

Technical Information

Weld-in adapter, Process adapter and Flanges

Level, Pressure, Temperature



Application

The adapters and the flanges are used to connect level, pressure or temperature sensors to a vessel or a pipe.

Your benefits

- High-quality, corrosion resistant materials for use in aggressive media
- Versions without crevices and dead space of the weld-in adapters and the process adapters according to international hygiene regulations
- A variety of seals for application in diverse processes

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General information

NOTICE

Maximum pressure and temperature may be limited by the sensor installed in the adapter.

- ▶ Maximum design pressure and temperature stated is for the adapter only and not for the sensor being installed in the adapter. Consult sensor supplier for sensor pressure-temperature ratings.

Pressure equipment directive PED 2014/68/EU

The herein listed adapters are not subject to the pressure equipment directive independent of the maximum allowable amount of pressure, because they have no pressurised volume.

Suitable for hygienic processes

3-A and EHEDG



The listed connections in this documentation are EHEDG and 3-A approved.

Suitable for hygienic application, see also documentation "Hygienic Certificates", SD02503F.

Material conformity



The data concerning suitability for hygienic processes are listed under the relevant device version.

The weld-in adapters are manufactured according to the material specifications of the latest standards. Special versions of weld-in adapters, e.g. older material charges, must be requested and ordered via TSP workflow.

Seals:

Conform materials according to FDA 21 CFR (Code of Federal Regulations)

PART 177 - Indirect Food Additives: Polymers

- Part 177.1550: Perfluorocarbon resins (PTFE)
- Part 177.2600: Rubber articles intended for repeated use (EPDM, Silicone (VMQ), Viton (FKM))

Conform to regulation (EC) No. 1935/2004 on materials and articles intended to come into contact with food (European)

- BfR (Federal Institute for Risk Assessment) Recommendation XV. Commodities based on Silicones: Silicone (VMQ)
- BfR (Federal Institute for Risk Assessment) Recommendation XXI. Commodities based on Natural and Synthetic Rubber: EPDM, Viton (FKM)
- PTFE conform to regulation (EC) No. 10/2011

Metals:

Metals meet at least the voluntary Standard des Council of Europe des Council of Europe - EDQM-Guide "metals and alloys used in food contact materials and articles 2013 (1st edition)".

CRN approval

Versions with a CRN approval (Canadian Registration Number) are listed in the corresponding registration documents. CRN-approved devices are marked with a registration number. Any restrictions regarding the maximum process pressure values are listed on the CRN certificate. Adapters with CRN approval can be found on the Endress+Hauser website: www.endress.com → Downloads

Ordering information







Product Configurator: www.endress.com

Product Configurator - the tool for individual product configuration



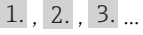
- Up-to-the-minute configuration data
- Depending on the device: Direct input of measuring point-specific information such as measuring range or operating language
- Automatic verification of exclusion criteria
- Automatic creation of the order code and its breakdown in PDF or Excel output format
- Ability to order directly in the Endress+Hauser Online Shop

Symbols

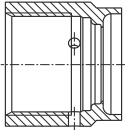
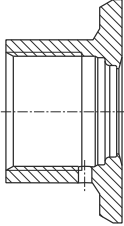
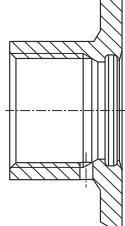
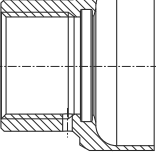
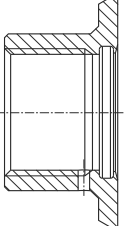
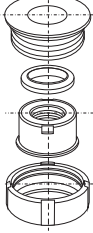
Safety symbols

Symbol	Meaning
 <small>A0011189-EN</small>	DANGER! This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
 <small>A0011190-EN</small>	WARNING! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
 <small>A0011191-EN</small>	CAUTION! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
 <small>A0011192-EN</small>	NOTICE! This symbol contains information on procedures and other facts which do not result in personal injury.

Symbols for certain types of information

Symbol	Bedeutung
 <small>A0011193</small>	Indicates additional information.
 <small>A0039080</small>	Please recycle a part of an device or the device itself if allowed.
	Series of steps

Weld-in adapter - overview Level

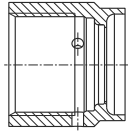
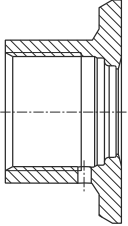
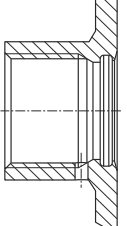
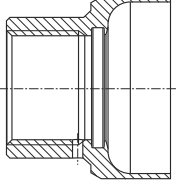
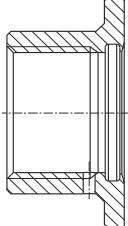
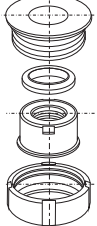
[Part 1] Weld-in adapter - overview Level						
	A0008246	A0008251	A0008256	A0011924	A0008248	A0008253
	G ¾, d=29 for pipe- mounting	G ¾, d=50 for vessel- mounting	G ¾, d=55 with flange	G 1, d=53 without flange	G 1, d=60 with flange	G 1 adjustable
Material	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)
Roughness μm (μin) process side	$\leq 1,5$ (59.1)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)
Order number weld-in adapter	71258357	71258355	52001052	71258358	52001051	52001221
Order number weld-in adapter with inspection certificate ¹⁾	52028295	52018765	52011897	71093129	52011896	52011898
Order number for seal replacement (5 pieces)	Silicone O-ring 52021717 ²⁾	Silicone O-ring 52021717 ²⁾	Silicone O-ring 52014473 ²⁾	Silicone O-ring 52014472 ²⁾	Silicone O-ring 52014472 ²⁾	Silicone profile gasket 52014424 ³⁾
Order number welding dummy ⁴⁾	71174959	71174959	71168889	71166879	71166879	71181945
Order number blind plug ⁴⁾	71167850	71167850	71177193	71173810	71173810	71166366
Order number blind plug with inspection certificate ^{1) 4)}	-	-	71190074	71167291	71167291	71196853

1) Inspection certificate EN10204-3.1 material; AD2000: The material 316L (in contact with process) corresponds to AD2000 – W0/W2/W10.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

3) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.


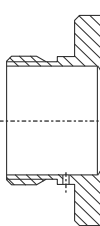
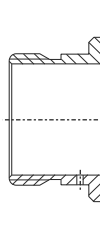
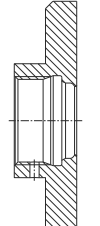
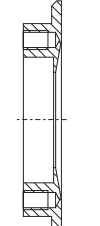
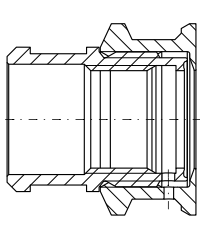
4) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

[continue part 1] Weld-in adapter - overview Level						
	G 3/4, d=29 for pipe- mounting	G 3/4, d=50 for vessel- mounting	G 3/4, d=55 with flange	G 1, d=53 without flange	G 1, d=60 with flange	G 1 adjustable
Measuring device	Suitable for process connection option ¹⁾					
Liquicap						
FMI51	-	GQJ	-	GWJ	GWJ	-
FMI52	-	-	-	GWJ	GWJ	-
FTI51	-	GQJ	-	GWJ	GWJ	-
FTI52	-	-	-	GWJ	GWJ	-
Liquipoint						
FTW23, FTW33	W5J	W5J	-	WSJ	WSJ	-
Liquitrend						
QMW43	W5J	W5J	-	WSJ	WSJ	-
Rod probe						
11371	4	4	4	-	-	-
Liquiphant						
FTL33, FTL31	W5J	W5J	-	WSJ	WSJ	WSJ
FTL50, FTL50H	-	-	GQ2	GW2	GW2	GW2
FTL51, FTL51H	-	-	-	GW2	GW2	GW2
FTL41, FTL51B, FTL63	-	-	W5J ²⁾	WSJ	WSJ	WSJ
FTL51B	-	-	W5J ²⁾	WSJ	WSJ	WSJ
FTL80	-	-	WCJ	WSJ	WSJ	WSJ
FTL81	-	-	-	WSJ	WSJ	WSJ
	Adapter as an accessory enclosed option ³⁾					
Liquipoint						
FTW23, FTW33	PC/PD	PA/PB	-	PG/PH	PE/PF	-
Liquitrend						
QMW43	PC/PD	PA/PB	-	PG/PH	PE/PF	-
Liquiphant						
FTL31, FTL33	PC/PD	PA/PB	-	PG/PH	PE/PF	-
FTL41, FTL51B, FTL63	-	-	PO/PP	PG/PH	PE/PF	PI/PJ

1) The option can be selected in the Product Configurator via the order feature "Process Connection".

2) The option can be selected in the Product Configurator only available for the compact version via the order code "Type of probe", option 1 "compact version".

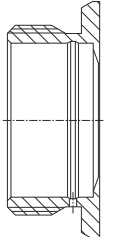
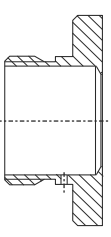
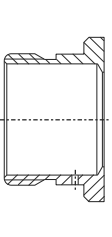
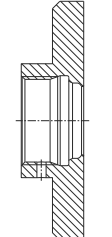
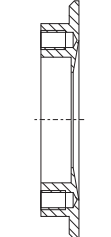
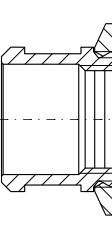
3) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".

[Part 2] Weld-in adapter- overview Level	 A0008252	 A0008245	 A0017639	 A0008552	 A0008254	 A0045641
	RD52	UNI D85	UNI D65	M24 D65	DRD DN50 65 mm (2.56 in) (weld-in flange)	G 1 1/4" with thread adapter G 1"
Material	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435) 304 (1.4301)	316L (1.4404)
Roughness μm (μin) process side	$\leq 0,8$ (31.5)	$\leq 0,76$ (29.9)	$\leq 0,76$ (29.9)	$\leq 0,76$ (29.9)	$\leq 0,76$ (29.9)	$\leq 0,76$ (29.9)
Order number weld-in adapter	52001047	52006262	214880-0002	71041381	52002041/ 916743-0000	-
Order number weld-in adapter with inspection certificate ¹⁾	52006909	52010173	52010174	71041383	52011899/ -	71444432
Order number for seal replacement (5 pieces) ²⁾	Silicone profile gasket 52014424	Silicone profile gasket 52023572	Silicone profile gasket 52023572	EPDM O-ring 52024267	PTFE flat seal 52024228	Silicone profile gasket 71075662
Order number welding dummy	71181945 ³⁾	71114210	71114210	-	71114209	-
Order number blind plug ³⁾	71166366	71580894	71580894	71171418	71181450	-
Slotted nut	52021715	52021715	52021715	-	-	-

1) Inspection certificate EN10204-3.1 material; AD2000: The material 316L (in contact with process) corresponds to AD2000 – W0/W2/W10.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

3) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

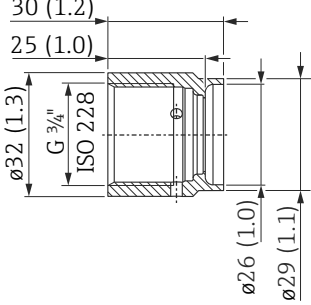

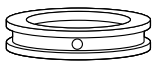
[continue part 2] Weld-in adapter - overview Level						
	A0008252	A0008245	A0017639	A0008552	A0008254	A0045641
	RD52	UNI D85	UNI D65	M24 D65	DRD DN50 65 mm (2.56 in) (weld-in flange)	G 1 1/4" with thread adapter G 1"
Measuring device	Suitable for process connection option ¹⁾					
Liquicap						
FMI5x	-	UPJ	UPJ	-	-	-
FTI5x	-	UPJ	UPJ	-	-	-
Liquipoint						
FTW23, FTW33	-	-	-	X2J	-	-
Liquitrend						
QMW43	-	-	-	X2J	-	-
Liquiphant						
FTL33	5ZJ	-	-	X2J	-	-
FTL63	5ZJ	-	-	-	-	-
FTL5xH	EE2	-	-	-	PE2	-
Nivector						
FTI26	-	-	-	-	-	WDJ
Levelflex						
FMP41C	-	UPK/UQK	UPK/UQK	-	-	-
FMP43	-	-	-	U1J	-	-
FMP53	-	-	-	U1J	-	-
Liquipoint	Adapter as an accessory enclosed option ²⁾					
FTW23, FTW33	-	-	-	PM/PN	-	-
Liquitrend						
QMW43	-	-	-	PM/PN	-	-
Liquiphant						
FTL33	PO/PQ	-	-	PM/PN	-	-
FTL63	PR/PS	-	-	-	-	-
Nivector						
FTI26	-	-	-	-	-	PK

1) The option can be selected in the Product Configurator via the order feature "Process Connection".

2) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".

Weld-in adapter and accessories - Level

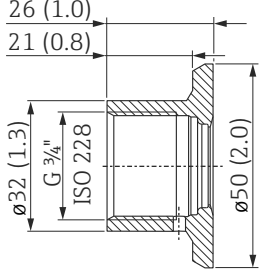

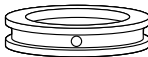
G 3/4, d=29 for pipe-mounting

Dimensions mm (in)	Version	Order number
 <p style="text-align: center;">A0008265</p> <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ▪ max. 25 bar (362 psi) / max. 150 °C (302 °F) ▪ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ▪ Without inspection certificate ▪ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 1.5 µm (59.1 µin)</p> <p>Approved by CRN: 0F18434.5C</p>	71258357 52028295
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	71174959 ¹⁾
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 3.2 µm (126 µin)</p>	71167850 ¹⁾
Seals and pressure ring	Order number	
 <p style="text-align: center;">A0021901</p>	Standard seal	
	<p>Silicone O-ring, ø 14.9 x 2.7 mm (0.59 x 0.11 in) Material: VMQ 70 Conform according to FDA, 3-A</p> <p>For this version a simple replacement of the seal is possible.</p>	52021717 ²⁾ (5 pieces)
	Alternative seals	
	<p>ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: EPDM Conform according to FDA, USP Class VI, EC1935, 3-A</p> <p>Approved by EHEDG</p>	71529759 ²⁾ (5 pieces)
	<p>ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: FKM Conform according to FDA, USP Class VI, EC1935, 3-A</p> <p>Approved by EHEDG</p>	71167890 ¹⁾ (5 pieces)
<p>ø14.9 x 2.7 mm (0.59 x 0.11 in) Material: Silicone VMQ 80 Conform according to FDA, USP Class VI, 3-A</p>	71086117 (3 pieces)	
 <p style="text-align: center;">A0021902</p>	<p>Pressure ring Material: 316L (1.4435)</p> <ul style="list-style-type: none"> ▪ The seal with pressure ring enables easy exchange of defective sealing rings. 	52027421

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

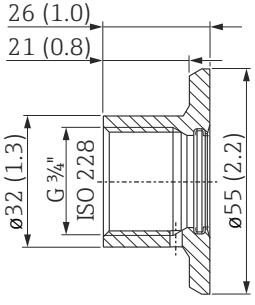

G 3/4, d=50 for vessel-mounting

Dimensions mm (in)	Version	Order number
 <p data-bbox="517 645 815 801"> Pressure and temperature range of the adapter of the adapter <ul style="list-style-type: none"> ■ max. 25 bar (362 psi) / max. 150 °C (302 °F) ■ max. 40 bar (580 psi) / max. 100 °C (212 °F) </p>	<ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin) Approved by CRN: 0F18434.5C	71258355 52018765
	Welding dummy for welding the weld-in adapter Material: Brass	71174959 ¹⁾
	Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 3.2 µm (126 µin)	71167850 ¹⁾
Seals and pressure ring		Order number
	Standard seal	
	Silicone O-ring, ø 14.9 x 2.7 mm (0.59 x 0.11 in) Material: VMQ 70 Conform according to FDA, 3-A For this version a simple replacement of the seal is possible.	52021717 ²⁾ (5 pieces)
	Alternative seals	
	ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: EPDM Conform according to FDA, USP Class VI, EC1935, 3-A Approved by EHEDG	71529759 ²⁾ (5 pieces)
	ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: FKM Conform according to FDA, USP Class VI, EC1935, 3-A Approved by EHEDG	71167890 ¹⁾ (5 pieces)
ø 14.9 x 2.7 mm (0.59 x 0.11 in) Material: Silicone VMQ 80 Conform according to FDA, USP Class VI, 3-A	71086117 (3 pieces)	
	Pressure ring Material: 316L (1.4435) The seal with pressure ring enables easy exchange of defective sealing rings.	52027421

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

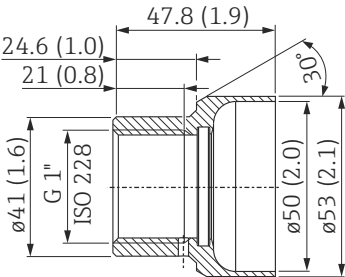

G 3/4, d=55 with flange for flush-mounted installation

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)	52001052 52011897
	Welding dummy for welding the weld-in adapter Material: Brass	71168889 ¹⁾
	Blind plug for closing weld-in adapter <ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)	71177193 ¹⁾ 71190074 ¹⁾
Seals, ø 21.89 x 2.62 mm (0.86 x 0.10 in)		Order number
	Standard seal	
	Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806	52014473 ²⁾ (5 pieces)
	Alternative seals	
	Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935, GB4806 Approved by EHEDG	71140670 ²⁾ (3 pieces)
	Material: FFKM Kalrez 6221 Conform according to FDA, USP Class VI, 3-A	71167883 ¹⁾
	Material: FKM	71172153 ¹⁾ (5 pieces)
	Material: FKM-FEP coated Conform according to FDA, USP Class VI, 3-A, EC1935	71167747
Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935, GB4806	71086100 (3 pieces)	

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

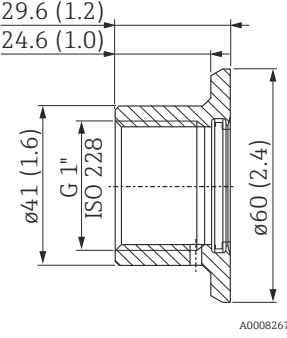

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

G 1, d=53 without flange for pipe-mounting

Dimensions mm (in)	Version	Order number
 <p data-bbox="804 607 858 618">A0011927</p> <p data-bbox="517 645 839 696">Pressure and temperature range of the adapter</p> <ul data-bbox="517 696 756 801" style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p data-bbox="890 394 1342 448">Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p data-bbox="890 472 1177 499">Approved by CRN: 0F18434.5C</p>	<p data-bbox="1378 304 1481 353">71258358 71093129</p>
	<p data-bbox="890 533 1342 584">Welding dummy for welding the weld-in adapter Material: Brass</p>	<p data-bbox="1378 533 1497 560">71166879¹⁾</p>
	<p data-bbox="890 622 1235 649">Blind plug for closing weld-in adapter</p> <ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p data-bbox="890 734 1257 808">Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p data-bbox="1378 645 1497 696">71173810 71167291¹⁾</p>
Seals, ø 28.17 x 3.53 mm (1.11 x 0.14 in)		Order number
 <p data-bbox="804 1122 858 1133">A0021901</p>	Standard seal	
	<p data-bbox="890 965 1342 1066">Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806</p>	<p data-bbox="1378 965 1497 1016">52014472²⁾ (5 pieces)</p>
	Alternative seals	
	<p data-bbox="890 1167 1342 1240">Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935</p> <p data-bbox="890 1267 1078 1294">Approved by EHEDG</p>	<p data-bbox="1378 1167 1497 1218">71140668²⁾ (3 pieces)</p>
	<p data-bbox="890 1335 1342 1386">Material: FKM 75 Conform according to FDA, USP Class VI, EC1935</p>	<p data-bbox="1378 1335 1497 1386">71182264¹⁾ (5 pieces)</p>
	<p data-bbox="890 1413 1155 1440">Material: FFKM Kalrez 4079</p> <p data-bbox="890 1467 1342 1541">Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p data-bbox="1378 1413 1497 1440">71166292¹⁾</p> <p data-bbox="1378 1467 1497 1518">71086102 (3 pieces)</p>

