GM SISTEMI
Apparecchiature Devices GM ELECTRONICS®
GM SISTEMI via dell' Artigianato 29 - 37056 Salizzole(VR) ITALY, P.IVA 03433220237 Tel. & Fax 0039-045-6900919 www.gmelectronics.it info@gmelectronics.it

GM SISTEMI

GMSTV001D
("-EX" VERSION)

THERMOVELOCIMETRIC PROBE FOR SUCTION AND AIR TREATMENT SYSTEMS

USE AND MAINTENANCE MANUAL

GMSTV001D-EX

PROBE IS AVAILABLE WITH IP55 PROTECTION OR VERSION ATEX ZONE 22D (-EX),
THIS MANUAL COVERS FOR BOTH VERSIONS.

Apparecchiature
GM ELECTRONICS

GENERAL DESCRIPTION

GMSTV001D is a probe thermovelocimetric with alarm function on fixed threshold to control the temperature in "environments", designed to be used specifically for FIRE protection, especially for this release is expected to be used for specific systems Suction and Treatment air. The probes are equipped with stylus a steel of 150mm that can be placed within the area to be monitored (eg, Silos, deposits, Filter Units), keeping the outside the container with the electronic circuit and thus the electrical cables connection. These probes are also constructed in containers of cast aluminum with IP65 protection. the internal circuit and the measuring sensor (within the stylus) are immersed in resin bi-component, obtaining in this way an apparatus that can be installed in difficult places, such as dusty environments, the probe is in fact suitable for ATEX zones (see categories in the manual). The probe GMSTV001D is controlled using forms GM ELECTRONICS eg. The GM826SD, through which you can see on a display the temperature detected in real time and can be implemented on set values outputs according to the requirements, also the modules running constantly control of the connection cables to the probes and some functionality of the power supply . Therefore, using these probes with their dedicated control modules, complete with power supply, case and batteries, you can realize an efficient and completely independent thermal control system, with the possibility of commanding any other accessories to complete the plant as warning, solenoid valves, etc. ..

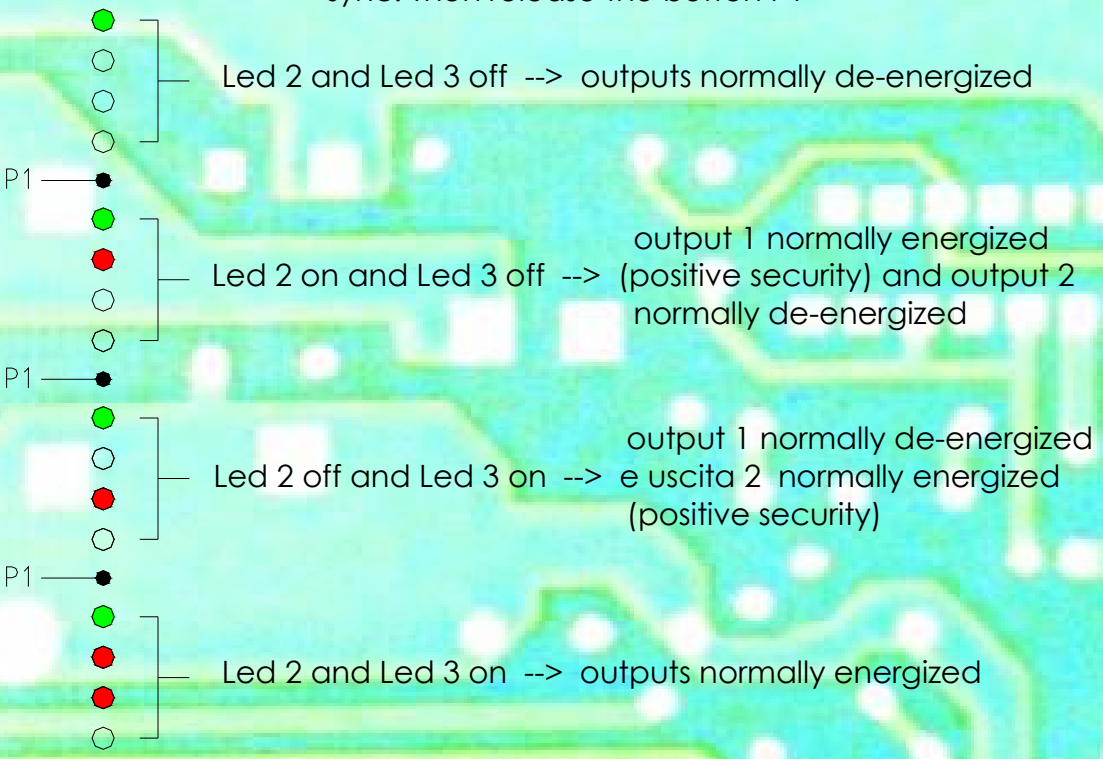
START-UP

On power-up the probe will be in succession in the 4 following states

1. All leds on → memory test
2. Display (via LED) outputs polarity programming
3. Led 1 acceso (about 30 sec.) → start up
4. Led 1 flashing → probe vitality (probe on)

