

# PROGRAMMER FOR FLAME START AND SUPERVISION, AND SAFE STOP OF BURNER

MODEL: PRG-Ie-III Me-□-□-C□□-P□-O□

TECHNICAL SHEET 1/8

☎ Customer Service 55 11 3019-1616

For further details, see technical bulletin

## • APPLICATION

Programmer PRG-Ie-III Me is a piece of equipment used for flame start and supervision as well as for safe stop for commercial or industrial gas, oil or any type of fuel burners, used in burners with discontinuous operation (turn burner on / off in less than 24h), with power smaller than 120 KW (100 000 Kcal/h).

For use in the combustion chamber closed, the user must provide safe system of pre-purge before each starting sequence, or order the programmer PRG-Ie-III Me with purge timer built in and since the purge time is suitable for application.

**This product meets the requirements of ABNT NBR 12313 regulation. 12313 – rev. Sept./2000.**

According to the type of sensor chosen, the options are the following:

- ⇒ **PRG-Ie-III Me-I** – input for ionization flame sensor, when gas is used as fuel in burners which operate with this type of sensor. See electrodes, line SEL-HT or SEL-HT-E (electrode assembled under draft or sample from the special-client).
- ⇒ **PRG-Ie-III Me-IG** – single input for double-function rod: - ignition and ionization flame sensor, when gas is used as fuel in burners designed to operate using such sensor. See sensor electrodes, line SEL-HT or SEL-HT-E (electrode assembled under draft or sample from the special-client).  
In this configuration, the sensor electrode also works as an ignitor electrode.
- ⇒ **PRG-Ie-III Me-L** - input for photo resistance sensor of cadmium sulfide – visible radiation when using oil or any type of fuel which provokes flame with emission of yellow light. See sensors, line SEL-SV-L.
- ⇒ **PRG-Ie-III Me-U** - input for ultraviolet radiation sensor, when using gas, light oils or any type of fuel which provokes flame with emission of ultraviolet rays. See sensor model SEL-SV-U.

## • TECHNICAL DATA

- ⇒ Watch dog microprocessing – safe failure
- ⇒ Local reset with 3 (three) sec. Safety to prepare the reset system
- ⇒ Flame sensing inlets: **I, IG, U, L or F** – t To order, see code field
- ⇒ Useful life of outlet relays: > 100.000 operations
- ⇒ Expected mechanical life of output contacts: > 10.000.000 operations
- ⇒ Protection of the flame circuit during the ignition period
- ⇒ Protection against failure due to short circuit of the ionization sensor
- ⇒ Protection against tension outbreaks
- ⇒ Fuse protection for circuits and outlet (F1) assembled on BASE Ie-III Me – code MST-250V – 6,3 A.
- ⇒ 115 VAC or 220 VAC +10 -15% feeding (**phase /phase or phase / neutral non-grounded**) - 50/60 Hz ± 3%.

**Note: Equipment originally configured for 220Vac. To alter feeding, change jumper to 115 VAC position – See figure 2.**

- ⇒ Power consumption: 5 VA
- ⇒ Working temperature: 0°C to 60°C
- ⇒ Minimum flame current (dc-uA): **I → 2 / U → 200 / L → 500 / F → 2000**

**NOTE: The cable of flame sensor must be installed separately from the other cables that constitute the set burner control. The best type of cable recommended for this purpose is the one used for ignition.**



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- ⇒ Verification of anticipated or false flame signal, before the start of ignition.
- ⇒ Ambient protection degree: IP 50 (with inlet / outlet cable press installed)
- ⇒ Fixation: BASE Ie to be assembled on any internal or external surface on the panel.
- ⇒ Automatic test of air flow switch or pressure switch: N.A. before fan start, and N.F. continuously, after fan start.
- ⇒ Purge time: programmable (to order, see time / sequence diagram and code)
- ⇒ Anticipated flame check: up to 0.5 sec. (prior to the beginning of ignition start).
- ⇒ Ignition time: programmable
- ⇒ Confirmation time for flame inlet: < 1 sec (for anyone of the flame inlets).
- ⇒ Time for pilot light stabilization or 1<sup>st</sup> phase: programmable
- ⇒ Blocking time for flame failure: ≤ 4 sec.
- ⇒ Automatic recycle: Programmable to make one attempt for re-lighting in case of ignition or flame failures.
- ⇒ Maximum outlet currents (250 Vac<sub>max</sub>)
  - V<sub>pil</sub> : 1,5 A (NA)
  - V<sub>pri</sub> : 1,5 A (NA)
  - Fan: 1,5 A (NA) – To order, see code field
  - External ignition converter : 2 A (NA) – To order, see code field
  - Blocking remote outlet 1,5 A (NA)
- ⇒ Local ON /OFF switch (L/D) optional
- ⇒ Local Signalization – equipment on – red on
- ⇒ Local Signalization – with flame – green on
- ⇒ Local Signalization with anticipated flame – orange on
- ⇒ Assembling through the basis – code BASE Ie-III Me, see figure 2 underneath.
- ⇒ Electric connections: by using terminal binding rod, assembled on BASE Ie-III Me. We suggest the use of flexible and extra-flexible cables. Maximum thickness of 1.5 mm<sup>2</sup>.
- ⇒ Weight: 450 grams
- ⇒ Warranty: 12 months (see terms of warranty)



