

# FLS pH/ORP 600

## PVCC BODY FLAT SURFACE ELECTRODES



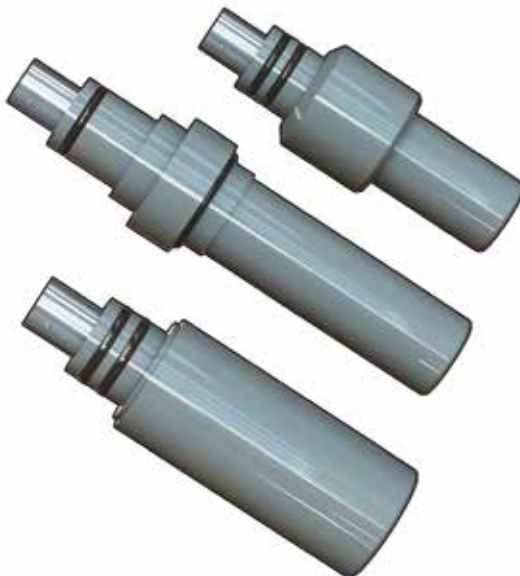
This is the rugged version of the traditional flat electrodes with an improved self-cleaning effect. Installation and maintenance are easy due to the quick disconnect BNC connectors. Built into the electrode's body is a sealed, gel-filled double junction reference design. This design provides an extra barrier against reference side contamination and allows the electrodes to be used in severe applications prolonging electrode life. The pH-responsive flat glass surface is placed in the center of the measuring surface and surrounded by the flat porous plastic reference junction providing an excellent sample contact. A wide range of installation accessories allows in line, submersion or hot tap installation.

### APPLICATIONS

- Water & Wastewater treatment
- Pre-chlorination & de-chlorination
- Neutralization systems
- Water quality monitoring
- Ozone treatment
- Cooling towers
- Boiler systems
- Bleach production
- Pulp bleaching
- Aquaculture
- Fruit and vegetables washing
- Textile Dye Process

### MAIN FEATURES

- pH and ORP versions
- Flat electrodes
- Double junction technology
- Large gel reference volume
- High protection from process contamination
- Easy and quick installation system
- BNC connector
- In line, submersion or hot tap installation
- Low cost fittings
- HF option (pH) for liquids with HF (max. 2%) inside
- DI option (pH) on request for pure water (<100uS)
- Other special versions on request



## TECHNICAL DATA

### General

- Operating Range:
  - pH Electrodes: 0 - 14 pH (0 - 12.3 pH without Na+ error)
  - ORP Electrodes:  $\pm 2000$  mV
- Pipe Size Range: DN15 to DN100 (0.5" to 4")
- Zero voltage point new electrode performances: 7.00pH  $\pm$  0.2pH
- Efficiency new electrode performances: > 97% @ 25°C (77°F)
- Response time new electrode performances:
  - pH: < 6 sec for 95% of signal change
  - ORP: application dependent
- Reference
  - type: sealed double junction
  - electrolyte: Solidified Gel 3.5M KCl 0.1M KCl for LC electrode version / solidified gel KCl 3.5M
  - secondary junction: Nylon filament
  - wire: Ag/AgCl.
- Process Connection:
  - In-line installation: threaded nipple  $\frac{1}{2}$ ",  $\frac{3}{4}$ "
  - FLS installation fittings
  - submersible installation
  - hot-tap installation

- Max Working pressure/ working temperature:
  - 6,7bar@75°C (100psi@170°F)
  - 5,7bar@81°C (85psi@180°F)
- Wetted materials:
  - body: CPVC (PVDF only on request)
  - reference Junction: porous HDPE
  - sensing surface: glass membrane (pH), platinum sealed in glass (ORP)
  - O-ring: FPM (Viton)

### Standards & Approvals

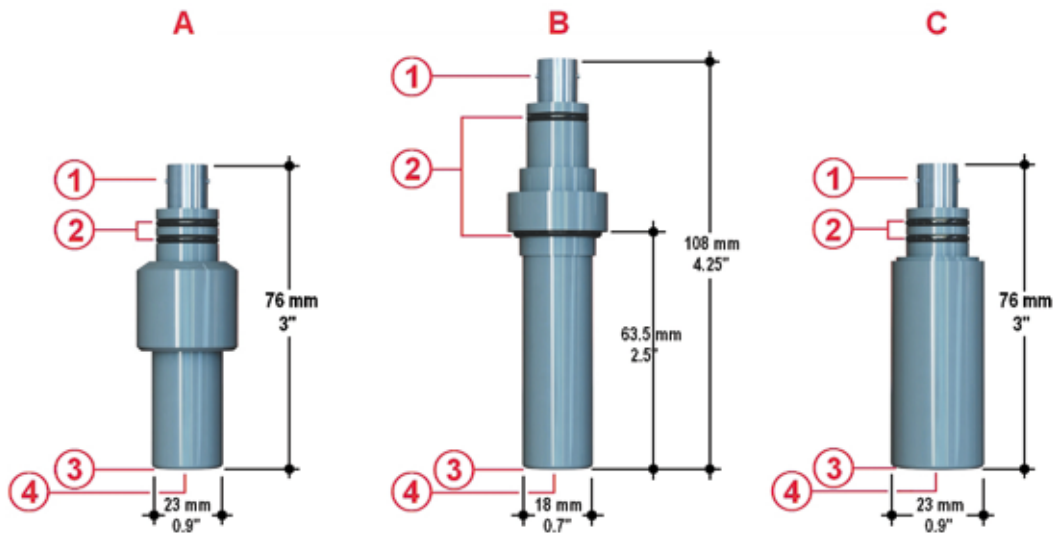
- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- GOST R