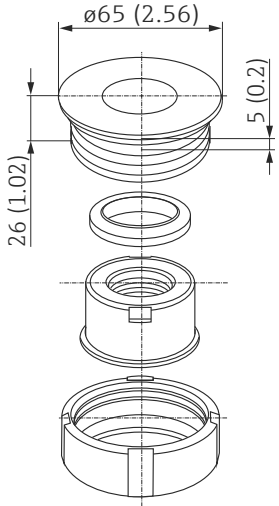

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

G 1, d=60 with flange for flush-mounted installation with sealing surface

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ■ max. 25 bar (362 psi) / max. 150 °C (302 °F) ■ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Approved by CRN: 0F18434.5C</p> <p>Welding dummy for welding the weld-in adapter Material: Brass</p> <p>Blind plug for closing weld-in adapter</p> <ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>52001051 52011896</p> <p>71166879¹⁾</p> <p>71173810 71167291¹⁾</p>
Seals, ø 28.17 x 3.53 mm (1.11 x 0.14 in)		Order number
	Standard seal	
	<p>Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806</p>	<p>52014472²⁾ (5 pieces)</p>
	Alternative seals	
	<p>Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935</p> <p>Approved by EHEDG</p>	<p>71140668²⁾ (3 pieces)</p>
	<p>Material: FKM 75 Conform according to FDA, USP Class VI, EC1935</p>	<p>71182264¹⁾ (5 pieces)</p>
	<p>Material: FFKM Kalrez 4079</p> <p>Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>71166292¹⁾</p> <p>71086102 (3 pieces)</p>

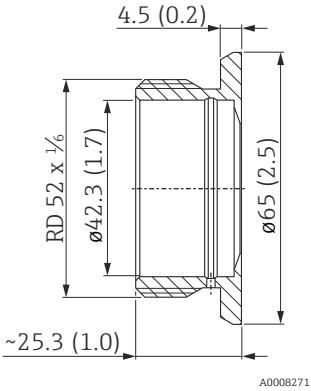

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

G 1 sensor can be positioned

Dimensions mm (in)	Version	Order number
 <p data-bbox="767 824 820 837">A0008272</p> <p data-bbox="517 862 815 913">Pressure and temperature range of the adapter</p> <ul data-bbox="517 913 756 1021" style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Approved by CRN: OF18434.5C</p>	<p>52001221 52011898</p>
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	<p>71181945¹⁾</p>
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>71166366¹⁾</p>
<p>Seals, ø 29 x 36 x 3.7 mm (1.14 x 1.42 x 0.15 in)</p>		<p>Order number</p>
 <p data-bbox="767 1361 820 1375">A0021901</p>	<p>Standard seal</p>	
	<p>Silicone profile gasket Material: VMQ 60 Conform according to FDA, EC1935</p>	<p>52014424²⁾ (5 pieces)</p>
	<p>Alternative seals</p>	
	<p>Material: EPDM-70</p>	<p>71168375¹⁾ (5 pieces)</p>
<p>Material: VMQ 60 Conform according FDA, USP Class VI, 3-A, EC1935</p>	<p>71075662 (5 pieces)</p>	

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

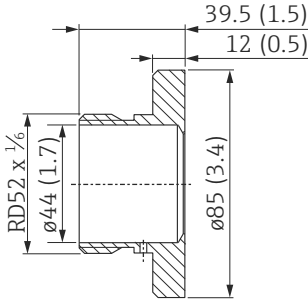


RD 52 sensor can be positioned

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ▪ max. 25 bar (362 psi) / max. 150 °C (302 °F) ▪ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ▪ Without inspection certificate ▪ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Welding dummy for welding the weld-in adapter Material: Brass</p> <p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>52001047 52006909</p> <p>71181945¹⁾</p> <p>71166366¹⁾</p>
Seals, ø 29 x 36 x 3.7 mm (1.14 x 1.42 x 0.15 in)		Order number
	Standard seal	
	<p>Silicone profile gasket Material: VMQ 60 Conform according to FDA, EC1935</p> <p>For this version a simple replacement of the seal is possible.</p>	<p>52014424²⁾ (5 pieces)</p>
	Alternative seals	
	<p>Material: EPDM-70</p>	<p>71168375¹⁾ (5 pieces)</p>
<p>Material: VMQ 60 Conform according FDA, USP Class VI, 3-A, EC1935</p>	<p>71075662 (5 pieces)</p>	

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

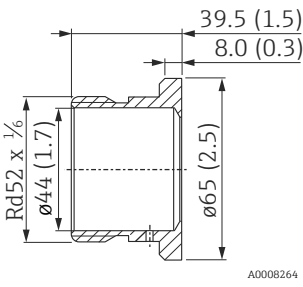


2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

UNI D85

Dimensions mm (in)	Version	Order number
 <p data-bbox="512 658 815 763">Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ■ max. 16 bar (232 psi) / max. 150 °C (302 °F) 	<ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p> <p>Approved by CRN: OF18434.5C</p>	<p>52006262 52010173</p>
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	<p>71114210</p>
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p>	<p>71580894</p>
Seals, back ring		Order number
	Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
	<p>Silicone profile gasket Material: Silicone 60 Shore A Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>52023572¹⁾ (5 pieces)</p>
	Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
<p>Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A</p>	<p>71100719 (5 pieces)</p>	
	O-ring with back ring	
	<p>With inspection certificate EN10204-3.1 material Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404)</p> <p>O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A</p> <p>Approved by EHEDG</p>	<p>71431380</p>

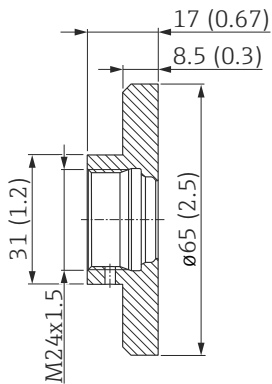

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

UNI D65

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 16 bar (232 psi) / max. 150 °C (302 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p> <p>Approved by CRN: OF18434.5C</p>	214880-0002 52010174
	Welding dummy for welding the weld-in adapter Material: Brass	71114210
	Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)	71580894
Seals, back ring	Order number	
	Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
	Silicone profile gasket Material: Silicone 60 Shore A Conform according to FDA, USP Class VI, 3-A, EC1935	52023572 ¹⁾ (5 pieces)
	Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
	Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A	71100719 (5 pieces)
	O-ring with back ring	
	<p>With inspection certificate EN10204-3.1 material</p> <p>Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404)</p> <p>O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A</p> <p>Approved by EHEDG</p>	71431380

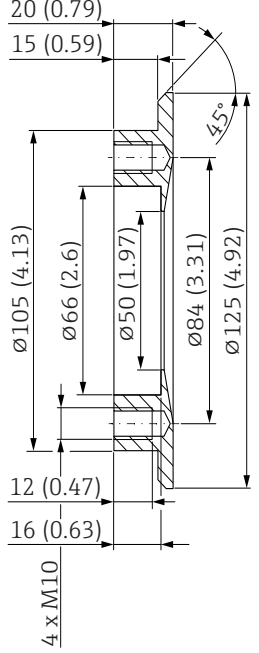

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

M24 D65

Dimensions (mm)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p>Approved by CRN: OF18434.5C</p>	<p>71041381 71041383</p>
<p>Blind plug for closing weld-in adapter</p> <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>		<p>71171418¹⁾</p>
<p>Seal Ø 15.54 x 2.62 mm (0.61 x 0.1 in)</p>		<p>Order number</p>
	<p>Standard seal</p> <p>O-ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p>Approved by EHEDG</p>	<p>52024267²⁾ (5 pieces)</p>

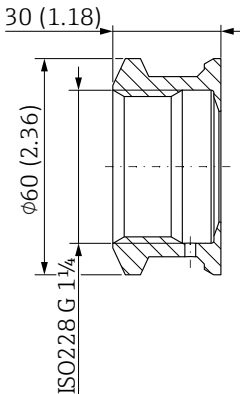
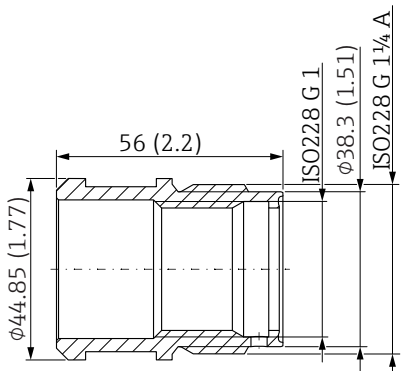

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

**DRD DN50 (65 mm (2.56 in))
for flush-mounted
installation of devices with
DRD-flange**

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	52002041 52011899
	<p>Material: AISI 304 (1.4301) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p>	916743-0000
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	71181450 ¹⁾
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	71114209
Seal ø 50 x 65 x 1 mm (1.97 x 2.56 x 0.04 in)		Order number
	Standard seal	
	<p>Flat seal Material: PTFE Conform according to FDA, EC1935</p>	52024228 ²⁾ (5 pieces)

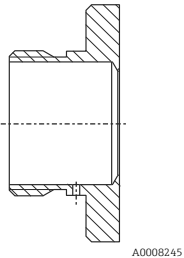
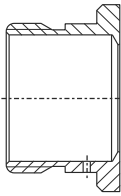

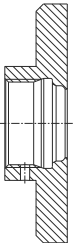
- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

G 1¼ with thread adapter G 1

Dimensions mm (in)	Version	Order number
 <p>30 (1.18)</p> <p>φ60 (2.36)</p> <p>ISO228 G 1¼</p> <p>Weld-in adapter G 1¼</p> <p>A0045643</p>  <p>56 (2.2)</p> <p>φ44.85 (1.77)</p> <p>ISO228 G 1</p> <p>φ38.3 (1.51)</p> <p>ISO228 G 1¼ A</p> <p>Threaded sleeve</p> <p>A0045644</p> <p>Pressure and temperature range</p> <ul style="list-style-type: none"> max. 6 bar (87 psi) / -20 °C ... +80 °C (-4 °F ... +176 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p>	<p>-</p> <p>71444432</p>
<p>Seal, ø 29 x 36 x 3.7 mm (1.14 x 1.42 x 0.15 in)</p>		<p>Order number</p>
 <p>A0021901</p>	<p>Standard seal</p> <p>Silicone profile gasket Material: VMQ 60 Conform according to FDA, USP Class VI, 3-A, EC1935</p> <p>71075662¹⁾ (5 pieces)</p> <p>Alternative seal</p> <p>Silicone profile gasket Material: VMQ 60 Conform according to FDA, EC1935</p> <p>52014424 (5 pieces)</p>	

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

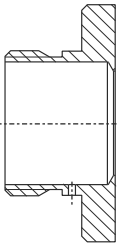
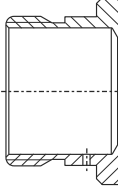


Weld-in adapter - overview Pressure

[Part 1] Weld-in adapter - overview Pressure				
	A0008245	A0017639	A0008254	A0008552
	UNI D85	UNI D65	DRD DN50 (65 mm) (weld-in flange)	M24 D65
Material	316L (1.4435)	316L (1.4435)	316L (1.4435) 304 (1.4301)	316L (1.4435)
Roughness μm (μin) process side	$\leq 0,76$ (29.9)	$\leq 0,76$ (29.9)	$\leq 0,76$ (29.9)	$\leq 0,76$ (29.9)
Order number weld-in adapter	52006262	214880-0002	52002041/916743- 0000	71041381
Order number weld-in adapter with inspection certificate ¹⁾	52010173	52010174	52011899/ -	71041383
Order number for seal replacement (5 pieces) ²⁾	Silicone profile gasket 52023572	Silicone profile gasket 52023572	PTFE flat seal 52024228	EPDM O-ring 52024267
Order number Welding dummy	71114210	71114210	71114209	-
Order number blind plug ³⁾	71181340	71181340	71181450	71171418

1) AD2000: The material 316L (in contact with process) corresponds to AD2000 – W0/W2/W10.

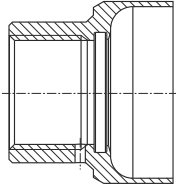
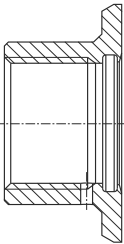

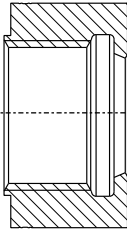
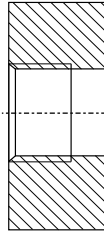

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

3) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

[continue part 1] Weld-in adapter - overview Pressure				
	A0008245 UNI D85	A0017639 UNI D65	A0008254 DRD DN50 (65 mm) (weld-in flange)	A0008552 M24 D65
Measuring device	Suitable for process connection option¹⁾			
Cerabar				
PMP23	52J	52J	-	X2J/X3J
Ceraphant				
PTP33B	-	-	-	X2J/X3J
Cerabar M				
PMC51	UNJ/UPJ	UNJ/UPJ	TIJ	-
PMP51	-	-	TIJ	-
PMP55	UPJ	UPJ	TIJ	-
Deltapilot M				
FMB50	UNJ/UPJ	UNJ/UPJ	TIJ	-
Deltapilot S				
FMB70	00/01	00/01	TK	-
Deltabar S				
FMD78	00/UT	00/UT	TK	-
Deltabar				
FMD71	UNJ/UPJ	UNJ/UPJ	TIJ	-
FMD72	-	-	TIJ	-
Measuring device	Adapter as an accessory enclosed option²⁾			
Ceraphant				
PTP33B	QP/QR	QL/QM	-	PM/PN
Cerabar				
PMP23	QP/QR	QL/QM	-	PM/PN
Cerabar M				
PMC51	Q2/Q3	QT/QU	QP/QR	-
PMP51	-	-	QP/QR	-
PMP55	-	-	QP/QR	-
Deltapilot M				
FMB50	Q2/Q3	QT/QU	QP/QR	-

1) The option can be selected in the Product Configurator via the order feature "Process Connection".

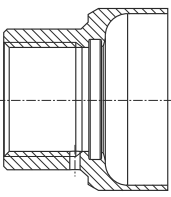
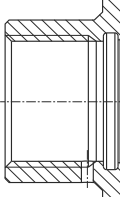

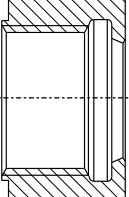
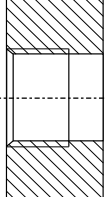
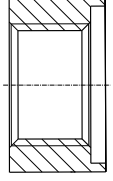
2) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".

[Part 2] Weld-in adapter overview Pressure						
	A0011924	A0008248	A0008247	A0008249	A0008250	A0037352
	G 1, d=53 without flange	G 1, d=60 with flange	G 1½ flush-mounted	G 1 flush-mounted (sealing taper)	G ½ flush-mounted	G ½ DIN3852
Material	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4404)	316L (1.4435)	316L (1.4404)
Roughness μm (μin) process side	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)
Order number weld-in adapter	71258358	52001051	52024469	52005087	52002643	71389241
Order number weld-in adapter with inspection certificate ¹⁾	71093129	52011896	52024470	52010171	52010172	71389243
Order number for seal replacement (5 pieces) ²⁾	Silicone O-ring 52014472	Silicone O-ring 52014472	-	-	-	-
Order number Welding dummy	71166879	71166879	52024471	52005272	52005082	52005082
Order number blind plug	71173810	71173810	-	71171731	-	-
Order number blind plug with inspection certificate ³⁾	71167291	71167291	-	-	-	-

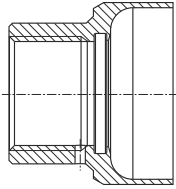
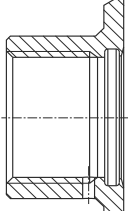
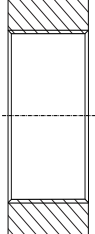
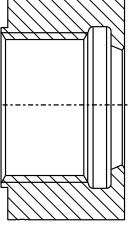
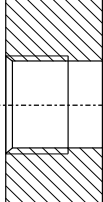

1) AD2000: The material 316L (in contact with process) corresponds to AD2000 – W0/W2/W10.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

3) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

[continue part 2] weld-in adapter overview Pressure						
	G 1, d=53 without flange	G 1, d=60 with flange	G 1½ flush-mounted	G 1 flush-mounted (sealing taper)	G ½ flush-mounted	G ½ DIN3852
Measuring device	Suitable for process connection option ¹⁾					
Ceraphant						
PTP31	-	-	-	-	AG	-
PTP35	BB	BB	-	BA	-	-
PTP31B	-	-	-	-	WUJ	WJJ
PTP33B	WSJ	WSJ	-	WQJ	-	-
Cerabar						
PMP11	-	-	-	-	-	WJJ
PMP135	N	N	-	M	-	-
PMP21	-	-	-	-	WUJ	WJJ
PMP23	WSJ	WSJ	-	WQJ	-	-
PMP51B	-	-	WNJ	-	-	WJJ
PMP71B	-	-	WNJ	-	-	WJJ
PMC51B	-	-	WNJ	-	-	-
PMC71B	-	-	WNJ	-	-	-
Cerabar M						
PMC51	-	-	GVJ	-	-	-
PMP51	-	GZJ	GVJ	GXJ	GOJ/GCJ	GRJ/GRC
PMP55	-	-	GVJ ²⁾	-	-	-
Cerabar S						
PMC71	-	-	1G/1H/1J	-	-	-
PMP71	-	-	1G/1H	-	-	1A/1B
PMP75	-	-	1G/1H	-	-	-
Deltapilot M						
FMB50	-	-	GGJ/GGC	-	-	-
FMB51	-	-	GGJ/GGC	-	-	-
FMB52	-	-	GGJ/GGC	-	-	-
Deltapilot S						
FMB70	-	-	1G/1H	-	-	-
Deltabar S						
FMD78	-	-	1G/1H	-	-	-
Deltabar						
FMD71	-	-	GVJ	-	-	-
FMD72	-	-	GVJ	-	-	-

- 1) The option can be selected in the Product Configurator via the order feature "Process Connection".
- 2) Flush mounting is not possible with this combination.

