



SITGroup

504 NAC & 505 EFD



***504 NAC - CONNECTOR WITH
INTEGRATED IGNITER FOR
SIT MULTIFUNCTIONAL
AUTOMATIC GAS CONTROL***

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***505 EFD - ELECTRONIC FLAME
CONTROL DEVICE***



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505 EFD

DESCRIPTION

The 505 EFD is an electronic flame safety device for controlling a gas appliance using the principle of flame rectification.

The 505 EFD family of products is suitable to be used with 230 Vac external igniter like 504 NAC.

APPLICATIONS

The 505 EFD is an automatic ignition control for applications with intermittent operation in accordance with EN298 for:

- boilers with natural draught
- boilers with forced draught including dynamic control of the air pressure switch.

NORMATIVE REFERENCE

EN 298

Automatic gas burner control systems for gas burners and gas-burning appliances with or without fans.

BASIC FEATURES

- Direct burner ignition (DBI) or by intermittent pilot (IP)
- Remote manual reset function and signalling of the non-volatile lockout state
- Multiple plug-in connectors
- Flame detection by ionization
- Permanent lock-out visualization also without thermostat request being present.

Options available

- Fan and air pressure switch control
- Reset button and lockout signalling integrated on board
- Volatile lockout version for specific applications
- 230 Vac switched neutral output synchronized with flame detection (flame relay contact)
- Possibility to connect an automatic safety thermostat in series with the solenoid valve with manual lockout following thermostat opening
- Different flame current sensitivity
- Several pre-purge and safety timings can be tailored to the application

505 EFD

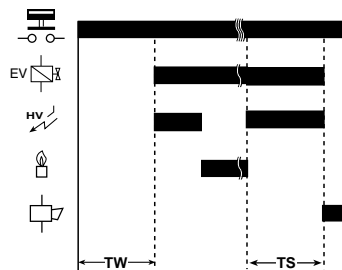
OPERATING SEQUENCE

Normal operation (natural draught or fan assisted)

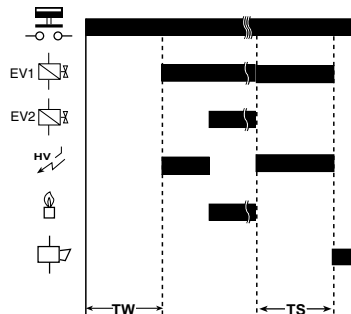
During the waiting or purge time, T_w or T_p , the unit verifies that there is no parasitic flame signal present, and that the internal circuitry is operating correctly. If the unit is used on a fan-assisted application, the air pressure switch is verified to be in the N.C. (normally closed) or “no flow” position.

Upon powering the fan, the unit will not begin the operating sequence until the N.O. (normally open) or “flow” position is activated on the air pressure switch. After the scheduled waiting time T_w , or purge time T_p , the external igniter and the gas valve are energized. This commences the safety time, T_s . The ignition spark will ignite the gas and the flame will be sensed by the detection electrode. Upon sensing the flame, the HV spark will be suppressed and the gas valve will remain energized. When the thermostat is satisfied, the valve and fan are de-energized and the control returns to the stand-by mode. The safety time of the 505 EFD has a constant duration in all operating conditions and, in particular, does not depend on the moment the pressure switch is switched over.

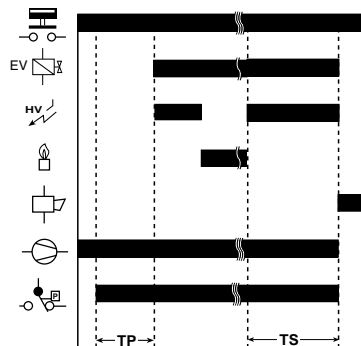
BOILERS WITH
NATURAL DRAUGHT
DBI version



BOILERS WITH
NATURAL DRAUGHT
IP version



FAN ASSISTED BOILERS
DBI version



Resetting the unit

To reset the unit the “Reset” switch is depressed. If a first reset is not successful, wait at least 10 seconds before the next attempt.

505 EFD

TECHNICAL DATA

AMBIENT WORKING TEMPERATURE

-20 to + 80 °C

HUMIDITY

95% max at 40 °C

SUPPLY VOLTAGE

230 Vac -15%, +10%, 50-60 Hz

POWER CONSUMPTION

maximum 10 VA

ELECTRICAL RATINGS

Gas valves: 230 Vac, 0,5 A, $\cos\phi < 0,6$

Fan: 230 Vac, 0,5A, $\cos\phi < 0,6$

Alarm: 230 Vac, 1A, $\cos\phi = 1$

ELECTRICAL CONNECTIONS

Flame detection probe: male fast-on connector 4,8 x 0,8 mm

Ground connections (T₁): male fast-on 6,3 x 0,8 mm

Other connections: female STELVIO series BS95
female STOCKO series MKF

PROTECTION DEGREE

IP 00

TIMING

Minimum waiting time Tw or purge time Tp: 1,5...30 sec.