Specific for pH-ORP.600							
Model	Body	Junction material/type	Reference solution	Sensing surface	O-ring	Connection	Max working pressure @ working temperature
PH660CD	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
ORP660CD	PVC-C	HDPE porous/ D.J.	3,5M KCl	platinum	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH650CD	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
ORP650CD	PVC-C	HDPE porous/ D.J.	3,5M KCl	platinum	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH655CD	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
ORP655CD	PVC-C	HDPE porous/ D.J.	3,5M KCl	platinum	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)

**Specific for pH-ORP.600**

Model	Body	Junction material/type	Reference solution	Sensing surface	O-ring	Connection	Max working pressure @ working temperature
PH660CDHF	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH650CDHF	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH655CDHF	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH660CDDA	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
ORP660CDDA	PVC-C	HDPE porous/ D.J.	3,5M KCl	platinum	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH650DA	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
ORP650DA	PVC-C	HDPE porous/ D.J.	3,5M KCl	platinum	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH655DA	PVC-C	HDPE porous/ D.J.	3,5M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
ORP655DA	PVC-C	HDPE porous/ D.J.	3,5M KCl	platinum	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH660CDLC	PVC-C	HDPE porous/ D.J.	0,1M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH650CDLC	PVC-C	HDPE porous/ D.J.	0,1M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)
PH655CDLC	PVC-C	HDPE porous/ D.J.	0,1M KCl	flat glass membrane	FPM	Twist-Lock (BNC)	6,7bar@75°C (100psi@170°F)

## DIMENSIONS



A Submersible PH650, ORP650  
 B In-line PH660, ORP660  
 C Insertion/Hot-tap PH655, ORP655

1 BNC receptacle  
 2 Viton O-rings  
 3 Porous HDPE junction  
 4 pH glass or platinum

## ORDERING DATA

ORP6XX CD Flat surface electrodes						
Part No.	Description /Name	Applications/ Operative Range	Cable (sold separately)	Connection	Installation	Weight (gr.)
ORP660CD	C-PVC Double Junction ORP Combination Flat surface Electrode	-	CN653	Twist-Lock (BNC)	EG66P, MK660	100
ORP650CD	C-PVC Double Junction ORP Combination Flat surface Electrode	-	CN653/CN653 TC1	Twist-Lock (BNC)	MIFV20X05, MIMC20X05	100
ORP655CD	C-PVC Double Junction ORP Combination Flat surface Electrode with pressurized filling gel	-	CN653	Twist-Lock (BNC)	WT675, WT675 TC1	100
ORP660CDDA	Ground Loop interrupt Flat Surface pH/ORP combination Electrode	Presence of stray currents	CN653	Twist-Lock (BNC)	EG66P, MK660	200
ORP650CDDA	Ground Loop interrupt Flat Surface pH/ORP combination Electrode	Presence of stray currents	CN653/CN653 TC1	Twist-Lock (BNC)	MIFV20X05, MIMC20X05	200
ORP655CDDA	Ground Loop interrupt Flat Surface pH/ORP combination Electrode with pressurized filling gel	Presence of stray currents	CN653	Twist-Lock (BNC)	WT675, WT675 TC1	200

## ORDERING DATA

pH6XX CD Flat surface electrodes						
Part No.	Description /Name	Applications/ Operative Range	Cable (sold separately)	Connection	Installation	Weight (gr.)
PH660CD	C-PVC Double Junction pH Combination Flat surface Electrode	-	CN653	Twist-Lock (BNC)	EG66P, MK660	100
PH650CD	C-PVC Double Junction pH Combination Flat surface Electrode	-	CN653/CN653 TC1	Twist-Lock (BNC)	MIFV20X05, MIMC20X05	100
PH655CD	C-PVC Double Junction pH Combination Flat surface Electrode with pressurized filling gel	-	CN653	Twist-Lock (BNC)	WT675, WT675 TC1	100
PH660CDHF	C-PVC Double Junction pH Combination Flat surface Electrode	Liquids with HF (max 2%)	CN653	Twist-Lock (BNC)	EG66P, MK660	100
PH650CDHF	C-PVC Double Junction pH Combination Flat surface Electrode	Liquids with HF (max 2%)	CN653/CN653 TC1	Twist-Lock (BNC)	MIFV20X05, MIMC20X05	100
PH655CDHF	C-PVC Double Junction pH Combination Flat surface Electrode with pressurized filling gel	Liquids with HF (max 2%)	CN653	Twist-Lock (BNC)	WT675, WT675 TC1	100
PH660CDDA	Ground Loop interrupt Flat Surface pH combination Electrode	Presence of stray currents	CN653	Twist-Lock (BNC)	EG66P, MK660	200
PH650CDDA	Ground Loop interrupt Flat Surface pH combination Electrode	Presence of stray currents	CN653/CN653 TC1	Twist-Lock (BNC)	MIFV20X05, MIMC20X05	200
PH655CDDA	Ground Loop interrupt Flat Surface pH combination Electrode with pressurized filling gel	Presence of stray currents	CN653	Twist-Lock (BNC)	WT675, WT675 TC1	200
PH660CDLC	C-PVC Double Junction pH Combination Flat surface Electrode	Liquids with low conductivity (<100 ms)	CN653	Twist-Lock (BNC)	EG66P, MK660	100
PH650CDLC	C-PVC Double Junction pH Combination Flat surface Electrode	Liquids with low conductivity (<100 ms)	CN653/CN653 TC1	Twist-Lock (BNC)	MIFV20X05, MIMC20X05	100
PH655CDLC	C-PVC Double Junction pH Combination Flat surface Electrode with pressurized filling gel	Liquids with low conductivity (<100 ms)	CN653	Twist-Lock (BNC)	WT675, WT675 TC1	100