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## • Dimensional Draft ( mm )

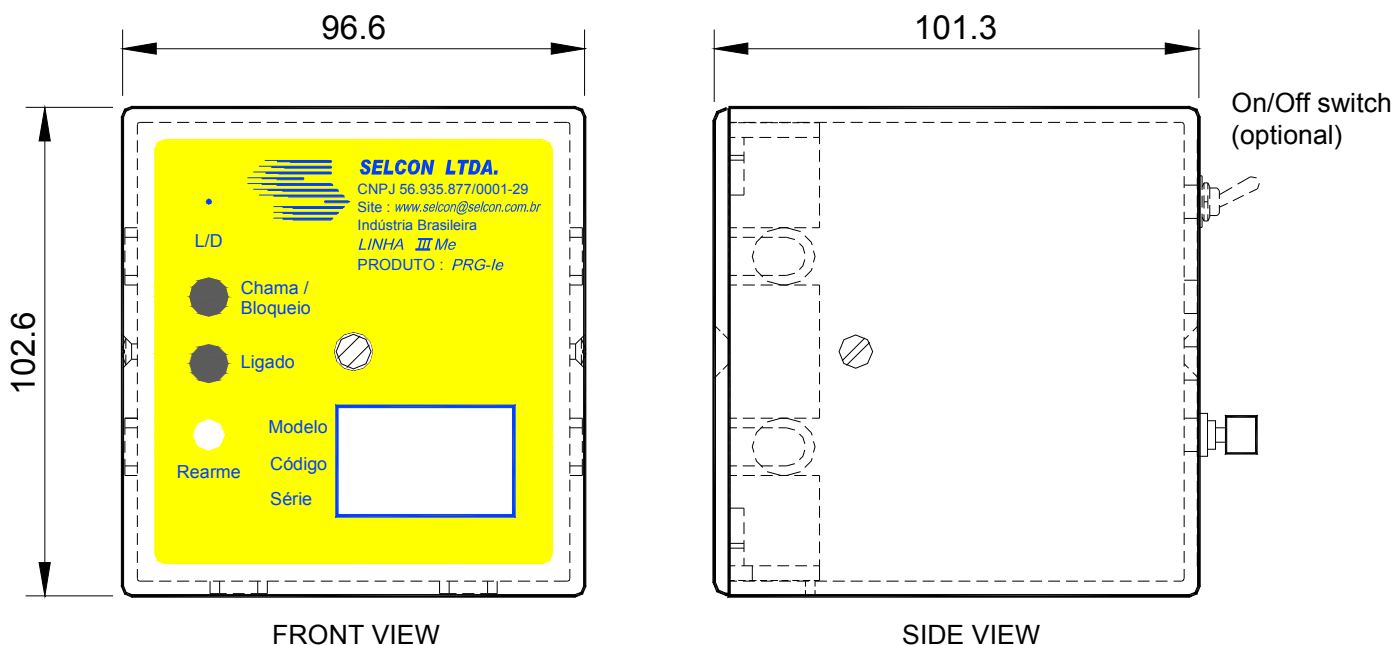


FIGURE 1

