

1. PREFACE

1.1 Introduction

The heart of a pH sensing loop are the electrodes. Yokogawa has designed a wide range of electrodes to ensure this heart keeps beating under the most severe conditions. A high degree of standardization makes it possible to mount any electrode in the standard program of fittings. Color coded strips on electrode and cable and clear identification of sensor specifications make incorrect installation virtually impossible.
2. General specifications

The specifications for the sensor are clearly shown on the type plate attached to the electrode cap. For detailed specification please download GS 12B06J01-00EN-P.

The resistance of the electrodes at different temperatures is shown in the tables 4 and 5.

3. Installation

3.1. Mounting
The electrode must be connected to an electrode cable (type WU20-PC..) marked with a green strip. The electrode fits any electrode cable of Yokogawa fitted with the standard nut of which the dimensions are shown in figure 1. The nut can be ordered under part number K1500DW.

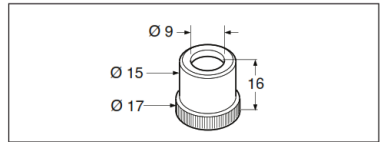


Fig. 1. K1500DW (set of 12 cable nuts)
The mounting of an electrode in an fitting should be carried out as shown in the figure 2 and 3.

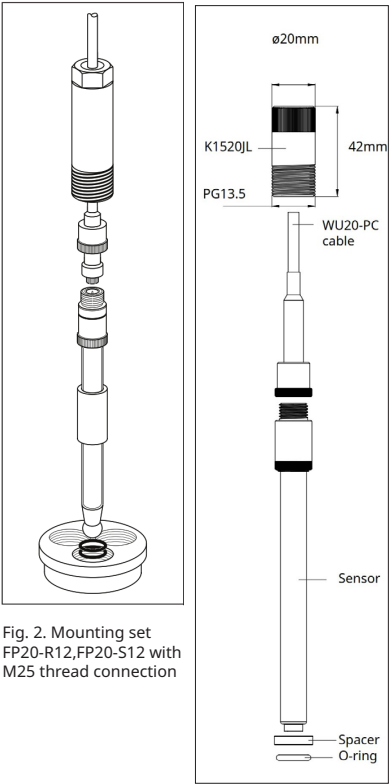


Fig. 2. Mounting set
FP20-R12,FP20-S12 with
M25 thread connection

Fig. 3. Mounting set with
PG13.5 connection for
Y-CAP sensors

4. Dimensions
- For electrode dimensions refer to figure 4 or data in GS 12B06J01-00EN-P

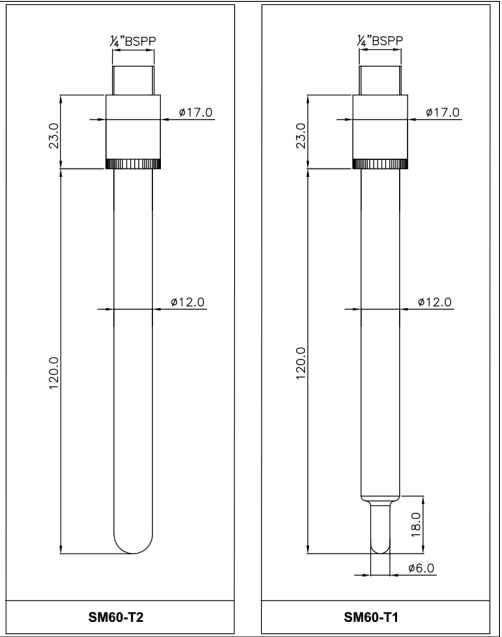


Fig.4. SM60 dimensions

5. Spare parts
Spare parts are listed in table 3.

Table 3: Temperature electrodes spare part list

Part number	Description
K1520JL	ADAPTER Y-CAP - PG13.5 SS
K1523JA	Adapter PG13.5 in F*40 PPO
K1523JB	Adapter PG13.5 to 3/4"NPT PPO
K1523JC	Adapter PG13.5-sensors in F*40 SS
K1523JD	Adapter PG13.5 to 3/4" NPT SS
K1524AA	O-RING SIL. 10.77x2.62&SLIDE RING (1PC)
K1598AC	Flow fitting (3.1), for SC4A

