

General Specifications

Model PR10
Retractable fitting for pH, Conductivity and Inductive Conductivity

GS 12B06K03-01EN-P

■ Overview

On-line measurements often present extra challenges, especially when routine maintenance is required. The PR10 is ideally suitable for applications where the sensors must be removed without interrupting or shutting down the process. Without any special tools the PR10 can be retracted safely from the process at pressures up to 5 bar (72 psi). The PR10 is a universal retractable assembly that can be used for all liquid measurements

Online measurements often present extra challenges when routine maintenance is required. The PR10 is ideally suitable for applications where the sensor must be removed without interrupting or shutting down the process. Without any special tools the PR10 can be retracted safely from the process at pressures up to 5 bars [71 psi].

The PR10 is a universal retractable assembly that can be used for Yokogawa's pH, ORP, conductivity and inductive conductivity sensor program.

Additionally, the PR10 can be adapted for use with any electrode equipped PG13,5 connection (120mm long) by changing only one part of the retractable assembly.



■ Features

- One model for pH, conductivity, and inductive conductivity sensors
- Integrated sensor protection cage
- Build-in scraper to avoid contamination of the fitting
- Usable for a wide range of sensors
- A safe “through the valve” insertion and retraction design
- Simplified installation by optional ball valves with flanged or tapered connections
- Optional flush port for keeping sensor moist, and easy sensor cleaning, and calibration
- Available in Stainless Steel and with Titanium shaft cage and adapters (after special request) for more harsh applications

1. General Specifications PR10

1.1 Materials

Wetted materials

- Stainless steel AISI 316L / Titanium
- O-ring seals: FKM 70° shore
- Scraper: PTFE
- For the sensor, please check the Instruction Manual of each specific sensor

1.2 Non-wetted materials

- Stainless steel AISI 316, 304
- Polypropylene glass filled
- For the sensor, please check the Instruction Manual of each specific sensor

1.3 Mounting methods

- D32: ISO 228/1 G1¼" female
- D50: ISO 228/1 G2" female

1.4 Insertion length

Ref. mechanical drawing figure 2 – 7

1.5 Operating range

Temperature : - 10°C – 150°C

Pressure : 0 – 10 bar [MPa]

Pressure/temperature ratings

Operating conditions during extraction and insertion
max. 500kPa, max. 100°C *

Static conditions: see Fig. 1. **

***Note:** the operating condition refers to the set of conditions for operating the PR10 retractable fitting: inserting or retracting the fitting from the process.

****Note:** the static condition is the condition where there are no changes. That means the PR10 retractable fitting is installed in the process.

1.6 Flange ratings

- DIN flange DN32 PN10
- ANSI flange 1¼" 150 lbs.
- DIN flange DN50 PN10
- ANSI flange 2" 150 lbs.

1.7 Specifications of the sensor used

Please check the Instruction Manual of each specific sensor.

1.8 Weight

Approx. 2.5 kg excluding ball valve

1.9 Regulatory standards

- CE: Decision 768/2008/EC by applying: EN-ISO 9001: 2015
- PED Directive 2014/68/EU by applying article 4.3 (Sound Engineering article Practice) ***

*****Note:** Warning: Damaging the screw thread of the sensor might influence the maximum process pressure.

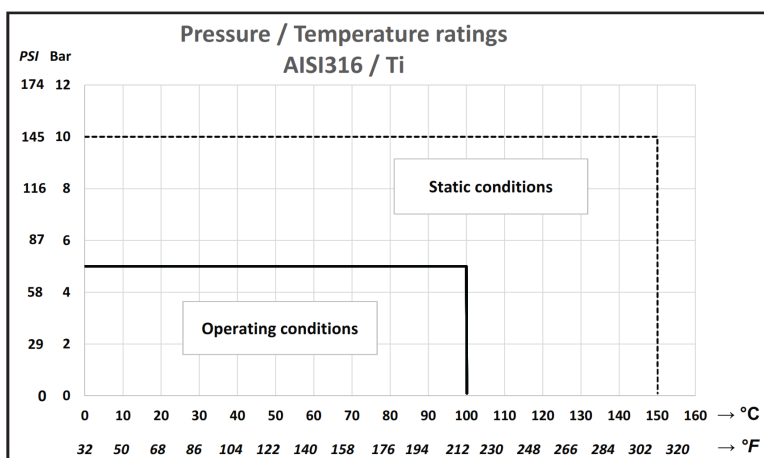


Figure 1: Pressure / temperature rating

■ 2. Model and Suffix codes

Table 1: Model and suffix codes for PR10

Model	Suffix	Options	Description
PR10			Retractable fitting general purpose
Material fitting	-S		Stainless steel
	-T		Titanium (tube and sensor holder only)
Material O-rings	-V		Viton
Tube length	-L5		Tube length 0.5 meter
Connection	-D32		DN32 / 1¼"
	-D50		DN50 / 2"
Measuring sensor	-PH12		For 12mm pH sensors Y-cap
	-PH13		For 12mm pH sensors PG13.5 cap
	-SC4A		For SC4A
	-ICS4		For ISC40→ Only for -D50
	-NNNN		No parameter specification
	-FU20		For FU20 / FU20F / PH21→ Only for -S
Adapter screw-in Only available in Stainless Steel	/SA125		ISO 228/1 G1¼ to 1¼" M-NPT
	/SL125		Long ISO 228/1 G1¼ to 1¼" M-NPT
	/SA200		ISO 228/1 G2 to 2" M-NPT
	/SL200		Long ISO 228/1 G2 to 2" M-NPT
Flange adapter Only available in Stainless Steel /**125 and /**D32 → Only for -D32 /**200 and /**D50 → Only for -D50	/FA125		Flange adapter drain 1¼" 150 Lbs
	/FN125		Flange adapter no drain 1¼" 150 Lbs
	/FL125		Long flange adapter drain 1¼" 150 Lbs
	/FA200		Flange adapter drain 2" 150 Lbs
	/FN200		Flange adapter no drain 2" 150 Lbs
	/FL200		Long flange adapter drain 2" 150 Lbs
	/FAD32		Flange adapter drain DN32
	/FND32		Flange adapter no drain DN32
	/FLD32		Long flange adapter drain DN32
	/FAD50		Flange adapter drain DN50
/FND50		Flange adapter no drain DN50	
/FLD50		Long flange adapter drain DN50	
Adapter weld-in Only available in Stainless Steel	/WA125		Straight weld-in adapter ISO 228/1 G1¼"
Ball-valves Only available in Stainless Steel	/BF125		Ball-valve flanged 1¼" 150 Lbs
	/BF200		Ball-valve flanged 2" 150 Lbs
	/BFD32		Ball-valve flanged DN32 PN10
	/BFD50		Ball-valve flanged DN50 PN10
	/BS125		Ball-valve screw-in 1¼" F-NPT
	/BS200		Ball-valve screw-in 2" F-NPT
Certificates	/M		Material certificate 3.1 according to NEN-EN 10204 (on wetted parts).

