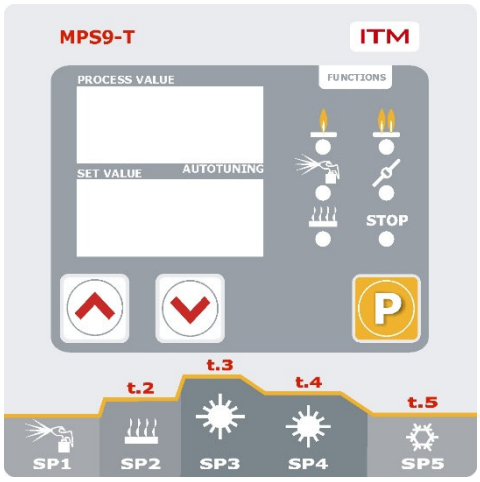
# INSTALLATION AND TECHNICAL MANUAL

# MPS9-T

## Special Spray Booth Execution




MPS9-T is provided by HW and SW dedicated to command and control some important features of any Spray Booth. It can drive the drying stage with a single temperature step or with two different value steps.
MPS9-T operates as temperature controller, suitable for any kind of burner, and also as timer and hours counter; in addition, it can drive also the recirculation damper. The times, once set for the timing stages, can be modified, if needed, also running the stage. Alarm signal of not completed bake stage is supplied in case of blackout during the timing stages. During the drying stage, if the burner is not able to get the set-point temperature, the intervention of the safety parameter b.t. (bake time) grants the regular start and completion of the drying stage.

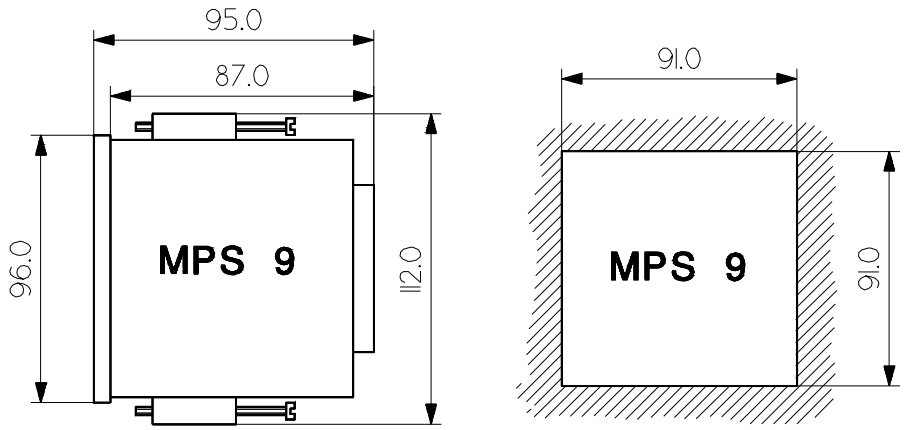




**1: INSTALLATION AND SET IN SERVICE:**
State of Art suggest:
- Keeping the signal cables (probes and digital transmitters) far from power circuits and cables; route these lines with screened cables.
- Installing instruments far from power components like contactors, motors, motor drives, variable frequency drives, and so on...

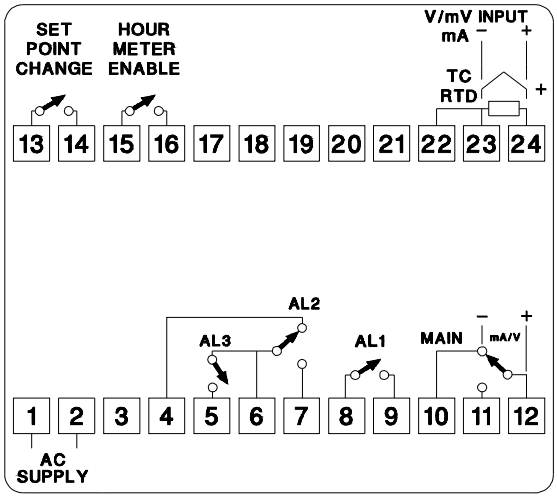
Make electrical connections according to the wiring diagram included in this manual.
**WARNING: Make sure to power the electronic equipment with the correct voltage, never connect the supply line directly to power components that may generate spikes and spurious frequencies or use the terminals to supply other power components.**
The regulator is resistant to electrical noise, but in case of non-stabilized supply lines, or if strong electrical noise is present in the factory networks, we suggest that you install a suitable main filter on the power panel. When switching noise is present, install suitable RC filters across load coils. Do not overload the output relays, which are rated at 5A/250V AC on resistive loads. When driving reactive loads such as motors, contactors, etc, the spurious current generated may be 8-10 times the standard contact rating. The operation of this unit is advised and granted inside the temperature range 2°F (0°C) ÷ 125°F (55°C). Starting from lower temperature, it may be necessary for the unit to reach this range in few minutes thanks to the internal burn-in temperature.

