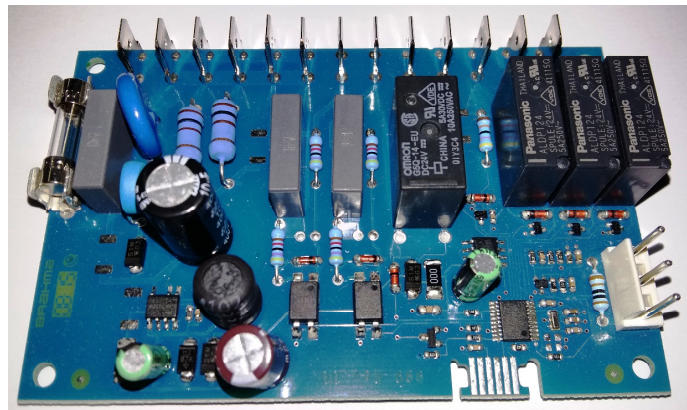


BRAHMA type ID0x

DIGITAL AUTOMATIC CONTROL SYSTEM FOR OIL BURNERS AND OIL APPLIANCES



DESCRIPTION

This range of electronic oil burner controls has been specifically designed for oil burners for non permanent operation.

The automatic burner controls of this series are suitable for:

- monobloc oil burners;
- power washers;
- warm air generators;
- steam boilers;
- kilns.

TECHNICAL DATA

Supply voltage:	110-240V @ 50/60Hz
On request:	24V _{DC} 12V _{DC}
Power consumption:	4.5VA @ 240V/50Hz 1W @ 24V _{DC} 1W @ 12V _{DC}
Operating temperature range:	-20°C ÷ 60°C
Storage temperature range:	-40°C ÷ 85°C
Umidity:	95% max. @ 40°C
Protection degree:	IP 00
Internal fuse:	6.3A time lag
Varnishing:	on request
Weight:	50gr.
Connections:	
– Photoresistor/ Phototransistor:	Molex type 3001 (3 poles)
– All others:	6.3x0.8mm Fast-on
Outputs ratings:	
– J7-J14:	2A cos φ ≥ 0.4
With option "H":	5A cos φ ≥ 0.4
– J15-J18:	1.0A cos φ ≥ 0.4
– J13-J8:	1.0A cos φ ≥ 0.4
– J19-J2:	1.0A cos φ ≥ 0.4
Photoresistors: ⁽¹⁾	BRAHMA type FC11 / FC13
Phototransistors: ⁽¹⁾	BRAHMA type FT11 / FT13

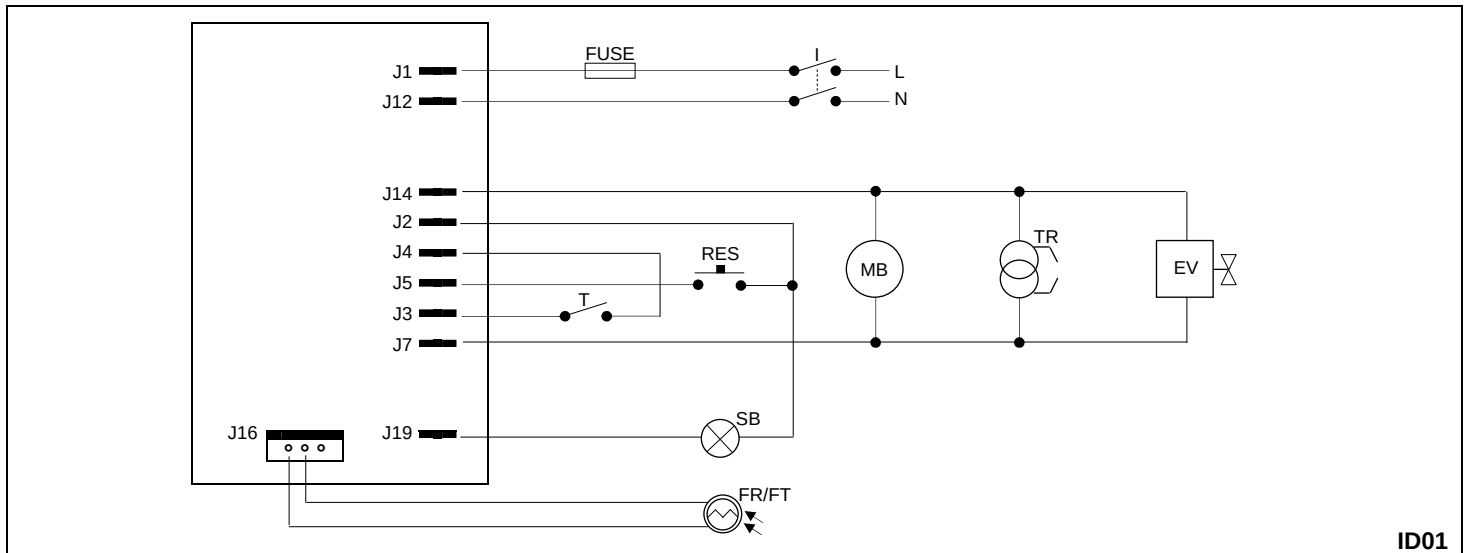
(1) Requiring option "J2", sensors will be provided with Molex type 3001 (3 poles) connector to be directly interfaced with the controller.