[continue part 2] weld-in adapter overview Pressure						
	A0011924	A0008248	A0008247	A0008249	A0008250	A0037352
	G 1, d=53 without flange	G 1, d=60 with flange	G 1½ flush-mounted	G 1 flush-mounted (sealing taper)	G ½ flush-mounted	G ½ DIN3852
Measuring device	Adapter as an accessory enclosed					
Ceraphant	option ¹⁾					
PTP31B	-	-	-	-	QA/QB	-
PTP33B	-	QJ/QK	-	QE/QF ²⁾	-	-
Cerabar						
PMP21	-	-	-	-	QA/QB	QM/QN
PMP23	-	QJ/QK	-	QE/QF ²⁾	-	-
PMC51	-	-	QJ/QK	-	-	-
PMP51	-	-	QJ/QK	QE/QF ²⁾	QA/QB	QM/QN
PMP55	-	-	QJ/QK ³⁾	-	-	-
PMP51B	-	-	QJ	-	-	-
PMP71B	-	-	QJ	-	-	-
PMC51B	-	-	QJ	-	-	-
PMC71B	-	-	QJ	-	-	-
Deltapilot M						
FMB50	-	-	QJ/QK	-	-	-
FMB51	-	-	QJ/QK	-	-	-
FMB52	-	-	QJ/QK	-	-	-

- 1) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".
- 2) Only suitable for one-time screwing in (observe the following note "Untight connection")
- 3) Flush mounting is not possible with this combination.

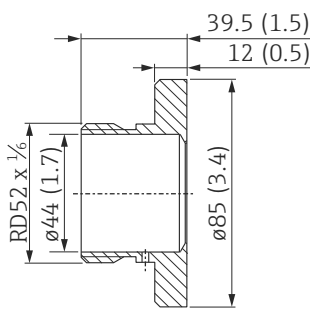

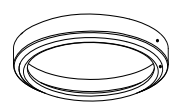
NOTICE**Untight connection**

Repeated screwing in of the process connection can cause damage to the weld-in adapter. The connection becomes untight.

- ▶ Use sealing G 1 flush-mounted only for one-time screwing in.

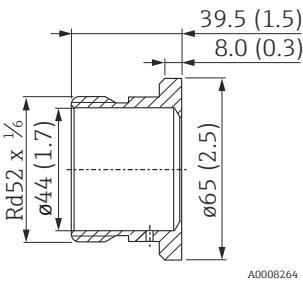


Weld-in adapter and accessories - Pressure

UNI D85

Dimensions mm (in)	Version	Order number
 <p style="text-align: right; font-size: small;">A0009985</p> <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ■ max. 16 bar (232 psi) / max. 150 °C (302 °F) 	<ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p> <p>Approved by CRN: 0F18434.5C</p>	52006262 52010173
	Welding dummy for welding the weld-in adapter Material: Brass	71114210
	Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)	71580894
Seals, back ring	Order number	
 <p style="text-align: right; font-size: small;">A0021901</p>	Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
	Silicone profile gasket Material: Silicone 60 Shore A Conform according to FDA, USP Class VI, 3-A, EC1935	52023572 ¹⁾ (5 pieces)
	Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
	Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A	71100719 (5 pieces)
 <p style="text-align: right; font-size: small;">A0042001</p>	O-ring with back ring	
	With inspection certificate EN10204-3.1 material Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404) O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A Approved by EHEDG	71431380

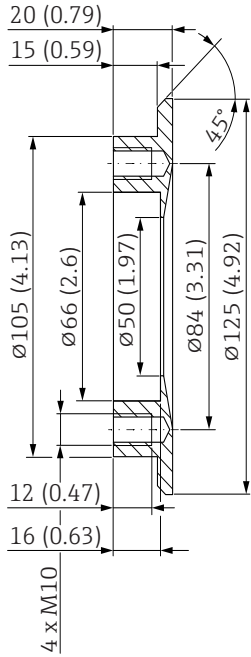

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

UNI D65

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 16 bar (232 psi) / max. 150 °C (302 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p> <p>Approved by CRN: OF18434.5C</p>	214880-0002 52010174
	Welding dummy for welding the weld-in adapter Material: Brass	71114210
	Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)	71580894
Seals, back ring	Order number	
	Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
	Silicone profile gasket Material: Silicone 60 Shore A Conform according to FDA, USP Class VI, 3-A, EC1935	52023572 ¹⁾ (5 pieces)
	Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A	71100719 (5 pieces)	
	O-ring with back ring	
	<p>With inspection certificate EN10204-3.1 material Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404)</p> <p>O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A</p> <p>Approved by EHEDG</p>	71431380

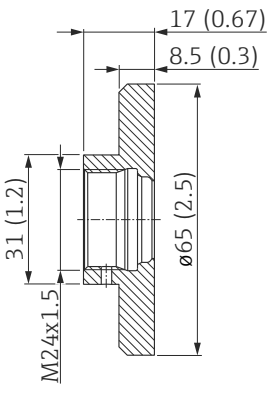

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

**DRD DN50 (65 mm (2.56 in))
for flush-mounted
installation of devices with
DRD-Flange**

Dimensions mm (in)	Version	Order number
 <p style="text-align: right;">A0008263</p> <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ■ max. 25 bar (362 psi) / max. 150 °C (302 °F) ■ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>52002041 52011899</p>
	<p>Material: AISI 304 (1.4301) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p>	<p>916743-0000</p>
	<p>Pressure welding dummy for welding the weld-in adapter Material: Brass</p>	<p>71114209</p>
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>71181450¹⁾</p>
<p>Seal, ø 50 x 65 x 1 mm (1.97 x 2.56 x 0.04 in)</p>		<p>Order number</p>
 <p style="text-align: right;">A0021901</p>	<p>Standard seal</p>	
	<p>Flat seal Material: PTFE Conform according to FDA, EC1935</p>	<p>52024228²⁾ (5 pieces)</p>

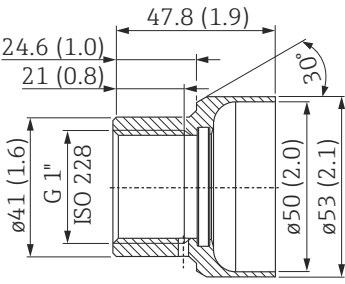

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

M24 D65

Dimensions (mm)	Version		Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p>Approved by CRN: OF18434.5C</p>		<p>71041381 71041383</p>
	<p>Blind plug for closing weld-in adapter</p> <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>		<p>71171418¹⁾</p>
Seal ø 15.54 x 2,62 mm (0.61 x 0.1 in)			Order number
	Standard seal		
	<p>O-Ring</p> <p>Material: EPDM-70</p> <p>Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p>Approved by EHEDG</p>		<p>52024267²⁾ (5 pieces)</p>

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

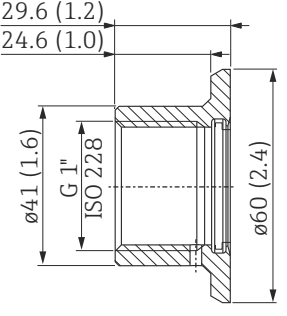

G 1, d=53 without flange for pipe-mounting

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Approved by CRN: 0F18434.5C</p>	<p>71258358 71093129</p>
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	<p>71166879¹⁾</p>
	<p>Blind plug for closing weld-in adapter</p> <ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>71173810 71167291¹⁾</p>
Seals, ø 28.17 x 3.53 mm (1.11 x 0.14 in)		Order number
	Standard seal	
	<p>Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806</p>	<p>52014472²⁾ (5 pieces)</p>
	Alternative seals	
	<p>Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935</p> <p>Approved by EHEDG</p>	<p>71140668²⁾ (3 pieces)</p>
	<p>Material: FKM 75 Conform according to FDA, USP Class VI, EC1935</p>	<p>71182264¹⁾ (5 pieces)</p>
	<p>Material: FFKM Kalrez 4079</p>	<p>71166292¹⁾</p>
<p>Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>71086102 (3 pieces)</p>	

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

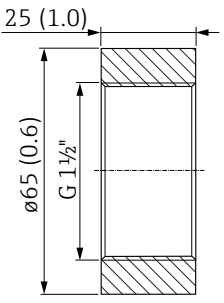
G 1, d=60 with flange for flush-mounted installation with sealing surface

Dimensions mm (in)	Version	Order number
 <p>A0008267</p> <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 μm (31.5 μin)</p> <p>Approved by CRN: 0F18434.5C</p>	52001051 52011896
	Welding dummy for welding the weld-in adapter Material: Brass	71166879 ¹⁾
	Blind plug for closing weld-in adapter	71173810 71167291 ¹⁾
Seals, ø 28.17 x 3.53 mm (1.11 x 0.14 in)		Order number
 <p>A0021901</p>	Standard seal	
	Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806	52014472 ²⁾ (5 pieces)
	Alternative seals	
	Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935 Approved by EHEDG	71140668 ²⁾ (3 pieces)
	Material: FKM 75 Conform according to FDA, USP Class VI, EC1935	71182264 ¹⁾ (5 pieces)
	Material: FFKM Kalrez 4079	71166292 ¹⁾
Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935	71086102 (3 pieces)	

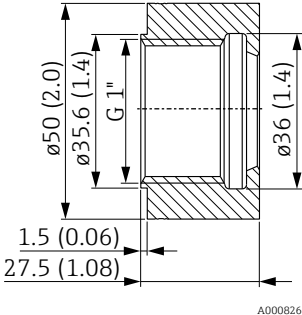
1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

G 1½ flush-mounted

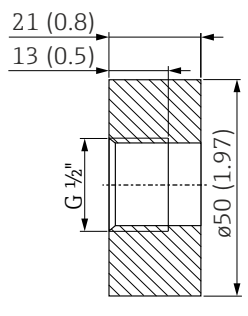
Dimensions mm (in)	Version	Order number
 <p>A0008266</p>	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 μm (31.5 μin)</p>	52024469 52024470
	Pressure welding dummy for welding the weld-in adapter Material: Brass	52024471

G 1 flush-mounted with metallic sealing taper

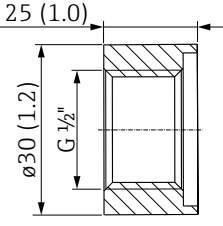
Dimensions mm (in)	Version	Order number
 <p>NOTICE Untight connection Repeated screwing in of the process connection can cause damage to the weld-in adapter. The connection becomes untight. ▶ Use sealing G 1 flush with front only for one-time screwing in.</p>	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material Material: AISI 316L (1.4404) Roughness (process side): Ra ≤ 0.8 μm (31.5 μin) Approved by CRN: OF18434.5C	52005087 52010171
	Pressure welding dummy for welding the weld-in adapter Material: Brass	52005272
	Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)	71171731 ¹⁾

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

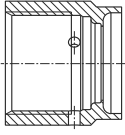
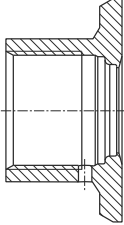
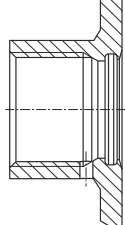
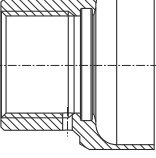
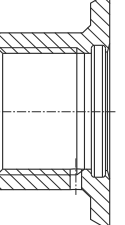
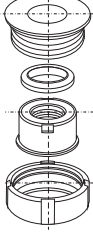
G ½ flush-mounted

Dimensions mm (in)	Version	Order number
 <p>Pressure resistance: max. 100 bar (1500 psi)</p>	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 μm (31.5 μin)	52002643 52010172
	Pressure welding dummy for welding the weld-in adapter Material: Brass	52005082

G ½ DIN3852

Dimensions mm (in)	Version	Order number
 <p>Pressure resistance: max. 100 bar (1500 psi)</p>	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material Material: AISI 316L (1.4404) Roughness (process side): Ra ≤ 0.8 μm (31.5 μin)	71389241 71389243
	Pressure welding dummy for welding the weld-in adapter Material: Brass	52005082

Weld-in adapter - overview Temperature

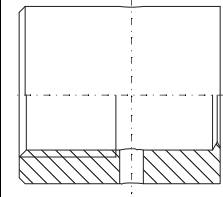
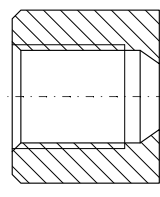
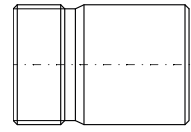
[Part 1] Weld-in adapter - overview Temperature						
	A0008246	A0008251	A0008256	A0011924	A0008248	A0008253
	G ¾, d=29 for pipe- mounting	G ¾, d=50 for vessel- mounting	G ¾, d=55 with flange	G 1, d=53 without flange	G 1, d=60 with flange	G 1 adjustable
Material	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)
Roughness μm (μin) process side	$\leq 1,5$ (59.1)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)	$\leq 0,8$ (31.5)
Order number weld-in adapter	71258357	71258355	52001052	71258358	52001051	52001221
Order number weld-in adapter with inspection certificate ¹⁾	52028295	52018765	52011897	71093129	52011896	52011898
Order number for seal replacement (5 pieces)	Silicone O-ring 52021717 ²⁾	Silicone O-ring 52021717 ²⁾	Silicone O-ring 52014473 ²⁾	Silicone O-ring 52014472 ²⁾	Silicone O-ring 52014472 ²⁾	Silicone profile gasket 52014424 ³⁾
Order number welding dummy	71174959	71174959	71168889	71166879	71166879	71181945
Order number blind plug	71167850	71167850	71177193	71173810	71173810	71166366
Order number blind plug with inspection certificate ¹⁾	-	-	71190074	71167291	71167291	71196853
Measuring device	Suitable for process connection					
Compact thermometer	option ⁴⁾					
TMR35	AC	AC	AB	AD	AD	AD
TM311	J1	J1	J2	J3	J3	J3
Hygienic thermometer						
TM371	J1	J1	J2	J3	J3	J3
TM372	J1	J1	J2	J3	J3	J3
TM411	J1	J1	J2	J3	J3	J3
Thermowell						
TT411	J1	J1	J2	J3	J3	J3

1) Inspection certificate EN10204-3.1 material; AD2000: The material 316L (in contact with process) corresponds to AD2000 – W0/W2/W10.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

3) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

4) The option can be selected in the Product Configurator via the corresponding order feature.

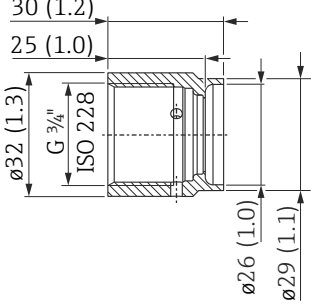

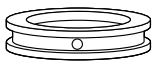
[Part 2] Weld-in adapter - overview Temperature	 <small>A0045815</small>	 <small>A0045834</small>	 <small>A0045836</small>
	Welding boss with sealing taper for G 1/2	Welding boss with sealing taper for M12x1.5	G 1 1/4 for Ingold process connection
Material	316L (1.4435)	316L (1.4435)	316L (1.4435)
Order number weld-in adapter	71424800	71405560	71531585
Order number for seal replacement (5 pieces) ¹⁾	-	-	Silicone o-ring 60018911
Order number blind plug	60022519	60021194	-
Measuring device	Suitable for process connection option²⁾		
Compact thermometer			
TMR31	-	-	-
TMR35	MB	-	-
TM311	H2	H1	-
Hygienic thermometer			
TM371	H2	H1	M1/M3
TM372	-	-	-
TM401	H2	H1	-
TM411	H2	H1	M1/M3
Thermowell			
TT411	H2	H1	M1/M3
Temperature switch			
TTR31	-	-	-
TTR35	MB	-	-
Flow switch			
DTT31	-	-	-
DTT35	MB	-	-

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

2) The option can be selected in the Product Configurator via the corresponding order feature.

Weld-in adapter and accessories - Temperature

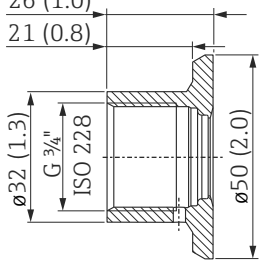

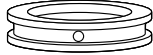
G 3/4, d=29 for pipe-mounting

Dimensions mm (in)	Version	Order number
 <p style="text-align: center; font-size: small;">A0008265</p> <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ▪ max. 25 bar (362 psi) / max. 150 °C (302 °F) ▪ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ▪ Without inspection certificate ▪ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 1.5 μm (59.1 μin)</p> <p>Approved by CRN: 0F18434.5C</p>	71258357 52028295
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	71174959 ¹⁾
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 3.2 μm (126 μin)</p>	71167850 ¹⁾
Seals and pressure ring	Order number	
 <p style="text-align: center; font-size: small;">A0021901</p>	Standard seal	
	<p>Silicone O-ring, ø 14.9 x 2.7 mm (0.59 x 0.11 in) Material: VMQ 70 Conform according to FDA, 3-A</p> <p>For this version a simple replacement of the seal is possible.</p>	52021717 ²⁾ (5 pieces)
	Alternative seals	
	<p>ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: EPDM Conform according to FDA, USP Class VI, EC1935, 3-A</p> <p>Approved by EHEDG</p>	71529759 ²⁾ (5 pieces)
	<p>ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: FKM Conform according to FDA, USP Class VI, EC1935, 3-A</p> <p>Approved by EHEDG</p>	71167890 ¹⁾ (5 pieces)
<p>ø14.9 x 2.7 mm (0.59 x 0.11 in) Material: Silicone VMQ 80 Conform according to FDA, USP Class VI, 3-A</p>	71086117 (3 pieces)	
 <p style="text-align: center; font-size: small;">A0021902</p>	<p>Pressure ring Material: 316L (1.4435)</p> <ul style="list-style-type: none"> ▪ The seal with pressure ring enables easy exchange of defective sealing rings. 	52027421

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

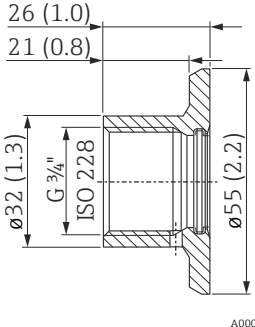

G 3/4, d=50 for vessel-mounting

Dimensions mm (in)	Version	Order number
 <p data-bbox="517 645 815 696">Pressure and temperature range of the adapter of the adapter</p> <ul data-bbox="517 696 756 801" style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Approved by CRN: OF18434.5C</p>	<p>71258355 52018765</p>
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	<p>71174959¹⁾</p>
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 3.2 µm (126 µin)</p>	<p>71167850¹⁾</p>
Seals and pressure ring		Order number
	<p>Standard seal</p>	
	<p>Silicone O-ring, ø 14.9 x 2.7 mm (0.59 x 0.11 in) Material: VMQ 70 Conform according to FDA, 3-A</p> <p>For this version a simple replacement of the seal is possible.</p>	<p>52021717²⁾ (5 pieces)</p>
	<p>Alternative seals</p>	
	<p>ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: EPDM Conform according to FDA, USP Class VI, EC1935, 3-A</p> <p>Approved by EHEDG</p>	<p>71529759²⁾ (5 pieces)</p>
	<p>ø 15.08 x 2.62 mm (0.59 x 0.10 in) Material: FKM Conform according to FDA, USP Class VI, EC1935, 3-A</p> <p>Approved by EHEDG</p>	<p>71167890¹⁾ (5 pieces)</p>
<p>ø 14.9 x 2.7 mm (0.59 x 0.11 in) Material: Silicone VMQ 80 Conform according to FDA, USP Class VI, 3-A</p>	<p>71086117 (3 pieces)</p>	
	<p>Pressure ring Material: 316L (1.4435)</p> <p>The seal with pressure ring enables easy exchange of defective sealing rings.</p>	<p>52027421</p>

