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Technical Information
FAR51

Insertion adapter with venting element

Universal insertion adapter for existing flange nozzles, suitable for high temperature applications

Application

- Process adapter for the Soliwave microwave barrier and the Solimotion flow indicator
- Reliable separation of measuring device and process if using the window (feature 050)

Properties

- Process temperature: -40 to +450 °C (-40 to +842 °F)
- Process pressure: 0.8 to 1.1 bar (12 to 16 psi) absolute
- Nozzle length up to 300 mm (11.81 in)
- Material:
  - Insertion adapter: Stainless steel
  - Window transmission: PTFE or aluminum oxide ceramics

Your benefits

- Cost-effective adapter for existing flange nozzles
- Devices of the Soliwave microwave barrier and the Solimotion flow indicator can easily be replaced during ongoing production
- Suitable for high temperature applications
- Insertion adapter with venting element to prevent condensation
- No wear on the installed devices
- Special versions (dimensions and material) are available on request

Endress+Hauser
People for Process Automation

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About this document

Symbols

Safety symbols

DANGER
This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.

WARNING
This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.

CAUTION
This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.

NOTICE
This symbol contains information on procedures and other facts which do not result in personal injury.

Symbols for certain types of information

Permitted
Procedures, processes or actions that are permitted.

Forbidden
Procedures, processes or actions that are forbidden.

Tip
Indicates additional information

Reference to documentation

Reference to another section

Reference to graphic

1., 2., 3. Series of steps

Symbols in graphics

A, B, C ... View

1, 2, 3 ... Item numbers

Performance characteristics

Operating conditions

Process temperature

- -40 to +450 °C (-40 to +842 °F) for window made of aluminium oxide ceramic or without window
- -40 to +200 °C (-40 to +392 °F) for window made of PTFE

Process pressure

0.8 to 1.1 bar (12 to 16 psi) absolute

- The accepted continuous operating temperature for PTFE is -200 to +240 °C (-328 to +464 °F), however material deformation occurs below and above the defined process temperature.
- The specified maximum process temperature of +200 °C (+392 °F) with PTFE is guaranteed for operation without significant pressure load (unpressurized).
- The maximum allowable temperature at the device has to be observed in any case!

Material

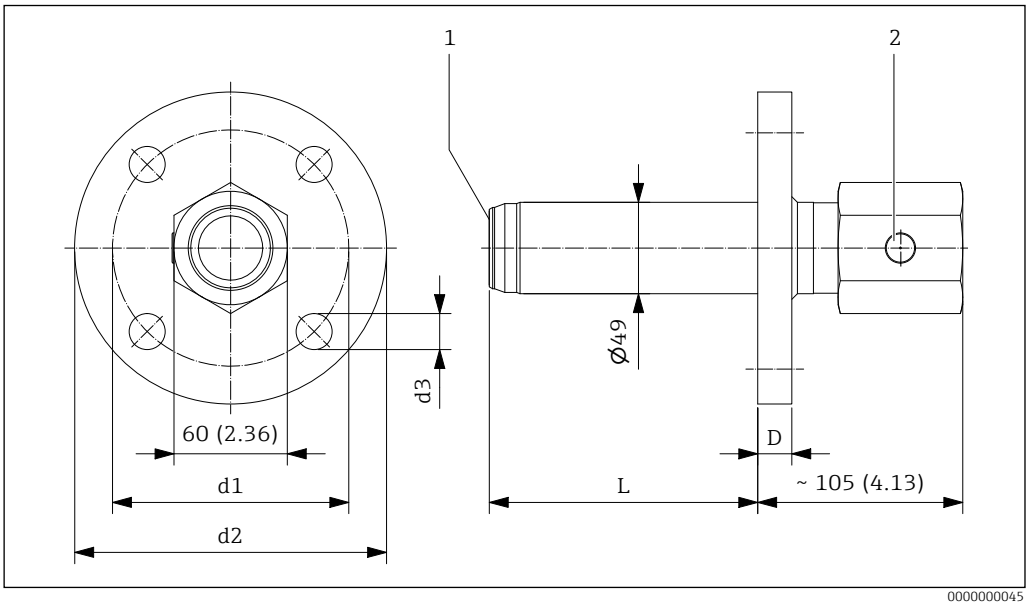
- Stainless steel 316Ti (1.4571)
- Stainless steel 316L (1.4404)
- Window transmission (optional): PTFE or aluminum oxide ceramics

Device connection

Suitable for the devices of the Soliwave microwave barrier and the Solimotion flow indicator, the following threads are available:
- R 1½ in accordance with EN 10226
- 1½ NPT in accordance with ANSI/ASME
- G 1½ in accordance with ISO 228-1