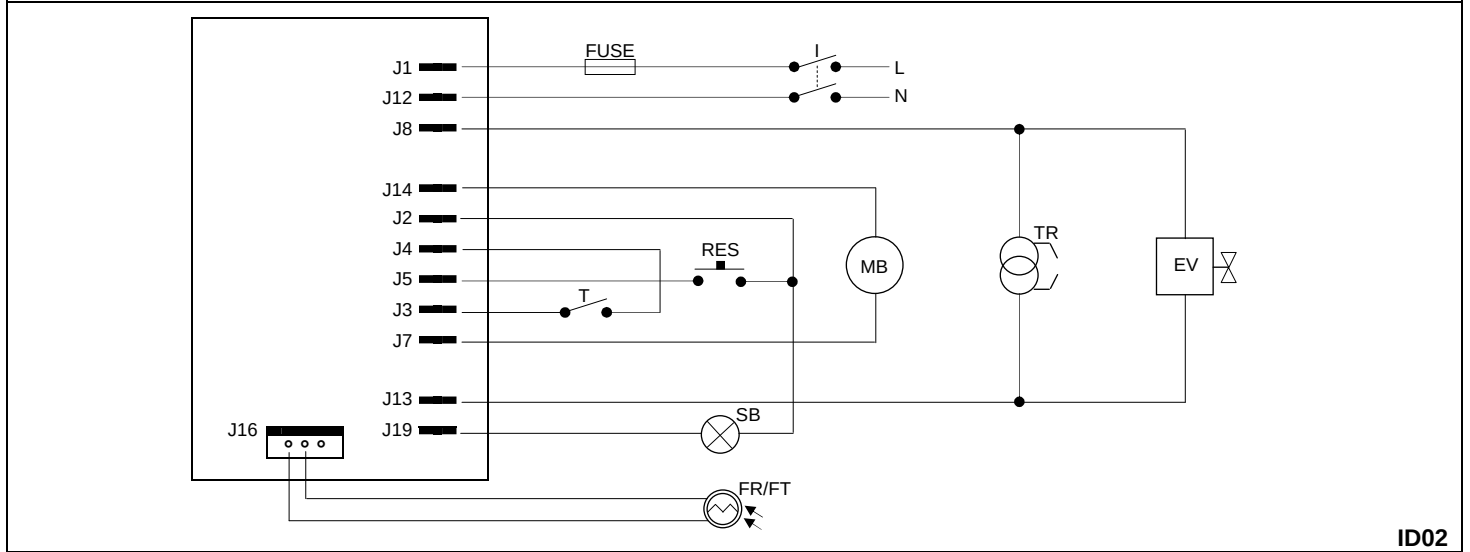
NOTES FOR THE DISPOSAL OPERATION

The controller contains electronic components and it must not be disposed of as a domestic waste. For the disposal operation refer to the local rules concerning special waste.

