

PROGRAMMER FOR START, FLAME SUPERVISION AND SAFE STOP OF BURNER

PRODUCT: PRG-SE-C□□□- O2

☎ Costumer Service 55 11 3019-1616

TECHNICAL SHEET 1/11

For further details see technical bulletin

● APPLICATION

Programmer PRG-SE-C□-O2 equipment recommended for start, flame supervision and safe stop for any type of burner for up to two stages of flame, in commercial applications or industrial and fuels gas or light liquids, with a cycle of **use do not continuum** (on/off burner Period in less than 24 hours).

For use in closed combustion camera, the user should provide safe system of pre-purge before each sequence of start, or require the programmer PRG-SE-C□-O2 with purge timer coupled, since that the times offered are appropriate for application.

Entry for flame sensor for ionization. See electrode sensors for ionization, line SEL-HT-I (standard) or SEL-HT-E (electrode mounted on a drawing or sample of the client).

This product meets the requirements of the standard NBR 12313 of ABNT-review Sept./2000.

● TECHNICAL DATA

⇒ Watch dog micro process – safe failure.

⇒ Supply/frequency: 90 a 250Vca - 50/60 Hz ± 3% or 24Vcc (-10 +20%).

NOTE: To supply network CA, consisting of phase/neutral, should consider the possible need for its reversal (terminals 9 and 10), for flame sensor circuit not lose sensitivity and therefore the capacity to detect signal of flame. See below diagram for the connections AC and DC.

⇒ Consumption of energy: 5 VA

⇒ Protection against tension outbreaks

⇒ Protection fuses retardate the internal circuitry (0,25A) and for the control outputs (6,3A)

⇒ Temperature of work: 0 at 60 °C

⇒ Storage ambient temperature: -5° a 65 °C

⇒ Maximum relative humidity of environment in operation: 90% (40 ± 2°C) – NBR 5291

⇒ Flame Sensor : Ionization.

⇒ Minimum current flame for supply of 90 at 250Vca: 2 microampers dc (uA).

⇒ Minimum current flame for supply in 24 Vcc: 7 uA microampers dc (uA).

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

⇒ Protection against short circuit failure sensor ionization for mass.

⇒ Blocking with local signaling (type LED) and remote (contact of relay N.A.)

⇒ With verification of premature flame or false flame signal, before starting the burner.

⇒ Purge Time: 10 or 20 seconds (see field code for request)

⇒ Maximum time for confirmation of contact closure of the **PS** of combustion air: 5 sec.



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- ⇒ Time of ignition: 6 sec.
- ⇒ Time to confirm the signal of flame: < 1 sec.
- ⇒ Time of answer to the flame flaw: < 4 seg.
- ⇒ BARGRAF of LED's:
 - Signaling **1** – “**PUR**” → BURNER IN PURGE
 - Signaling **2** – “**IGN**” → BURNER IN IGNITION
 - Signaling **3** – “**N4**” → LEVEL OF FLAME
 - Signaling **4** – “**N3**” → LEVEL OF FLAME
 - Signaling **5** – “**N2**” → LEVEL OF FLAME
 - Signaling **6** – “**N1**” → LEVEL OF FLAME
 - Signaling **7** – “**FCH**” → FAILURE OF IGNITION / FLAME FAILURE (**fixed access**)
→ DEFECT SENSOR - SHORT CIRCUIT FOR OF MASS
(BLINK, BLINK) - available only for the model fed on 24Vdc
 - Signaling **8** – “**ANT**” → FAILURE FOR FLAME PREMATURE OR FALSE
 - Signaling **9** – “**PSA**” → FAILURE PS AIR COMBUSTION OPENED
 - Signaling **10** – “**PSF**” → FAILURE PS AIR COMBUSTION CLOSED
NOTE: The flame sign will be greater the higher the level "N" indicated
- ⇒ Maximum current per output in 250 Vac (resistive):
 - **VE** (ventilator): 2 A
 - **TI** (transformer of ignition): 2 A
 - **V1** (low fire or pilot): 2 A
 - **V2** (high fire): 2 A
 - **AL** (alarm): 2 A
- ⇒ Electric connections: through socket of fast extraction polarized, type terminal rule, to receive the external cables.
- ⇒ Expected electrical life of output contacts: > 100,000 operations.
- ⇒ Expected mechanical life of output contacts: > 10,000,000 operations.
- ⇒ Reset local and remote after 3(three) sec. waiting for security to enable the reset system.
- ⇒ Auto Test of key air flow or pressure switch: (NA) before start the fan, and (NC) continuously after the start of the fan.
- ⇒ Degree of environmental protection: IP 54 (except connector of fast extraction - IP 50)
- ⇒ Cabinet: Plastic box gray color
- ⇒ Mounting: External or internal on flat surface in protected environment.