**1.1: DIMENSIONS**




**1.2: WIRINGS**

Make electrical wirings according to following label.






**1.3: FRONT PANEL DESCRIPTION**

After the switch on of MPS9T, the displays show for few seconds the progressive hours already run, after that it start to control the burner at the preset temperature **SP1** value.

After this stage, dedicated to the spraying operation, the operator can go to bake stage, operating by remote contact on the terminals N° 13 and 14 of the terminal block.

During the timing stages the displays show:

- the red one: the process temperature value **(PV)**
- the green one: the set temperature value **(SV)**

Every five seconds the preceding visualized values are substituted as follow:

- on the green display: by the indication of the timing stage running, for instance **t2**
- on the red display: the countdown of the time t2 for reaching the end of the stage

The signalling led indicate with its following icons:

| | |
|---|---|
| **FLAME 1** | First flame of the burner ON |
| **FLAME 2** | Second flame of the burner ON |
| **SPRAY-GUN** | Start of spraying stage |
| **DRYING** | Start of the bake stage |
| **DAMPER** | Energized relay of recirculation damper |
| **STOP** | Motors START/STOP |

**1.4: SET POINTS AND TIMES**

MPS9-T is provided by n° 7 work stages, drawn on the front panel, provided by n° 7 set-points and n° 6 times, all programmable:

| | |
|---|---|
| **SP1** | set-point stage 1 (preparation and/or spraying) |
| **SP2** | set-point stage 2 (flash-off) |
| **t2** | time 2 |
| **SP3** | set-point stage 3 (drying first step) |
| **t3** | time 3 |
| **SP4** | set-point stage 4 (drying second step) |
| **t4** | time 4 |
| **SP5** | set-point stage 5 (cooling) |
| **t5** | time 5 |
| **SP6** | Set point 6 (FLASH-OFF, booth not in recirculation) |
| **T6** | Time 6 (timing for FLASH-OFF) |
| **SP7** | Set Point 7 (FLASH-OFF with booth in recirculation) |
| **T7** | Time 7 (timing for FLASH-OFF) |

The menu of the preceding parameters is visualized by pushing in sequence the Key **P**.
When the desired parameter is shown on the display, the value can be changed by pushing the "▲" UP and "▼" DOWN arrow-keys; the value is memorized by pushing again the key **P**.
The not desired stages can be excluded by giving 0 value to its time parameters; it is possible to mask to the operator the undesired parameters by the parameter **d.S.3** and **d. S.4 (see paragraph 5)**.

**1.4.1: WORK CYCLE**

After the spraying stage, the operator switches by remote contact (contact on terminals n°13-14) the work cycle proceeds into the timing stages.
The work cycle forwards the ramps and soaks of the preset temperature/time broken line, according the memorized values of set point and time.
The stages whose times are set to 0 value will be jumped.
In all stages the times start from the beginning of the running stage except in the stage n°3 of drying; in this stage the time starts when the temperature reaches the set point SP3; this value is adjustable by **AL2** parameter (see pag 6 note 1).
It is possible to get over the running stage and to reach the next one, by pushing the"▼" DOWN arrow-key and setting the timer to 0.
If the stop of fan motors is requested during the changeover of the recirculation damper before and after the drying stage, the parameters **t0b, t1b, t0c,t1c** allow to program pauses between 0-199 seconds on the AL3 output relay of the fan motors.
Running the drying stage n°3, if the burner is not able to reach the temperature set point, may be in winter or in cold climates, the safety parameter **"b.t."** provides the activation of **t3** time and the execution of the stage.
During the run of a timing stage is also possible to modify the time just for that stage, without modification of the memorized set point value (suitable for the following cycles), by operating as follow.
Running the countdown of the time, push "▼" DOWN arrow-key**:** the SV display shows **t.o.n**. (TIME ON ) and the display **PV** shows the time to the end of the stage; by operating on the arrow keys, it is possible to change the time but just only for that run, entering the new value by key **P**.
After the first spray application, the operator can choose:

- by pushing for 5 sec. "▲" UP arrow-key, the cycle will do a FLASH- OFF not in recirculation mode;
- by pushing for 5 sec. the "▼" DOWN arrow-key, the FLASH-OFF will start in recirculation mode.