Mechanical construction

Dimensions



1 Dimensions. Unit of measurement mm (in)

1 Window with seal, optional
2 Pressure equalization element (not for version without window)

Flange according to EN1092-1, Form A

Order code	Flange	d1 mm (in)	d2 mm (in)	d3 mm (in)	D mm (in)	Holes
EQ2	DN50 PN16	125 (4.92)	165 (6.50)	18 (0.71)	18 (0.71)	4
ER2	DN65 PN16	145 (5.71)	185 (7.28)	18 (0.71)	18 (0.71)	8
ES2	DN80 PN16	160 (6.30)	200 (7.87)	18 (0.71)	20 (0.79)	8
ET2	DN100 PN16	180 (7.09)	220 (8.66)	18 (0.71)	20 (0.79)	8

Flange according to ASME B16.5

Order code	Flange	d1 mm (in)	d2 mm (in)	d3 mm (in)	D mm (in)	Holes
AD2	NPS 2" Cl.150 RF	120.7 (4.75)	152.4 (6.00)	19.1 (0.75)	19.1 (0.75)	4
AF2	NPS 3" Cl.150 RF	152.4 (6.00)	190.5 (7.50)	19.1 (0.75)	23.9 (0.94)	4
AG2	NPS 4" Cl.150 RF	190.5 (7.50)	228.6 (9.00)	19.1 (0.75)	23.9 (0.94)	8

Weight

The weight depends on type of flange and length, for example:
- FAR51-EQ2CA22A
  Insertion adapter DN50 PN16 Form A, Flange EN 1092-1, L = 100 mm (3.94 in), window made of PTFE, device connection thread R 1½ in accordance with EN 10226
  Weight 5.1 kg (11.2 lb)
- FAR51-AG2CI32C
  Insertion adapter NPS 4" Cl. 150 RF, Flange ASME B16.5, L = 300 mm (11.81 in), window made of aluminium oxide ceramic, device connection thread G 1½ in accordance with ISO 228-1
  Weight 10.2 kg (22.5 lb)

Installation conditions

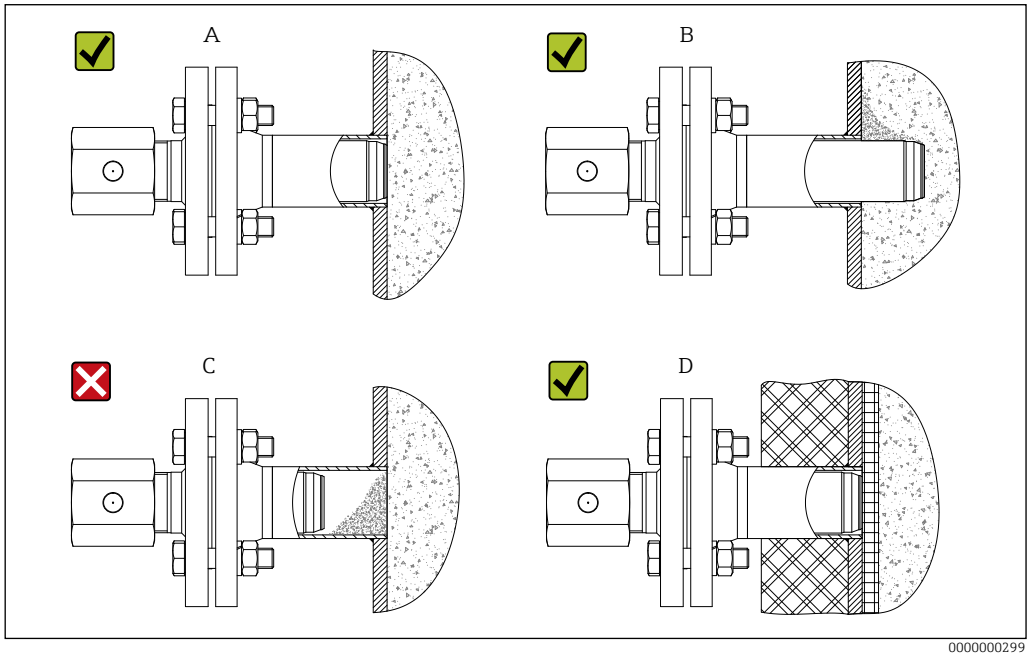
Mounting position

- The insertion adapter can be installed in any position.
- Provide suitable clearance for installation and removal of the adapter and measuring devices.

Installation instructions

- When using the adapter with the microwave barrier Soliwave, it is essential to ensure that the devices FDR and FQR can be mounted directly opposite each other (see relevant Technical Information as well).
- The chemical resistance of the window made of PTFE under process conditions must be taken into account.

- Select the length of the adapter so that it is flush with the inner vessel wall (**A**).
- Alternatively, the adapter can protrude slightly into the process (**B**), as long as he stands no risk of being damaged by falling media.
- A recessed position (**C**) must be avoided, because media can accumulate there, impairing the function of the devices.
- The FAR51 without optional window is recommended for use behind a microwave-permeable process lining (**D**).



