

# CONVEYER SENSOR OF SIGNAL FLAME DETECTION

PRODUCT: SEL-SV-□□-□1-O□40-K7

☎ Costumer Service 55 11 6162-1616

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For further details see technical bulletin

## • APPLICATION

Conveyer Sensor of signal flame detection, **explosion proof**, recommended for systems with one or multi-burners, of industrial or commercial use of any kind or power, using gas, oil, or any kind of fuel that provokes flame with ultraviolet rays emission or visible, with continuous use cycle( on/off burner in a period less or equal 24hs). It has failure self-checking conveyer Sensor in each 4 seconds of operation.

**NBR 12313 of ABNT item 4.1.4.4 standard, considers obligatory the use of sensor with failure self-checking in burners from 100.000 Kcal of power, and that work 24hs or more, without at least one disconnection.**

**This product is certified by INMETRO. Meets the requirements of the administrative rule 176 (BR-Ex d IIB+H<sub>2</sub> T6) and NBR 12313 of ABNT standard, revision Sept./2000.**

It has sensor sensibility adjustment, which facilitates the use in applications with multi-burners and conveyer circuit of signal flame detection, which allows its application when the distance between the Conveyer-sensor SEL-SV-(U or L) and detector relay of flame detection or programmer is until 500 meters. It can be used for gas burners, oil burners or other kind of fuel; depending on the chosen sensor. The options are:

- ⇒ **SEL-SV-U0-□1-O□4-K7** – For ultraviolet radiation photo-valve sensor. Detection of flame presence, when it is used gas, oil or any other fuel that provokes flame with ultraviolet rays' emission.
- ⇒ **SEL-SV-L0-□1-O□4-K7** – For Photo-resistance sensor of cadmium sulfide - visible radiation. Flame Presence detection, when oils or any other fuel that stimulate flame with yellow light emission are used.

## • TECHNICAL DATA

- Feeding Tension: 115 Vca or 220V, +10 / -15%; 50 / 60Hz ± 3%
- Power consumption (max): 5 VA
- Source protection internal fuse: 160mA – assembled on socket MST 160mA 00346607 model from company Fusibras Ltda or similar.
- Safe Failure: it has continuous failure self-checking system, with 4 sec cycles.
- Sensor: Photocell sensitive to ultraviolet radiation or Photo-resistance sensitive to visible radiation.
- Internal Sinalization -L1 (Vd) flashing: -there is flame; follows the flame sensor vision
  - L2 (Vm) on: -sensor / Conveyer is energized.
- Operation: with flame: square wave oscillating between 0mA (~1,5 sec.) e 9mA<sub>max</sub>. The indicated value depends on the volume of radiation originated from the flame impinging on the sensor.
- Sensibility adjustment: through internal trimpot.
- Quartz crystal flat lens of 4 mm thickness. **Optional convex lens.**
- Ambient Protection Degree: IP 66 Sensor outer covering and IP 55 bindings' box.
- Fixation to process: Flange with 1" NPT internal screw thread, for connection to vision pipe.
- Electrical Connection: 3 holes, 1/2" x 14 NPT internal screw thread, for flexible conduit connection.
- Electrical spinning: 5 (five) internal conductors (70°C - 0,33mm<sup>2</sup> - 660V)
- Sensor to programmer distance (PRG-M) or relay (CHM-M): 500 meters maximum.
- Weight: 3000 grams
- Ambient operation temperature: 0° C à 60° C
- Storage temperature: - 5° C à 65° C dry heat
- Maximum ambient air moisture for operation: 90% without condensation ( NBR 5291)
- Outer covering: cast aluminum box, SAE 323 alloy.



SELCON SISTEMAS ELETRÔNICOS DE CONTROLE LTDA.  
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*Representative or Retailer*