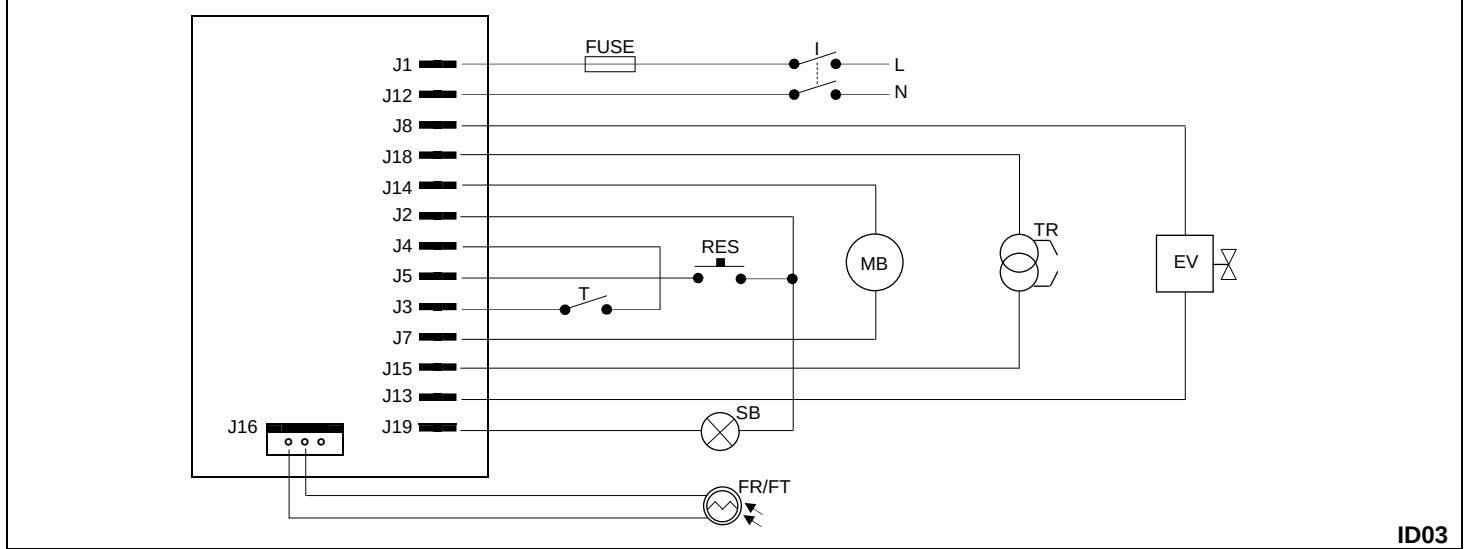
WIRING DIAGRAMS



ID01



ID02



ID03

Legend

L Supply voltage – Line
N Supply voltage – Neutral
I Main switch
FUSE External fuse
T Room Thermostat – Start input
FR/FT Photoresistor/Phototransistor

MB Burner motor
TR Ignition transformer
EV Oil valve
SB Lockout signalling
RES Reset push-button (not available with option “E”)

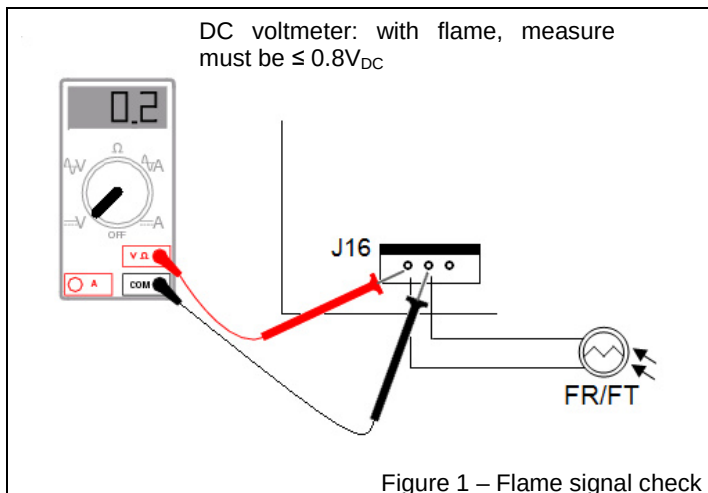
INSTALLATION DIRECTIONS

- This automatic system must not be modified. The manufacturer's responsibility and guarantee are invalidated in case the device is tampered with by the user;
- any maintenance operation on the device must be carried out only after switching off the power supply;
- the unit can be mounted in any position;
- avoid exposing the system to dripping water;
- keep the device at a suitably low temperature to ensure its longest life;
- respect the applicable national and European standards regarding electrical safety (e.g. EN 60335-1 and EN 60335-2-102);
- avoid putting signal cables (T, RES and FR inputs) close to power or ignition cables;
- this controller is supplied with an internal fuse however the use of another external fuse suitable to the loads of the appliance is recommended;
- before starting the system check the cables carefully. A wrong wiring (e.g. reverse polarity of the power supply) could damage the unit or compromise its operating.