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

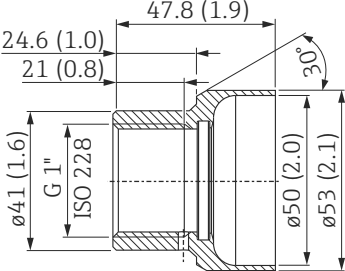

2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

G 3/4, d=55 with flange for flush-mounted installation

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Welding dummy for welding the weld-in adapter Material: Brass</p> <p>Blind plug for closing weld-in adapter</p> <ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>52001052 52011897</p> <p>71168889¹⁾</p> <p>71177193¹⁾ 71190074¹⁾</p>
Seals, ø 21.89 x 2.62 mm (0.86 x 0.10 in)		Order number
	Standard seal	
	<p>Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806</p>	<p>52014473²⁾ (5 pieces)</p>
	Alternative seals	
	<p>Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p>Approved by EHEDG</p>	<p>71140670²⁾ (3 pieces)</p>
	<p>Material: FFKM Kalrez 6221 Conform according to FDA, USP Class VI, 3-A</p>	<p>71167883¹⁾</p>
	<p>Material: FKM</p>	<p>71172153¹⁾ (5 pieces)</p>
	<p>Material: FKM-FEP coated Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>71167747</p>
<p>Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935, GB4806</p>	<p>71086100 (3 pieces)</p>	

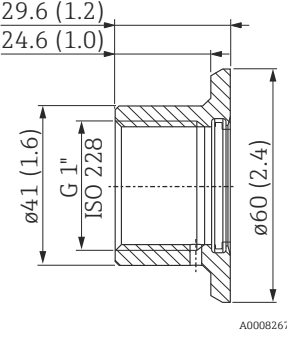

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

G 1, d=53 without flange for pipe-mounting

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Approved by CRN: 0F18434.5C</p>	<p>71258358 71093129</p>
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	<p>71166879¹⁾</p>
	<p>Blind plug for closing weld-in adapter</p> <ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>71173810 71167291¹⁾</p>
<p>Seals, ø 28.17 x 3.53 mm (1.11 x 0.14 in)</p>		<p>Order number</p>
	<p>Standard seal</p>	
	<p>Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806</p>	<p>52014472²⁾ (5 pieces)</p>
	<p>Alternative seals</p>	
	<p>Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935</p> <p>Approved by EHEDG</p>	<p>71140668²⁾ (3 pieces)</p>
	<p>Material: FKM 75 Conform according to FDA, USP Class VI, EC1935</p>	<p>71182264¹⁾ (5 pieces)</p>
	<p>Material: FFKM Kalrez 4079</p> <p>Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>71166292¹⁾ 71086102 (3 pieces)</p>

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

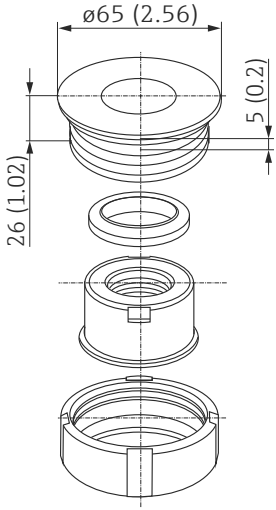

G 1, d=60 with flange for flush-mounted installation with sealing surface

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ■ max. 25 bar (362 psi) / max. 150 °C (302 °F) ■ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Approved by CRN: OF18434.5C</p> <p>Welding dummy for welding the weld-in adapter Material: Brass</p> <p>Blind plug for closing weld-in adapter</p> <ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>52001051 52011896</p> <p>71166879¹⁾</p> <p>71173810 71167291¹⁾</p>
Seals, ø 28.17 x 3.53 mm (1.11 x 0.14 in)		Order number
	Standard seal	
	<p>Silicone O-ring Material: VMQ 70 Conform according to FDA, 3-A, EC1935, GB4806</p>	<p>52014472²⁾ (5 pieces)</p>
	Alternative seals	
	<p>Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A, EC1935</p> <p>Approved by EHEDG</p>	<p>71140668²⁾ (3 pieces)</p>
	<p>Material: FKM 75 Conform according to FDA, USP Class VI, EC1935</p>	<p>71182264¹⁾ (5 pieces)</p>
	<p>Material: FFKM Kalrez 4079</p> <p>Material: Silicone VMQ 3-80 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>71166292¹⁾</p> <p>71086102 (3 pieces)</p>

1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.

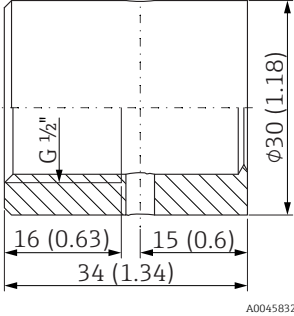
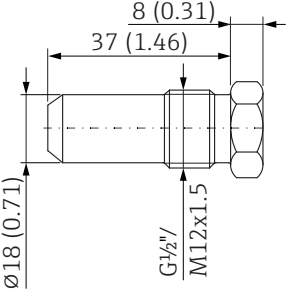
2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal, 1 x EPDM seal (EHEDG).

G 1 sensor can be positioned

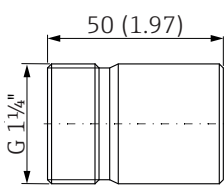

Dimensions mm (in)	Version	Order number
 <p data-bbox="767 824 820 837">A0008272</p> <p data-bbox="517 862 815 913">Pressure and temperature range of the adapter</p> <ul data-bbox="517 913 754 1021" style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.8 µm (31.5 µin)</p> <p>Approved by CRN: OF18434.5C</p>	<p>52001221 52011898</p>
	<p>Welding dummy for welding the weld-in adapter Material: Brass</p>	<p>71181945¹⁾</p>
	<p>Blind plug for closing weld-in adapter Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>71166366¹⁾</p>
<p>Seals, ø 29 x 36 x 3.7 mm (1.14 x 1.42 x 0.15 in)</p>		<p>Order number</p>
 <p data-bbox="767 1361 820 1375">A0021901</p>	<p>Standard seal</p>	
	<p>Silicone profile gasket Material: VMQ 60 Conform according to FDA, EC1935</p>	<p>52014424²⁾ (5 pieces)</p>
	<p>Alternative seals</p>	
	<p>Material: EPDM-70</p>	<p>71168375¹⁾ (5 pieces)</p>
<p>Material: VMQ 60 Conform according FDA, USP Class VI, 3-A, EC1935</p>	<p>71075662 (5 pieces)</p>	

- 1) TSP modification number. Can be ordered only FTSP, PTSP or NTSP.
- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

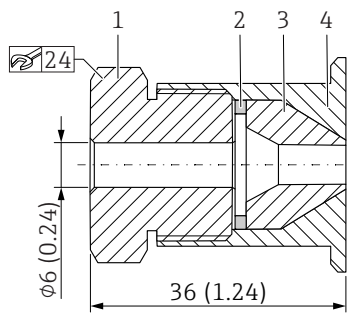
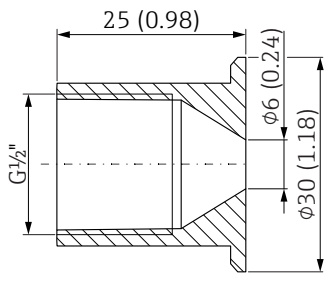
Welding boss with sealing taper for thread G 1/2" or M12x1.5

Dimensions in mm (in)	Version	Order number
 <p style="text-align: right;">A0045832</p> <p>Process pressure</p> <ul style="list-style-type: none"> max. 16 bar (232 psi) 	<p>Welding boss for thread G 1/2" or M12x1.5 Metal-sealing; conical</p> <p>Material of wetted parts AISI 316L (1.4435)</p>	<p>71424800 (G 1/2")</p> <p>71405560 (M12x1.5)</p>
 <p style="text-align: right;">A0045839</p>	<p>Dummy plug for G 1/2" or M12x1.5 conical metal-sealing welding boss</p> <p>Material: AISI 316L (1.4435)</p>	<p>60022519 (G 1/2")</p> <p>In preparation (M12x1.5)</p>

Weld-in adapter for Ingold process connection

Dimensions in mm (in)	Version	Order number
 <p style="text-align: right;">A0045835</p>	<p>G 1 1/4 x 50 mm (1.97 in)</p> <p>Material of wetted parts: AISI 316L (1.4435)</p>	71531585
Seal	Order number	
 <p style="text-align: right;">A0021901</p>	<p>O-ring sealing kit</p> <p>Silicone O-ring In accordance with FDA</p> <p>Maximum temperature: 230 °C (446 °F)</p>	60018911

Welding boss with sealing taper with/without pressure screw

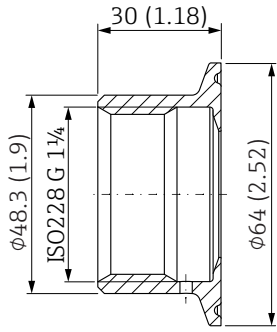
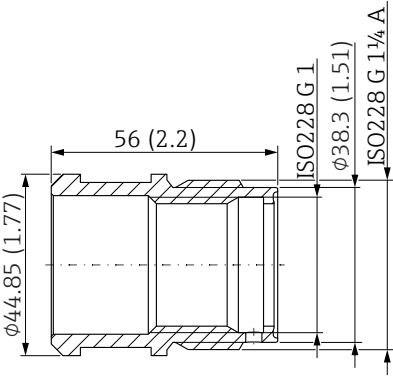

Dimensions in mm (in)	Version	Bestellnummer
 <p style="text-align: right;">A0046177</p> <p>1 Pressure screw, 303/304 2 Washer, 303/304 3 Sealing taper, PEEK 4 Collar welding boss, 316L</p> <p>Process pressure</p> <ul style="list-style-type: none"> max. 10 bar (145 psi) 	<p>Collar welding boss movable with sealing taper, washer and pressure screw G 1/2</p> <p>Material of parts in contact with the process AISI 316L, PEEK</p>	In preparation (with pressure screw)
 <p style="text-align: right;">A0046175</p> <p>Process pressure</p> <ul style="list-style-type: none"> max. 10 bar (145 psi) 	<p>Collar welding boss</p> <p>Material of parts in contact with the process AISI 316L</p>	51004752 (without pressure screw)

Hygiene process adapter Nivector FTI26



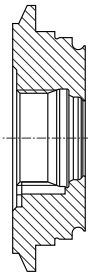
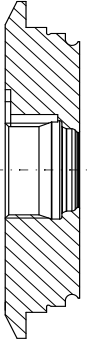
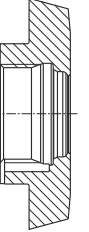
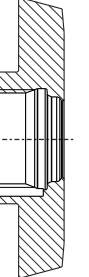
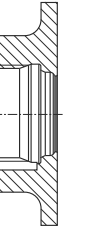
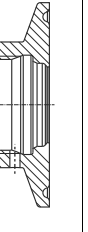

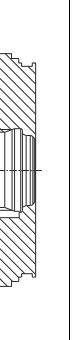
Pay attention to the temperature and pressure specifications for the seals and clips used at the customer site!

Process adapter G 1¼ Tri-Clamp 2" with threaded sleeve

Dimensions in mm (in)	Version	Order number
 <p style="text-align: right;">A0045642</p> <p>Process adapter G 1¼</p>  <p style="text-align: right;">A0045644</p> <p>Threaded sleeve</p> <p>Pressure and temperature range</p> <ul style="list-style-type: none"> max. 6 bar (87 psi) / -20 °C ... +80 °C (-4 °F ... +176 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4404) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <ul style="list-style-type: none"> Measuring device: Nivector FTI26 Suitable for Process connection¹⁾ Option: WDJ Adapter as an accessory enclosed¹⁾ Option: RK 	<p>–</p> <p>71444431</p>
<p>Seal, ø 29 x 36 x 3.7 mm (1.14 x 1.42 x 0.15 in)</p>		<p>Order number</p>
 <p style="text-align: right;">A0021901</p>	<p>Standard seal</p> <p>Silicone profile gasket Material: VMQ 60 Conform according to FDA, USP Class VI, 3-A, EC1935 Approved by EHEDG</p> <p>Alternative seal</p> <p>Silicone profile gasket Material: VMQ 60 Conform according to FDA, EC1935 Approved by EHEDG</p>	
	<p>71075662²⁾ (5 pieces)</p>	
	<p>52014424 (5 pieces)</p>	

- The option can be selected in the Product Configurator via the corresponding order feature.
- Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

Process adapter M24 - overview Level and Pressure

Process adapter M24								
	A0023286	A0023419	A0023547	A0023418	A0023420	A0023423	A0023426	A0023422
	Varivent F DN32 PN40	Varivent N DN50 PN40	DIN11851 DN40	DIN11851 DN50	SMS 1½	Clamp 1½	Clamp 2	APV-Inline
Material	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)
Roughness µm (µin) process side	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)
Order number process adapter	52023996	52023997	52023999	52023998	52026997	52023994	52023995	52024000
Order number process adapter with inspection certificate ¹⁾	52024003	52024004	52024006	52024005	52026999	52024001	52024002	52024007
Order number for seal replacement (5 pieces) ²⁾	EPDM 52024267	EPDM 52024267	EPDM 52024267	EPDM 52024267	EPDM 52024267	EPDM 52024267	EPDM 52024267	EPDM 52024267
Slotted nut	-	-	71258361	71258361	-	-	-	-
Measuring device	Suitable for process connection option³⁾							
Liquipoint								
FTW23, FTW33	X2J	X2J	X2J	X2J	X2J	X2J	X2J	X2J
Liquitrend								
QMW43	X2J	X2J	X2J	X2J	X2J	X2J	X2J	X2J
Liquiphant								
FTL33	X2J	X2J	X2J	X2J	X2J	X2J	X2J	X2J
Ceraphant								
PTP33B	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J
Cerabar								
PMP23	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J	X2J/X3J
Micropilot								
FMR62	U2J	U2J	U2J	U2J	U2J	U2J	U2J	U2J
FMR63B	X2J	X2J	X2J	X2J	X2J	X2J	-	-
Liquipoint	Adapter as an accessory enclosed option⁴⁾							
FTW23	RC/RD	RA/RB	-	RE/RF	RG/RH	RI/RJ	RK/RL	-
FTW33	RC/RD	RA/RB	-	RE/RF	RG/RH	-	-	-
Liquiphant								
FTL33	RC/RD	RA/RB	-	RE/RF	RG/RH	-	-	-
Micropilot								
FMR62, FMR63B	RC/RD	RA/RB	RE/RF	RG/RH	RI/RJ	RK/RL	-	-

1) Inspection certificate EN10204-3.1 material; AD2000: The material 316L (in contact with process) corresponds to AD2000 – W0/W2/W10.

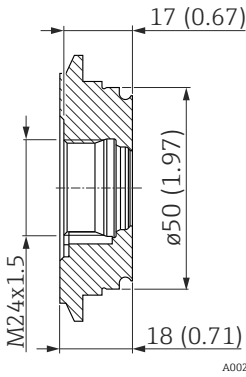

- 2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.
- 3) The option can be selected in the Product Configurator via the order feature "Process Connection".
- 4) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".

Process connection M24 - Level and Pressure



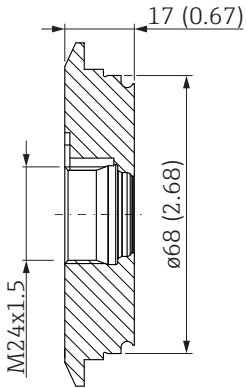

Pay attention to the temperature and pressure specifications for the seals and clips used at the customer site!