Maximum safety time Ts: 5...10 sec.

FLAME SENSING

Minimum flame current: 0,5µA

Recommended flame current: > 3 times the
minimum current

FUSING

Internal: 3,15A fast

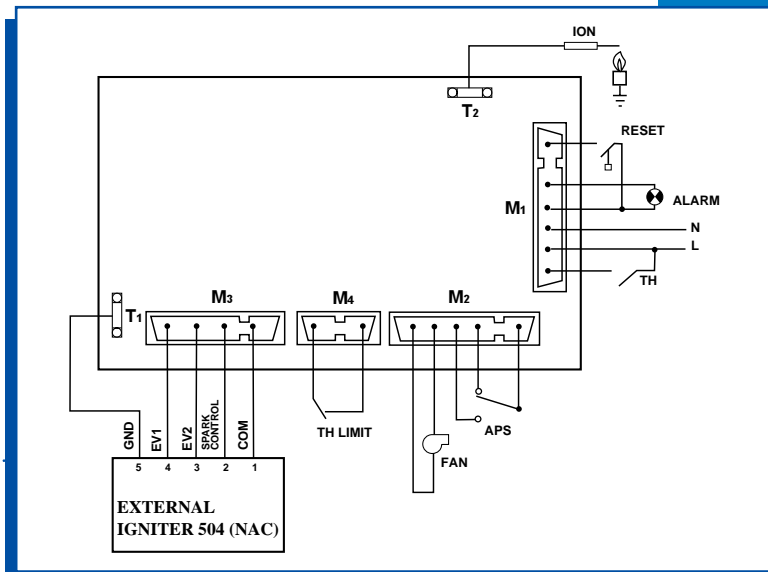
EXTERNAL IGNITION

Supply voltage 230 Vac

Maximum load 5VA

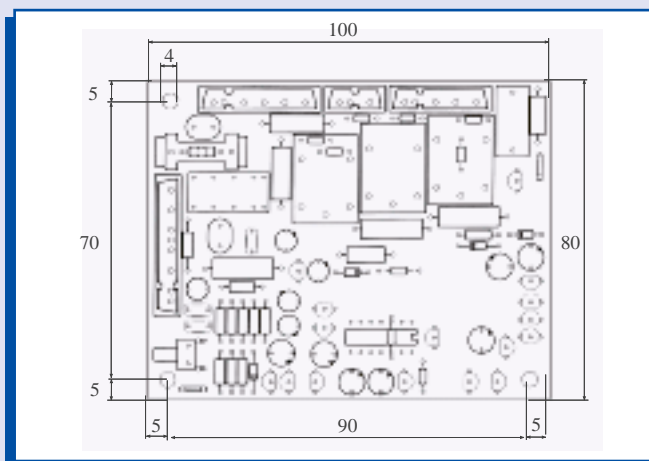
MOUNTING

Any position



WIRING DIAGRAM

DIMENSIONS





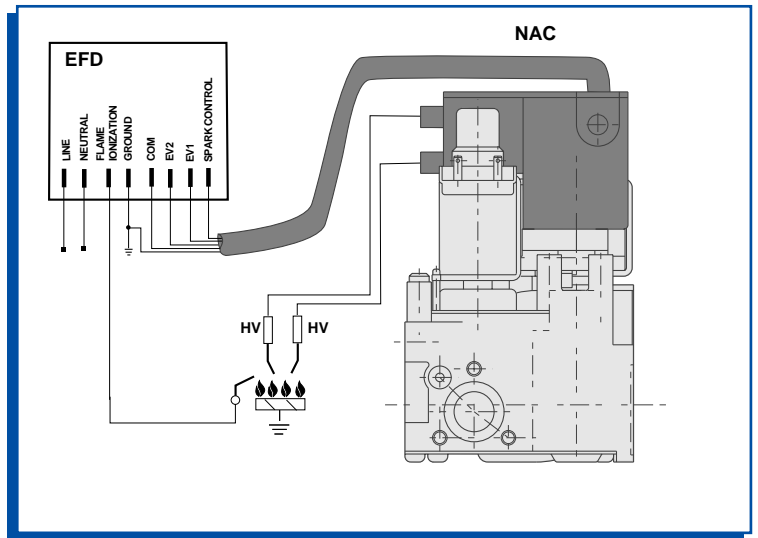
504 NAC

DESCRIPTION

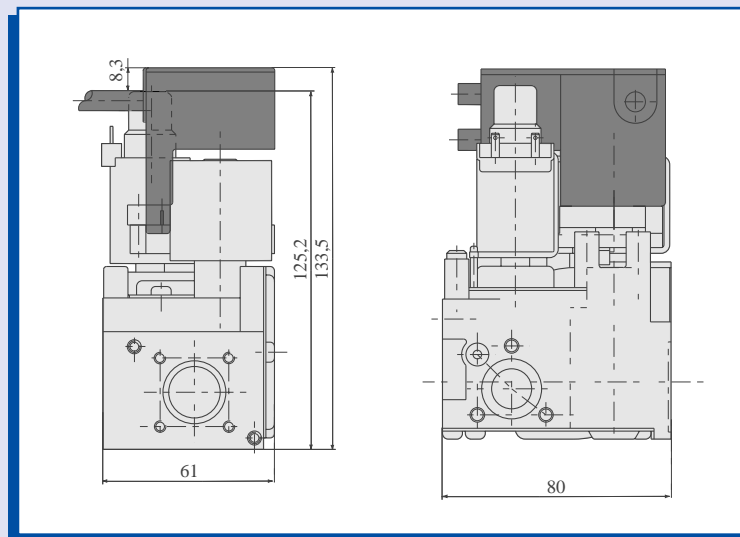
NAC is the SIT new product (patented system) where the electronic flame igniter is put inside the electrical connector of the gas control. NAC is specially suitable to be used with SIT electronic flame failure