

# General Specifications

Model PH20  
pH/ORP Combination sensor

**EXAxt**

The Model PH20 is nicknamed "Tempress" because of the patented compensation for changes in the process temperature and pressure. This simple mechanical feature makes the sensor more accurate, and longer lived. The compensation panels flex to accommodate changes in the avoiding large differential pressures across the diaphragm. This prevents most problems associated with the reference junction.

Made in chemically resistant PVDF, this all-in-one sensor has elements to measure pH, ORP and temperature. The reference system is Silver Chloride, with a double junction and gelled electrolyte to combat pollution. The Platinum electrode doubles as a solution ground, essential for uncompromising accuracy, and for sensor diagnostic measurements.

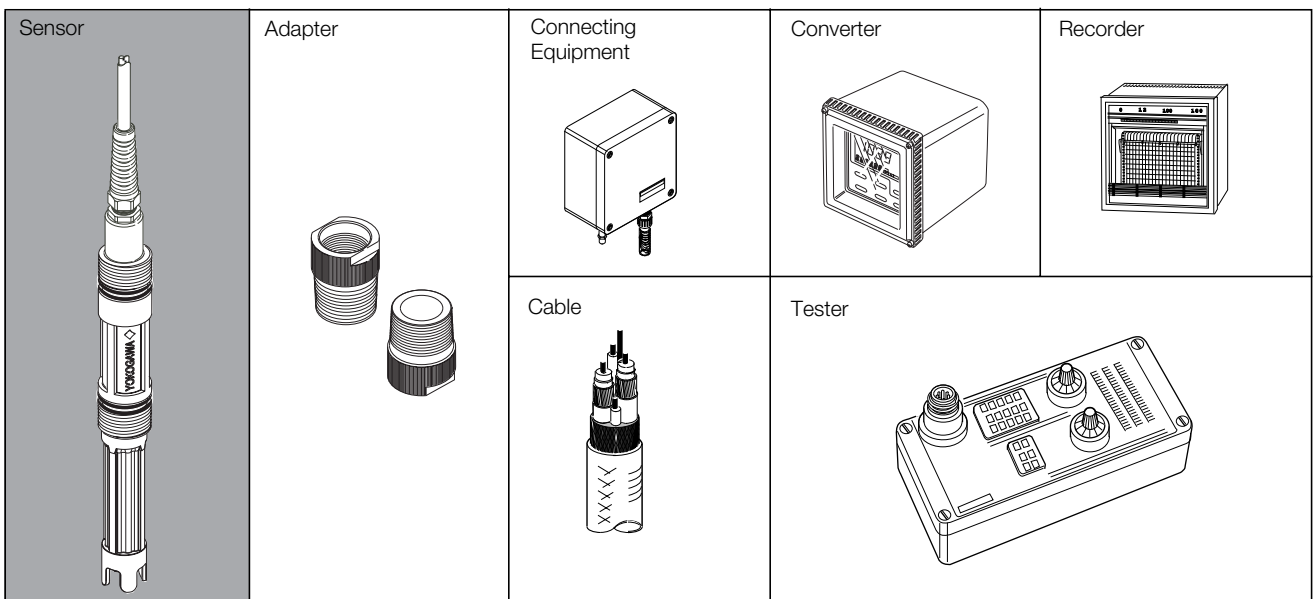
Parallel threads and "O"-ring seals are available both on the front and back of the sensor. Simple adapters and standard plumbing accessories are used to make up a variety of installation systems.



## FEATURES

- Patented Temperature and Pressure compensation for long life and accuracy
- pH & ORP simultaneous measurement with the EXA range of transmitters
- Simple adapter mounting design for easy and cost effective installation
- Integral Pt1000 temperature sensor for enhanced accuracy
- PVDF body moulding for excellent chemical resistance
- Double junction for reference pollution resistance
- Large volume of gelled electrolyte for long life
- Test certificate delivered with each sensor
- Viton and EPDM mounting "O"-rings delivered with each sensor

## SYSTEM CONFIGURATION



**GENERAL SPECIFICATIONS**

**Measuring elements** : pH glass electrode & silver chloride reference system.  
Platinum electrode and Pt1000 temperature sensor.

