For a description of the ASME nameplate, refer to Bypass chamber nameplate on page 14.

WARNING

The process pressure and process temperature are given on the device nameplate and are only applicable to your bypass chamber. Do not use the device at a process pressure more than the maximum limit for a given process temperature. For more data, refer to Maximum process pressure: bypass chamber on page 39.

WARNING

If the device has an Ex approval, then you must obey other temperature limits.
For more data, refer to the Ex supplementary instructions.

The manufacturer did a risk analysis on the device that agrees with the EU Pressure Equipment Directive and the UK Pressure Equipment (Safety) Regulations. All personnel must know the design and operating conditions that follow to prevent the risk of damage and injury:

- This device is designed to function at almost constant pressure and temperature conditions. A maximum of 500 cycles is permitted along the full pressure range. A maximum of 2000 cycles is permitted along the full temperature range.
- This device is not designed for operating conditions where vibration or fatigue stress is present.
- Events that are not taken into account in the calculations include exceptional risks such as: earthquakes, bad weather, fire etc..

SAFETY INSTRUCTIONS

- The standard design calculation does not take into account the theoretical coefficient of corrosion. The product circulating in the device must not have properties that cause surface erosion.
- Our conformity declaration is limited to the parts of the device that are pressurized. It does not include parts that can be dismantled (valves etc.).
- The process connections must be attached correctly to prevent mechanical stress. The axis of the process connection must be parallel to and centred with the axis of the tank's process connections. Tighten the process connections in agreement with the design code.
- The user must take necessary steps to protect the installed device from shock waves (water hammer). A pressure-limiting valve must protect the installation.
- The effective pressure of the installation (the maximum pressure permitted by the pressure-limiting valve) must never be more than the maximum permitted pressure. The maximum permitted pressure is marked on the device nameplate.
- Make sure that the parts in contact with the fluid are compatible with the fluid and conform to the ageing characteristics of the measurement environment and the fluid used. These have either been recommended in the instructions or form the subject of a particular specification in the contract.
- The device is designed to measure a liquid with a gas phase. It is not designed to measure liquids that change to a solid phase because of changes in pressure (solidification) and temperature (freezing), e.g. water and ice.
- Make sure that there are no magnetic particles in the liquid. These particles can have an effect on the performance of the device.
- Make sure that the size of the particles in the liquid are less than 0.05mm/ 0.002" in diameter.
- Make sure that the device is correctly sealed. Do a leakage check between the device and the tank.
- The external pressure, P_{ext} , must be equal to atmospheric pressure, P_{atmos} ($P_{ext} = P_{atmos}$).

Safety instructions from the manufacturer

Disclaimer

The manufacturer will not be liable for any damage of any kind by using its product, including, but not limited to direct, indirect or incidental and consequential damages.

This disclaimer does not apply in case the manufacturer has acted on purpose or with gross negligence. In the event any applicable law does not allow such limitations on implied warranties or the exclusion of limitation of certain damages, you may, if such law applies to you, not be subject to some or all of the above disclaimer, exclusions or limitations.

Any product purchased from the manufacturer is warranted in accordance with the relevant product documentation and our Terms and Conditions of Sale.

The manufacturer reserves the right to alter the content of its documents, including this disclaimer in any way, at any time, for any reason, without prior notification, and will not be liable in any way for possible consequences of such changes.

Product liability and warranty

Responsibility as to suitability and intended use of these bypass chambers rests solely with the operator. The supplier does not accept any liability resulting from misuse by the operator. Improper installation and operation of the bypass chambers may lead to loss of warranty. In addition, the “General conditions of sale” which forms the basis of the purchase agreement are applicable.

Information concerning the documentation

To prevent any injury to the user or damage to the device it is essential that you read the information in this document and observe applicable national standards, safety requirements and accident prevention regulations.

If this document is not in your native language and if you have any problems understanding the text, we advise you to contact your local office for assistance. The manufacturer cannot accept responsibility for any damage or injury caused by misunderstanding of the information in this document.

This document is provided to help you establish operating conditions, which will permit safe and efficient use of this device. Special considerations and precautions are also described in the document, which appear in the form of icons as shown below.

SAFETY INSTRUCTIONS

Warnings and symbols used

Safety warnings are indicated by the following symbols.



DANGER!

This warning refers to the immediate danger when working with electricity.



DANGER!

This warning refers to the immediate danger when using this device in a hazardous atmosphere.



DANGER!

These warnings must be observed without fail. Even partial disregard of this warning can lead to serious health problems and even death. There is also the risk of seriously damaging the device or parts of the operator's plant.



DANGER!

Disregarding this safety warning, even if only in part, poses the risk of serious health problems. There is also the risk of damaging the device or parts of the operator's plant.



WARNING!

Disregarding this safety warning, even if only in part, poses the risk of serious health problems. There is also the risk of damaging the device or parts of the operator's plant.



CAUTION!

Disregarding these instructions can result in damage to the device or to parts of the operator's plant.



INFORMATION

These instructions contain important information for the handling of the device.



LEGAL NOTICE

This note contains information on statutory directives and standards.



• **HANDLING**

This symbol designates all instructions for actions to be carried out by the operator in the specified sequence.

➔ **RESULT**

This symbol designates all instructions for actions to be carried out by the operator in the specified sequence.

Safety instructions for the operator



DANGER

In general, devices from the manufacturer may only be installed, commissioned, operated and maintained by properly trained and authorized personnel.

This document is provided to help you establish operating conditions, which will permit safe and efficient use of this device.

DEVICE DESCRIPTION

Scope of delivery

Do a check of the packing list to make sure that your device agrees with the customer order. The device is supplied in one box.



INFORMATION!

Inspect the packaging carefully for damages or signs of rough handling. Report damage to the carrier and to the local office of the manufacturer.

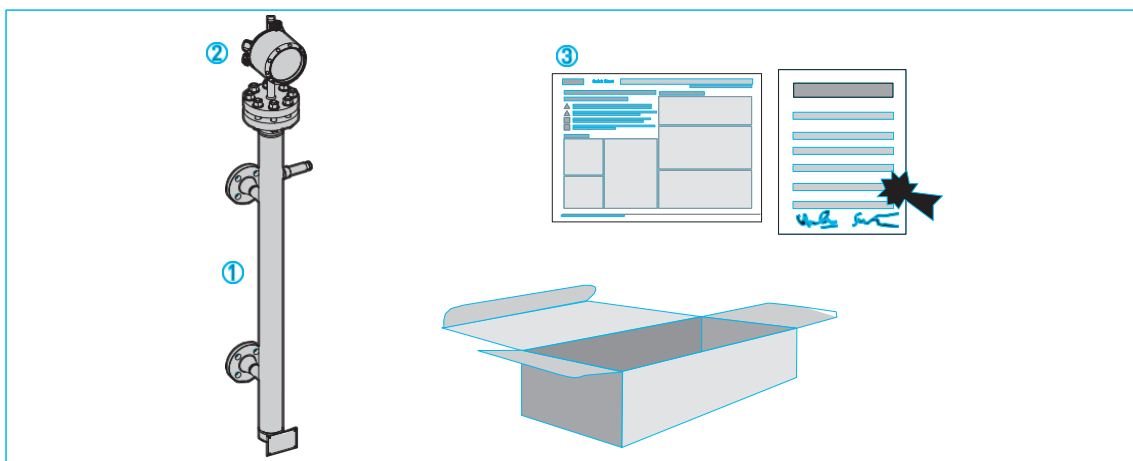


Figure 2-1: Scope of delivery

1. Bypass chamber
2. Level transmitter
3. Quick Start

Technical documentation for this device can be downloaded from the website ([Download Centre](#)).

Device description

The BM26A-5000 is a bypass chamber for Displacer-type, FMCW (non-contact) Radar or Buoyancy level transmitters. The level transmitter is installed on top of the bypass chamber.

A FMCW (non-contact) radar level transmitter is designed to continuously measure the level.

A Buoyancy level transmitter is designed to continuously measure the level, interface, or density of liquids.

The illustration that follows shows the level transmitter options.

