



SURFACE BLOWDOWN SYSTEM

GENERAL FEATURES

The density of total dissolved substances (TDS) in water increases during steam production. In such a case, boiler and steam lines may be damaged if the specified limits are exceeded.

These damages can create defects on the equipment, as well as lead to energy loss by dragging along with the steam and increasing the conductivity of the condensate.

These substances (generally calcium and magnesium salts) which are formed in the steam and steam lines of steam production are removed by various means in order to provide optimum TDS level.

This process is called blow down. If the unwanted substances are dissolved in water, they are automatically evacuated from the system by blowing from the surface. Surface blow down is a process that continues at regular intervals.

1 piece Conductivity Sensor,
1 piece Transmitter,
1 control valve,
1 PID Controller and Control Panel.
On request, 1 Plate Heat Exchanger
and 1 Circulation Pump can be added
in addition to YBS-10 for ENERGY
RECOVERY SYSTEM.

Depending on operating conditions,
YBS-10 with heat recovery system can
amortize the investment cost in a very
short time.

ADVANTAGES OF SURFACE BLOWDOWN CONTROL SYSTEM

It is not possible to determine the
amount of undissolved matter
concentration in the boiler water and
to determine the optimum blast range
with a manually controlled surface
blow down system.

The boiler operator does not know
at what intervals and for how long to
blow down.

However, even if the blow interval is
appropriate, it can not calculate the
changing conditions in fresh feed
water and boiler feed water.

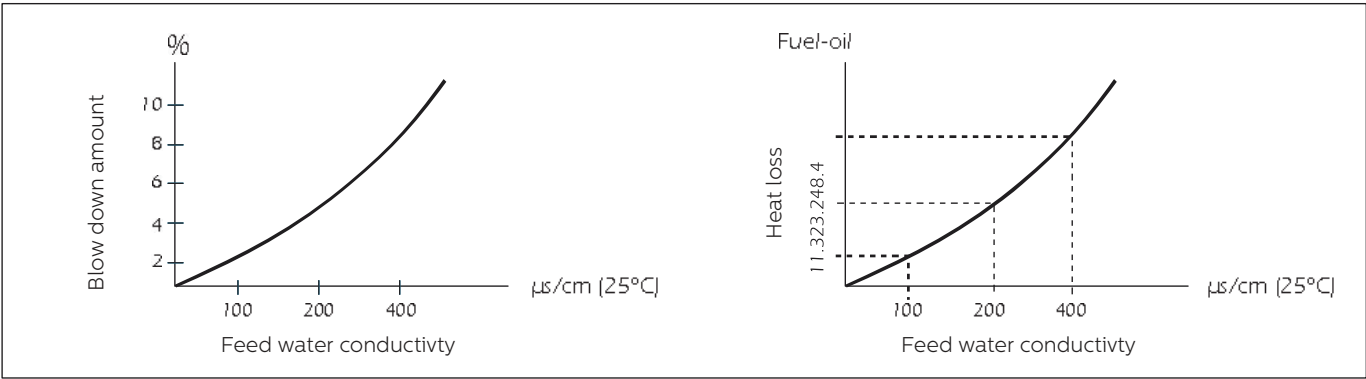
In the same way, it is not possible to
calculate the conditions of return of
the condensate.

The automatic blow system measures
the amount of undissolved material
in the water volume by optimizing the
surface blow interval.

The automatic surface blow down
control system minimizes the amount
of blows to ensure that the amount of
chemicals used remains at acceptable
levels and reduces energy loss to a
minimum.

It reduces the cost of water treatment,
consumption and heating by a
considerable amount.

YBS-10 SURFACE BLOWDOWN SYSTEM



EL-22 Conductivity Probe

Mechanical Connection	G ½ (SW27)	
	Tee Connection to Boiler	
Electrical Connection	Socket Input	
Material	Prob Material	SS
	Prob Stem	SS
	Izolator	PTFE
	Socket	Polyamid
	Sealing Gasket	Soft Material
	Tee Connection	10,460

Tee Connection

Standard	TÜV ID:0000006175	
Pressure	Ps (bar)	32
Temperature	Ts (°C)	239
Sleeve	M16X1.5	
Water Proof Class	IP65	
Plug Temperature	Ts (°C)	100

