

# Technical Information

## FAR54

Plug made of PTFE or aluminium oxide ceramics



Universal plug for individual solutions for process separation or for existing process nozzles

### Application

- For simple insertion into existing process nozzles, or to glue into process openings
- Material of the plug suitable for the Soliwave microwave barrier and the Solimotion flow indicator

### Properties

- Process temperature up to +150 °C (+302 °F) for PTFE and +800 °C (+1472 °F) for aluminium oxide ceramics
- Process pressure 80 to 110 kPa (0.8 to 1.1 bar) absolute
- Length of the plug (nozzle length) up to 300 mm (11.81 in)
- Material: PTFE or aluminium oxide ceramics

### Your benefits

- Individual installation options
- Very cost-effective solution for process separation
- Material of the plug suitable for microwaves
- No wear on the devices
- Special versions (dimensions and material) are available on request

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## Performance characteristics

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### Operating conditions

#### Process temperature

- PTFE: -40 to +150 °C (-40 to +302 °F)
- Aluminium oxide ceramics: -40 to +800 °C (-40 to +1472 °F)

#### Process pressure

80 to 110 kPa (0.8 to 1.1 bar) absolute

#### NOTICE

- 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 maximum process temperature given is guaranteed for operation without noteworthy pressure strain (pressureless).
- The maximum allowable temperature at the device has to be observed in any case!

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### Material

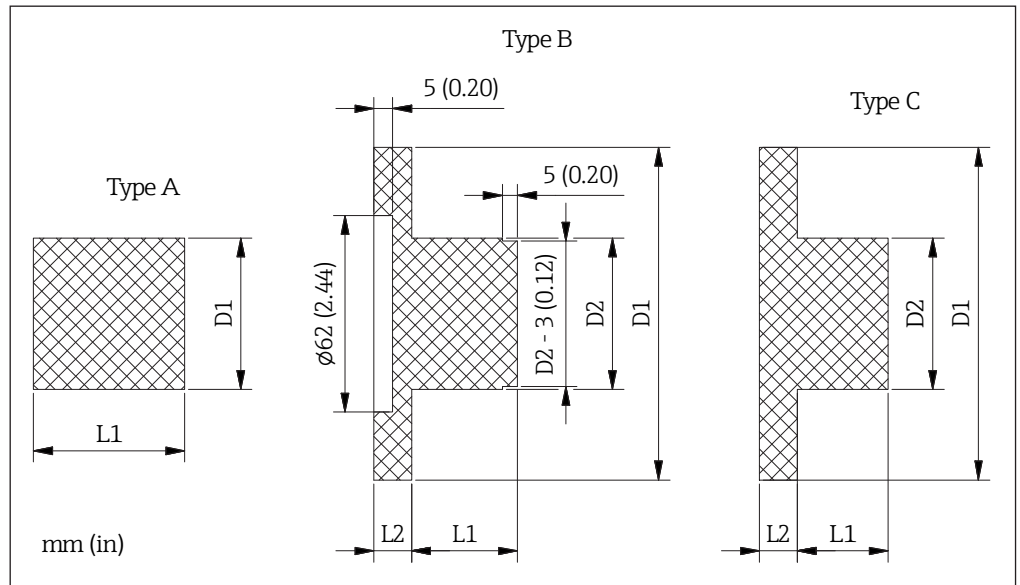
- PTFE
- Aluminium oxide ceramics



For type B there is only the material PTFE available.

## Mechanical construction

### Design, dimensions



### Weight

The weight depends on diameter, length and material, for example:

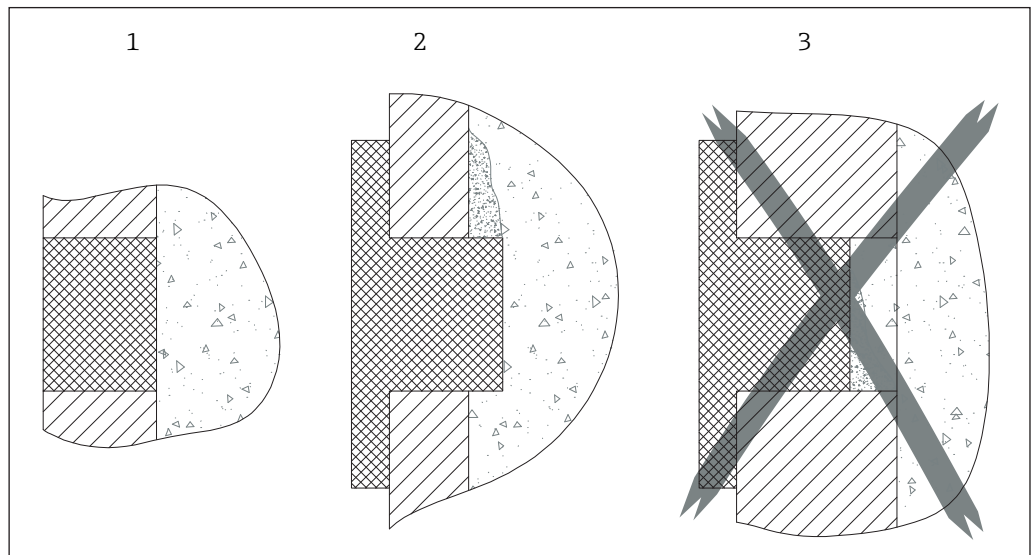
- FAR54-ABCBFAAAA2  
Plug made of PTFE,  $L1 = 20 \text{ mm (0.787 in)}$ ,  $D1 = 40 \text{ mm (1.575 in)}$   
Weight  $0.06 \text{ kg (0.13 lbs)}$
- FAR54-CCBCABEBJ3  
Plug made of aluminium oxide ceramics,  $L1 = 110 \text{ mm (4.331 in)}$ ,  $L2 = 30 \text{ mm (1.181 in)}$ ,  
 $D1 = 100 \text{ mm (3.937 in)}$ ,  $D2 = 80 \text{ mm (3.150 in)}$   
Weight  $3.2 \text{ kg (7.05 lbs)}$

## Installation conditions

**Orientation** The plug can be installed in any position.

**Installation instructions**

- For utilization of the Soliwave microwave barrier, take care that the plug in front of transmitter and transceiver are positioned directly opposite of each other (see relevant Technical Information as well).
- Take notice of the chemical durability of the plug made of PTFE for the process conditions.
- Follows the instructions of the manufacturer of the adhesive when gluing the plug.



The plug should be chosen in such a way, that it is flush with the inner vessel wall (1). Alternatively, the plug can protrude slightly into the process (2), as long as he stands no risk of being damaged by falling media. A recessed position (3) must be avoided, because media can accumulate there, impairing the function of the devices.

## Ordering information

### Product structure

Detailed ordering information is available from the following sources:

- In the Product Configurator on the Endress+Hauser website: [www.endress.com](http://www.endress.com) → Select your country → Products → Select measuring technology, software or components → Select the product (picklists: measurement method, product family etc.) → Device support (right-hand column): Configure the selected product → The Product Configurator for the selected product opens.
- From your Endress+Hauser Sales Center: [www.addresses.endress.com](http://www.addresses.endress.com)

<b>010</b>	<b>Version</b>
A	Type A
B	Type B
C	Type C
<b>020</b>	<b>Length L1</b>
BC	20 mm (0.80 in)
BE	30 mm (1.18 in)
BF	40 mm (1.58 in)
BG	50 mm (1.97 in)
BH	60 mm (2.36 in)
BI	70 mm (2.76 in)
BJ	80 mm (3.15 in)
BK	90 mm (3.54 in)
CA	100 mm (3.94 in)
CB	110 mm (4.33 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)
<b>030</b>	<b>Diameter D1</b>
BF	40 mm (1.58 in)
BG	50 mm (1.97 in)
BH	60 mm (2.36 in)
BI	70 mm (2.76 in)
BJ	80 mm (3.15 in)
BL	88 mm (3.46 in), suitable for DN40 PN16
BK	90 mm (3.54 in), suitable for 2" CL.150 RF
CA	100 mm (3.94 in), suitable for DN50 PN16
CC	120 mm (4.72 in), suitable for DN65 PN16
CD	127 mm (5.00 in), suitable for 3" CL.150 RF
CE	135 mm (5.31 in), suitable for DN80 PN16
CF	150 mm (5.91 in), suitable for DN100 PN16
CG	155 mm (6.10 in), suitable for für 4" CL.150 RF
<b>040</b>	<b>Length L2</b>
AA	Without
BA	10 mm (0.39 in)
BB	15 mm (0.59 in)
BC	20 mm (0.80 in)
BD	25 mm (0.98 in)
BE	30 mm (1.18 in)