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- ⇒ Fixation: 3 screws on plane surface.
- ⇒ Weight : 300 grams
- ⇒ Warranty: 12 months (**see the guarantee**)

• **Dimensional drawing (mm) - version for supply AC-90 to 250V**

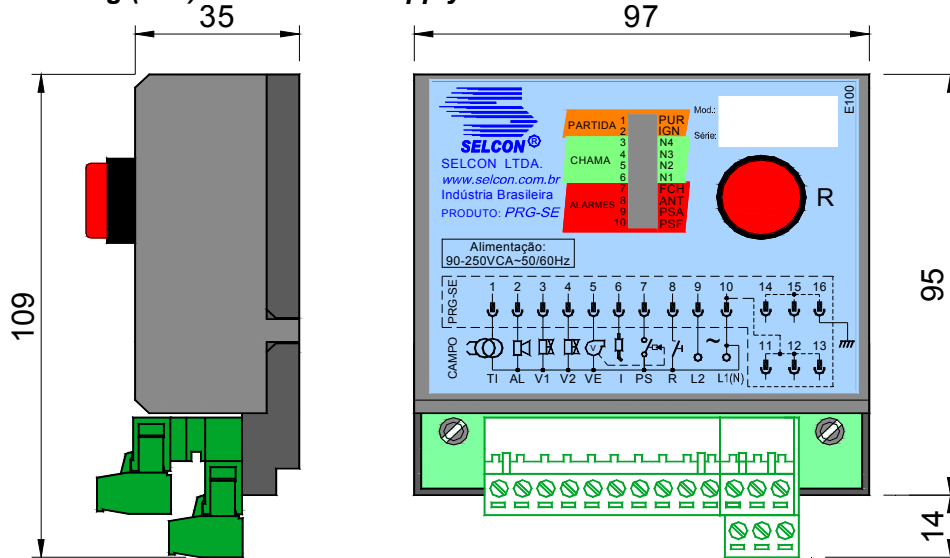


FIGURE 1

• **Main ruler of terminals (10 terminals) and additional (optional 3 +3 terminals) - AC 90 to 250V**

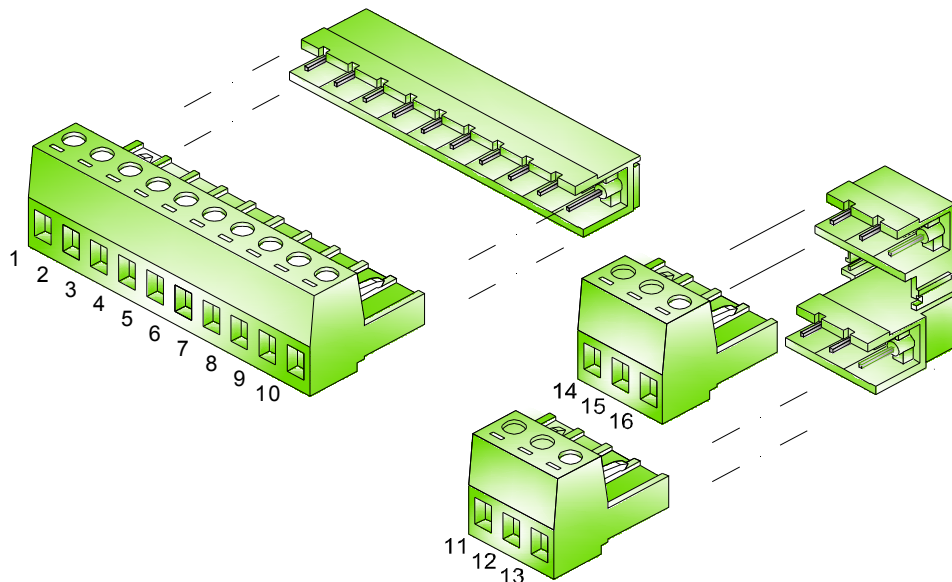


FIGURE 2



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• Scheme of electric connections CA - version for supply CA - 90 to 250V:

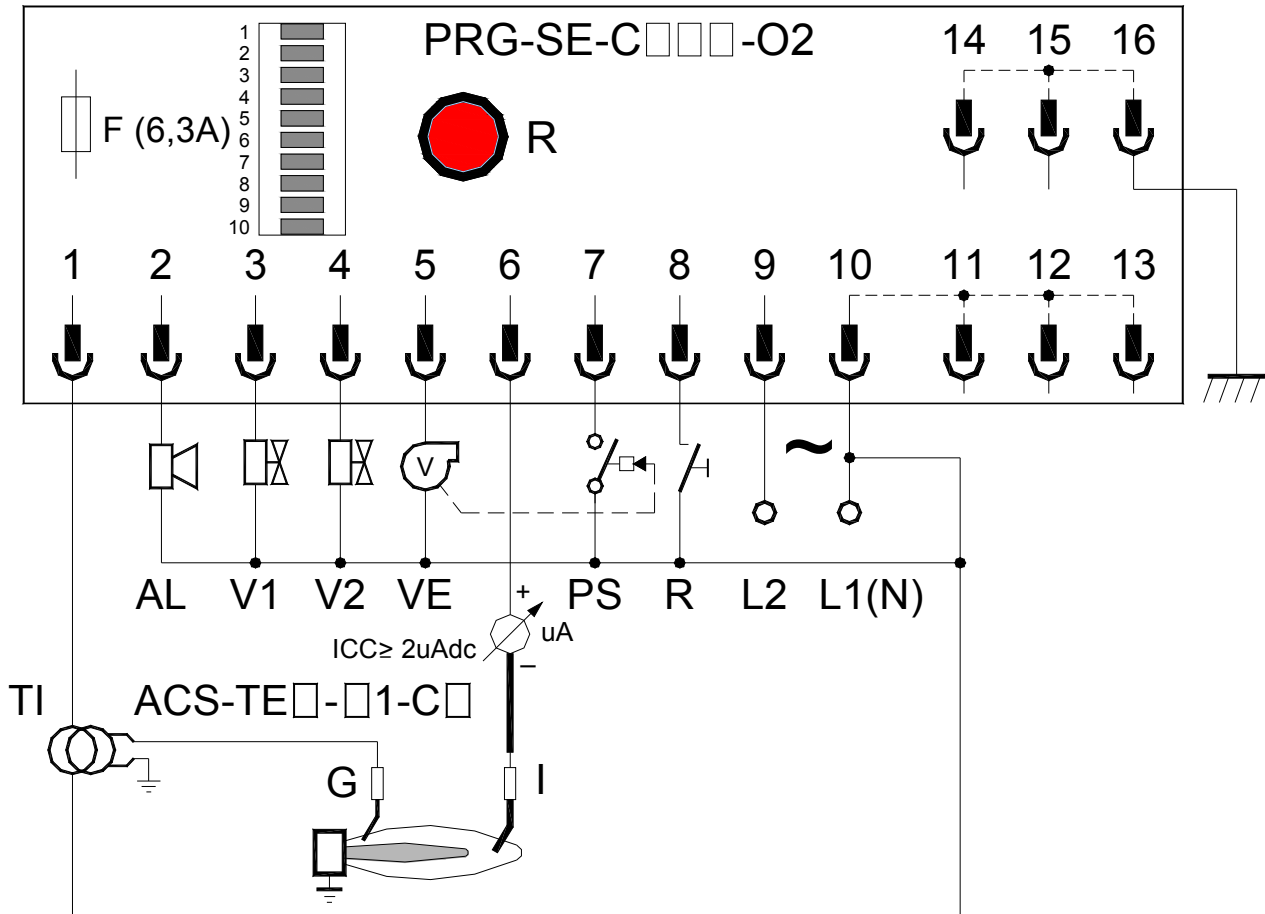


FIGURE 3



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- Dimensional drawing (mm) - version for supply DC in 24Vcc:

