

Operating Instructions

Flowfit CYA21

Flow assembly

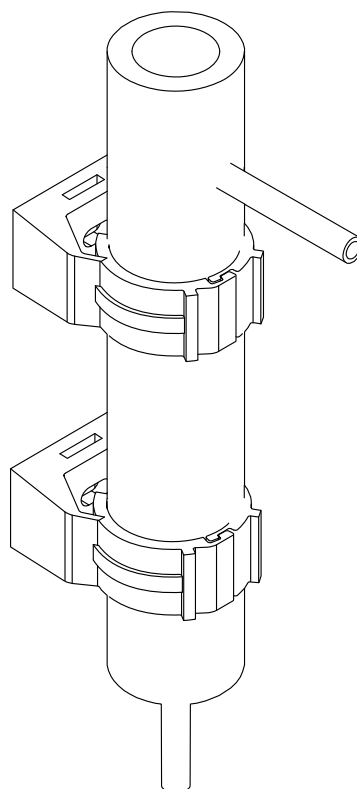


Table of contents

1	About this document	4
1.1	Warnings	4
1.2	Symbols used	4
1.3	Symbols on the device	4
1.4	Registered trademarks	4
2	Basic safety instructions	5
2.1	Requirements for personnel	5
2.2	Designated use	5
2.3	Workplace safety	5
2.4	Operational safety	6
2.5	Product safety	6
3	Product description	7
4	Incoming acceptance and product identification	8
4.1	Incoming acceptance	8
4.2	Product identification	8
5	Installation	10
5.1	Installation conditions	10
5.2	Mounting the assembly	10
5.3	Sensor installation	12
5.4	Post-installation check	12
6	Cleaning	13
6.1	Cleaning agent	14
7	Accessories	15
7.1	Sensors	15
7.2	Connection accessories	16
8	Technical data	17
8.1	Environment	17
8.2	Process	17
8.3	Mechanical construction	17

1 About this document

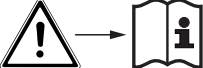
1.1 Warnings

Structure of information	Meaning
 Causes (/consequences) If necessary, Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation will result in a fatal or serious injury.
 Causes (/consequences) If necessary, Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation can result in a fatal or serious injury.
 Causes (/consequences) If necessary, Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.
 Cause/situation If necessary, Consequences of non-compliance (if applicable) ► Action/note	This symbol alerts you to situations which may result in damage to property.

1.2 Symbols used

Symbol	Meaning
	Additional information, tips
	Permitted or recommended
	Not permitted or not recommended
	Reference to device documentation
	Reference to page
	Reference to graphic
	Result of a step

1.3 Symbols on the device

Symbol	Meaning
	Reference to device documentation

1.4 Registered trademarks

SWAGELOK®

Registered trademark of Swagelok & Co., Solon, USA

2 Basic safety instructions

2.1 Requirements for personnel

- Installation, commissioning, operation and maintenance of the measuring system may be carried out only by specially trained technical personnel.
- The technical personnel must be authorized by the plant operator to carry out the specified activities.
- The electrical connection may be performed only by an electrical technician.
- The technical personnel must have read and understood these Operating Instructions and must follow the instructions contained therein.
- Faults at the measuring point may only be rectified by authorized and specially trained personnel.

 Repairs not described in the Operating Instructions provided must be carried out only directly at the manufacturer's site or by the service organization.

2.2 Designated use

The assembly is designed for connection to common gaugeable tube fittings systems and is suitable only for use with liquids that do not form deposits and are not susceptible to precipitation. Thanks to its design, it can be operated in pressurized systems.

Use of the device for any purpose other than that described, poses a threat to the safety of people and of the entire measuring system and is therefore not permitted.

The manufacturer is not liable for damage caused by improper or non-designated use.

2.3 Workplace safety

As the user, you are responsible for complying with the following safety conditions:

- Installation guidelines
- Local standards and regulations

2.4 Operational safety

Before commissioning the entire measuring point:

1. Verify that all connections are correct.
2. Ensure that electrical cables and pipe connections are undamaged.
3. Do not operate damaged products, and protect them against unintentional operation.
4. Label damaged products as defective.

During operation:

- If faults cannot be rectified:
products must be taken out of service and protected against unintentional operation.

