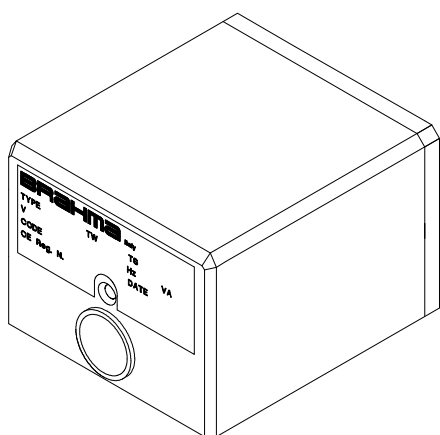


SR3 - VE3 - BV3 - GV2 CONTROL BOXES

**CONTROL BOXES FOR FORCED
DRAUGHT GAS BURNERS, WITH
POWER UP TO 120KW.**



DESCRIPTION

The SR3 - VE3 - BV3 - GV2 safety devices are suitable to control forced draught gas burners for civil and industrial applications.

The BV3 control is used for fast boilers in which hot water (or steam) taking has to occur within short times, which cannot be granted by using the SR3 and VE3 devices.

The GV2 control box is used for small boilers in which a longer safety time is generally allowed.

According to TÜV Bayern, Monaco, the SR3 control is in compliance with the German regulation DIN 4788, part 3, for power up to 120KW. It also obtained the DIN-DVGW 89.11fBN approval, now expired and not renewable.

The "Laboratorio di Macchine e Termotecnica del Centro Studi ed Esperienze" in Rome, Capannelle, tested the SR3 control for power up to 93KW, which obtained the certification no. 3704/81/77/3A and the approval of the Ministry of the Interior for fire prevention (circulars no. 68 and no. 42).

TECHNICAL DATA:

Supply voltage:	220V(-15% +10%)
	50Hz (±5%)
on request:	110V
Operating temperature range:	-10°C +60°C
Protection degree:	IP40
Starting power consumption:	10VA
Operating power consumption:	6,5VA
Max. current rating	I max.
- burner motor:	4 A
- EV valve:	2 A
- ignition transformer:	2 A
- alarm:	1 A
Regulators (T, PA, PG):	6 A
Times:	
- prepurge time (TV):	
SR3 - VE3:	50 s
BV3 - GV2:	20 s
- safety time (TS): GV2:	15 s
SR3 - VE3 - BV3:	3 s
- dropout time on running	
flame failure:	<1 s
Flame control:	
- minimum ionization current:	0,5µA
- recommended ionization current:	7µA
- minimum insulation resistance between	
probe, cable and ground:	> 50MΩ
- voltage on the detection probe:	300V
Weight including socket:	550 g

FLAME CONTROL

A transformer having one primary and two secondary windings supplies the electronic flame detection circuit at low voltage, and the detection probe with about 300V. This supply system offers the big advantage of having constant ionization values, even if the network is a live-live installation.

To check the efficiency of the flame detection circuit, you have to proceed as follows: connect a low impedance ammeter, as shown in Fig.1; the R1 ... Rn resistors in series must give the total resistance value of 200MΩ (e.g. 20 resistors of 10MΩ 1/4W 5%). If the control box is supplied with 220V, the measured current value is about 0,5+0,6µA DC, which causes the flame relay to switch on. Lower current values indicate that the circuit is damaged or only partially efficient.



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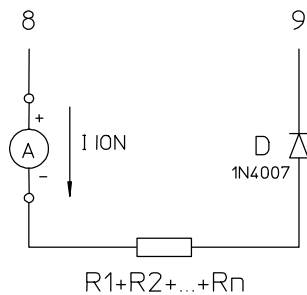


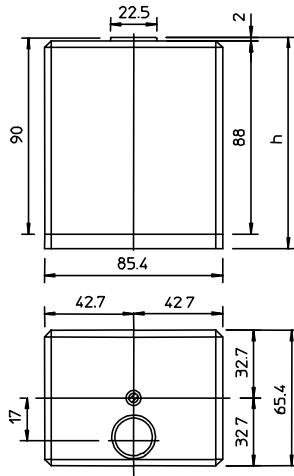
Fig.1

CONSTRUCTION

The components of the control box are fixed on a pressed frame made of thermohardening material, with high dielectric resistance. The plastic casing protects the device from possible damages resulting from crashes, incautious opening, dust and contact with the external environment. Flexible unipolar conductors of different sizes connect the components of the control, except for the flame detection and prepurge control circuit, which is mounted on a printed circuit.