CHECKING AT START

Check the controller before the first start and also after amendments or a long period of no operation of the system. Before any ignition attempt make sure that the combustion chamber is empty, then make sure that:

- if the starting attempt occurs without fuel supply, the controller locks out at the end of the safety time (TS);
- when the fuel flow stops (while the controller is in operation state) the power supply of the solenoid valves is interrupted and, in the standard versions, the controller locks out;
- operating times and cycle are suitable of the controller used;
- the level of the flame signal is high enough (for flame signal test see figure 1) ;
- the ignition electrode is adjusted so as to guarantees always a good fuel ignition. Make sure also that it's fixed stably (for more information see the specific technical data of the ignition device);
- the intervention of the regulators, limiters or safety devices causes a shut-down of the controller according to the application type and reference standards.



OPERATING

Operating cycles will be described as follow depending on the device model .

ID01

Closing "T" switch "MB", "TR" and "EV" loads will be simultaneously energized for a time "TS" (*safety time*): in case of flame detection before the end of this time, device will proceed with running position (RP) keeping all loads in on-state otherwise it will proceed in lockout condition (LO).

Opening "T" switch during the operating "MB", "TR" and "EV" loads will be immediately de-energized.

ID02

Closing "T" switch "MB" load will be energized for a time "TP" (*prepurge time*) to "clean" the combustion chamber before the ignition. At the end of this time also "TR" and "EV" loads will be simultaneously energized for a time "TS" (*safety time*): in case of flame detection before the end of this time, device will proceed with running position (RP) keeping all loads in on-state otherwise it will proceed in lockout condition (LO).

Opening "T" switch during the operating "MB", "TR" and "EV" loads will be immediately de-energized or, on request, post-purge (TPOST time) of combustion chamber will be performed (see option no. 7).

