



SIT Group

NEW

571 DBC



ELECTRONIC BURNER CONTROL DEVICE WITH MICROPROCESSOR FOR UNIVERSAL USE IN GAS FIRED APPLICATIONS

Field of application

NG or LPG fired gas appliances such as boilers (with natural or forced draught including dynamic control of the air pressure switch), water heaters, hot air generators, tumble driers gas radiators and other gas-fired appliances.

Main features

Gas burner ignition managed by digital technology (microprocessor) with multiple ignition attempts.



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DESCRIPTION AND APPLICATION

The 571 DBC control is a family of electronic ignition devices for gas-fired appliances. All the functions are managed by a microprocessor and the product has obtained the certification of conformity with the most severe safety requirements by both CSA and European notified bodies. The microcontroller structure combines the traditional features of high reliability with high flexibility for the needs of the appliance. The 571 DBC family of products have been specifically designed to be used in a wide variety of gas-fired appliances. Any customization is easy to achieve thanks to the digital technology. All the hardware and firmware architecture have been designed by SIT and innovative concepts and technologically advanced solutions have been implemented so as to achieve the product's best reliability and performances.

BASIC FEATURES

- Compact design
- Incorporated spark igniter with EMC filter or Hot Surface Igniter driver
- Direct burner ignition (DBI) or pilot valve
- Remote signalling of the lockout state
- Multiple plug-in connectors
- Utilises well established electronic technology for high reliability of operations
- Precise and repeatable timings
- Multiple ignition attempts
- Flame detection by ionization
- CSA approval and CE approval
- Repetition of the cycle after loss of flame during operation
- Suitable for applications at wide ambient temperature range
- ROHS compliant.

Options available

- Fan and air pressure switch control
- Non-volatile lockout version for specific applications
- Line voltage or optocoupled flame presence signal
- Different flame current sensitivity options may be specified
- Several pre-purge and safety timings can be tailored to the application.
- Different frequency of ignition
- Auto-reset function in case of flame loss or ignition problems after 1 hour
- With or without enclosure

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OPERATION

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 built-in 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 electrode.

If there is no flame the system repeats the ignition cycle, after a defined interpurge time, for a definite number of times and it goes definitively on lockout position in case there is no flame.

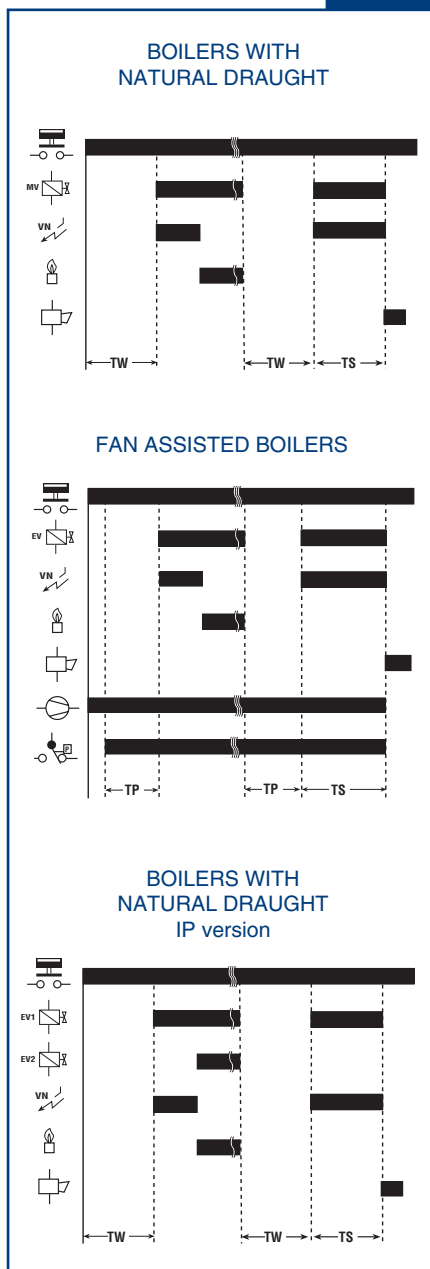
Upon sensing the flame, the HV spark will be suppressed and the gas valve will remain energized. When the thermostat is open, the valve and fan are de-energized and the control returns to the stand-by mode. The safety time of the 571 DBC has a constant duration in all operating conditions and, in particular, does not depend on the moment the pressure switch is switched over.

Resetting the unit

To reset the unit the power has to be removed for at least one second and then restored in case of volatile LO version.

In case of non-volatile version: close input 1 and 2 of connector CN1.