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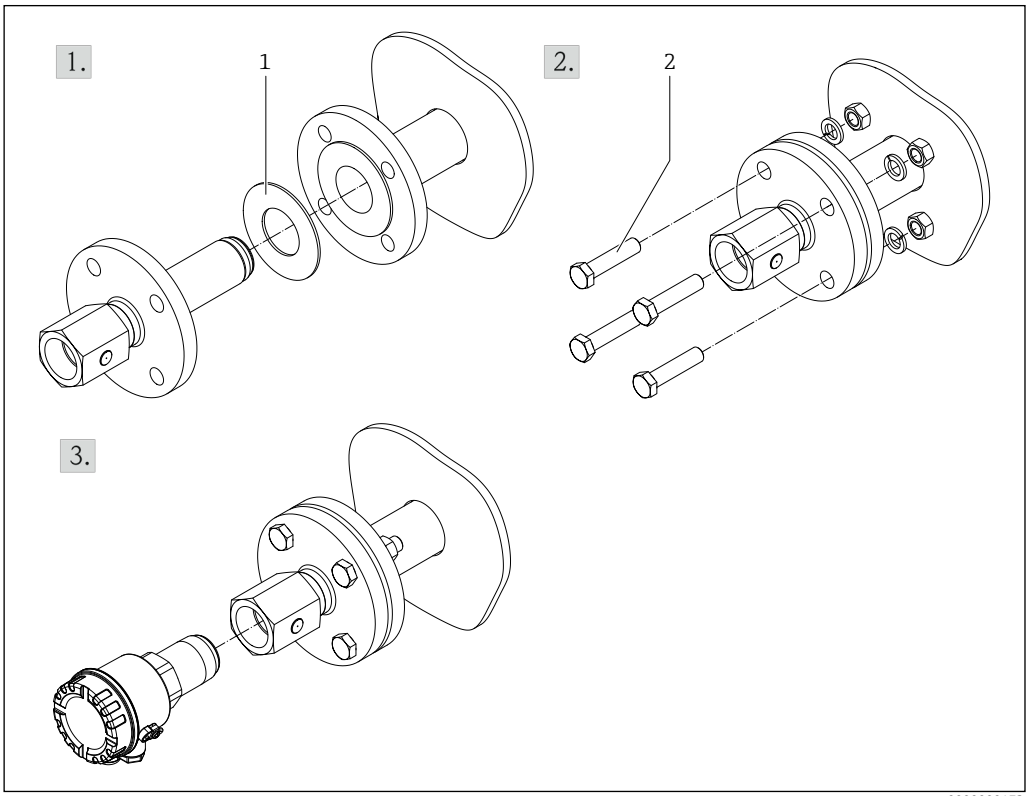
2 *Installation instructions*

Mounting

Mounting

The installation is done in three steps:

1. Insert the adapter carefully inside the nozzle
2. Install adapter on the nozzle
3. Install and arrange the devices of the Soliwave microwave barrier or the Solimotion flow indicator



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3 *Mounting*

1 *Customer-supplied gasket*
2 *Customer-supplied installation material*

- The general notes on the installation and alignment of process adapters in the technical information of the device to be connected must be observed.
- The flat gasket between insertion adapter and flange nozzle as well as the installation screws are not part of delivery, these must be selected depending on the process conditions.

Ordering information

Detailed ordering information is available from the following sources:

- In the Product Configurator on the Endress+Hauser website: www.endress.com → Click "Corporate" → Select your country → Click "Products" → Select the product using the filters and search field → Open product page → The "Configure" button to the right of the product image opens the Product Configurator.
- Endress+Hauser sales center: www.addresses.endress.com

Special versions (dimensions and material) are available on request

020	Flange
AD2	NPS 2" Cl.150 RF, Flange ASME B16.5
AF2	NPS 3" Cl.150 RF, Flange ASME B16.5
AG2	NPS 4" Cl.150 RF, Flange ASME B16.5
EQ2	DN50 PN16 Form A, Flange EN1092-1
ER2	DN65 PN16 Form A, Flange EN1092-1
ES2	DN80 PN16 Form A, Flange EN1092-1
ET2	DN100 PN16 Form A, Flange EN1092-1
030	**Nozzle length L**
CA	100 mm (3.94 in)
CB	110 mm (4.33 in)
CC	120 mm (4.72 in)
CD	130 mm (5.12 in)
CE	140 mm (5.51 in)
CF	150 mm (5.91 in)
CG	200 mm (7.87 in)
CH	250 mm (9.84 in)
CI	300 mm (11.81 in)
050	**Window transmission**
1	Without
2	PTFE
3	Aluminum oxide ceramics
060	**Material insertion adapter**
2	Stainless steel 316Ti (1.4571)
3	Stainless steel 316L (1.4404)
070	**Device connection**
A	Thread R 1½ in accordance with EN 10226
B	Thread 1½ NPT in accordance with ANSI/ASME
C	Thread G 1½ in accordance with ISO 228-1

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