PROGRAM OUTPUTS POLARITY

ENTRY INTO THE PROGRAMMING:
Press and hold the button P1 until the three red lights begin to flash in sync. Then release the button P1



TECHNICAL FEATURES GMSTV001D-EX

- Supply : 24 Vdc from module GMAL15SW
- Power consumption : 65 mA
- Measure Range : -40 + 150°C on stylus
- Tolerance : +/- 1°C
- Temperature : -5 / +80°C circuit and enclosure
- Temperature : -40 / +150°C measure stylus
- Measure stylus : steel 1mm of thickness Ø 8 x 150mm
- Enclosure : die-cast Aluminium
- Protection : IP 55(cod. GMSTV001D)
- Protection : IP 65(cod. GMSTV001D-EX)
- Protection : ATEX zone 22 D(cod. GMSTV001D-EX-GD)
- Fixing : male threaded 3/4"

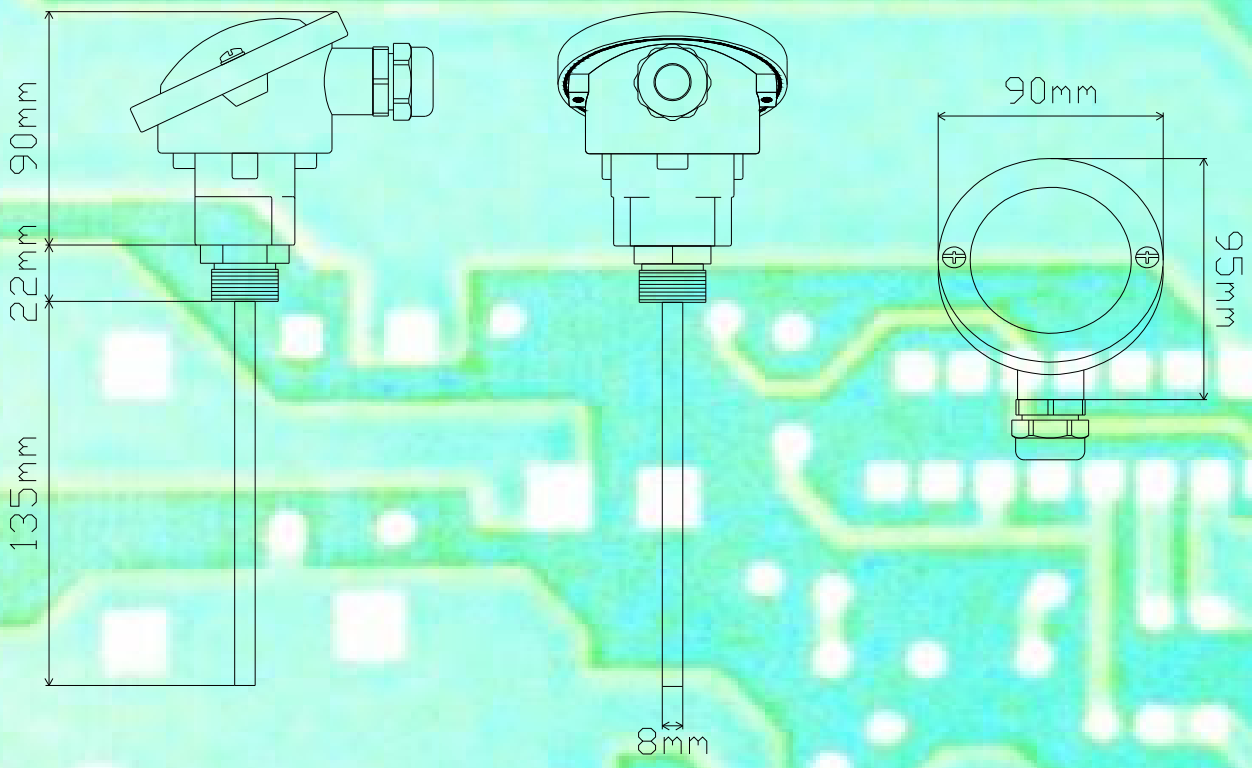
DIMENSIONS

Dimensions: 247 x 95 x 90 mm

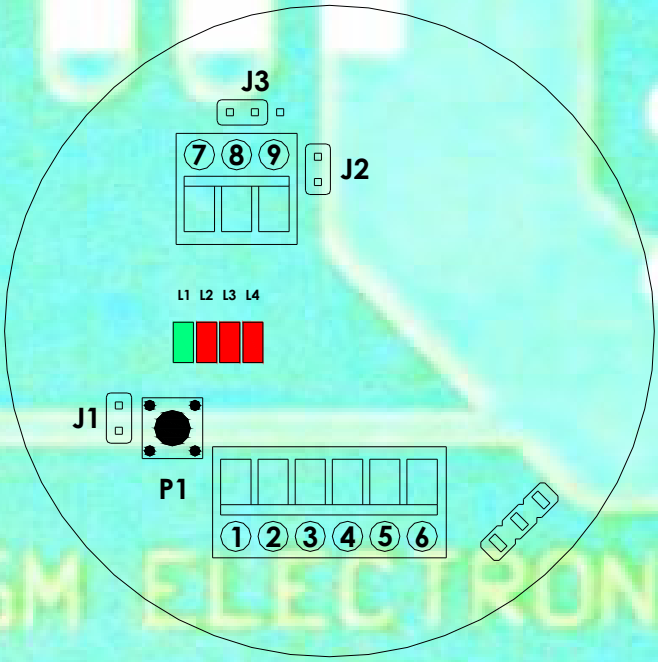
fig.1 Profile

fig.2 Gland side

fig.3 Top view



LEDS , JUMPERS , BUTTON , TERMINALS , CONNECTIONS LAYOUT



LED DESCRIPTION:

L1 : flashing = probe vitality
L2 : on = output OUT1 on –THERMOVELOCIMETRIC ALARM
L3 : on = output OUT2 on – STATIC THRESHOLD ALARM