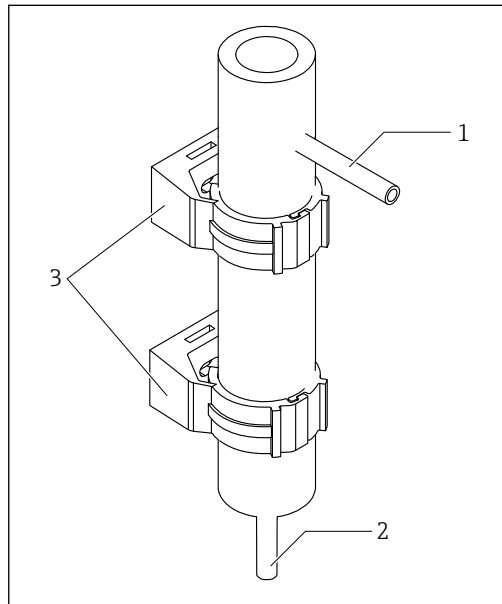
2.5 Product safety

2.5.1 State-of-the-art technology

The product is designed to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate. The relevant regulations and international standards have been observed.

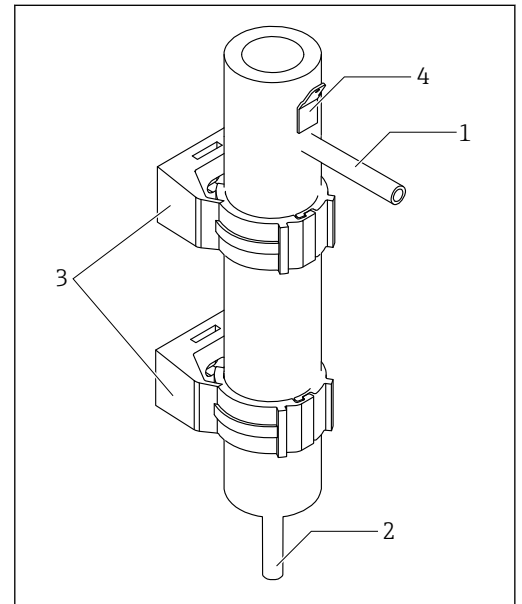
3 Product description

The Flowfit CYA21 flow assembly is designed for installation in analysis systems in power stations and all common industrial utilities. The high-grade stainless steel layout enables continuous applications at more challenging process pressures of up to 16 bar and temperatures of 100°C. Easy installation thanks to the use of common gaugeable tube fittings systems, such as SWAGELOK. Simple measuring points for pH/ORP, conductivity or oxygen are possible with the assembly.



 1 Version CYA21 NPT 1/2" $\frac{1}{2}$

- 1 Outlet
- 2 Inlet
- 3 Fixing clamps



 2 Version CYA21 Pg 13.5

- 1 Outlet
- 2 Inlet
- 3 Fixing clamps
- 4 PML

4 Incoming acceptance and product identification

4.1 Incoming acceptance

1. Verify that the packaging is undamaged.
 - ↳ Notify the supplier of any damage to the packaging.
Keep the damaged packaging until the issue has been resolved.
2. Verify that the contents are undamaged.
 - ↳ Notify the supplier of any damage to the delivery contents.
Keep the damaged goods until the issue has been resolved.
3. Check that the delivery is complete and nothing is missing.
 - ↳ Compare the shipping documents with your order.
4. Pack the product for storage and transportation in such a way that it is protected against impact and moisture.
 - ↳ The original packaging offers the best protection.
Make sure to comply with the permitted ambient conditions.

If you have any questions, please contact your supplier or your local Sales Center.

4.2 Product identification

4.2.1 Nameplate

Nameplates can be found:

- On the flow assembly
- On the packaging (adhesive label)

The nameplate provides you with the following information on your device:

- Manufacturer identification
- Order code
- Extended order code
- Serial number
- Safety information and warnings

- ▶ Compare the information on the nameplate with the order.

4.2.2 Product identification

Product page

www.endress.com/cya21

Interpreting the order code

The order code and serial number of your product can be found in the following locations:

- On the nameplate
- In the delivery papers

Obtaining information on the product

1. Go to www.endress.com.
2. Call up the site search (magnifying glass).
3. Enter a valid serial number.

4. Search.

↳ The product structure is displayed in a popup window.

5. Click on the product image in the popup window.

↳ A new window (**Device Viewer**) opens. All of the information relating to your device is displayed in this window as well as the product documentation.

