Self-monitoring low water level limiter SMLC2

Application and function

In conjunction with the appropriate IGEMA level probes the SMLC2 self-monitoring low water level limiter is a limiter with safety function in accordance with the Pressure Equipment Directive (PED) (special design according to Water Level 100).

The product meets EU Directive 2014/68/EU (PED). Conformity (CE marking) is certified in accordance with Annex III, Modules B+D (Category IV); notified body NB 0035.

Regulations applied: corresponding DIN EN standards.

Due to the permanent self-monitoring, the limiter ensures the safety function. Thus he can be implemented in systems with safety requirements up to SIL 3.

Function SMLC2

The SMLC2 low water level limiter 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 µS/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 adjusted to the length at which the switching procedure is to be executed, e.g. for switching off burner and interrupting the safety circuit.

LEDs in different colors show the state of the system. This assists the troubleshooting.

If all conditions for correct operation are met, the safety circuit for the steam generator is enabled (burner can switch on).

In the SMLC2 the current across the electrical contacts of the safety circuit is limited by a 4A fuse. Thus jamming of the contacts is avoided.

In the case of low water, the output (relays) of the safety circuit is deactivated after a total adjustable delay of 4s, 8s, 12s or 16s, thus the burner is cut-off. The preset delay time is 4s.

A latching is not implemented in to the SMLC2. It has to be installed by the operator.

The permanent self-monitoring ensures the functionality. Thus a test button is not necessary.

- EU Type Approval
- SIL 3
- Production monitored

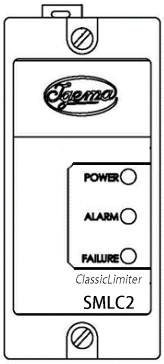
Probes

name	PS	TS	connection	electrode length
EL030	32 bar	239° C	G ½“	125mm – 1700mm
EL19-2	200 bar	367° C	G ½“	150mm – 1700mm
EL963	8 bar	175° C	Flange	130mm
MS 015A	32 bar	239° C	G 1“	60mm – 1500mm
MS 015B	32 bar	239° C	G 1½“	60mm – 1500mm

Technical basic equipment

- SMLC2 is delivered in a plastic plug-in housing for installation in control panels
- Fixation on standard rail 35 mm according to DIN EN 50022 or directly screwed to chassis plate

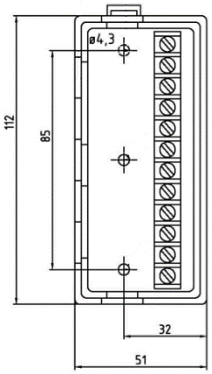
front view



Technical Data

EU – component test	CE 0035 DIN EN 12952-11 : 2007; DIN EN 12953-9 : 2007
Safety integrity level	SIL 3 EN 61508: 2010; EN 12952-11: 2007 5.5; EN 12953-9: 2007 5.5
Electromagnetic compatibility	EN 61326-1: 2006
Low voltage	EN 61010-1: 2010

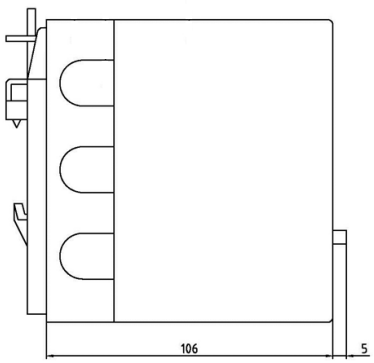
socket with terminals



Mains connection	230V (-15% + 10%) / 50/60Hz
Power consumption	3 VA
Hardware protection	short-circuit-proof transformer
Protection class (DIN EN 60529)	IP40 [1)]
Ambient temperature	0° C - 55° C
Self monitoring	every 2 s

[1)] according to DIN EN 12952-11, 4.3.4 a protection of IP54 has to be maintained in the boiler area (switching cabinet)

side view



Max. operating data of potential free contacts		
Burner cut-off	Voltage	max. 250 VAC*
	Current	max. 6 A* ohmsch
Auxiliary output (relay)	Voltage	max. 250 VAC*
	Current	max. 5 A* ohmsch
Electrical conductivity of the liquid	0,5 µS/cm ≤ æ ≤ 10.000 µS/cm (25° C)	
Lenght of connection line	max. 100m	

* observe load curve / use contactor
At the auxiliary output the terminals are not fused.
The burner-cut-off output has a 4A microfuse to avoid jamming of the contacts in the case of excess current.
The load has to be reduced regarding the nominal values of the relay.
Relay used: Schrack V23092-A1024-A301