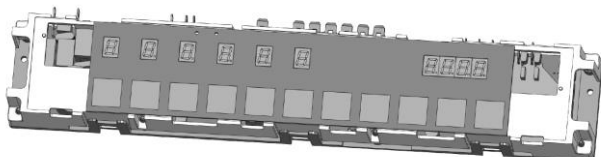
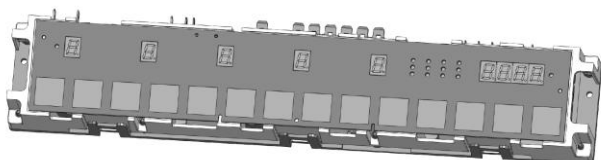
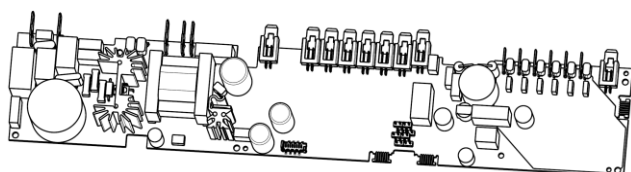


NPCxF

ELECTRONIC MANAGEMENT DEVICE FOR COOKING APPLIANCES BURNING GAS WITH 1 TO 6 BURNERS



DESCRIPTION

The NPCxF device allows to manage cooking appliances burning gas composed of 1 to 6 burners (x: number of burners customizable upon request). This device operates together with Brahma VPC01 valves and allows the regulation of the flow rate of each burner powered by different type of gas. With this device you can also use the main valve Brahma E6G*PC upstream of the gas rail. The NPCxF could be paired with different types of user interfaces, with proprietary serial link or existing user interfaces with custom protocol as customer's request.

GENERAL FEATURES

The device is normally customizable and its basic features are the following:

- **EU** Type certification (CE PIN **0051CS4833**) according to **Regulation (EU) 2016/426** on appliances burning gaseous fuels;
- In compliance with directives on Electromagnetic Compatibility EMC 2014/30/EU (immunity) and Low-Voltage 2014/35/EU;
- CB TEST CERTIFICATE No. IT-18469 according to IEC 60730-1:2010 and IEC 60730-2-5:2013
- In accordance with EN 298:2012 (European standard for automatic burner control systems for burners and appliances burning gaseous fuels) and with IEC/EN 60730-2-5 (standard for automatic electrical burner control systems);
- the devices are suitable for EN60335-1 and EN60335-2-102 applications
- Max. operating time for each burner preset on a FLASH memory and corresponding to 4 hours
- power supply made by using switching technology (SMPS)
- six 24Vdc outputs for Brahma VPC01 modulating valves
- 24Vdc output for the main Brahma VPC01 (or E6G*PC) valve located upstream of the gas collector
- 24Vdc auxiliary output (max. 2W)
- Serial interface used for the system diagnostic
- six inputs for the flame detection electrodes of the six burners
- voltage free output for spark-generator driving
- serial communication port for custom user interface
- serial communication port for customized at customer's request user interface
- management of the modulation levels preset on a FLASH memory;
- possibility to manage up to three modulation tables depending on the selected type of gas (for example G2020, G3029, etc..)
- Integrated procedure that allows the flow rate adjustment for each burner and each level
- possibility to drive dual crown burners (with single or double ionization probe)
- Communication port for the connection of a wireless communication module for the remote monitoring of the device state and for the control of a hood

TECHNICAL DATA

Supply voltage:	100÷240Vac +10%/-15%
Frequency:	50-60Hz
Standby power consumption without time display:	< 0,5W
Standby power consumption with time display:	< 1W
Maximum power consumption:	40W
Maximum current over ignition transformer output contacts:	250mA
Power supply and earth connection:	Fast-on 6,3x0,8 mm
Electrovalve connection:	Lumberg 2,5 MSFW 02
Ionization electrode connection:	Fast-on 2,8x0,8 mm
Ignition transformer connection:	Fast-on 4,8x0,8 mm
Operating temperature range:	
- version with plastic box and Brahma user interface	0°C ÷ +95°C
- powerboard version only	0°C ÷ +105°C
Protection rating:	IP 00
Max. cable length for external components:	≤1m