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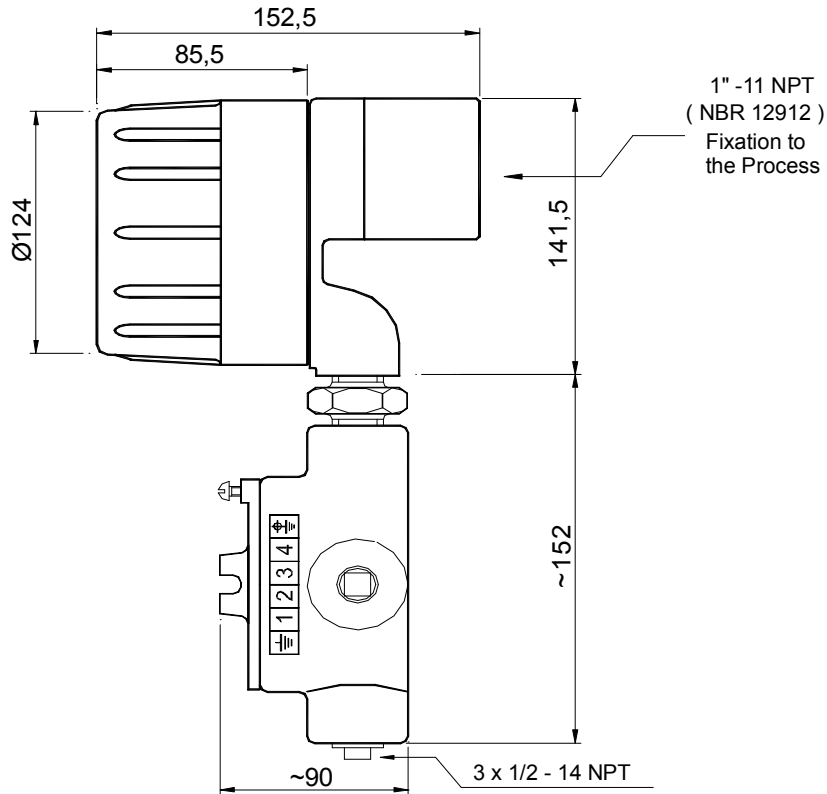
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- Painting: gray epoxy dust.
- Label marking: (Stainless) - 0,5mm thickness, 90mm de diameter, fixed by bolts.
- Warranty: 12 months (**see term of warranty**)

## • Dimensional Draft (mm)



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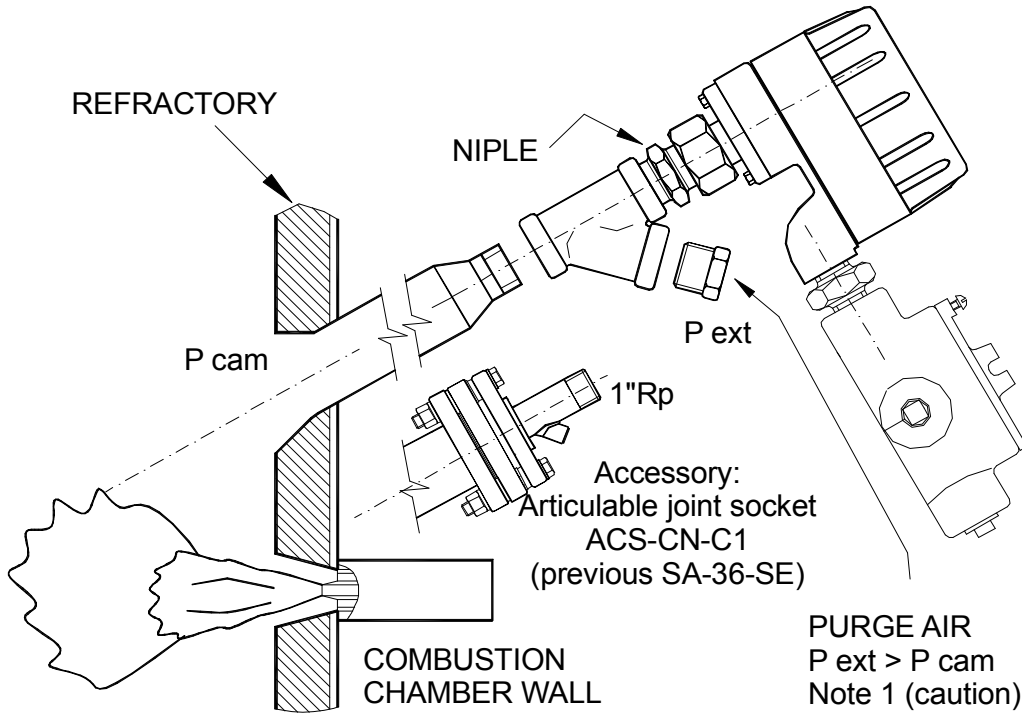
PRODUCT: SEL-SV-□□-□1-O□40-K7