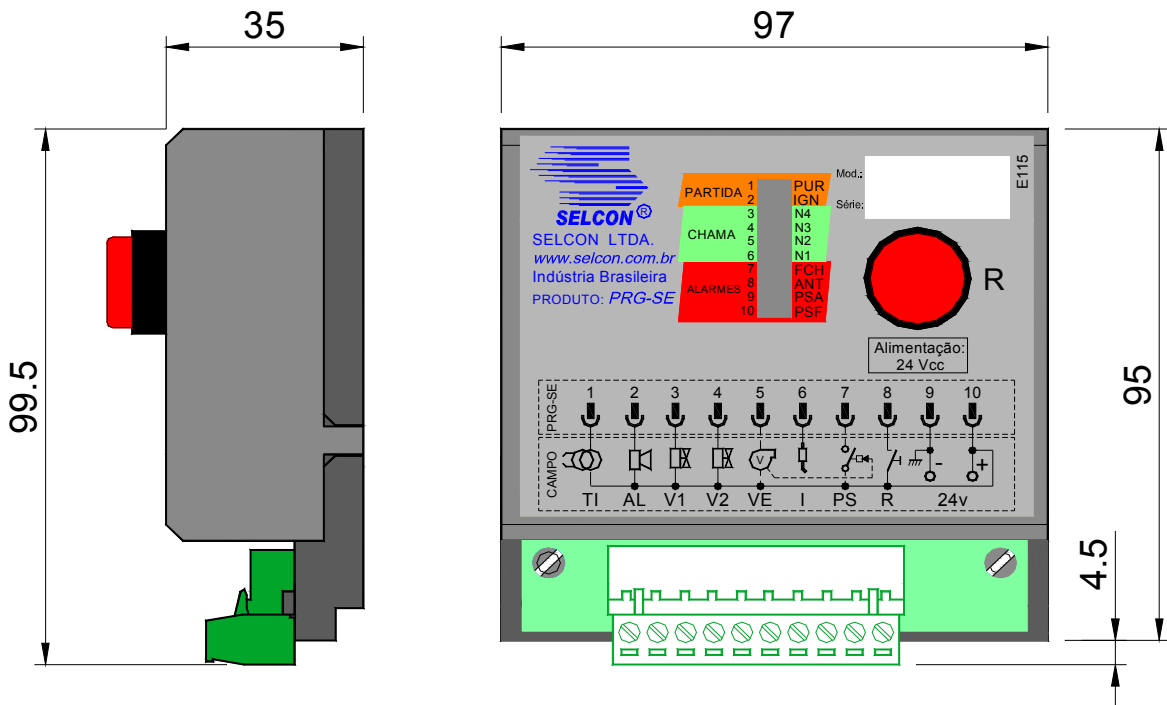


FIGURE 4

- Scheme of electric connections - version for supply DC in 24Vcc:

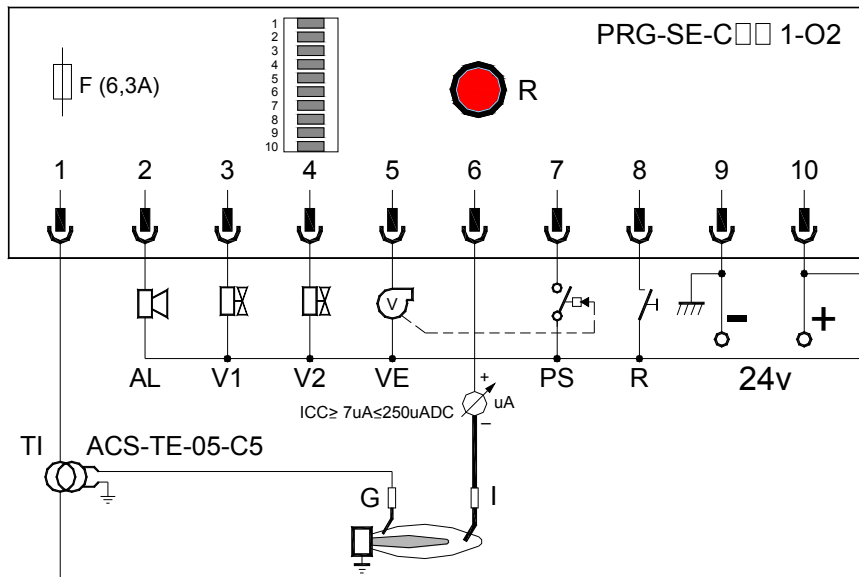


FIGURE 5



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● LEGEND

L1 / L2 (N): Power Input 90 to 250Vac or 24Vdc (see code for request).

Ps: Pressure switches for minimum gas (permission of start).

Rearme: Reset local

R: Reset remote

VE: Fan

PS: Key of flow of air / key of pressure of combustion air and/or exhaustion

TI: Transformer of ignition:

- We recommend using the model ACS-TE-□□-C5 or ACS-TE -□1-C6.

For other transformers of Ignition, consult Selcon Ltda.

G: Electrode ignitor – line SEL-HT

I: Sensor electrode of flame for ionization – line SEL-HT

V1: Pilot valve (1º stage / pilot / fire low)

V2: Main valve (2º stage / main / fire high)

AL: Alarm of flame premature or false; failure of ignition; failure of flame in regime; circuit short short of the flame sensor.



