DID – Dosing Instrumentation Digital

Measurement and control of up to 3 water quality parameters

General

Monitoring of typical water quality parameters as well as precise control of disinfectant addition or pH adjustment is essential for many water treatment processes. Bus interface as well as data logging functionalities and intuitive user interface are a must for M&C today.

The new Grundfos by s::can DID systems are the perfect combination of s::can´s state-of-the-art digital sensor technology and Grundfos´ experience in PID controlling of dosing and disinfection processes. DID systems are designed to match perfectly with Grundfos dosing pumps, gas dosing systems as well as systems for the generation and dosing of chlorine dioxide and hypochlorite.

Characteristics and main features

DID systems are available as pre-assembled systems with bypass flow cell or as kits for applications with tank-immersed sensors.

Variants with bypass flow cell are intended for monitoring and control of disinfectants, pH, ORP, conductivity and temperature. The water flow through the cell is kept at an appropriate level by a flow restrictor. Lack of water is detected by a flow switch and leads to an alarm. A shut-off ball valve and a sampling cock complete the hydraulic installation, which is compatible with Grundfos standard hoses.

System configurations for tank immersion are available with up to 2 sensors for pH, ORP and conductivity, and always include temperature measurement. These variants allow measurement of water parameters directly in the tank or basin without the need for a bypass line and flow cell. The controller unit can either be fixed directly at a wall or backplate, or mounted on a DIN rail in a cabinet.

Control unit CU 382

- Intuitive plain-text operation
- Data logger functionality
- Up to 3 controller outputs, freely assignable
- Modbus included
- Modbus sensor interface
- Data interchange with USB stick
- Wide-range power supply

Sensors

- Modbus interface to control unit CU 382
- Onboard storage of calibration data
- Temperature compensation included for all sensors
- Long service intervals
- Pre-calibrated (pH, ORP, conductivity sensor)
- 1-2 sensor variants per parameter for all applications and measuring ranges
- Diaphragm-covered amperometric sensor principle for disinfectant sensors
- Low pH dependency for free-chlorine sensors

Pre-assembled measuring system

- Automatic setting of the water flow and detection of missing water flow in systems with flow cell
- Probe carrier included in systems for tank installation
- 7.5 m of cable included in systems for tank installation (extension cables are available in lengths up to 20 m)
- Probe guard included in systems for tank installation

GRUNDFOS

Possibility in every drop

Technical data

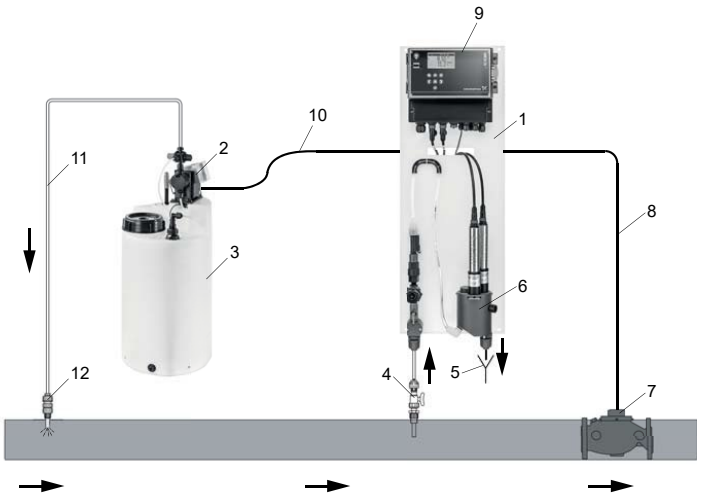
Control unit CU 382

Electronics	High-speed 32 bit Cortex M4 processor
Display	128 x 64 px graphical display
Memory	512 MB, industrial grade SLC
Data logger	Internal memory or USB stick
Outputs/inputs	3 x 4-20 mA outputs 1 x 4-20 mA input 2 x potential-free outputs 1 alarm relay 2 x potential-free inputs
Interfaces	RS485 GENIbus or Modbus
Operating temperature	-20 to +45 °C
Permissible relative air humidity	5 to 90 %, non-condensing
Supply voltage	100-240 50/60 Hz
Enclosure class	IP 65

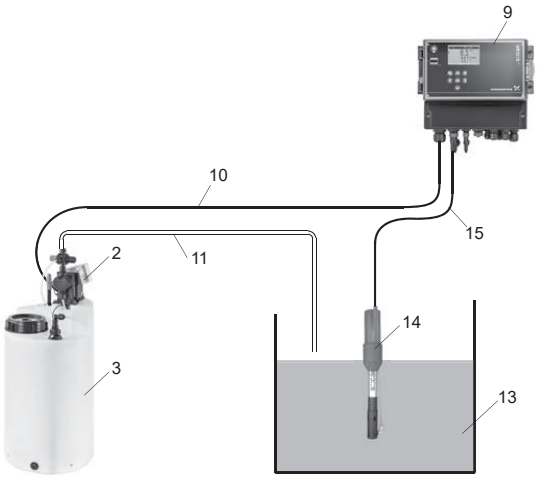
Sensors

Measured parameter	Free chlorine	Total chlorine	ClO_2	H_2O_2	PAA	pH	ORP	Conductivity
Operating temperature	+5 to +45 °C	+5 to +45 °C	+5 to +50 °C	+5 to +45 °C	+5 to +45 °C	0 to +70 °C	0 to +70 °C	0 to +70 °C
Max. operating pressure	0.5 bar	0.5 bar	1.0 bar	1.0 bar	1.0 bar	0-10 bar	0-10 bar	0-10 bar
Min. flow rate/flow speed	30 l/h	30 l/h	30 l/h	30 l/h	30-100 l/h	0.01 -3 m/s	0.01-3 m/s	0.01-3 m/s
Response time t_{90}	2 min	2 min	1 min	8 min	5 min at 10 °C 1.5 min at 50 °C	30 s	30 s	60 s
Measuring range	0-2 ppm 0-20 ppm	0-2 ppm 0-20 ppm	0-2 ppm 0-20 ppm	0-200 ppm 0-2000 ppm	0-200 ppm 0-2000 ppm	pH 2-12	-2000 to +2000 mV	0-500000 µS/cm

Typical setup of DID, dosing system and flowmeter



Installation scheme: DID with bypass flow cell



Installation scheme: DID for tank immersion

Legend

1 DID unit
2 SMART Digital dosing pump
3 Dosing tank
4 Sample water extraction
5 Sample water outlet to drain
6 Bypass flow cell for one or three sensors
7 Flowmeter
8 Signal cable: flowmeter to control unit CU 382
9 Control unit CU 382 of DID
10 Control cable to pump
11 Dosing line
12 Injection unit
13 Tank
14 Sensor holder
15 Signal cable: sensor to control unit CU 382

Contact us
Toll Free: 1800 102 2535
Email: oneoffice.india@sales.grundfos.com
Website: www.grundfos.com/in

GRUNDFOS

Possibility in every drop

98911695 0416 ECM: 1165229