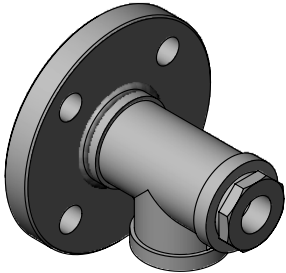
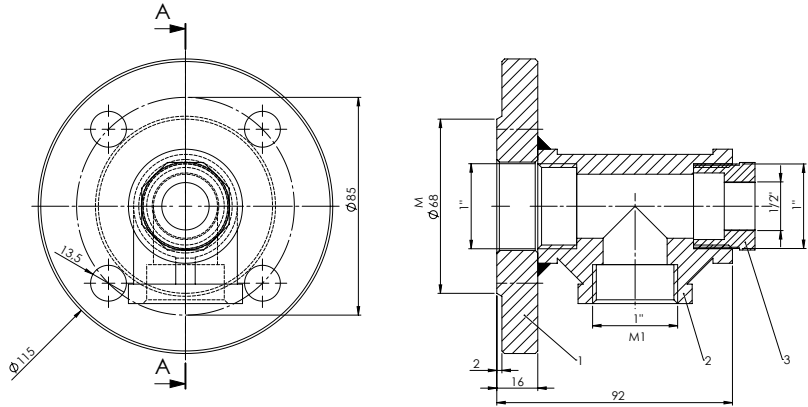
- Used in vertical and inclined tanks up to 90 degrees.
- Can be produced in different sizes upon request.
- Screws, nuts and gaskets are available.
- Caution: Never try to shorten or extend the probe.