Burner-pilot and main; low fire and high or of 2 stages.



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● **Diagram of times**

TIMES		
t1	Wait to start sequence	1 sec.
t2	Wait for stabilization of the key signal of air flow	5 sec.
t3	Purge	0, 10 or 20 sec.
t4	Pre-ignition	2 sec.
t5	Ignition	6 sec.
t6	Stabilization pilot flame or 1st stage.	8 sec.

● **Operation starting with the formation of normal flame**

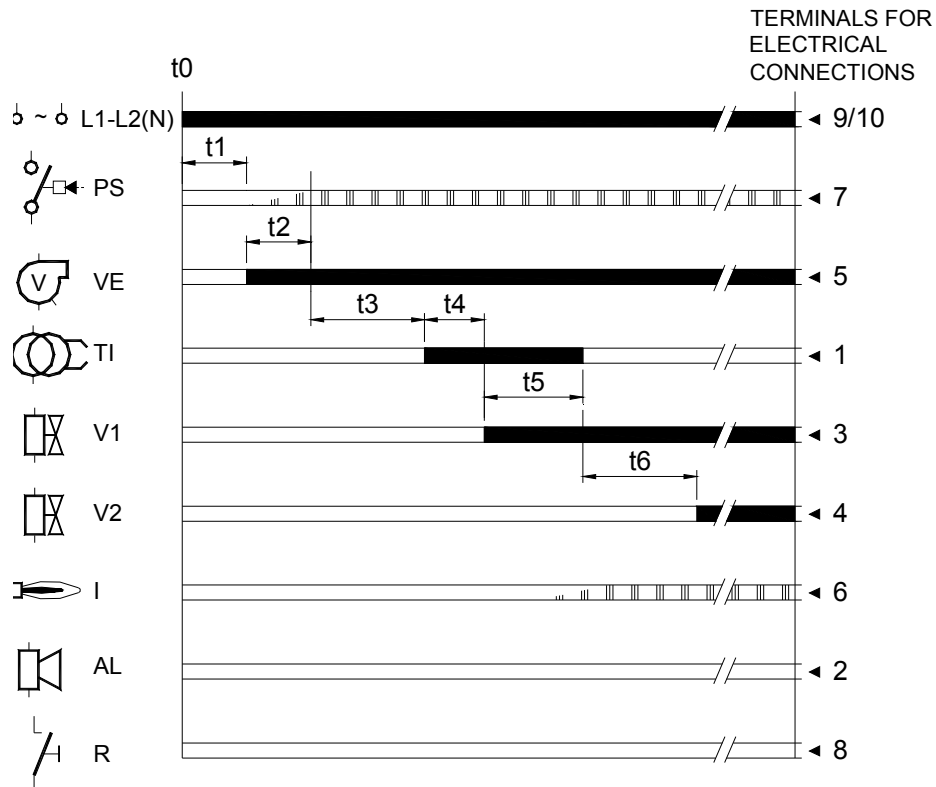


FIGURE 6



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● **Operation starting with the presence of premature flame / false signal**

