

# FLAME DETECTOR RELAY FOR BURNER

PRODUCT: CHM-M-□-R□-C□

TECHNICAL SHEET 1/4

☎ Customer Service 55 11 3019-1616

For further details see technical bulletin

## • APPLICATION

CHM-M detector relay is a flame safety piece of equipment for machines, equipment or systems with one or multi-burners of any kind or power, with discontinuous use cycle (on/off burner in a period less than 24 hours), or continuous (on/off burner in a period less, equal or more than 24 hours), according to 4.1.4.4 NBR 12313 item, because it has failure self-checking circuit during the operation – safe failure. It can be used in burners of gas, liquid or solid fuels.

### Meets the requirements of NBR 12313 ABNT standard– revision Sept. /2000.

Allows signal inlet coming from ionization sensors, ultraviolet and visible light (without sensor self-checking) or ultraviolet and visible light (with sensor self-checking). It is recommended to use this product with failure self-checking flame sensor, available in versions time proof or time + explosion.

For applications with **use cycle of discontinuous burner**, the options are:

- ⇒ **CHM-M-I** - Inlet for flame sensor by ionization, when gas is used as fuel in burners that work with this kind of sensor. See electrodes, sensors SEL-HT or SEL-HT-E line (electrode assembled under draft or sample from the special-client).
- ⇒ **CHM-M-L** - Inlet for photo-resistor sensor of cadmium sulfide – visible radiation, when heavy oils or any other kind of fuel that stimulate flame with yellow light emission in dark combustion chamber are used. See sensor SEL-SV-L model.

For applications with **use cycle of discontinuous or continuous burner**, the options are:

- ⇒ **CHM-M-U** – Inlet for ultraviolet radiation sensor, when light oils or any other kind of fuel that provoke flame with ultraviolet rays' emission are used. See sensor SEL-SV-U model.
- ⇒ **CHM-M-X** Inlet for ACS-TX-□-K5 flame signal presence conveyer. It must be specified when the distance between the sensor and the programmer is higher than 8 meters, or when **SEL-SV-U2-11-O□□□-K6** is used. When the conveyer is used, it is possible to install the sensor until 500 meters away from the controller (relay or programmer). It has circuit that allows sensor sensibility adjustment over the supervised flame, allowing the discrimination of adjacent flames, and of other possible emissions present in the combustion chamber walls. See the specifications of the ACS-TX-□-K5 flame signal conveyer.

In applications of any power, with **use cycle of continuous burner**, with failure self-checking, use the following sensors:

- ◇ **SEL-SV-T0-□1-O□□□-K6** or **SEL-SV-T0-□1-O□4-K7** - Photo-valve sensor of gas emission-ultraviolet radiation, with flame signal conveyer, for applications that use gas, oil or any other fuel that provokes flame with ultraviolet radiation.
  - ◇ **SEL-SV-V0-□1-O□□□-K6** or **SEL-SV-V0-□1-O□4-K7** - Photo-resistor sensor of cadmium sulfide – visible radiation, with flame signal conveyer, when oil or any other fuels that stimulate flame with yellow light emission are used.
  - ◇ **SEL-SV-U2-11-O□□□-K6** – Inlet for flame signal coming from the ultraviolet sensor for high temperature (until 105 °C). If it is necessary, specify separately the ACS-TX-□-K5 flame signal conveyer.
- ⇒ **CHM-M-M** - Inlet for the contact coming from the CHM-F-MCQ-C□ flame detector relay, with failure self-checking, for systems with one or multi-burners and/or multi-fuel.