Table 4: T1 / Pt1000 table		Table 5: T2 / Pt100 table	
°C	R (Ω)	°C	R (Ω)
-25	901.5	-25	90.15
-20	921.3	-20	92.13
-15	941	-15	94.1
-10	960.7	-10	96.07
-5	980.4	-5	98.04
0	1000	0	100
5	1019.5	5	101.95
10	1039	10	103.9
15	1058.5	15	105.85
20	1078	20	107.8
25	1097.4	25	109.74
30	1116.8	30	111.68
35	1136.1	35	113.61
40	1155.4	40	115.54
45	1174.7	45	117.47
50	1194	50	119.4
55	1213.2	55	121.32
60	1232.4	60	123.24
65	1252.6	65	125.26
70	1270.8	70	127.08
75	1290	75	129
80	1309.1	80	130.91
85	1328.1	85	132.81
90	1347	90	134.7
95	1366	95	136.6
100	1385	100	138.5
105	1404	105	140.4
110	1422.9	110	142.29
115	1441.8	115	144.18
120	1460.7	120	146.07
125	1479.5	125	147.95
130	1498.3	130	149.83
135	1517.1	135	151.71
140	1535.9	140	153.59
145	1554.6	145	155.46
150	1573.3	150	157.33
155	1592	155	159.2
160	1610.6	160	161.06
165	1629.2	165	162.92
170	1647.8	170	164.78
175	1666.3	175	166.63
180	1684.8	180	168.48
185	1703.3	185	170.33
190	1721.8	190	172.18
195	1740.2	195	174.02
200	1758.6	200	175.86



YOKOGAWA ◆

EU DECLARATION OF CONFORMITY

We: **Yokogawa Process Analyzers Europe B.V.**
Euroweg 2, 3825 HD Amersfoort
The Netherlands

Herewith declare under our sole responsibility that the products, model:

SB20
SM29, SM29D
SM60, SM60D
SR20, SR20D

further specified with model suffix- and option codes: **As listed in Annex-1 in this document**

is manufactured in accordance with the requirements for CE-marking of products as stated in EC Decision:

768/2008/EC on a common framework for the marketing of products

by applying the following standards:

EN-ISO 9001: 2015 Quality management systems - Requirements

Subject product is:

- Produced according to appropriate quality control procedures.
- In compliance with the essential requirements of the specific product legislation:

- RoHS Directive 2011/65/EU
Commission Delegated Directive (EU) 2015/863 amending Annex II as regards the list of restricted substances, by applying the following standards:
EN-IEC 63000: 2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

The CE-mark has been affixed on the product in 2019 for the first time.

If applicable, the product is checked against the latest official released revision of the standards mentioned above; differences do not affect the certified product identified on this declaration.

Amersfoort – November 14, 2022

S. Kiyono
General Manager
Yokogawa Process Analyzers Europe B.V.

1/3

Annex-1

Model	Suffix Code	Option code	Description
SB20			Salt bridge
	- VC - VP - VS		Flow diaphragm: ceramic Flow diaphragm: PTFE Flow diaphragm: sleeve
Model	Suffix Code	Option code	Description
SM29			Metal electrodes
	- PT9 - ZZZ		Solid Platinum beaker Tokuchu
		/Z	Tokuchu
Model	Suffix Code	Option code	Description
SM29D			Metal electrodes with DIN connector
	- PT9		Solid Platinum beaker
Model	Suffix Code	Option code	Description
SM60			Measuring sensor temperature
	- T1 - T2		Meas. Temp. pt1000 Meas. Temp. pt100
Model	Suffix Code	Option code	Description
SM60D			Measuring sensor temperature with DIN conn.
	- T1 - T2		Meas. Temp. pt1000 Meas. Temp. pt100
Model	Suffix Code	Option code	Description
SR20			Reference sensor
	- AC22 - AC32 - AC52 - AP24 - AP26 - AS52 - ZZZZ		Ref. pH, non flow, ceramic Ref. pH, refill, bellomatic Ref. pH, refill, ceramic Ref. pH, non flow, PTFE Ref. pH, non flow, PTFE, DJ Ref. pH, refill, sleeve Tokuchu
		/Z	Tokuchu
Model	Suffix Code	Option code	Description
SR20D			Reference sensor with DIN connector
	- AC22 - AC32 - AC52 - AP24 - AP26		Ref. pH, non flow, ceramic Ref. pH, refill, bellomatic Ref. pH, refill, ceramic Ref. pH, non flow, PTFE Ref. pH, non flow, PTFE, DJ