EL-22 Conductivity Probe

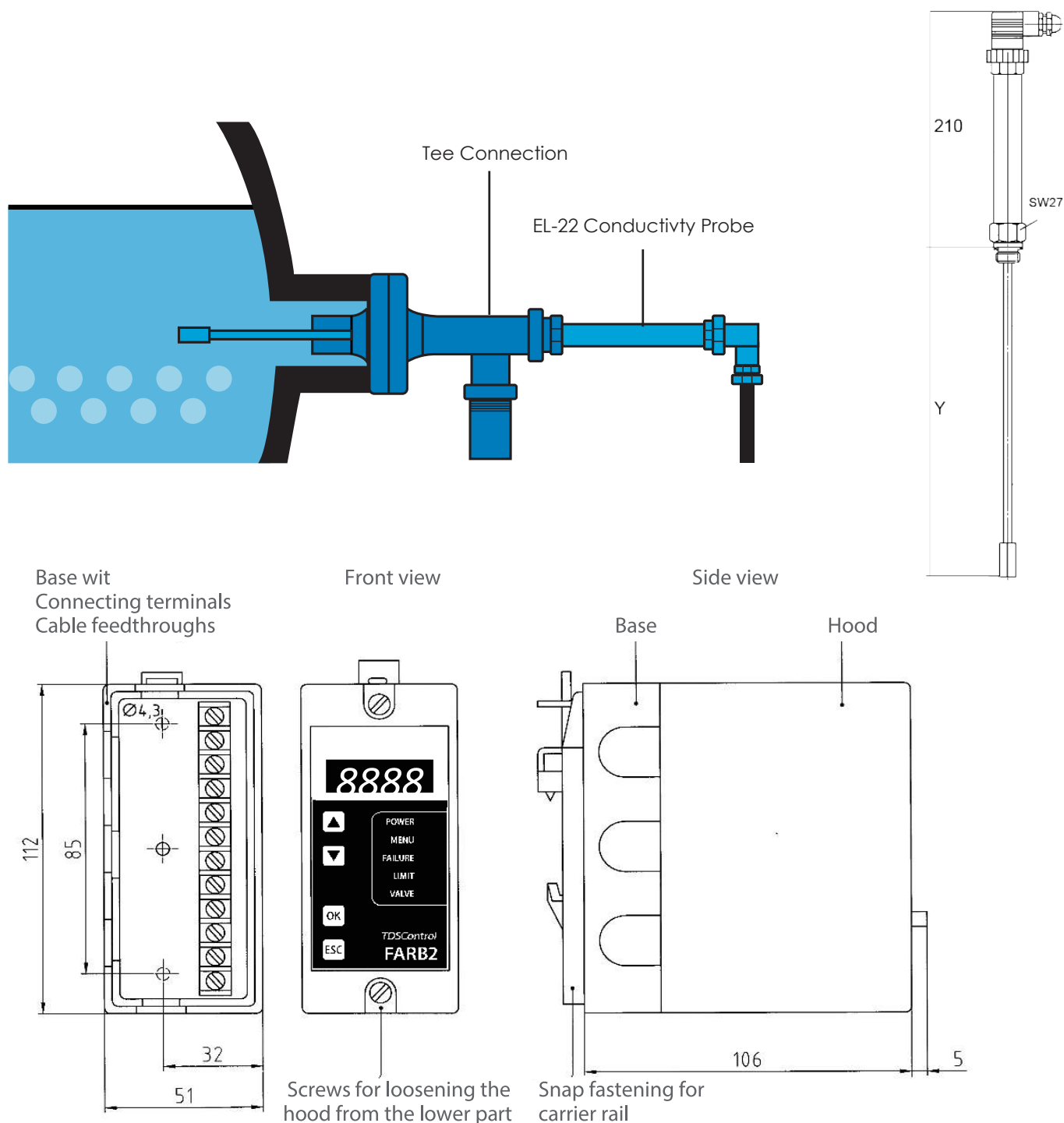


Tee Connection



PN	Probe Boiler Connection M		Blowdown Valve Connection M1	
	DN	DIN 2535	DN	DIN 2535
40	20		15	
	25		20	

YBS-10 SURFACE BLOWDOWN SYSTEM



The FARB2 works in conjunction with TDS probes. The measuring current flowing between the measuring cell wall (boiler wall / protection electrode and the n tube) is proportional to the conductivity of the liquid.