TIMES

- waiting time (TW):	1 ... 60s
- safety time (TS):	1 ... 60s
- reaction time on flame failure (according to EN 30-1-4)	1 ... 10s
- inter-waiting or inter-purge time:	1... 60s
- waiting time for lockout due to extraneous light:	0 ... 60s
- pre-ignition time:	0 ... 60s
- number of ignition attempts:	1 ... 10

FLAME MONITORING

The flame detection device exploits the flame rectification property.

- Minimum ionization current:	0,2μADC
- Maximum ionization current:	4,00μADC approx.
- Recommended ionization current:	3÷5 times the minimum one
- Minimum insulation resistance of detection cable and electrode to earth:	≥ 50MΩ
- Maximum electrode stray capacitance:	≤1nF
- Maximum short-circuit current:	< 110μAAC

FUNCTIONS

The main functions of the device are the following:

- Stand-by mode
- Flow rate adjusting for each burner
- Safety lockout with manual reset through the user interface or from remote unlock input or volatile lockout (it's a choice)
- Setting of the employed fuel type
- Temperature detection on the electronic board (thermal protection function)

FEATURES OF THE USER INTERFACE

- Red 7-segment display and LEDs indicating the flow rate level of each burner, as well as time and settings;
- Touch keyboard with touch-sensitive areas for the selection of each burner level, settings, keyboard lock and turn-on/off functions;
- Setting of the turn-off time for each burner
- Anomaly/failure management through a series of codes appearing on the display.
- Stand-by mode
- Keyboard lock to prevent any unwanted ignition/setting

DIRECTIONS FOR INSTALLATION

- The device is designed to stay in running status for less than 24h (system for non-permanent operation). Reaching this limit causes a regulation shutdown to enable the device to check its own efficiency.
 - This automatic device is a safety appliance and should not be modified. The manufacturer's responsibility and guarantee are invalidated in case the device is tampered with by the user.
 - The applicable national regulation and European standards (Ex. IEC/EN 60335-1 and IEC/EN 60335-2-102) related to the electrical safety must be respected;
 - All operations (installation, maintenance, etc.) must be carried out by a qualified technician.
 - Before any connection operation, completely isolate the system from power supply (multi-pole disconnection). Place the system safely to avoid accidental switch-on and make sure there is no voltage. If the system is not switched off, there is a risk of electric shock.
 - Check the cables before starting operation. Incorrect wiring may damage the unit and compromise the system safety.
 - During and after any operation (installation, maintenance, etc.), make sure that the type, timing and code are the ones provided, that the wiring is in good condition and perform the safety check in the "Notes for start-up."
 - After installation of the device it's necessary to assure that the glass is over the user interface without air gap between glass and the touch zone. Verify the functions of every key at the first startup of the device or in case of maintenance.
 - In the event of a fall or impact, the devices must not be started, as safety functions may be compromised even if no damage is visible to the outside.
 - Faulty devices or damaged must be unplugged from power supply and cannot be used.
 - Condensation, ice formation and liquids intake are not permitted.
 - The device contact with foods and liquids for human use are not permitted.
 - Always run the high-voltage ignition cables separately while observing the greatest possible distance to the unit and to other cables
 - The appliance in which the controllers are installed must provide adequate protection against the risk of electric shock (at least IP40);
 - The Low Voltage Circuit (PELV) and ionization electrodes are safe to touch (in accordance with IEC/EN 60730-1 and IEC/EN 60335-1)
 - EMC emission requirements, according to the directive EN55014-1, shall be tested after the incorporation of the burner control system into the equipment.
 - Hob burner controls has a designed lifetime* of 250,000 burner startup cycles which, under normal operating conditions in heating mode, correspond to approx. 10 years of usage (starting from the production date given on the type field). This lifetime is based on the endurance tests in the standard EN 298. A summary of the conditions has been published by the European Control Manufacturers Association (Afecor) (www.afecor.org). The designed lifetime is based on use of the hob burner controls according to this document. After reaching the designed lifetime in terms of the number of burner startup cycles, or the respective time of usage, the burner control has to be replaced by authorized personnel.
- * The designed lifetime is not the warranty time specified in the Terms of Delivery

NOTES FOR STARTUP

Perform the following safety checks at first start-up or maintenance work.