Once finished one of these phases, MPS5-T will return in the spraying stage and it will continue by repeating this operation as many times as requested by the operator. The intervention of the operator on the switch on the electric board will close the remote contact on terminals 13-14 and the cycle will enter in the drying stage up to the end (led STOP light).

**1.5: FAILURE INDICATION**

PV Display shows **hhh:** interruption of temperature probe
input value higher of the reading scale
PV Display shows **LLL**:
PT100 probe short circuited
Input value lower than the reading scale

**In case of power blackout, while bake stage is running, when the supply comes back the PV displays shows the message ALb (Alarm bake) that is the stage has not been completed. This alarm can be cancelled by pushing any key and the instrument is ready for a following cycle.**

**1.6: OTHERS INDICATION**
Led **AT** is active while AUTOTUNING function is running.

**HOUR-COUNTER:**
The hour counter counts the total hours of the full work cycle.
Indeed, at every cycle the hour counter start is enabled from an independent closed contact on the terminal block (terminals n° 15 and 16).
After the start, when the instrument is on, the displays show for some seconds the number of the hours already worked.
The hour counter stops at the end of every work cycle.
The hour counting can be reset as follow:
set the configuration parameter **cnF =221,** by pushing the key **P** the display shows the indication **"del"** (delete), set the value 1 on the display PV by operating on the "▲" UP arrow-key; push the key **P** to reset the hour counter.

**2: REGULATION PARAMETERS**
**2.1: NOTES ON REGULATION PARAMETERS**
The burner control can be operated by MPS9-T in two operating modes: **ON/OFF** (with adjustable hysteresis) or **PID** control.

- the **ON/OFF** control mode is indicated for single or dual flames burners controlled by ON/OFF valves.
- the **PID** control is indicated when the burner valve is linear modulating and needs a 4-20 mA or 0-10 Volt input.

The PID control is also needed when the heating is effected by hot water exchanger.
Dual PID relay control is needed when the drive of the burner valve is three position motorized (open – stop - close type). The elements of a PID control are:

| | |
|---|---|
| **P** | **= proportional band** |
| **i** | **= integrative time** |
| **d** | **= derivative time** |

**2.2: SETTING OF REGULATION PARAMETERS**
The routine of regulation parameters is split in n° 3 menu:
1) **Program menu: design of the work cycle line of temperatures/times**
2) **Regulation parameters menu**
3) **Configuration parameters**



The menu n° 1) has been described in preceding 1.4 paragraph;
The menu n° 2) is described in the following Table; the menu is available on the display, by pushing for ten seconds the **P** key.

Parameter run in sequence operating on **P** key; the parameter value shown on the display can be modified operating by "▲" UP arrow-key and "▼" DOWN arrow-key, the new value is saved by pushing **P** key again.
To make operator work easier, the spray-booth's manufacturer can mask the parameters to be excluded to the operator access, by masking parameters **dS1, dS2, dS3, dS4** (see configuration parameters).

**REGULATION PARAMETER MENU**

| CODE | PARAMETER | NOTES |
|---|---|---|
| AL1 | Alarm 1 threshold setting | **1** |
| AL2 | Stage n° 3 start setting | **1** |
| AL4 | Alarm 4 threshold setting | **1** |
| hL | Relay MAIN lower hysteresis | **2** |
| hh | Relay MAIN higher hysteresis | **2** |
| P | Proportional band | **3** |
| i | integrative time | **3** |
| d | derivative time | **3** |
| Ar | Antireset windup | **3** |
| tc | Relay cycle time | **3** |
| At | Autotuning | **4** |
| Cnf | Password configuration | **5** |
| bLo | Keyboard block | **6** |

**3: CONFIGURATION PARAMETERS**
**Cnf** parameter is the key to enter the CONFIGURATION parameters starting from regulation parameters menu.
When the display shows **cnf,** it is possible to enter in parameters configuration:
digit the password **123** by operating on arrow keys UP and DOWN; then push the key **P** to enter the configuration menu.

