

General Specifications

Model PR10
pH
Retractable fitting

On-line measurements always present extra challenges compared to at-line measurements. For example when maintenance needs to be done. Applications where the sensors has to be removed without interruptions or shut-downs the PR10 is especially suitable. Without any special tools the PR10 can be retracted safely from the process up to 5 bar.

For easy of use optional flush ports are available. In the retracted position the sensor can be kept moist, cleaned or even calibrated. This can all be done without process interruption or disassembly of the armature.

The model PR10 can be adapted for use with pH electrodes with PG13,5 connection by changing only one part of the retractable assembly. Also Yokogawa's FU20 sensors with 3/4 " NPT thread can be used with optional adapters.

Features

- One model for pH, conductivity and inductive conductivity sensors
- Integrated protection cage
- Build in scraper to avoid contamination of the fitting
- Usable for 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 moist, cleaning and calibration
- Available in Stainless Steel and with Titanium shaft cage and adapters for more harsh applications



General Specifications

A. Wetted materials

- For sensor check Instruction Manual
- Stainless steel AISI 316L / Titanium
- O-ring seals: Viton 70° shore

B. Non-wetted materials

- For sensor check Instruction Manual
- Stainless steel AISI 316, 304
- Polypropylene glass filled

C. Insertion length

- Ref. mechanical drawing Figure 2.

D. Pressure/temperature ratings

- Static conditions: see Figure 1.
- Operating conditions during extraction and insertion max. 500kPa, max. 100°C

E. Flange ratings:

- DIN flange DN32 PN10
- ANSI flange 1¼" 150 lbs

F. Specifications of the sensor used

- Please check sensor specifications

G. Weight

- Approx 2.5 kg excl. ball valve

H. Specifications of the sensor used

YPA pH sensors

- All SC21D sensors (PG13,5 connector) and can be used with the standard spare part cable (see table 1).
- All sensors (YEF connector) spare part cable is needed to fit in the PR10.
- Maximum sensor length is 120 mm
- FU20(f) sensor of YPA in fitting with FU20 option
- pH sensor with 3/4" NPT thread and variopin connector (FU20-like)

Competitor pH sensors

- All pH sensors with PG13,5, VP or Smart connector with a max sensor length of 120 mm can be used (see table 1 and 2 for yokogawa sensors).

Table 1 Specifications Combined pH Electrodes (non-flow)

Type	Membrane	Resistance in MΩ/25°C	pH-range	Temp. range (°C)	Pressure range kPa	Reference liquid	Reference system	Diaphragm	Flow
SC21(D)-AGP24	Universal pH-glass bulb	50 - 100	0 - 14	0 - 80	1-500	3.3 m. KCl Thickened	Ag/AgCl (wire) Silver-silverchloride	Porous PTFE	0
SC21(D)-ASP23	Low ohmic pH-glass bulb	40 - 100	0 - 10	0 - 80	1-500	3.3 m. KCl Thickened	Ag/AgCl (wire) Silver-silverchloride	Porous PTFE	0
SC21(D)-AAP26	Chem. res. pH-glass bulb steam-sterillisable 3/4 bulb	250 - 400	0 - 14	0 - 110	1-500	Oversaturated KCl thickened	Ag/AgCl (wire) Silver-silverchloride	Porous PTFE	0
SC21(D)-ALP26	Chem. res. pH-glass dome	500 - 900	0 - 14	10 - 120	1-500	Oversaturated KCl thickened	Ag/AgCl (wire) Silver-silverchloride	Porous PTFE	0
SC21(D)-AGP26	Universal pH-glass bulb	120 - 200	0 - 14	-10-100	1-500	Oversaturated KCl thickened	Ag/AgCl (wire) Silver-silverchloride	Porous PTFE	0
SC21(C)-AGP64	Universal pH-glass bulb	50 - 100	0 - 14	0 - 80	1-500	3.3 m. KCl Thickened	Ag/AgCl (wire) Silver-silverchloride	Porous PTFE	0
SC24V-ALN26	Chem.res. pH glass dome	400-1000	4-14	0-120	0-1000	Ag/AgCl	Salt sensitive glass	-	0
SC25V-AGP25	Universal pH- glass bulb	225	0-14	-10 - 80	0- 1000	KCl saturated with Ag+-trap	Ag/AgCl double junction	-	0
SC25V-ALP25	Chem.res. pH glass bulb	600	0-14	15 - 130	0-1000	KCl saturated with Ag+-trap	Ag/AgCl double junction	-	0

Note 1: with D connector No Temperature compensation is possible

Note 2: with YEF connector PR20 cable is needed with integral T sensor K1520LP, K1520LQ, K1520LS and K1520LT.