## BASE M-III Me - Front View

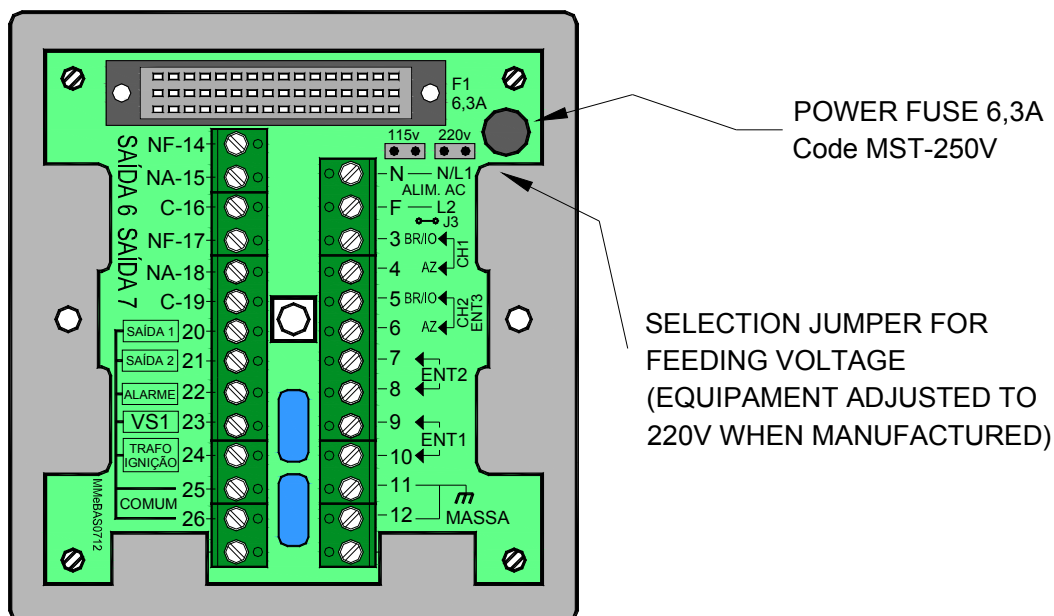


FIGURE 2



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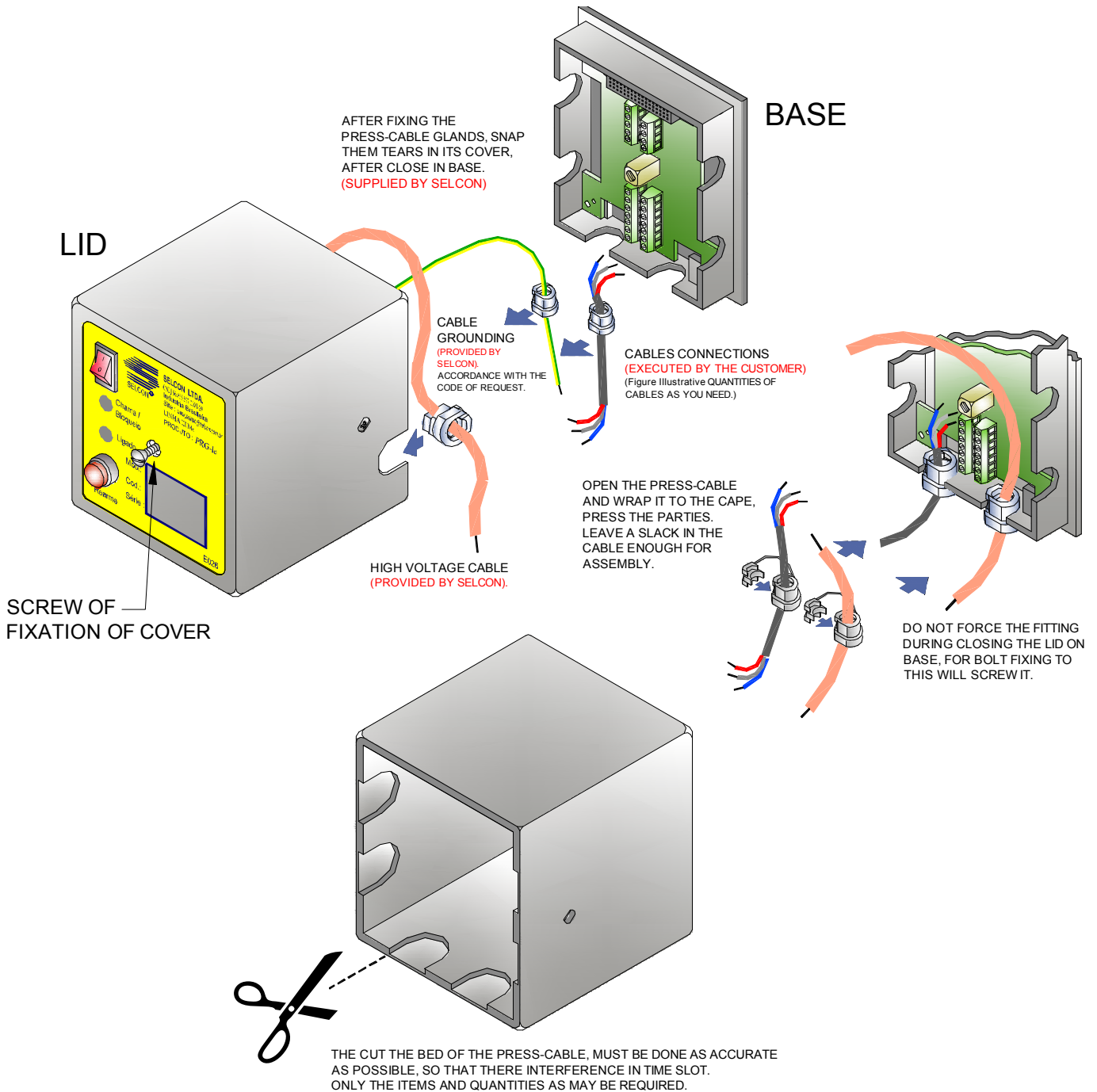