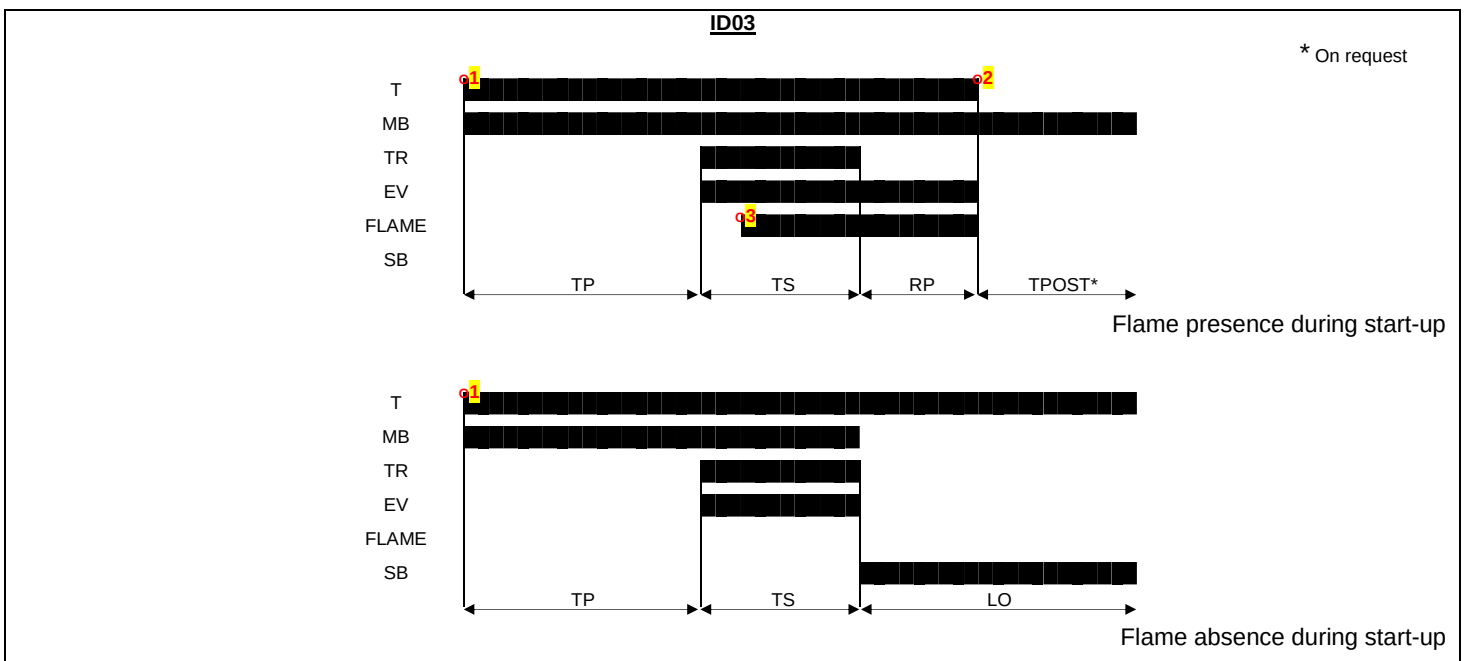
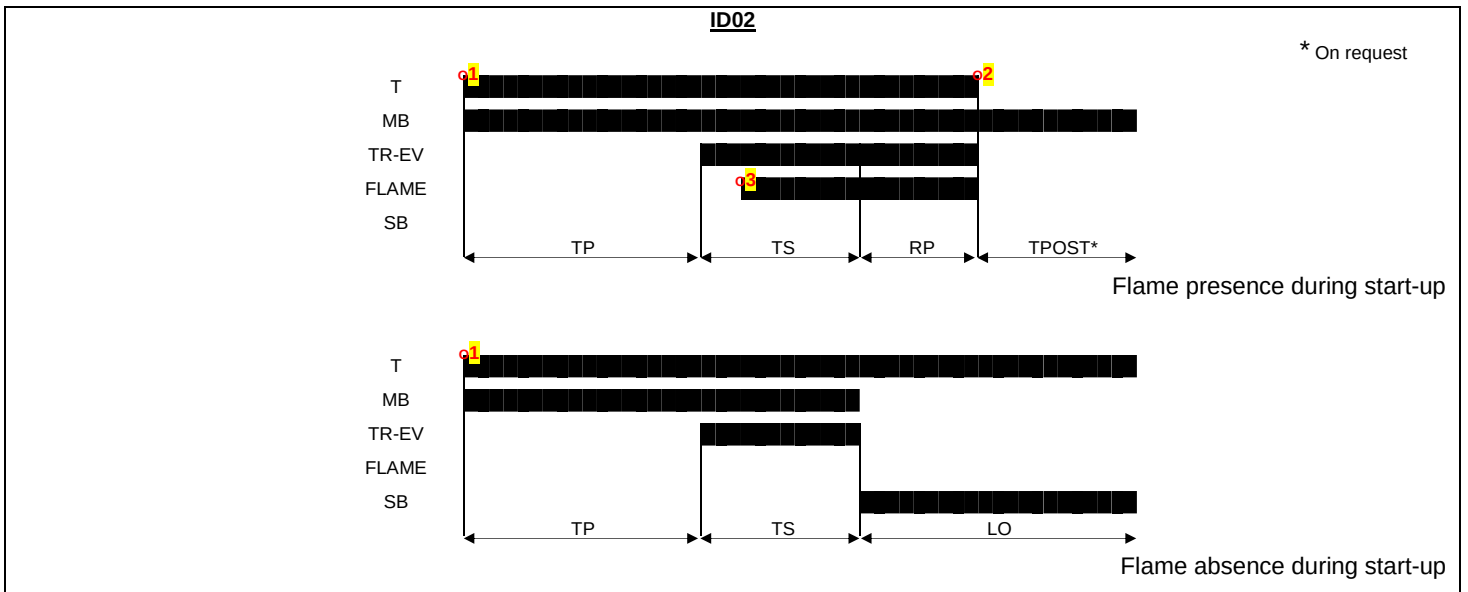
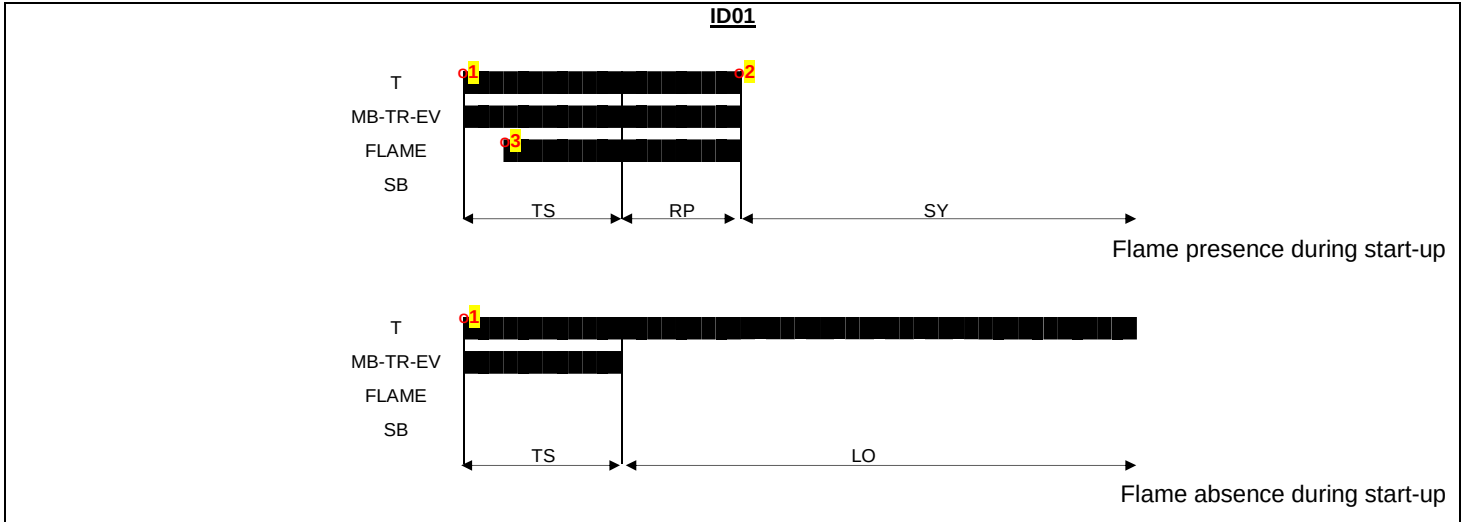
ID03