After setting the operating point by entering the current liquid temperature and the conductivity measured by sampling (reference temperature 25°C), the FARB2 sets the 4..20mA output current and changes it when the measuring current changes due to conductivity changes of the liquid.

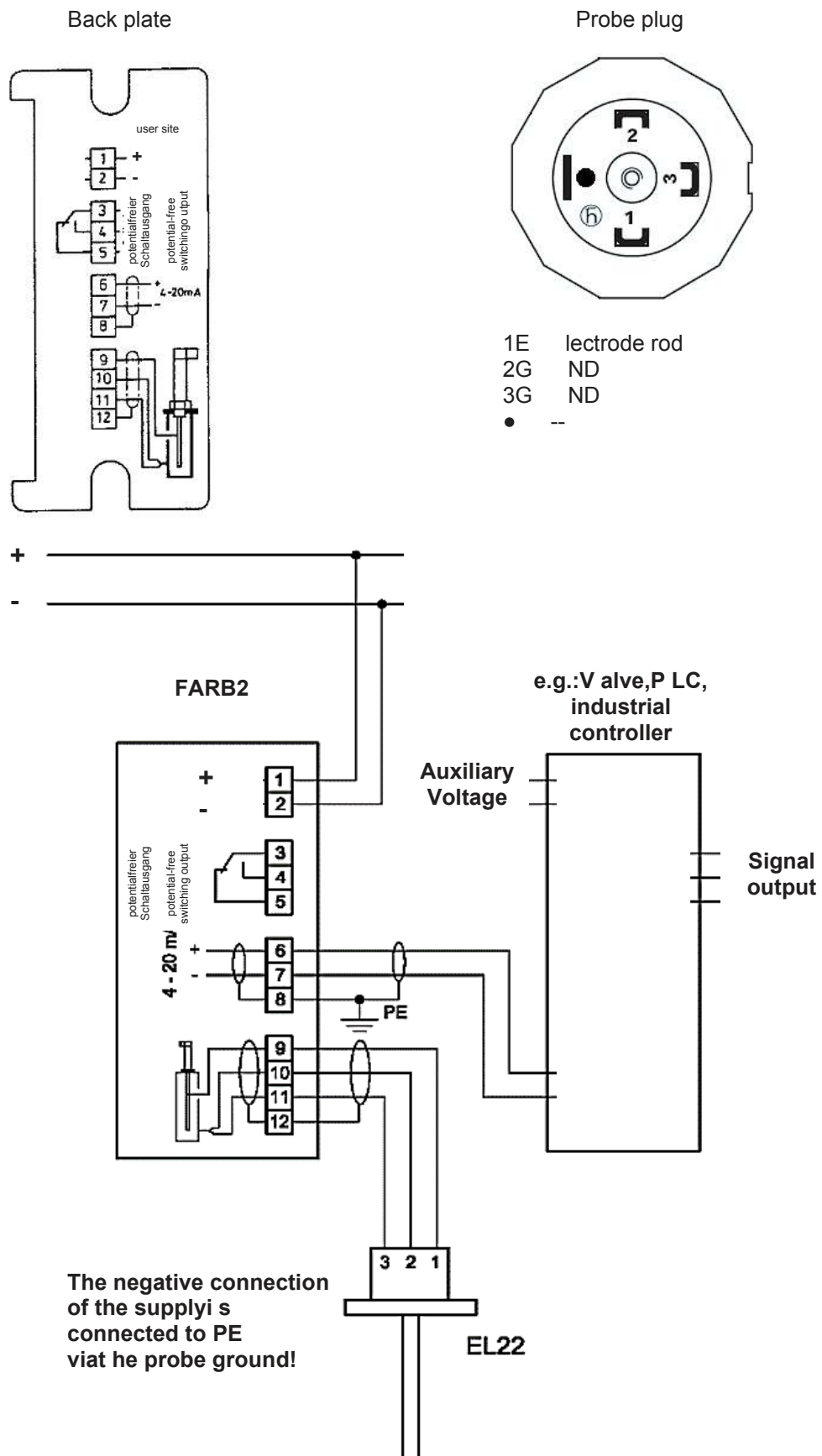
The FARB2 can be operated in two ways (relay output), as:

TDS limitation

- Switch for TDS control valve

YBS-10 SURFACE BLOWDOWN SYSTEM

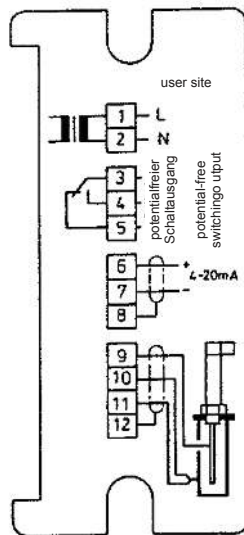
24V DC WIRING



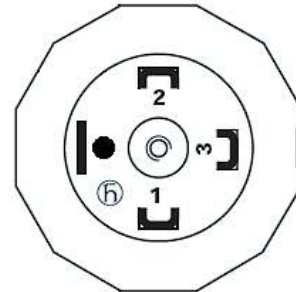
YBS-10 SURFACE BLOWDOWN SYSTEM

110 – 240 V AC WIRING

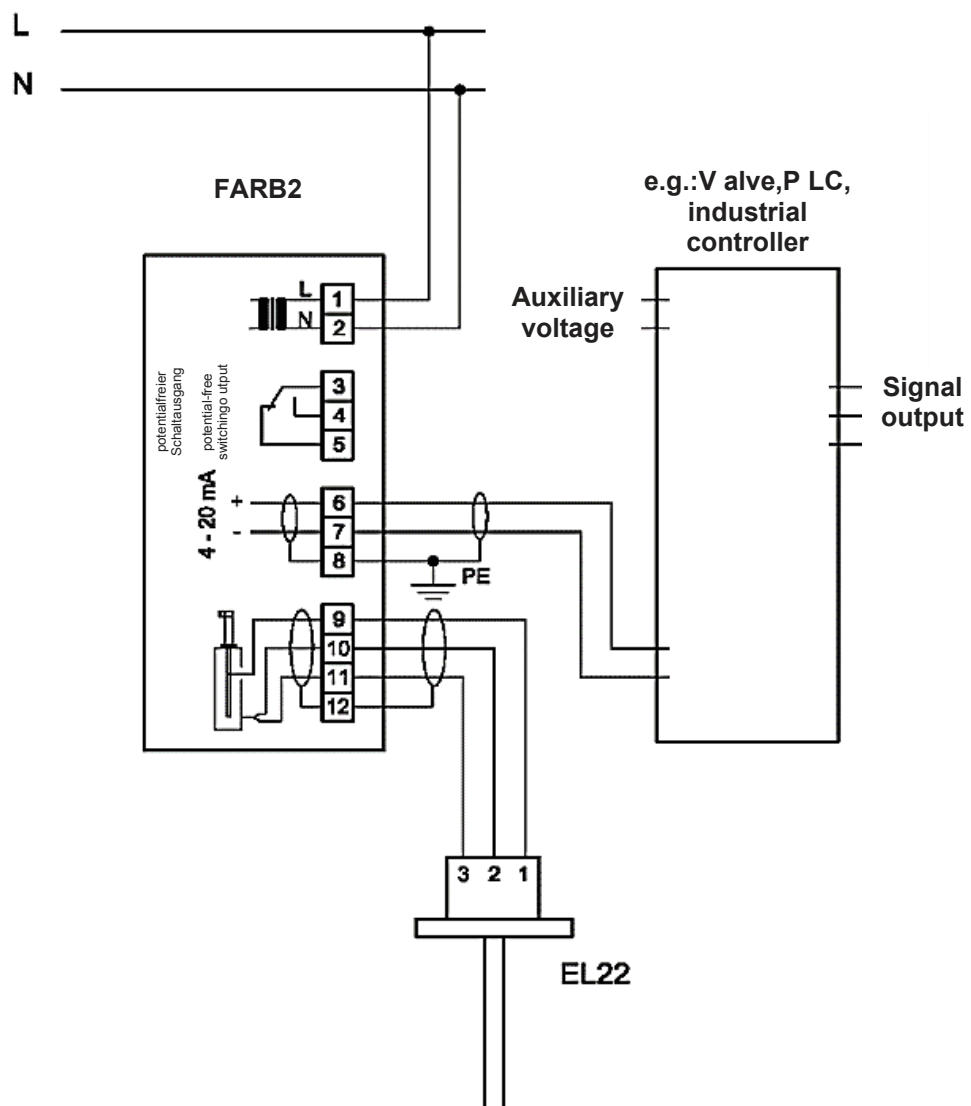
Back plateP



robe plug

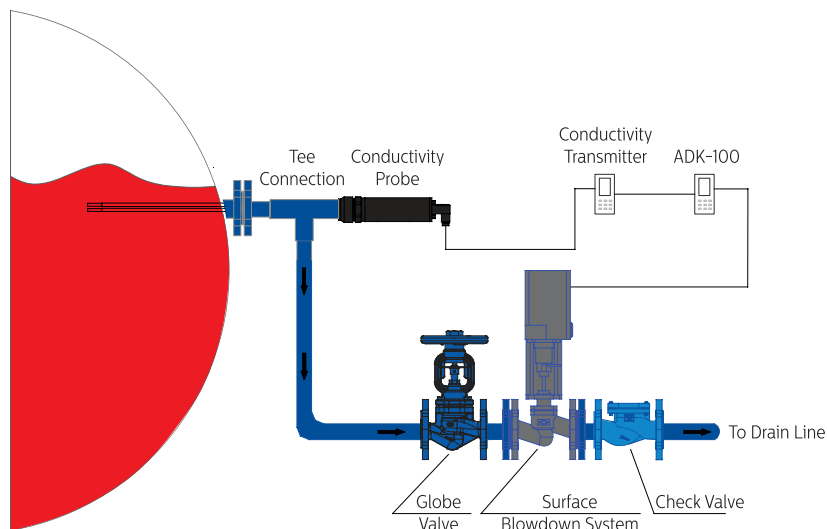


1E	lectrode rod
2G	ND
3G	ND
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YBS-10 SURFACE BLOWDOWN SYSTEM