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## • TECHNICAL DATA

- ⇒ Watch dog micro process - safe failure with frontal sinalization (Vm) and through isolated electrical contact.
- ⇒ Feeding: 115 or 220Vac; +10/-15%; 50/60 Hz
- ⇒ Power Consumption: 5VA
- ⇒ Internal Fuse: 100 mA delayed.
- ⇒ **External Fuse: Estimate fuse for internal circuits' protection in accordance to the estimated load in the project, respecting the boundaries of this specification.**
- ⇒ Protection against tension outbreaks
- ⇒ Protection against failure due to short-circuit of the mass ionization sensor
- ⇒ Confirmation time for flame inlet: < 1 sec.
- ⇒ Flame failure response time: until 4 sec. (see order code)
- ⇒ Electrical Connections: Through bindings disposed in the box frontal.
- ⇒ Maximum outlet currents (in 250 Vac<sub>max</sub>): 2 A resistive
- ⇒ Electrical useful life expectancy of outlet contacts: > 100.000 operations
- ⇒ Mechanical useful life expectancy of outlet contacts: > 100.000 operations
- ⇒ Frontal Sinalization - equipment working (Vm) – light flame (Vd) –internal defect- watch dog (Vm)
- ⇒ Work temperature: 0 a 60°C
- ⇒ Storage ambient temperature: -5° a +65°C
- ⇒ Maximum ambient air moisture for operation: 90% (40 ± 2°C) – NBR 5291
- ⇒ Outer covering: ABS beige Plastic Box
- ⇒ Ambient protection degree: IP 40
- ⇒ Assembling: In sheltered flat surface
- ⇒ Fixation: 35 mm DIN rail or bolts through the outer covering base.
- ⇒ Weight: 730 grams
- ⇒ Warranty: 12 months (**see term of warranty**)



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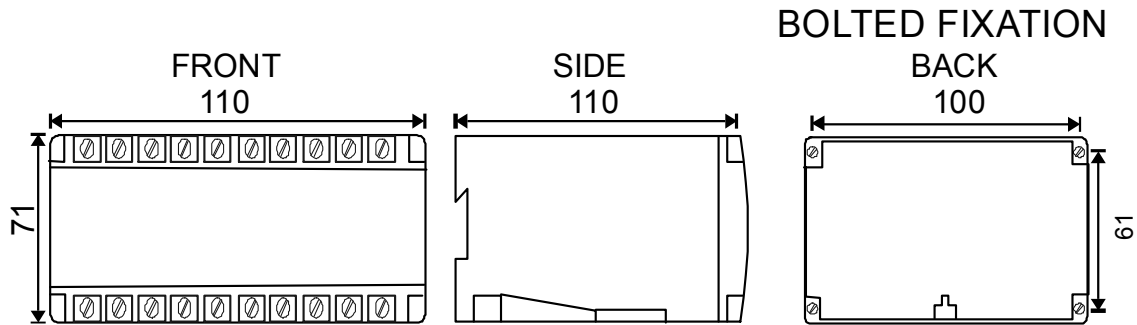
PRODUCT: CHM-M-□-R□-C□

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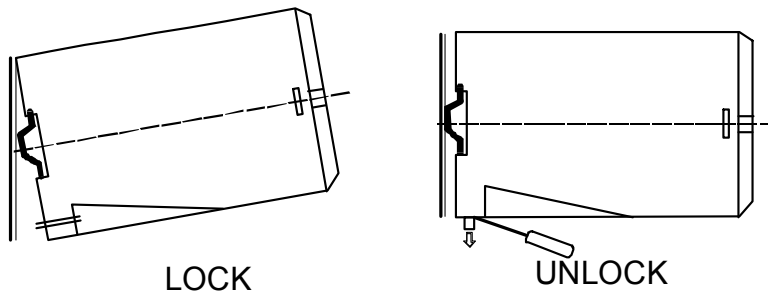
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## • Dimensional Draft (mm)