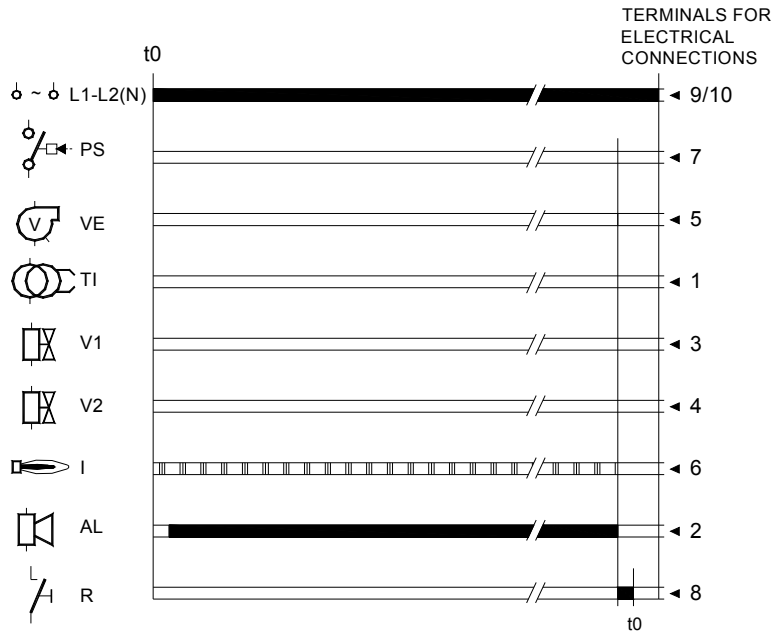


FIGURE 7

● **Operation of start with ignition failure**

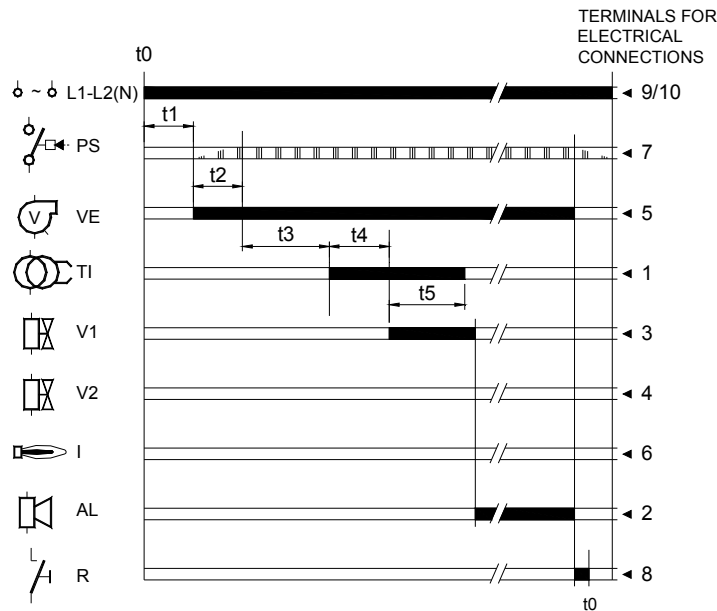


FIGURE 8



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● **Operation of start with pre-existent flaw of the key of flow of air**

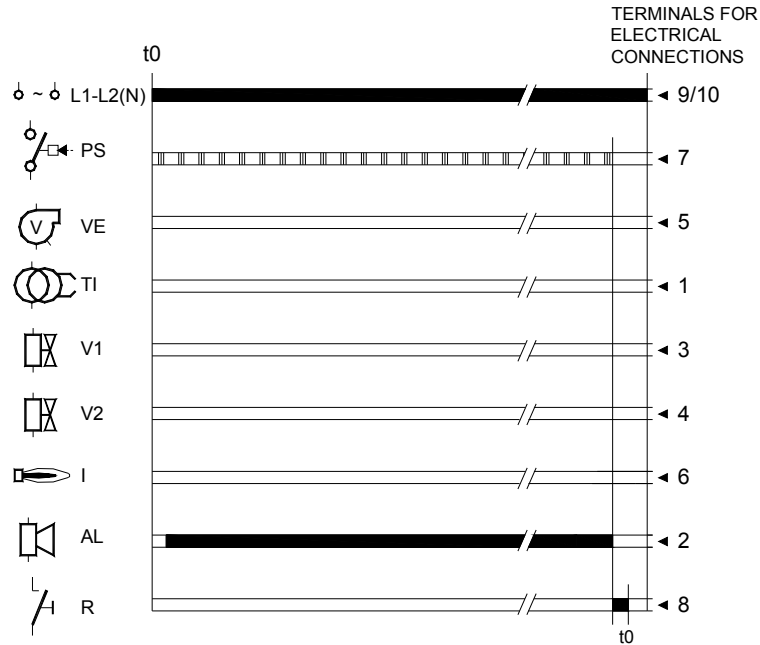


FIGURE 9

● **Operation of start with flaw of the key of flow of air after entering in regime.**

