

5.4 DULCOMETER[®] diaLog DACa Multi-parameter Controller

5.4.1 diaLog DACa Multi-parameter Controller



The DULCOMETER[®] diaLog DACa multi-parameter controller is the new controller platform from ProMinent. It replaces the D1Ca/D2Ca controllers. The diaLog DACa can also be installed in a control cabinet using the optional mounting kit. The diaLog DACa has been specifically developed for the continuous control of liquid analysis parameters in water treatment processes, environmental technology and industry.

The DULCOMETER[®] diaLog DACa multi-parameter controller is available in a version with one or two measuring channels and can work with conventional analogue sensors and actuators. It is also equipped to communicate with digital sensors and actuators via the CANopen sensor/actuator bus.

The diaLog DACa controller intelligently completes the control circuit between ProMinent[®] DULCOTEST[®] sensors and ProMinent[®] metering pumps offering special functions, as required in water treatment.

Typical applications

- Potable water treatment
- Waste water treatment
- Industrial and process water treatment
- Swimming pool water treatment

Standard equipment

- 1 measuring channel with 14 freely selectable measured variables (via the mV or mA input). The measured variables conductive and inductive conductivity are currently only available with the D1Ca.
- PID controller with frequency-based metering pump control for 2 metering pumps.
- 2 analogue outputs for measured value, correction variable or control variable (dependent on the optional equipment).
- 2 digital inputs for sample water fault detection, pause and parameter switching.
- 2 relays with limit value functions, timer and non-continuous control, 3-point step control (dependent on the optional equipment).
- Measured variables and language selection during commissioning.
- Temperature compensation for the pH and fluoride measured variables.
- 22 operating languages.
- Saving and transfer of device parameterisation using the SD card.
- Subsequent upgrade of the software functions by means of an activation key or firmware update.

Optional accessories

- Second, complete measuring and control channel with second PID controller.
- Data and event logger with SD card.
- Disturbance variable processing (flow) via mA or frequency.
- Compensation of the pH influence on chlorine measurement.
- 3 additional inputs, e.g. for level monitoring.

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5.4.2 diaLog DACa Multi-parameter Controller - Technical Data

Technical Data

Measuring range	mV connection type: pH: 0.00 ... 14.00 ORP voltage: -1,500 ... +1,500 mV Connection type mA (amperometric measured variables, measuring ranges corresponding to the sensors): Chlorine Chlorine dioxide Chlorite Bromine Ozone Hydrogen peroxide (PER sensor) Hydrogen peroxide (PEROX sensor with Peracetic acid) Dissolved oxygen Connection type mA (potentiometer measured variables, measuring ranges corresponding to the transmitter): pH ORP voltage Fluoride Conductivity (measuring ranges corresponding to the transmitters): via Transmitter 0/4 ... 20 mA (DMT) Temperature: via Pt 100/Pt 1000, measuring range 0 ... 150 °C
Resolution	pH: 0.01 ORP voltage: 1 mV Temperature: 0.1 °C Amperometric analysis (chlorine etc.): 0.001/0.01 ppm, 0.01 vol. %, 0.1 vol. %
Accuracy	0.3 % based on the full-scale reading
Measurement input	pH/ORP (input resistance > 0.5 x 10 ¹² Ω)
Correction variable	Temperature via Pt 100/Pt 1000
Correction range	0 ... 100 °C
pH compensation range for chlorine	6.5 ... 8.5
Disturbance signals	Flow via mA or frequency
Control characteristic	P/PID control
Control	2 x bidirectional control
Signal current output	2 x 0/4 ... 20 mA electrically isolated, max. load 450 Ω, range and allocation (measured, correction, control variable) can be set
Control outputs	2 x 2 pulse frequency outputs for metering pump control 2 relays (limit value, 3-point step or pulse length control) 2 x 0/4 ... 20 mA
Alarm relay	250 V ~3 A, 700 VA contact type changeover contact
Electrical connection	90-253 V, 50/60 Hz, 25 VA
Ambient temperature	0 ... 55 °C (for indoor installation or with protective housing)
Enclosure rating	Wall mounted: IP 67 Control cabinet mounting: IP 54
Tests and approvals	CE, MET (corresponding to UL according to IEC 61010)
Housing material	PC with flame retardant additive
Dimensions	250 x 220 x 122 mm (WxHxD)
Weight	1.3 kg

A complete measuring station comprises the following:

- DACa measuring transducer /controller (see identcode)
- DGMa..., DLG III ..., sensor holder
- pH sensor
- ORP sensor
- Chlorine, chlorine dioxide, chlorite, bromine, dissolved oxygen sensor
- Transducers for pH and/or ORP
- Sensor cable

5.4 Identcode Ordering System for DULCOMETER® diaLog DACa Controller



5.4.3 diaLog DACa Identcode Ordering System

DACa	Version	
	00	Wall mounted with ProMinent® logo
	S0	With fitting kit for panel mounting
	Operating voltage	
	6	90 ... 253 V, 48/63 Hz
	Channel 1 (the measured variable is selected during initial commissioning)	
	1	Measurement + control, 2 pumps, 2 control inputs, 2 mA outputs
	Channel 2 (the measured variable is selected during initial commissioning or software presetting.)	
	0	No 2nd channel
	1	Hardware only for channel 2, no software functions activated <i>(Not stocked use option 2)</i>
	2	Disturbance variable (mA) or external setpoint specification via mA or pH compensation for chlorine (all acting on channel 1)
	3	2nd measurement + control, additionally 2 pumps, additionally 3 control inputs <i>(Not stocked use option 4)</i>
	4	2nd measurement + control, additionally 2 pumps, additionally 3 control inputs, disturbance variable (mA or frequency), pH compensation for chlorine
	Software presets	
	0	no default settings (standard)
	1	Batch neutralisation 2 x pH measurement with 1-2 sided controller and final checking
	2	Batch neutralisation 2 x pH measurement with 1-2 sided controller, disturbance variable and final checking
	3	ORP/pH measurement/control (ORP 1 way, pH 2 way)
	4	Cl ₂ /pH measurement/control (chlorine 1 way, pH 2 way)
	5	ClO ₂ /pH measurement/control (chlorine dioxide 1 way, pH 2 way)
	6	Cl ₂ /pH measurement/control with disturbance variable (chlorine 1 way, pH 2 way)
	7	ClO ₂ /ORP measurement/control (chlorine dioxide 1 way, ORP for monitoring)
	Channel connections	
	0	Channel 1 / 2 via terminals (mA and mV)
	Connection of digital sensors / actuators	
	0	none
	Communication	
	0	none
	Data logger	
	0	No data logger <i>(Not stocked use option 1)</i>
	1	Data logger with SD card
	Hardware upgrade	
	0	none
	1	Protective RC circuit for power relay
	Approvals	
	01	none (CE standard)
	Certificates	
	0	none
	Documentation language	
	EN	English

Note: The following controllers are stocked, other versions are available ex Germany. All controllers are fitted with data logger

DACa00610000010010EN
DACa00612000010010EN
DACa00614000010010EN

Controllers for Panel Mount are Ex Germany: Consult Sydney

Software presets are done in the Sydney office, any code

Protective RC Relay Board for any identcode