**Construction materials**

Body : PVDF  
Earthing pin : Platinum  
O-ring : Viton  
Ref. junction : Porous PTFE

**Functional specifications (at 25°C)**

Isothermal point : pH 7  
Glass impedance : 200 MΩ (nominal)  
Junction resistance : 1 to 10 kΩ  
Temperature element : Pt1000  
Asymmetry potential : < 15 mV  
Slope : > 96 % (theoretical value)

**Dynamic specifications (at 25°C)**

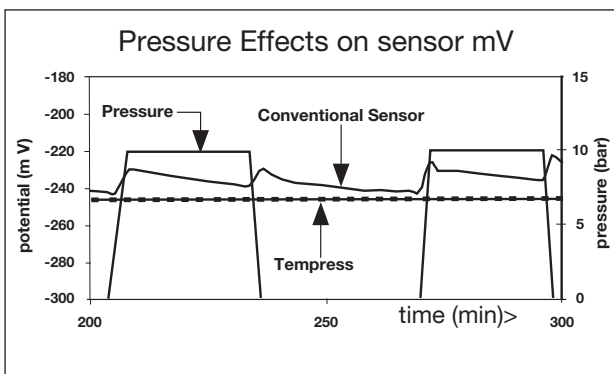
Response time pH step (7 to 4) : < 10 sec for 90%  
Response time temp step (10°C) : < 3 min for 90 %  
Stabilisation time (0.02 pH unit/ 10 s) : < 1 minute

**Operating range**

pH : 2 to 12  
Temperature : -10 to 100 °C (14 to 212 °F)  
Pressure : 0 to 10 bar ( 0 to 142 PSIG)  
Conductivity : >50 μS/cm  
Storage temperature : -30 to 50 °C (-22 to 122 °F)

**Note:**

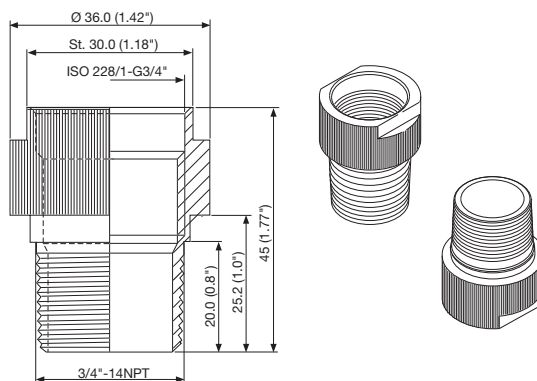
Specifications should not be considered in isolation. For example the pH range can be extended to 0-14 pH, where the measurement is at room temperature. For specific advice about applications please contact you local sales office.



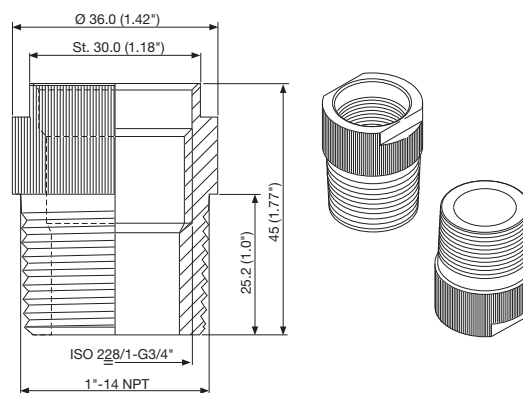
**Figure 1 Pressure effects on sensor mV**

The erratic trend of the standard sensor shows the progressive contamination of its reference junction. The graph indicates between 0.1 to 0.4 pH error with the conventional sensor while the readings from the Tempress are extremely stable.

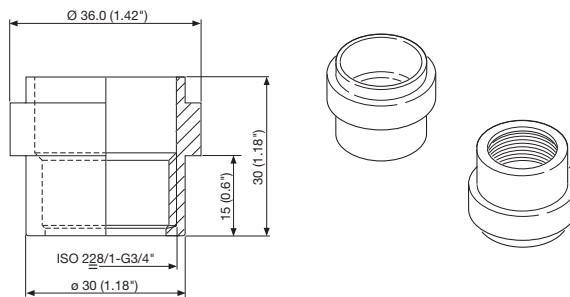
Unit: mm (inches)