Note: overview of all available models and configurations can be found in addendum 2

Note: When choosing a Ball valve, it is required to choose a flange adapter or screw-in adapter. In table 2 an overview can be found to make the proper selection.

Table 2: Selection guide for ball valve selection in relevance to screw in adapter and flange adapter

		Ball valve						/M
		/BF125	/BF200	/BFD32	/BDF50	/BS125	/BS200	
Screw-in adapter	/SA125					X		X
	/SL125					X		X
	/SA200						X	X
	/SL200						X	X
Flange adapter	/FA125	X						X
	/FN125	X						X
	/FL125	X						X
	/FA200		X					X
	/FN200		X					X
	/FL200		X					X
	/FAD32			X				X
	/FND32			X				X
	/FLD32			X				X
	/FAD50				X			X
	/FND50				X			X
	/FLD50				X			X
Weld-in adapter	/WA125					X		X
	/M	X	X	X	X	X	X	

Table 3: List of spare parts

Part no.	Description
K1520LQ	Cable retractable fitting 5M PT1000
K1520LT	Cable retractable fitting 10M PT1000
K1525AA	Outer tube SS 33
K1525AB	Sensor holder PG13.5 SS 31
K1525AC	Spare part Flange adapter 2"
K1525AF	O-ring pick up tool
K1525AG	Adapter Y-cap
K1525AP	Adapter SC4A-ISC40 SS
K1525BA	O-ring set PR10-S-V-L5-D32
K1525BB	O-ring set PR10-S-V-L5-D50
K1525BC	Key set
K1525BD	Squeezing set 37
K1525BE	Set M16 bolt & washer (8 pcs)
K1525BF	Set M14 bolt & washer (8 pcs)
K1525BH	Gaskets ball valves - D32 (2x)
K1525BJ	Gaskets ball valves - D50 + 2" (2x)
K1525BK	Gaskets ball valves - 1¼" (2x)
K1525BX	OUTER TUBE SS FU20
K1525BZ	Cable gland for PR10 (5 pcs)
K1525CA	Outer tube titanium
K1525CB	Sensor holder PG13.5 Titanium
K1525CP	Adapter SC4A-ISC40 Titanium
K1525KA	O-ring set FFKM & FKM PR10 D32-PH1x
K1525KB	O-ring set FFKM & FKM PR10 D32-SC4A
K1525KC	O-ring set FFKM & FKM PR10 D32-FU20/NNNN
K1525KD	O-ring set FFKM & FKM PR10 D50-PH1x
K1525KE	O-ring set FFKM & FKM PR10 D50-SC4A/ISC4
K1525KF	O-ring set FFKM & FKM PR10 D50-FU20/NNNN

Part no.	Description
K1525YA	PR10/SA125
K1525YB	PR10/FA125
K1525YC	PR10/FN125
K1525YD	PR10/FA200
K1525YE	PR10/FN200
K1525YF	PR10/FAD32
K1525YG	PR10/FND32
K1525YH	PR10/WA125
K1525YK	PR10/BF125
K1525YL	PR10/BF200
K1525YM	PR10/BFD32
K1525YN	PR10/BF50
K1525YP	PR10/BS125
K1525YQ	PR10/BS200
K1525YR	PR10/FAD50
K1525YS	PR10/FND50
K1525YT	PR10/SL125
K1525YU	PR10/FL125
K1525YV	PR10/SL200
K1525YW	PR10/FL200
K1525YX	PR10/FLD32
K1525YY	PR10/FLD50
K1541EM	Adapter 2" NPT - G2 SS PR10/SA200

