

# General Specifications

Model PH21  
Wide Body Sensor for Water and Waste Water

GS 12B06J10-01EN-P

## ■ Overview

The PH21 sensor is targeted for water and waste water industry where simplicity will result in accuracy and reliable pH measurement. This means that in 80% of the water- and waste water industry, this sensor will be an excellent choice.

For more difficult applications than water, we refer you to other sensors in our pH portfolio.

The PH21 is the newest wide body sensor in Yokogawa. This sensor is specially made for water- and waste water industry.

## ■ Features

- The sensor body is made from recycled product.
- Preferred to work with SA11 SENCOM SMART Adapter model SA11.
- Our highly accurate instruments help you increase product efficiency, improve product quality and ensure process safety.
- Increase product efficiency due to the memory chip in the sensor.



## 1. General Specifications

Measuring elements	: pH glass electrode
	: Silver Chloride reference
	: Pt1000 temp sensor

### Construction materials

#### Wetted parts

Sensor body	: PPS- GF40
Measuring sensor	: G-Glass
O-ring	: Viton
Reference junction	: PTFE

### Functional specifications (at 25°C)

Isothermal point	: pH7
Reference system	: Ag/AgCl
Glass impedance	: 100-300 MΩ
Junction resistance	: < 1 KΩ
Temperature element	: Pt1000 IEC 751
Asymmetry potential	: 8 mV ± 15 mV
Linearity PH (Slope)	: >96% in pH 2-12

### Dynamic specifications (at 25°C)

Response time pH step 7 to 4	: 15 sec for 90%
Response time temp step 10°C	: 120 sec for 90%
Stabilization time (0.02 pH unit/10 s)	: < 2 minutes

### Operating range

pH	: 0-14
Temperature	: +0°C ... +60°C
Pressure (at 25°C)	: 0 to 5 Bar (0 to 72 PSIG)
Pressure (at 70°C)	: 0 to 5 Bar (0 to 72 PSIG)
Conductivity	: > 50 μS/cm

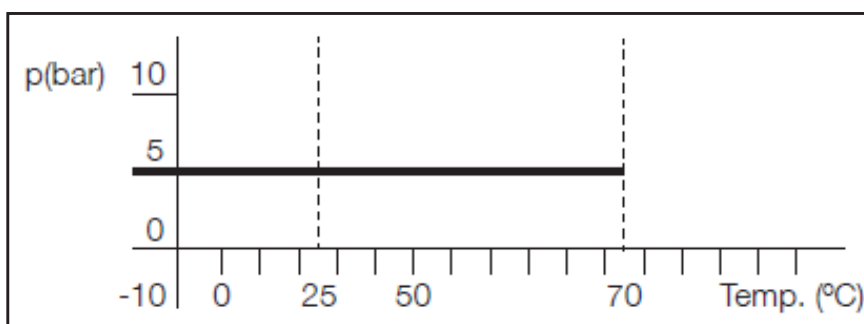


Figure 1: Pressure & Temperature range PH21

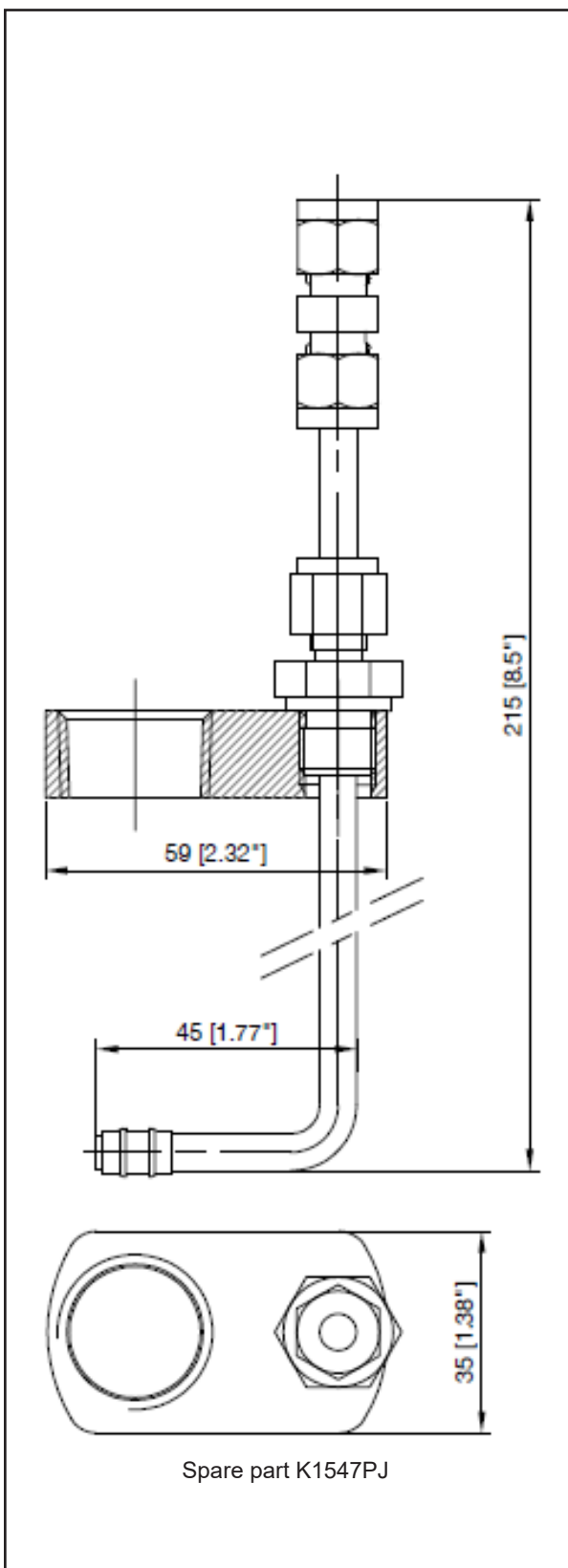
**Note:** The pH operating range at room temperature is 0-14 pH, but at high temperatures, the lifetime will be seriously shortened outside 3-11 pH range.