Table 2 Specifications Redox Electrodes

Type	Temperature range	Process pressure	Metal surface
SM29-PT9	0 - 130°C	max. 1000 kPa	Platinum
SC29C(D)-PTP29	-10 - 100°C	max. 500 kPa	Platinum
SC29-PTG29	0 - 100°C	max. 1000 kPa	Platinum

Note 1: with D connector No T comp. is possible

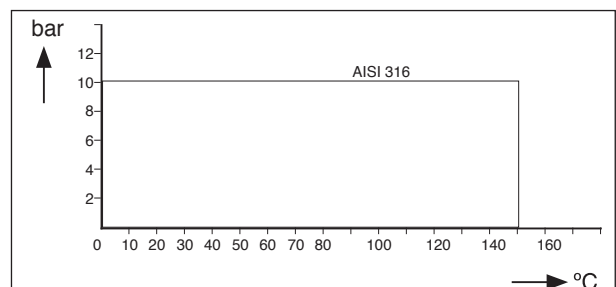


FIG. 1 Pressure / Temperature graphic

Table 3 Model- and suffix codes

Model	Suffix	Options	Description
PR10			Retractable fitting general purpose
Material fitting	-S -T		Stainless steel Titanium (tube and sensor holder only)
Material O-rings	-V		Viton
Tube length	-L5		Tube length 0.5 meter
Connection	-D32 -D50		DN32 / 1¼" DN50 / 2"
Measuring sensor	-PH12 -PH13 -SC4A -ISC4 -NNNN -FU20		For 12mm pH sensors Y-cap For 12mm pH sensors PG13.5 cap For SC4A For ISC40 No parameter specification For FU20 / FU20F → Only for -S
Adapter screw-in Only available in Stainless Steel		/SA125 /SL125 /SA200 /SL200	ISO 228/1 G1¼ to 1¼" M-NPT Long ISO 228/1 G1¼ to 1¼" M-NPT ISO 228/1 G2 to 2" M-NPT Long ISO 228/1 G2 to 2" M-NPT
Flange adapter Only available in Stainless Steel		/FA125 /FN125 /FL125 /FA200 /FN200 /FL200 /FAD32 /FND32 /FAD50 /FND50	Flange adapter drain 1¼" 150 Lbs Flange adapter no drain 1¼" 150 Lbs Long flange adapter drain 1¼" 150 Lbs Flange adapter drain 2" 150 Lbs Flange adapter no drain 2" 150 Lbs Long flange adapter drain 2" 150 Lbs Flange adapter drain DN32 Flange adapter no drain DN32 Flange adapter drain DN50 Flange adapter no drain DN50
Adapter weld-in Only available in Stainless Steel		/WA125 /WA200	Straight weld-in adapter ISO 228/1 G1¼ Straight weld-in adapter ISO 228/1 G2
Ball-valves Only available in Stainless Steel		/BF125 /BF200 /BFD32 /BFD50 /BS125 /BS200	Ball-valve flanged 1¼" 150 Lbs Ball-valve flanged 2" 150 Lbs Ball-valve flanged DN32 PN10 Ball-valve flanged DN50 PN10 Ball-valve screw-in 1¼" F-NPT Ball-valve screw-in 2" F-NPT
Certificates		/M	Material certificate 3.1 according to NEN-EN 10024 (on wetted parts).

*With Ball-valves flange adapters or screw-in adapters are necessary.