**CONFIGURATION PARAMETERS TABLE**

| CODE | PARAMETER | NOTE |
|---|---|---|
| **iS** | Temperature probe offset | 7 |
| **in** | Probe configuration | 8 |
| **Sh** | Max temperature settable on SPRAY | 9 |
| **SL** | Low temperature settable on SPRAY | 9 |
| **Sht** | Max temperature settable on FLASH, DRY and COOL | 9 |
| **SLt** | Low temperature settable on FLASH, DRY and COOL | 9 |
| **L0** | MAIN output operation logic | 10 |
| **L1** | AL1 operation logic | 11 |
| **L2** | AL2 operation logic | 11 |
| **L4** | AL4 operation logic | 11 |
| **hA1** | Alarm 1 hysteresis | 12 |
| **hA2** | Alarm 2 hysteresis | 12 |
| **hA4** | Alarm 4 Hysteresis | 12 |
| **t.0.b.** | Activation delay for AL2 (while getting into Bake) | |
| **t.1.b.** | AL3 relay pause (while getting into Bake) | |
| **t.0.c.** | Deactivation delay for AL2 (from Bake to Cool) | |
| **t.1.c.** | AL3 relay pause(from Bake to Cool) | |
| **bt** | Safety time for baking stage | 13 |
| **c.S.** | Cycle start selection: 0=direct; 1=consent pulse on 15-16 | |
| **dS1** | Parameters masking | 14 |
| **dS2** | Parameters masking | 14 |
| **dS3** | Parameters masking | 14 |

**NOTE 1:** logic of alarm relays:
AL2 parameter value depend upon L2 logic value
- L2 = 1, AL2 is not enabled
- L2 = 0, AL2 values from0 to -99 °C

The timing of the drying stage starts when the temperature probe gets SP3-AL2 value.
The logic parameters L1 and L4 (as from following note 11) govern the setting field of AL1 and AL4 relays



**NOTE 2:** with regulation parameter **P = 0** (proportional band = 0) the temperature control operates in **ON/OFF** mode. The global hysteresis (dead band) is corresponding to h.L. + h.h., consequently it can be symmetric if h.L. = h.h. or asymmetric if h.L. different from h.h. In ON/OFF control mode the PID parameters loose of meaning and intervention.

**NOTE 3:** with regulation parameter **P > 0** the temperature control is enabled in **PID** mode (in this regulation mode the parameters h.h. and h.L. loose of meaning and intervention.

**NOTE 4:** **AUTOTUNING FUNCTION EXECUTION**
This function is advisable when the control of a burner by its modulating valve is not satisfying
To enable Autotuning function, enter the regulation menu, select **At** parameter and set
**At = 1,** then push P key to get out the menu.
The instrument will analize the load,by the load answer to a signal, and will define the load characteristics, depending on which will calculate the optimal values of PID parameters **: P, i, d, Ar.**
The **At** execution needs a time depending on the thermic inertia of the load.
At the end of autotuning operation, the new parameters will be saved and the regulation will go on according with the new parameters, which will be used in the following work cycles up to an eventual new autotuning calculation.
**AUTOTUNING** execution can be stopped in any moment by resetting to 0 value the **At** parameter or by turning OFF the instrument; in this case the already set PID parameters will be saved in the memory of MPS9-T.
As the Autotune function is effected in ON/OFF control mode, the execution can present overshoots over temperature Set Point.

**NOTE 5:** To enter configuration parameters the access key is the **cnF** parameter: when present on the display digit 123 password and push **P** key

**NOTE 6:** The instrument is provided of access block to the parameter's menus by **bLo** parameter, according the following table:

| bLo VALUES | ACCESS LIMIT |
|---|---|
| **0** | enable the access to all the routines |

| | |
|---|---|
| **1** | configuration parameters menu not enabled |
| **2** | Only Work cycle menu enabled |
| **3** | all menu block |

For safety rule, when **bLo** parameters value is 2 or 3 the operator has to push **P** key for 30 seconds to unlock and to visualize the **bLo** parameter; after that his value can be modified.