Closing "T" switch "MB" load will be energized for a time "TP" (*prepurge time*) to "clean" the combustion chamber before the ignition. At the end of this time also "TR" and "EV" loads will be simultaneously energized for a time "TS" (*safety time*): in case of flame detection before the end of this time, device will proceed with running position (RP) keeping "MB" and "EV" loads in on-state and turning off "TR" output otherwise it will proceed in lockout condition (LO).

Opening "T" switch during the operating "MB" and "EV" loads will be immediately de-energized or, on request, post-purge (TPOST time) of combustion chamber will be performed (see option no. 7).

Pre-ignition time (option no. 9) and/or post-ignition time (option no. 10) on "TR" output can be added on request.

OPERATING CYCLES



1: "T" switch is closed
TP: prepurge time
LO: safety lockout

2: "T" switch is open
TS: safety time
SY: stand-by position

3: flame presence
RP: running position
TPOST: postpurge time

CONTROLLERS DENOMINATION

- (1) **Model**
ID01: device for direct ignition appliances
ID02: device for forced draught appliances with permanent operation of ignition transformer
ID03: device for forced draught appliances with non-permanent operation of ignition transformer
- (2) **Prepurge time (TP – available only on ID02-ID03)**
TP = nn: prepurge time of “nn” seconds
- (3) **Safety time (TS)**
TS = nn: safety time of “nn” seconds