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Dimensions

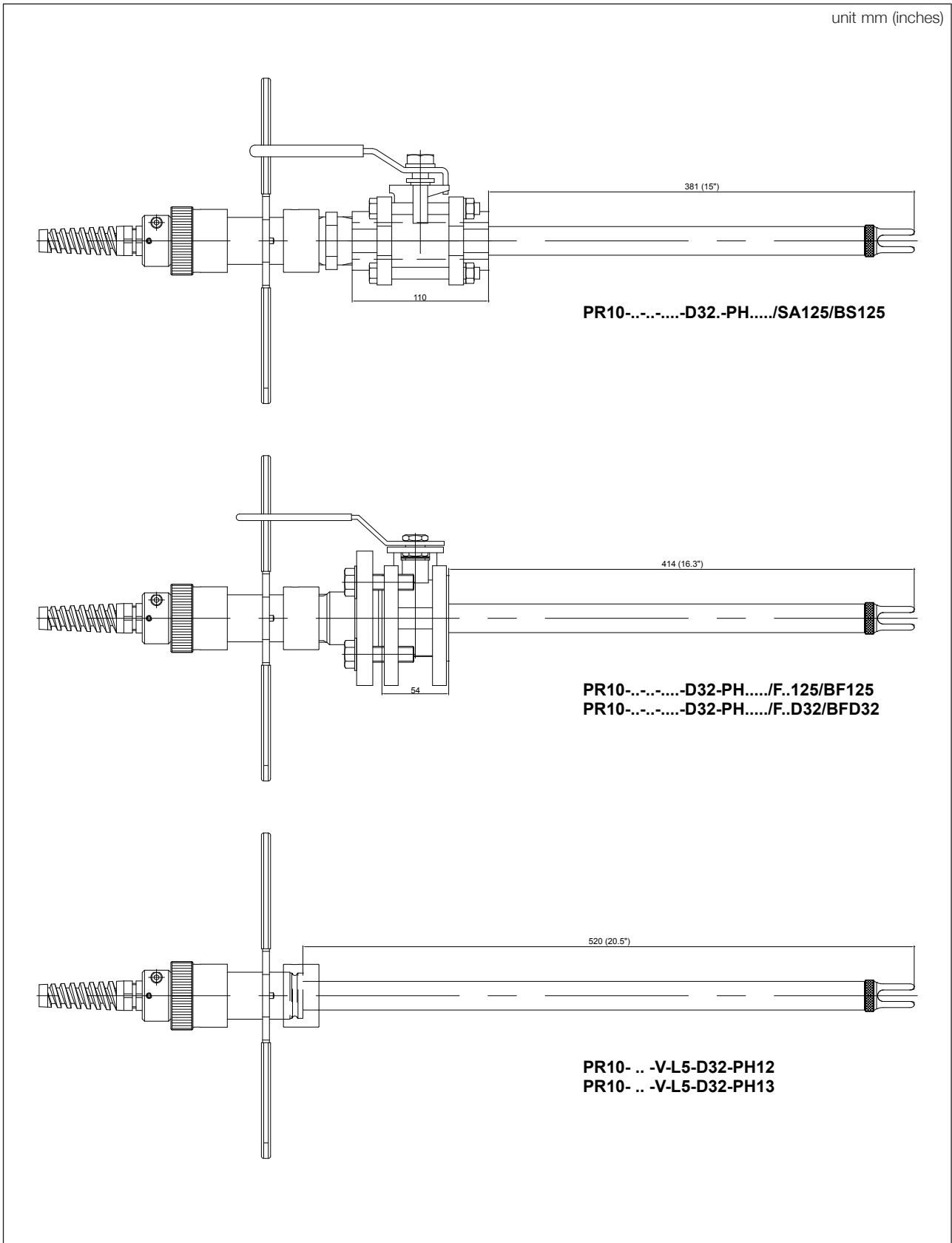


FIG. 2 Dimensional drawing PR10...-D32 with mounted pH12 + pH13 sensor

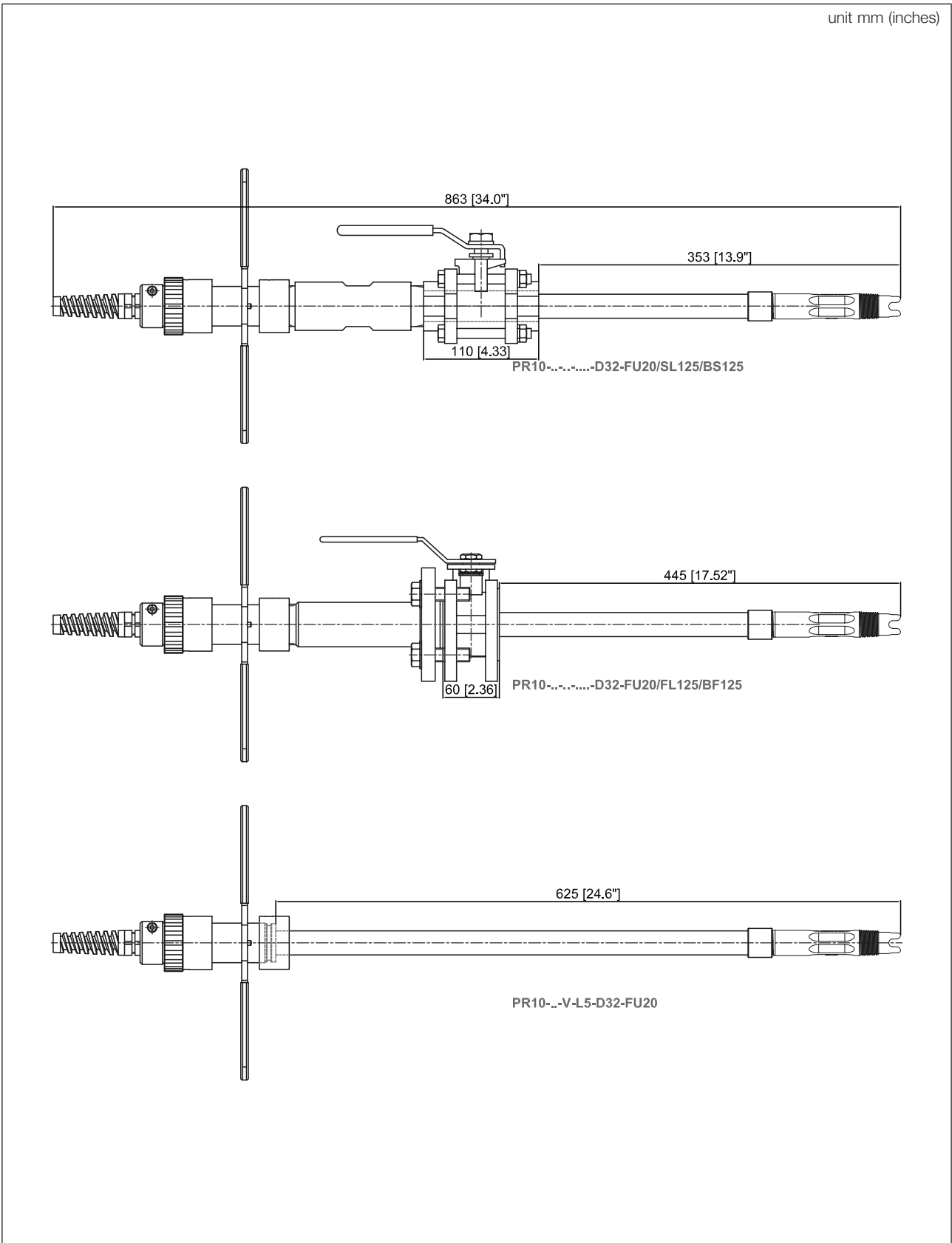


FIG. 3 Dimensional drawing PR10...-D32 with mounted FU20 sensor

Dimensions

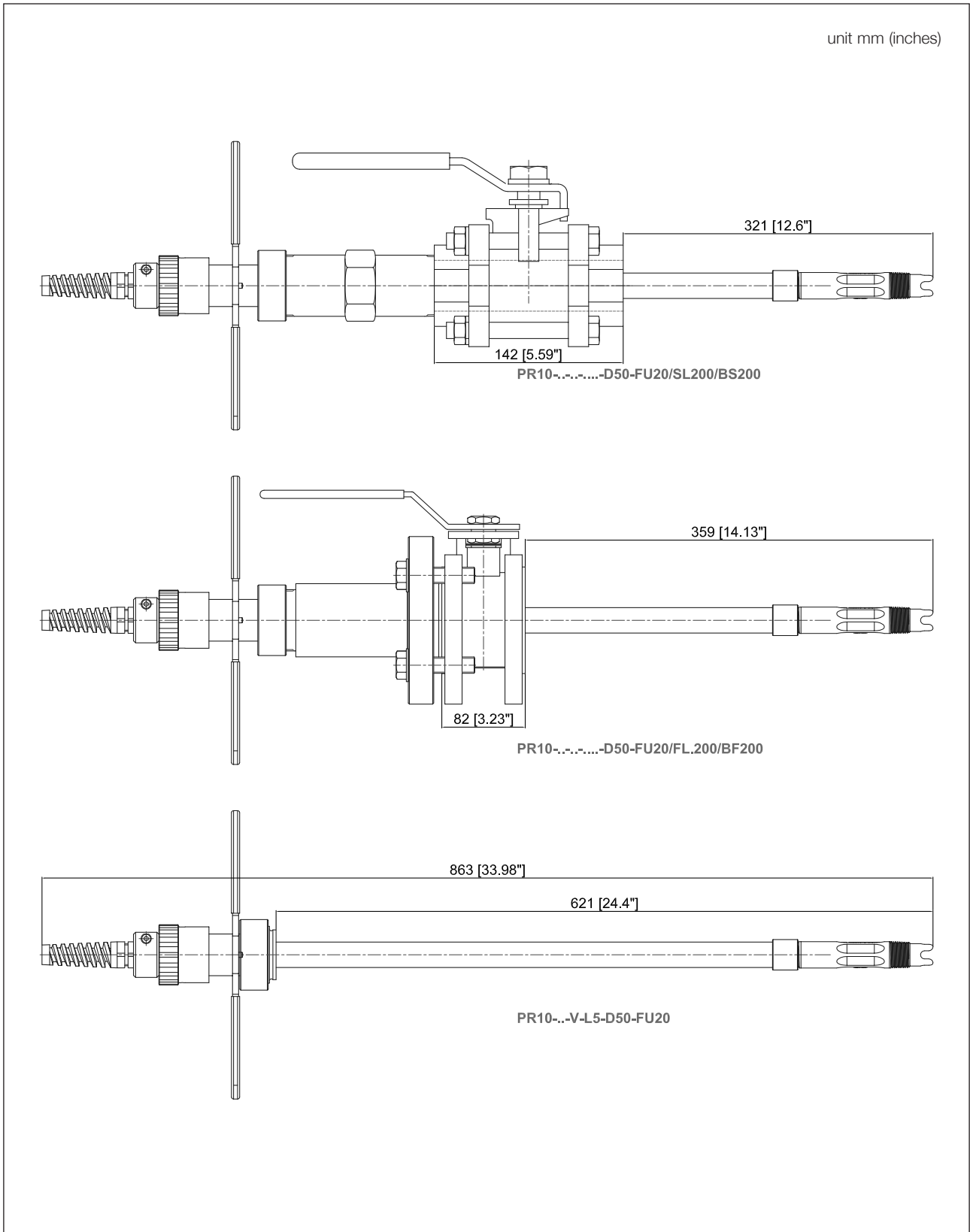


FIG. 4 Dimensional drawing PR10...-D50 with mounted FU20 sensor

Options PR10

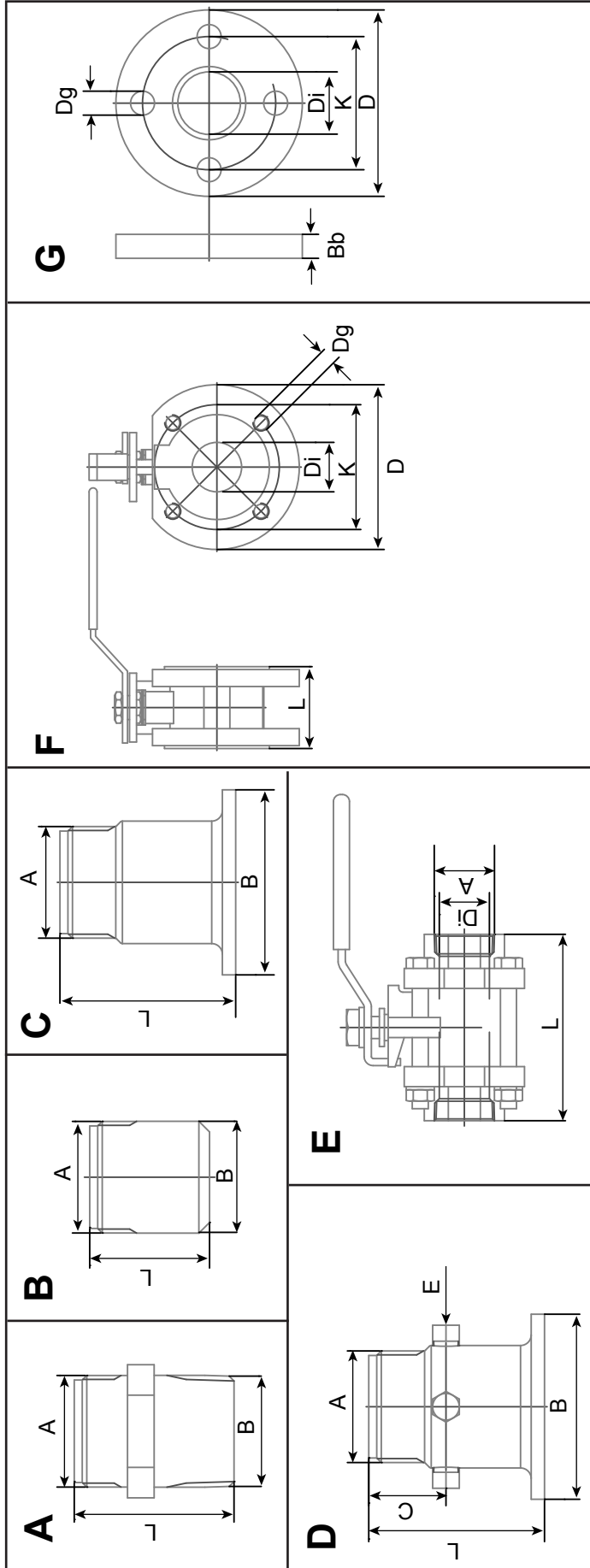


FIG. 5 Dimensions of the PR10 options

Table 4 Dimensions options in mm (inches)

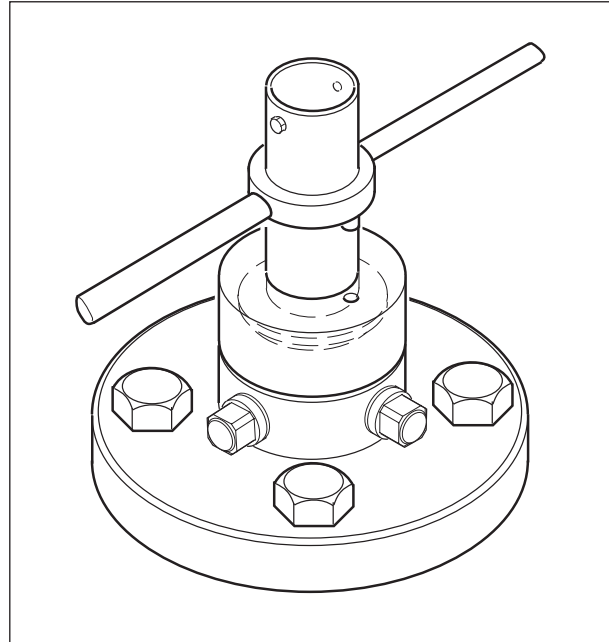
Option	Description	Fig.	A	B	L	C	Bb	D	E	Di	Dg	K