Varivent F DN32 PN40

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p> <p>Approved by CRN: 0F18434.5C</p>	<p>52023996 52024003</p>
<p>Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)</p>		<p>Order number</p>
	<p>Standard seal</p> <p>O-ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p>Approved by EHEDG</p>	<p>52024267¹⁾ (5 pieces)</p>

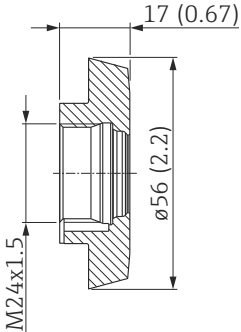

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

Varivent N DN50 PN40

Dimensions mm (in)	Version	Order number
 <p>A0023276</p> <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ▪ max. 25 bar (362 psi) / max. 150 °C (302 °F) ▪ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ▪ Without inspection certificate ▪ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p>Approved by CRN: OF18434.5C</p>	<p>52023997 52024004</p>
Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)		Order number
 <p>A0021901</p>	<p>Standard seal</p> <p>O-ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p>Approved by EHEDG</p>	<p>52024267¹⁾ (5 pieces)</p>

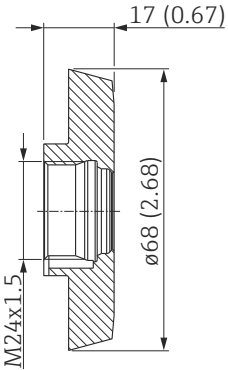

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

DIN11851 DN40

Dimensions mm (in)	Version	Order number
 <p data-bbox="778 633 836 649">A0023548</p> <p data-bbox="517 674 815 703">Pressure and temperature range of the adapter</p> <ul data-bbox="517 725 754 779" style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) 	<ul data-bbox="868 282 1265 360" style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p data-bbox="868 371 1134 400">Material: AISI 316L (1.4435)</p> <p data-bbox="868 400 1326 430">Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p data-bbox="868 452 1155 481">Approved by CRN: 0F18434.5C</p>	<p data-bbox="1361 282 1465 311">52023999</p> <p data-bbox="1361 311 1465 340">52024006</p>
Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)		Order number
 <p data-bbox="778 1016 836 1032">A0021901</p>	<p data-bbox="868 875 1002 904">Standard seal</p> <p data-bbox="868 927 1265 1039">O-ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p data-bbox="868 1061 1054 1090">Approved by EHEDG</p>	
		<p data-bbox="1361 927 1481 981">52024267¹⁾ (5 pieces)</p>

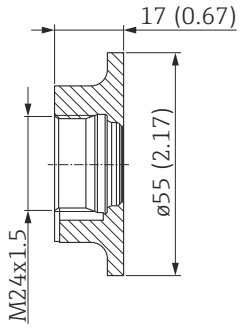

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

DIN11851 DN50

Dimensions in mm (in)	Version	Order number
 <p data-bbox="427 712 724 813">Pressure and temperature range of the adapter</p> <ul data-bbox="427 763 667 813" style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) 	<ul data-bbox="778 280 1177 360" style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p data-bbox="778 371 1233 423">Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p> <p data-bbox="778 450 1066 477">Approved by CRN: 0F18434.5C</p>	<p data-bbox="1273 280 1374 331">52023998 52024005</p>
Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)		Order number
	<p data-bbox="778 907 911 934">Standard seal</p> <p data-bbox="778 965 1177 1070">O-Ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p data-bbox="778 1099 967 1126">Approved by EHEDG</p>	
		<p data-bbox="1273 965 1385 1016">52024267¹⁾ (5 pieces)</p>

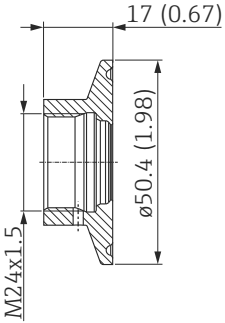

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

SMS 1½

Dimensions mm (in)	Version	Order number
 <p>A0023278</p> <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p>Approved by CRN: OF18434.5C</p>	<p>52026997 52026999</p>
Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)		Order number
 <p>A0021901</p>	<p>Standard seal</p> <p>O-ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806 Approved by EHEDG</p>	<p>52024267¹⁾ (5 pieces)</p>

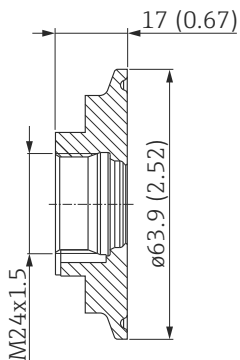

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

Clamp 1½ (DIN32676, ISO28552)

Dimensions mm (in)	Version	Order number
 <p data-bbox="683 622 735 636">A0023284</p> <p data-bbox="427 663 722 712">Pressure and temperature range of the adapter</p> <ul data-bbox="427 714 667 819" style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul data-bbox="767 282 1166 360" style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p data-bbox="767 371 1038 398">Material: AISI 316L (1.4435)</p> <p data-bbox="767 400 1230 427">Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p data-bbox="767 450 1054 477">Approved by CRN: OF18434.5C</p>	<p data-bbox="1278 282 1382 309">52023994</p> <p data-bbox="1278 311 1382 338">52024001</p>
Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)		Order number
 <p data-bbox="683 1016 735 1030">A0021901</p>	<p data-bbox="767 909 903 936">Standard seal</p> <p data-bbox="767 969 836 996">O-Ring</p> <p data-bbox="767 999 951 1025">Material: EPDM-70</p> <p data-bbox="767 1028 1238 1055">Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p data-bbox="767 1099 959 1126">Approved by EHEDG</p>	<p data-bbox="1278 969 1398 1025">52024267¹⁾ (5 pieces)</p>

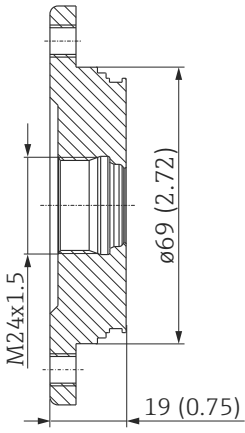

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

Clamp 2 (DIN32676, ISO28552)

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> ▪ max. 25 bar (362 psi) / max. 150 °C (302 °F) ▪ max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> ▪ Without inspection certificate ▪ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p>Approved by CRN: 0F18434.5C</p>	<p>52023995 52024002</p>
Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)		Order number
	<p>Standard seal</p> <p>O-Ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p>Approved by EHEDG</p>	

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

APV-Inline

Dimensions mm (in)	Version	Order number
 <p>Pressure and temperature range of the adapter</p> <ul style="list-style-type: none"> max. 25 bar (362 psi) / max. 150 °C (302 °F) max. 40 bar (580 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>52024000 52024007</p>
Seal ø 15.54 x 2.62 mm (0.61 x 0.1 in)		Order number
	<p>Standard seal</p> <p>O-ring Material: EPDM-70 Conform according FDA, USP Class VI, 3-A, EC1935, GB4806</p> <p>Approved by EHEDG</p>	<p>52024267¹⁾ (5 pieces)</p>

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

Process adapter UNI - overview Pressure



The following adapters can be used to create a connection between the customer's process connection and the Endress+Hauser instrument with a universal adapter.

Process adapter UNI overview Pressure					
	Clamp 2	Varivent N	DIN11851 DN40	DIN11851 DN50	DRD DN50
Material	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)	316L (1.4435)
Roughness μm (μin) process side	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)	≤ 0.76 (29.9)
Order number process adapter	71114176	71114177	71114172	71114173	71114174
Order number process adapter with inspection certificate ¹⁾	71114207	71114208	71114178	71114205	71114206
Order number for seal replacement (5 pieces) ²⁾	Silicone profile gasket 52023572	Silicone profile gasket 52023572	Silicone profile gasket 52023572	Silicone profile gasket 52023572	Silicone profile gasket 52023572
Scope of delivery	-	-	Slotted nut	Slotted nut	DRD-flange
Measuring device	Suitable for process connection option³⁾				
Cerabar					
PMP23	52J	52J	52J	52J	52J
PMC51	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ
PMP55	UPJ	UPJ	UPJ	UPJ	-
Deltapilot					
FMB50	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ
FMB70	00/01	00/01	00/01	00/01	00/01
Deltabar					
FMD71	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ	UNJ/UPJ
FMD78	00	00	00	00	00
Cerabar	Adapter as an accessory enclosed option⁴⁾				
PMC51	RD / R4	RF/R6	RA/R1	RB/R2	RC/R3
Deltapilot					
FMB50	RD/R4	RF/R6	RA/R1	RB/R2	RC/R3

1) Inspection certificate EN10204-3.1 material; AD2000: The material 316L (in contact with process) corresponds to AD2000 – W0/W2/W10.

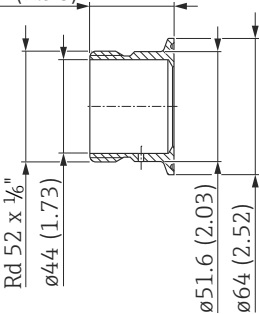


2) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

3) The option can be selected in the Product Configurator via the order feature "Process Connection".

4) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".

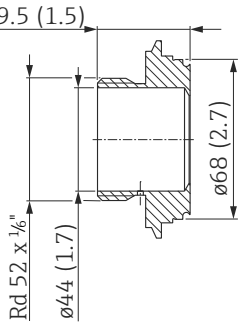


Process adapter UNI - Pressure

Clamp 2

Dimensions mm (in)	Version	Order number
 <p style="text-align: center;">A0023531</p> <p>Pressure- and temperature range</p> <ul style="list-style-type: none"> max. 10 bar (150 psi) / max. 100 °C (212 °F) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 μm (29.9 μin)</p>	<p>71114176 71114207</p>
Seals, back ring		Order number
 <p style="text-align: center;">A0021901</p>	<p>Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)</p>	
	<p>Silicone profile gasket Material: SI-60 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>52023572¹⁾ (5 pieces)</p>
	<p>Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)</p>	
	<p>Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A</p>	<p>71100719 (5 pieces)</p>
 <p style="text-align: center;">A0042001</p>	<p>O-ring with back ring</p>	
	<p>With inspection certificate EN10204-3.1 material Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404)</p> <p>O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A</p> <p>Approved by EHEDG</p>	<p>71431380</p>

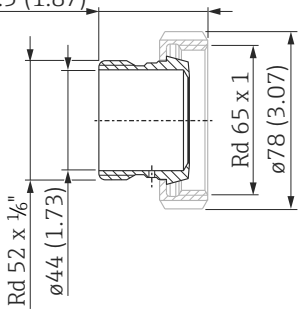

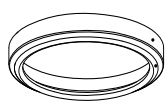
1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

Varivent N

Dimensions mm (in)	Version	Order number
 <p style="text-align: right; font-size: small;">A0023526</p> <p>Pressure- and temperature range</p> <ul style="list-style-type: none"> ■ max. 10 bar (150 psi) / max. 100 °C (212 °F) (max. 135 °C (275 °F) for 30 minutes) 	<ul style="list-style-type: none"> ■ Without inspection certificate ■ With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p>71114177 71114208</p>
Seals, back ring		Order number
 <p style="text-align: right; font-size: small;">A0021901</p>	Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
	<p>Silicone profile gasket Material: SI-60 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>52023572¹⁾ (5 pieces)</p>
	Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)	
<p>Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A</p>	<p>71100719 (5 pieces)</p>	
 <p style="text-align: right; font-size: small;">A0042001</p>	O-ring with back ring	
	<p>With inspection certificate EN10204-3.1 material Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404)</p> <p>O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A</p> <p>Approved by EHEDG</p>	<p>71431380</p>

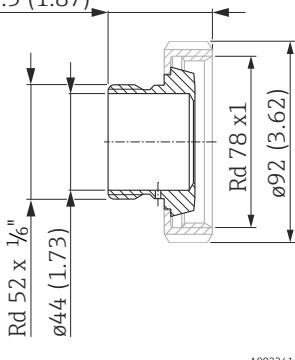


1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

DIN11851 DN40

Dimensions mm (in)	Version	Order number
 <p>Pressure- and temperature range</p> <ul style="list-style-type: none"> max. 10 bar (150 psi) / max. 100 °C (212 °F) (max. 135 °C (275 °F) for 30 minutes) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p>Material slotted nut: Endress+Hauser supplies these slotted nuts in stainless steel AISI 304 (DIN/EN material number 1.4301) or in AISI 304L (DIN/EN material number 1.4307).</p>	<p>71114172 71114178</p>
Seals, back ring		Order number
	<p>Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)</p>	
	<p>Silicone profile gasket Material: SI-60 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>52023572¹⁾ (5 pieces)</p>
	<p>Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)</p>	
	<p>Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A</p>	<p>71100719 (5 pieces)</p>
	<p>O-ring with back ring</p>	
	<p>With inspection certificate EN10204-3.1 material Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404)</p> <p>O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A</p> <p>Approved by EHEDG</p>	<p>71431380</p>

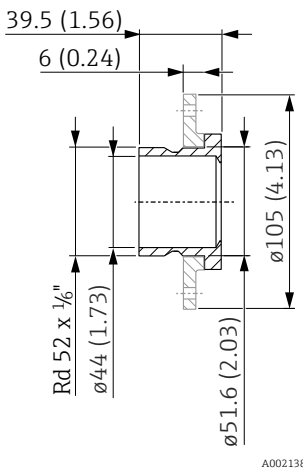

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

DIN11851 DN50

Dimensions mm (in)	Version	Order number
 <p>Pressure- and temperature range</p> <ul style="list-style-type: none"> max. 10 bar (150 psi) / max. 100 °C (212 °F) (max. 135 °C (275 °F) for 30 minutes) 	<ul style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p>Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p> <p>Material slotted nut: Endress+Hauser supplies these slotted nuts in stainless steel AISI 304 (DIN/EN material number 1.4301) or in AISI 304L (DIN/EN material number 1.4307).</p>	<p>71114173 71114205</p>
Seals, back ring	Order number	
	<p>Standard seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)</p>	
	<p>Silicone profile gasket Material: SI-60 Conform according to FDA, USP Class VI, 3-A, EC1935</p>	<p>52023572¹⁾ (5 pieces)</p>
	<p>Alternative seal ø 34 x 41.5 x 6.4 mm (1.34 x 1.63 x 0.25 in)</p>	
	<p>Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI, 3-A</p>	<p>71100719 (5 pieces)</p>
	<p>O-ring with back ring</p>	
	<p>With inspection certificate EN10204-3.1 material Back ring: Dimensions: ø 38.2 x 43.6 x 5.6 mm (1.5 x 1.72 x 0.22 in) Material: AISI 316L (1.4404)</p> <p>O-ring: Dimensions: ø 36 x 2.5 mm (1.42 x 0.1 in) Material: EPDM-70 Shore A Conform according to FDA, USP, Class VI, 3-A</p> <p>Approved by EHEDG</p>	<p>71431380</p>

1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

DRD DN50

Dimensions mm (in)	Version	Order number
 <p data-bbox="427 772 734 907">Pressure- and temperature range</p> <ul data-bbox="427 795 734 907" style="list-style-type: none"> max. 10 bar (150 psi) / max. 100 °C (212 °F) (max. 135 °C (275 °F) for 30 minutes) 	<ul data-bbox="782 280 1236 358" style="list-style-type: none"> Without inspection certificate With inspection certificate EN10204-3.1 material <p data-bbox="782 369 1236 448">Material: AISI 316L (1.4435) Roughness (process side): Ra ≤ 0.76 µm (29.9 µin)</p>	<p data-bbox="1268 280 1428 336">71114174 71114206</p>
Seals $\varnothing 34 \times 41.5 \times 6.4$ mm (1.34 x 1.63 x 0.25 in)		Order number
	Standard seal	
	<p data-bbox="782 1052 1236 1164">Silicone profile gasket Material: SI-60 Conform according to FDA, USP Class VI, EC1935</p>	<p data-bbox="1268 1052 1428 1108">52023572¹⁾ (5 pieces)</p>
	Alternative seal	
<p data-bbox="782 1247 1236 1332">Profile gasket Material: EPDM-70 Conform according to FDA, USP Class VI</p>	<p data-bbox="1268 1247 1428 1303">71100719 (5 pieces)</p>	

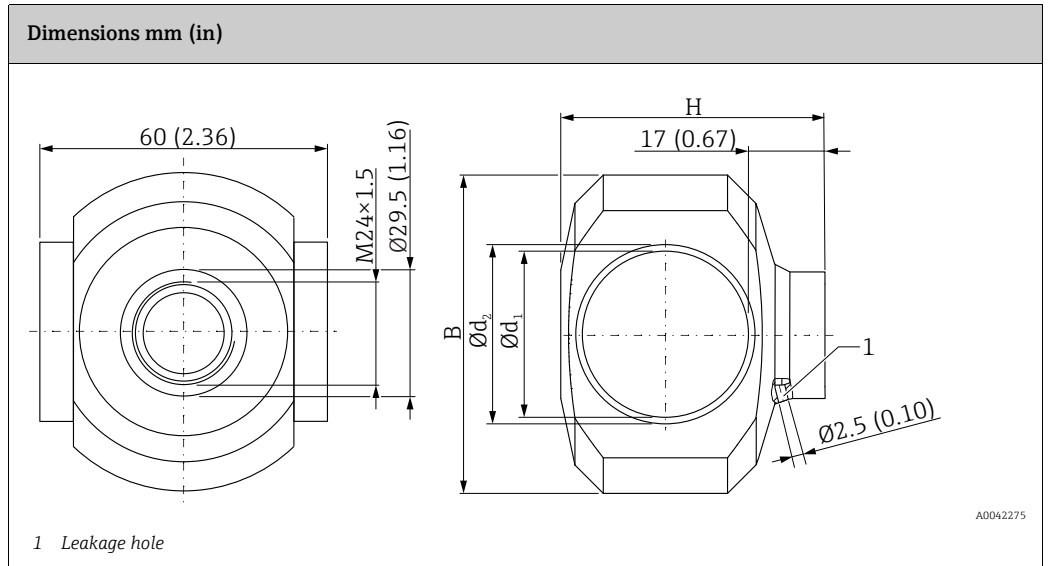
1) Already included in the scope of delivery of the weld-in adapter: 1 x standard seal.

Flush mount pipe connection M24×1.5 - Level and Pressure

General

- Material: AISI 316L (1.4404)
- Roughness: Ra wetted (inside) 0.76 μm (29.9 μin)/Ra outside: 1.6 μm (62.99 μin)
- Process temperature range: -40 ... +85 °C (-40 ... +185 °F)
For a maximum 30 min: +85 ... +150 °C (+185 ... +302 °F), e.g. SIP cleaning

Pipe connection, weldable



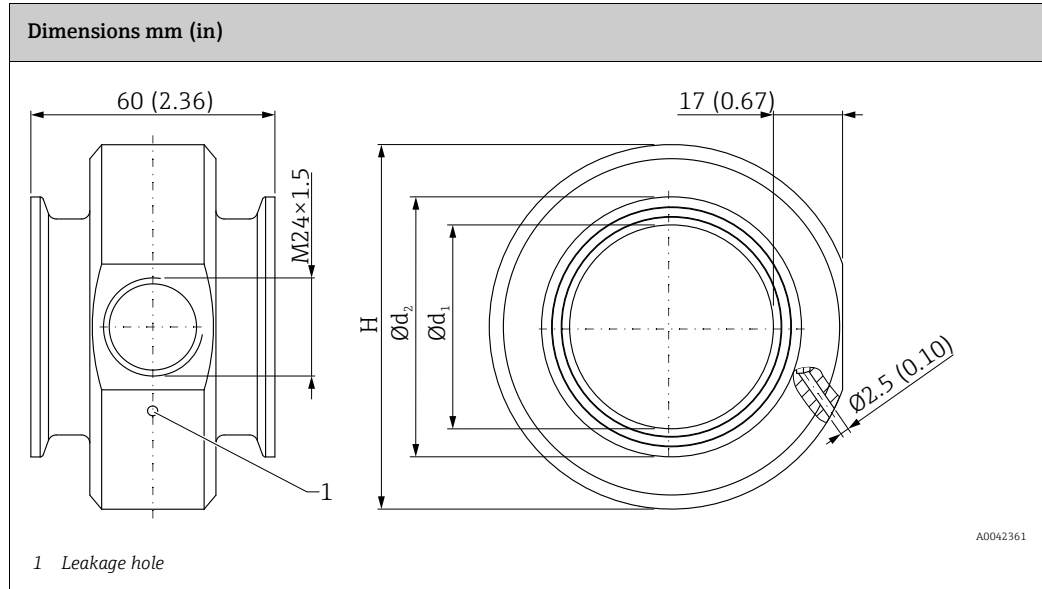
Nominal diameter	DN25	DN32	DN40	DN50
Order number	71477801	71477803	71477807	71477808
B	67-mm (2.64 in)	70 mm (2.56 in)	73 mm (2.87 in)	81 mm (3.19 in)
H	48 mm (1.89 in)	54 mm (2.13 in)	60 mm (2.36 in)	72 mm (2.83 in)
Ø d ₁	26 mm (1.02 in)	32 mm (1.26 in)	38 mm (1.50 in)	50 mm (2.00 in)
Ø d ₂	29 mm (1.14 in)	35 mm (1.34 in)	41 mm (1.61 in)	53 mm (2.09 in)
MWP for gases in fluid group 2 ^{1) 2)}	26 bar (377 psi)	26 bar (377 psi)	20 bar (290 psi)	20 bar (290 psi)
MWP for gases in fluid group 1 ^{1) 2)}	26 bar (377 psi)	26 bar (377 psi)	26 bar (377 psi)	26 bar (377 psi)
Measuring devices	Pipe connection as an accessory enclosed option³⁾			
Liquipoint				
FTW23, FTW33	QS	QU	QW	QY
Liquitrend				
QMW43	QS	QU	QW	QY
Ceraphant				
PTP33B	QS	QU	QW	QY
Cerabar				
PMP23	QS	QU	QW	QY

1) The maximum process pressure depends on the temperature.