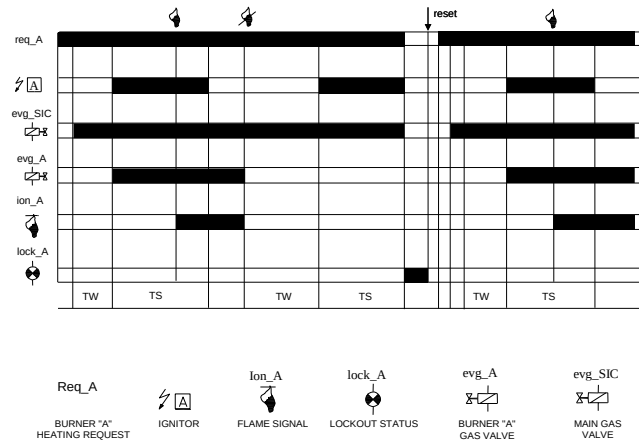
Safety check to be performed	Expected result
Hob burners startup without gas supply	Lockout at the end of (TS)
Burner operation with simulated loss of flame. For that purpose, close the gas supply during operation and leave it in this state.	Recycle with lockout at the end of ignition attempts.
Press every key of the user interface	Every key must function properly and perform the function as described in the technical specifications of the device.



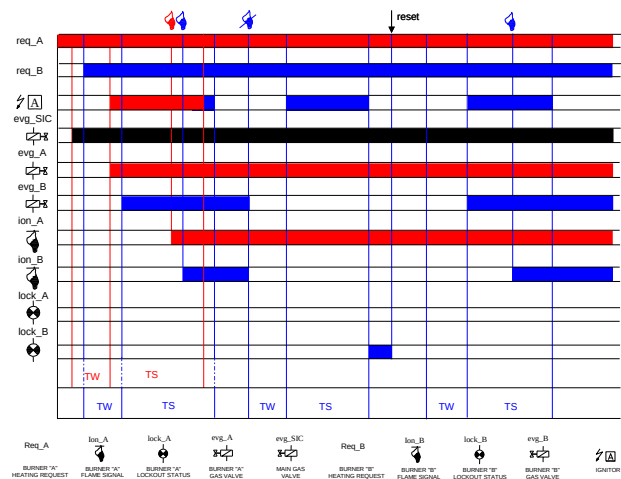
NOTES ABOUT PRODUCT DISPOSAL

The device contains electronic components and cannot therefore be disposed of as normal household waste. For the disposal procedure, please refer to the local rules in force for special waste.

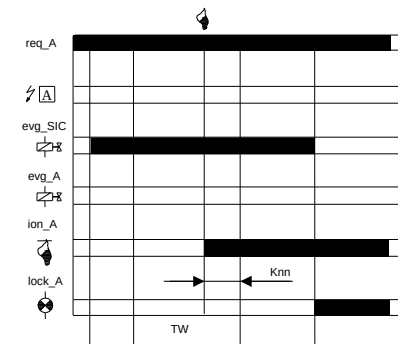
OPERATING CYCLE DIAGRAM
(STANDARD CASE WITH HEATING REQUEST BY ONE BURNER, E.G. BURNER "A")