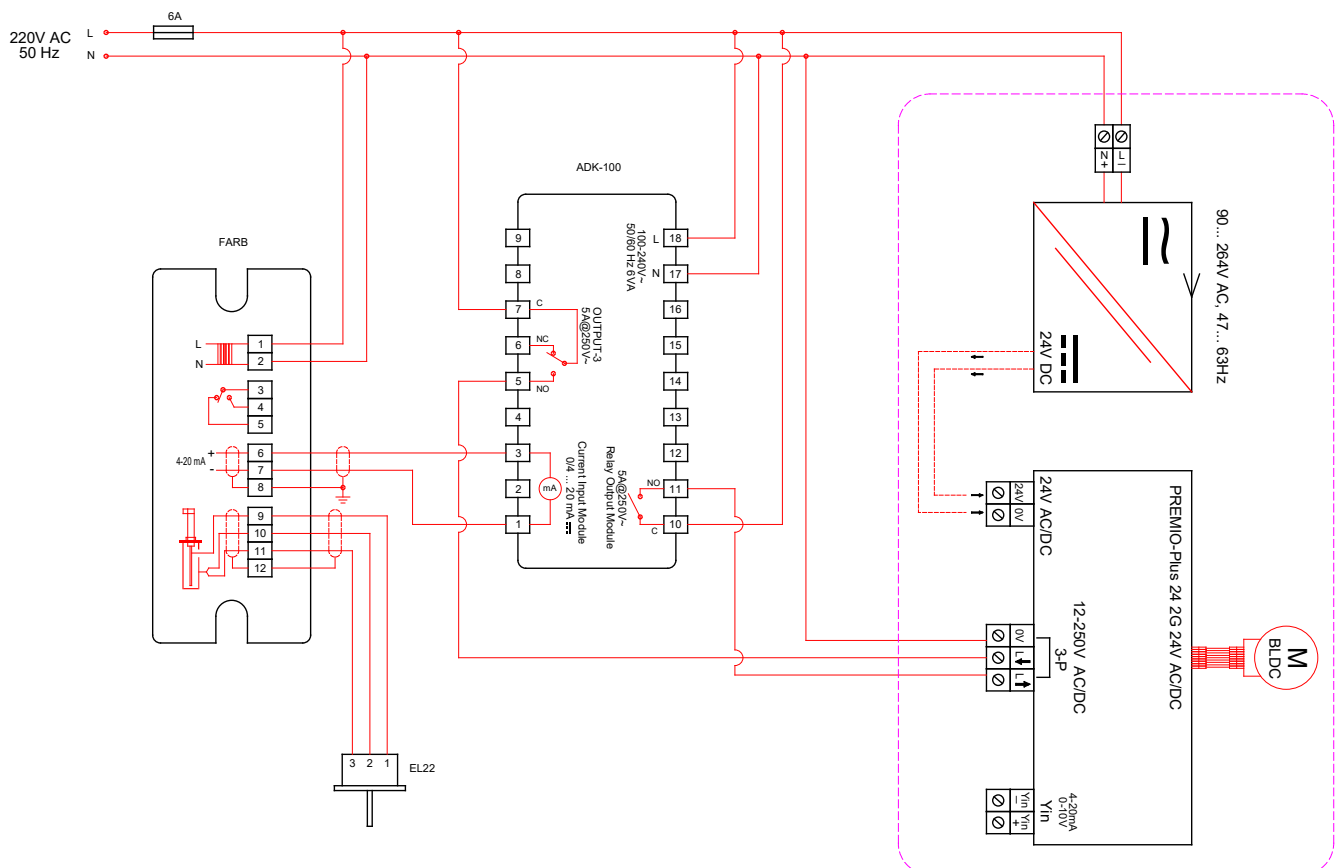
APPLICATION EXAMPLE



Power connection

- The terminal band of the device is operational during operation!
- Disconnect the device from the mains before working on it!

The device must be protected by the operator with a maximum 2A fuse on the mains side! If inductive consumers are connected, voltage peaks occur when switched off. Therefore, the connected inductive consumers (Ex: Contactors) must be additionally provided with an RC circuit: for example, $0.1\mu\text{F} / 100\ \Omega$



YBS-10 SURFACE BLOWDOWN SYSTEM

Device Data - Controller

Power Supply	100 – 240V / 50 – 60 Hz
Power	apprx. 4,5 VA
Device Fuse	4A relay
DIN EN 60529 Protection Class	IP40 ¹
Ambient Temperature	0 – 55°C

¹In accordance with the German directive VdTÜV-Wasserstand 100, a protection class of 4.90, IP 54 must be ensured in the boiler zone.

Device Data - Contacts

Current interface (Not galv. insulated)	Output (Active)	4 mA ... 20 mA	
	Load	max. 500 Ω	
Limit and additional relays	Switching the voltage (Max.)	250 VAC	25 VDC
	Switching the current (Max)	4 A ohmic Inductive / capacitive / higher loads: Use contactors	

Differences Between Manuel and Automatic Blowdown System