3. Dimensional Drawings

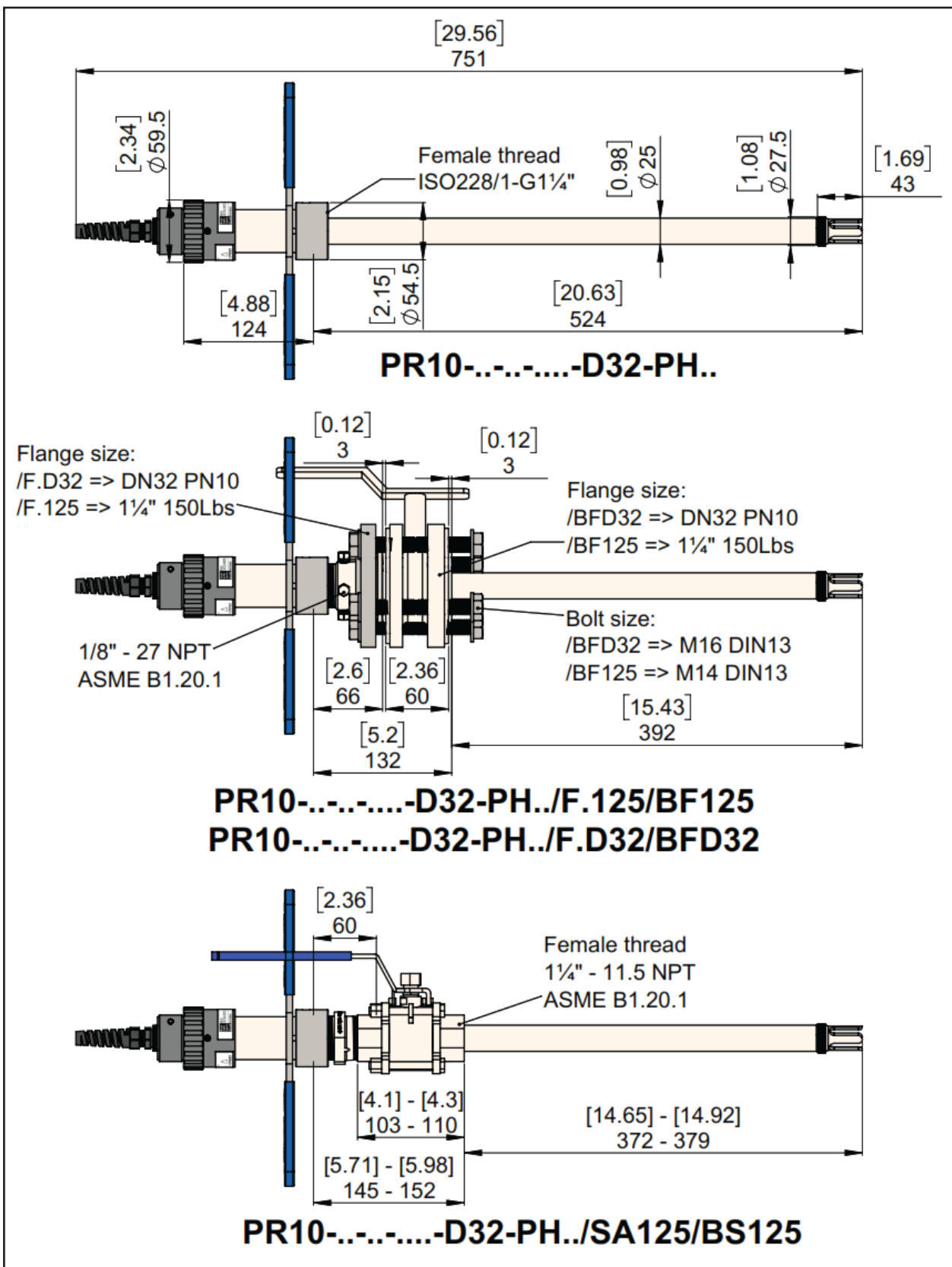


Figure 2: Dimensional drawing PR10...-D32 with mounted pH sensor - units in mm [inch]

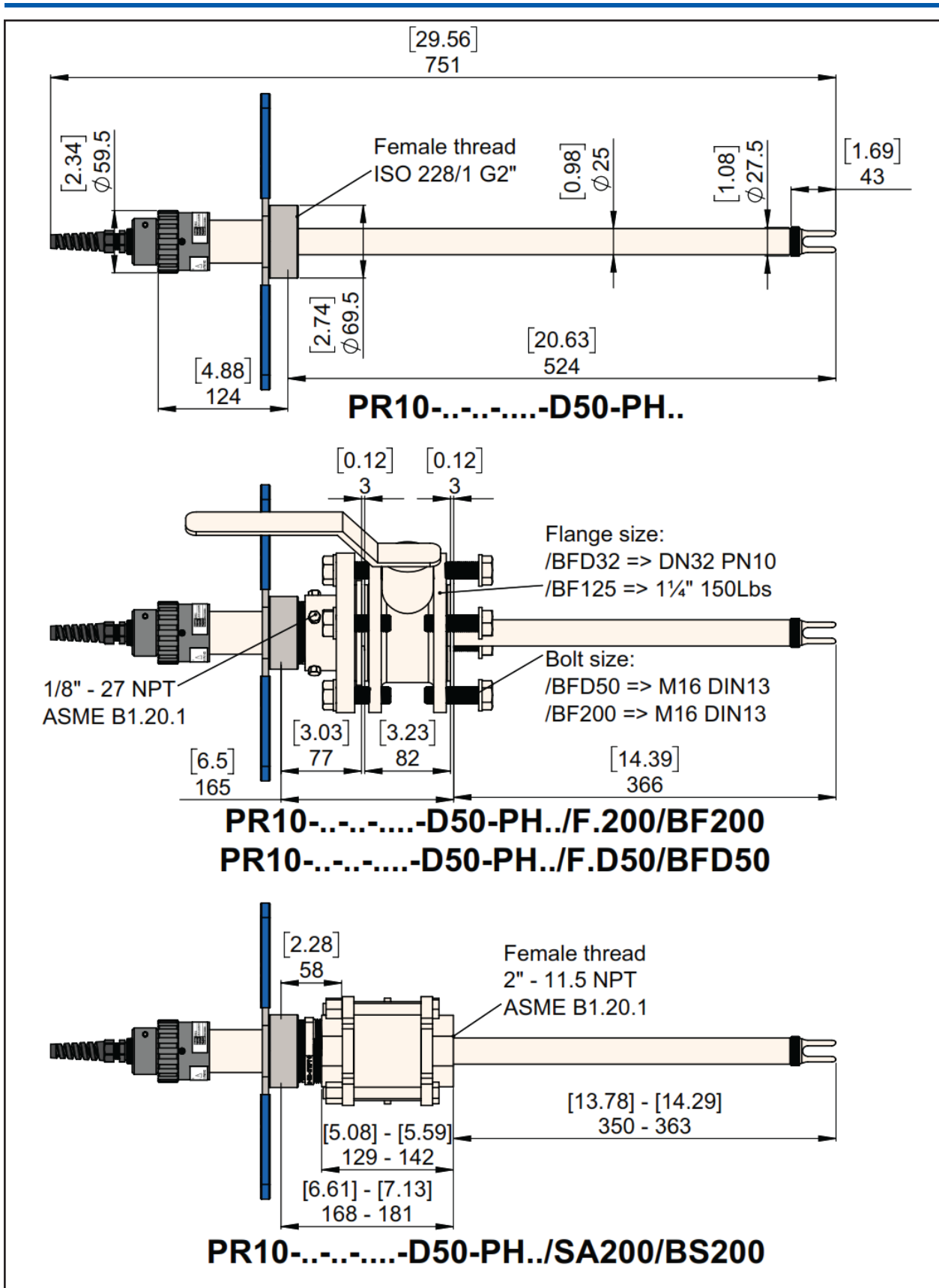


Figure 3: Dimensional drawing PR10...-D50 with mounted pH sensor - units in mm [inch]

