

# General Specifications

Model SC29  
Industrial Redox Electrodes

GS 12C06J01-30EN-P

## ■ Overview

Selecting the proper redox electrode for an application can be a challenging exercise. The SC29 series, Yokogawa's trusted range of combination redox electrodes for many years, still has the same variety of options, making it easy to find the best electrode for each application.

For redox measurement Yokogawa offers non-flow general purpose electrodes and a heavy duty flow electrode. All electrodes are equipped with a solid platinum pin to provide long lifetime, even in processes that harm the platinum electrodes such as hypochloride.

This combined electrode can be used in processes with a constant pH value and Redox potential. This sensor can be used in process where Redox potential is dependent on pH value. In such a case a pH/Redox converter with a high input is required. All pH/Redox converters of Yokogawa have such an input.

The combination of electrode plug and cable socket is watertight and temperature is resistant up to 100°C.

Colour coded strips on electrodes and cables and clear identification of sensor specifications make incorrect installation virtually impossible.

## ■ Features

- Wide range of electrodes to suit almost all process conditions.
- Colour code strips for easy identification of electrodes and cables.
- High degree of standardisation for mounting in various flow, insertion and immersion fittings.
- Separate electrode system for high accuracy applications.



## ■ 1. General Specifications SC29(C)

### 1.1 Characteristics SC29(C)-PTP29

Combined Redox/reference, electrode  
(Non flow type)

- Measuring range : -1500 ... 1500 mV
- Temp range : -10 ... 100 °C
- Pressure range : 1,5 kPa ... 500 kPa
- Membrane : Solid Platinum cup
- Diaphragm : Porous PTFE  
(impedance <5 kΩ)
- Reference system : Ag/AgCl Sat'd. KCl

### 1.2 Characteristics SC29C-PTC55

Combined Redox/reference electrode  
(Flow type)

- Temp range : -10 to 100 °C
- Pressure range : 1,5 kPa ... 500 kPa
- Membrane : Solid Platinum cup
- Diaphragm : Ceramic  
(impedance <10 kΩ)
- Reference system : Ag/AgCl 3.3m. KCl

### 1.3 Characteristics SC29-PTG29

Combined Redox/glass electrode

- Temp range : 0 to 100 °C
- Pressure range : 1,5 kPa ... 500 kPa
- Membrane : Solid Platinum cup
- Glass : general purpose pH glass

#### 1.1 Measuring Elements

Sensor type : ORP reference electrode  
Reference system : Ag/AgCl

Reference liquid

- PTG29 : N/A
- PTP29 : Sat'd. KCl
- PTC55 : 3.3m KCl

Junction type

- PTG29 : N/A
- PTP29 : PTFE
- PTC55 : Ceramic

Glass Impedance range @25°C

- PTG29 : N/A
- PTP29 : < 5kΩ
- PTC55 : < 5kΩ

#### 1.2 Wetted parts construction material

Sensor body : Glass  
O-rings : N/A

#### 1.3 Operating range

Temperature

- PTG29 : 0°C ... 100°C
- PTP29 : -10°C ... 100°C
- PTC55 : -10°C ... 100°C

Temperature

- PTG29 : 1,5 kPa ... 1000 kPa
- PTP29 : 1,5 kPa ... 500 kPa
- PTC55 : 1,5 kPa ... 500 kPa

pH

- PTG29 : 0 ... 14
- PTP29 : N/A
- PTC55 : N/A

ORP

- PTG29 : -1500 mV ... 1500 mV
- PTP29 : -1500 mV ... 1500 mV
- PTC55 : -1500 mV ... 1500 mV

Conductivity : > 50 µS/cm

#### 1.5 Shipping Details

SC29(C)  
Package size (LxWxH) : 260 x 45 x 45 mm  
: (10.2 x 1 x1 inch)

SC29C-PTC55  
Package size (LxWxH) : 300 x 95 x 73 mm  
: 11.8 x 3.7 x 2.8 inch

#### 1.6 Environmental conditions

Storage temp. : -10 to 50 °C  
: (14 to 122 °F)

#### 1.7 Regulatory standards

CE  
- RoHS Directive 2011/65/EU  
Commission Delegated Directive (EU) 2015/863  
amending Annex II as regards the list of restricted  
substances, and by applying Annex IV as regards the  
application of sensors, detectors and electrodes, 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.

