

General Specifications

Model PR20
Retractable fitting
for combined pH/Reference electrode

pH

With pH measurements in chemical processes, a combined pH/ reference electrode is usually mounted in a by-pass flow fitting, a flanged immersion fitting or an on-line retractable fitting. Applications for the PR20 retractable fitting can be found in all processes where the pH sensor should be removed without interrupting its continuity (e.g. pulp slurries, pressurised systems). The Yokogawa design ensures the safe retraction of the electrode from the process without a shut-down.

The optional adapters make selection of a suitable construction easy. Both flanged and tapered connections are available in DIN or ANSI versions. The standardised connection (1 1/4 inch BSPP) is used for weld-in sockets as well.

When inserted, the probe can be locked at any position (between the minimum and maximum) with a locking ring. In addition to that optional flush ports make cleaning without complete disassembly possible.

The choice between stainless steel and titanium as construction materials, make use in many applications possible.

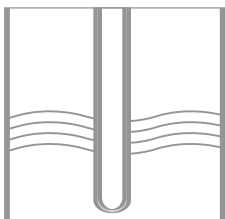
Yokogawa recommends to use the combined electrodes: SC21-AAP26, SC21-AGP26, SC21-ALP26, SC29-PTP29. For safety reasons Yokogawa recommends to use a flanged ball-valve.

Features

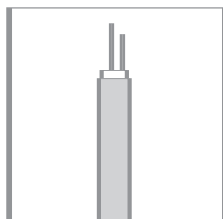
- Designed to make safe retraction under process pressure possible by blocking the ball-valve handle.
- Adjustable insertion depth for optimal positioning in the process.
- Integrated temperature sensor (Pt100 or Pt1000) and liquid earthing.
- Easy replacement of the combined pH electrode.
- Damped probe retraction by o-ring friction with pressurized systems.
- Adaptable to most installations by a range of options.
- Optional flush ports for cleaning or calibration purposes.
- Compatible with Yokogawa sensor check.



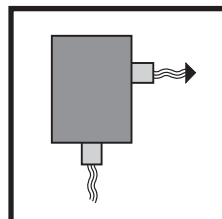
System Configuration



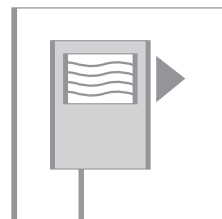
Sensors



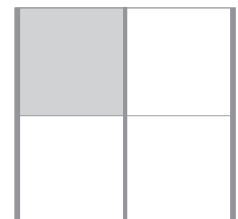
Cables



Fittings



Transmitters



Accessories

Specifications

a. Materials:	Model PR20-S (Stainless steel)	Model PR20-T (Titanium grade)
Wetted parts - Probe - O-ring seals	Stainless steel AISI 316l Viton 70° shore	Titanium Viton 70° shore

Non-wetted parts
- Stainless steel (AISI 316l) and polyphenylene sulphide (PPS)

b. Insertion length:

The dimensional drawing indicates the maximum insertion length for both specified probe lengths.

c. Pressure / temperature ratings:

Static conditions : 2 MPa at 20°C
: 500 kPa at 125°C

Operating conditions maintenance : max. 500 kPa
: max. 100°C

Flange ratings : DIN flange DN25 PN16
: ANSI flange 1" 150 lbs

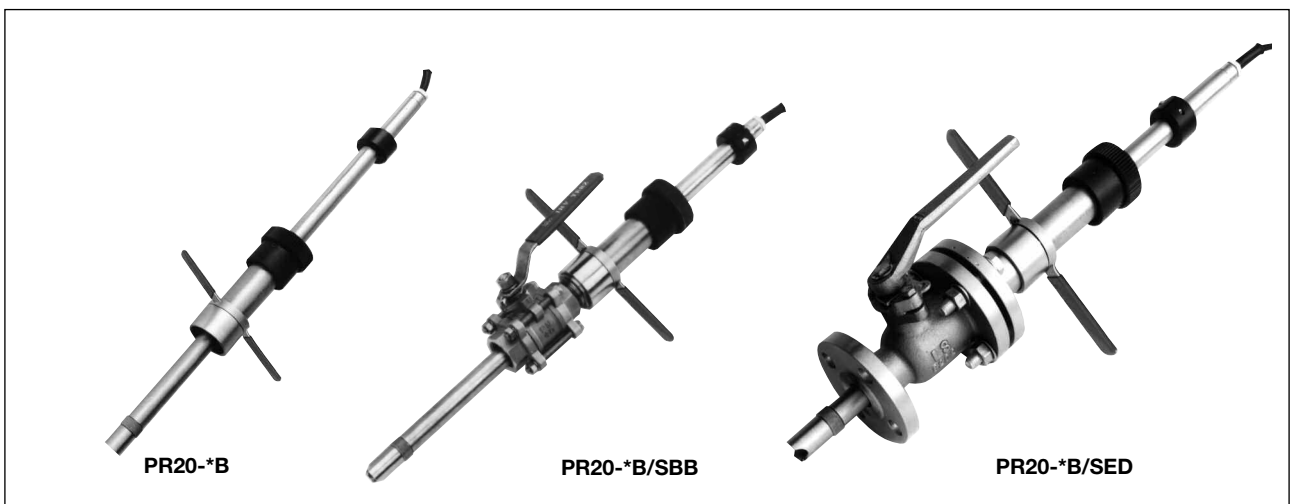
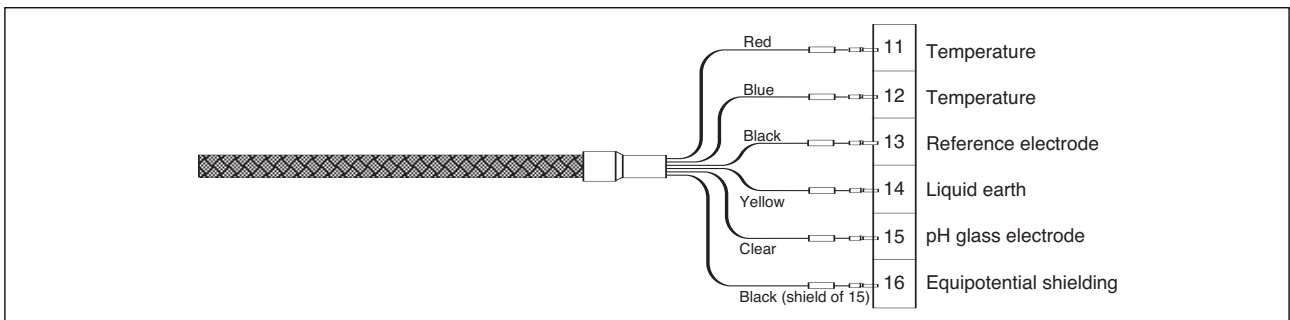
Specifications of the sensor used:

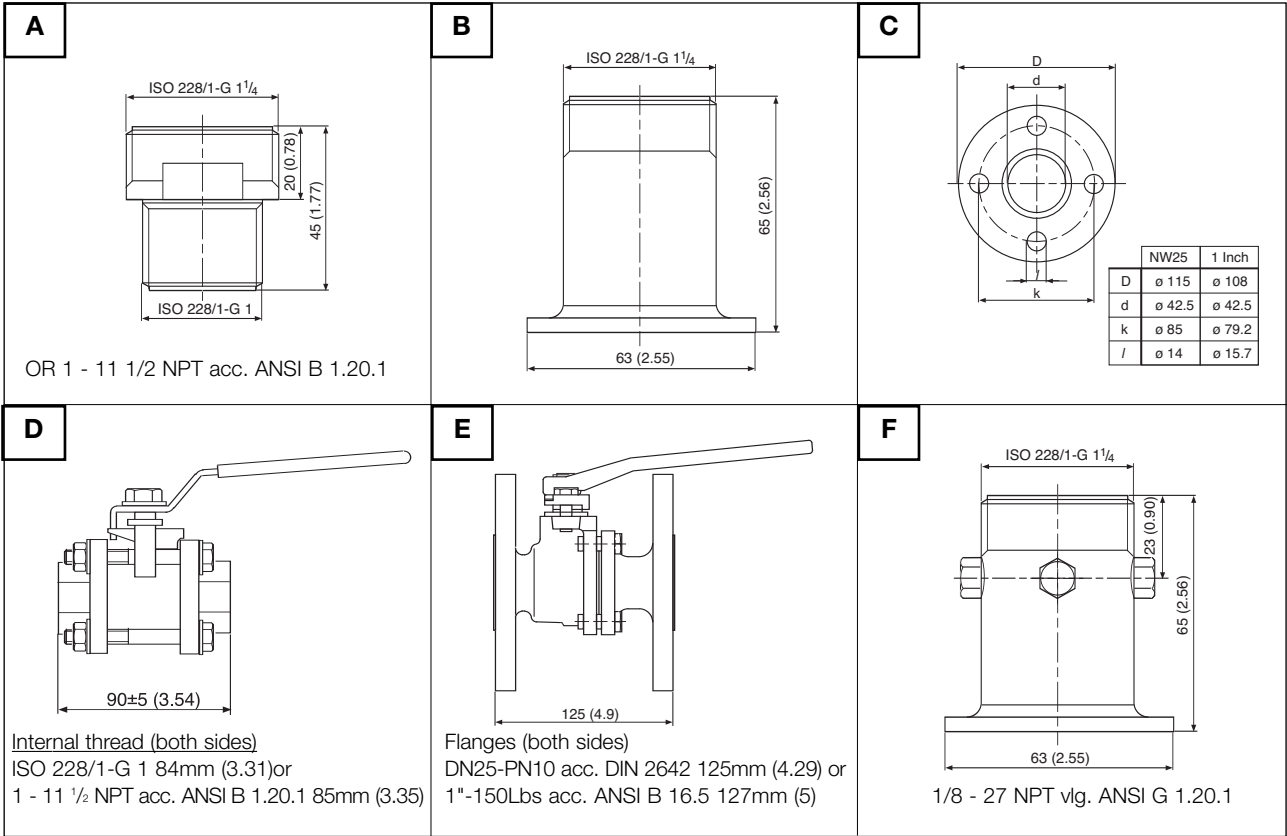
- SC21-AGP24 1 to 500 kPa at 0 to 80°C, pH 2 to 14 (general purpose, ball membrane)
- SC21-AAP26 1 to 500 kPa at 0 to 110°C, pH 2 to 14 (high temperature, ball membrane)
- SC21-AGP26 1 to 500 kPa at 0 to 80°C, pH 2 to 14 (general purpose, heavy duty membrane)
- SC21-ALP26 1 to 500 kPa at 0 to 120°C, pH 2 to 14 (high temperature, heavy duty membrane)

Weight:

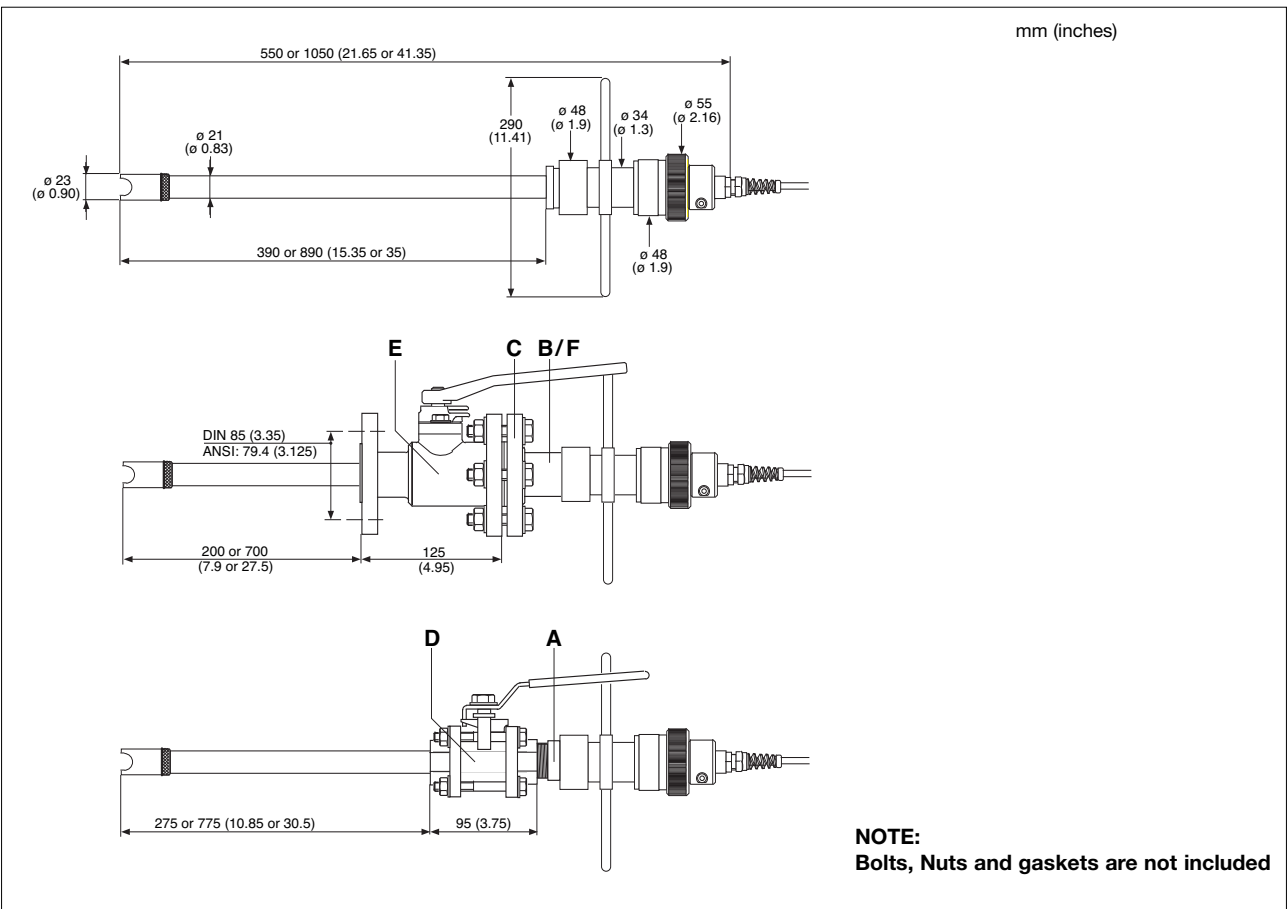
Approx 2.5 kg. (stainless steel version without ball-valve)

Wiring Diagram





External Dimensions



Modelcode Retractable Fitting for pH Measurement

Model	Suffix	Option	Description code
PR20			Retractable fitting 1 1/4" BSP-female
Material	-S		Stainless steel (AISI 316)
	-T		Titanium
Probe length	-05		5 dm (*)
	-10		10 dm
Cable length	-05		5 m
	-10		10 m
Temperature sensor	-T1		Pt1000
	-T2		Pt100
Style	*B		Style Code
Adapters:	/□□□		(see separate table)
Certificates:	/M		Material certificate 3.1 according to EN10024 (on wetted parts)
	/T		Test certificate for hydrostatic pressure test (2 MPa at ambient temperature)

pH electrode used for this fitting: SC21-AAP26 / SC21-AGP24 / SC21-AGP26

* **Note:** The insertion depth of the probe is given in the dimensional drawing.

Table 1. Titanium Ball valves

Model	Option	Description
BV20		Titanium ball valve 1" (25 mm)
	/TBB	Ball valve Rc1" female + adapter
	/TNN	Ball valve 1" NPT female + adapter
	/TDD	Ball valve DN25 PN16 + adapter
	/TUU	Ball valve ANSI 1"-150lbs + adapter
	/TED	Ball valve DN25 PN16 + adapter (flush ports)
	/TVU	Ball valve ANSI 1"-150lbs + adapter (flush ports)