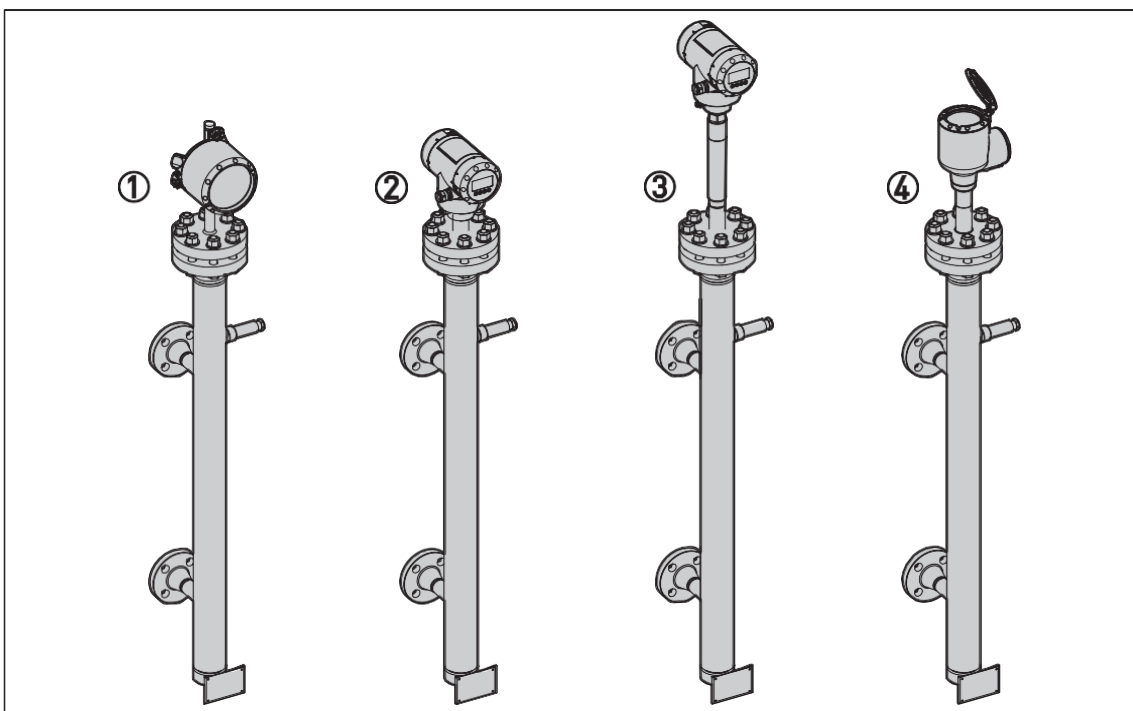


Figure 2-2: Level transmitter options

1. Bypass chamber with displacer-type level transmitter
2. Bypass chamber with TDR (Guided Radar) level transmitter
3. Bypass chamber with TDR (Guided Radar) level transmitter
4. Bypass chamber with FMCW radar level transmitter

The temperature and pressure range of a level transmitter installed on a bypass chamber is:

Device	Temperature range		Pressure range	
	[°C]	[°F]	[barg]	[psig]
Displacer	-40...+400	-40...+752	-1...400	-14.5...5802
TDR	-50...+250	-58...+482	-1...100	-14.5...1450
TDR	-50...+315	-58...+599	-1...320	-14.5...4641
FMCW	-50...+200	-58...+392	-1...100	-14.5...1450

Table 2-1: Bypass chamber with a level transmitter option: pressure and temperature ranges



INFORMATION

For more data about the level transmitter options, refer to the related handbook (244LD, LRxx).

The bypass chamber can be made of:

- 316/316L (1.4401/1.4404) stainless steel,
- 304L (1.4307) stainless steel,
- HASTELLOY® C-276 alloy (2.4819), or
- INCONEL® nickel-chromium alloy 625 (2.4856)

Nameplates



INFORMATION

For more data about the level transmitter options, refer to the related handbook.

The bypass chamber can be made of:

- 316/316L (1.4401/1.4404) stainless steel,
- 304L (1.4307) stainless steel,
- HASTELLOY® C-276 alloy (2.4819), or
- INCONEL® nickel-chromium alloy 625 (2.4856)

Location of device labels

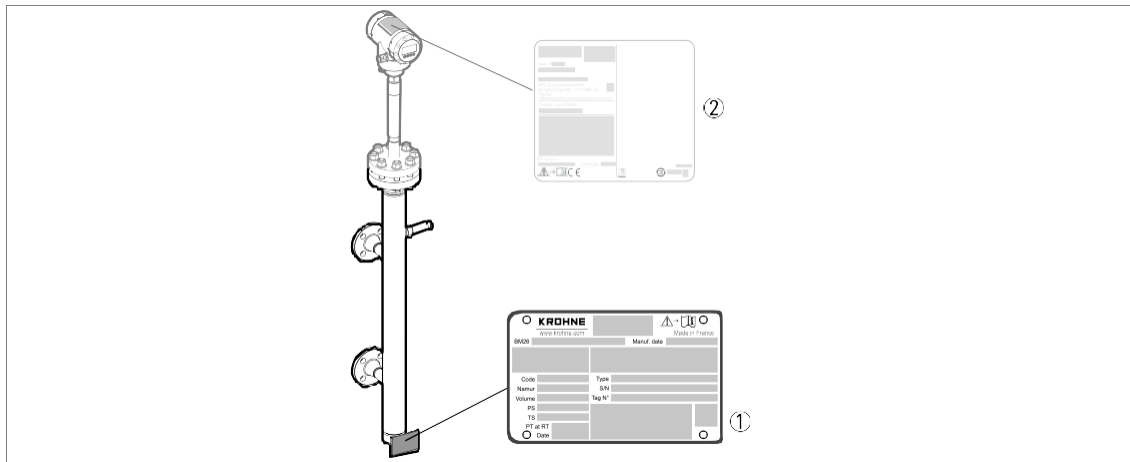


Figure 2-3: Location of device nameplates

1 Bypass chamber nameplate

2 Optional level transmitter nameplate - for more data, refer to the related handbook



INFORMATION

For more data about the level transmitter options, refer to the related handbook.

Bypass chamber nameplate

PED, PE(S)R and EN13445 construction codes.

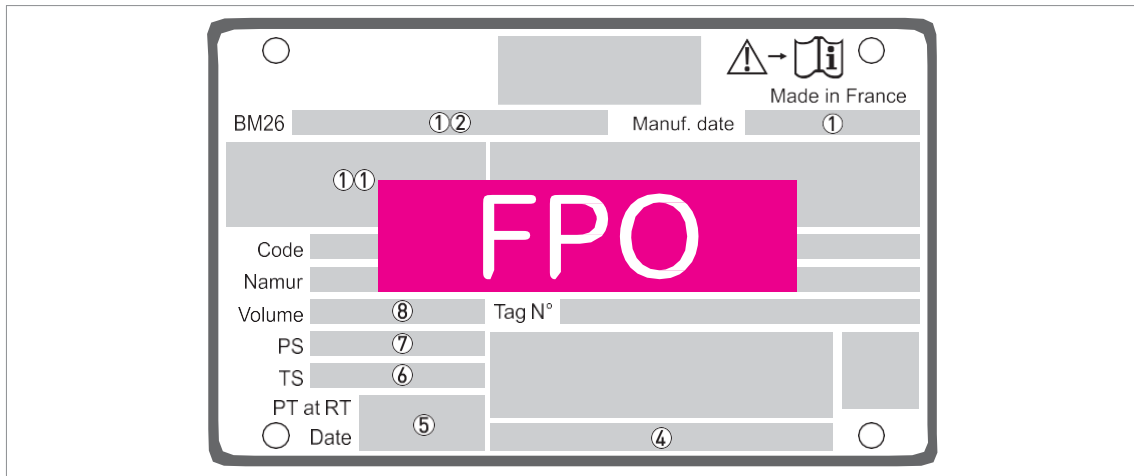


Figure 2-4: Bypass chamber nameplate (PED, PE(S)R and EN 13445 construction codes)

1. Date of manufacture (Year . Month . Day)
2. Designation code (VF or SF code given in the order)
3. Factory serial number
4. Name and address of the UK importer (if applicable)
5. Test pressure (PT) and test date
6. Process temperature range (TS)
7. Process pressure range (PS)
8. Bypass chamber volume
9. PED marking (PED/G1/III, PED/G1/IV or PED/G2/III). This marking agrees with NAMUR Recommendation NE 080.
- For more data, refer to Pressure equipment regulations on page 7.
10. Construction code
11. CE marking (if applicable)

PED Notified Body code (0036) - if there is a PED marking given on the nameplate.

UKCA marking (if applicable)

PE(S)R Approved Body code (0168) - if there is a PE(S)R marking given on the nameplate.

Refer also to item (9) on this illustration.

12. Model name

ASMEB31.3 construction code

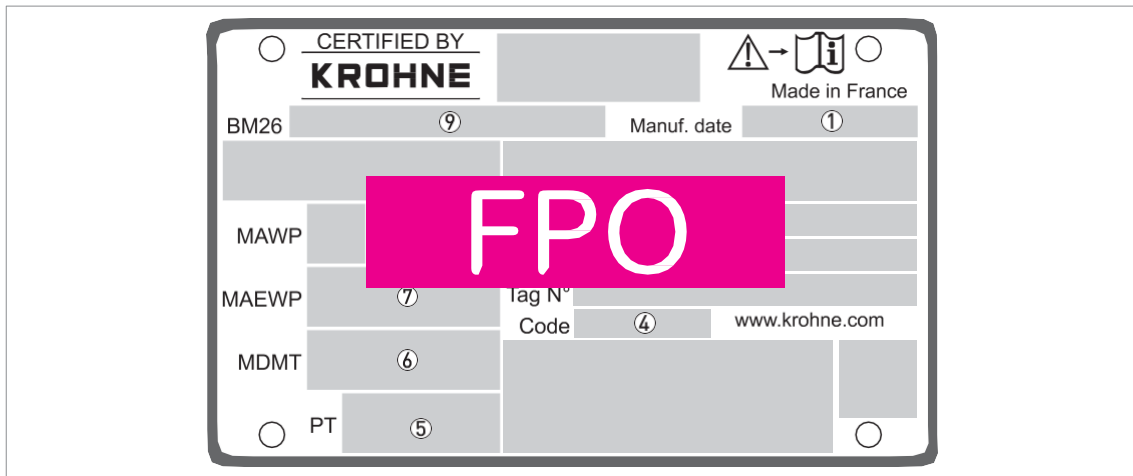


Figure 2-5: Bypass chamber nameplate (ASME B31.3 construction code)

- 1 Date of manufacture (Year . Month . Day)
- 2 Designation code (VF or SF code given in the order)
- 3 Factory serial number
- 4 Construction code
- 5 Test pressure (PT)
- 6 Maximum design metal temperature (MDMT)
- 7 Maximum allowable external working pressure (MAEWP)
- 8 Maximum allowable working pressure (MAWP)
- 9 Model name

INSTALLATION

Storage

- Do not keep the device in a vertical position before installation. Put the device on its side.
- Store the device in its original packing and in dry and dust-free location.
- Storage temperature range: -70...+80°C / -94...+176°F

Transportation

Lift the device carefully. Make sure that the method used to transport the device is adapted to its weight and agrees with national regulations.

