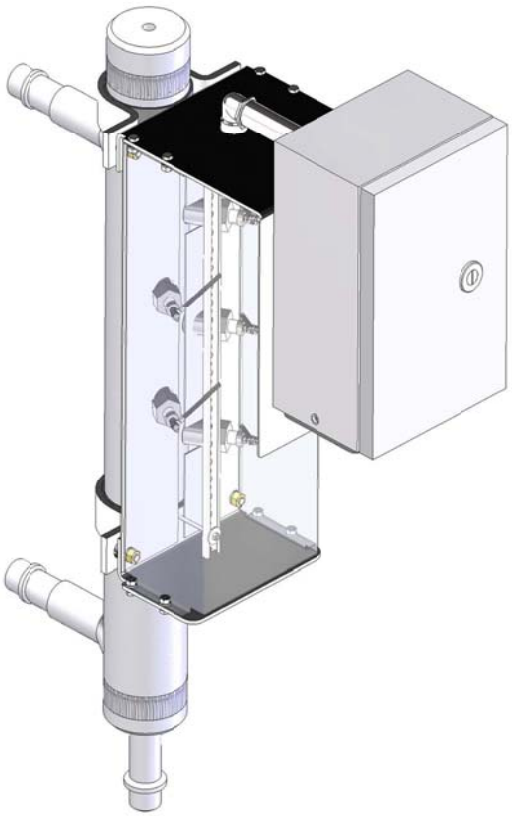
Electronic remote water level gauge type EWLI-3B

System components

The remote indicator consists of the following components:

- add-on housing with number of probes ordered (EL65 (<=32bar) or EL60 (>32bar)); (min. 5; max. 32 probes)
- measuring unit (MU); fitted on to the add-on housing and fully wired
- control unit (CU) with separate switched-mode power supply unit; for top-hat rail fitting in the distribution cabinet
- display unit (DU) – optional
- various CAN bus connecting cables



Application and function

The electronic remote indicator (EWLI-3B) is used as a water level gauge for steam boilers or tanks with electrically conductive liquid. Depending on the regulations applied the EWLI-3B can also be used as a multi-control system (indicator - limiter - controller).

Recording is carried out by a conductive measuring principle which assumes a minimum conductivity of the liquid.

The measuring unit (MU) can be equipped with up to 32 probes. The distance between the individual probes can be freely determined by the customer – taking into account a minimum distance.

Because of the freely programmable assignment of switch contacts to the probes, any subdivision of the display range can be carried out, e.g. low water level range (LW), working range and high water level range (HW). A subdivision into LLW – LW – working range – HW – HHW is also possible.

Both the measuring unit and the control unit have 2 independent electronic circuits with their own processors. All processors carry out regular self-tests for internal faults in the electronic circuit.

The **control unit (CU)** processes the signals recorded and controls the downstream functions.

There are seven freely controllable output contacts (SPDT) available. An eighth contact (SPDT) is permanently switched as the signal contact for device error and a ninth contact (SPDT) permanently switched as the water level alarm contact, whereby the probes triggering the alarm (LW and/or HW) can be freely selected.
Here each processor actuates its own relay per contact whereby the output contacts are only switched when both processors signal the normal operating state in agreement. In addition there is a 4mA – 20mA interface as a (virtually) continuous output available. The output is increased per submerged probe by the corresponding proportion (16 mA / number of probes). In the event of an error the output goes to 2 mA.

The programming is carried out via 4 buttons and a 2-row LCD display with 16 characters each.

The EWLI-3B can be optionally supplemented by an additional LED display unit (DU). Here each probe of the measuring module is displayed green or red depending on status (water/steam). Moreover error states can be rapidly and reliably diagnosed with the aid of a 2x7-segment display and 3 status LEDs.

The EWLI-3B complies with EC Directive 97/23/EC and the applied regulations DIN EN 12952, DIN EN 12953, AD2000 and the ASME boiler code.

Technical equipment

- materials according to DIN or ASME
- process connection according to DIN or ANSI; flange or welding end
- up to 32 probes (EL65 / EL60)
- display of the level in relation to the probes
- 1 separate interface 4 mA – 20 mA for loads up to 500 Ohm
- 7 switch contacts, can be freely assigned to individual probes
- 1 error contact, permanently interconnected
- 1 alarm contact permanently assigned to the water level alarm, LW and/or HW probes can be freely assigned
- 1 separate interface 4 mA – 20 mA for loads up to 500 Ohm in the (optional) DUs

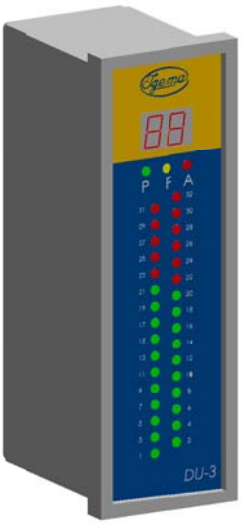
Technical Data

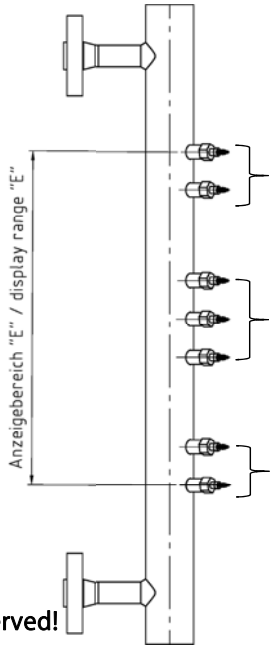
Allowable pressure	PS [bar]	32	50	80	100	160	200
Allowable temperature	TS [° C]	239	265	296	312	348	367
Electrode	Type	EL65	EL60				
	Item no.	15-01877	15-00790				
	Insulator	PTFE	Ceramic				