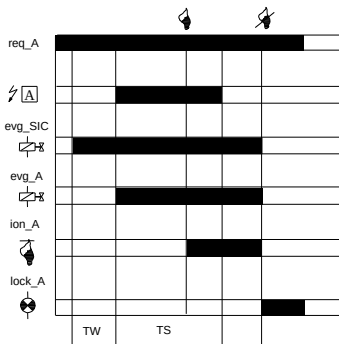
OPERATING CYCLE DIAGRAM
(STANDARD CASE WITH HEATING REQUEST BY TWO BURNERS, E.G. BURNERS "A" AND "B")



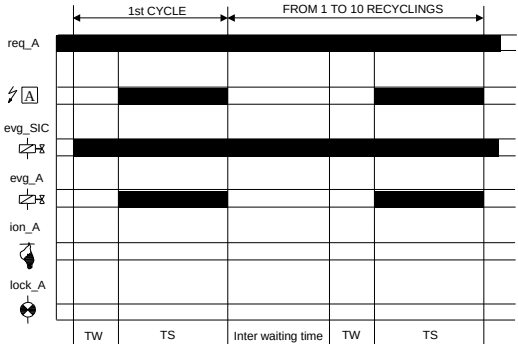
OPERATING CYCLE DIAGRAM FOR OPTIONS Knn – V – Inn – Ynn – E



OPTION Knn
(lockout due to extraneous light)



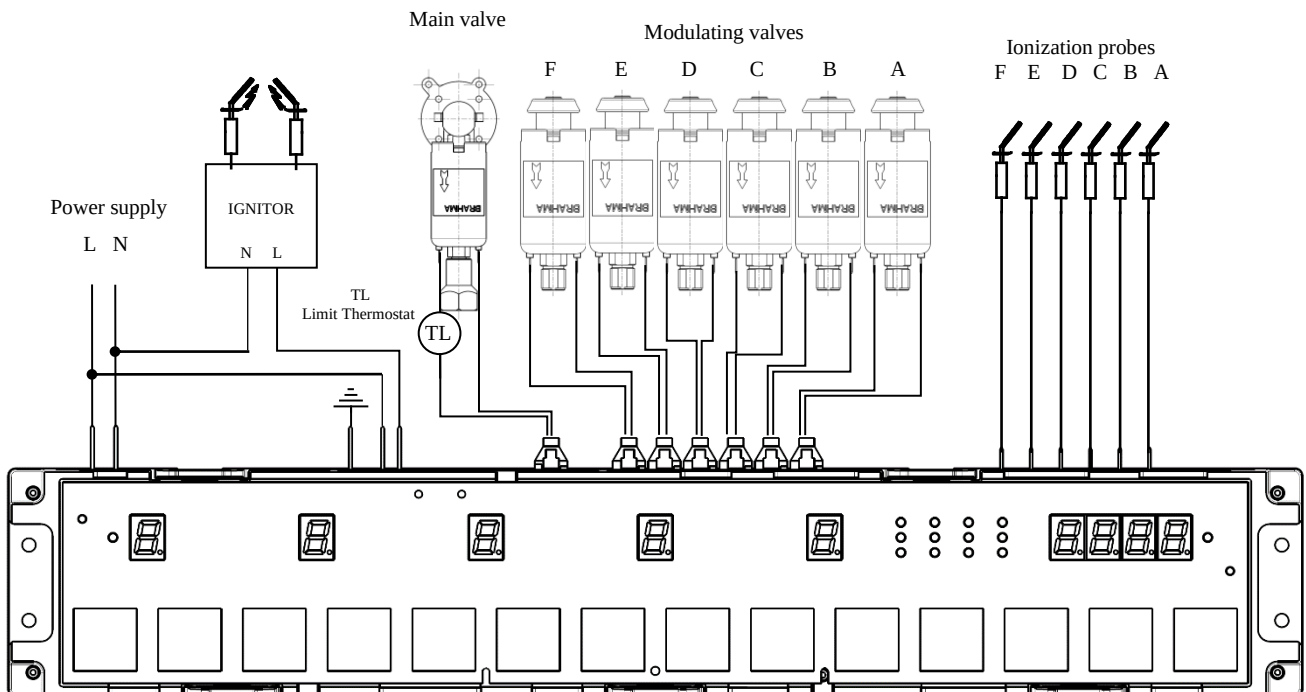
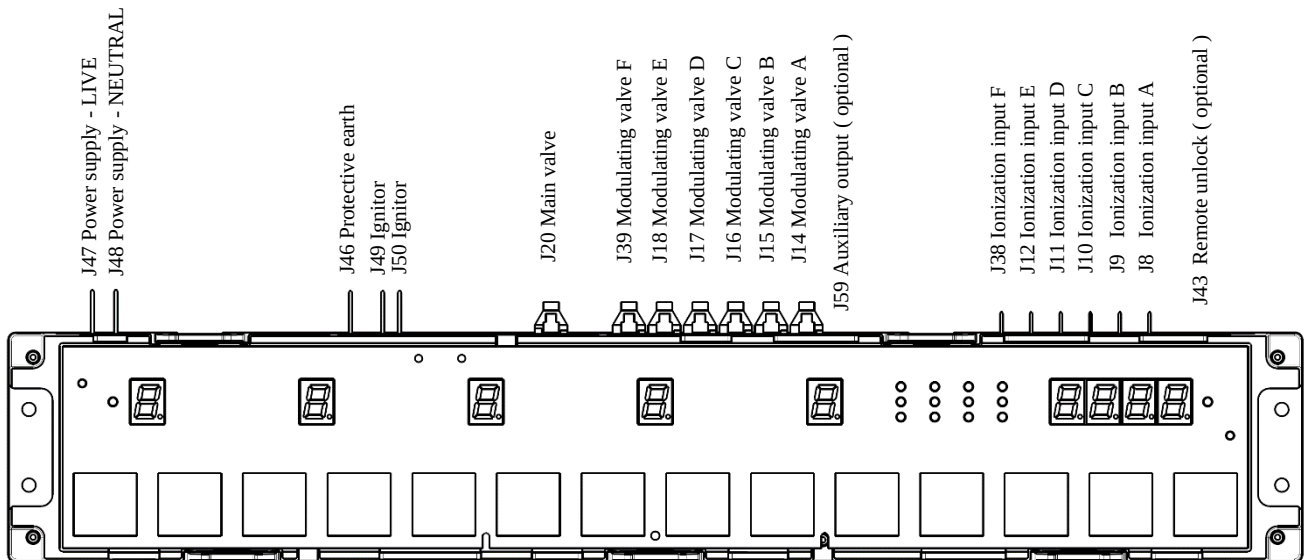
OPTION V
(lockout due to flame failure)