4.2.3 Manufacturer's address

Endress+Hauser Conducta GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

4.2.4 Scope of delivery

The delivery comprises:

- Assembly in the version ordered
- Mounting kit
- Operating Instructions

► If you have any queries:

Please contact your supplier or local sales center.

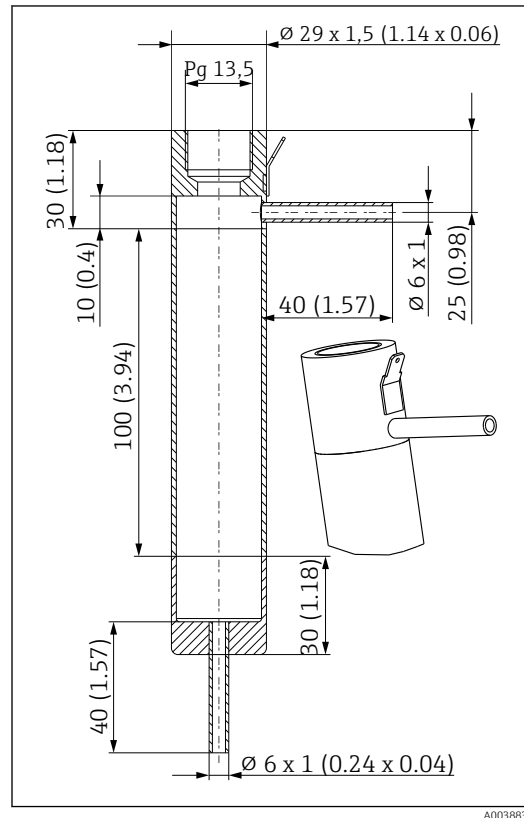
4.2.5 Certificates and approvals**DGRL- 2014/68/EU / PED- 2014/68/EU**

The assembly has been manufactured according to good engineering practice as per Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU and is therefore not required to bear the CE label.