/SA125	ISO 228/1 G1½ to 1¼" M-NPT	A	ISO 228/1 - G1½	1¼" NPT	60 (2.4")							
/SL125	Long ISO 228/1 G1½ to 1¼" M-NPT	A	ISO 228/1 - G1½	1¼" NPT	170 (6.7")							
/FA125	Flange adapter drain 1¼" 150 Lbs	D, G	ISO 228/1 - G1½	69.5 (2.7")	66 (2.6")	29 (1.1")	15.7 (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	D, G	ISO 228/1 - G1½	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	C, G	ISO 228/1 - G1½	69.5 (2.7")	66 (2.6")	29 (1.1")	16 (0.6")	117.3 (4.6")		47 (1.9")	15.7 (0.6")	88.9 (3.5")
/FAD32	Flange adapter drain DN32	D, G	ISO 228/1 - G1½	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")
/FND32	Flange adapter no drain DN32	C, G	ISO 228/1 - G1½	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 G1½	B	ISO 228/1 - G1½	42 (1.7")	45 (1.8")			140 (5.5")		32 (1.3")	M16	100 (3.9")
/BFD32	Bell-valve flanged DN32 PN10	F			60 (2.4")			118 (4.6")		32 (1.3")	M14	89 (3.5")
/BF125	Bell-valve flanged 1¼" 150 Lbs	F			60 (2.4")					32 (1.3")		
/BS125	Bell-valve screw-in 1¼" F-NPT	E	1¼" NPT		110 (4.3")							
/SA200	ISO 228/1 G2 to 2" M-NPT	A	ISO 228/1 - G2	2" NPT	58 (2.3")							
/SL200	Long ISO 228/1 G2 to 2" M-NPT	A	ISO 228/1 - G2	2" NPT	177 (7")							
/FA200	Flange adapter drain 2" 150 Lbs	D, G	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	D, G	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	C, G	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	D, G	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")
/FND50	Flange adapter no drain DN50	C, G	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")
/WA200	Straight weld-in adapter ISO 228/1 G2	B	ISO 228/1 - G2	49 (1.9")	45 (1.8")			150 (5.9")		50 (2")	M16	121 (4.8")
/BFD200	Bell-valve flanged 2" 150 Lbs	F			82 (3.2")			165 (6.5")		50 (2")	M16	125 (4.9")
/BF200	Bell-valve flanged DN50 PN10	F			82 (3.2")					50 (2")	M16	125 (4.9")
/BS200	Bell-valve screw-in 2" F-NPT	E	2" NPT		142 (5.6")							

