

Water Technologies

Wallace & Tiernan

MFC-DEPOLOX® 5

Multi-function controller
for free chlorine, chlorine dioxide,
ozone and potassium permanganate

SIEMENS

The Wallace & Tiernan MFC-DEPOLOX® 5 is specifically designed for adding the exact dose of disinfectant to drinking, process and waste water. The control, measuring and analysis features of the multi-function controller make this device flexible enough for a variety of possible applications. Dosing pumps, electric stroke positioners (servo drives) and continuous actuators are directly controlled according to the metered disinfectant concentration. 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 (set point). Five preset process applications assist in the configuration process and may also be used to select the control types. The MFC-DEPOLOX® 5 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 MFC module is equipped with different controller outputs, alarm contacts and integrated safety functions. 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 max. 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.

Integrated safety functions:

- Safety deactivation of the controllers with digital input
- Adjustable dosing time delay
- Monitoring sample water flow

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; (see separate data sheets). Connecting other (third-party) sensors with mA signals is possible as well.

The “multi-sensor” integrated into the flow cell module monitors the constant sample water flow, measures the sample water temperature and provides wide-area earthing.

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
- Timer-controlled dosing using programmable time switch contacts
- Easy to configure with selectable, preset process-adjusted applications
- Easy linking with process visualisation systems via an OPC server; with ChemWeb server 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 (direct printer control or firmware update)
RS 485 to connect with ChemWeb server, Wallace & Tiernan OPC server, CMS software
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

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

Dimensions (W x H x D): 320 x 270 x 175 mm

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-pressurised or pressurised, into the flow cell module.

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 cell module:

Flow control valve:

- Controlled sample water flow: 33 l/h
- Control range: 0.2 ... 4.0 bar at valve inlet
- Back-pressure: max. 1.5 bar for pressurised model
- Permissible sample water temperature: max. 50 °C
- 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

Dimensions (W x H x D): 215 x 375 x 155 mm

www.siemens.com/wallace-tiernan

Wallace & Tiernan and DEPOLOX are trademarks of Siemens, its subsidiaries or affiliates.

The information provided in this brochure contains merely general descriptions of characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

Germany:
+49 8221 9040
wtger.water@siemens.com

United Kingdom:
+44 1732 771777
wtuk.water@siemens.com

USA:
+1-856-507 9000
wtus.water@siemens.com

WT.050.580.001.IE.PS.0607
© Siemens Water Technologies 2007
Subject to change without prior notice.