



(주)엠씨마스터스

**MC Masters**  
Measurement & Control

# FLS pH/ORP 200 EPOXY BODY BULB ELECTRODE



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. Moreover for automatic temperature compensation function (ATC) a pH option with temperature sensor integrated is available. 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
- Version with temperature sensor combined
- Special versions on request
- Low cost fittings



# TECHNICAL DATA

## General

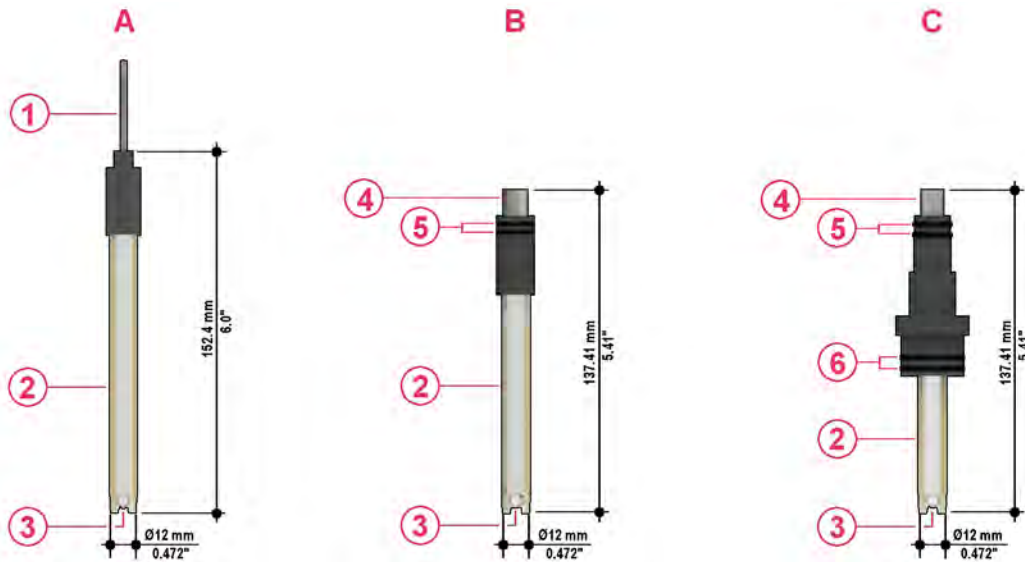
- Operating Range:
  - pH Electrodes: 0 - 14 pH (0 - 12.3 pH without Na+ error)
  - ORP Electrodes: ± 2000 mV
- Temperature compensation device (for TC model): PT1000
- Pipe Size Range: DN15 to DN100 (0.5" to 4")
- Zero voltage point new electrode performances: 7.00pH ± 0.2pH
- Efficiency new electrode 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-KNO<sub>3</sub> for double junction versions
- Process Connection:
  - in-line installation with: threaded nipple ½", ¾" 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: Pellon®
  - sensing surface: glass membrane (pH) platinum (ORP)
- O-ring: NBR (PH222 CD, PH223 CD, ORP222 CD, ORP223 CD)

## Standards & Approvals

- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- EAC

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	-	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 KNO <sub>3</sub>	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 KNO <sub>3</sub>	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	-	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 KNO <sub>3</sub>	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 KNO <sub>3</sub>	platinum	silicone	Twist-Lock (BNC)	7 bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)
PH222CDTC	epoxy	nylon/D.J.	3,5M KCl/ Sat'd KNO <sub>3</sub>	Glass membrane	-	5 mt (16,5 ft)	7bar @ 25°C/ 1 bar @ 65°C (100 psi @ 77°F/ 14,5 psi @ 149°F)

## DIMENSIONS



**A** PH200C PH222CDTC ORP200C  
**B** PH222CD ORP222CD  
**C** PH223CD ORP223CD

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
PH222CDTC	Cartridge-type Double Junction Combination pH/Reference Electrode with Pt1000	0-14 pH (Na+ error >12.3 pH)	Not required	5 mt (16,5 ft)	EG50P, EG75P, MK150200, MIFV20X05, MIMC20X05	220

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