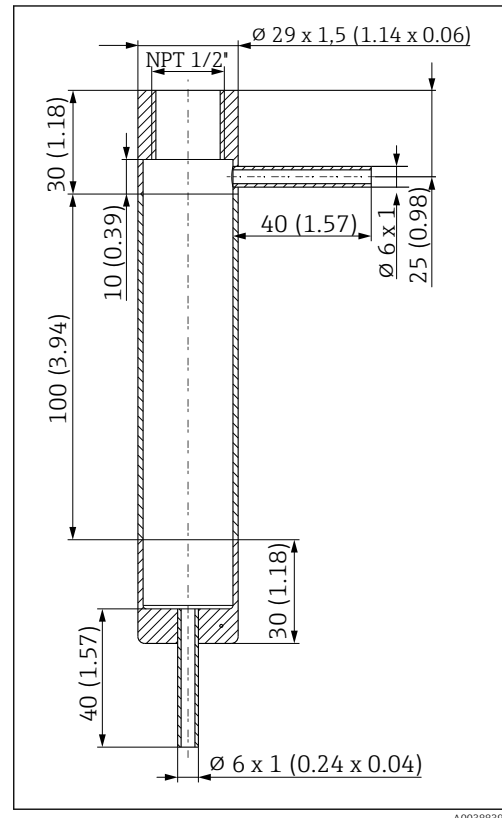
5 Installation

5.1 Installation conditions

5.1.1 Dimensions



3 Dimensions of CYA21 Pg 13.5. engineering unit in mm (inch)



4 Dimensions of CYA21 NPT 1/2". Engineering unit in mm (inch)

5.2 Mounting the assembly

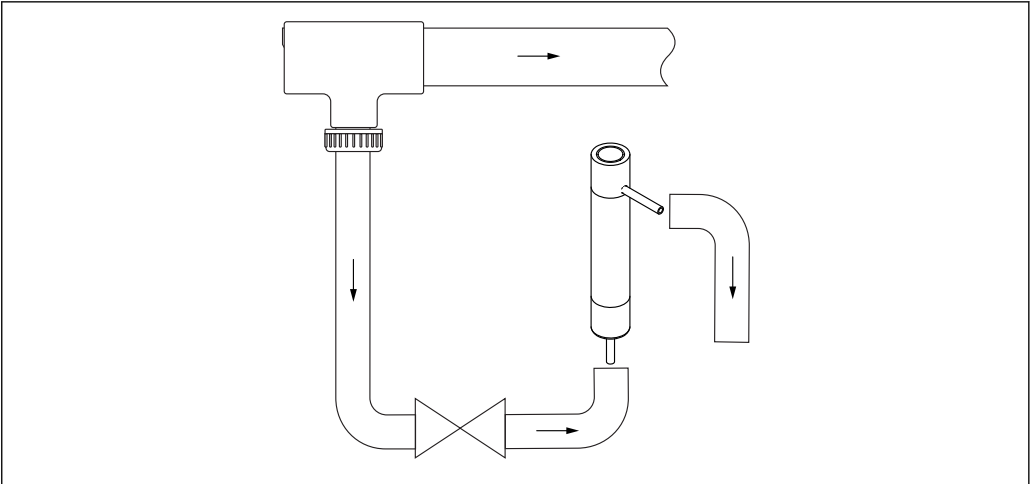
⚠ WARNING

If process medium and cleaning medium escape, there is a risk of injury due to high pressure, high temperatures or chemicals.

- ▶ Wear protective gloves, protective goggles and protective clothing.
- ▶ Mount the assembly only if vessels or pipes are empty and unpressurized.
- ▶ Before exposing the assembly to the process pressure, verify that all connections are sealed.

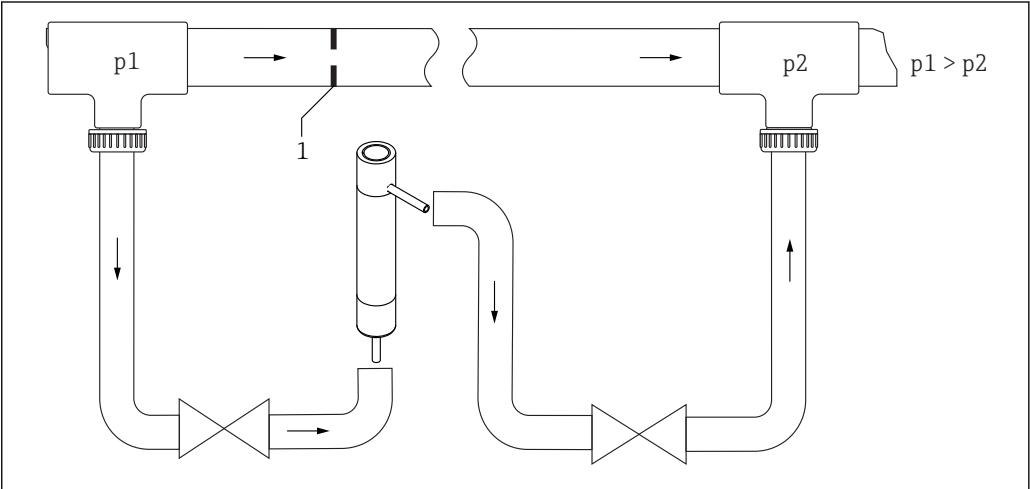
5.2.1 Installation instructions

No measures are required for branch pipes that branch off from the main pipe (no return medium).



A0039276

5 Connection example



A0039277

6 Connection example with bypass and orifice plate in the main pipe

1 Orifice plate

To achieve flow through the assembly with a bypass, pressure p_1 must be higher than pressure p_2 . This can be achieved by installing an orifice plate in the main pipe.