## FIXATION ON 35mm DIN RAIL



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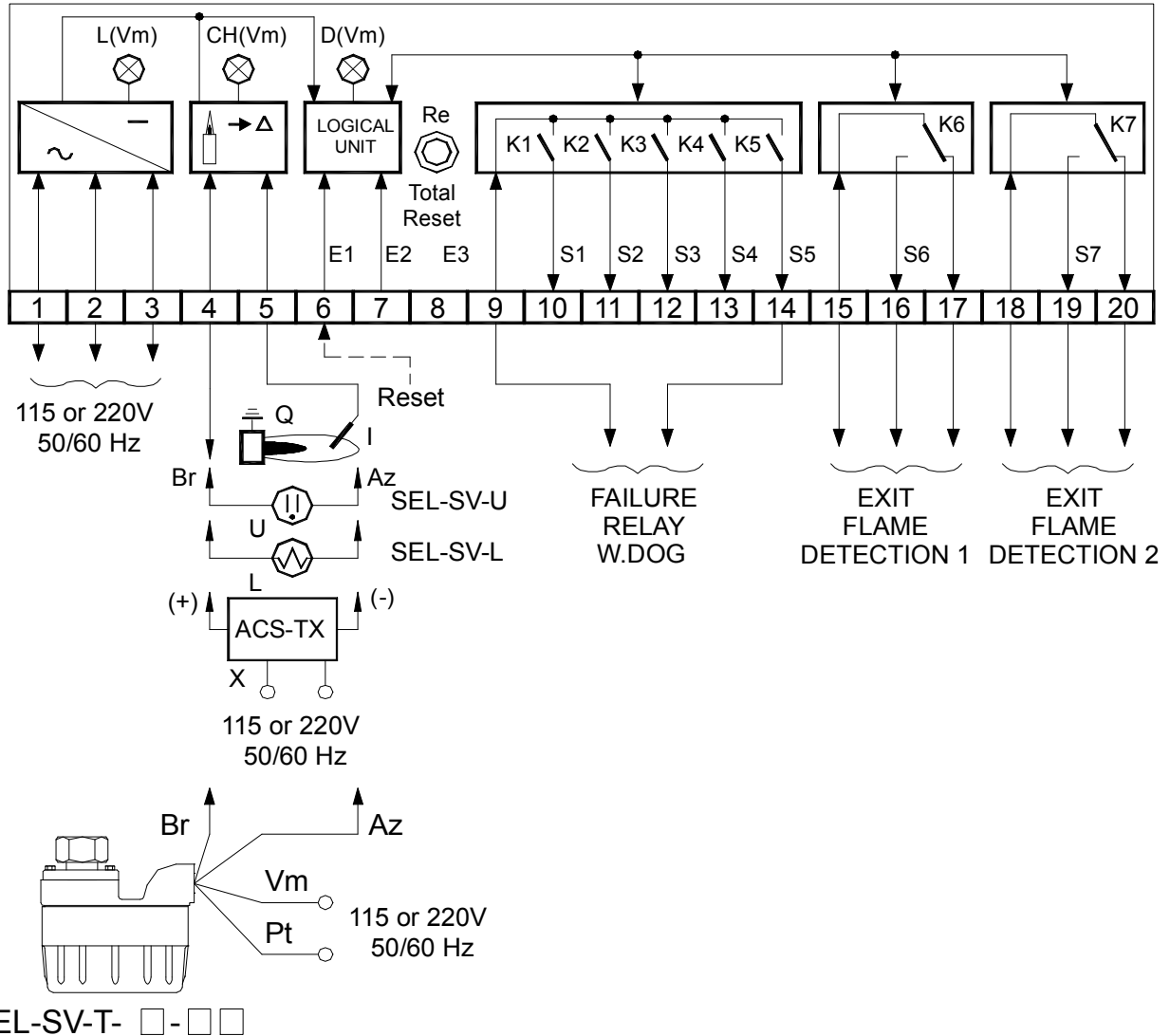
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• **ELECTRICAL CONNECTIONS DIAGRAM**

## CHM-M



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• ORDER CODE - CHM-M-□-R□-C□

PRG-M	-	SENSOR	-	R – FLAME FAILURE RESPONSE	-	C- BLOCKING FRONT FLAME FAILURE
		<b>I</b> IONIZATION <b>U</b> ULTRAVIOLET <b>L</b> VISIBLE LIGHT <b>X</b> CONVEYER <b>M</b> DRY CONTACT GENERATED BY CHM-F		<input type="checkbox"/> (d1)  d1 = <b>1</b> => 1 sec.  <b>OR</b>  d1 = <b>2</b> => 4 sec.		<input type="checkbox"/> (d2)  d2 = <b>1</b> => yes  <b>OR</b>  d2 = <b>2</b> => no

**P.S.:** The sensor and other accessories must be specified separately, according to their corresponding code tables.

• **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 -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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