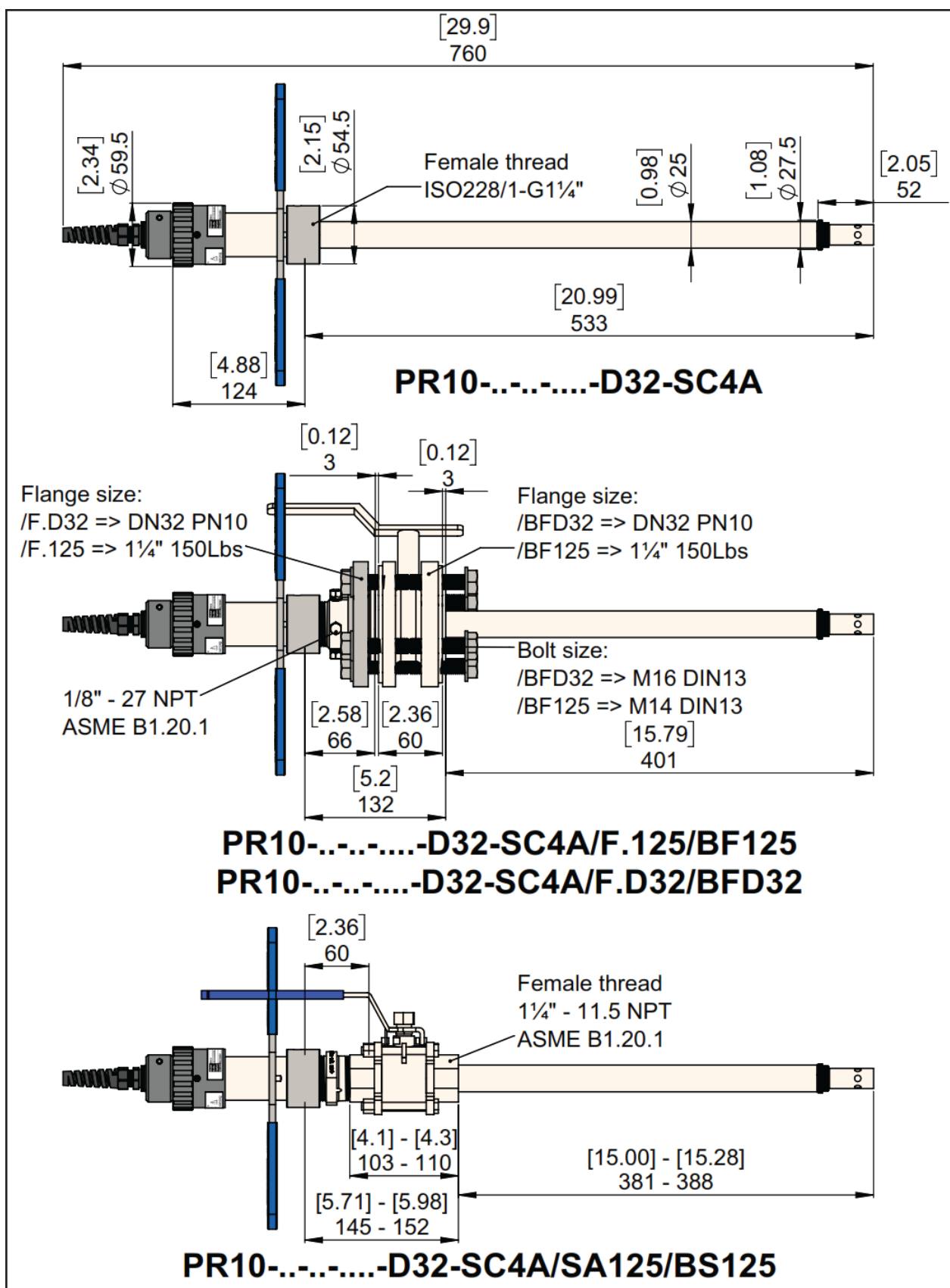


Figure 4: Dimensional drawing PR10...-D32 with mounted SC4A sensor - units in mm [inch]

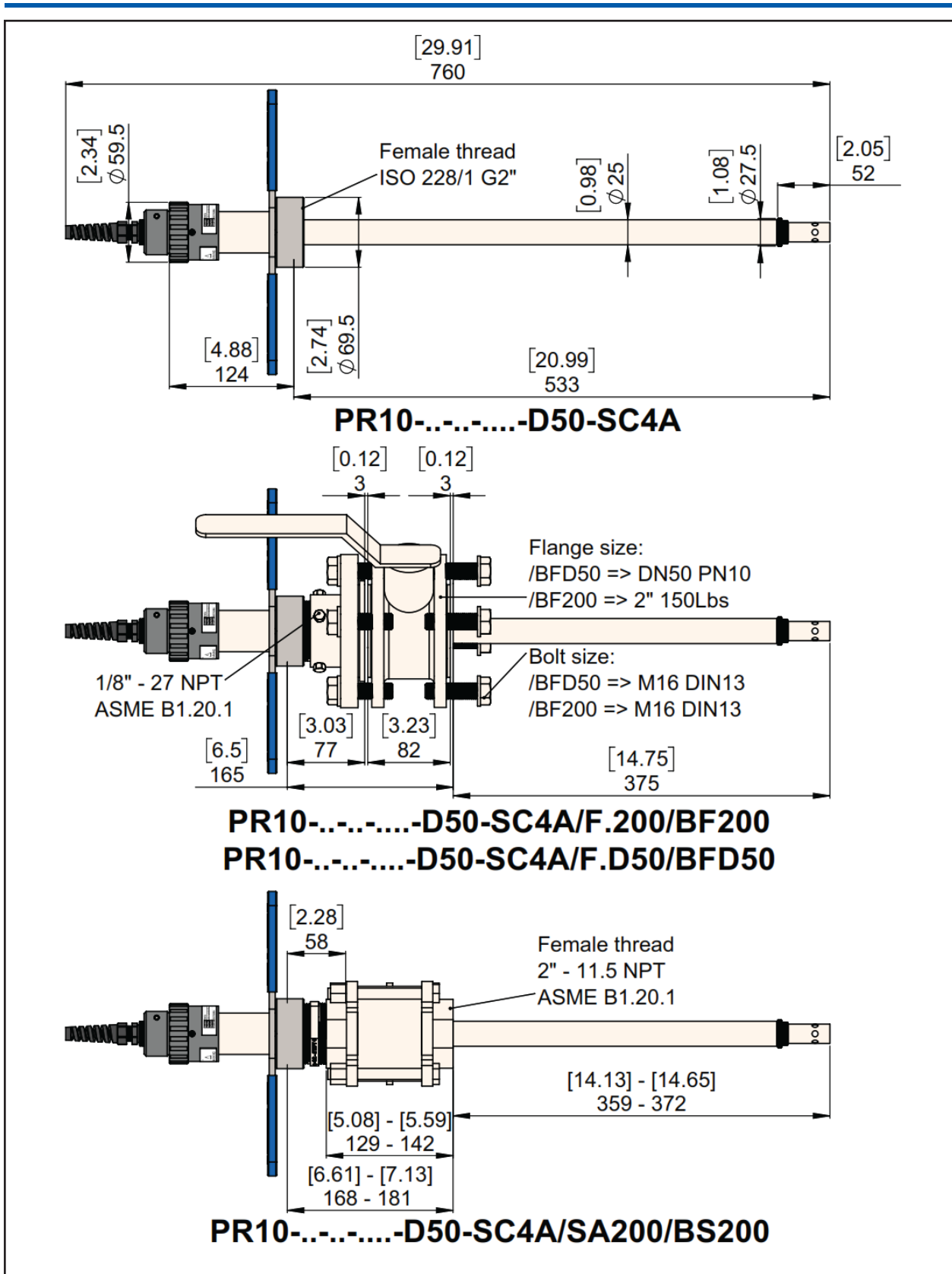


Figure 5: Dimensional drawing PR10...-D50 with mounted SC4A sensor - units in mm [inch]