3/3

User Manual

Directions for use SM60 Temperature Electrodes

YOKOGAWA ◆

IM12B06J01-03EN-P

Printed in The Netherlands, 01-2212

Subject to change without notice
Copyright©



YOKOGAWA ◆

UK DECLARATION OF CONFORMITY

We:

Manufacturer:
Yokogawa Process Analyzers Europe B.V.
Euroweg 2, 3825 HD Amersfoort
The Netherlands

Importer:
Yokogawa UK Ltd.
17 Stuart Road, Runcom W7 1TR
United Kingdom

Herewith declare under our sole responsibility that the products, model:

SB20
SM29, SM29D
SM60, SM60D
SR20, SR20D

further specified with model suffix- and option codes: **As listed in Annex-1 in this document**

is manufactured/imported in accordance with the requirements for UKCA-marking of products by applying the following standards:

EN-ISO 9001: 2015 Quality management systems - Requirements

Subject product is:

- Produced according to appropriate quality control procedures.
- In compliance with the essential requirements of the specific product legislation:

- RoHS The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The UKCA-mark has been affixed on the product in 2022 for the first time.

If applicable, the product is checked against the latest official released revision of the standards mentioned above; differences do not affect the certified product identified on this declaration.

Amersfoort – November 14, 2022

S. Kiyono
General Manager
Yokogawa Process Analyzers Europe B.V.

2/3

Instruction Manual

SC21, SC25V, SC25F, SC29, SM21, SM23,
SM60, SR20, FU20, FU20F, FU24, FU24F, PH21

Protection of Environment (Use in China)

This manual is valid only in China.

产品中有害物质的名称及含量

部件名称	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
传感器	×	○	○	○	○	○
电缆	×	○	○	○	○	○

○：表示该有害物质在该部件中所有均质材料中的含量符合GB/T26572所规定的限量要求以下。

×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T26572所规定的限量要求。

环保使用期限：这个标志是基于SJ/T11364，在中国（不包括台湾，香港，澳门）销售的电子电器

产品所适用的环保使用期限。

只要遵守产品上关于安全及使用上的注意事项，从制造之日起计算在该年限内，不会发生制品内的有害物质外泄，突然变异，对环境或人体以及财产产生重大影响的情况。

（注）该年限是《环境保护使用期限》，不是产品的保质期限。

另外，关于替换部件的推荐替换周期，请阅读使用说明书。

Production date

关于生产日期

生产日期在产品铭牌上9位数的序列号中，用以下形式表示生产日期。

从左数第3位数：生产年份

R: 2015, S: 2016, T: 2017, U: 2018, V: 2019, W: 2020, X: 2021, Y: 2022, Z: 2023,

1: 2024, 2: 2025, 3: 2026, ...

从左数第4位数：生产月份

1: 1月, 2: 2月, 3: 3月, ..., 9: 9月, A: 10月, B: 11月, C: 12月

（示例）N35700001: 2016年7月

Subject to change without notice

YOKOGAWA ◆

Copyright©2016 YPA Europe B.V.
Euroweg 2, 3825 HD, Amersfoort The Netherlands

IM12A06A03-00EN-P
7th edition October, 2021
Printed in The Netherlands

YOKOGAWA ELECTRIC CORPORATION
World Headquarters
9-32, Nakacho 2-chome, Musashino-shi
Tokyo 180-8750
Japan
www.yokogawa.com

YOKOGAWA ELECTRIC ASIA Pte. LTD.
5 Bedok South Road
Singapore 469270
Singapore
www.yokogawa.com/sg

YOKOGAWA CORPORATION OF AMERICA
2 Dart Road
Newman GA 30265
USA
www.yokogawa.com/us

YOKOGAWA CHINA CO. LTD.
Room 1801, Tower B, THE PLACE
No.100 Zunyi Road
Changning District, Shanghai, China
www.yokogawa.com/cn

YOKOGAWA EUROPE BV
Euroweg 2
3825 HD AMERSFOORT
The Netherlands
www.yokogawa.com/eu

YOKOGAWA MIDDLE EAST B.S.C.(c)
P.O. Box 10070, Manama
Building 577, Road 2516, Busaiten 225
Muharraq, Bahrain
www.yokogawa.com/bh

Yokogawa has an extensive sales and distribution network. Please refer to the European website (www.yokogawa.com/eu) to contact your nearest representative.



YOKOGAWA ◆