**NOTE 7:** Usually the position of the temperature probe cannot be the optimal one for the temperature measurement (the center of the booth), the **i.S** configuration parameter allows to recalibrate the input value, which is used for the regulation, up to the temperature value present in the center of the booth.

**NOTE 8:** By giving to **i.n.** parameter the following values, the input of the instrument will remain configured to the corresponding temp. probes

**INPUT TYPE TABLE**

| i.n. | INPUT | DECIMAL | SCALE MAX | ORDER CODE |
|---|---|---|---|---|
| **0** | Thermocouple J | 1°C | 0÷870 °C | J1 |
| **1** | Thermocouple J | 1°F | 0÷999 °F | J2 |
| **2** | Thermocouple K | 1°C | 0÷999 °C | K1 |
| **3** | Thermocouple K | 1°F | 0÷999 °F | K2 |
| **4** | RTD PT100 DIN | 0.1°C | -19.9÷99.9 °C | P1 |
| **5** | RTD PT100 DIN | 0.1°F | -19.9÷99.9 °F | P2 |
| **6** | RTD PT100 DIN | 1°C | -199÷500 °C | P3 |
| **7** | RTD PT100 DIN | 1°F | -199÷900 °F | P4 |
| **8** | Linear 0÷20 mA | 1 | -199÷999 | A1 |
| **9** | Linear 0÷20 mA | 0.1 | -19.9÷99.9 | A2 |
| **10** | Linear 0÷20 mA | 0.01 | -1.99÷9.99 | A3 |
| **11** | Linear 4÷20 mA | 1 | -199÷999 | A4 |
| **12** | Linear 4÷20 mA | 0.1 | -19.9÷99.9 | A5 |
| **13** | Linear 4÷20 mA | 0.01 | -1.99÷9.99 | A6 |
| **14** | Linear 0÷10 V | 1 | -199÷999 | V1 |
| **15** | Linear 0÷10 V | 0.1 | -19.9÷99.9 | V2 |
| **16** | Linear 0÷10 V | 0.01 | -1.99÷9.99 | V3 |



**NOTE 9:** Spraying stage: the **S.h.** and **S.L.** parameters are respectively the upper and lowest limits of setting the temperature Set Point.
Timed stages n° 2, 3, 4,5: the **S.h.t.** and **S.L.t.** parameters are respectively the upper and the lowest limits of setting the temp. Set Points

**NOTE 10:** The operating logic of the MAIN output relay is configurable as from following table

**MAIN OUTPUT LOGIC AND SAFETY CONDITIONS**

| L.O | OUTPUT LOGIC | SAFETY VALUE (*) |
|---|---|---|
| **0** | Normal (heat) | 0 % (De-energized output) |
| **1** | Reverse (cool) | 0 % (De-energized output) |
| **2** | Normal (heat) | 100 % (Energized output) |
| **3** | Reverse (cool) | 100 % (Energized output) |

(*) The safety value is the output value in case of probe failure or when the input signal is outside of the upper and lower limits of the reading scale (PV display indicates hhh or LLL).

**NOTE 11:** The operating logic of the AL relay **AL1** is configurable according the following table

| L._ | ALARM RELAY LOGIC |
|---|---|
| **0** | Not present or not installed or deactivated |
| **1** | Inferior, absolute value set |
| **2** | Similar to 1, but open when energized |
| **3** | Superior, absolute value setting |
| **4** | Similar to 3, but open when energized |
| **5** | Inferior, slaved value setting |
| **6** | Similar to 5, but open when energized |
| **7** | Superior, slaved value setting |
| **8** | Similar to 7, open when energized |
| **9** | Window" type (symmetrical) energized inside the Window |
| **10** | Window" type (symmetrical) energized outside the window |
| **11** | Similar to 10. open when energized |

The AL2 parameter value controls the operating logic of the AL" relay:

**L2 = 0** AL2 relay drives the recirculation damper. It is energized with the start of bake stage, and OFF at the end of this stage (see broken line drawing).

**L2 = 1** When T4 time is completed, AL2 relay is energized just for two seconds

**NOTE 12:** **PARAMETERS hA1, hA2, – HISTERESYS OF ALARMS**
The alarm hysteresis is the temperature difference between the pick- up and drop out of the relay.
The hysteresis is asymmetric and settable depending on the kind of the alarm:
For low teperature alarm, it is lower of the alarm value set.
For max temperature alarm, it is upper of the alarm value set.