2) Specifications according to PED, Rev. 01, Pipe adapter, classified according to PED (EU) 2014/68, Article 4, paragraph 3.

3) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".

Pipe connection, clamp connection



Nominal diameter	DN25	DN32	DN40	DN50
Order number	71477812	71477813	71477816	71477817
H	68 mm (2.68 in)	73 mm (2.87 in)	78,5 mm (3.09 in)	90 mm (3.54 in)
Ø d ₁	26 mm (1.02 in)	32 mm (1.26 in)	38 mm (1.50 in)	50 mm (2.00 in)
Ø d ₂	50 mm (2.00 in)	50 mm (2.00 in)	50 mm (2.00 in)	64 mm (2.50 in)
MWP for gases in fluid group 2 ^{1) 2)}	26 bar (377 psi)	26 bar (377 psi)	20 bar (290 psi)	20 bar (290 psi)
MWP for gases in fluid group 1 ^{1) 2)}	26 bar (377 psi)	26 bar (377 psi)	26 bar (377 psi)	26 bar (377 psi)
Measuring devices	Pipe connection as an accessory enclosed option³⁾			
Liquipoint				
FTW23, FTW33	QT	QV	QX	QZ
Liquitrend				
QMW43	QT	QV	QX	QZ
Ceraphant				
PTP33B	QT	QV	QX	QZ
Cerabar				
PMP23	QT	QV	QX	QZ

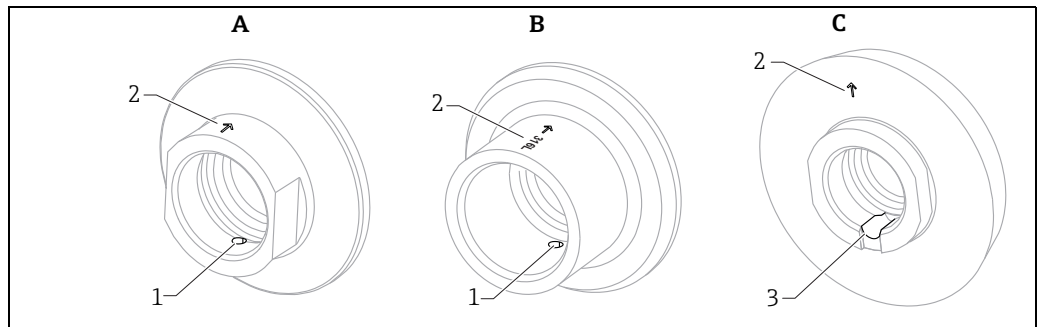
- 1) The maximum process pressure depends on the temperature
- 2) Specifications according to PED, Rev. 01, Pipe adapter, classified according to PED (EU) 2014/68, Article 4, paragraph 3
- 3) The option can be selected in the Product Configurator via the order feature "Accessory Enclosed".

Mounting and welding hints

- i** Absolute care must be taken when welding stainless steel. The applied work pieces and tools must be rust-free. Also, no normal steel parts may be present in the vicinity.
- i** During the welding, the adapter should be protected against deformations by the welding dummy or by other means of cooling according to usual welding practice (e.g. water cooling). With a suitable seal the welding dummy can also be used to flush-plug the process when starting-up the plant. Before doing so, make sure that the material of the dummy fits the process.

Weld-in adapter with leakage hole or leakage port

If installed horizontally and weld-in adapters with a leakage hole or leakage port are used, ensure that the leakage hole or the leakage port is pointing down. This allows leaks to be detected as quickly as possible.



- A Process adapter with leakage hole
- B Weld-in adapter with leakage hole
- C Process adapter with leakage port
- 1 Leakage hole
- 2 Mark, e.g. material and/or arrow, 180° across from hole
- 3 Leakage port

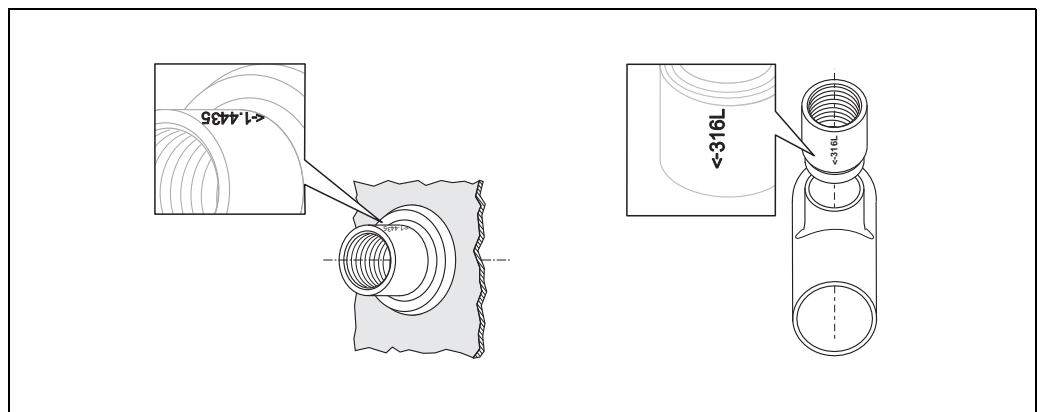
Notes for pressure measuring devices

Before mounting a weld-in adapter for a pressure measuring device, please note the following:

- The maximum pressure resistance of a sensor is limited. Therefore, the welding must be performed very carefully if a weld-in adapter is applied for screwing-in a pressure measuring cell.
- In order to avoid deformations of the weld-in adapter during the welding it is essential to use the correct welding dummy for heat dissipation. Otherwise the tightness and pressure resistance can not be guaranteed after screwing in the sensor. The welding dummy prevents deformation of the weld-in adapter, which could cause leaks after the mounting of the sensor.

Preparation

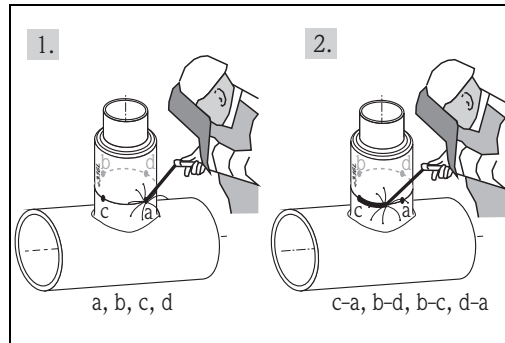
- Drill a hole at the required position into the wall of the vessel or pipe
Hole diameter: The outer diameter of the welding adapter (max. tolerance: +0.2 mm (0.01 in))
- Slide the weld-in adapter with welding dummy into the hole and align it in a way as to ensure that the sensor will be positioned correctly. See the chapter "Install measuring device" from → 65.



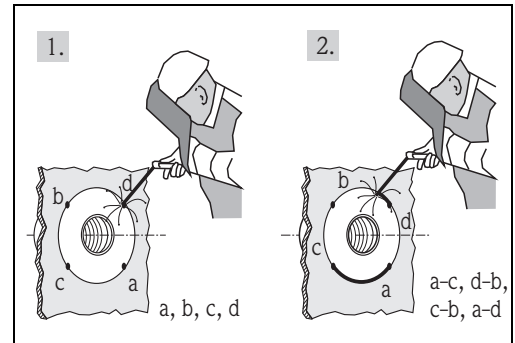
Welding procedure

It is recommended to partition the welding seam into several segments (according to common welding practice).

- Pin the weld-in adapter with four or six welding spots to the vessel or tube (see the figures).
- Weld the segments between the spots in order to avoid deformations and leakages. After welding a segment always weld the opposite segment.
- After welding two segments stop the welding procedure until the workpiece is cooled down.
- Let the weld-in adapter cool down after the welding and remove the welding dummy.



Welding of pipes



Welding of vessels



To obtain the desired surface roughness, the range of the welding seam must be polished.

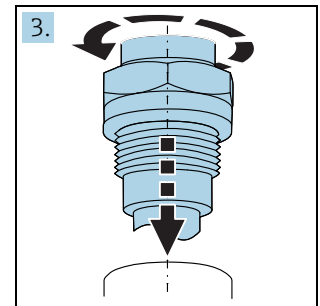
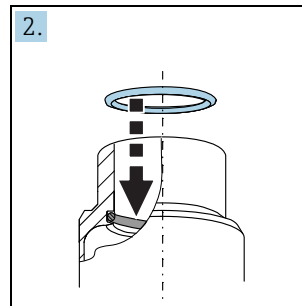
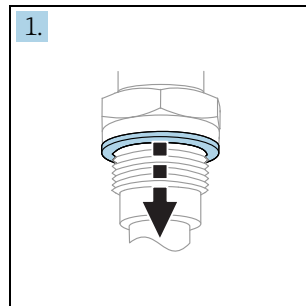
Before mounting

Note for Liquiphant

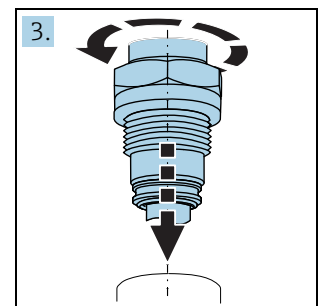
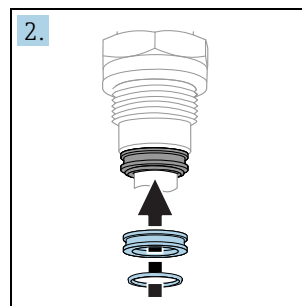
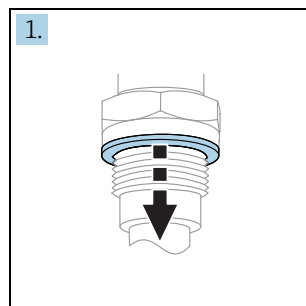
Some devices are supplied with a flat gasket on the adapter.

- Remove the flat gasket
- Use supplied o-ring or pressure ring with o-ring

Scope of delivery: O-ring for G $\frac{3}{4}$ d=55, G 1 d=53, G 1 d=60



Scope of delivery: Pressure ring with o-ring für G $\frac{3}{4}$ d=50, G $\frac{3}{4}$ d=29



Install measuring device

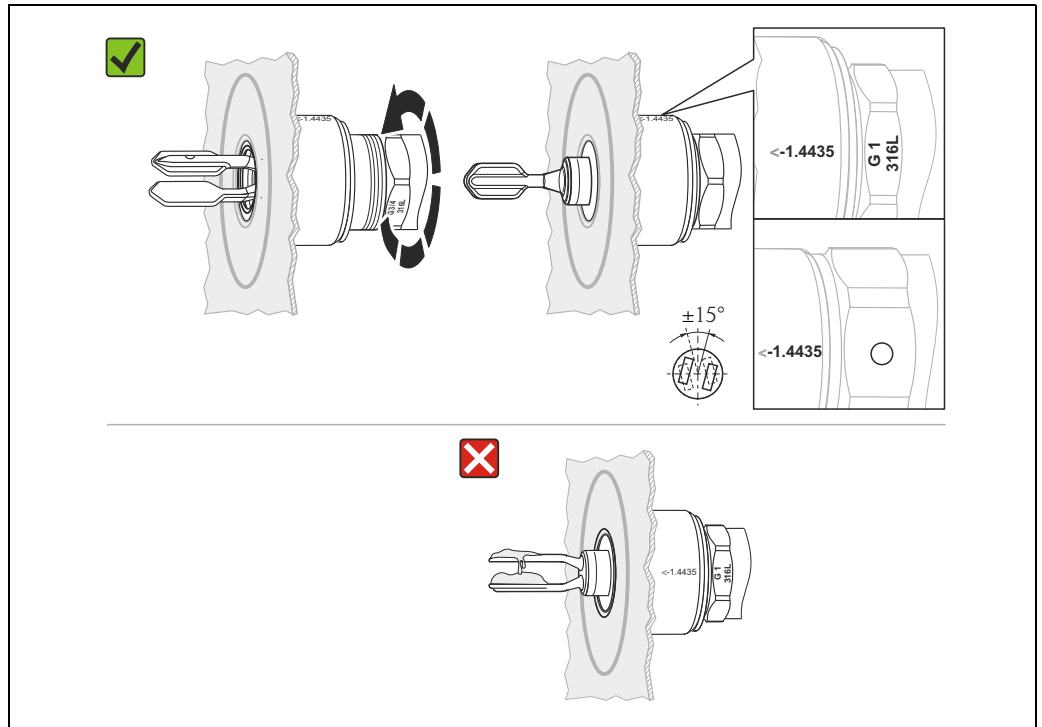
Notes for level measuring device (e.g. Liquiphant)

Consider marking

The marking indicates the position of the tuning fork. The marking appears either as a material specification (e.g. 316L) or a thread designation (e.g. G 1/2) in the following locations: On the process- or weld-in adapter or on the name plate of the measuring device.

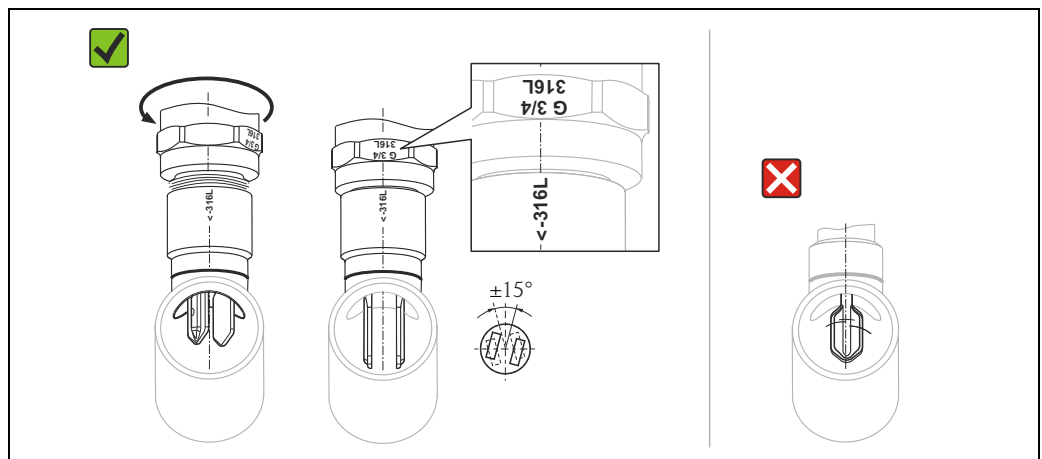
If installed horizontally in vessels

- the marking is face up
- ensure that the leakage hole is pointing down. This allows leaks to be detected as quickly as possible, see chapter "Weld-in adapter with leakage hole/leakage port" → 63.



Orientation in the vessel

When mounted into pipes, the fork must be aligned in the direction of the flow according to the mark.



Orientation in the pipe

Notes for pressure sensor

- Before mounting, all sealing surfaces at the weld-in adapter must be cleaned.
- Remove the protective cap from the pressure sensor.



Do not touch or damage the process isolating diaphragm!

- Screw the pressure sensor firmly at the hexagonal nut. The threaded connection must be fastened fingertight. It is recommended to secure the threaded connection with a torque of 60 Nm (± 20 Nm) to protect it against vibrations and other influences.

Pressure resistance

The material of the weld-in adapter and the quality of the welding are crucial for pressure resistance. The complete length of the thread has to be used in order to ensure maximum pressure resistance.

Flange - overview

Specifications

The material of the flanges delivered is AISI 316L with the material number 1.4404 or 1.4435. With regard to their stability-temperature property, the materials 1.4404 and 1.4435 are grouped in DIN EN 1092-1 table 18 under 13E0 and in JIS B2220 table 5 under 023b. The ASME flanges are dual rated flanges (316/316L) and grouped in table 2-2.2 according to ASME B16.5.



Values in inches are converted to values in millimeters using the factor 2.54. The mm values are rounded off to the nearest 0 or 5 in the ASME standard.

Versions

EN flanges	ASME flanges	JIS flanges
European Standards	America Society of Mechanical Engineers	Japanese Industrial Standard
DIN EN 1092-1	ASME B16.5	B2220

Flange Norm DIN EN 1092-1

Endress+Hauser usually delivers only flanges with flat face. This type of flange has hardly changed. Thus, a comparison is done only for this sealing surfaces. Due to the change of the designation of the sealing surface mistakes may occur occasionally. The roughness (Rz) of the old raised face form C and the new one B1 have an overlapping between 40 to 50 µm. In this roughness window both standards are fulfilled. Therefore, at Endress+Hauser the flanges are specified according to both flange standards. This double marking makes it clear that both standards are met.

Flange	Sealing surface	DIN EN 1092-1		
		Form	Rz (µm)	Ra (µm)
without raised face		A	12.5 - 50	3.2 - 12.5
with raised face		B1 ¹⁾	12.5 - 50	3.2 - 12.5
		B2 ²⁾	3.2 - 12.5	0.8 - 3.2
tongue		C	3.2 - 12.5	0.8 - 3.2
groove		D		
projection		E	12.5 - 50	3.2 - 12.5
recess		F		
projection		H	3.2 - 12.5	3.2 - 12.5
recess		G		

1) typically of PN2.5 bis PN40

2) typically of PN63

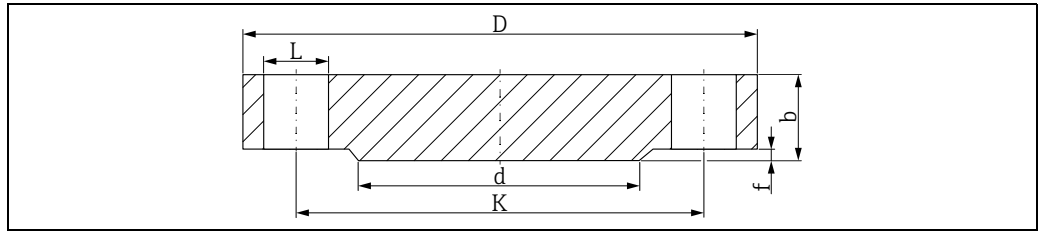
Height of raised face

Unit of measurement in mm (in)

Standard	Flange	Height of raised face f	Tolerance
DIN EN 1092-1	≤ DN 32	2 (0.08)	0 -1 (-0.04)
	> DN 32 up to DN 250	3 (0.12)	0 -2 (-0.08)
	> DN 250 up to DN 500	4 (0.16)	0 -3 (-0.12)
	> DN 500	5 (0.19)	0 -4 (-0.16)
ASME B16.5	≤ Class 300	1.6 (0.06)	±0.75 (±0.03)
	≥ Class 600	6.4 (0.25)	±0.5 (±0.02)
JIS B2220	< DN 20	1.5 (0.06) 0	-
	> DN 20 up to DN 50	2 (0.08) 0	
	> DN 50	3 (0.12) 0	

Mechanical Construction

EN flanges (DIN EN 1092-1)



(Raised face B1)

- L Diameter of holes
- d Raised face diameter
- K Diameter of hole circle
- D Flange diameter
- b Total flange thickness
- f Raised face height (general 2 mm (0.08 in))

A0029176

PN16

In following tables, the unit of measurement are indicated in mm (in) unless otherwise noted.