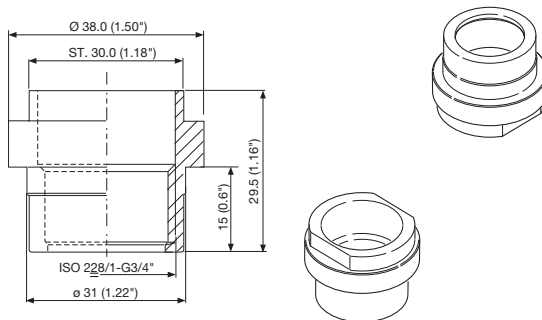
**/SN3 (3/4" NPT) and /SR3 (3/4" R)**



**/FN4 (1" NPT) and /FR4 (1" R)**

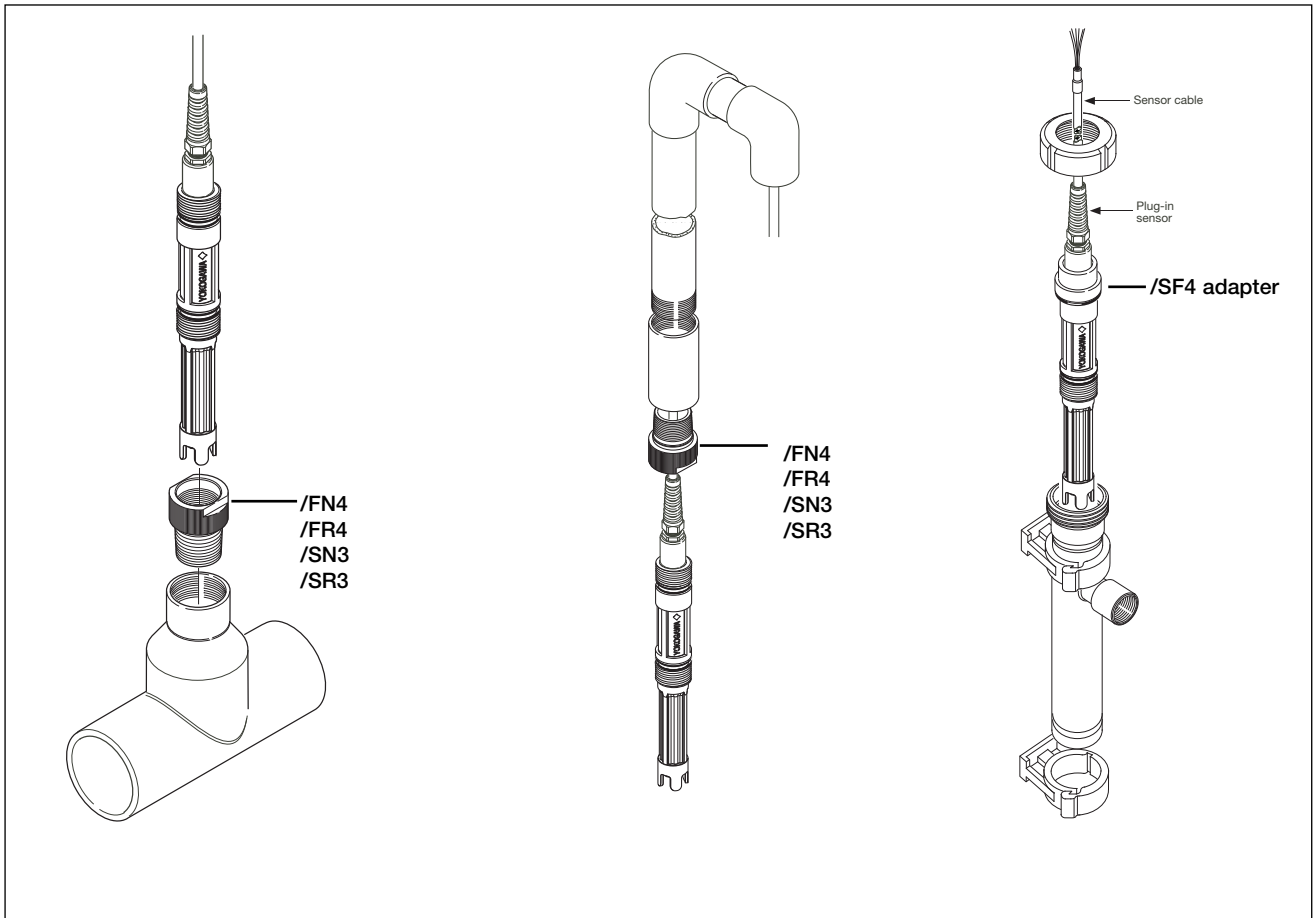


**/SF4. Adapter for FF40, FS40 and FD40 fittings**



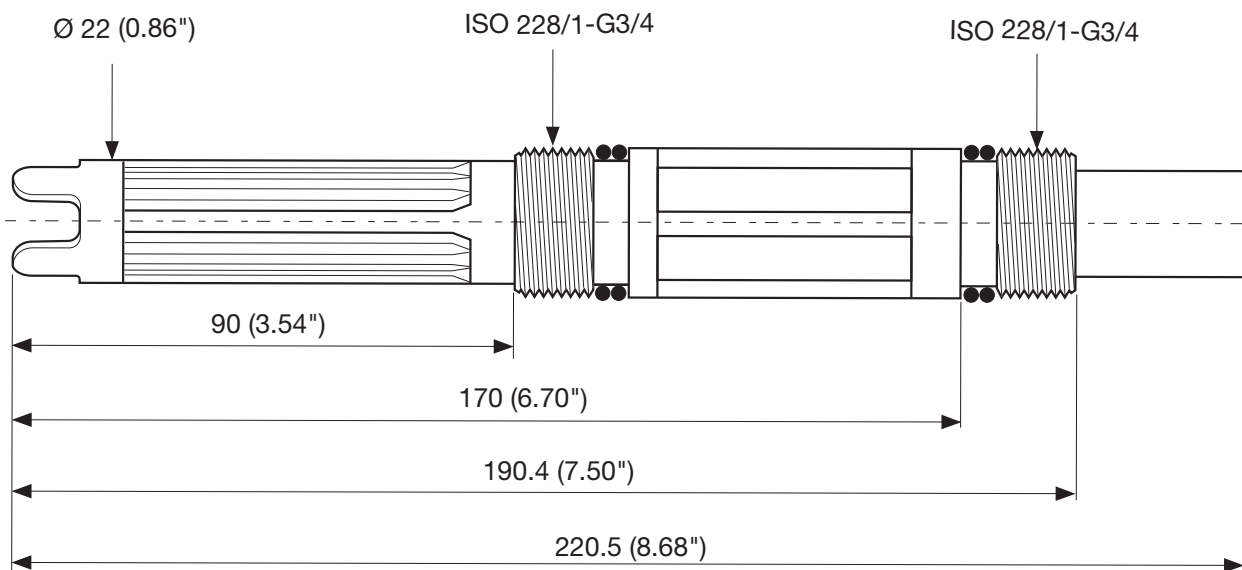
**/PH8 Adapter for PH8 Combi Sensor fittings (only)**

**INSTALLATION EXAMPLES**



**DIMENSIONS PH20**

Unit: mm (inches)



**MODEL AND SUFFIX CODE**

Model Code	Suffix code	Option	Description
PH20			4-in-1 pH sensor
Material	-F	.....	PVDF
Membrane	-G	.....	Dome shaped
Cable length	-02	.....	02 mtr.
	-05	.....	05 mtr.
	-10	.....	10 mtr.
	-20	.....	20 mtr.
	-30	.....	30 mtr.
Temperature sensor	-T1	.....	Pt1000
	-N -A	.....	Always -N -A
Options	/SN3.....		Stainless steel 3/4" NPT adapter
	/SR3.....		Stainless steel 3/4" R adapter
	/FN4.....		PVDF 1" NPT adapter
	/FR4.....		PVDF 1"R adapter
	/PH8.....		PVDF adapter for PH8 Combi Sensor fittings (only)
	/SF4.....		Stainless steel adapter for FF40, FS40 and FD40 fittings