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

## ■ 2. Dimensions (Units in mm)

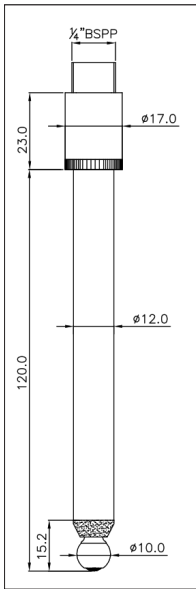


Fig. 1: SC29-PTP29

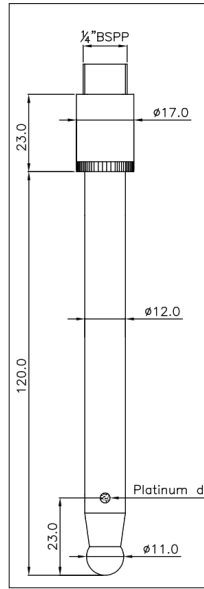


Fig. 2: SC29-PTG29

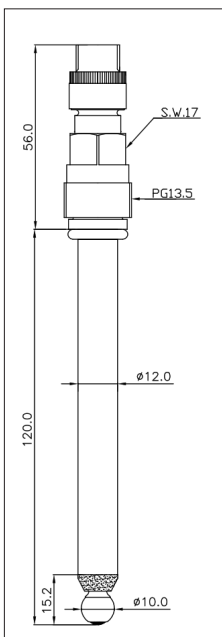


Fig. 3: SC29C-PTP29

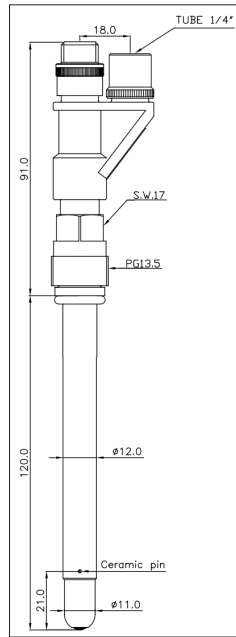


Fig. 4: SC29C-PTC55

### ■ 3. Model Codes and Parts

**Table 1: Model & Suffix codes SC29**

Model	Suffix Code	Option code	Description
SC29			Combined pH/redox
	-PTG29		Comb. pH/redox, Pt
	-PTP29		Comb. redox Pt, ref, nonflow

**Table 2: Model & Suffix codes SC29C**

Model	Suffix Code	Option code	Description
SC29C			Combined pH/redox
	-PTC55		Comb. redox Pt, ref, refill
	-PTP29		Comb. redox Pt, ref, non-flow

**Table 3: Sealing spare parts**

Product	Description
K1500BZ	O-rings Viton 11x3 (6 Pcs)
K1500GA	5 m tube for KCl reservoir
K1520FJ	Tubing set, chem. cleaning 5m
K1520FK	Tubing set, chem. cleaning 10m

**Table 4: Adaptor spare parts**

Product	Description
K1500DV	Adapter M25x1.5 - PG13.5 PVDF
K1520JN	Adapter M25x1.5 - PG13.5 PVC
K1520JP	Adapter M25x1.5 - PG13.5 SS
K1523JA	Adapter PG13.5 in F*40 PPO
K1523JB	Adapter PG13.5 to ¼" NPT PPO
K1523JC	Adapter PG13.5-sensors in F*40 SS
K1523JD	Adapter PG13.5 to ¼" NPT SS
K1520YA	/KR for PD/PF/PS20 holders
K1500DW	Set of 12 cable nuts for WU20
K1520JL	Adapter Y-CAP- PG13.5 SS

**Table 5: Consumable spare parts**

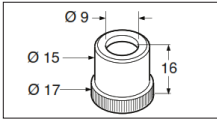
Product	Description
K1500GF	1 Molal KCl sol. 250 ml
K1500GG	1 Molal KCl sol. 250 ml, thickened
K1520VA	3.3 Molal KCl solution
K1520VN	3.3 molal KCl sol. 250 ml. thickened

### ■ 4. Cables

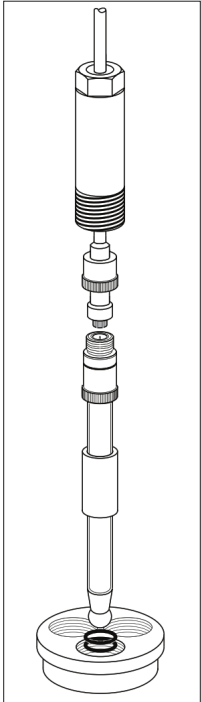
**Table 6: Model & Suffix codes WU20**

Model	Suffix Code	Option code	Description
WU20			Industrial pH/ORP cable
	-LT		Triax
		01	1 meter cable
		02	2 meter cable
		05	5½ meter cable
		10	10 meter cable
		15	15 meter cable
		20	20 meter cable
		25	25 meter cable

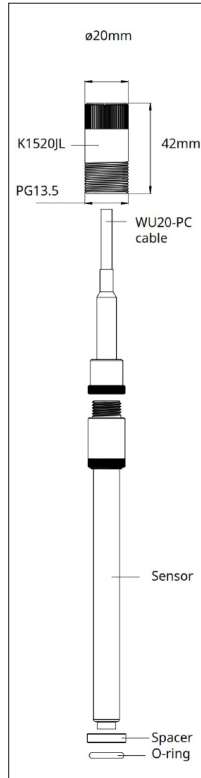
## ■ Addendum 1: Typical Installations



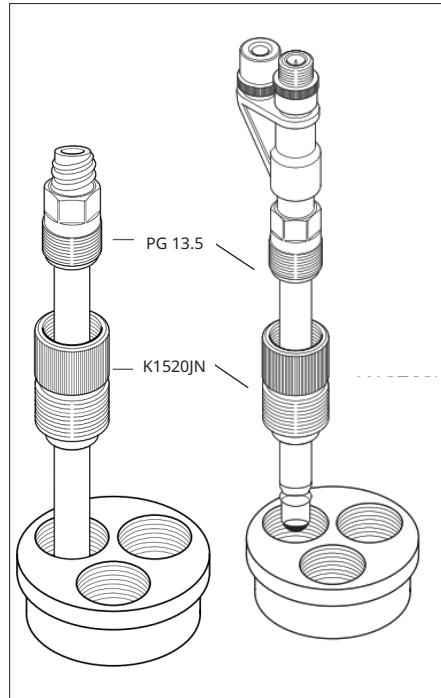
**Fig. 5:** Yokogawa connector K1500DW (set of 12 cable nuts)



**Fig. 6:** Standard mounting with mounting set FP20-R12, FP20-S12



**Fig. 7:** Mounting PG13.5 for Y-CAP sensors




**Fig. 8:** Mounting PG13.5 in Yokogawa fitting using the adapter K1520JN (PVC-C) or K1500DV (PVDF)

## ■ Addendum 2: Available Model Codes

Table 7: SC29(C) pH Electrode Available models

<b>MS-code</b>	SC29-PTG29
	SC29-PTP29
<b>MS-code</b>	SC29C-PTC55
	SC29C-PTP29

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