MFC-DEPOLOX® 5 MULTI-FUNCTION CONTROLLER

WALLACE & TIERNAN® ANALYZERS AND CONTROLLERS

The MFC-DEPOLOX® 5 system is specifically designed for adding the exact dose of disinfectant to drinking, process and waste water. Up to four different control types are available for two measured parameters. Select ratio control, single feedback closed-loop control, combined control and setpoint trim, which is the combination control with adaptive nominal value (setpoint). Five preset process applications assist in the configuration process. The MFC-DEPOLOX 5 controller is therefore easily configured for the control, measuring and analysis tasks in hand.

DESIGN AND FUNCTION

The MFC-DEPOLOX 5 multi-function controller consists of the MFC electronic module and the DEPOLOX 5 flow cell module. The MFC electronic module displays the measured data and functions as the control unit. The controller outputs for dosing chlorine dosing systems, positioners, dosing pumps, pulse pumps as well as analogue signals (mA) are easily configured in the set-up menu. The alarm contacts – up to a maximum of eight contacts – are application-dependant and freely configurable. A multiple assignment of events such as a general alarm for monitoring limit values, sample water failure, for example, is also possible.

The DEPOLOX 5 flow cell module can be equipped with up to four measuring sensors. Apart from the integrated sensor for the measurement of free chlorine, chlorine dioxide, ozone and potassium permanganate, these sensors can measure conductivity, redox voltage, pH value and fluoride. An additional membrane sensor can also be used to measure free chlorine, total chlorine, ozone and chlorine dioxide. Connecting other (third-party) sensors with mA signals is possible as well.

Benefits

- Modular design of the DEPOLOX 5 measuring cell and up to three additional sensors
- Four different selectable control types, together with automatic set-point adjustment
- Time-controlled dosing using programmable time switch contacts
- Easy to configure with selectable, preset process-adjusted applications
- Easy linking with process visualization systems via an OPC server; with Process Monitoring System connected to Web technology
- Additional functions such as integrated calibration instrument bracket, easy draining of the flow block module, sample water extraction

MFC ELECTRONIC MODULE

Display:
Back-lit LCD graphic display; Resolution 240 x 64 pixels
Measurement inputs:
1 x DEPOLOX® 5 module; three additional module slots
Galv. isolated up to 50 V relative to earth
1 x dosing quantity display (feedback signal of positioner)
Digital inputs:
1 x digital input for monitoring sample water; 1 x external stop; 1 x freely definable, e.g. controller stop, operating mode switch, external set-point
Output contacts:
Max. eight freely definable alarm contacts/general fault messages as well as controller outputs for the measured parameter
Each output contact is visualised by a signal LED
max. 1250 VA to 250 V DC, max. 150 W to 220 V DC
Special outputs:
Time-controlled contact (timed dosing)
Analogue outputs (optional):
4 x 0/4 – 20 mA, freely configurable
Load ≤ 1000 Ohm, accuracy < 0.5 % FS
Galv. isolated up to 50 V relative to earth
Interfaces:
RS 232 interface (printer or firmware update)
RS 485 to connect with Process Monitoring System, Wallace & Tiernan® OPC server; IRDA interface for remote calibration with the Wallace & Tiernan® photometer P42 i-cal
Power supply:
200 – 240 V AC ± 10 %, 50 – 60 Hz, 30 VA
100 – 120 V AC ± 10 %, 50 – 60 Hz, 30 VA
24 V DC ± 20 % 30 W
Ambient temperature: 0 – 50 °C (32 – 122 °F)
Protection: IP 66
Tests and marks:
Conform to CE (89/336/EEC); EMC tests acc. to EN 61326; electric safety acc. to EN 61010
Weight (incl. packaging): 5.5 kg (12.1 lbs)
Dimensions (W x H x D):
320 x 270 x 175 mm (12.7 x 10.6 x 6.8 “)

DEPOLOX® 5 SENSOR MODULE

The measuring module consists of a sensor, sensor cable and a pre-calibrated and tested card.
Sensor plug connector:
IP 66 Rugged 3-electrode sensor DEPOLOX® 5 with potentiostatic measuring principle
11 measuring ranges from 0 to 100/200/500 µg/l / 1.00/2.00/5.00/10.0/20.0/50.0/100/200 mg/l
Resolutions:
up to 500 µg/l: 1 µg/l; up to 5 mg/l: 0.01 mg/l; up to 50 mg/l: 0.1 mg/l; up to 200 mg/l: 1 mg/l

DEPOLOX® 5 FLOW CELL MODULE

It is possible to install up to four sensors of the same or different design, non-pressurized or pressurized. Stable measuring signals are achieved with hydrodynamic grit cleaning of the measuring electrodes of the DEPOLOX® 5 sensor together with optimised flow around all sensors.

The following components are integrated into the flow block module:
Flow control valve:

- Controlled sample water flow: 33 l/h (0.15 USgpm)
- Control range: 0.2 – 4.0 bar (3 – 60 psi at valve inlet)
- Back-pressure: max. 1.5 bar (21.7 psi) for press. model
- Sample water temperature: max. 50 °C (122 °F)
- Min. conductivity: 200 µS/cm

Multi-sensor:

- Monitoring of correct sample water flow
- Switching point: 21 l/h +/- 3 l/h Switching hysteresis: 2 l/h
- Measurement of sample water temperature with sensor Pt 1000 for the temperature compensation of the chlorine and possibly the pH measurement
- Sample water earthing with stainless steel sleeve

Sample water connections:
PVC hose 6 x 3 mm or PE hose 6 x 1 mm Hose connector adaptors to 1/2 “ threaded hose connection
Weight (incl. packaging): approx. 2 kg (4.4 lbs)
Dimensions (W x H x D):
215 x 375 x 155 mm (8.4 x 14.8 x 6.1 “)

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