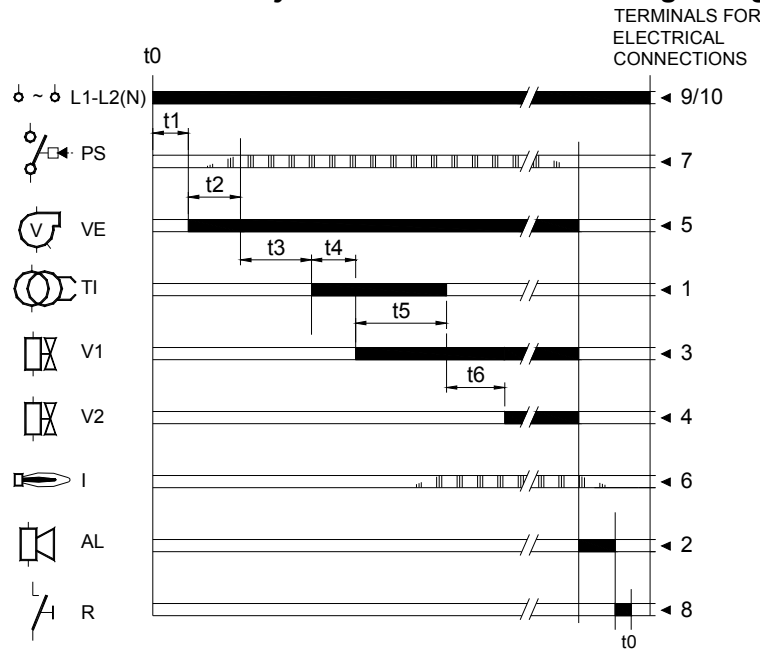


FIGURE 10



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● **Operation of normal start with lack and subsequent electric power return.**