L4: on = supply voltage +V is present

JUMPERS DESCRIPTION:

J1 : connected = threshold (gradient) THERMOVELOCIMETRIC 5ºC/5 s (60°C/min)
disconnected = threshold (gradient) THERMOVELOCIMETRIC 2.5ºC/5 s (30°C/min)
J2 : connected = activating THERMOVELOCIMETRIC alarm without conditions
disconnected = activating THERMOVELOCIMETRIC alarm with temperature above 25°C
J3 : setting of common reference (to positive or negative) of outputs, see examples of electrical connections.

THERMOSTATIC OUTPUT:

FIXED THRESHOLD ALARM at 80°C (alarm reset at 78°C) (latest software version)

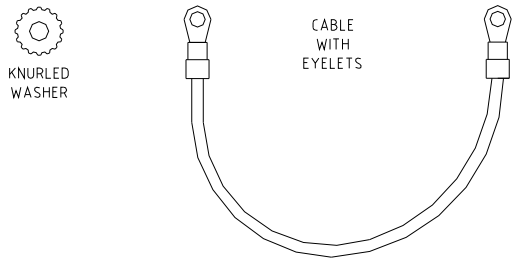
BUTTON DESCRIPTION:

P1 : function 1 : Output polarity = see the chapter "PROGRAM OUTPUTS POLARITY "
function 2 : Output test = see the chapter PROBE TEST (MANUAL SIMULATION TEST)

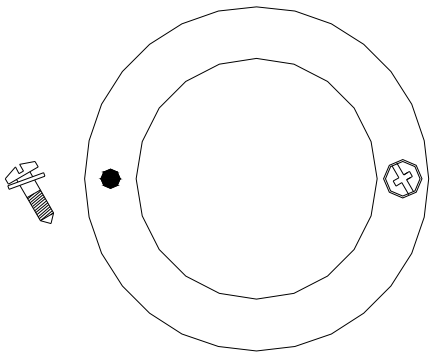
TERMINALS DESCRIPTION:

1 = POSITIVE SUPPLY
2 = NEGATIVE SUPPLY
3 = TEST INPUT
4 = SERIAL RS485 (A)
5 = SERIAL RS485 (B)
6 = ENABLE DEPENDS ON SOFTWARE VERSION
7 = OUTPUT THRESHOLD U1
8 = OUTPUT THRESHOLD U2
9 = ENABLE DEPENDS ON SOFTWARE VERSION