Table 5 Spareparts

Part no.	Description
K1520LP	Cable retractable fitting 5M PT100
K1520LQ	Cable retractable fitting 5M PT1000
K1520LS	Cable retractable fitting 10M PT100
K1520LT	Cable retractable fitting 10M PT1000
K1525 BZ	Cable gland (5 pcs)
K1525AA	Outer tube SS
K1525AB	Sensor holder PG13.5 SS
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
K1525BE	Set M16 bolt & washer (8 pcs)
K1525BF	Set M14 bolt & washer (8 pcs)
K1525BG	Gaskets ball valves - D50
K1525BH	Gaskets ball valves - D32
K1525BJ	Gaskets ball valves - D50 + 2"
K1525BK	Gaskets ball valves - 1/4"
K1525BX	OUTER TUBE SS FU20
K1525BZ	Cable gland (5 pcs)
K1525CA	Outer tube titanium
K1525CB	Sensor holder PG13.5 Titanium
K1525CP	Adapter SC4a-ISC40 Titanium
K1525YA	PR10/SA125
K1525YB	PR10/FA125
K1525YC	PR10/FN125
K1525YD	PR10/FA200
K1525YE	PR10/FN200
K1525YF	PR10/FAD32
K1525YG	PR10/FND32
K1525YH	PR10/WA125
K1525YJ	PR10/WA200
K1525YK	PR10/BF125
K1525YL	PR10/BF200
K1525YM	PR10/BFD32
K1525YN	PR10/BF50
K1525YP	PR10/BS125
K1525YR	PR10/FAD50
K1525YS	PR10/FND50
K1525YT	PR10/SL125
K1525YU	PR10/FL125
K1525YV	PR10/SL200
K1525YW	PR10/FL200
K1541EM	Adapter 2" NPT - G2SS

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.

**FIG. 6 Drain Port Connection**

	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	X	X	X	X															
/SA200						X	X	X	X	X	X									
/SL200	X					X	X	X	X	X	X									
/FA125		X	X	X	X															
/FN125		X	X	X	X															
/FL125	X	X	X	X	X															
/FA200						X	X	X	X	X	X									
/FN200						X	X	X	X	X	X									
/FL200	X					X	X	X	X	X	X									
/FAD32		X	X	X	X															
/FND32		X	X	X	X															
/FAD50						X	X	X	X	X	X									
/FND50						X	X	X	X	X	X									
/WA125	X	X	X	X	X															
/WA200						X	X	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

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