**Note:** For detailed information about SENCOM SMART Adapter SA11 refer to current edition of GS12A06S01-01Z1x.

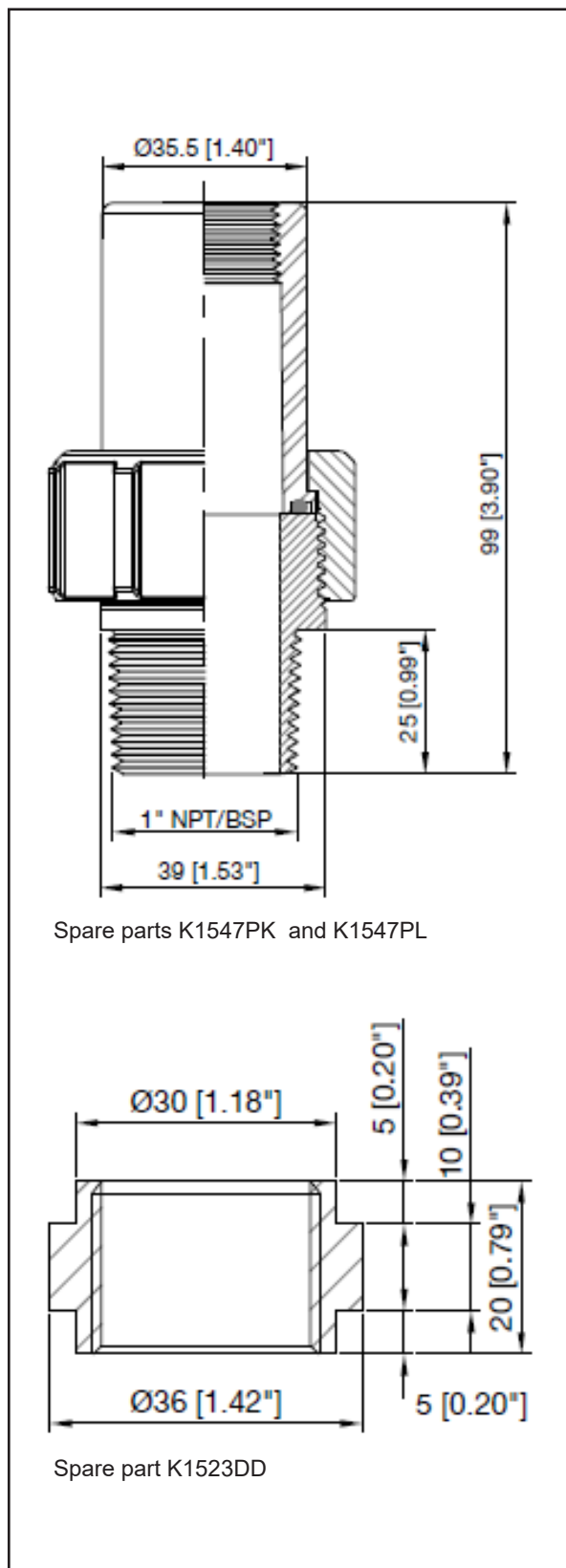
### Selection options

PH21	
Cable	: WE10
Smart adapter extension cable	: WE10-003-V1
Flow fitting	: FF40+ option /FPS or K1523DD
Immersion	: FD40+option /FPS or K1523DD
Subassembly	: FS40+option /FPS or K1523DD
Option HCNF	: K1547PJ

## 2. Dimensions



**Figure 2a:** Dimensions spare part K1547PJ (Hastelloy cleaning system) and adapters



Spare parts K1547PK and K1547PL

Spare part K1523DD

**Figure 2b:** Dimensions spare parts K1523DD (PH20-mounting in F\*40), K1547PK (Adapter 1" NPT, SS 316 for PH21), K1547PL (Adapter 1" BSP, SS 316 for PH21)