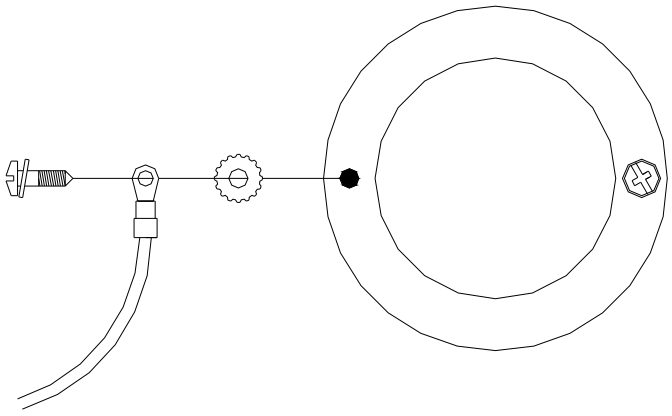
ELECTRICAL CONNECTIONS
COVER GROUNDING CONNECTION NEEDED→ CABLE INCLUDED IN THE COVER



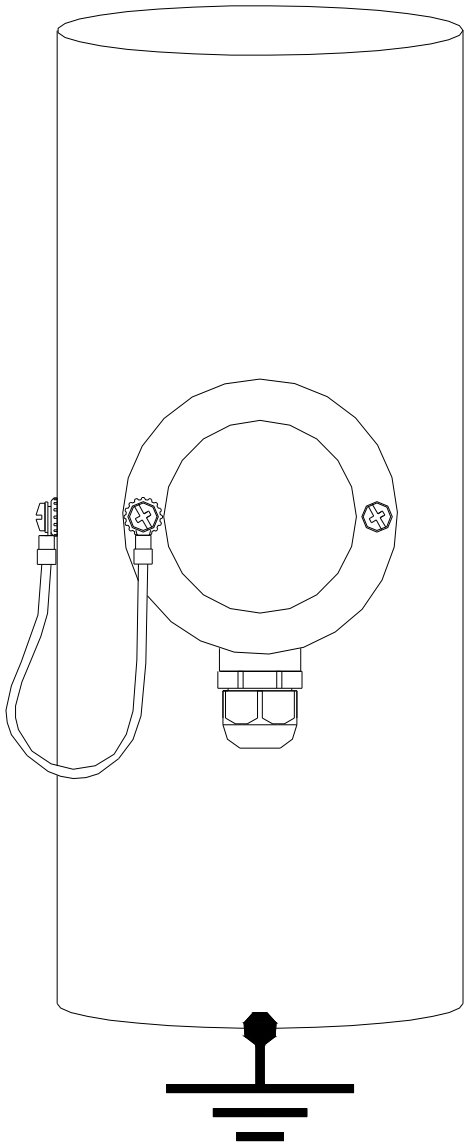
GROUNDING KIT COMPONENTS



REMOVE ONE OF THE SCREWS OF THE COVER



FIX THE SCREW WITH EYELET AND WASHER



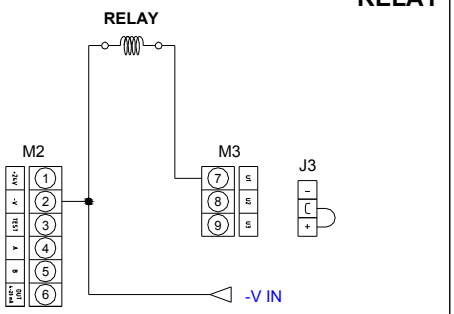
CONNECT THE OTHER HEAD OF THE EYELET TO THE PIPE
(ALSO CONNECTED TO GROUND)

ELECTRICAL CONNECTIONS

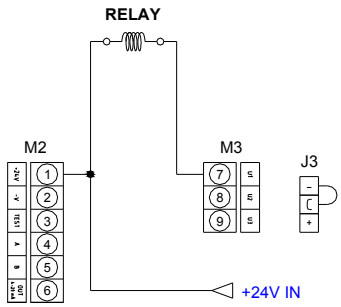
The probe GMSTV001D must be supplied with a voltage between 20 and 30V DC.
The probe is electrically isolated from power supply.