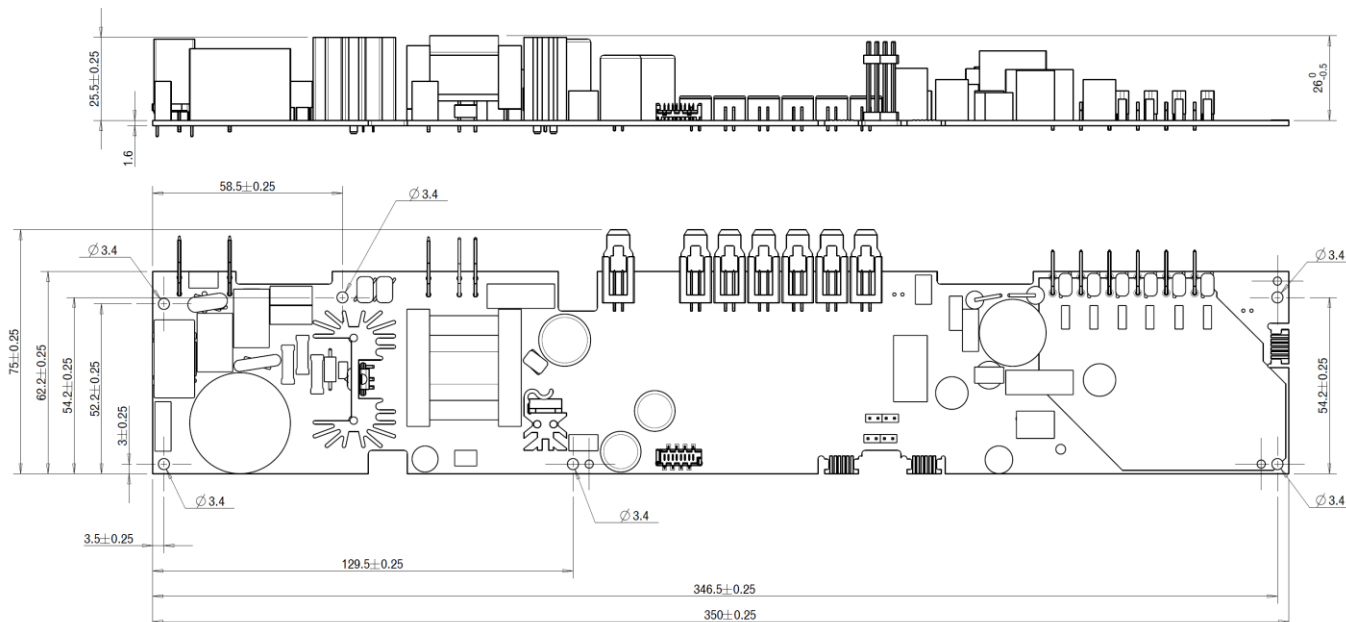
OPTION Inn -Ynn
(inter-waiting time and recycling)