## Dimensions PH21

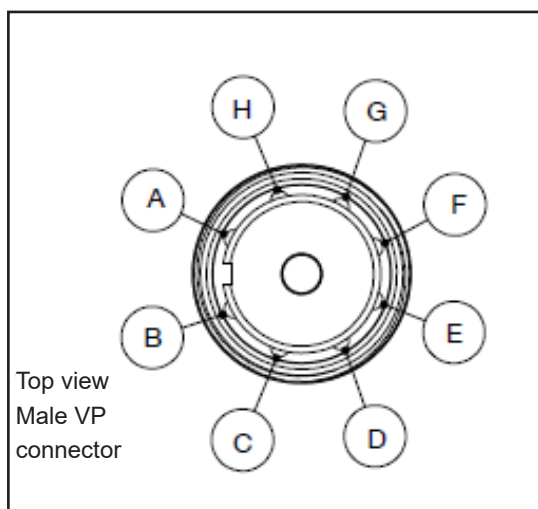


Figure 3 : Connection diagram

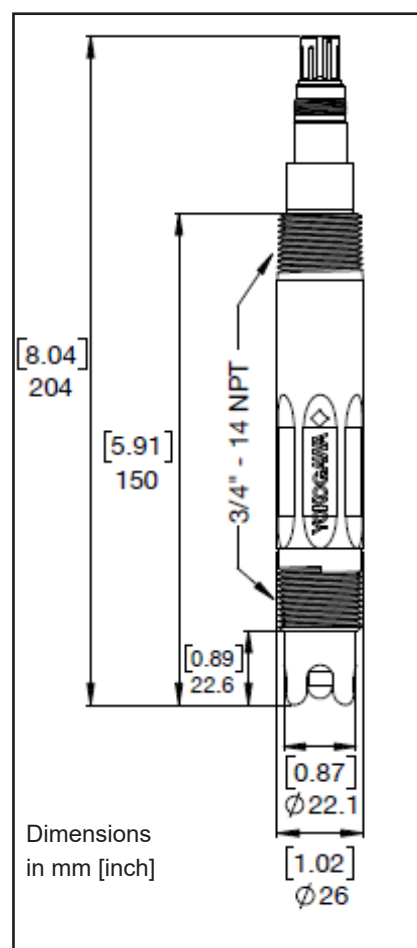


Figure 4: Dimensions PH21

### ■ 3. Model and suffix codes

**Table 1:** Model and suffix codes for PH21

Model	Suffix Code	Description
PH21		Wide Body sensor specially for water and wastewater applications
Connection	-VS	VarioPin with ID-chip for Sencom 4.0 connector (model SA11)
Type	-RTD	PPS body / Tapered Thread / Dome shaped
Style	-NN	Always -NN

**Table 2:** Spare parts PH21

Part number	Part number
K1547PJ	(/HCNF) Hastelloy cleaning system
K1523DD	(/FPS) PH20-mounting in F*40
K1547PK	(/NSS) Adapter 1" NPT, SS 316 for PH21
K1547PL	(/BSS) Adapter 1" BSP, SS 316 for PH21
K1520BC	Buffer Solution (500 ml) pH 4.01
K1520BD	Buffer Solution (500 ml) pH 6.87

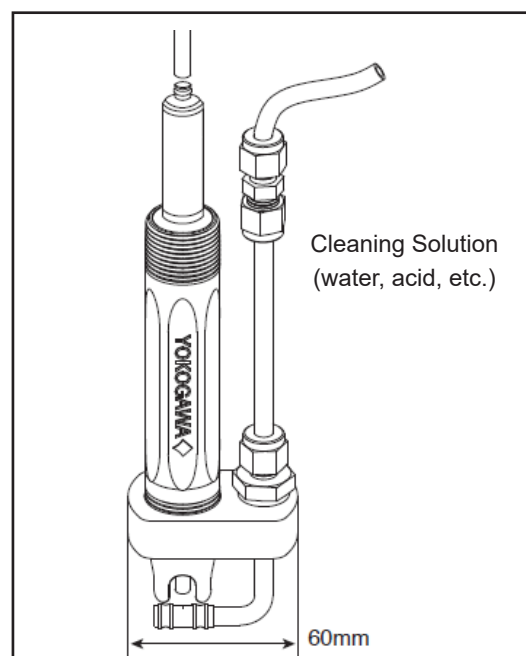
#### Cleaning system for PH21

Some applications require frequent cleaning of the electrode. For these applications Yokogawa designed a chemical cleaning system that can either be used in the Yokogawa fitting range (HCN2, HCN3 or HCN4) or as back-end spare part for the PH21. The K1547PJ spare part (previously ordered as /HCNF) option comes with a hastelloy cleaning nozzle, stainless steel mounting and ferrules sets and a nylon tube of 10 meters

#### Connection equipment

BA11	Active junction connection box
WE10	Multicore shielded cable with two low noise coaxes and four insulated wires, halogeen free.
SA11	SENCOM SMART adapter

**Spare part K1547PJ (previous /HCNF option)**



**Figure 5:** Installation example using spare part K1547PJ

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