Installation - bypass chamber

General notes

The operating conditions that are applicable for your device are given on the device nameplate. For more data on where to find the operating conditions data for your device, refer to

Nameplates on page 13. For general technical data about the device, refer to Technical data on page 26.

Make sure that the installation conditions obey the design constraints related to PED. For more data, refer to Pressure equipment regulations on page 7.

Other installation conditions

- Make sure that there is no contamination (dirt etc.) or unwanted objects in the bypass chamber.
- Install the bypass chamber vertically on the tank.
- Make sure that the device is correctly installed. The device nameplate is always at the bottom of the device.
- Select bolts and gaskets (not supplied) that agree with the pressure rating of the process connection and the process pressure.
- We recommend that you use braces to prevent damage to the process connections.



DANGER!

Make sure that the outer surface temperature of the device is less than +60°C / +140°F. If the surface temperature is more than +60°C / +140°F, use the device with precautions that agree with health and safety rules and regulations.



WARNING!

Do not apply weight on the process connections. There is a risk of damage to the device and the installation.

Isolation valves

We recommend that you install isolation valves between the device and the tank. The device can then be easily removed from the tank for the cleaning procedure. Drain the device only when it is isolated from the tank.

Level transmitter options

The level transmitter is attached to the bypass chamber at the factory.

ELECTRICAL CONNECTIONS

244LD displacer-type level transmitter

This device is supplied as an option with the bypass chamber. For the electrical connection procedure, refer to the 244LD handbook.

LR54/74 24 GHz FMCW radar level transmitters

This device is supplied as an option with the bypass chamber. For the electrical connection procedure, refer to the LR54/74 handbook.

LR75 80 GHz FMCW radar level transmitter

This device is supplied as an option with the bypass chamber. For the electrical connection procedure, refer to the LR75 handbook.

Grounding connection

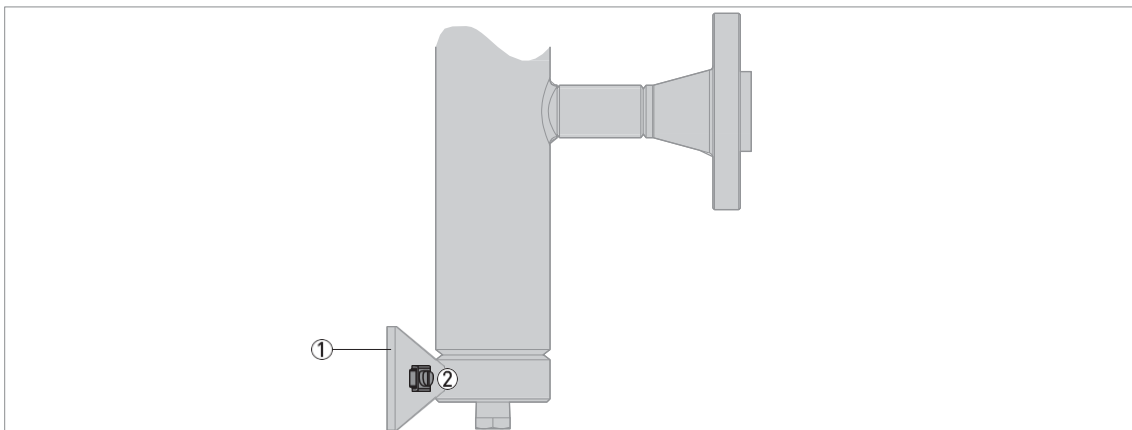


Figure 4-1: Bypass chamber - location of grounding terminal

1. Bypass chamber nameplate
2. Grounding terminal on the side of the nameplate

START-UP

Start-up checklist

Do these checks before you use the device:

- Are all the wetted components (bypass chamber, flanges and gaskets) resistant to the product in the tank?
- Does the information on the nameplate agree with the operating data? For more data about nameplates, refer to Nameplates on page 13.
- Did you correctly install the device on the tank?
- Device options: Do the electrical connections agree with the national electrical codes?
- Do the electrical cables have properties that are applicable to the operating conditions?



DANGER!

Devices with Ex approval options: Make sure that the bypass chamber, electrical equipment and the installation agree with the requirements of all the related Ex certificates of compliance.



CAUTION!

If the device has a level transmitter option or electric heat tracing equipment, obey the instructions given in the related handbooks for this equipment.

How to start the device



- Attach the drainage plugs or close the drainage cock.
 - Slowly open the isolation valves on the top and bottom process connections.
 - Do a leak test.
 - Energize the electrical equipment.
- ➡ End of the procedure.



DANGER!

Low-temperature or high-temperature versions: risk of burns. Put on protective clothing when you go near the device.



DANGER!

Do the servicing of device regularly to agree with the regulations of the site on which it is installed.



CAUTION!

Risk of damage to the device from shock waves. Open the valves slowly to prevent damage from water hammer. Use a pressure-limiting valve to prevent damage to the installation.

OPERATION

Operating concept

You can read level or interface measurements with a level transmitter that uses guided radar (TDR), FMCW radar or displacer-type measurement technology. Output options include 4...20mA, 4...20mA+ HART and FOUNDATION™ fieldbus.

Description of display

For more data about the display screen, refer to the handbook related to the level transmitter option.

Configuration of the level transmitter

244LD displacer-type level transmitter

This device is supplied as an option with the bypass chamber. For the device configuration procedure, refer to the 244LD handbook.

LR54/74 FMCW radar level transmitters

These devices are supplied as an option with the bypass chamber. For the device configuration procedure, refer to the LR54 or LR74 handbook.

Errors

For more data about error handling, refer to the handbook related to the level transmitter option.

SERVICE

Periodic maintenance

This device does not normally need maintenance. If the liquid is contaminated or build-up of deposits is possible, we recommend that you flush the device regularly:



WARNING!

The device must be regularly serviced to conform to the rules and regulations applicable to the site on which it is installed.



WARNING!

Follow accident prevention regulations carefully when you do work near pressurized tanks and dangerous chemical products.



How to flush the device

- Open the drain plug or drain valve.
- Flush the chamber..
- ➡ End of the procedure.



WARNING!

If you open the drain valve, make sure that you close the tank isolation valves first.



WARNING!

If the bypass chamber has Ring Joint gaskets, then make sure that you replace the gasket each time that you remove the bottom flange.

Service warranty

Maintenance is not necessary for most applications

Servicing by the customer is limited by warranty to

- screws, nuts, studs, gaskets and counter flanges for flanged connections
- male and female plugs for drains and vents
- ball valves
- support brackets for the bypass chamber

Use only authorized service staff to repair the device

Availability of services

The manufacturer offers a range of services to support the customer after expiration of the warranty. These include repair, maintenance, technical support and training.



INFORMATION!

For more precise information, please contact your local sales office.

Returning the device to the manufacturer

General information

This device has been carefully manufactured and tested. If installed and operated in accordance with these operating instructions, it will rarely present any problems



WARNING!

Should you nevertheless need to return a device for inspection or repair, please pay strict attention to the following points:

- Due to statutory regulations on environmental protection and safeguarding the health and safety of the personnel, the manufacturer may only handle, test and repair returned devices that have been in contact with products without risk to personnel and environment
- This means that the manufacturer can only service this device if it is accompanied by the following certificate (see next section) confirming that the device is safe to handle.



WARNING!

If the device has been operated with toxic, caustic, radioactive, flammable or water-endangering products, you are kindly requested

- to check and ensure, if necessary by rinsing or neutralising, that all cavities are free from such dangerous substances
- to enclose a certificate with the device confirming that it is safe to handle and stating the product used.

Form (for copying) to accompany a returned device

Company:		Address:	
Department:		Name:	
Tel. No.:		Fax No.:	
The meter enclosed, type:			
Manufacturer's Order or Serial No.:			
has been operated with the following liquid:			
Because this liquid is:	hazardous to water		
	toxic		
	caustic		
	flammable		
	We have checked that all cavities in the unit are free from such substances.		
	We have flushed out and neutralized all cavities in the unit.		
We herewith confirm that in returning this unit there is no risk to man or environment through any residual liquid contained in it.			
Date:		Company stamp:	
Signature:			

Disposal



LEGAL NOTICE!

Disposal must be carried out in accordance with legislation applicable in your country.

Separate collection of WEEE (Waste Electrical and Electronic Equipment):



According to the directive 2012/19/EU or UK Regulation 2013 No.3113, the monitoring and control instruments marked with the WEEE symbol and reaching their end-of-life must not be disposed of with other waste. The user must dispose of the WEEE to a designated collection point for the recycling of WEEE or send them back to our local organisation or authorised representative.

TECHNICAL DATA

Measuring principle

The bypass chamber operates on the principle of communicating vessels. The bypass chamber is installed adjacent to the tank and connected to it by two pipes. The process conditions in the bypass chamber are the same as those in the tank.

