



Monitors

EcoLine/QuadroLine® – Analog monitors for D.O., pH and Conductivity

Easy of use and maximum operating safety at an attractive price were the basic design criteria for the development of the EcoLine monitors. As a result of the logical further development of the successful EMC concept, WTW has also been able to make these advantages available to customers at an attractive price.

Analog monitors

- Outstanding price/performance ratio
- Built-in lightning protection
- Galvanically isolated inputs and outputs

Oxi 170, pH 170, LF 170

With the EcoLine series WTW offers an economical and technically flexible and reliable system solution which is suitable for a wide range of applications water and wastewater applications.

Oxi 296, pH 296, LF 296

The QuadroLine® series is an extremely powerful monitor in a compact form and at an attractive price-performance ratio. These monitors are intended to be built into control panels and fulfill all the requirements which industrial practice demands from such systems today. Based on the proven technology of the WTW monitors of the EcoLine family, the QuadroLine® instruments have the same impressive performance features. EcoLine and QuadroLine® monitors are the right choice when single point measurements require a dedicated monitor.



EcoLine 170



QuadroLine® 296

Technical Data EcoLine pH 170/QuadroLine® pH 296

	pH Measurement	ORP Measurement	Temperature Measurement
Measuring Ranges	0.00 ... 14.00 pH	-1500 mV ... +1500 mV	NTC: 23 °F ... 212 °F (-5 °C ... 100 °C) Pt 100/Pt 1000: -4 °F ... 266 °F (-20 °C ... 130 °C)
Resolution	0.01 pH	1 mV	0,1 K
Accuracy (± 1 Digit)	±0.01 pH	± 2 mV	NTC: ±0.2 K; Pt 100/Pt 1000: ±0.1 K fine adjustment ± 0.5 K
Signal Input	Low-impedance or high impedance	Low-impedance or high impedance	2-conductor (NTC); 3-conductor (Pt 100/Pt 1000)
Temperature Measurement	NTC thermistor, integrated in SensoLyte® sensor assembly; or separate NTC/Pt 100/Pt 1000		
Temperature Compensation	NTC: 23 °F ... 212 °F (-5 °C ... 100 °C); Pt 100/Pt 1000: -4 °F ... 266 °F (-20 °C ... 130 °C)		
Calibration	AutoCal1: automatic calibration with technical buffer solutions AutoCal2: automatic calibration with technical buffer solutions and subsequent analog output of buffer used in calibration ConCal®: manual calibration with any buffer solution		
Calibration Range	Slope range: -62 mV/pH ≤ S ≤ -50 mV/pH Asymmetry potential: -45 mV ≤ U _{asy} ≤ +45 mV		
Display	Dual numeric LCD-readout, 3 1/2 digits for values and display of units; graphic symbols for auxiliary information and operator guidance		
Relay Outputs	Ⓢ Sensor alarm relay (sensor failure); 2 programmable relays (setpoints, delay, hysteresis, control functions) Ⓢ + Ⓢ; Relays are from C rated 5 A at 250 VAC, max. 5 A @ 30 VDC resistive		
Analog Outputs	0/4 - 20 mA output for pH/ORP and in versions Ⓢ + Ⓢ additionally for temperature; max. load 600 Ω; output span and recorder damping adjustable by software		
Digital Interface	RS 485 Interface; bus operation with up to 31 instruments possible Ⓢ		
Ambient Conditions	Operating temperature: -13 °F ... 131 °F (-25 °C ... +55 °C); Storage temperature: -13 °F ... 149 °F (-25 °C ... +65 °C); Clima class 4 (VDI/VDE 3540)		
Electrical Connections	pH 170	Sensor input: quick disconnect 7-pole receptacle Signal inputs and outputs, mains supply: via plug-in terminal strips	
	pH 296	Sensor input, signal inputs and outputs, mains supply: via plug-in terminal strips; accessible from rear	
Input Power	115/230 VAC (-15/+10 %), 48-62 Hz (18 VA max.); 24 VAC (-15/+10 %), 24 VDC (-30/+20 %)		
Integrated Lightning Protection	Coarse and fine protection, surpasses EN 61326 requirements		
EMI/RFI Conformance	EN 61326 class B, FCC Class A		
Certifications	CE		
Housing	pH 170	Watertight housing (PC/GF20) with threaded receptacle and four cable feed-through connections (PG compression fittings, 10 - 14 mm dia.); Protection rating IP 66 (exceeds NEMA 4X)	
	pH 296	Fiberglass-reinforced Noryl housing with membrane keypad (Polyester); Protection rating IP 54 (front panel)	
Dimensions	pH 170	8.74 x 7.95 x 4.13 in. (222 x 202 x 105 mm, WxHxD)	
	pH 296	3.78 x 3.78 x 7.32 in. (96 x 96 x 186 mm, WxHxD)	
Weight	pH 170	Approx. 7.7 lb (3.5 kg)	
	pH 296	Approx. 2.2 lb (1 kg)	
Guaranty	3 years for defects of quality		

Ordering Information

EcoLine pH 170		Order No.
pH 170, 230 VAC	pH/ORP field monitor, 230 VAC 50/60 Hz; standard model	181 112
pH 170 RT, 230 VAC	Same as standard model, with 2 programmable relays and second analog output for temperature	182 212
pH 170 RT RS, 230 VAC	Same as standard model, with 2 programmable relays and second analog output for temperature and RS 485 interface	182 222
QuadroLine® pH 296		Order No.
pH 296, 230 VAC	pH/ORP panel mount monitor, 230 VAC 50/60 Hz; standard model	191 112
pH 296 RT, 230 VAC	Same as standard model, with 2 programmable relays and second analog output for temperature	192 212
pH 296 RT RS, 230 VAC	Same as standard model, with 2 programmable relays and second analog output for temperature and RS 485 interface	192 222

EcoLine Oxi 296:



QuadroLine® Oxi 296:



Other power supplies see brochure "Product Details"

Ⓢ R-T-version, Ⓢ R-T-RS-version