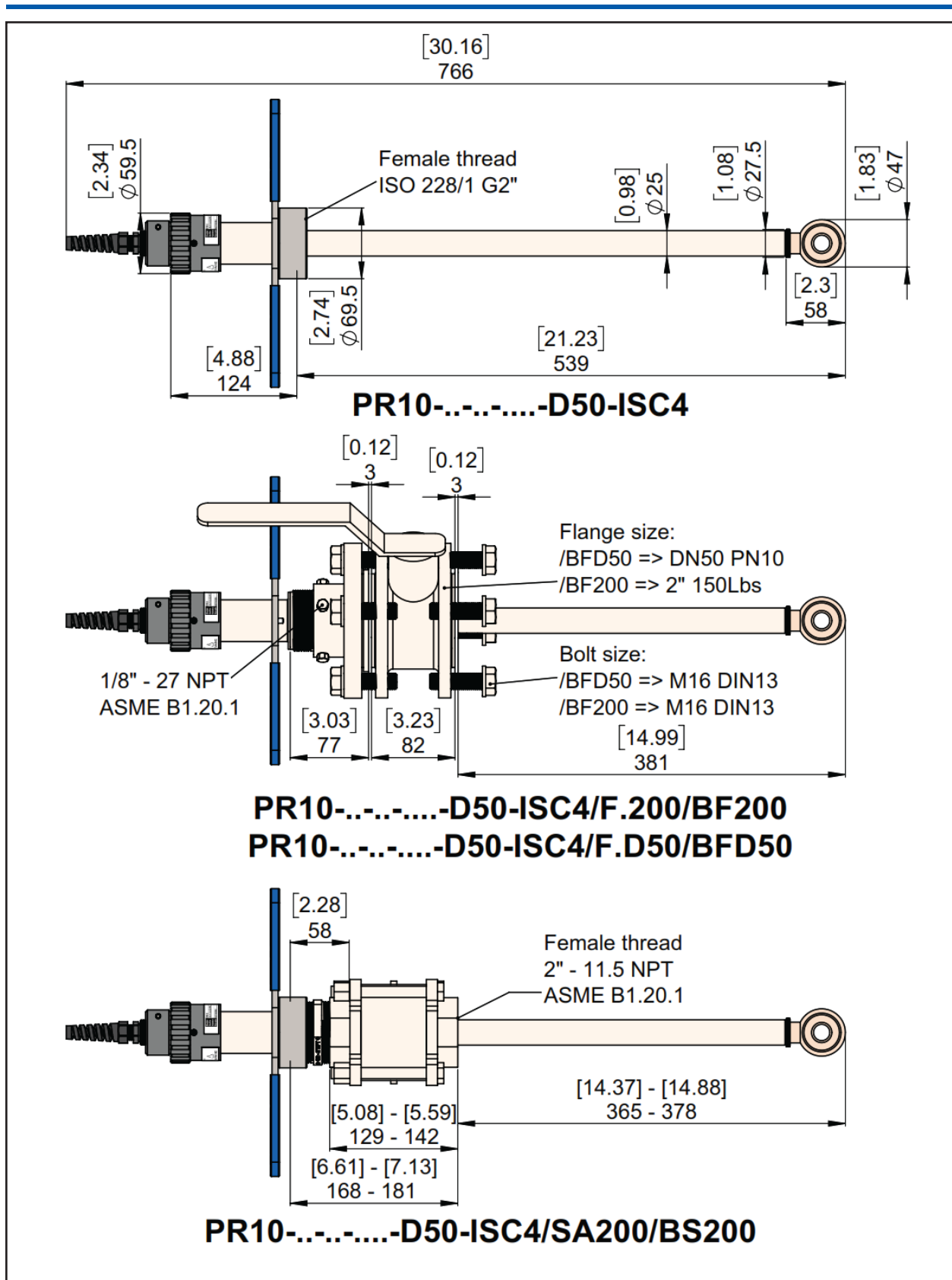


Figure 6: Dimensional drawing PR10...-D50 with mounted ISC40 sensor - units in mm [inch]

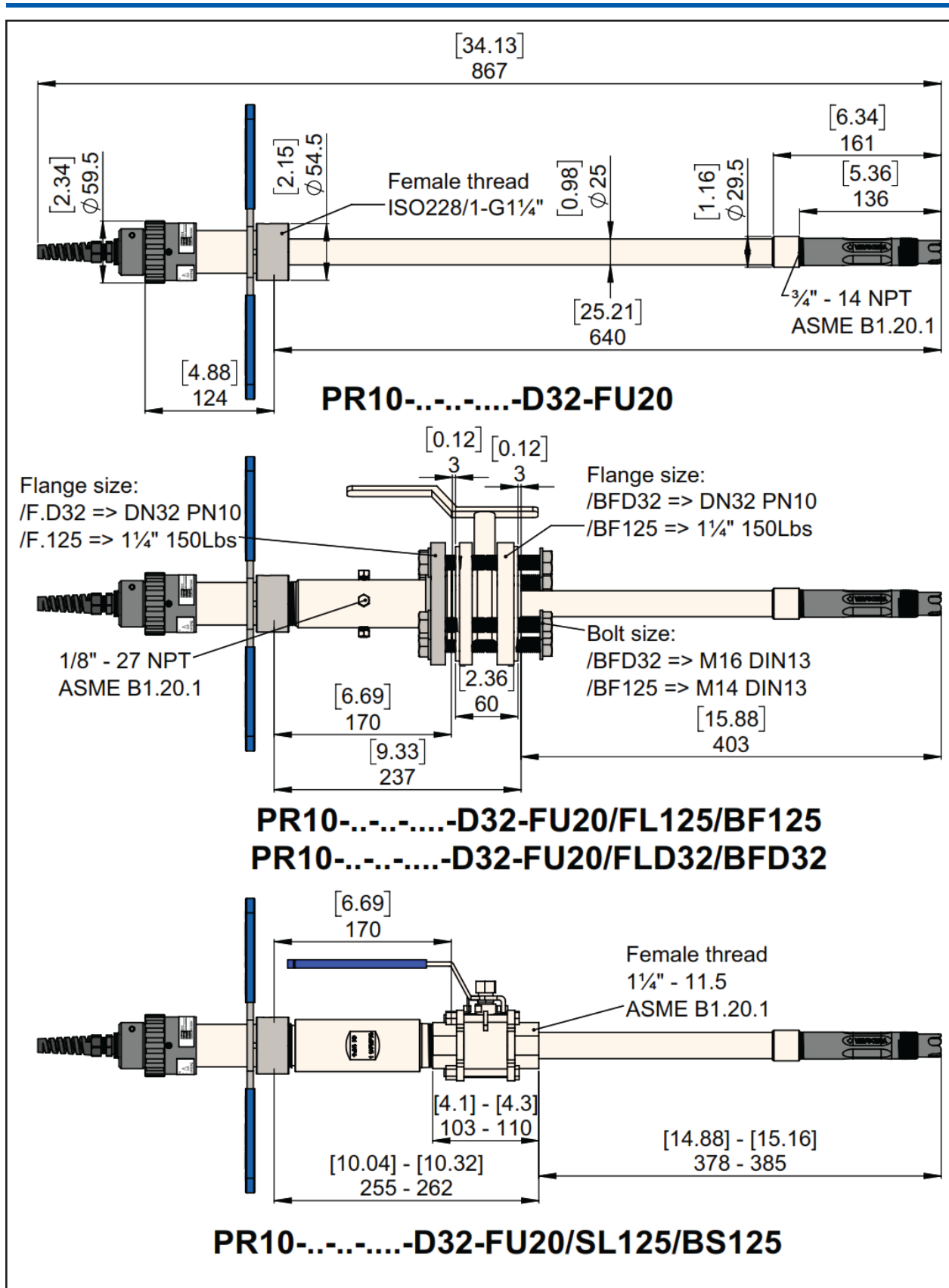


Figure 7: Dimensional drawing PR10...-D32 with mounted FU20 sensor - units in mm [inch]