DN	D	b	K	d	L	approx. kg (lbs)
25	115 (4.53)	18 (0.71)	85 (3.35)	68 (2.68)	4xØ14 (0.55)	1.50 (3.31)
32	140 (5.51)	18 (0.71)	100 (3.94)	78 (3.07)	4xØ18 (0.71)	2.00 (4.41)
40	150 (5.91)	18 (0.71)	110 (4.33)	88 (3.46)	4xØ18 (0.71)	2.50 (5.51)
50	165 (6.50)	18 (0.71)	125 (4.92)	102 (4.02)	4xØ18 (0.71)	2.90 (6.39)
65	185 (7.28)	18 (0.71)	145 (5.71)	122 (4.80)	8xØ18 (0.71)	3.50 (7.72)
80	200 (7.87)	20 (0.79)	160 (6.30)	138 (5.43)	8xØ18 (0.71)	4.50 (9.92)
100	220 (8.66)	20 (0.79)	180 (7.09)	158 (6.22)	8xØ18 (0.71)	5.50 (12.13)
125	250 (9.84)	22 (0.87)	210 (8.27)	188 (7.40)	8xØ18 (0.71)	8.00 (17.64)
150	285 (11.2)	22 (0.87)	240 (9.45)	212 (8.35)	8xØ22 (0.87)	10.5 (23.15)
200	340 (13.4)	24 (0.94)	295 (11.6)	268 (10.6)	12xØ22 (0.87)	16.5 (36.38)
250	405 (15.9)	26 (1.02)	355 (14.0)	320 (12.6)	12xØ26 (1.02)	25.0 (55.13)
300	460 (18.1)	28 (1.10)	410 (16.1)	378 (14.9)	12xØ26 (1.02)	35.0 (77.18)

PN25

DN	D	b	K	d	L	approx. kg (lbs)
25	115 (4.53)	18 (0.71)	85 (3.35)	68 (2.68)	4xØ14 (0.55)	1.50 (3.31)
32	140 (5.51)	18 (0.71)	100 (3.94)	78 (3.07)	4xØ18 (0.71)	2.00 (4.41)
40	150 (5.91)	18 (0.71)	110 (4.33)	88 (3.46)	4xØ18 (0.71)	2.50 (5.51)
50	165 (6.50)	20 (0.79)	125 (4.92)	102 (4.02)	4xØ18 (0.71)	3.00 (6.62)
65	185 (7.28)	22 (0.87)	145 (5.71)	122 (4.80)	8xØ18 (0.71)	4.50 (9.92)
80	200 (7.87)	24 (0.94)	160 (6.30)	138 (5.43)	8xØ18 (0.71)	5.50 (12.13)
100	235 (9.25)	24 (0.94)	190 (7.48)	162 (6.38)	8xØ22 (0.87)	7.50 (16.54)
125	270 (10.6)	26 (1.02)	220 (8.66)	188 (7.40)	8xØ26 (1.02)	11.0 (24.26)
150	300 (11.8)	28 (1.10)	250 (9.84)	218 (8.58)	8xØ26 (1.02)	14.5 (31.97)
200	360 (14.2)	30 (1.18)	310 (12.2)	278 (10.9)	12xØ26 (1.02)	22.5 (49.61)
250	425 (16.7)	32 (1.26)	370 (14.6)	335 (13.2)	12xØ30 (1.18)	33.5 (73.9)
300	485 (19.1)	34 (1.34)	430 (16.9)	395 (15.6)	16xØ30 (1.18)	46.5 (102.5)

PN40

DN	D	b	K	d	L	approx. kg (lbs)
25	115 (4.53)	18 (0.71)	85 (3.35)	68 (2.68)	4xØ14 (0.55)	1.50 (3.31)
32	140 (5.51)	18 (0.71)	100 (3.94)	78 (3.07)	4xØ18 (0.71)	2.00 (4.41)
40	150 (5.91)	18 (0.71)	110 (4.33)	88 (3.46)	4xØ18 (0.71)	2.50 (5.51)
50	165 (6.50)	20 (0.79)	125 (4.92)	102 (4.02)	4xØ18 (0.71)	3.00 (6.62)
65	185 (7.28)	22 (0.87)	145 (5.71)	122 (4.80)	8xØ18 (0.71)	4.50 (9.92)
80	200 (7.87)	24 (0.94)	160 (6.30)	138 (5.43)	8xØ18 (0.71)	5.50 (12.13)
100	235 (9.25)	24 (0.94)	190 (7.48)	162 (6.38)	8xØ22 (0.87)	7.50 (16.54)
125	270 (10.6)	26 (1.02)	220 (8.66)	188 (7.40)	8xØ26 (1.02)	11.0 (24.26)
150	300 (11.8)	28 (1.10)	250 (9.84)	218 (8.58)	8xØ26 (1.02)	14.5 (31.97)
200	375 (14.8)	36 (1.42)	320 (12.6)	285 (11.2)	12xØ30 (1.18)	29.0 (63.95)
250	450 (17.7)	38 (1.50)	385 (15.2)	345 (13.6)	12xØ33 (1.30)	44.5 (98.12)
300	515 (20.3)	42 (1.65)	450 (17.7)	410 (16.1)	16xØ33 (1.30)	64.0 (141.1)

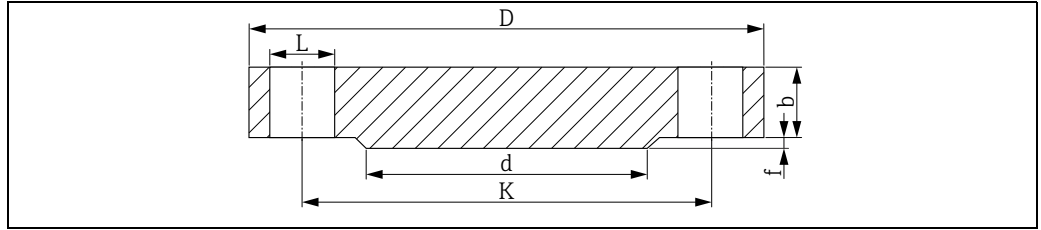
PN63

DN	D	b	K	d	L	approx. kg (lbs)
25	140 (5.51)	24 (0.94)	100 (3.94)	68 (2.68)	4xØ18 (0.71)	2.50 (5.51)
32	155 (6.10)	24 (0.94)	110 (4.33)	78 (3.07)	4xØ22 (0.87)	3.50 (7.72)
40	170 (6.69)	26 (1.02)	125 (4.92)	88 (3.46)	4xØ22 (0.87)	4.50 (9.92)
50	180 (7.09)	26 (1.02)	135 (5.31)	102 (4.02)	4xØ22 (0.87)	5.00 (11.03)
65	205 (8.07)	26 (1.02)	160 (6.30)	122 (4.80)	8xØ22 (0.87)	6.00 (13.23)
80	215 (8.46)	28 (1.10)	170 (6.69)	138 (5.43)	8xØ22 (0.87)	7.50 (16.54)
100	250 (9.84)	30 (1.18)	200 (7.87)	162 (6.38)	8xØ26 (1.02)	10.5 (23.15)
125	295 (11.6)	34 (1.34)	240 (9.45)	188 (7.40)	8xØ30 (1.18)	16.5 (36.38)
150	345 (13.6)	36 (1.42)	280 (11.0)	218 (8.58)	8xØ33 (1.30)	24.5 (54.02)
200	415 (16.3)	42 (1.65)	345 (13.6)	285 (11.2)	12xØ36 (1.42)	40.5 (89.3)
250	470 (18.5)	46 (1.81)	400 (15.7)	345 (13.6)	12xØ36 (1.42)	58.0 (127.9)
300	530 (20.9)	52 (2.05)	460 (18.1)	410 (16.1)	16xØ36 (1.42)	83.5 (184.1)

PN100

DN	D	b	K	d	L	approx. kg (lbs)
25	140 (5.51)	24 (0.94)	100 (3.94)	68 (2.68)	4xØ18 (0.71)	2.50 (5.51)
32	155 (6.10)	24 (0.94)	110 (4.33)	78 (3.07)	4xØ22 (0.87)	3.50 (7.72)
40	170 (6.69)	26 (1.02)	125 (4.92)	88 (3.46)	4xØ22 (0.87)	4.50 (9.92)
50	195 (7.68)	28 (1.10)	145 (5.71)	102 (4.02)	4xØ26 (1.02)	6.00 (13.23)
65	220 (8.66)	30 (1.18)	170 (6.69)	122 (4.80)	8xØ26 (1.02)	8.00 (17.64)
80	230 (9.06)	32 (1.26)	180 (7.09)	138 (5.43)	8xØ26 (1.02)	9.50 (20.95)
100	265 (10.4)	36 (1.42)	210 (8.27)	162 (6.38)	8xØ30 (1.18)	14.0 (30.87)
125	315 (12.4)	40 (1.57)	250 (9.84)	188 (7.40)	8xØ33 (1.30)	22.5 (49.61)
150	355 (14.0)	44 (1.73)	290 (11.4)	218 (8.58)	12xØ33 (1.30)	30.5 (67.25)
200	430 (16.9)	52 (2.05)	360 (14.2)	285 (11.2)	12xØ36 (1.42)	54.5 (120.2)
250	505 (19.9)	60 (2.36)	430 (16.9)	345 (13.6)	12xØ39 (1.54)	87.5 (192.9)
300	585 (23.0)	68 (2.68)	500 (19.7)	410 (16.1)	16xØ42 (1.65)	131.5 (289.9)

ASME-Flange (ASME B16.5)



(Raised face RF)

- L Diameter of holes
- d Raised face diameter
- K Diameter of hole circle
- D Flange diameter
- b Total flange thickness
- f Raised face height Class 150/300: 1.6 mm (0.06 in) or from Class 600: 6.4 mm (0.25 in)

Note!

Surface finish of the gasket faces $Ra \leq 3.2$ to $6.3 \mu\text{m}$ (126 to 248 μin).

Class 150

In following tables, the unit of measurement are indicated in mm (in) unless otherwise noted.

NPS (Nominal pipe size)	D	b	K	d	L	approx. kg (lbs)
1"	108.0 (4.25)	14.2 (0.56)	79.2 (3.12)	50.8 (2.00)	4x \varnothing 15.7 (0.62)	0.86 (1.9)
1¼"	117.3 (4.62)	15.7 (0.62)	88.9 (3.50)	63.5 (2.50)	4x \varnothing 15.7 (0.62)	1.17 (2.58)
1½"	127.0 (5.00)	17.5 (0.69)	98.6 (3.88)	73.2 (2.88)	4x \varnothing 15.7 (0.62)	1.53 (3.37)
2"	152.4 (6.00)	19.1 (0.75)	120.7 (4.75)	91.9 (3.62)	4x \varnothing 19.1 (0.75)	2.42 (5.34)
2½"	177.8 (7.00)	22.4 (0.88)	139.7 (5.50)	104.6 (4.12)	4x \varnothing 19.1 (0.75)	3.94 (8.69)
3"	190.5 (7.50)	23.9 (0.94)	152.4 (6.00)	127.0 (5.00)	4x \varnothing 19.1 (0.75)	4.93 (10.87)
3½"	215.9 (8.50)	23.9 (0.94)	177.8 (7.00)	139.7 (5.50)	8x \varnothing 19.1 (0.75)	6.17 (13.60)
4"	228.6 (9.00)	23.9 (0.94)	190.5 (7.50)	157.2 (6.19)	8x \varnothing 19.1 (0.75)	7.00 (15.44)
5"	254.0 (10.0)	23.9 (0.94)	215.9 (8.50)	185.7 (7.31)	8x \varnothing 22.4 (0.88)	8.63 (19.03)
6"	279.4 (11.0)	25.4 (1.00)	241.3 (9.50)	215.9 (8.50)	8x \varnothing 22.4 (0.88)	11.3 (24.92)
8"	342.9 (13.5)	28.4 (1.12)	298.5 (11.8)	269.7 (10.6)	8x \varnothing 22.4 (0.88)	19.6 (43.22)
10"	406.4 (16.0)	30.2 (1.19)	362.0 (14.3)	323.8 (12.7)	12x \varnothing 25.4 (1.00)	28.8 (63.50)

Class 300

NPS (Nominal pipe size)	D	b	K	d	L	approx. kg (lbs)
1"	124.0 (4.88)	17.5 (0.69)	88.9 (3.50)	50.8 (2.00)	4xØ19.1 (0.75)	1.39 (3.06)
1¼"	133.4 (5.25)	19.1 (0.75)	98.6 (3.88)	63.5 (2.50)	4xØ19.1 (0.75)	1.79 (3.95)
1½"	155.4 (6.12)	20.6 (0.81)	114.3 (4.50)	73.2 (2.88)	4xØ22.4 (0.88)	2.66 (5.87)
2"	165.1 (6.50)	22.4 (0.88)	127.0 (5.00)	91.9 (3.62)	8xØ19.1 (0.75)	3.18 (7.01)
2½"	190.5 (7.50)	25.4 (1.00)	149.4 (5.88)	104.6 (4.12)	8xØ22.4 (0.88)	4.85 (10.69)
3"	209.5 (8.25)	28.4 (1.12)	168.1 (6.62)	127.0 (5.00)	8xØ22.4 (0.88)	6.81 (15.02)
3½"	228.6 (9.00)	30.2 (1.19)	184.2 (7.25)	139.7 (5.50)	8xØ22.4 (0.88)	8.71 (19.21)
4"	254.0 (10.0)	31.8 (1.25)	200.2 (7.88)	157.2 (6.19)	8xØ22.4 (0.88)	11.5 (25.36)
5"	279.4 (11.0)	35.1 (1.38)	235.0 (9.25)	185.7 (7.31)	8xØ22.4 (0.88)	15.6 (34.4)
6"	317.5 (12.5)	36.6 (1.44)	269.7 (10.6)	215.9 (8.50)	12xØ22.4 (0.88)	20.9 (46.08)
8"	381.0 (15.0)	41.1 (1.62)	330.2 (13.0)	269.7 (10.6)	12xØ25.4 (1.00)	34.3 (75.63)
10"	444.5 (17.5)	47.8 (1.88)	387.4 (15.3)	323.8 (12.7)	16xØ28.4 (1.12)	53.3 (117.5)

Class 600

NPS (Nominal pipe size)	D	b	K	d	L	approx. kg (lbs)
1"	124.0 (4.88)	17.5 (0.69)	88.9 (3.50)	50.8 (2.00)	4xØ19.1 (0.75)	1.60 (3.53)
1¼"	133.4 (5.25)	20.6 (0.81)	98.6 (3.88)	63.5 (2.50)	4xØ19.1 (0.75)	2.23 (4.92)
1½"	155.4 (6.12)	22.4 (0.88)	114.3 (4.50)	73.2 (2.88)	4xØ22.4 (0.88)	3.25 (7.17)
2"	165.1 (6.50)	25.4 (1.00)	127.0 (5.00)	91.9 (3.62)	8xØ19.1 (0.75)	4.15 (9.15)
2½"	190.5 (7.50)	28.4 (1.12)	149.4 (5.88)	104.6 (4.12)	8xØ22.4 (0.88)	6.13 (13.52)
3"	209.5 (8.25)	31.8 (1.25)	168.1 (6.62)	127.0 (5.00)	8xØ22.4 (0.88)	8.44 (18.61)
3½"	228.6 (9.00)	35.1 (1.38)	184.2 (7.25)	139.7 (5.50)	8xØ25.4 (1.00)	11.0 (24.26)
4"	273.1 (10.8)	38.1 (1.50)	215.9 (8.50)	157.2 (6.19)	8xØ25.4 (1.00)	17.3 (38.15)
5"	330.2 (13.0)	44.5 (1.75)	266.7 (10.5)	185.7 (7.31)	8xØ28.4 (1.12)	29.4 (64.83)
6"	355.6 (14.0)	47.8 (1.88)	292.1 (11.5)	215.9 (8.50)	12xØ28.4 (1.12)	36.1 (79.6)
8"	419.1 (16.5)	55.6 (2.19)	349.3 (13.8)	269.7 (10.6)	12xØ31.8 (1.25)	58.9 (129.9)
10"	508.0 (20.0)	63.5 (2.50)	431.8 (17.0)	323.8 (12.7)	16xØ35.1 (1.38)	97.5 (214.9)

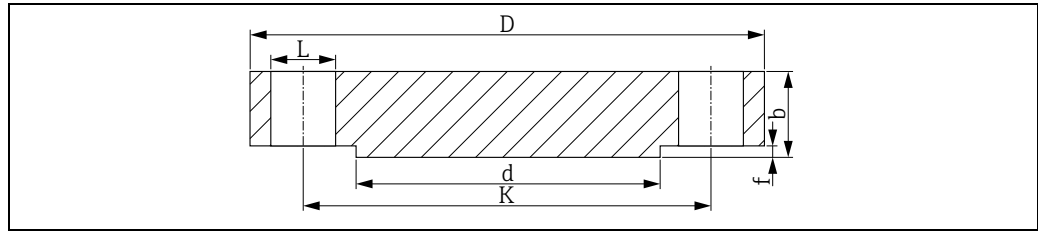
Class 900

NPS (Nominal pipe size)	D	b	K	d	L	approx. kg (lbs)
1"	149.4 (5.88)	28.4 (1.12)	101.6 (4.00)	50.8 (2.00)	4xØ25.4 (1.00)	3.57 (7.87)
1¼"	158.8 (6.25)	28.4 (1.12)	111.3 (4.38)	63.5 (2.50)	4xØ25.4 (1.00)	4.14 (9.13)
1½"	177.8 (7.00)	31.8 (1.25)	124.0 (4.88)	73.2 (2.88)	4xØ28.4 (1.12)	5.75 (12.68)
2"	215.9 (8.50)	38.1 (1.50)	165.1 (6.50)	91.9 (3.62)	8xØ25.4 (1.00)	10.1 (22.27)
2½"	244.4 (9.62)	41.1 (1.62)	190.5 (7.50)	104.6 (4.12)	8xØ28.4 (1.12)	14.0 (30.87)
3"	241.3 (9.50)	38.1 (1.50)	190.5 (7.50)	127.0 (5.00)	8xØ25.4 (1.00)	13.1 (28.89)
4"	292.1 (11.50)	44.5 (1.75)	235.0 (9.25)	157.2 (6.19)	8xØ31.8 (1.25)	26.9 (59.31)
5"	349.3 (13.8)	50.8 (2.00)	279.4 (11.0)	185.7 (7.31)	8xØ35.1 (1.38)	36.5 (80.48)
6"	381.0 (15.00)	55.6 (2.19)	317.5 (12.5)	215.9 (8.50)	12xØ31.8 (1.25)	47.4 (104.5)
8"	469.9 (18.50)	63.5 (2.50)	393.7 (15.5)	269.7 (10.6)	12xØ38.1 (1.50)	82.5 (181.9)
10"	546.1 (21.50)	69.9 (2.75)	469.9 (18.5)	323.8 (12.7)	16xØ38.1 (1.50)	122 (269.0)

Class 1500

NPS (Nominal pipe size)	D	b	K	d	L	approx. kg (lbs)
1"	149.4 (5.88)	28.4 (1.12)	101.6 (4.00)	50.8 (2.00)	4xØ25.4 (1.00)	3.57 (7.87)
1¼"	158.8 (6.25)	28.4 (1.12)	111.3 (4.38)	63.5 (2.50)	4xØ25.4 (1.00)	4.14 (9.13)
1½"	177.8 (7.00)	31.8 (1.25)	124.0 (4.88)	73.2 (2.88)	4xØ28.4 (1.12)	5.75 (12.68)
2"	215.9 (8.50)	38.1 (1.50)	165.1 (6.50)	91.9 (3.62)	8xØ25.4 (1.00)	10.1 (22.27)
2½"	244.4 (9.62)	41.1 (1.62)	190.5 (7.50)	104.6 (4.12)	8xØ28.4 (1.12)	14.0 (30.87)
3"	266.7 (10.50)	47.8 (1.88)	203.2 (8.00)	127.0 (5.00)	8xØ31.8 (1.25)	19.1 (42.12)
4"	311.2 (12.3)	53.8 (2.12)	241.3 (9.50)	157.2 (6.19)	8xØ35.1 (1.38)	29.9 (65.93)
5"	374.7 (14.8)	73.2 (2.88)	292.1 (11.5)	185.7 (7.31)	8xØ41.1 (1.62)	58.4 (128.8)
6"	393.7 (15.50)	82.6 (3.25)	317.5 (12.5)	215.9 (8.50)	12xØ38.1 (1.50)	71.8 (158.3)
8"	482.6 (19.00)	91.9 (3.62)	393.7 (15.5)	269.7 (10.6)	12xØ44.5 (1.75)	122 (269.0)
10"	584.2 (23.00)	108.0 (4.25)	482.6 (19.0)	323.8 (12.7)	12xØ50.8 (2.00)	210 (463.0)

JIS flanges (B 2220)



(Raised face RF)

- L* Diameter of holes
d Raised face diameter
K Diameter of hole circle
D Flange diameter
b Total flange thickness
f Raised face height (general 2 mm (0.08 in))

Note!