Option E = volatile lockout (electrical reset)

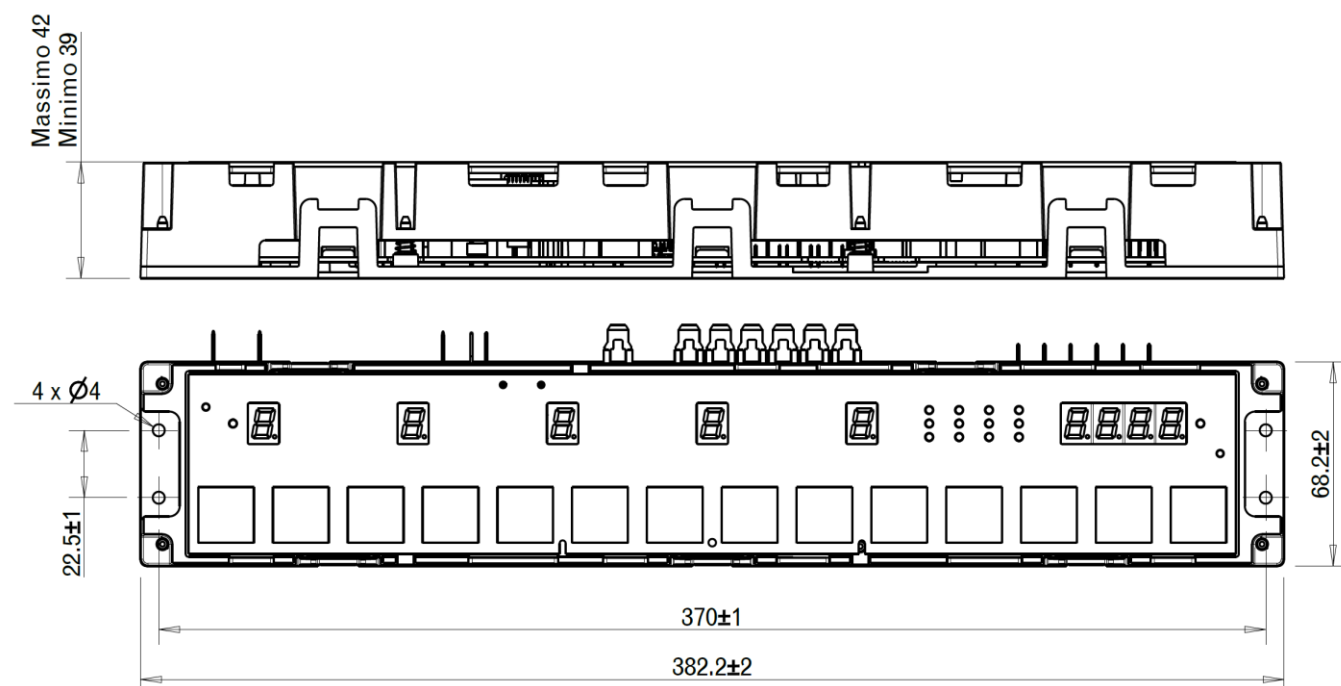
CONNECTION DIAGRAMS

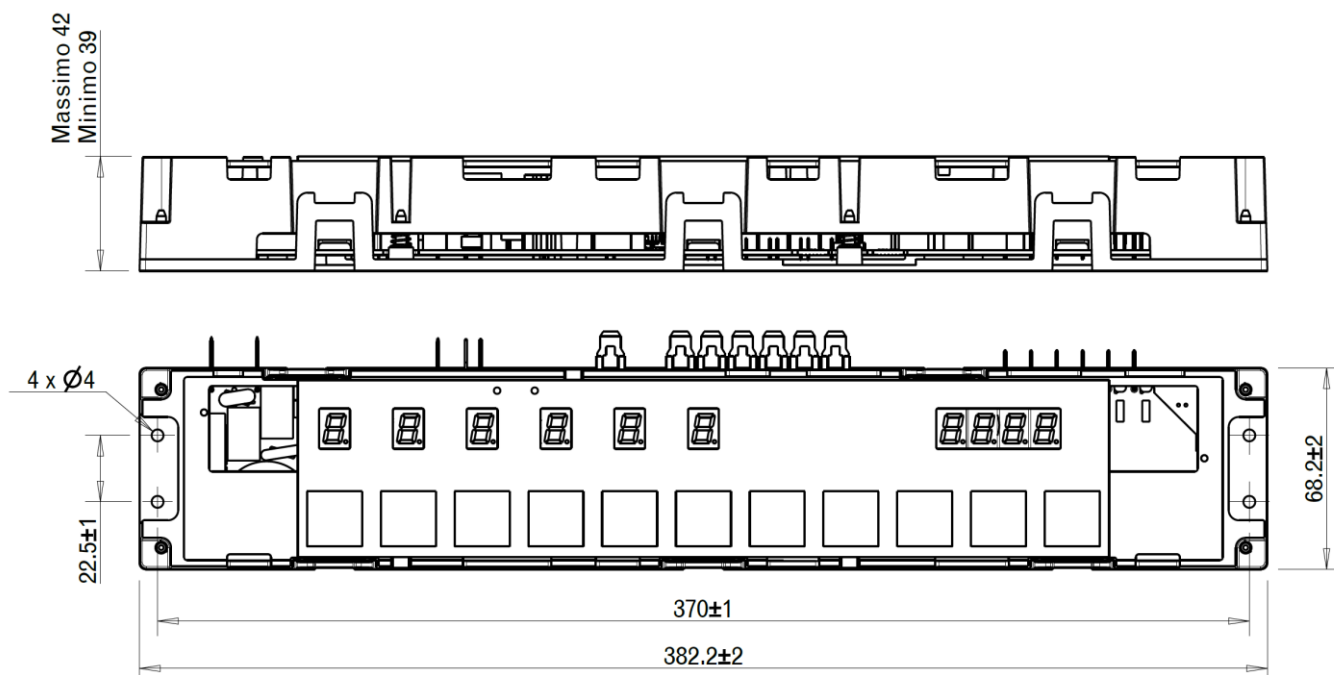


MECHANICAL DIMENSIONS POWERBOARD VERSION



MECHANICAL DIMENSIONS USER INTERFACE VERSION





ATTENTION --> Company Brahma S.p.A. takes no responsibility for any damage resulting from Customer's tampering with the device.

BRAHMA S.p.A.

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