**NOTE 13:** In case that the burner does not reach the set point temperature SP3-AL2, the safety parameter **b.t. (bake time)** can ensure the start and the execution of the baking stage. The bake time is excluded with **b.t. = 0**

**NOTE 14:** see paragraph n° 5: PARAMETERS MASKING

**4: OUTPUTS**

**MPS9-T** is provided by n° 4 outputs which work as follow:

| OUTPUT | OPERATION |
|---|---|
| **MAIN** | It can drive any kind of burners because it is provided with every kind of control modes already described in the paragraph 2.1 and specified on the model code (page10). |
| **AL1** | When not used as auxiliary relay, can be used as temperature alarm; see **NOTE 11** table. |
| **AL2** | Operation already described on **NOTE 11** (page 8) |
| **AL3** | **START/STOP** of fan motors relay |

**5: PARAMETERS MASKING**
To lock undesired operator's intervention on any parameter of the spray-booth, **MPS9-T** is provided by:
- #4 levels of access to the parameter's routines and menu (see Note 6 = **b.L.o**.)
- # 3 Masking codes: **dS1, dS2, dS3, dS4.**

By giving to **d.S.** parameters the following listed codes, the corresponding parameters will not any more displayed and any intervention forbidden; to mask more parameters: add the following codes of undesired parameters, the value of the resulting sum will be assigned to d.S.
For instance: to mask SP2, SP3, SP4, the value to set **d.S.3**. is (2+8+32) = 42



| d.S.1. | | d.S.2. | | d.S.3. | | d.S.4. | |
|---|---|---|---|---|---|---|---|
| **2** | **AL1** | **1** | **HI** | **2** | **SP2** | **1** | **t6** |
| **4** | **AL2** | **2** | **hh** | **4** | **t3** | **2** | **SP6** |
| **8** | **AL4** | **4** | **P** | **8** | **SP3** | **4** | **t7** |
| **32** | **At** | **8** | **i** | **16** | **t4** | **8** | **SP7** |
| **64** | **bLo** | **16** | **d** | **32** | **SP4** | | |
| | | **32** | **Ar** | **64** | **t5** | | |
| | | **64** | **tc** | **128** | **SP5** | | |

**6: TECHNICAL SPECIFICATION**

| | |
|---|---|
| **Installation:** | Panel assembly |
| **Package:** | Black ABS, flames retardant V0 according UL94 |
| **Frontal Protection:** | IP 65, NEMA 4x |
| **Accuracy:** | ±0.2 % v.f.s. per ingressi Pt100, Tc |
| **Sampling Time:** | 400 mSec. |
| **Working Temperature:** | -10 ÷ +55 °C |
| **Storage Temperature:** | -10 ÷ + 70 °C |
| **Power Absorbing:** | 6 VA |
| **MAX Humidity:** | 90% without condensation |
| **Dielectric Stiffness:** | According norm EN 61010 -1 |
| **Installation Category:** | **II** |

**7: MODEL CODIFY**

The label of the instrument contains the identification code and other information as: serial number and the kind of supply. Identification code is composed as follow:

**MPS- | a | - | b | - | c | - | dd | - | ee | - | ff | - | gg | - | h | - | i | - | l |**

| | |
|---|---|
| **a:** size: | **9:** 96 x 96, prof.85 mm |
| **b:** output: | **A**: 4 ÷ 20 mA d.c. ( 0 ÷ 20 mA d.c. on demand)<br>**R**: relay 5 A, 250V<br>**V**: 0 ÷ 10 V d.c. ( 2 ÷ 10 V d.c. on demand) |
| **c:** kind of regulation: | **1**: ON/OFF<br>**3**: PID with autotuning |
| **dd:** input | **P1**: Pt100, -19.9 ÷ +99.9°C<br>**P2**: Pt100, -19.9 ÷ +99.9°F<br>**P3**: Pt100, -199 ÷ + 500°C<br>**P4**: Pt100, -199 ÷ + 900°F<br>**J1**: TC J, 0 ÷ + 870°C<br>**J2**: TC J, 0 ÷ + 999°F<br>**K1**: TC K, 0 ÷ + 999°C<br>**K2**: TC K, 0 ÷ + 999°F<br>**A1**: 0 ÷ 20 mA c.c., resolution 1<br>**A2**: 0 ÷ 20 mA c.c., resolution 0.1<br>**A4**: 4 ÷ 20 mA c.c., resolution 1<br>**A5**: 4 ÷ 20 mA c.c., resolution 0.1<br>**V1**: 0 ÷ 10 V c.c., resolution 1<br>**V2**: 0 ÷ 10 V c.c., resolution 0.1 |
| **ee:** alarm 1 configuration 1 (always installed): | **(00 ÷ 11)** see logic table for alarm AL1, AL4 |
| **ff:** alarm 2 configuration (always installed): | **(00 ÷ 01)** see parameter L2 |
| **gg:** alarm 3 configuration (always installed): | **(01)** |
| **h:** output logic in case of probe malfunction: | **(0 ÷ 3)** See **L0** parameter table |
| **i:** options: | **S**: 7 Set-Point + 6 internal timers |
| **l:** supply: | **6**: 12 ÷ 30 V ac/dc<br>**7**: 90 ÷ 250 Vac |



