

## DCU Discontinuous Water Level Controller

with LW signalling (cIS, cId) or HW signalling (chS, chd)

### Application and function

The DCU discontinuous water level controller is a 2-point water level controller with additional LW signalling (cIS, cId) or HW signalling (chS, chd). It can be configured as a supply or drain controller.

In conjunction with the IGEMA level probes DP311 or DP321 or the multiple probes DP313 or DP114, it is intended for use in steam boilers or other fluid tanks.

The product meets EC Directive 97/23/EC (PED). Conformity (CE marking) is certified in accordance with Annex III, Module D1 (Category II); notified body NB 0035.

Regulations applied: corresponding DIN EN standards.

### Functioning of DCU

The DCU water level controller works in conjunction with the Igema level probes on the basis of the conductive fill level method of measurement whereby the electric conductivity of the water medium is used. The conductivity of the medium is measured in  $\mu\text{S}/\text{cm}$ . For the secure functioning of this method of measurement a minimum conductivity of the substance to be measured is required.

The conductive method of measurement makes two statements: Electrode submerged or electrode uncovered or switch point reached or not reached. Before installation the electrode must be brought to the measure at which the switching procedure is to be used, e.g. for the lower and upper pump control point.

The evaluation device can supply up to three control probes, which can be fitted in the boiler, with power and evaluate their signals. The serial numbers of the probes used must be entered in the evaluation device so that the evaluator can communicate with these probes.

With the aid of the measurement data received from the probe electronics the evaluation device determines the system status (electrode submerged / electrode uncovered) in the boiler.

#### Control function

- a) Supply control:
  - The feeder pump is switched on when both electrode rods are uncovered.
  - As soon as both electrode rods are submerged the feeder pump is switched off.
  - The LED "PUMP" lights up.
- b) Discharge control:
  - The extraction pump is switched on when both electrode rods are uncovered. If both electrode rods are uncovered the extraction pump is switched off.
  - The LED "PUMP" lights up.



**Alarm:**
**LW alarm (cIS)**

When the electrode rod is submerged the respective relay is charged, the "LIMIT" contact is closed and the "LIMIT" LED is extinguished. If the electrode rod is uncovered the respective relay becomes de-energised, the "LIMIT" contact is opened (closed circuit principle) and the LED "LIMIT" lights up.

**HW Alarm (chS)**

When the electrode rod is uncovered, the respective relay is charged, the "LIMIT" contact is closed and the "LIMIT" LED is extinguished. If the electrode rod is submerged, the respective relay becomes de-energised, the "LIMIT" contact is opened (closed circuit principle) and the LED "LIMIT" lights up.

**Standard technical equipment**

DCU in a plastic plug-in housing for fitting into switch cabinets

- Quick fitting with a spring catch for standard 35 mm carrier rail according to DIN EN 50022 or screw fixing on a mounting plate


**Technical data**

CE ID no.:	0035
Mains connection	230V - 15% + 10% / 50Hz
Power consumption	3 VA
Device fuse	63 mA/T
Protection class according to DIN EN 60529	IP40 <sup>1)</sup>
Allowable ambient temperature	0° C - 55° C

<sup>1)</sup> as per DIN EN 12952-11, 4.3.4 in the boiler area protection class IP54 is to be ensured (switch cabinet)

**Maximum ratings of potential free contacts**

	Switching voltage	max. 250 VAC
PUMP	Switching current	max. 4 A resistive max. 0.75 A inductive $\varphi$ 0.5
	Switching voltage	max. 250 VAC
LIMIT	Switching current	max. 4 A resistive max. 0.75 A inductive $\varphi$ 0.5

Electrical conductivity of the fluid	$0,5 \mu\text{S}/\text{cm} \leq \alpha \leq 10.000 \mu\text{S}/\text{cm}$
Length of connecting cable	max. 250m

The DCU carries out periodic self-testing.

