

# FLS pH/ORP 200 EPOXY BODY BULB ELECTRODES



This FLS line of electrodes has been designed to provide a cost effective multi-purpose solution for in line or submersion measurement of pH and ORP in a wide range of applications.

Single and double junction versions are available as well as models with or without quick disconnect top caps. These epoxy body electrodes can stand several applications thanks to the high chemical resistance of the material. A simple and reusable gland can be used for economic electrode in-line mounting while a 1/2" or 3/4" coupler with a pipe extension is enough for submersion mounting. A special version is dedicated to installation on FLS T fitting as well as to FLS clamp saddle adding just a nut.

## APPLICATIONS

- Water treatment
- Neutralization systems
- Water quality monitoring
- Swimming Pools and spas
- Aquaculture
- Agriculture and fertilizing systems
- Process control

## MAIN FEATURES

- Epoxy body
- Single or double junction technology
- Large gel reference volume
- Easy and quick installation system
- Outline cable or BNC connection
- Special versions on request
- Low cost fittings



# TECHNICAL DATA

## General

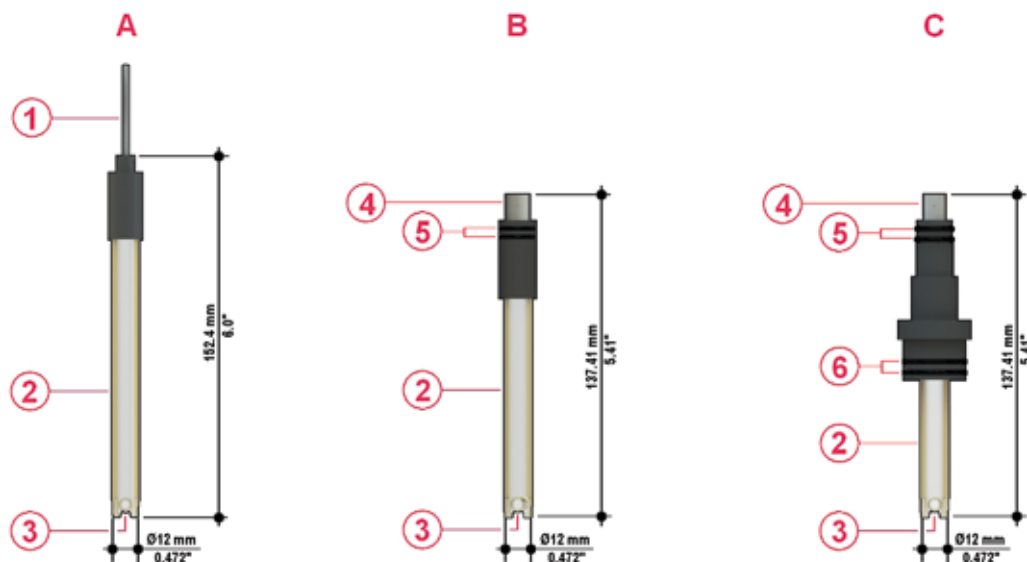
- Operating Range:
- pH Electrodes: 0 - 14 pH (0 - 12.3 pH without Na+ error)
- ORP Electrodes: ± 2000 mV
- Pipe Size Range: DN15 to DN100 (0.5" to 4")
- Zero voltage point new electrode performances: 7.00pH ± 0.2pH
- Efficiency new electrode performances: > 97% @ 25°C (77°F)
- Response time new electrode performances:
- pH: 2 sec for 95% of signal change
- ORP: application dependent
- Reference:
- electrolyte:
- solidified gel 3.5M KCl for single junction versions
- KCl-KNO3 for double junction versions
- Process Connection:
- in-line installation with:
- threaded nipple 1/2", 3/4" or PG13,5
- FLS installation fittings
- submersible installation
- Max Working pressure/ working temperature:
- 7 bar (100 psi) @ 25°C (77°F)
- 1 bar (14,5 psi) @ 65°C (149°F)
- Wetted materials:
- body: epoxy
- o-ring junction: silicone
- junction: pelon
- sensing surface: glass membrane (pH) platinum (ORP)
- O-ring: Buna-N (PH222 CD, PH223 CD, ORP222 CD, ORP223 CD)

## Standards & Approvals

- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- GOST R

Specific for pH-ORP.200							
Model	Body	Junction material/type	Reference solution	Sensing surface	O-ring	Connection	Max working pressure @ working temperature
PH200C	epoxy	nylon/S.J.	3,5M KCl	glass membrane	silicone	5 mt. (16.5 ft.) Cable	7 bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)
PH222CD	epoxy	nylon/D.J.	3,5M KCl/ Sat'd KNO3	glass membrane	silicone	Twist-Lock (BNC)	7 bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)
PH223CD	epoxy	nylon/D.J.	3,5M KCl/ Sat'd KNO3	glass membrane	silicone	Twist-Lock (BNC)	7 bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)
ORP200C	epoxy	nylon/S.J.	3,5M KCl	platinum	silicone	5 mt. (16.5 ft.) Cable	7 bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)
ORP222CD	epoxy	nylon/D.J.	3,5M KCl/ Sat'd KNO3	platinum	silicone	Twist-Lock (BNC)	7 bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)
ORP223CD	epoxy	nylon/D.J.	3,5M KCl/ Sat'd KNO3	platinum	silicone	Twist-Lock (BNC)	7 bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)