The measuring principle is also related to the level transmitter option that you selected in the customer order. For more data, refer to the handbook for that level transmitter option.

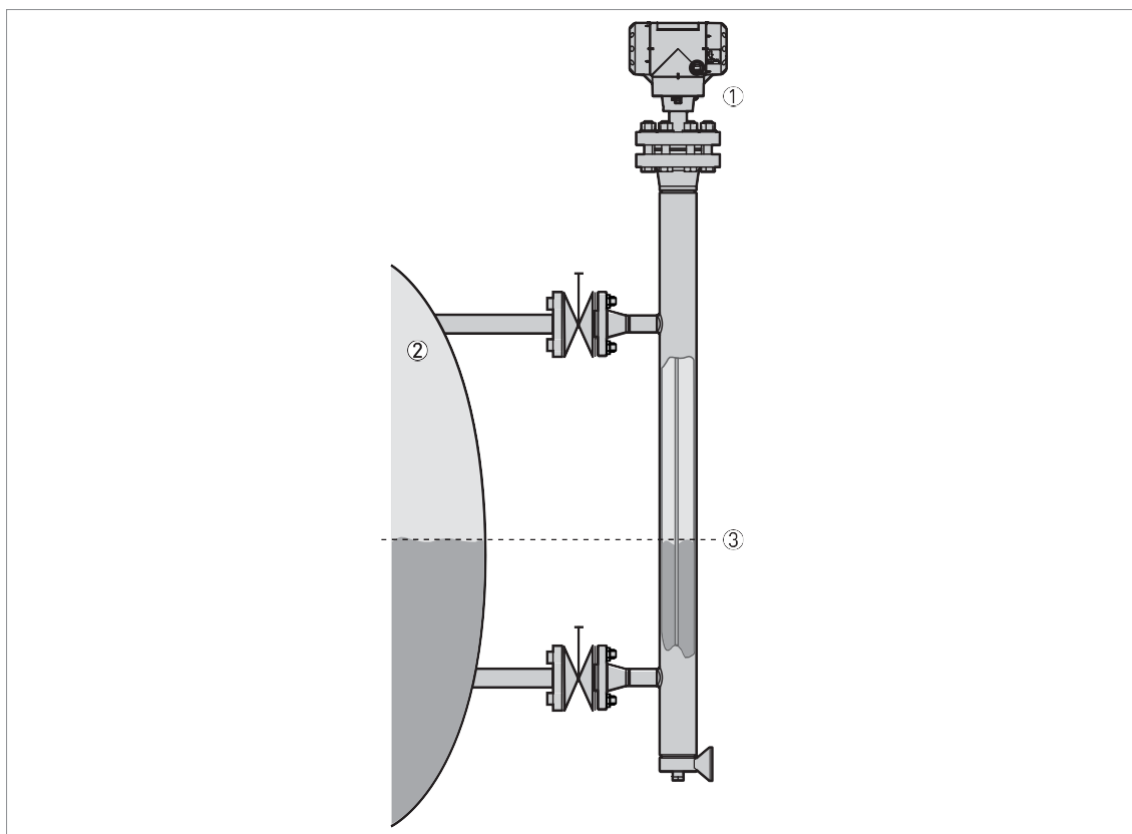


Figure 4-1: Measuring principle

- 1. Bypass chamber with level transmitter
- 2. Tank
- 3. Level of the liquid

Technical data



INFORMATION!

- The following data is provided for general applications. If you require data that is more relevant to your specific application, please contact us or your local sales office.
- Additional information (certificates, special tools, software,...) and complete product documentation can be downloaded free of charge from the website (Downloadcenter).

PN40 / Class 300	PN100 / Class 600	PN250 / Class 1500	PN400 / Class 2500
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Measuring principle	Bypass chamber for level transmitter (principle of communicating vessels). For more data about the measuring principle, refer to the handbook of the level transmitter option. 1
Application range	Level and interface measurement of liquids
Measured value	
Primary measured value	Distance. For more data about the primary measured value, refer to the handbook of the level transmitter option. 1
Secondary measured value	For more data about the secondary measured value, refer to the handbook of the level transmitter option. 1

Bypass chamber, variants	Side / side process connections 2		
Level transmitter, options	244LD displacer-type	244LD displacer-type	244LD displacer-type
	LR54/74 24GHz FMCW radar		
	LR75 80GHz FMCW radar		
Other options	Thermal insulation (ROCKWOOL® or FOAMGLAS®) in a metal enclosure		
	Electric heat tracing system		
	Heat protective enclosure (metal grid)		
Measuring range (ML)	0.3. 5.5m / 1...18ft (longer on request)		
Display and user interface			
Display	For more data about the display options, refer to the handbook of the level transmitter option. 1		

Level transmitter	Refer to the handbook of the level transmitter option 1
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Temperature	
Process temperature	-196...+400°C/ -320.8...+752°F (refer also to the handbook of the level transmitter option) 1
Ambient temperature	-70...+80°C/ -94...+176°F (refer also to the handbook of the level transmitter option) 1
Storage temperature	-70...+80°C/ -94...+176°F

PN40 / Class 300		PN100 / Class 600		PN250 / Class 1500		PN400 / Class 2500	
Pressure							
Process pressure	-1...40 barg / -14.5...580 psig 3	-1...100 barg / -14.5...1450 psig 3		-1...250 barg / -14.5...3625 psig 4		-1...400 barg / -14.5...5802 psig 4	
Chemical properties: viscosity							
244LD	≤ 500 mPa·s / ≤ 500 cP						
LR54/74/75	N/A						
Other conditions							
Ingress protection (IEC60529)	IP68 (0.15barg)						

Bypass chamber (options)	DN65 / NPS 2 1/2 (Ø73.03 mm) chamber		
	Stainless steel (1.4404/ 316L or 1.4307/ 304L); HASTELLOY® C-276 alloy (2.4819); INCONEL® nickel-chromium alloy 625 (2.4856)		Stainless steel (1.4404/ 316L); HASTELLOY® C-276 alloy (2.4819); INCONEL® nickel-chromium alloy 625 (2.4856)
	DN80 / NPS 3 (Ø88.9 mm) chamber		
	Stainless steel (1.4404/ 316L)		
Process connection (options)	Stainless steel (1.4404/ 316L or 1.4307/ 304L); HASTELLOY® C-276 alloy (2.4819); INCONEL® nickel-chromium alloy 625 (2.4856)		Stainless steel (1.4404/ 316L); HASTELLOY® C-276 alloy (2.4819); INCONEL® nickel-chromium alloy 625 (2.4856)
Gasket (options)	Aramid (T ≤ +250°C/ +482°F); graphite; 316L/graphite (spiral-wound); PTFE (T ≤ +250°C/ +482°F)	Aramid (T ≤ +250°C/ +482°F); graphite; 316L/graphite (spiral-wound); ring joint 5	Ring joint 5

Threaded pipe	1/2...1 NPT (male); 1 NPT (female); G 1/2...1 (male); G 1 (female)	N/A		
Welded pipe	NPS 1/2...1 in Sch10S6	NPS 1 in Sch40S6	NPS 1 in Sch80S6	N/A
Flange, EN				
Size	DN15...50			
Pressure rating	PN40 (welding neck or lap joint)	PN100 (welding neck)	PN160 or 250 (welding neck)	7
Facing type options	B1; C; D; E; F	B2; C; D; E; F	B2; C; D; E; F	7

PN40 / Class 300		PN100 / Class 600		PN250 / Class 1500		PN400 / Class 2500	
Flange, ASME							
Size	NPS 1/2...2 6					NPS 1 or 2 6	
Pressure rating	Class 150/ 300 (welding neck)	Class 600 (welding neck)		Class 1500 (welding neck)		Class 2500 (welding neck)	
Facing type options	RF; LG; SG; LF; SF; LT; ST; LM; SM	RF; RJ; LG; SG; LF; SF; LT; ST; LM; SM		RJ; LG; SG; LF; SF; LT; ST; LM; SM		RJ	
Flange, JIS							
Size	25...50N	/A					
Pressure rating	20K (Type A)	N/A					
Facing typeN	RF	/A					

Drain options			
Thread	Without; G 3/8...3/4 (female) with plug; 3/8...3/4 NPT (female) with plug	Without; 3/8...3/4 NPT (female) with plug	
Flange, EN	All process connection options		8
Flange, ASME	All process connection options		NPS 1/2 or 1 (RJ) in Class 2500 (welding neck)
Vent options			
Thread	Without; G 1/2...3/4 (female) with plug; 1/2...3/4 NPT (female) with plug	Without; 3/8...3/4 NPT (female) with plug	
Flange, EN	DN20; DN25	DN15; DN25	8
Flange, ASME	NPS 3/4; NPS 1	NPS 1/2; NPS 1	NPS 1/2 or 1 (RJ) in Class 2500 (welding neck)

Level transmitter	Refer to the handbook of the level transmitter option 1
Electrical heat tracing equipment	Refer to the handbook of the electrical heat tracing equipment