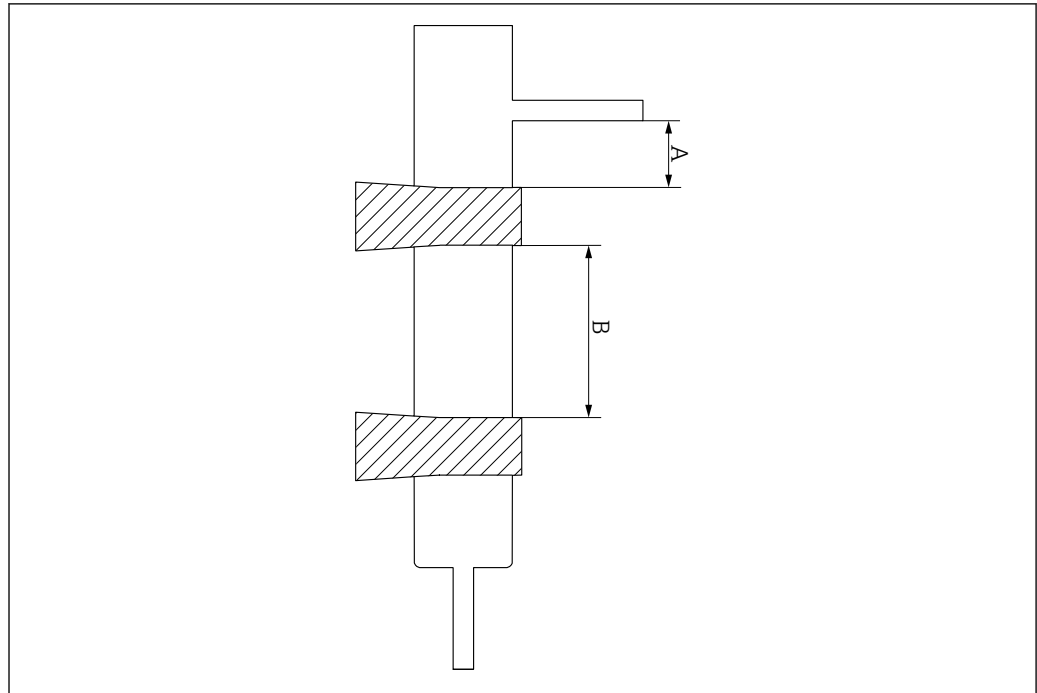
The inlet and outlet connection of the flow assembly are always identical (Ø 6 x 1 mm).

The flow assembly is designed for gaugeable tube fittings systems.

Required at point of installation:

Required components	Application
2 shut-off valves	Bypass solution
1 shut-off valve	Solution with open outlet
Orifice plate in the main pipe	Bypass solution
Dirt filter (500 µm or finer)	If the medium contains coarse particles of dirt
Pressure-reducing valve	If the medium pressure exceeds the permitted value
Wall holder unit to secure the assembly	All versions
Pipe connections to assembly	All versions

5.3 Sensor installation



A0041751

 7 Clip distance

A 10 mm (0.4 in)

B 50 to 70 mm (1.97 to 2.76 in)

5.3.1 Version with Pg 13.5 gland

1. Screw the sensor into the assembly.
 - ↳ The O-ring of the sensor guarantees correct sealing.
2. For analog sensors: connect PML.

5.3.2 Version with NPT 1/2" coupling

1. Seal the sensor, e.g. with Teflon tape or another suitable sealing agent.
2. Screw the sensor into the assembly.

5.4 Post-installation check

1. After mounting, check all the connections to ensure they are secure and leak-tight.
2. Ensure that the pipes cannot be removed without substantial force.
3. Check all pipes for damage.

6 Cleaning

For stable and safe measurements:

- Clean the assembly and sensor regularly. The frequency and intensity of the cleaning process depend on the medium.

All parts in contact with the medium, such as the sensor and the sensor guide, must be cleaned regularly.

1. Remove the sensor in the reverse order to installation.
2. Remove light dirt and fouling with suitable cleaning solutions →  14
3. Remove heavy soiling using a soft brush and a suitable cleaning agent.
4. For very persistent dirt, soak the parts in a cleaning solution. Then clean the parts with a brush.

 A typical example of a cleaning interval would be 6 months in the case of drinking water.

6.1 Cleaning agent

WARNING

Organic solvents containing halogens

Limited evidence of carcinogenicity! Dangerous for the environment with long-term effects!

- ▶ Do not use organic solvents that contain halogens.

WARNING

Thiocarbamide

Harmful if swallowed! Limited evidence of carcinogenicity! Possible risk of harm to the unborn child! Dangerous for the environment with long-term effects!

- ▶ Wear protective goggles, protective gloves and appropriate protective clothing.
- ▶ Avoid all contact with the eyes, mouth and skin.
- ▶ Avoid discharge into the environment.

The most common types of soiling and the cleaning agents used in each case are shown in the following table.

Type of soiling	Cleaning agent
Greases and oils	Hot water or tempered (alkaline) agents containing surfactants or water-soluble organic solvents (e. g. ethanol)
Limescale deposits, metal hydroxide buildup, lyophobic biological buildup	Approx. 3% hydrochloric acid
Sulfide deposits	Mixture of 3% hydrochloric acid and thiocarbamide (commercially available)
Protein buildup	Mixture of 3% hydrochloric acid and pepsin (commercially available)
Fibers, suspended substances	Pressurized water, possibly surface-active agents
Light biological buildup	Pressurized water

- ▶ Choose a cleaning agent to suit the degree and type of soiling.

7 Accessories

The following are the most important accessories available at the time this documentation was issued.