<b>050</b>	<b>Diameter D2</b>
AA	Without
BF	40 mm (1.58 in)
BM	41 mm (1.61 in), suitable for DN40 PN16
BG	50 mm (1.97 in)
BN	51 mm (2.01 in), suitable for 2" CL.150 RF
BP	52,5 mm (2.07 in), suitable for DN50 PN16
BH	60 mm (2.36 in)
BQ	68 mm (2.68 in), suitable for DN65 PN16
BI	70 mm (2.76 in)
BR	76 mm (2.99 in), suitable for 3" CL.150 RF
BJ	80 mm (3.15 in), suitable for DN80 PN16
CA	100 mm (3.94 in), suitable for für 4" CL.150 RF
CM	105 mm (4.13 in), suitable for DN100 PN16
<b>060</b>	<b>Material</b>
2	PTFE
3	Aluminium oxide ceramics



- For type B there is only the material PTFE available.
- Based on the mechanical construction, not all combinations of lengths and diameters are available.
- Special versions (dimensions and material) are available on request. The form on the next page must be observe for special dimensions.

**Special dimensions**

The following form must be filed with each request, if at least one required dimension differs from those found in the order code.

**Auswahl / Selection FAR54**



Messstelle / Measuring point	
Name	
Datum / Date	

Bitte Typ auswählen / Please select type:

<p><b>Typ / Type A</b></p>	<p><b>Typ / Type B</b></p>	<p><b>Typ / Type C</b></p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bitte Maße und Material auswählen oder angeben / Please select or enter dimensions and material:

Maß / Dimension	Wert / Value
<b>D1 / mm(in)</b>	<input type="checkbox"/> 40 (1.58) <input type="checkbox"/> 50 (1.97) <input type="checkbox"/> 60 (2.36) <input type="checkbox"/> 70 (2.76)
	<input type="checkbox"/> 80 (3.15) <input type="checkbox"/> 88 (3.46) <input type="checkbox"/> 90 (3.54) <input type="checkbox"/> 100 (3.95)
	<input type="checkbox"/> 120 (4.72) <input type="checkbox"/> 127 (5.00) <input type="checkbox"/> 135 (5.31) <input type="checkbox"/> 150 (5.91)
	<input type="checkbox"/> 155 (6.10) <input type="checkbox"/> _____ (Sondermaß / Special dimension)
<b>D2 / mm(in)</b>	<input type="checkbox"/> 40 (1.58) <input type="checkbox"/> 41 (1.61) <input type="checkbox"/> 50 (1.97) <input type="checkbox"/> 51 (2.01)
	<input type="checkbox"/> 52,5 (2.07) <input type="checkbox"/> 60 (2.36) <input type="checkbox"/> 68 (2.68) <input type="checkbox"/> 70 (2.76)
	<input type="checkbox"/> 76 (2.99) <input type="checkbox"/> 80 (3.15) <input type="checkbox"/> 100 (3.94) <input type="checkbox"/> 105 (4.13)
	<input type="checkbox"/> _____ (Sondermaß / Special dimension)
<b>L1 / mm(in)</b>	<input type="checkbox"/> 20 (0.80) <input type="checkbox"/> 30 (1.18) <input type="checkbox"/> 40 (1.58) <input type="checkbox"/> 50 (1.97)
	<input type="checkbox"/> 60 (2.36) <input type="checkbox"/> 70 (2.76) <input type="checkbox"/> 80 (3.15) <input type="checkbox"/> 90 (3.54)
	<input type="checkbox"/> 100 (3.95) <input type="checkbox"/> 110 (4.33) <input type="checkbox"/> 150 (5.91) <input type="checkbox"/> 200 (7.87)
	<input type="checkbox"/> 250 (9.84) <input type="checkbox"/> 300 (11.81)
	<input type="checkbox"/> _____ (Sondermaß / Special dimension)
<b>L2 / mm(in)</b>	<input type="checkbox"/> 10 (0.39) <input type="checkbox"/> 15 (0.59) <input type="checkbox"/> 20 (0.80) <input type="checkbox"/> 25 (0.98)
	<input type="checkbox"/> 30 (1.18) <input type="checkbox"/> _____ (Sondermaß / Special dimension)
<b>Material</b>	
<input type="checkbox"/> PTFE <input type="checkbox"/> Aluminiumoxidkeramik (nur Typ A und C) / Aluminium oxide ceramics (only type A and C)	

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