Level transmitter	Refer to the handbook of the level transmitter option 1
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PN40/ Class 300	PN100/ Class 600	PN250/ Class 1500	PN400/ Class 2500
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CE / UKCA	The device meets the essential requirements of the EU Directives and UK Regulations. The manufacturer certifies successful testing of the product by applying the CE or UKCA marking.
	For more data about the European Standards and UK Designated Standards related to this device, refer to the EU and the UKCA Declarations of Conformity. You can download this document free of charge from the website (Download Center).
Explosion protection	Ex approvals are not applicable to the bypass chamber (no moving parts). For more data about Ex approval options, refer to the handbook for the level transmitter option. 1
Pressure	EU Pressure Equipment Directive
	UK Pressure Equipment (Safety) Regulations
	ASMEB31.3 Code for Process Piping
Vibration resistance	EN 60721-3-4 - vibration class 4M4 (1...200 Hz:1g, 15g shock ½sinus: 6 ms)
Construction code	Standard: EN 13445
	Option: NACE MR0175/ MR0103/ IS10 5156, ASME B31.3

Table 8-1: BM26A-5000: technical data

- 1 Level transmitter options include: LR54 & LR74 24GHz FMCW radar and 244LD displacer-type level transmitters.
- 2 Other variants are available on request
- 3 The maximum pressure is related to the type of process connection, pressure rating and the process temperature. For more data about 316-316L and 304L stainless-steel bypass chambers, refer to the "Maximum process pressure: bypass chamber" section in this chapter.
- 4 The maximum pressure is related to the type of process connection, pressure rating and the process temperature. For more data about 316-316L stainless-steel bypass chambers, refer to the "Maximum process pressure: bypass chamber" section in this chapter.
- 5 The ring joint is made of the same material as the bypass chamber
- 6 NPS = Nominal Pipe Size. For more data about the dimensions of flanges, refer to the ASMEB16.5 standard. For more data about the dimensions of welded pipes, refer to the ASMEB36.19M standard.
- 7 Other process connections on request
- 8 Other vent and drain connections on request

Dimensions

PN40 - Class 300

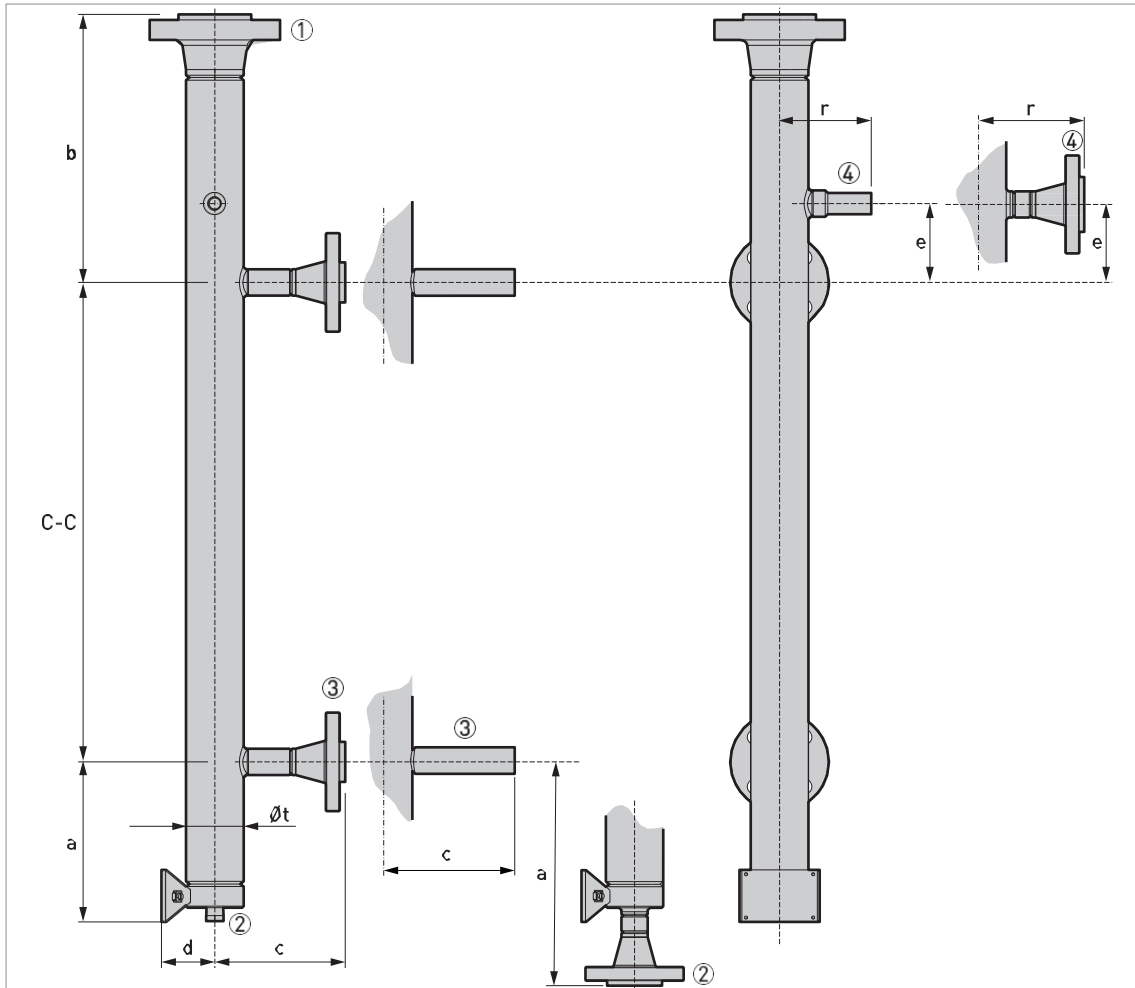


Figure 8-2: BM26A-5000 PN40/ Class 300: side - side process connections

1. Top flange (DN50/ NPS2 or DN80/ NPS3) for level transmitter option
2. Optional drain with 3/8...3/4NPT female threaded connection (with plug) or DN15...50/ NPS1/2...2 flange
3. Process connection (flange or welded pipe)
4. Optional side vent with 1/2...3/4NPT or G1/2...3/4 female threaded connection (with plug) or DN25/ NPS1 flange

INFORMATION!

- a = distance from the center axis of the bottom connection to the bottom of the device
- b = distance from the center axis of the top connection to the top of the device
- C-C = distance between the center axes of the top and bottom process connections

If the device has ASME flanges, then the flange facing type can change the dimension "c". If the flange facing type is "RF", c+0mm/0". If the flange facing type is "FF", c-2mm/0.08". If the flange facing type is "LG", "LF", "SG" or "SF", c+3mm/0.1". If the flange facing type is "LT", "LM", "ST" or "SM", c+5mm/0.2". This is applicable to Class 300 flanges.

Flanged vent and drain options have the same pressure rating as the flanges for the process connections.

Other dimensions are available on request.

Dimensions [mm]								
a	b	C-C	c	d	e	k	r	Øt
210 1	2	300...5500 3	4	70.7	100	74.1	5	6

Table 8-2: BM26A-5000 PN40/ Class 300 (side - side process connections): general dimensions in mm

1. Drain options are available. NPT or G connection (female) + plug: 210mm. Flange, DN15...25 and NPS1/2...1: 270mm. Flange, DN40...50 and NPS1 1/2...2: 345mm.
2. If the bypass chamber has a nominal diameter of NPS21/2 (ASMEB36.19M): 340mm. If the bypass chamber has a nominal diameter of NPS3 (ASMEB36.19M): 250mm.
3. This value agrees with the "C-C" dimension given in the customer order
4. NPT or G connection (male): 162mm. 1/2...3/4NPT or G connection (female): 71mm. 1NPT or G connection (female): 76mm. Flange: 165mm. Welded pipe: 162mm.
5. If the bypass chamber size option is "NPS21/2", then NPT or G connection (male) + plug: 131mm and flange: 165mm. If the bypass chamber size option is "NPS3", then NPT or G connection (male) + plug: 151mm. Flange options for the "NPS3" option include DN20/25: 144mm, NPS3/4 Class150: 157mm, NPS1 Class150: 160mm, NPS3/4 Class300: 162mm, NPS1 Class300: 166mm.
6. This diameter is related to the bypass chamber size option. NPS21/2: 73.03mm. NPS3: 88.9mm.

Dimensions [inches]								
a	b	C-C	c	d	e	k	r	Øt
8.27 1	2	11.8...216.5 3	4	2.78	3.94	2.92	5	6

Table 8-3: BM26A-5000 PN40/ Class 300 (side - side process connections): general dimensions in inches

1. Drain options are available. NPT or G connection (female) + plug: 8.27". Flange, DN15...25 and NPS1/2...1: 10.63". Flange, DN40...50 and NPS1 1/2...2: 13.58".
2. If the bypass chamber has a nominal diameter of NPS21/2 (ASMEB36.19M): 13.39". If the bypass chamber has a nominal diameter of NPS3 (ASMEB36.19M): 9.84".
3. This value agrees with the "C-C" dimension given in the customer order
4. NPT or G connection (male): 6.38" 1/2. 3/4NPT or G connection (female): 2.80". 1NPT or G connection (female): 2.99". Flange: 6.50". Welded pipe: 6.38".
5. If the bypass chamber size option is "NPS21/2", then NPT or G connection (male) + plug: 5.16" and flange: 6.50". If the bypass chamber size option is "NPS3", then NPT or G connection (male) + plug: 5.94". Flange options for the "NPS3" option include DN20/25: 5.67", NPS3/4 Class150: 6.18", NPS1 Class150: 6.30", NPS3/4 Class300: 6.38", NPS1 Class300: 6.54".
6. This diameter is related to the bypass chamber size option. NPS21/2: 2.9". NPS3: 3.5".