FIGURE 3



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Selcon Ltda., keeps the right to modify this technical sheet whenever it is necessary – Mar./2013

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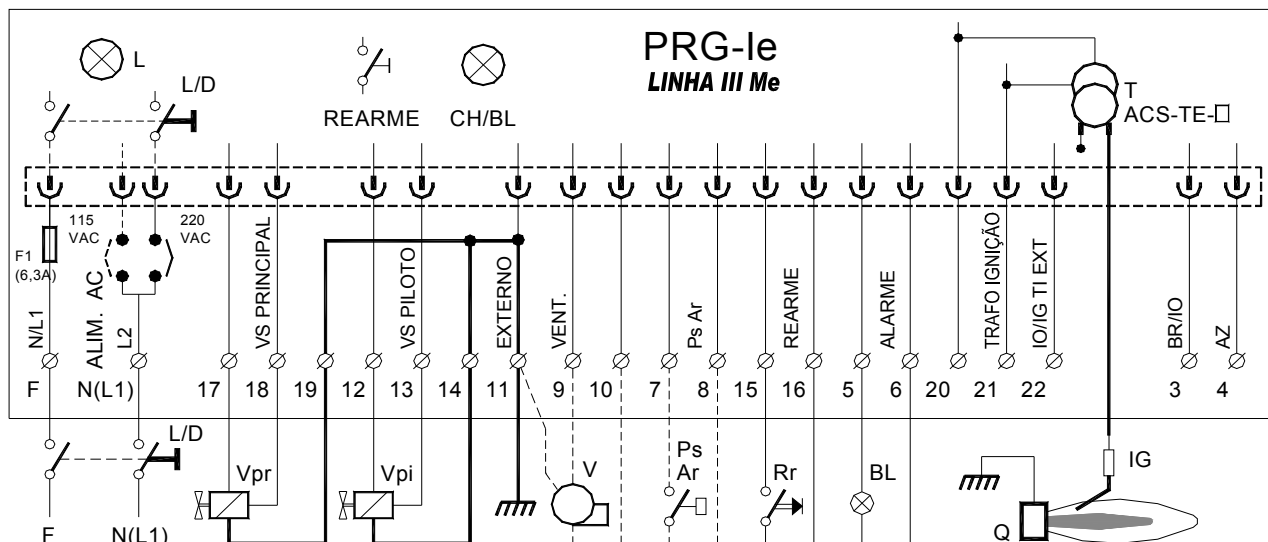
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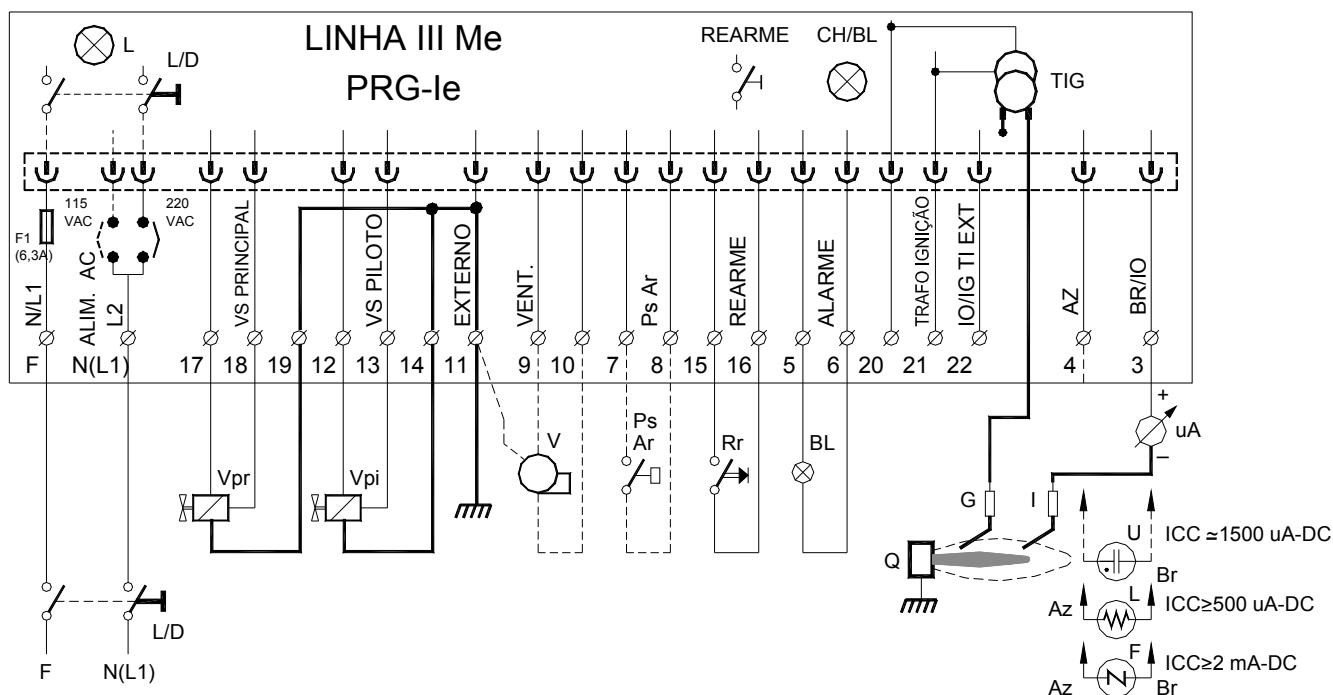
## • DIAGRAM FOR ELECTRIC CONNECTIONS