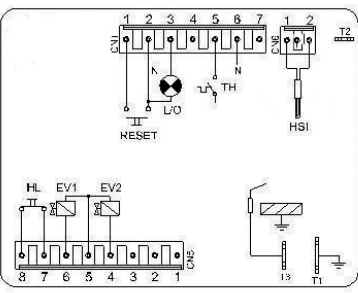
WIRING DIAGRAM



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BARCODE

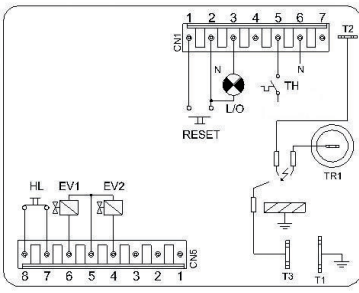
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TW 15s TS 10s
Date YY-WW
S/N SSSS



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BARCODE

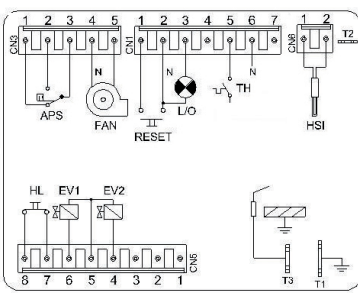
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S/N SSSS



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BARCODE

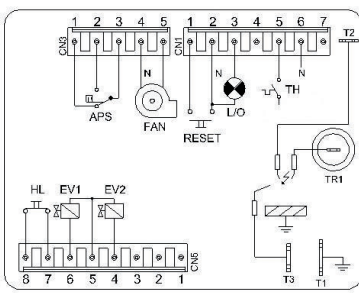
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TW 15s TS 10s
Date YY-WW
S/N SSSS



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BARCODE

Code 0.571.3NN
120V~ 60Hz 12VA
TW 1,5s TS 10s
Date YY-WW
S/N SSSS





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TECHNICAL DATA

STORAGE TEMPERATURE

-30 °C to +80 °C (-22 to 176 °F)

AMBIENT WORKING TEMPERATURE

-20 °C to +60 °C (-4 to 140 °F)

HUMIDITY

90 % max at 40 °C (not condensing)

SUPPLY VOLTAGE

120V (- 15 %, + 10 %, 50-60 Hz), 220-240V (- 15 %, + 10 %, 50-60 Hz)

POWER CONSUMPTION

20 VA

ELECTRICAL RATINGS

Gas valves: supply voltage, 1 A, $\cos\phi\geq 0.4$

Fan: supply voltage, 0.5 A, $\cos\phi\geq 0.6$

Alarm: volt free, 1 A, $\cos\phi=1$

ELECTRICAL CONNECTIONS

High voltage probe: male fast-on connector 2.8 x 0.5 mm

Flame detection probe: male fast-on connector 4.8 x 0.8 mm

Other connections: Molex headers

Max. length of the I/O cables: 1 m

PROTECTION DEGREE

Standard IP 00

TIMING

Minimum waiting time T_w or purge time T_p : 1 ... 60 sec.

Maximum safety time T_s : 3 ... 120 sec.

Ignition attempts 1 ... 10

Relative interpurge time 0 ... 240 sec.

FLAME SENSING

Minimum flame current: 0.9 μ A

Recommended flame current: > 3 times the minimum current

FUSING

Internal: 4 A fast non replaceable.

IGNITION

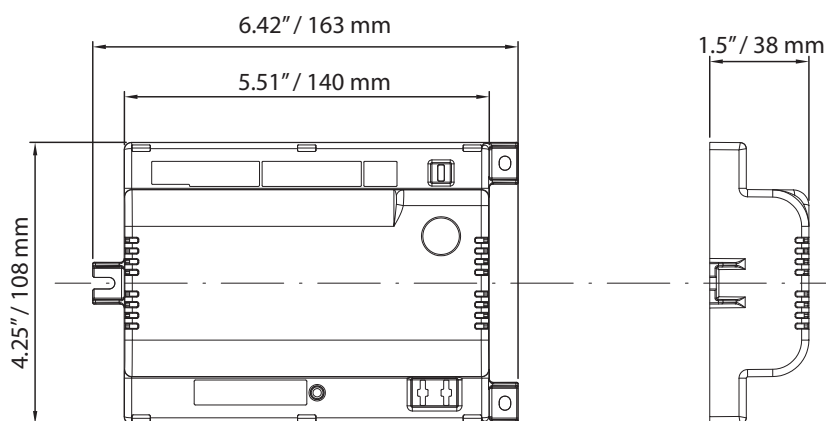
Ignition voltage: 15 KV at 30 pF load

Repetition rate: STANDARD 25 Hz (optional 4÷50 Hz @power supply 50 Hz)

Max. length of the cable: 1 m

Spark gap recommended: 2-4 mm

571 DBC DIMENSIONS [inch/mm]



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