Dimensions

PN100 - Class 600

Side - side process connections

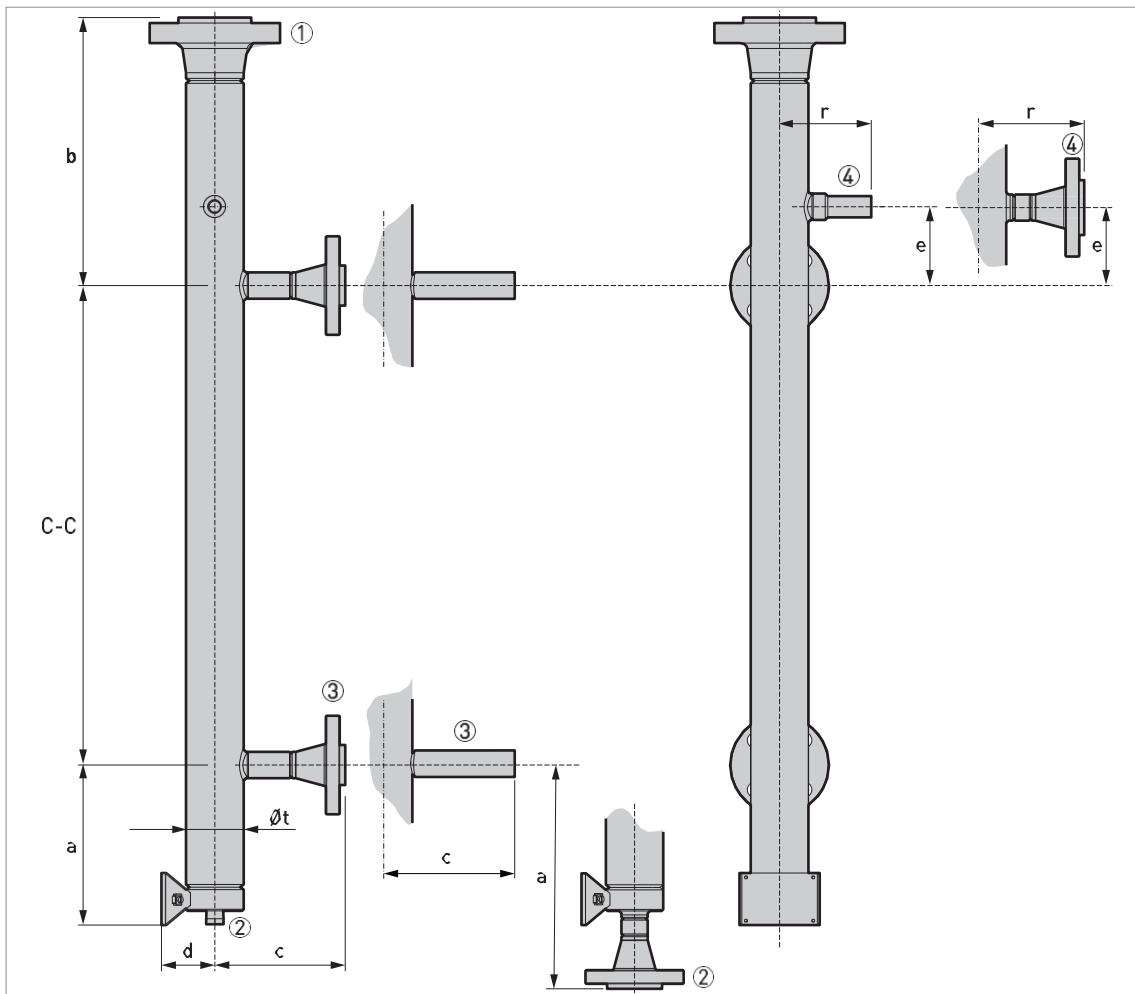


Figure 8-3: BM26A-5000 PN100/ Class 600: side - side process connections

1. Top flange (DN50/ NPS2 or DN80/ NPS3) for level transmitter option
2. Optional drain with 3/8...3/4NPT female threaded connection (with plug) or DN15...50/ NPS1/2...2 flange
3. Process connection (flange or welded pipe)
4. Optional side vent with 3/8...3/4NPT female threaded connection (with plug) or DN25/ NPS1 flange



INFORMATION!

- a = distance from the center axis of the bottom connection to the bottom of the device
- b = distance from the center axis of the top connection to the top of the device
- C-C = distance between the center axes of the top and bottom process connections

Flanged vent and drain options have the same pressure rating as the flanges for the process connections.

Other dimensions are available on request.

Other dimensions are available on request.

Dimensions [mm]								
a	b	C-C	c	d	e	k	r	Øt
210 1	2	300...5500 3	4	70.7	100	74.1	5	6

Table 8-4: BM26A-1000 PN100 / Class 600 (side - side process connections): general dimensions in mm

1. Drain options are available. NPT or G connection (female) + plug: 210 mm. Flange, DN15...25 and NPS 1/2...1: 285 mm. Flange, DN40...50 and NPS 1 1/2...2: 351 mm.
2. If the bypass chamber has a nominal diameter of NPS 2 1/2 (ASME B36.19M): 340 mm. If the bypass chamber has a nominal diameter of NPS 3 (ASME B36.19M): 250 mm.
3. This value agrees with the "C-C" dimension given in the customer order
4. Welded pipe: 165 mm. Flange, DN15...25 and NPS 1/2...1: 165 mm. Flange, DN40: 192 mm. Flange DN50: 210 mm. Flange, NPS 1 1/2: 207 mm. Flange, NPS 2: 222 mm.
5. If the bypass chamber size option is "NPS 2 1/2", then NPT or G connection (male) + plug: 126 mm and flange: 165 mm. If the bypass chamber size option is "NPS 3", then NPT or G connection (male) + plug: 151 mm. Flange options for the "NPS 3" option include DN20: 152 mm, DN25: 162 mm, NPS 3/4: 168 mm, NPS 1: 173 mm.
6. This diameter is related to the bypass chamber size option. NPS 2 1/2: 73.03 mm. NPS 3: 88.9 mm.

Dimensions [inches]								
a	b	C-C	c	d	e	k	r	Øt
8.27 1	2	11.8...216.5 3	4	2.78	3.94	2.92	5	6

Table 8-5: BM26A-5000 PN100 / Class 600 (side - side process connections): general dimensions in inches

1. Drain options are available. NPT or G connection (female) + plug: 8.27". Flange, DN15...25 and NPS 1/2...1: 11.22". Flange, DN40...50 and NPS 1 1/2: 13.82".
2. If the bypass chamber has a nominal diameter of NPS 2 1/2 (ASME B36.19M): 13.39". If the bypass chamber has a nominal diameter of NPS 3 (ASME B36.19M): 9.84".
3. This value agrees with the "C-C" dimension given in the customer order
4. Welded pipe: 6.50". Flange, DN15...25 and NPS 1/2: 1: 6.50". Flange, DN40: 7.56". Flange DN50: 8.27". Flange, NPS 1 1/2: 8.15". Flange, NPS 2: 8.74".
5. If the bypass chamber size option is "NPS 2 1/2", then NPT or G connection (male) + plug: 4.96" and flange: 6.50". If the bypass chamber size option is "NPS 3", then NPT or G connection (male) + plug: 5.94". Flange options for the "NPS 3" option include DN20: 5.98", DN25: 6.38", NPS 3/4: 6.61", NPS 1: 6.81".
6. This diameter is related to the bypass chamber size option. NPS 2 1/2: 2.9". NPS 3: 3.5".

Accessories

Support bracket

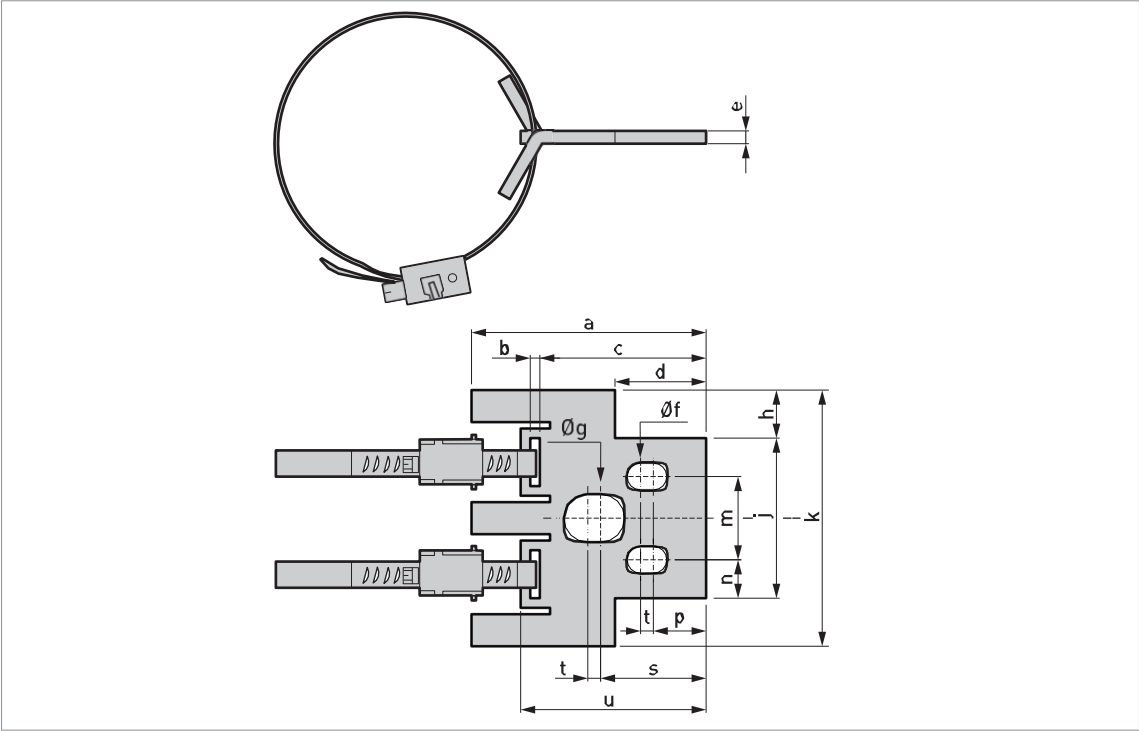


Figure 8-6: Support bracket

The support bracket is an accessory. If necessary, send an order to your supplier.