ELECTRIC DIAGRAM OF CONNECTION IN THE BASE OF THE INTERNAL TRANSFORMER  
PROGRAMMER WITH ONE IGNITOR ELECTRODE AND FLAME SENSOR



**FIGURE 4**

ELECTRIC DIAGRAM OF CONNECTION IN THE BASE OF THE INTERNAL  
TRANSFORMER PROGRAMMER, FLAME SENSOR I, U OR L.



**FIGURE 5**



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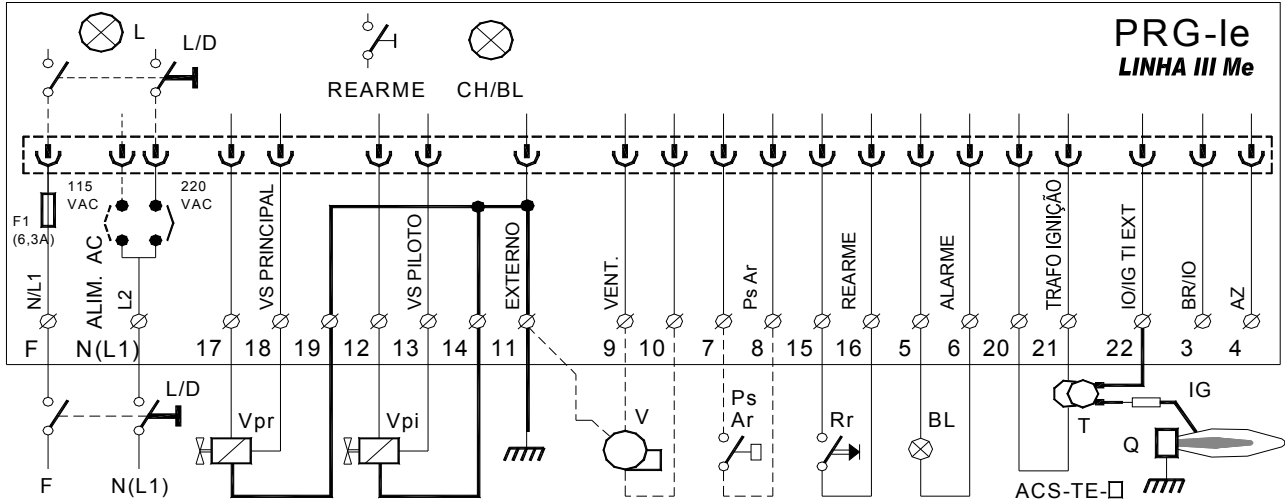
**MODEL: PRG-Ie-III Me-□-□-C□□-P□-O□**