devices EDF 505 and MICROEFD 506. The 504 NAC has been specifically designed for fixing on SIT gas control SIGMA and TANDEM series.

SIGMA SERIES

CONNECTION DIAGRAM



DIMENSIONS



504 NAC

TECHNICAL DATA

SUPPLY VOLTAGE

230 Vac - 50Hz

ELECTRICAL CONNECTIONS

High voltage probe: male fast-on connector
2,8 x 0,5mm

PROTECTION DEGREE

Standard IP 40
IP 44 with gasket

IGNITION

Ignition voltage: 15 KV at 40 pF load

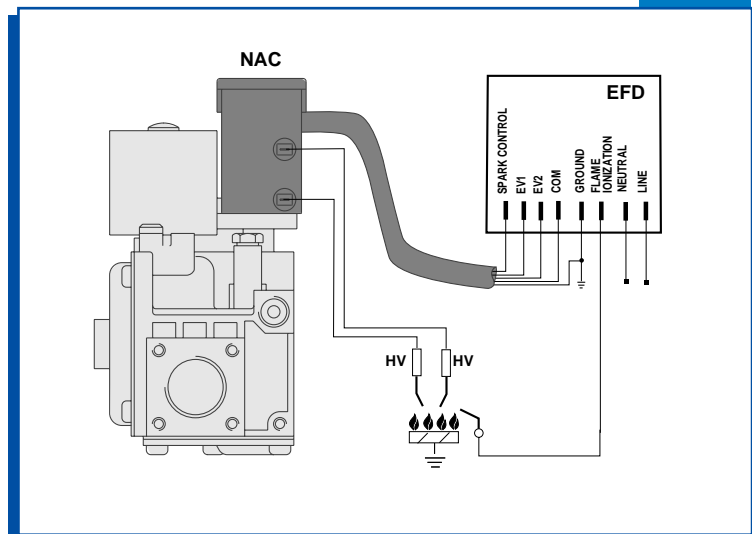
Spark frequency: 10 ± 5 Hz

AMBIENT WORKING TEMPERATURE

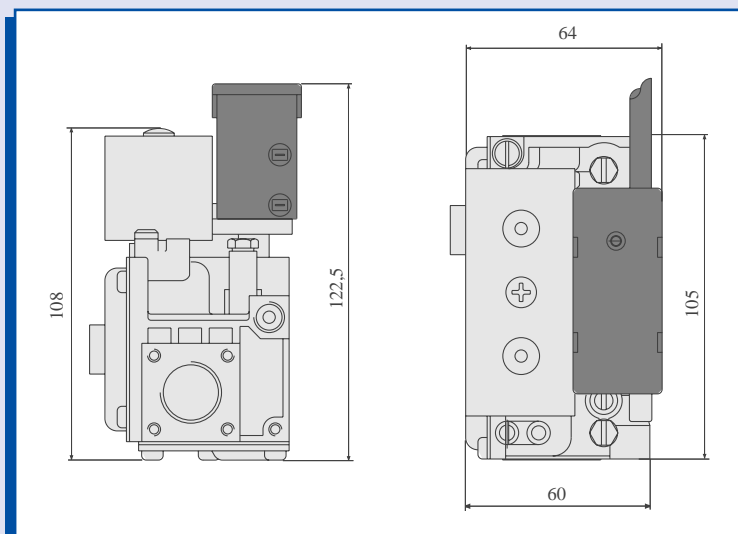
-20 to 100 °C

TANDEM SERIES

CONNECTION DIAGRAM



DIMENSIONS





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