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**GENERAL SALES CONDITIONS**
(clients who do not speak English should translate these sales conditions into their own language)

**1. CONTRACT TERMS**

1.1. All sales contracts become final – after the order has been submitted by the purchaser – only when the purchaser is sent the confirmation of order to ITALMEC ELETTRONICA or upon delivery and/or invoicing of the goods. The documentation necessary to conclude a contract of purchase and sale is complete with these conditions that are known to the client from the start of the supply negotiations and are understood as accepted upon issuance of the order and signed at the time of delivery and acceptance of the goods.

**2. DELIVERY AND TRANSFER OF RISKS**

2.1. The term of delivery shall be indicated on every order confirmation, as per clause 1. The term is merely indicative and will be respected, with all professional diligence, in the measure to which production possibilities permit.

2.2. Unless otherwise agreed, the products will be delivered ex-works from the ITALMEC ELETTRONICA factory (indicated hereafter as ITM)

2.3. Delivery shall be considered as having been duly made when the goods are delivered to the carrier indicated by the purchaser in the order or, if not indicated, chosen by ITM. The products are shipped at the risk and peril of the purchaser even when, at the client's request or for other reasons, ITALMEC ELETTRONICA should make the shipment or choose the carrier.

2.4. Except in case of malicious damage or serious faults of the seller, no reimbursement of damages may be claimed for delays in deliveries.

2.5. Any possible claims regarding the conditions of the packing, quantity or number of pieces or other obvious flaws in the products delivered, for which ITM is liable, shall be reported in writing to ITM within eight days of delivery, on pain of forfeiture of the right to the claim. If Itm is responsible for the obvious defect, it will undertake to replace or complete the products within a term to be agreed with the client.

**3. ACTS OF GOD OR UNFORESEEN EVENTS**

3.1. ITM, its branches or agents are not liable for non-performance or inaccurate performance if this is due to causes beyond their control such as, by way of example and not limited to the listed cases: earthquakes, fires, blackouts, strikes, lack of materials, fuel and means of transportation, theft, robbery and also to any laws, provisions having legal force, regulations or other binding provisions by the public authorities.

**4. PRICES**

4.1. The prices and all other conditions relative to a sale are not binding for possible later sales of the same products. Any agreements to the contrary are not a departure from this principle that should be considered as limited to the specific cases for which they have been made.

4.2. If the costs of raw materials, or semi-finished parts, or labor, or other production costs should undergo a variation in the period between the acquisition of the order and the completion of the contract of sale, ITM retains the right to adjust the price of the products sold in proportion.

4.3. In relations with foreign countries, prices will be automatically bound to the rate of exchange of the currency according to the laws of sub-supply.

**5. CONDITIONS OF PAYMENT**

5.1 In case of delays in payment, ITM hereby reserves the right to suspend, even without notice, and/or to withdraw from any contracts in progress even if different from those to which the delay in payment refers and without giving the client any right to indemnity or reimbursement of any kind.

5.2 In case of delay in payments, for every month or fraction thereof, interest will be charged on the delay in the measure of the ABI prime rate (in effect on the date on which the payment was due) plus 3 percentage points, applicable from the date on which the payment was due.

5.3 If the business relationship is one of sub-supply, payments, like orders, shall be governed by the local laws and in Italy by law 192 of 20/10/98.