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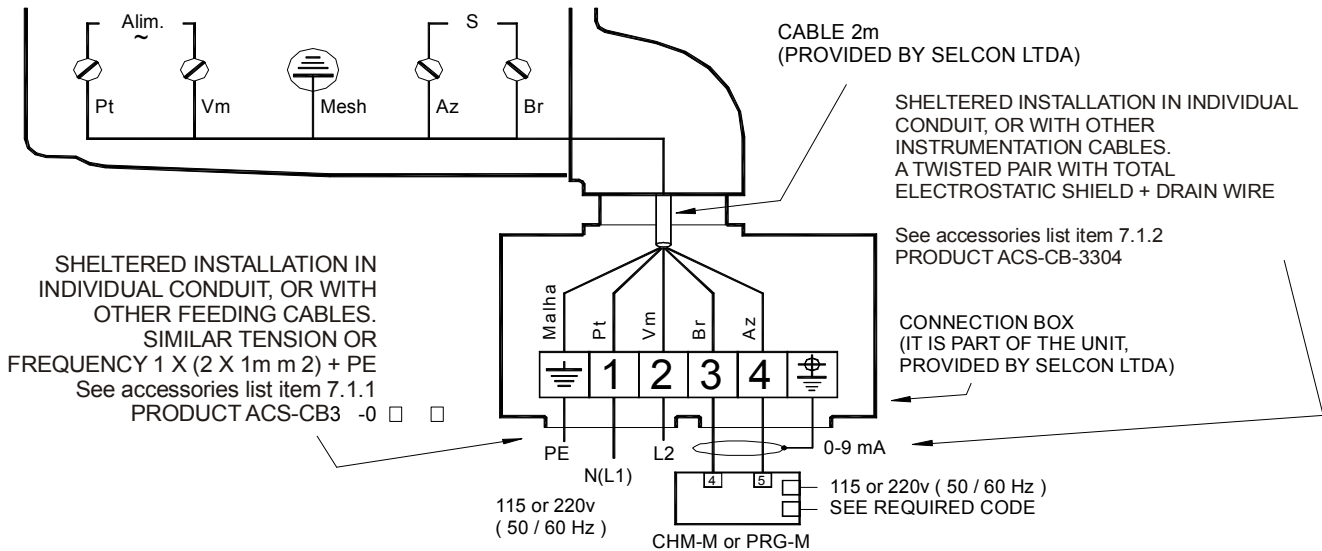
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## • INSTALLATION



## • ELECTRICAL CONNECTIONS DIAGRAM



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• **ORDER CODE: SEL-SV-□□-□1-O□40-K7**

| SEL-SV | SENSOR  | TEMPERATURE  | FEEDING  |  | O - OPTIONAL  |  |   | Protection Degree  |
|--------|---|--|--|--|---|--|---|--|
|        | <input type="checkbox"/> (d1)<br><br><b>T</b><br><br>ULTRAVIOLET<br><br>SENSOR + CONVEYER   | d2 = 0<br>=> 0 to + 60°C<br><br>d2 = 4<br>=> -20 to + 80°C | TENSION<br><br><input type="checkbox"/> (d3)<br><br>d3 = 1<br>=> 115Vac<br><br>OR<br><br>d3 = 2<br>=> 220Vac | FREQ.<br><br>d4 = 1<br><br>=> 50/60 Hz | LENS<br><br><input type="checkbox"/> (d5)<br><br>d5 = 2<br>=> Flat<br><br>OR<br><br>d5 = 3<br>=> convex | Connection To Process<br><br>d6 = 4<br><br>=> 1" NPT (F)<br>With failure self-checking | Screw Thread Adapter<br><br>d7 = 0<br>=> none | <b>K7</b><br><br><b>BR-Ex d IIB+H<sub>2</sub> T6</b><br>(explosive atmosphere) |
|        | <input type="checkbox"/> (d1)<br><br><b>V</b><br><br>VISIBLE LIGHT<br><br>SENSOR + CONVEYER | d2 = 0<br>=> 0 to + 60°C                                   |  |  |   |  |   |  |

**P.S.: Relay, programmer, and accessories must be specified separately, according to their corresponding code tables.**

• **CAUTION:**

- ⇒ Install the sensor from top to bottom, to avoid dust accumulation and to keep its face clean.
- ⇒ **Attention:** >Use clean and dry air with  $\theta < 40^\circ \text{C}$ ; flow > 5 scfm; pressure > pressure in the combustion chamber, in at least 300mm of water column.
- ⇒ The sensor should "see" the flame (if possible, the first 30% of it) from the burner nozzle, where the emission of visible radiation is higher.
- ⇒ **Use the sensor exclusively with programmers and/or detector relays manufactured by Selcon.**

• **BE AWARE:**

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



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## • 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 -IIIMe (with base), PRG-I, PRG-M e PRG-M-IIIMe (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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