## DIMENSIONS



A PH200 C ORP200 C  
 B PH222 CD ORP222 CD  
 C PH223 CD ORP223 CD

1 Cable: 5 mt (6,5 ft.)  
 2 Epoxy body  
 3 pH glass bulb  
 4 BNC connector




5 Buna-N O-rings  
 6 FPM O-rings

## ORDERING DATA





PH2XX Bulb pH Electrodes with epoxy body						
Part No.	Description /Name	Applications/ Operative Range	Cable (sold separately)	Connection	Installation	Weight (gr.)
PH200C	Combination pH/Reference Electrode	0 - 14 pH (0 - 12.3 pH without Na+ error)	not required	5 mt. (16.5 ft.) Cable	EG50P, EG75P, MK150200, MIFV20X05, MIMC20X05	200
PH222CD	Cartridge-type Double Junction Combination pH/Reference Electrode	0 - 14 pH (0 - 12.3 pH without Na+ error)	CN 653, CN 653 TC1	Twist-Lock (BNC)	EG50P, EG75P, MIFV20X05, MIMC20X05	90
PH223CD	Cartridge-type Double Junction Combination pH/Reference Electrode for FLS fittings	0 - 14 pH (0 - 12.3 pH without Na+ error)	CN 653	Twist-Lock (BNC)	F3.SP2.4	100



ORP2XX Bulb ORP Electrodes with epoxy body						
Part No.	Description /Name	Applications/ Operative Range	Cable (sold separately)	Connection	Installation	Weight (gr.)
ORP200C	Combination ORP/Reference Electrode	± 2000 mV	not required	5 mt. (16.5 ft.) Cable	EG50P, EG75P, MK150200, MIFV20X05, MIMC20X05	200
ORP222CD	Cartridge-type Double Junction Combination ORP/Reference Electrode	± 2000 mV	CN 653	Twist-Lock (BNC)	EG50P, EG75P, MIFV20X05, MIMC20X05	90
ORP223CD	Cartridge-type Double Junction Combination ORP/Reference Electrode for FLS fittings	± 2000 mV	CN 653	Twist-Lock (BNC)	F3.SP2.4	100

## MONITOR ACCESSORIES

Accessories for monitors				
	Part No.	Name	Description	Weight (gr.)
	F6.KC1	Compact mounting kit	Plastic adapter with compact cap and locking nut (for M9.02, M9.20 and M9.00 only)	137
	M9.KW1	Wall mounting kit	144x144mm plastic box for wall installation of all panel mounting monitors	600
	M9.KW2	Wall mounting kit with power supply	144x144mm plastic box for wall installation of all panel mounting monitors and 110/230VAC to 24 VDC power supply included	900
	M9.KUSB	USB Cable	USB cable dedicated to FLS products, 1,5 meter long	60

## ANALYTICAL ELECTRODES ACCESSORIES

Accessories for pH/ORP electrodes				
	Part No.	Name	Description	Weight (gr.)
	CN653	5m Universal cable assembly	Cable for PH222 CD, PH223 CD, ORP222 CD, ORP223 CD, PH-ORP.600	300
	CN65310M	10m Universal cable assembly	Cable for PH222 CD, PH223 CD, ORP222 CD, ORP223 CD, PH-ORP.600	400
	CN65315M	15m Universal cable assembly	Cable for PH222 CD, PH223 CD, ORP222 CD, ORP223 CD, PH-ORP.600	500
	CN653TC1	5m Submersible cable assembly with Temperature compensation (PT 100)	Cable for PH222 CD, PH223 CD, PH650CD, PH650CD HF, PH650CD DA, PH650CD LC	350
	CE5S7	5m Cable assembly	Cable for PH435 CD PH430 CD ORP430CD	300
	CE10S7	10m Cable assembly	Cable for PH435 CD PH430 CD ORP430CD	400
	CE15S7	15m Cable assembly	Cable for PH435 CD PH430 CD ORP430CD	500
	B104	pH buffer	Buffer pH 4,01	450
	B107	pH buffer	Buffer pH 7,00	450
	B110	pH buffer	Buffer pH 10,00	450
	B3KCL	pH buffer	3KCl solution	500
	B475	ORP buffer	Buffer 475mV	450

Accessories for Conductivity Sensors				
	Part No.	Name	Description	Weight (gr.)
	T970278	5m PT100 Temperature Epoxy body Sensor	2 wire PT100 Temperature Sensor with epoxy body	200
	T970196	5m PT100 Temperature Epoxy body Sensor	2 wire PT100 Temperature Sensor with epoxy body (no metal in contact)	200
	B0018	Conductivity buffer	Calibration solution for low conductivity (18 microsiemens)	450
	B1417	Conductivity buffer	Calibration solution for conductivity (1417 microsiemens)	450