OVERALL DIMENSIONS

The overall dimensions of the control box are shown in Fig.2.



h: Dimensions depending on the type of socket:
95 with socket A
99 with socket B
98.3 with socket N

Fig.2

ACCESSORIES

The control is provided with inbuilt reset button and luminous lockout signal.

It can be supplied with kanthal flame detection probes in different executions (see, for instance, Fig.3).

The casing is arranged for the fitting of core hitches and/or cable holders on its sides; also these accessories can be supplied on request.

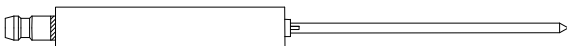
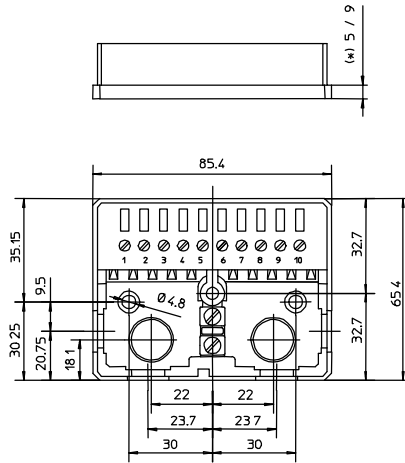
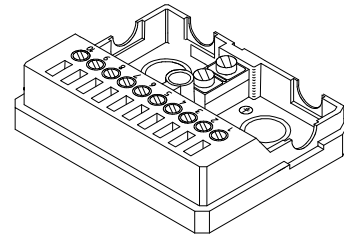


Fig.3

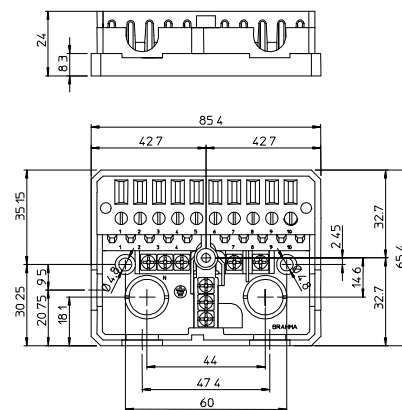
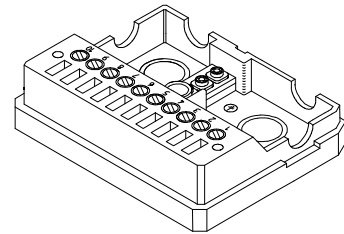
CONNECTION

As regards the interconnection system of this control, several solutions are possible and different types of connecting sockets can be employed (see Fig.4 and Fig.5). Socket N differs from sockets A and B for its dimensions and the greater number of terminals connecting neutral and ground.



(*) The dimensions differ according to the type of socket: 5 with socket A
9 with socket B

Sockets A - B
Fig.4



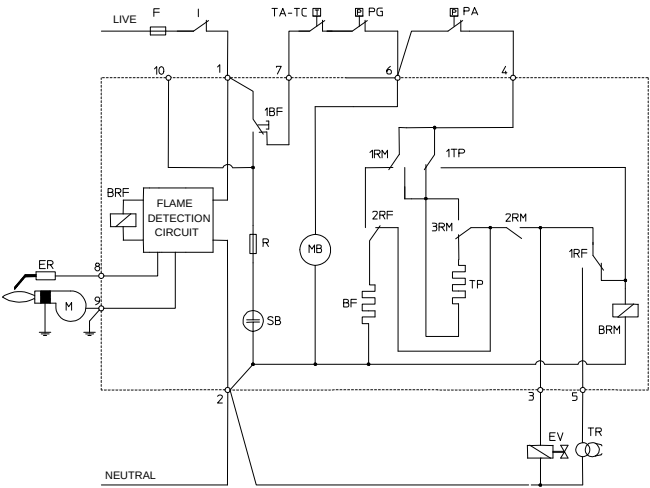
Socket N
Fig.5

DIRECTIONS FOR INSTALLATION

- Control boxes are safety devices and must not be opened; the manufacturer's responsibility and guarantee are invalidated if the control is opened.
- For safety reasons a regulation shutdown must occur every 24 hours.
- The control can be mounted in any position.