	Dimensions [mm]															
	a	b	c	d	e	Øf	Øg	h	j	k	m	n	p	s	t	u
Support bracket	73	3	52	28.5	4	8.4	15	15	50	80	26	12	16.5	33	4	58

Table 8-10: Support bracket: dimensions in mm

	Dimensions [inches]															
	a	b	c	d	e	Øf	Øg	h	j	k	m	n	p	s	t	u
Support bracket	2.87	0.12	2.05	1.12	0.16	0.33	0.59	0.59	1.97	3.15	1.02	0.47	0.65	1.30	0.16	2.28

Table 8-11: Support bracket: dimensions in inches

Maximum process pressure: bypass chamber



DANGER!

Do not use the device at a process pressure more than the maximum limit for a given process temperature.



WARNING!

The process temperature must agree with the temperature limits of the gasket material

Magnetic level indicator with a 316/ 316L bypass chamber

Maximum process pressure [barg] for a given maximum process temperature [°C]

EU PED, EN1 3445 and UK PE(S)R								
Standard	Pressure rating	Maximum process temperature [°C]						
		-196	-70	-20	+20	+38	+50	+100
		Maximum process pressure [barg]						
EN 1092-1	PN40	40	40	40	40	40	40	40
	PN1001	00	100	100	00	100	100	00
	PN160	160	60	160	160	60	160	160
	PN250	250	250	50	250	50	250	50
	PN4004	00	400	400	400	400	392.3	358.1
ASME B16.5	Class 1501	19	9	19	19	19	18.4	16
	Class 3004	40	0	40	40	40	40	40
	Class 600	99.3	99.3	99.3	99.3	99.3	96.3	84.5
	Class 1500	248.2	248.2	248.2	248.2	248.2	240.6	210.9
	Class 2500	400	400	400	400	400	392.3	358.1
JIS B 2220	20K	34	34	34	34	34	34	34
ASME B36.19M	10S	40	40	40	40	40	40	40
	40S1	00	100	00	100	100	00	100
	80S2	50	250	250	250	50	250	250
ISO228-14	G	0	40	40	40	40	40	40
ASME B1.20.1	NPT	100	100	00	100	100	100	00

EU PED, EN13445 and UK PE(S)R							
Standard	Pressure rating	Maximum process temperature [°C]					
		+150	+200	+250	+300	+350	+400
		Maximum process pressure [barg]					
EN 1092-1	PN40	36.3	33.7	31.8	29.7	28.5	27.4
	PN100	90.9	84.2	79.5	74.2	71.4	68.5
	PN160	145.5	134.8	127.2	118.8	114.2	109.7
	PN250	227.3	210.7	198.8	185.7	178.5	171.4
	PN400	324	298.4	281.4	264.3	255.8	247.2
ASME B16.5	Class 150	14.8	13.6	12	10.2	8.4	6.5
	Class 300	36.3	33.7	31.8	29.7	28.5	27.4
	Class 600	77.1	71.2	66.7	63.1	61	58.9
	Class 1500	192.4	178.4	167	158.1	152.2	147.1
	Class 2500	324	298.4	281.4	264.3	255.8	247.2
JIS B 2220	20K	31	31	31	29	26	23
ASME B36.19M	10S	36.3	33.7	31.8	29.7	28.5	27.4
	40S	90.9	84.2	79.5	74.2	71.4	68.5
	80S	227.3	210.7	198.8	185.7	178.5	171.4
ISO228-1	G	36.3	33.7	31.8	29.7	28.5	27.4
ASME B1.20.1	NPT	90.9	84.2	79.5	74.2	71.4	68.5

Table 8-13: EU PED, EN 13445 and UK PE(S)R: maximum process pressure [barg] for a given maximum process temperature [°C]

Maximum process pressure [psig] for a given maximum process temperature [°F]

EU PED, EN13445 and UK PE(S)R								
Standard	Pressure rating	Maximum process temperature [°F]						
		-320.8	-94	-4	+68	+100.4	+122	+212
		Maximum process pressure [psig]						
EN 1092-1	PN40	580.2	580.2	580.2	580.2	580.2	580.2	580.2
	PN100	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4
	PN160	2320.6	2320.6	2320.6	2320.6	2320.6	2320.6	2320.6
	PN250	3625.9	3625.9	3625.9	3625.9	3625.9	3625.9	3625.9
	PN400	5801.5	5801.5	5801.5	5801.5	5801.5	5689.1	5193.8
ASME B16.5	Class 150	275.6	275.6	275.6	275.6	275.6	266.9	232.1
	Class 300	580.2	580.2	580.2	580.2	580.2	580.2	580.2
	Class 600	1440	1440	1440	1440	1440	1396.7	1225.6
	Class 1500	3599.8	3599.8	3599.8	3599.8	3599.8	3489.6	3058.8
	Class 2500	5801.5	5801.5	5801.5	5801.5	5801.5	5689.1	5193.8
JIS B 2220	20K	493.1	493.1	493.1	493.1	493.1	493.1	493.1
ASME B36.19M	10S	580.2	580.2	580.2	580.2	580.2	580.2	580.2
	40S	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4
	80S	3625.9	3625.9	3625.9	3625.9	3625.9	3625.9	3625.9
ISO228-1	G	580.2	580.2	580.2	580.2	580.2	580.2	580.2
ASME B1.20.1	NPT	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4

Table 8-14: EU PED, EN 13445 and UK PE(S)R: maximum process pressure [psig] for a given maximum process temperature [°F]

EU PED, EN13445 and UK PE(S)R							
Standard	Pressure rating	Maximum process temperature [°F]					
		+302	+392	+482	+572	+662	+752
		Maximum process pressure [psig]					
EN 1092-1	PN40	526.5	488.8	461.2	430.8	413.4	397.4
	PN100	1318.4	1221.2	1153.1	1076.2	1035.6	993.5
	PN160	2110.3	1955.1	1844.9	1723	1656.3	1591.1
	PN250	3296.7	3055.9	2883.4	2963.4	2588.9	2485.9
	PN400	4699.2	4327.9	4081.4	3833.3	3710.1	3585.3
ASME B16.5	Class 150	214.7	197.3	74	147.9	121.8	94.3
	Class 300	526.5	488.8	461.2	430.8	413.4	397.4
	Class 600	1118.2	1032.7	967.4	915.2	884.7	854.3
	Class 1500	2790.5	2587.5	2422.1	2293	2207.5	2133.5
	Class 2500	4699.2	4327.9	4081.4	3833.3	3710.1	3585.3
JIS B 2220	20K	449.6	449.6	449.6	420.6	377.1	333.6
ASME B36.19M	10S	526.5	488.8	461.2	430.8	413.4	397.4
	40S	1318.4	1221.2	1153.1	1076.2	1035.6	993.5
	80S	3296.7	3055.9	2883.4	2693.4	2588.9	2485.9
ISO228-1	G	526.5	488.8	461.2	430.8	413.4	397.4
ASME B1.20.1	NPT	1318.4	1221.2	1153.1	1076.2	1035.6	993.5

Table 8-15: EU PED, EN 13445 and UK PE(S)R: maximum process pressure [psig] for a given maximum process temperature [°F]

Maximum allowable working pressure [barg] for a given maximum process temperature [°C]

ASMEB31.3								
Standard	Pressure rating	Maximum process temperature [°C]						
		-196	-70	-20	+20	+38+	50	+100
		Maximum allowable working pressure [barg]						
ASME B16.5	Class 150	19	19	19	19	19	18.4	16
	Class 3004	40	0	40	40	40	40	40
	Class 600	84.5	84.5	84.5	84.5	84.5	84.5	84.5
	Class 900	148.9	148.9	148.9	148.9	148.9	144.3	126.6
	Class 1500	216	216	216	16	216	216	207
	Class 2500	282	282	82	282	282	282	75
ASME B36.19M	10S	40	40	40	40	40	40	40
	40S	84.5	84.5	84.5	84.5	84.5	84.5	84.5
	80S	216	216	16	216	216	16	207
ASME B1.20.1	NPT - Class 300 1	40	40	40	40	40	40	40
	NPT - Class 600 2	84.5	84.5	84.5	84.5	84.5	84.5	84.5

Table 8-16: ASMEB31.3: Maximum allowable working pressure [barg] for a given maximum process temperature [°C]

1. These values are applicable to NPT process connections for the BM26A-5000 PN40/ Class 300
2. These values are applicable to NPT process connections for the BM26A-5000 PN100/ Class 600