**6. CHARACTERISTICS OF THE SUPPLY**

6.1 Italmec Elettronica, a company that is certified according to standards ISO 9001, performs research, engineering, construction and sales with its trademark ITM of its products to an international clientele. In this context it also, but not necessarily, performs subcontracting work, in particular with custom products; in such cases, subordinate to the conditions foreseen by the European legislation, converted in Italy into law 192 of 20/10/98. Possible adaptation of ITM products to the specific and particular cycle of operation of the machine or installation of individual clients without receiving executive products including wiring diagrams, drawings or software, shall not be considered subcontracting; the same applies to participation in the cost of customization by the client, which does not give the client any rights as regards ownership or ITM projects and design, even in case of sub-supply relations. The ownership of any copyrights and property rights pertains, in particular to software of products or the supervision or communication package installed on Personal Computers. Reproduction of the client's trademark or logo on the ITM product engages Italmec only to the extent that the replacement parts for this product will only be sold to the client and no one else as long as the product is in the ITM catalogue. If the above service policy and closeness to the client should be the source of any understanding, or the incorporation of our products in more complex property (such as a machine or installation produced by a client) should be a source of misunderstanding or prejudice to the role and image of Italmec on the market or even of the presumption to a right of exclusivity by the client to the ITM product, the company may be forced to eliminate the client's trademark from the product.

6.2 The supply of spare parts for a product is guaranteed for a maximum period of five years from the data of starting the supply; except for reasons beyond the manufacturer's control such as the removal of an original part from the market so as to preclude production of the item, whether standard or custom.

**7. TECHNICAL FEATURES OF THE PRODUCT**

7.1 All products correspond to the technical features indicated in the catalogues and technical documentation produced by ITM. The weights, measurements and illustration are provided for purposes of orientation and are not binding. All products are tested by ITM prior to delivery, according to the procedures required by IEC.

7.2 ITM reserves the right to make any changes in materials or manufacturing methods even during the process of making supplies and to make any improvements that do not alter the main features of the products, regardless of their application.

7.3 In the performance of its business, the purchaser is required to comply strictly with the characteristics and any specifications for use of the products and therefore not to alter the products or claim, assign or expect characteristics, qualities or uses that they do not have, in particular not to use the thermoregulator as a safety thermostat; rather, in case of risk to property or persons, the client is required to provide the circuit with an adequate safety thermostat to prevent any malfunction of the parts of the ITM thermoregulator. ITM products with the CE seal shall be installed on devices or electrical systems certified CE either by the manufacturer or by a qualified outside organization. ITM responds for its product and not its application, in particular if this is made in countries or situations in which the CE regulations are not adopted locally by law.

**8. LIABILITIES, ASPECTS AND LIMITS OF THE WARRANTY**

The liabilities of ITM are limited to the supply of goods, for a value equivalent to its price, and to the guarantee of supply of a complete, working product for the time and at the conditions foreseen by the warranty. ITM is not liable as regards application of the goods supplied.



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**DICHIARAZIONE DI CONFORMITA`** CE

CE ***DECLARATION OF CONFORMITY***

La ITALMEC ELETTRONICA s.r.l. DICHIARA, sotto la propria responsabilità, che il prodotto:
ITALMEC ELETTRONICA s.r.l. *DECLARES that the product:*

# MPS

**è conforme alle disposizioni legislative che traspongono le seguenti direttive:**
- **2014/30 UE (direttiva EMC) e successivi emendamenti**
- **2014/35 UE (direttiva bassa tensione) e successivi emendamenti**

***is in accordance with the following directives:***
- ***2014/30 UE (EMC directive) and following amendments***
- ***2014/35 UE (low voltage directive) and following amendments***

e che sono state applicate le norme e/o specifiche tecniche di seguito indicate:
*and that all the following standards have been applied:*

| | | |
|---|---|---|
| **EN61000-6-2** | **EN61000-6-4** | **EN61000-4-2** |
| **EN61000-4-3** | **EN61000-4-4** | **EN61000-4-5** |
| **EN61000-4-6** | **EN61000-4-8** | **EN61000-4-11** |
| **EN61010-1** | | |

Ultime due cifre dell'anno in cui è affissa la marcatura CE**08**

*Last two figures of the year of the* CE**08** *marking*

Zola Predosa li: 04/05/18

Italmec Elettronica s.r.l.
Ceo
S. Campanella



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