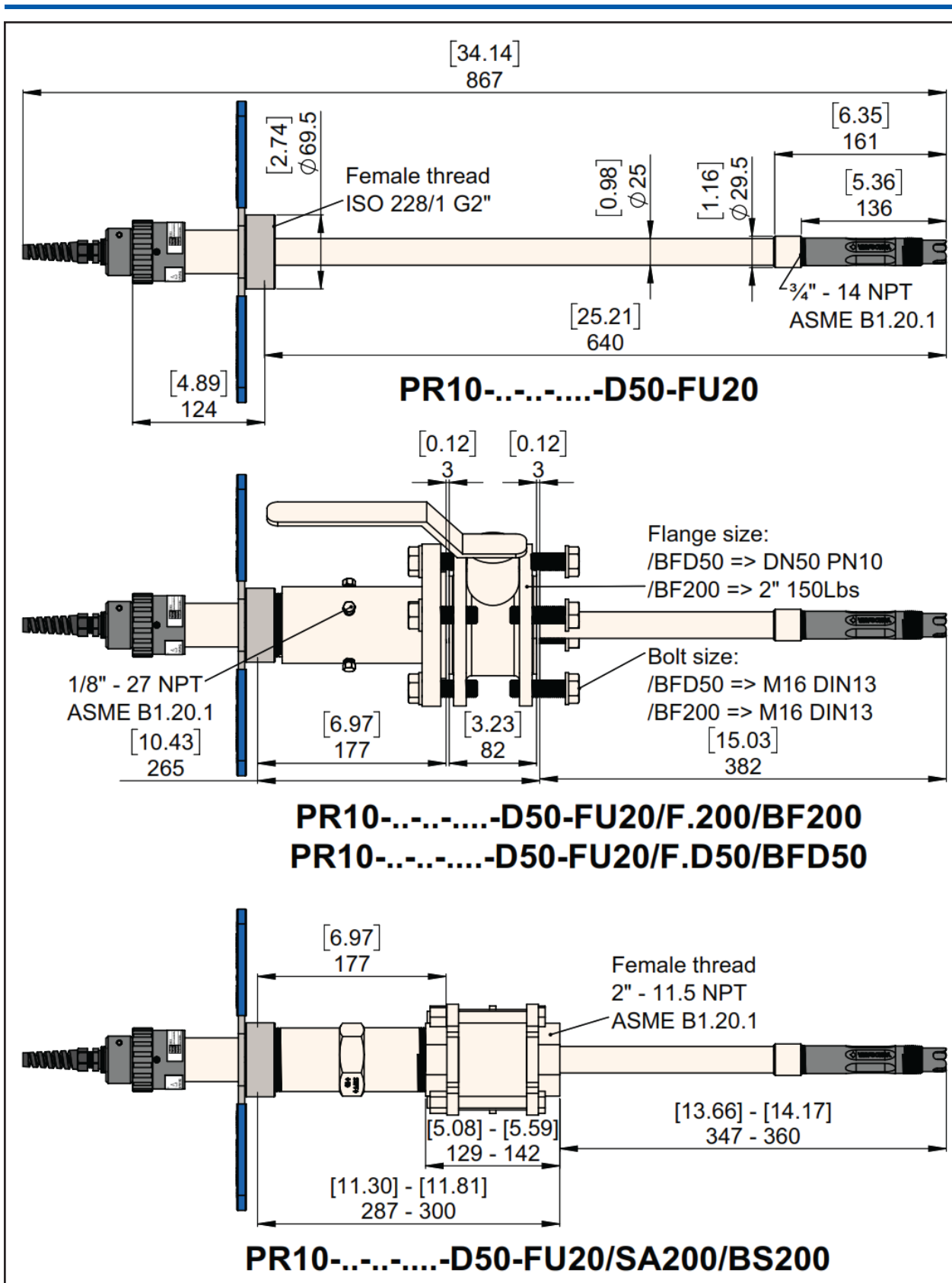


Figure 8: Dimensional drawing PR10...-D50 with mounted FU20 sensor - units in mm [inch]