Adapter	Option	Code	
Options	AISI 316	Titanium	Drawing
Adapters only			
Rc1"-male	/SBS	/TBS	A
1" NPT-male	/SNS	/TNS	A
DIN flange DN25 PN16	/SDS	/TDS	B, C
ANSI flange 1" 150 lbs	/SUS	/TUS	B, C
Adapters and ball valves			
Rc1"-female	/SBB	/TBB*	} A, D
1" NPT-female	/SNN	/TNN*	
DIN flange DN25 PN16	/SDD	/TDD*	} B, C, E
ANSI flange 1" 150 lbs	/SUU	/TUU*	
Adapters with flush ports			
DIN flange DN 25 PN16	/SES	/TES	F, C
ANSI flange 1" 150 lbs	/SVS	/TVS	
Adapters with flush ports and ball valves			
DIN flange DN25 PN16	/SED	/TED*	} F, C, E
ANSI flange 1" 150 lbs	/SVU	/TVU*	
Weld in adapters			
Straight welding	/SWR	-	
Angled at 15 degrees	/SWA	-	

* **Note:** The titanium ball valve options must be ordered as a separate item, example: BV20/TBB

NOTE: Bolts, Nuts and gaskets are not included

Spare Parts PR20

Part no.	Description	Part no.	Description	Part no.	Description
K1500AG	O-rings viton 29.74x3.53 (5)	K1520KE	Electrode holder TI for PR20	K1522VE	/SES for PR20/PR4A
K1500AH	O-ring Kalrez 29.74x3.53	K1520KF	Position clip assy, retr holder	K1522VF	/SVS for PR20/PR4A
K1500AK	O-rings EPDM 29.74x3.53 (5)	K1520LP	Cable 5m, PT100, for PR20	K1522VG	/SBB for PR20/PR4A
K1500BE	O-rings viton, 15.6x1.78 (10x)	K1520LQ	Cable 5m, PT1000, for PR20	K1522VH	/SNN for PR20/PR4A
K1500BZ	O-rings Viton 11x3 (6Pcs)51250	K1520LS	Cable 10m, PT100, for PR20	K1522VJ	/SDD for PR20/PR4A
K1500FN	O-ring set EPDM for PR20	K1520LT	Cable 10m, PT1000, for PR20	K1522VK	/SUU for PR20/PR4A
K1500FP	O-rings (2) KALREZ 20.22x3.53, PR20	K1520TA	Clamping set SS, retr. holder	K1522VL	/SED for PR20/PR4A
K1500FQ	O-ring set KALREZ/Viton for PR20	K1520TF	Nut for PR20/PR4A	K1522VM	/SVU for PR20/PR4A
K1500FX	O-rings Sil 70 29.74x3.53 (5)	K1520TK	Key for retr. holders	K1522VN	/TBS for PR20/PR4A
K1520AW	Cable gland for PR20	K1520TN	Outer tube 0,5m SS, PR20/PR4A	K1522VP	/TNS for PR20/PR4A
K1520AX	O-ring set-1 viton, PR20	K1520UB	Clamping set Ti, retr. holder	K1522VQ	/TDS for PR20/PR4A
K1520AY	O-ring set-2 viton, PR20/PR4A	K1520UF	Outer tube 0,5m Ti, PR20/PR4A	K1522VR	/TUS for PR20/PR4A
K1520AZ	Bush for PR20	K1520UH	Outer tube 1,0m SS, PR20/PR4A	K1522VS	/TES for PR20/PR4A
K1520DZ	Adapter 1"NPT-male, SS	K1520UJ	Outer tube 1,0m Ti, PR20/PR4A	K1522VT	/TVS for PR20/PR4A
K1520EJ	Straight weld-in adapter, SS	K1522TT	Innertube for PR20*B (0,5m)	K1541DA	Ball valve 1" ANSI 150 lbs
K1520EK	Angled weld-in adapter, SS	K1522UP	Innertube for PR20*B (1,0m)	K1541DB	Ball valve DIN DN25 PN16
K1520KA	Electrode holder SS for PR20	K1522UW	Adapter ISO 7/1-Rc1"	K1541DC	Ball valve Rc1"
K1520KC	Main fixing screw, retr. holders	K1522VC	/SDS for PR20/PR4A	K1541DD	Ball valve 1" NPT
K1520KD	Clamping ring, retr. holders	K1522VD	/SUS for PR20/PR4A		

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