- 3/4

ELECTRIC SCHEME BV3

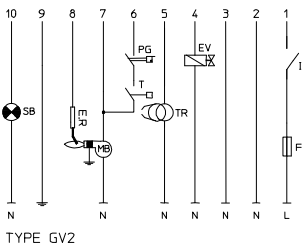
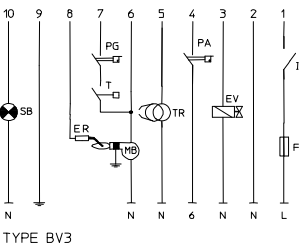
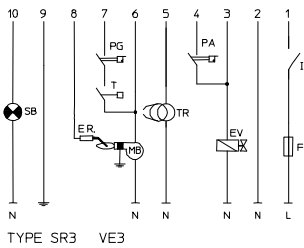


ELECTRIC SCHEME SYMBOLS

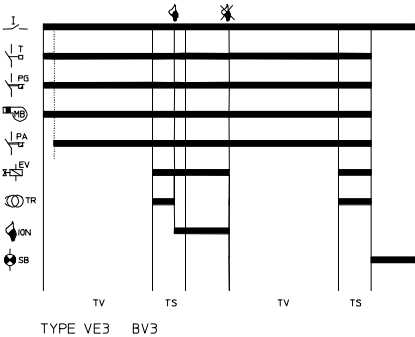
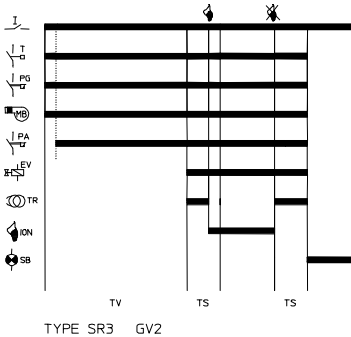
BF: postpurge and lockout thermal
BRM: operation relay
EV: gas valve
MB: burner motor
PG: gas pressure switch
TA: ambient thermostat
TP: thermal programmer

BRF: flame detection relay
ER: detection probe
M: burner casing
PA: air pressure switch
SB: lockout signal
TC: boiler thermostat
TR: ignition transformer

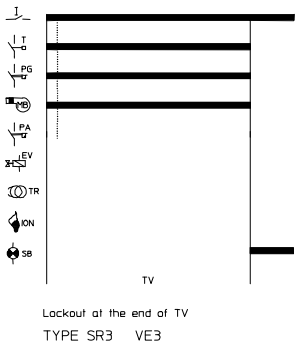
CONNECTION DIAGRAMS



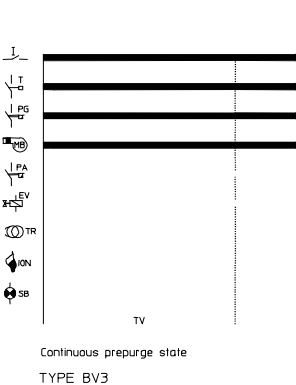
OPERATING CYCLES



Air flow failure

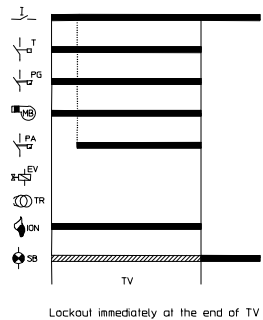


Lockout at the end of TV
TYPE SR3 VE3



Continuous prepurge state
TYPE BV3

Parasitic flame signal



Lockout immediately at the end of TV