**SPARE PARTS PH20**

Spare part nr.	Description
K1547QA	/SN3 Stainless steel 3/4" NPT adapter
K1547QB	/SR3 Stainless steel 3/4" R adapter
K1547PC	/FN4 PVDF 1" NPT adapter
K1547PD	/FR4 PVDF 1"R adapter
K1547PE	/PH8 PVDF adapter for Combi Sensor
K1547QF	/SF4 Stainless steel adapter for FF40, FS40 and FD40 fittings
K1511DP	Viton 21.9*2.62 (5 set of 2pcs)
K1511DQ	EPDM 21.9*2.62 (5 set of 2pcs)

**ACCESSORIES**

Part nr.	Description
<b>Buffer powder</b>	
6C234	Buffer powder pH 4.01 @ 25 °C
6C237	Buffer powder pH 6.87 @ 25 °C
6C236	Buffer powder pH 9.18 @ 25 °C
<b>Tester</b>	
QT20	pH/ORP input simulator with carrying case and cables
<b>Connection equipment</b>	
BA10	Junction box for pH extension cables
WF10-xxx-F	pH signal cable with terminated ends. Specify length in whole mtr.. Example WF10-025-F is for 25 mtr.

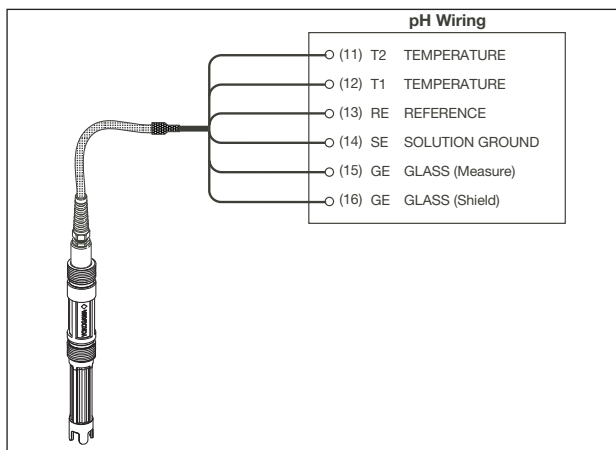



Figure 3. Wiring Diagram of PH20

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