Surface finish of the gasket faces $Ra \leq 3.2$ to $6.3 \mu\text{m}$ (126 to 248 μin).

10 K

In following tables, the unit of measurement are indicated in mm (in) unless otherwise noted.

DN	D	b	K	d	L
25	125 (4.92)	14 (0.55)	90 (3.54)	67 (2.64)	4x \varnothing 19 (0.75)
32	135 (5.31)	16 (0.63)	100 (3.94)	76 (2.99)	4x \varnothing 19 (0.75)
40	140 (5.51)	16 (0.63)	105 (4.13)	81 (3.19)	4x \varnothing 19 (0.75)
50	155 (6.10)	16 (0.63)	120 (4.72)	96 (3.78)	4x \varnothing 19 (0.75)
65	175 (6.89)	18 (0.71)	140 (5.51)	116 (4.57)	4x \varnothing 19 (0.75)
80	185 (7.28)	18 (0.71)	150 (5.91)	126 (4.96)	8x \varnothing 19 (0.75)
100	210 (8.27)	18 (0.71)	175 (6.89)	151 (5.94)	8x \varnothing 19 (0.75)
125	250 (9.84)	20 (0.79)	210 (8.27)	182 (7.17)	8x \varnothing 23 (0.91)
150	280 (11.0)	22 (0.87)	240 (9.45)	212 (8.35)	8x \varnothing 23 (0.91)
200	330 (13.0)	22 (0.87)	290 (11.4)	262 (10.3)	12x \varnothing 23 (0.91)
250	400 (15.7)	24 (0.94)	355 (14.0)	324 (12.8)	12x \varnothing 25 (0.98)
300	445 (17.5)	24 (0.94)	400 (15.7)	368 (14.5)	16x \varnothing 25 (0.98)

20 K

DN	D	b	K	d	L
25	125 (4.92)	16 (0.63)	90 (3.54)	67 (2.64)	4x \varnothing 19 (0.75)
32	135 (5.31)	18 (0.71)	100 (3.94)	76 (2.99)	4x \varnothing 19 (0.75)
40	140 (5.51)	18 (0.71)	105 (4.13)	81 (3.19)	4x \varnothing 19 (0.75)
50	155 (6.10)	18 (0.71)	120 (4.72)	96 (3.78)	8x \varnothing 19 (0.75)
65	175 (6.89)	20 (0.79)	140 (5.51)	116 (4.57)	8x \varnothing 19 (0.75)
80	200 (7.87)	22 (0.87)	160 (6.30)	132 (5.20)	8x \varnothing 23 (0.91)
100	225 (8.86)	24 (0.94)	185 (7.28)	160 (6.30)	8x \varnothing 23 (0.91)
125	270 (10.6)	26 (1.02)	225 (8.86)	195 (7.68)	8x \varnothing 25 (0.98)
150	305 (12.0)	28 (1.10)	260 (10.2)	230 (9.06)	12x \varnothing 25 (0.98)
200	350 (13.8)	30 (1.18)	305 (12.0)	275 (10.8)	12x \varnothing 25 (0.98)
250	430 (16.9)	34 (1.34)	380 (15.0)	345 (13.6)	12x \varnothing 27 (1.06)
300	480 (18.9)	36 (1.42)	430 (16.9)	395 (15.6)	16x \varnothing 27 (1.06)

63 K

DN	D	b	K	d	L
25	140 (5.51)	27 (1.06)	100 (3.94)	70 (2.76)	4xØ23 (0.91)
32	150 (5.91)	30 (1.18)	110 (4.33)	80 (3.15)	4xØ23 (0.91)
40	175 (6.89)	32 (1.26)	130 (5.12)	90 (3.54)	4xØ25 (0.98)
50	185 (7.28)	34 (1.34)	145 (5.71)	105 (4.13)	8xØ23 (0.91)
65	220 (8.66)	38 (1.50)	175 (6.89)	130 (5.12)	8xØ25 (0.98)
80	230 (9.06)	40 (1.57)	185 (7.28)	140 (5.51)	8xØ25 (0.98)
100	270 (10.6)	44 (1.73)	220 (8.66)	165 (6.50)	8xØ27 (1.06)
125	325 (12.8)	50 (1.97)	265 (10.4)	200 (7.87)	8xØ33 (1.30)
150	365 (14.4)	54 (2.13)	305 (12.0)	240 (9.45)	12xØ33 (1.30)
200	425 (16.7)	60 (2.36)	360 (14.2)	290 (11.4)	12xØ33 (1.30)
250	500 (19.7)	68 (2.68)	430 (16.9)	355 (14.0)	12xØ39 (1.54)
300	560 (22.0)	77 (3.03)	485 (19.1)	410 (16.1)	16xØ39 (1.54)

Pressure-temperature dependencies

EN flanges¹⁾

Temperature range	Nominal pressure bar (psi)				
	PN16	PN25	PN40	PN63	PN100
-10 °C ... +50 °C (+14 °F ... +122 °F)	16.0 (232)	25.0 (362)	40.0 (580)	63.0 (913)	100.0 (1450)
50 °C (122 °F)	15.5 (225)	24.3 (352)	38.9 (564)	61.3 (889)	97.3 (1411)
100 °C (212 °F)	15.1 (219)	23.6 (342)	37.9 (550)	59.7 (866)	94.7 (1373)
150 °C (302 °F)	13.7 (199)	21.5 (312)	34.4 (499)	54.3 (787)	86.1 (1248)
200 °C (392 °F)	12.7 (184)	19.8 (287)	31.8 (461)	50.1 (726)	79.5 (1153)
250 °C (482 °F)	11.9 (173)	18.6 (270)	29.9 (434)	47.1 (683)	74.7 (1083)
300 °C (572 °F)	11.0 (159)	17.2 (249)	27.6 (400)	43.5 (631)	69.0 (1000)
350 °C (662 °F)	10.5 (152)	16.5 (239)	26.4 (383)	41.7 (605)	66.1 (958)
400 °C (752 °F)	10.2 (148)	16.0 (232)	25.7 (373)	40.1 (580)	64.2 (931)

ASME flanges¹⁾

Temperature range	Nominal pressure bar (psi)				
	Class 150	Class 300	Class 600	Class 900	Class 1500
-29 °C ... +38 °C (-20 °F ... +100 °F)	19.0 (275)	49.6 (719)	99.3 (1440)	148.9 (2159)	248.2 (3599)
50 °C (122 °F)	18.4 (267)	48.1 (697)	96.2 (1395)	144.3 (2092)	240.6 (3489)
100 °C (212 °F)	16.2 (235)	42.2 (612)	84.4 (1224)	126.6 (1836)	211.0 (3059)
150 °C (302 °F)	14.8 (215)	38.5 (558)	77.0 (1116)	115.5 (1675)	192.5 (2791)
200 °C (392 °F)	13.7 (199)	35.7 (518)	71.3 (1034)	107.0 (1551)	178.3 (2588)
250 °C (482 °F)	12.1 (175)	33.4 (484)	66.8 (969)	100.1 (1451)	166.9 (2420)
300 °C (572 °F)	10.2 (148)	31.6 (458)	63.2 (916)	94.9 (1376)	158.1 (2292)
325 °C (617 °F)	9.3 (135)	30.9 (448)	61.8 (896)	92.7 (1344)	154.4 (2239)
350 °C (662 °F)	8.4 (122)	30.3 (439)	60.7 (880)	91.0 (1319)	151.6 (2189)
375 °C (707 °F)	7.4 (107)	29.9 (434)	59.8 (867)	89.6 (1299)	149.4 (2166)
400 °C (752 °F)	6.5 (94)	29.4 (426)	58.9 (854)	88.3 (1280)	147.2 (2134)

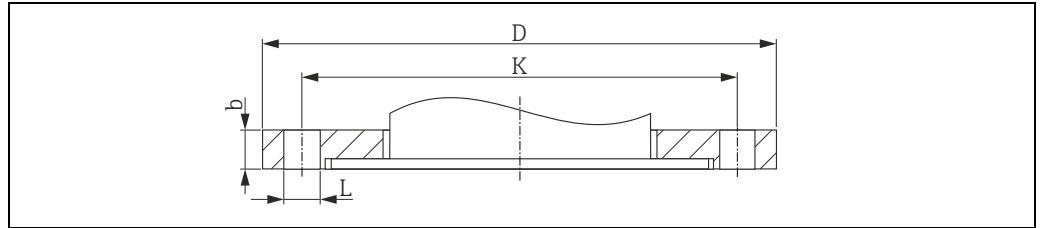
JIS flanges¹⁾

Temperature range	Nominal pressure bar (psi)			
	10 K	20 K		
	for all flanges	to DN 125	from DN 150 up to DN 250	DN 300
up to 120 °C (248 °F)	14 (203.0)	34 (493.0)	20 (290.0)	20 (290.0)
220 °C (428 °F)	12 (174.0)	31 (449.5)	20 (290.0)	-
300 °C (572 °F)	10 (145.0)	29 (420.5)	19 (275.5)	-
350 °C (662 °F)	-	26 (377.0)	17 (246.5)	-
400 °C (752 °F)	-	23 (333.5)	17 (246.5)	-
425 °C (797 °F)	-	20 (290.0)	17 (246.5)	-

1) With regard to their stability-temperature property, the materials 1.4435 and 1.4404 are grouped in DIN EN 1092-1 table 18 under 13E0 and in JIS B2220 table 5 under 023b. The ASME flanges are dual rated flanges (316/316L) and grouped in table 2-2.2 according to ASME B16.5.

Slip-on flange FAU80

The sensors (FDU91F, FDU80F, FDU81F) can be flush mounted using a FAU80 slip-on flange. Flanges in polypropylene (PP) should only be used with pressures up to 1.5 bar_{abs} (22 psi) flanges in 316L also above.



Details to dimension "Mechanical Construction" → 69

A002918

FAU80 Version slip-on flange Order information

010	Process Connection	
AA	3"	150 lbs FF, flange ANSI B16.5
AH	4"	150 lbs FF, flange ANSI B16.5
CA	DN 80	PN16 A, flange EN1092-1
CH	DN 100	PN16 A, flange EN1092-1 (
KA	10K 80A	FF, flange JIS B2220
KH	10K 100A	FF, flange JIS B2220
YY	Special version, to be specified	
020	Flange Material	
J	316L	
P	PPs, max. 1.5 bar abs	
Y	Special version, to be specified	

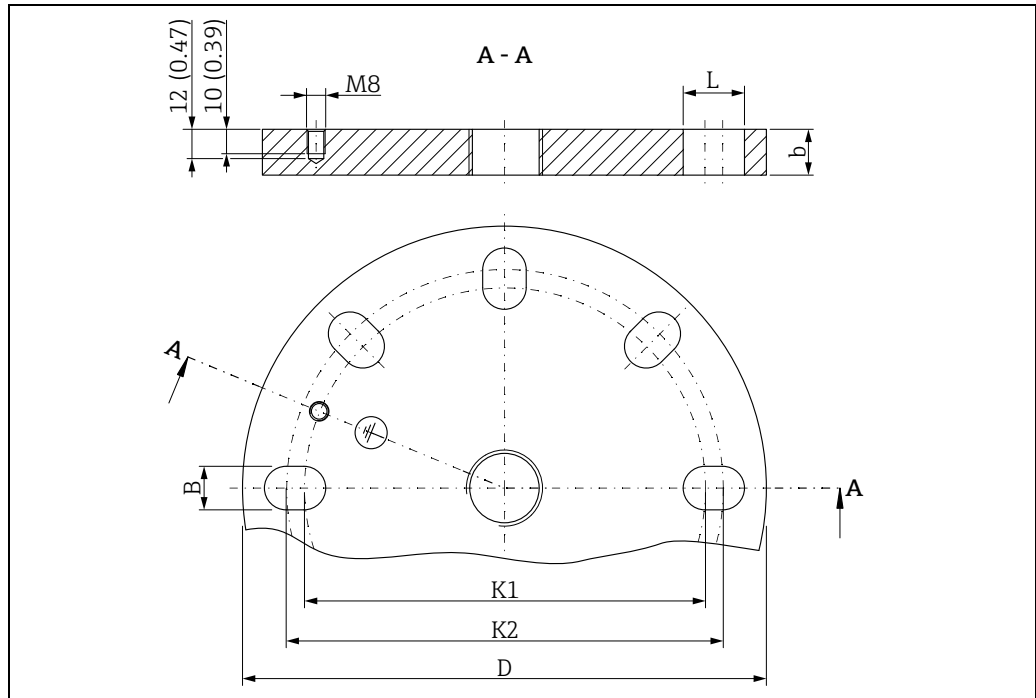
The versions entered make up the order code:

	010	020
FAU80 -		

Screw in flange FAX50

The screw in flange is an universal flange. On the basis of dimensions min./max. it can be used for all three standards (DIN - ASME - JIS).

FAX50 universal flange
DIN-ASME-JIS



L Diameter of holes
K1, K2 Diameter of hole circle
D Flange diameter
b Total flange thickness
B Slotted hole (width)

i Thread M8, 10 mm + 2 mm (0.39 in + 0.08 in) deep, centered between 2 holes
Is made on all flanges, incl. UNI flanges, out of steel or 316L.

G 3/4, NPT 3/4

In following tables, the unit of measurement are indicated in mm (in) unless otherwise noted.

DN	D	b	L	K1	K2	approx. kg (lbs)		
						PP	PVDF	316L
50	165 (6.50)	20 (0.79)	4xØ19 (0.75)	120 (4.72)	125 (4.92)	-	-	3.11 (6.86)
80	200 (7.87)		8xØ19 (0.75)	150 (5.91)	160 (6.30)	-	-	4.37 (9.64)
100	228.6 (9.0)		8xØ19 (0.75)	175 (6.89)	190.5 (7.5)	-	-	5.79 (12.77)

G 1, NPT 1

DN	D	b	L	K1	K2	approx. kg (lbs)		
						PP	PVDF	316L
80	200 (7.87)	20 (0.79)	8xØ19 (0.75)	150 (5.91)	160 (6.30)	0.50 (1.10)	0.97 (2.14)	4.34 (9.57)
100	228.6 (9.0)		8xØ19 (0.75)	175 (6.89)	190.5 (7.5)	0.66 (1.46)	1.29 (2.84)	5.75 (12.68)
150	285 (11.2)		8xØ23 (0.91)	240 (9.45)	241.3 (9.5)	1.09 (2.40)	2.12 (4.67)	9.44 (20.82)
200 ¹⁾	340 (13.4)		12xØ23 (0.91)	290 (11.4)	295 (11.6)	1.53 (3.37)	-	-
250	406.4 (16.0)		12xØ26 (1.02)	355 (14.0)	362 (14.3)	2.20 (4.85)	-	-

1) Only for DIN und JIS!

Exception G 1

NPS (Nominal pipe size)	D	b	L	K1	K2	approx. kg (lbs)		
						PP	PVDF	316L
ASME								
8"	342.9 (13.5)	20 (0.79)	8xØ22.5 (0.89)	298.5 (11.8)	298.5 (11.8)	1.61 (3.55)	-	-

G 1½, NPT 1½

DN	D	b	L	K1	K2	approx. kg (lbs)		
						PP	PVDF	316L
50	165 (6.50)	20 (0.79)	4xØ19 (0.75)	120 (4.72)	125 (4.92)	0.34 (0.75)	0.67 (1.48)	2.97 (6.55)
80	200 (7.87)		8xØ19 (0.75)	150 (5.91)	160 (6.30)	0.49 (1.08)	0.95 (2.09)	4.24 (9.35)
100	228.6 (9.0)		8xØ19 (0.75)	175 (6.89)	190.5 (7.5)	0.65 (1.43)	1.27 (2.80)	5.65 (12.46)
150	285 (11.2)		8xØ23 (0.91)	240 (9.45)	241.3 (9.5)	1.08 (2.38)	2.09 (4.61)	9.34 (20.59)

G 2, NPT 2

DN	D	b	L	K1	K2	approx. kg (lbs)		
						PP	PVDF	316L
50	165 (6.50)	20 (0.79)	4xØ19 (0.75)	120 (4.72)	125 (4.92)	0.33 (0.73)	0.63 (1.39)	2.83 (6.24)
80	200 (7.87)		8xØ19 (0.75)	150 (5.91)	160 (6.30)	0.47 (1.04)	0.92 (2.03)	4.10 (9.04)
100	228.6 (9.0)		8xØ19 (0.75)	175 (6.89)	190.5 (7.5)	0.64 (1.41)	1.24 (2.73)	5.51 (12.15)
150	285 (11.2)		8xØ23 (0.91)	240 (9.45)	241.3 (9.5)	1.06 (2.34)	2.06 (4.54)	9.20 (20.29)



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