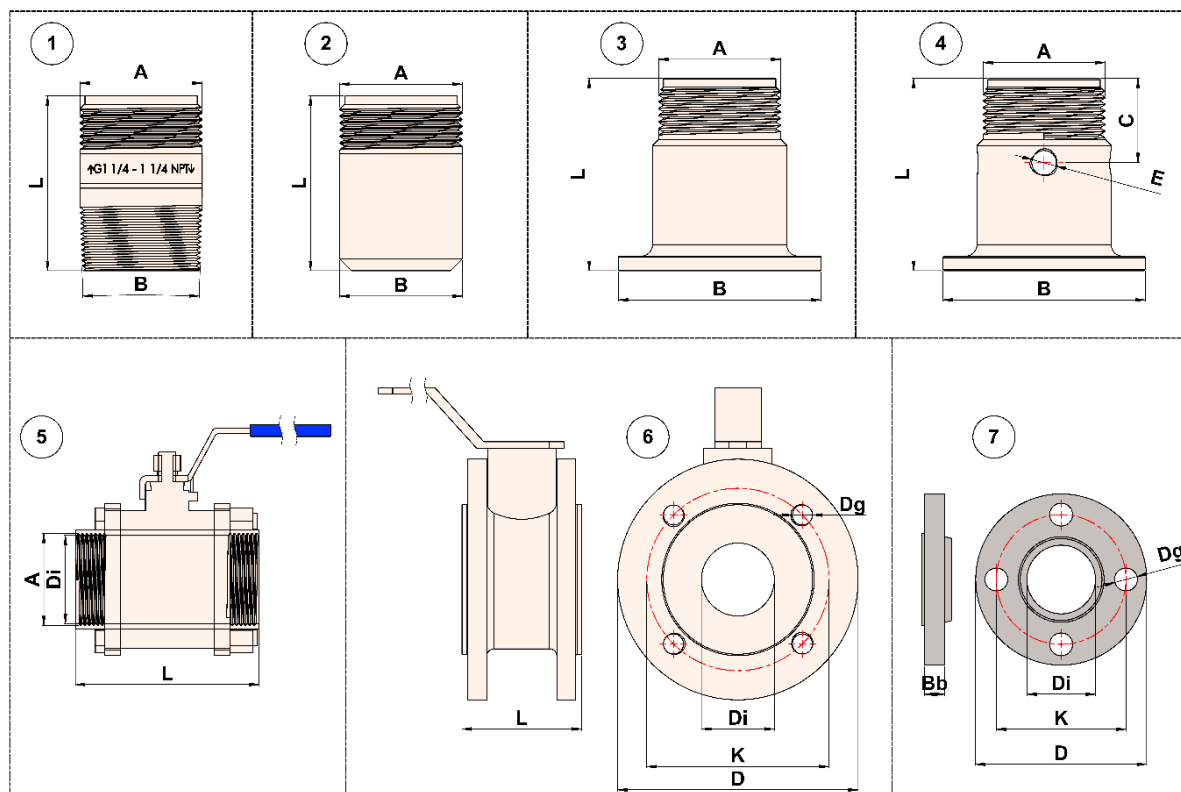


Figure 9: Dimensional drawing PR10 options

Table 4: Dimensions of options for PR10 - units in mm [inch]

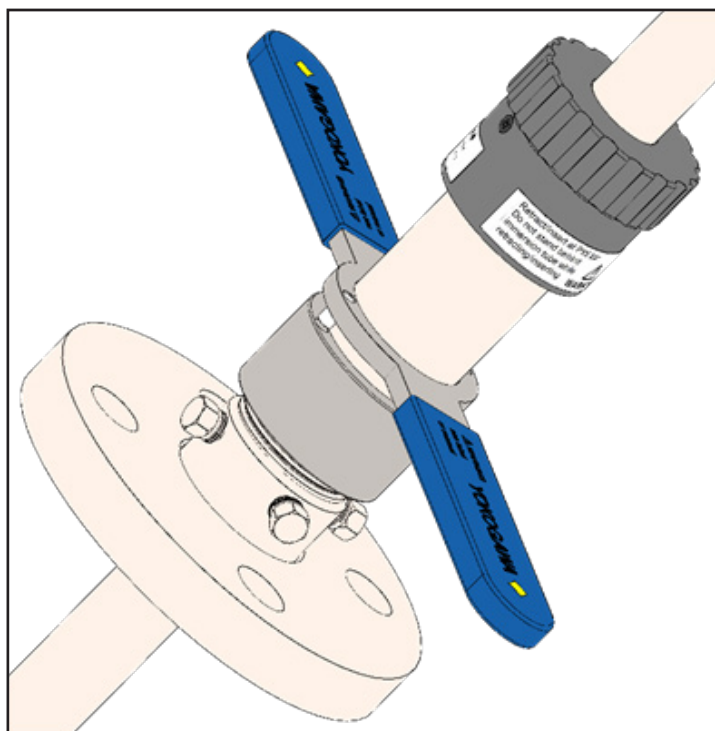
Option	Description	Fig.	Dimension										
			A	B	L	C	Bb	D	E	Di	Dg	K	
/SA125	ISO 228/1 G1¼ to 1¼" M-NPT	1	ISO 228/1 - G1¼	1¼" NPT	60 [2.4"]								
/SL125	Long ISO 228/1 G1¼ to 1¼" M-NPT	1	ISO 228/1 - G1¼	1¼" NPT	170 [6.7"]								
/FA125	Flange adapter drain 1¼" 150 lbs.	4, 7	ISO 228/1 - G1¼	69.5 [2.7"]	66 [2.6"]	29 [1.1"]	15.7 [0.6"]	117.3 [4.6"]	1/8" NPT	47 [1.9"]	15.7 [0.6"]	88.9 [3.5"]	
/FL125	Long flange adapter drain 1¼" 150 lbs.	4, 7	ISO 228/1 - G1¼	69.5 [2.7"]	170 [6.7"]	86 [3.4"]	15.7 [0.6"]	117.3 [4.6"]	1/8" NPT	47 [1.9"]	15.7 [0.6"]	88.9 [3.5"]	
/FN125	Flange adapter no drain 1¼" 150 lbs.	3, 7	ISO 228/1 - G1¼	69.5 [2.7"]	66 [2.6"]	29 [1.1"]	15.7 [0.6"]	117.3 [4.6"]		47 [1.9"]	15.7 [0.6"]	88.9 [3.5"]	
/FAD32	Flange adapter drain DN32	4, 7	ISO 228/1 - G1¼	69.5 [2.7"]	66 [2.6"]	29 [1.1"]	16 [0.6"]	140 [5.5"]	1/8" NPT	47 [1.9"]	18 [0.7"]	100 [3.9"]	
/FLD32	Long flange adapter drain DN32	4, 7	ISO 228/1 - G1¼	69.5 [2.7"]	170 [6.7"]	86 [3.4"]	16 [0.6"]	140 [5.5"]	1/8" NPT	47 [1.9"]	18 [0.7"]	100 [3.9"]	
/FND32	Flange adapter no drain DN32	3, 7	ISO 228/1 - G1¼	69.5 [2.7"]	66 [2.6"]	29 [1.1"]	16 [0.6"]	140 [5.5"]		47 [1.9"]	18 [0.7"]	100 [3.9"]	
/WA125	Straight weld-in adapter ISO 228/1 G1¼	2	ISO 228/1 - G1¼	42 [1.7"]	45 [1.8"]								
/BFD32	Ball-valve flanged DN32 PN10	6			60 [2.4"]			140 [5.5"]		32 [1.3"]	M16	100 [3.9"]	
/BF125	Ball-valve flanged 1¼" 150 lbs.	6			60 [2.4"]			118 [4.6"]		32 [1.3"]	M14	89 [3.5"]	
/BS125	Ball-valve screw-in 1¼" F-NPT	5	1¼" NPT		103 - 110 [4.1"-4.3"]					32 [1.3"]			