CU	
Power supply	24Vdc / 24 W through separate switched-mode power supply
Interfaces	CAN bus
	4 mA – 20 mA (load < 500Ohm) not galv. isolated
	7 SPDT output contacts freely programmable (Probe – switch contact)
	1 SPDT output contact permanently assigned to device errors
	1 SPDT output contact permanently assigned to the water level alarm (LW and/or HW); the corresponding probes for LW and/or HW are freely selectable
Housing design	
Material	PC-GF V-0
Protection type	Housing: IP40 Terminals: IP20
Connection	Two 21-terminal strips to 2.5 mm²
Display	LCD display with 2 16-character lines
Input / Programming	4 keys
Working temperature	0° C to +55° C

MU	
Probe design	
Connection thread	G ½
Width across flats	WF27
Material screw connection	Stainless steel
Material electrode tip	Stainless steel
Electrode spacing	At least 36 mm with offset arrangement
Housing design	
Material	Stainless steel
Protection type	IP65
Interface	CAN bus
Working temperature	0° C to +85° C

DU	
Power supply	18V – 36V; 24V DC / 2W electrical short-circuit-proof via lead
Current consumption	70mA @ 24V
Interfaces	CAN bus
	4 mA – 20 mA (load < 500Ohm) not galv. isolated
Housing design	As per DIN 61554
Material	Housing: Noryl SE1, GFN2; Pane: Makrolon
Protection type	Front: IP40 Rear: IP20
Working temperature	0° C to +55° C
Display	2 x 7-segment display
	3 Status LEDs green: power yellow: error red: alarm
	Fill level display per probe: green –water // red –steam up to 16 probes: single column otherwise: double column





Note:

max. cable length EWLI-3B MU --- EWLI-3B CU --- EWLI-3B DU: 500m

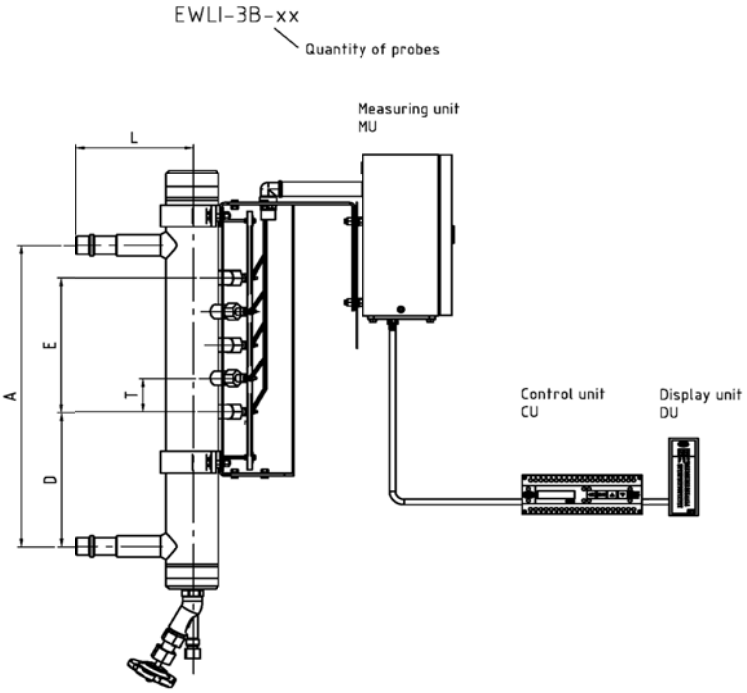
Maximum ratings of potential free contacts		
Error relay	Switching voltage	max. 250Vac
	Switching current	max. 6 A resistive
		inductive: see load profile
Limit value contacts	Switching voltage	max. 250Vac
	Switching current	max. 6 A resistive
		inductive: see load profile

During switching operations the load profile of the relay is to be observed!

Available (optional) versions

- IP65 protective housing for the insertion of the CU and DU
- Switched-mode power supply
- Relay version with gold-plated contacts
- Display DU
- Top-hat rail adapter for DU
- Bus connecting cable of required length
- optional isolated switch amplifier for galv. isolation of the power output

Dimensions



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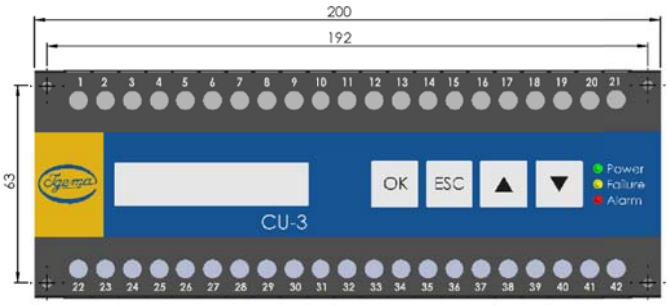

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