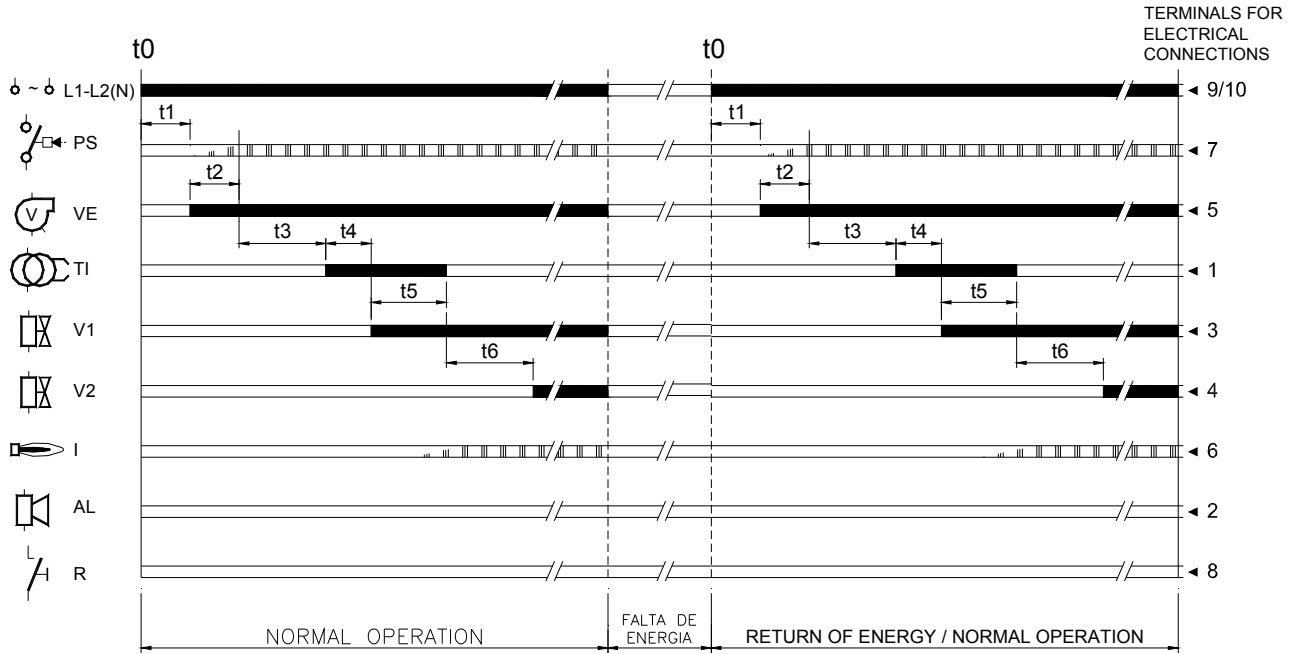


FIGURE 11

● **Equipment lock with momentary lack of energy**

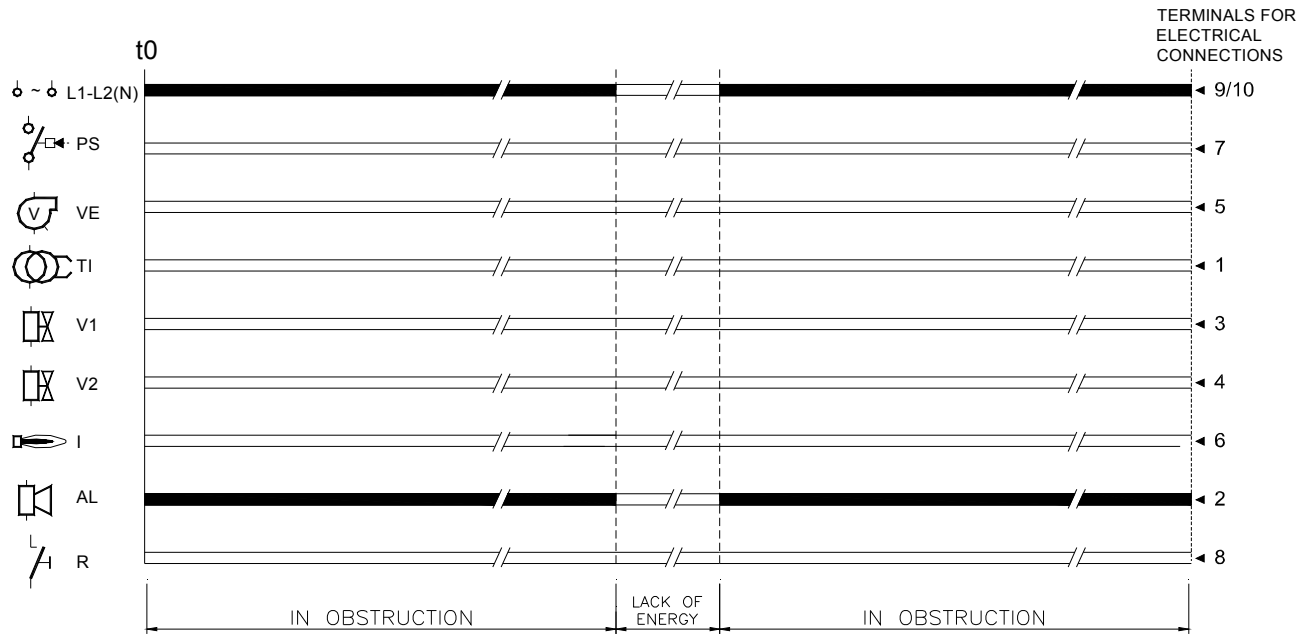


FIGURE 12



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● CODE OF REQUEST PRG-SE-C□□□-O2

PRG-SE	C- SETUP			O- OPTION
	TIME OF PURGE	FAN + KEY OF AIR FLOW	SUPPLY	
	□ (d1)	□ (d2)	□ (d3)	
	d1 = 0 => 0 sec.	d2 = 1 => without	d3 = 0 => 90 a 250 Vac- 50/60 Hz	d4= 2 => 2 stages
	OR	OR	OR	
	d1 = 1 => 10 sec.	d2 = 2 => with	d3 = 1 => 24Vcc	
	OR			
	d1 = 2 => 20 sec.			

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

● **BEWARE:**

⇒ Use the programmers and/or relays detectors exclusively with flame sensors manufactured by the Selcon.

● **OTHER PRODUCTS AND ACCESSORIES:**

- ⇒ Flame relays : CHM-SE, CHM-P, CHM-M, CHM-M-III Me (with base) and CHM-F
- ⇒ Relay tester tightness of shutoff valves: CHM-T
- ⇒ Programmers ignition and flame monitoring: PRG-SE, PRG-E, PRG-Ie, PRG-Ie-III Me (with base), PRG-I, PRG-M and PRG-M-M-III Me (with base)
- ⇒ Optical flame sensors: SEL-SV.
- ⇒ Sensors flame ionization electrodes and igniters: SEL-HT (standard) and SEL-HT-E (sensors and electrodes mounted on a drawing or sample of client-special).
- ⇒ Signal transmitter of flame ACS-TX (up to 500 meters between sensor and relay or programmer).
- ⇒ Signal converter flame 4 -20 mA: ACS-CV
- ⇒ Transformers Ignition : ACS-TE (for supply on VAC or VDC)
- ⇒ Panel ignition timer: ACS-IT
- ⇒ Ignitor portable: ACS-IP (operates with batteries)
- ⇒ Panel ignition (operates with batteries): ACS-PN-E
- ⇒ Panel ignition and flame monitoring: PRG-Ie/O3
- ⇒ Different cables: ACS - CB (ignition / sensing / communication / control)
- ⇒ Connector and shield to touch for cable of ignition: ACS-CP
- ⇒ Junction of articulation : ACS-CN
- ⇒ Panel ignition and monitoring: ACS-PN (under consultation)
- ⇒ Services of reform of pilot burners: under consultation
- ⇒ **LINE OF SUPERVISORS PRODUCTION DATA**



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