

Electronic remote water level gauge type EWLS

System components

The electronic switch consists of the following components:

- Water column with 1 to 4 probes (fully wired)
- Measuring unit (MU); mounted on to the water column housing and fully wired
- NEMA4X/IP66 Control Box with Control unit (CU) for up to 4 independent probe channels and LED indication (fully wired)
- connecting cables

Application and function

The state of the art electronic level detection can be used for steam boilers or any other application with electrically conductive liquid. Typical applications:

- Receiver tanks (Water tank, Deaerator, Condenser)
- Flash Tanks, Feedwater heaters
- TWIP (Turbine water induction prevention)
- Steam line drain control
- Boiler water high level high/low level control and many more

Recording is carried out by a conductive measuring principle which can detect even lowest conductivities.

The **measuring unit (MU)** can be equipped with up to 4 probes. The distance between the individual probes can be determined by the customer.

Due to the freely programmable assignment of switch contacts to the probes, the system provides maximum versatility.

Both the measuring unit and the control unit have two independent electronic circuits with its own processors. All processors carry out regular self-tests for internal faults in the electronic circuit. Redundant power supplies are standard with our system.

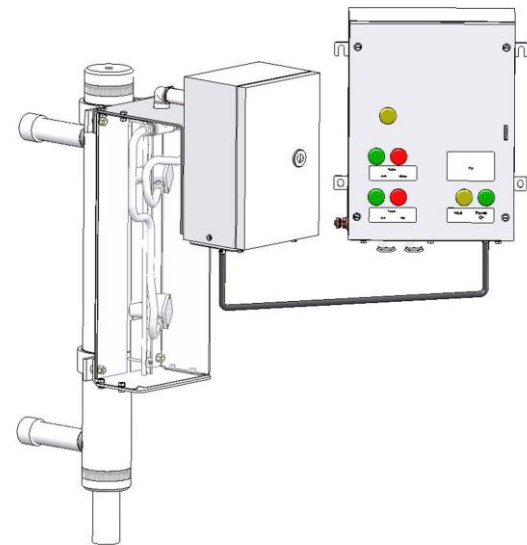
The **control unit (CU-3)** processes the signals recorded and controls the downstream functions. It is built into a stainless steel control box (IP65/NEMA4X). The control box provides local indication of all probes (water=green, steam=red), normal operation (green LED) and system fault (yellow).

Individual configurable output contacts (SPDT) with time delay option are available as standard. Furthermore 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 normal operation.

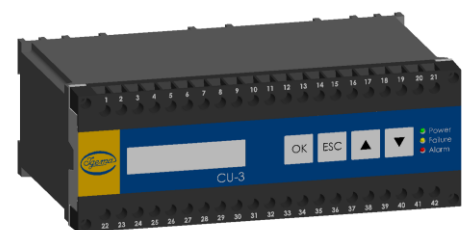
In addition there is a 4mA – 20mA interface as a (virtually) continuous output available. The output is increased per submerged probe by the corresponding proportion (16 mA / number of probes). In the event of an error the output goes to 2 mA.

The configuration/programming is carried out via 4 buttons and a 2-row illuminated LCD display with 16 characters each. Also the LCD display will show local fault indication such as power supply failure, probe fault, level indication failure ("water over steam failure"), circuit board failure, cable fault or short circuit.



Water column with Probes & measuring Unit (MU)

Control box with Control Unit (CU)



Control unit (CU)



The EWLS design and fabrication 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
- up to 4 probes (EL65 or EL60)
- display of the level in relation to the probes
- 1 separate interface 4 mA – 20 mA for loads up to 500 Ohm
- switch contacts, can be individually assigned to the 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
- Optional: Remote Display Unit DU3

Technical Data

Allowable pressure	PS [psi]	464	725	1160	2321	3002	
Allowable temperature	TS [° F]	239	265	296	312	348	
Electrode	Type	EL65	EL60				
	Item no.	t.b.d.	15-12982				
	Insulator	PTFE	Ceramic				

CU-3

Power supply	24Vdc or 110-230V AC (power converter included)
Interfaces	CAN bus
	4 mA – 20 mA (load < 500Ohm) not galv. isolated
	SPDT independent output contacts freely programmable
	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
Protection type	Housing: IP40 (built into a stainless steel IP/NEMA4X box)
Connection	Two 21-terminal strips to 2.5 mm ²
Display	Illuminated LCD display with 2 rows, each 16-character
Input / Programming	4 buttons
Working temperature	Up to 167° F

MU-

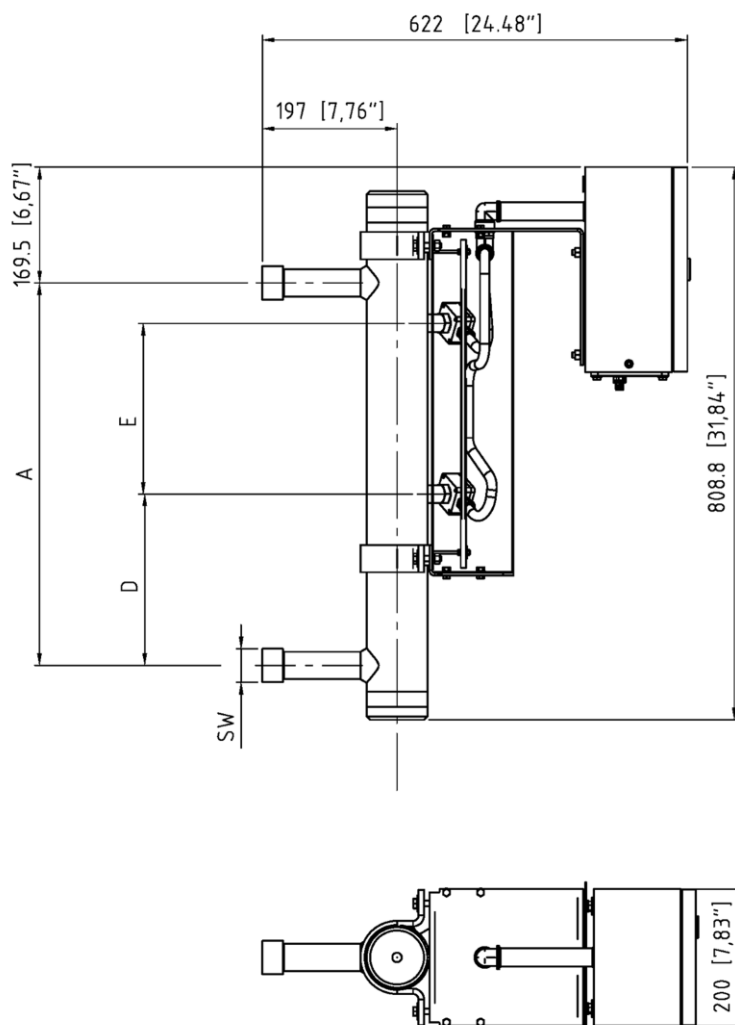
Housing design	
Material	Stainless steel
Protection type	IP65
Interface	CAN bus
Working temperature	Up to 185° F



Probe EL 60

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

Technical Dimensions



The process- and drain connection can be executed as flange, Butt welding or Socket welding end or plug