ASMEB31.3								
Standard	Pressure rating	Maximum process temperature [°C]						
		+150	+200	+250	+300	+350	+400	
		Maximum allowable working pressure [barg]						
ASME B16.5	Class 150	14.8	13.6	12	10.2	8.4	6.5	
	Class 300	36.3	33.7	31.8	29.7	28.5	27.4	
	Class 600	77.1	71.2	66.7	63.1	61	58.9	
	Class 900	115	07	100.1	94.9	91	88.3	
	Class 1500	207	202	191	81	175	172	
	Class 2500	275	275	275	275	275	274	
ASME B36.19M	10S	36.3	33.7	31.8	29.7	28.5	27.4	
	40S	77.1	71.2	66.7	63.1	61	58.9	
	80S	207	202	191	81	175	172	
ASME B1.20.1	NPT - Class 300 1	36.3	33.7	31.8	29.7	28.5	27.4	
	NPT - Class 600 2	77.1	71.2	66.7	63.1	61	58.9	

Table 8-17: ASMEB31.3: Maximum allowable working pressure [barg] for a given maximum process temperature [°C]

1. These values are applicable to NPT process connections for the BM26A-6000 and the BM26A-7000 PN40/ Class 300
2. These values are applicable to NPT process connections for the BM26A-7000 PN100/ Class 600

Maximum allowable working pressure [psig] for a given maximum process temperature [°F]

ASMEB31.3								
Standard	Pressure rating	Maximum process temperature [°F]						
		-320.8	-94	-4	+68	+100.4	+122	+212
		Maximum allowable working pressure [psig]						
ASME B16.5	Class 150	275.6	275.6	275.6	275.6	275.6	266.9	232.1
	Class 300	580.2	580.2	580.2	580.2	580.2	580.2	580.2
	Class 600	1225.6	1225.6	1225.6	1225.6	1225.6	1225.6	1225.6
	Class 900	2159.6	2159.6	2159.6	2159.6	2159.6	2092.9	1836.2
	Class 1500	3132.8	3132.8	3132.8	3132.8	3132.8	3132.8	3002.3
	Class 2500	4090.1	4090.1	4090.1	4090.1	4090.1	4090.1	3988.5
ASME B36.19M	10S	580.2	580.2	580.2	580.2	580.2	580.2	580.2
	40S	1225.6	1225.6	1225.6	1225.6	1225.6	1225.6	1225.6
	80S	3132.8	3132.8	3132.8	3132.8	3132.8	3132.8	3002.3
ASME B1.20.1	NPT - Class 300 1	580.2	580.2	580.2	580.2	580.2	580.2	580.2
	NPT - Class 600 2	1225.6	1225.6	1225.6	1225.6	1225.6	1225.6	1225.6

Table 8-18: ASME B31.3: maximum allowable working pressure [psig] for a given maximum process temperature [°F]

1. These values are applicable to NPT process connections for the BM26A-5000 PN40 / Class 300
2. These values are applicable to NPT process connections for the BM26A-5000 PN100 / Class 600

ASMEB31.3								
Standard	Pressure rating	Maximum process temperature [°F]						
		+302	+392	+482	+572	+662	+752	
		Maximum allowable working pressure [psig]						
ASME B16.5	Class 150	214.7	197.3	174	147.9	121.8	94.3	
	Class 300	526.5	488.8	461.2	430.8	413.4	397.4	
	Class 600	1118.2	1032.7	967.4	915.2	884.7	854.3	
	Class 900	1675.2	1551.9	1451.8	1376.4	1319.8	1280.7	
	Class 1500	3002.3	2929.8	2770.2	2625.2	2538.2	2494.7	
	Class 2500	3988.5	3988.5	3988.5	3988.5	3988.5	3585.3	
ASME B36.19M	10S	526.5	488.8	461.2	430.8	413.4	397.4	
	40S	1118.2	1032.7	967.4	915.2	884.7	854.3	
	80S	3296.7	3055.9	2770.2	2625.2	2538.2	2494.7	
ASME B1.20.1	NPT - Class 300 1	526.5	488.8	461.2	430.8	413.4	397.4	
	NPT - Class 600 2	1118.2	1032.7	967.4	915.2	884.7	854.3	

Table 8-19: ASME B31.3: maximum allowable working pressure [psig] for a given maximum process temperature [°F]

1. These values are applicable to NPT process connections for the BM26A-5000 PN40 / Class 300
2. These values are applicable to NPT process connections for the BM26A-5000 PN100 / Class 600

Magnetic level indicator with a 304L bypass chamber

Maximum process pressure [barg] for a given maximum process temperature [°C]

EU PED, EN13445 and UK PE(S)R								
Standard	Pressure rating	Maximum process temperature [°C]						
		-196	-70	-20	+20	+38+	50	+100
		Maximum process pressure [barg]						
EN 1092-1	PN40	40	40	40	40	40	40	34.4
	PN100	100	100	100	100	100	100	86.1
ASME B16.5	Class 150	15.9	15.9	15.9	15.9	15.9	15.3	13.3
	Class 3004	40	40	40	40	40	40	34.4
	Class 600	82.7	82.7	82.7	82.7	82.7	79.9	69.1
JIS B 2220	20K	34	34	34	34	34	34	34
ASME B36.19M	10S	40	40	40	40	40	40	34.4
	40S	100	100	100	100	100	100	86.1
ISO228-14	G	40	40	40	40	40	40	34.4
ASME B1.20.1	NPT	100	100	100	100	100	100	86.1

Table 8-20: EU PED, EN 13445 and UK PE(S)R: maximum process pressure [barg] for a given maximum process temperature [°C]

EU PED, EN13445 and UK PE(S)R								
Standard	Pressure rating	Maximum process temperature [°C]						
		+150	+200	+250	+300	+350	+400	
		Maximum process pressure [barg]						
EN 1092-1	PN40	30.8	28	26	24.1	23	22	
	PN100	77.1	70	65.2	60.4	57.6	55.2	
ASME B16.5	Class 150	12	11.1	10.2	9.7	8.4	6.5	
	Class 300	30.8	28	26	24.1	23	22	
	Class 600	62.6	57.4	53.5	50.5	48	46.1	
JIS B 2220	20K	31	31	31	29	26	23	
ASME B36.19M	10S	30.8	28	26	24.1	23	22	
	40S	77.1	70	65.2	60.4	57.6	55.2	
ISO228-1	G	30.8	28	26	24.1	23	22	
ASME B1.20.1	NPT	77.1	70	65.2	60.4	57.6	55.2	

Table 8-21: EU PED, EN 13445 and UK PE(S)R: maximum process pressure [barg] for a given maximum process temperature [°C]

Maximum process pressure [psig] for a given maximum process temperature [°F]

EU PED, EN13445 and UK PE(S)R								
Standard	Pressure rating	Maximum process temperature [°F]						
		-302.8	-94	-4	+68	+100.4	+122	+212
		Maximum process pressure [psig]						
EN 1092-1	PN40	580.2	580.2	580.2	580.2	580.2	580.2	498.9
	PN100	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4	1248.8
ASME B16.5	Class 150	230.6	230.6	230.6	230.6	230.6	221.9	192.9
	Class 300	580.2	580.2	580.2	580.2	580.2	580.2	498.9
	Class 600	1199.5	1199.5	1199.5	1199.5	1199.5	1158.9	1002.2
JIS B 2220	20K	493.1	493.1	493.1	493.1	493.1	493.1	493.1
ASME B36.19M	10S	580.2	580.2	580.2	580.2	580.2	580.2	498.9
	40S	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4	1248.8
ISO228-1	G	580.2	580.2	580.2	580.2	580.2	580.2	498.9
ASME B1.20.1	NPT	1450.4	1450.4	1450.4	1450.4	1450.4	1450.4	1248.8

Table 8-22: EU PED, EN 13445 and UK PE(S)R: maximum process pressure [psig] for a given maximum process temperature [°F]

EU PED, EN13445 and UK PE(S)R								
Standard	Pressure rating	Maximum process temperature [°F]						
		+302	+392	+482	+572	+662	+752	
		Maximum process pressure [psig]						
EN 1092-1	PN40	446.7	406	377.1	349.5	333.6	319.1	
	PN100	1118.2	1015.3	945.6	876	835.4	880.6	
ASME B16.5	Class 1501	74	161	147.9	140.7	121.8	94.3	
	Class 300	446.7	406	377.1	349.5	333.6	319.1	
	Class 600	907.9	832.5	76	732.4	696.2	668.6	
JIS B 2220	20K	449.6	449.6	449.6	420.6	377.1	333.6	
ASME B36.19M	10S	446.7	406	377.1	349.5	333.6	319.1	
	40S	1118.2	1015.3	945.6	876	835.4	880.6	
ISO228-1	G	446.7	406	377.1	349.5	333.6	319.1	
ASME B1.20.1	NPT	1118.2	1015.3	945.6	76	835.4	80.6	

Table 8-23: EU PED, EN 13445 and UK PE(S)R: maximum process pressure [psig] for a given maximum process temperature [°F]

APPENDIX

Glossary

B

Bypass chamber

The bypass chamber (or measuring chamber) is a vertical pipe that is attached adjacent to a tank that contains one or more liquids that must be measured. There is one process connection at the top and one more at the bottom of the measuring chamber. Options include a level transmitter, axial or lateral process connections, vents and drains.

E

Electromagnetic compatibility

Defines how much a device influences or is influenced by other devices that generate electromagnetic fields during operation. Refer to European standard EN 61326-1 and EN 61326-2-3 for further details.

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