- For accessories not listed here, please contact your Service or Sales Center.

7.1 Sensors

7.1.1 Glass electrode, analog and digital with Memosens technology

Orbisint CPS11D / CPS11

- pH sensor for process technology
- Optional SIL version for connecting to SIL transmitter
- With dirt-repellent PTFE diaphragm
- Product Configurator on the product page: www.endress.com/cps11d



Technical Information TI00028C

Memosens CPS31D

- pH electrode with gel-filled reference system with ceramic diaphragm
- Product Configurator on the product page: www.endress.com/cps31d



Technical Information TI00030C

Ceraliquid CPS41D / CPS41

- pH electrode with ceramic junction and KCl liquid electrolyte
- Product Configurator on the product page: www.endress.com/cps41d or www.endress.com/cps41



Technical Information TI00079C

7.1.2 Oxygen sensors

Oxymax COS22D

- Sterilizable sensor for dissolved oxygen
- With Memosens technology or as an analog sensor
- Product Configurator on the product page: www.endress.com/cos22d



Technical Information TI00446C

Memosens COS81D

- Sterilizable, optical sensor for dissolved oxygen
- With Memosens technology
- Product Configurator on the product page: www.endress.com/cos81d



Technical Information TI01201C

7.1.3 Conductivity sensors

Condumax CLS15D

- Conductive conductivity sensor
- For pure water, ultrapure water and hazardous area applications
- Product Configurator on the product page: www.endress.com/CLS15d



Technical Information TI00109C

Condumax CLS19

- Cost-effective, conductive conductivity sensor
- For applications with pure and ultrapure water
- Product Configurator on the product page: www.endress.com/CLS19



Technical Information TI00110C

7.2 Connection accessories

Memosens data cable CYK10

- For digital sensors with Memosens technology
- Product Configurator on the product page: www.endress.com/cyk10



Technical Information TI00118C

Measuring cable CYK71

- Unterminated cable for connecting analog sensors and for extending sensor cables
- Sold by the meter, order numbers:
 - Non-Ex version, black: 50085333
 - Ex-version, blue: 50085673

8 Technical data

8.1 Environment

Ambient temperature	-15 to 70 °C (5 to 158 °F)
---------------------	----------------------------

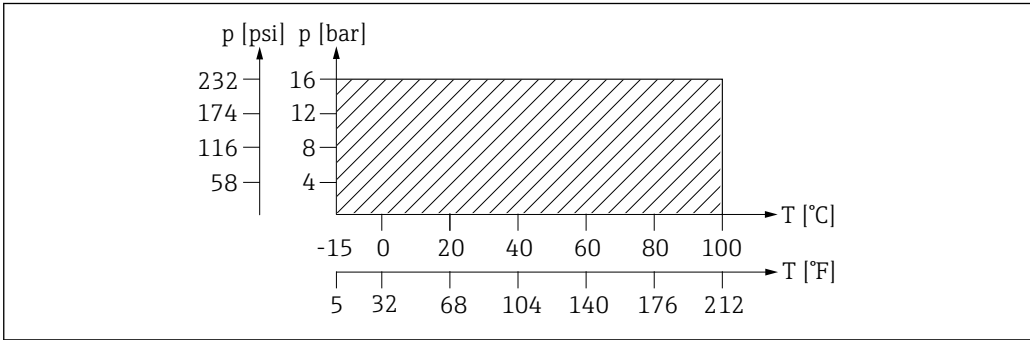
8.2 Process

Process temperature	-15 to 100 °C (5 to 212 °F), non-freezing
---------------------	---

Maximum process pressure	PN 16 232 psi
--------------------------	------------------

Flow conditions	Pay attention to the specifications of the electrode.
-----------------	---

Pressure-temperature ratings



A0039251-EN

 8 Pressure-temperature ratings

8.3 Mechanical construction

Dimensions	→ Section "Installation"
------------	--------------------------

Weight	255 g (8.99 oz)
--------	-----------------

Materials in contact with the medium	Stainless steel 1.4404 (AISI 316 L)
--------------------------------------	-------------------------------------

Sensor connection	■ NPT 1/2" ■ Pg 13.5
-------------------	---

Pipe connection	6 x 1 mm (open pipe outlet)
-----------------	-----------------------------



www.addresses.endress.com

For more Endress+Hauser product please visit: www.ainstru.com
Mail: Sales@ainstru.com