Table 5: Dimensions of options for PR10

Option	Description	Fig.	Dimension										
			A	B	L	C	Bb	D	E	Di	Dg	K	
/SA200	ISO 228/1 G2 to 2" M-NPT	1	ISO 228/1 - G2	2" NPT	58 [2.3"]								
/SL200	Long ISO 228/1 G2 to 2" M-NPT	1	ISO 228/1 - G2	2" NPT	177 [7"]								
/FA200	Flange adapter drain 2" 150 Lbs	4, 7	ISO 228/1 - G2	101 [4"]	77 [3"]	32 [1.3"]	20 [0.8"]	165 [6.5"]	1/8" NPT	73 [2.9"]	19 [0.7"]	120.7 [4.75"]	
/FL200	Long flange adapter drain 2" 150 Lbs	4, 7	ISO 228/1 - G2	101 [4"]	177 [7"]	86 [3.4"]	20 [0.8"]	165 [6.5"]	1/8" NPT	73 [2.9"]	19 [0.7"]	120.7 [4.75"]	
/FN200	Flange adapter no drain 2" 150 Lbs	3, 7	ISO 228/1 - G2	101 [4"]	70 [2.8"]	32 [1.3"]	20 [0.8"]	165 [6.5"]		73 [2.9"]	19 [0.7"]	120.7 [4.75"]	
/FAD50	Flange adapter drain DN50	4, 7	ISO 228/1 - G2	101 [4"]	77 [3"]	32 [1.3"]	20 [0.8"]	165 [6.5"]	1/8" NPT	73 [2.9"]	19 [0.7"]	125 [4.9"]	
/FLD50	Long flange adapter drain DN50	4, 7	ISO 228/1 - G2	101 [4"]	177 [7.0"]	86 [3.4"]	20 [0.8"]	165 [6.5"]	1/8" NPT	73 [2.9"]	19 [0.7"]	125 [4.9"]	
/FND50	Flange adapter no drain DN50	3, 7	ISO 228/1 - G2	101 [4"]	70 [2.8"]	32 [1.3"]	20 [0.8"]	165 [6.5"]		73 [2.9"]	19 [0.7"]	125 [4.9"]	
/BF200	Ball-valve flanged 2" 150 Lbs	6			82 [3.2"]			150 [5.9"]		50 [2"]	M16	121 [4.8"]	
/bfd50	Ball-valve flanged DN50 PN10	6			82 [3.2"]			165 [6.5"]		50 [2"]	M16	125 [4.9"]	
/BS200	Ball-valve screw-in 2" F-NPT	5	2" NPT		142 [5.6"]					50 [2"]			

Drain ports connection

The PR10 retractable fitting can be equipped with optional drain (or flush) ports on the flanged adapter. The drain ports are tapered 1/8" NPT female for small diameter connectors.

**Figure 10:** Flush port connection

■ Addendum 1: Installation options

Table 6: Installation options

	PR10-S-V-L5-D32-FU20	PR10-S-V-L5-D32-NNNN	PR10-S-V-L5-D32-PH12	PR10-S-V-L5-D32-PH13	PR10-S-V-L5-D32-SC4A	PR10-S-V-L5-D50-FU20	PR10-S-V-L5-D50-ISC4	PR10-S-V-L5-D50-NNNN	PR10-S-V-L5-D50-PH12	PR10-S-V-L5-D50-PH13	PR10-S-V-L5-D50-SC4A	PR10-T-V-L5-D32-NNNN	PR10-T-V-L5-D32-PH12	PR10-T-V-L5-D32-PH13	PR10-T-V-L5-D32-SC4A	PR10-T-V-L5-D50-ISC4	PR10-T-V-L5-D50-NNNN	PR10-T-V-L5-D50-PH12	PR10-T-V-L5-D50-PH13	PR10-T-V-L5-D50-SC4A
/SA125		X	X	X	X															
/SL125	X	O	O	O	O															
/SA200							X	X	X	X	X									
/SL200						X	O	O	O	O	O									
/FA125		X	X	X	X															
/FN125		X	X	X	X															
/FL125	X	O	O	O	O															
/FA200							X	X	X	X	X									
/FN200							X	X	X	X	X									
/FL200						X	O	O	O	O	O									
/FAD32		X	X	X	X															
/FND32		X	X	X	X															
/FLD32	X	O	O	O	O															
/FAD50							X	X	X	X	X									
/FND50							X	X	X	X	X									
/FLD50						X	O	O	O	O	O									
/WA125		X	X	X	X															
/BF125	X	X	X	X	X															
/BF200						X	X	X	X	X	X									
/BFD32	X	X	X	X	X															
/BFD50						X	X	X	X	X	X									
/BS125	X	X	X	X	X															
/BS200						X	X	X	X	X	X									
/M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

O = technical possible but not recommendable due to decrease insertion depth and large process volume.

■ Addendum 2: Available model codes, configurations and spare parts

Table 7: Available model codes

MS-code	Options
PR10-S-V-L5-D32-PH12	PR10/SA125
PR10-S-V-L5-D32-PH13	PR10/SL125
PR10-S-V-L5-D32-SC4A	PR10/SA200
PR10-S-V-L5-D50-ISC4	PR10/SL200
PR10-S-V-L5-D50-SC4A	PR10/FA125
PR10-S-V-L5-D32-NNNN	PR10/FL125
PR10-S-V-L5-D50-NNNN	PR10/FN125
PR10-S-V-L5-D50-PH12	PR10/FA200
PR10-S-V-L5-D50-PH13	PR10/FL200
PR10-S-V-L5-D32-FU20	PR10/FAD50
PR10-S-V-L5-D50-FU20	PR10/FLD50
PR10-T-V-L5-D32-PH12	PR10/FN200
PR10-T-V-L5-D32-PH13	PR10/FND50
PR10-T-V-L5-D32-SC4A	PR10/FAD32
PR10-T-V-L5-D50-ISC4	PR10/FLD32
PR10-T-V-L5-D50-SC4A	PR10/FND32
PR10-T-V-L5-D32-NNNN	PR10/WA125
PR10-T-V-L5-D50-NNNN	PR10/BF125
PR10-T-V-L5-D50-PH12	PR10/BF200
PR10-T-V-L5-D50-PH13	PR10/BFD32
	PR10/BFD50
	PR10/BS125
	PR10/BS200
	PR10/M

Table 8: Overview of all possible configurations

PR10	-V	-T	-L5	-D32	-D50	-PH12	-PH13	-SC4A	-ISC4	-NNNN	-FU20
-S	X	X	X	X	X	X	X	X	X	X	X
-T	X	X	X	X	X	X	X	X	X	X	

Note: When choosing a Ball valve, it is required to choose a flange adapter or screw-in adapter (see table 2).

Table 9: Overview of all possible adapters with the PR10

		Ball valve						
		/BF125	/BF200	/BFD32	/BFD50	/BS125	/BS200	/M
Screw-in adapter	/SA125					X		X
	/SL125					X		X
	/SA200						X	X
	/SL200						X	X
Flange adapter	/FA125	X						X
	/FN125	X						X
	/FL125	X						X
	/FA200		X					X
	/FN200		X					X
	/FL200		X					X
	/FAD32			X				X
	/FND32			X				X
	/FLD32			X				X
	/FAD50				X			X
	/FND50				X			X
	/FLD50				X			X
	Weld-in adapter	/WA125					X	
	/M	X	X	X	X	X	X	

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