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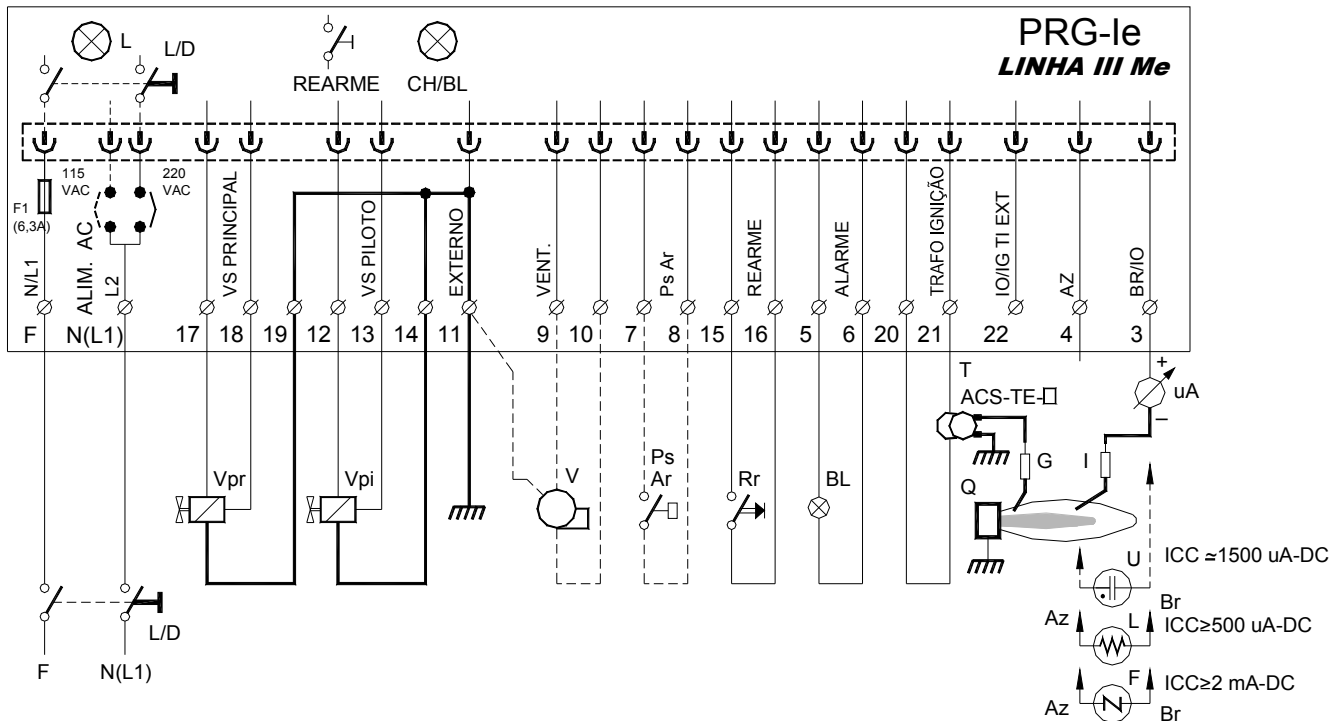
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## ELECTRIC DIAGRAM OF CONNECTION IN THE BASE OF THE EXTERNAL TRANSFORMER PROGRAMMER WITH ONE IGNITOR ELECTRODE AND FLAME SENSOR



**FIGURE 6**

## ELECTRIC DIAGRAM OF CONNECTION IN THE BASE OF THE EXTERNAL TRANSFORMER PROGRAMMER, FLAME SENSOR I, U OR L.



**FIGURE 7**



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## • LEGEND:

L: Programmer signalization on

L/D: On/Off switch

REARME: Local front reset of PRG-Ie-III Me / remote reset via bar terminal (BASE Ie-III Me)

CH/BL: flame signalization (VD) / local blocking (VM) / Anticipated flame (LJ)

Alarm: remote block signalization via bar terminal (BASE Ie-III Me)

IG: Ignitor electrode / ionization flame sensor inlet – line SEL-HT

I: Sensor Electrode– line SEL-HT

U: Ultraviolet radiation sensor– line SEL-SV

L: Visible radiation sensors – line SEL-SV

TI EXT.: Ignition transformer outside the programmer– line ACS-TE

### Ignition Transformer (Tig):

- Internal when incorporated to PRG-Ie: : With ignition transformer ACS-TE-□1-C5
- External to the PRG-Ie: Of any power, except the version with only one ignitor/sensor electrode, which should operate with an isolated transformer **MODELS:** ACS-TE-□□-C5 or ACS-TE-□1-C6.
- Consult Selcon Ltda in case you wish to use other transformers.

Fan (V) : Combustion fan

PS AR: Sensor-Inlet for induced air flow/ pressure switch

VS pilot (Vpi): pilot fuel valve or of 1<sup>st</sup> phase

Main VS (Vpr): main fuel valve or of 2<sup>nd</sup> phase

F1: Miniature fuse assembled on BASE Ie – code MST-250V – 6,3 A

uA/mA: Meter to monitor flame signal (uA/mA) (see figures 4 and 6)



Q: Burner



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• **CODE FOR ORDERS: PRG-Ie-III Me-□-□-C□□-P□-O□**

PRG-IE-III ME	SENSOR	IGNITION TRANSFORMER INCLUDED IN THE OUTER COVERING	C- CONFIGURATION		P- PROGRAM REQUESTED	O- ON/OFF Switch With Front Signalization
	<b>I</b> IONIZATION	<b>(d1)</b>	<b>PURGE TIME</b>	<b>Fan outlet + air switch inlet</b>	<b>(d4)</b>	<b>(d5)</b>
	<b>IG</b> SINGLE ELECTRODE (sensor and ignitor)	d1 = <b>S</b> => Yes	<b>(d2)</b>	<b>(d3)</b>	d4 = <b>1</b> => standard	d5 = <b>1</b> => no
	<b>U</b> ULTRAVIOLET	OR	OR	OR	OR	OR
	<b>L</b> VISIBLE	d1 = <b>N</b> => no	d2 = <b>2</b> => 10 sec.	d3 = <b>2</b> => yes	d4 = <b>2 a "n"</b> => other (under consultation)	d5 = <b>2</b> => yes

**Obs.:** The sensor and other accessories must be specified separately, according to a specific code.

• **BE AWARE:**

⇒ Use the programmers and/or detector relays exclusively with flame sensors of Selcon manufacturing.

• **OTHER PRODUCTS AND ACCESSORIES:**

- ⇒ Flame Relays – CHM-E, CHM-P, CHM-M e CHM-F
- ⇒ Tightness Test Relay of blocking valves – CHM -T
- ⇒ Ignition Programmers and flame monitoring – PRG-E, PRG-Ie, PRG-Ie -III Me (with base), PRG-I, PRG-M e PRG-M-III Me (with base)
- ⇒ Optical Flame Sensors– SEL- SV
- ⇒ Flame sensors by ionization and ignitor electrodes – SEL-HT e SEL-HT-E (sensors and electrodes assembled under draft or sample from the special-client).
- ⇒ Flame signal transmitter– ACS -TX (until 500 meters between the sensor and relay or programmer)
- ⇒ Flame Signal Converter for 4 -20 mA – ACS - CV
- ⇒ Ignition transformers – ACS -TE (for feeding in VAC or VCC)
- ⇒ Portable ignitor – ACS-IP (works with common alkaline battery AA type)
- ⇒ Several Cables– ACS - CB (ignition / sensing / communication / control)
- ⇒ Connector and protector to touch for ignition cable – ACS - CP
- ⇒ Temporized ignition panel ACS – IT
- ⇒ Ignition and flame panel – ACS - PI
- ⇒ Articulated socket joint – ACS - CN
- ⇒ Ignition and monitoring panel – ACS-PN (under consultation)
- ⇒ Reform services of pilot burners (under consultation)
- ⇒ **PRODUCTION DATA SUPERVISION LINE**



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