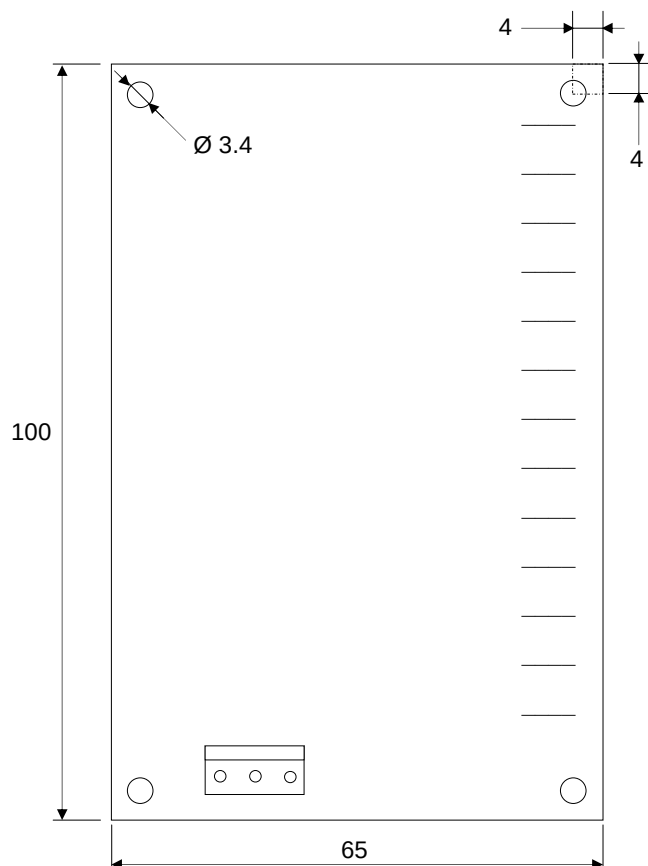
CYCLE OPTIONS

- (4) **Type lockout**
Standard: non-volatile lockout (reset must be performed by “RES” pushbutton)
E: volatile lockout (reset must be performed removing power supply)
- (5) **Lockout due to parasite flame**
Standard: the cycle stops , without lockout (without limit, continuous prepurge stage)
K: lockout without delay
Knn: lockout with delay of nn seconds
- (6) **Flame failure in running position**
Standard: recycle, without lockout (no limit)
V: immediate lockout
Vnn: lockout after “nn” recycle attempts
- (7) **Post-purge time on combustion motor fan (available only on ID02-ID03)**
Standard: without post-purge time
Pnn: post-purge time of nn seconds due to heating demand failure, it cannot be interrupted by the heating demand restoration
PTnn: post-purge time of nn seconds due to heating demand failure, it can be interrupted by the heating demand restoration
Cnn: post-purge time of nn seconds due to shut-off in running position, it cannot be interrupted by the heating demand restoration
CTnn: post-purge time of nn seconds due to shut-off in running position, it can be interrupted by the heating demand restoration
- (8) **Recycle attempts due to ignition failure**
Standard: lockout without recycle
Ynn: lockout after “nn” recycle attempts
- (9) **Pre-ignition (available only on ID03)**
Standard: without pre-ignition
Jnn: with pre-ignition of nn seconds before the safety time TS
- (10) **Post-ignition (available only on ID03)**
Standard: without post- ignition
Tnn: with post- ignition of nn seconds after the safety time TS
- (11) **Operating of the external ignitor transformer (available only on ID03)**
Standard: ignitor transformer de-activated during operating without delay for cooling
XP: delay for ignitor transformer's cooling: in case of re-ignition (due to loss of flame during operating or because “Ynn” option) start-up cycle will be delayed to permit cooling of ignition transformer (non-permanent device)
- (12) **Lockout signalling lamp (SB output)**
Standard: WITH output for lockout signalling
RL1: WITHOUT output for lockout signaling
- (13) **J7-J14 output**
Standard: output for loads up to 2A
H: output for loads up to 5A

Examples

- (1) ID01 TS=10s opt. E K5
Features: – Safety time of 10 seconds
– Electrical reset
– Lockout due to parasite flame for over 5 seconds before the start-up
- (2) ID03 TP=30s TS=5s opt. P60 J3
Features: – Prepurge time of 30 seconds
– Safety time of 5 seconds
– Post-purge for 60 seconds due to interruption of operating
– With pre-ignition: ignition transformer will be energizer for 3 seconds after prepurge time (TP) and before the beginning of safety time (TS)

MECHANICAL DIMENSIONS



All dimensions are in millimeters

WARNING -> Company Brahma S.p.A. declines any responsibility for any damage resulting from the Customer's interfering with the device

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