CONNECTION SAMPLE N.1

NEGATIVE COMMON RELAY

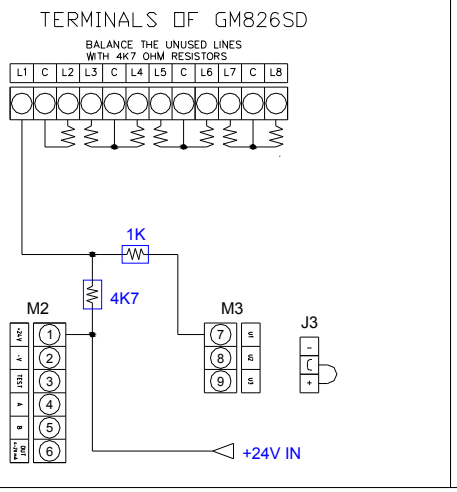


POSITIVE COMMON RELAY

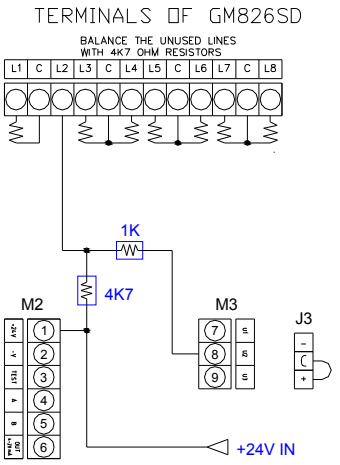


CONNECTION SAMPLE N.2

THERMOVELOCIMETRIC OUTPUT

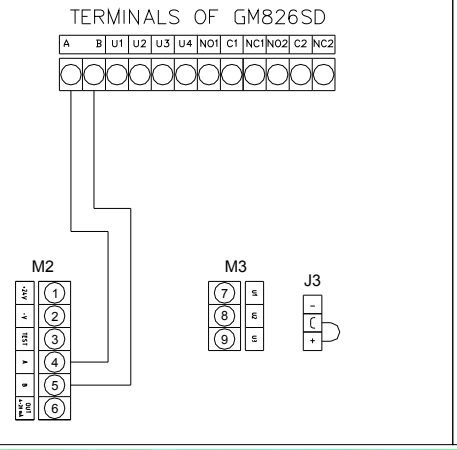


THERMOSTATIC OUTPUT

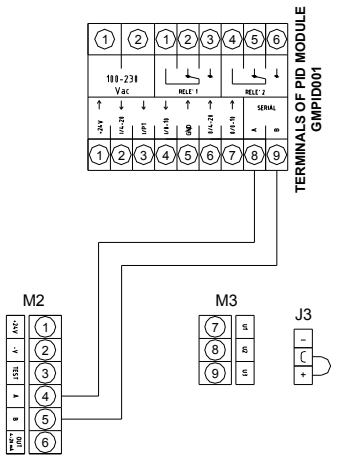


CONNECTION SAMPLE OF SERIAL OUTPUT FOR TEMPERATURE TRANSMISSION

CONNECTION WITH MODULE GM826SD



CONNECTION WITH MODULE GMPID001



RECOMMENDATIONS

1) Install and connect the probes as described in the figures and in the chapters before and after.
2) These probes have been designed for measuring the temperature in environments for fire, is not provided their use for the management of temperatures on groceries.

DIMENSIONING PROBES ON SUCTION SYSTEMS

PIPES/DUCTS

Regardless of diameter, we recommend the installation of a probe every 7-8 meters. Since the pipes (with plants in operation) subject to constant change of air, it is appropriate to carry out the thermal measurement at several points in order to detect as quickly as possible overheating or fires.

SILO / DEPOSITS / FILTER or FILTERING SUBSTATIONS

At least 2 probes to be placed in the following ways:
1) near the air inlet and air outlet clean
2) in the upper within section of filter hoses 2 opposing probes
3) in the upper within section of filter hoses and down inside the hopper
4) in the case of silos inside the upper section of filter hoses and bottom section of internal storage.

N.B. 1 in the case of filters or substations with length higher than 5m, we recommend the use of 4 probes divided between sections hoses and hopper.

N.B. 2 for Silos / Deposits with diameter greater than 4 meters, we recommend the use of 4 probes, divided between the sections and hose storage.

N.B. 3 in each case should be evaluated each time depending on the application, the exact number of measurement points, and then to install the probes, taking account of the surface to be protected and the degree of danger of the stored substances, also relatively to the number of probes provided, to be able to detect with timeliness is such an abnormal difference in temperature between "compartments", is any principles of fire that may occur in several points, will always be advisable to use more probes (spaced).

N.B. 4 in the case of use for fire protection of rooms other than the above described, are to be considered valid the previous concepts of "prevention" related to the timeliness of detecting principles of fire, in each case, check whether there are devices specific standardization, in relation probes for surface sizing and the ability to use these probes in the same application.

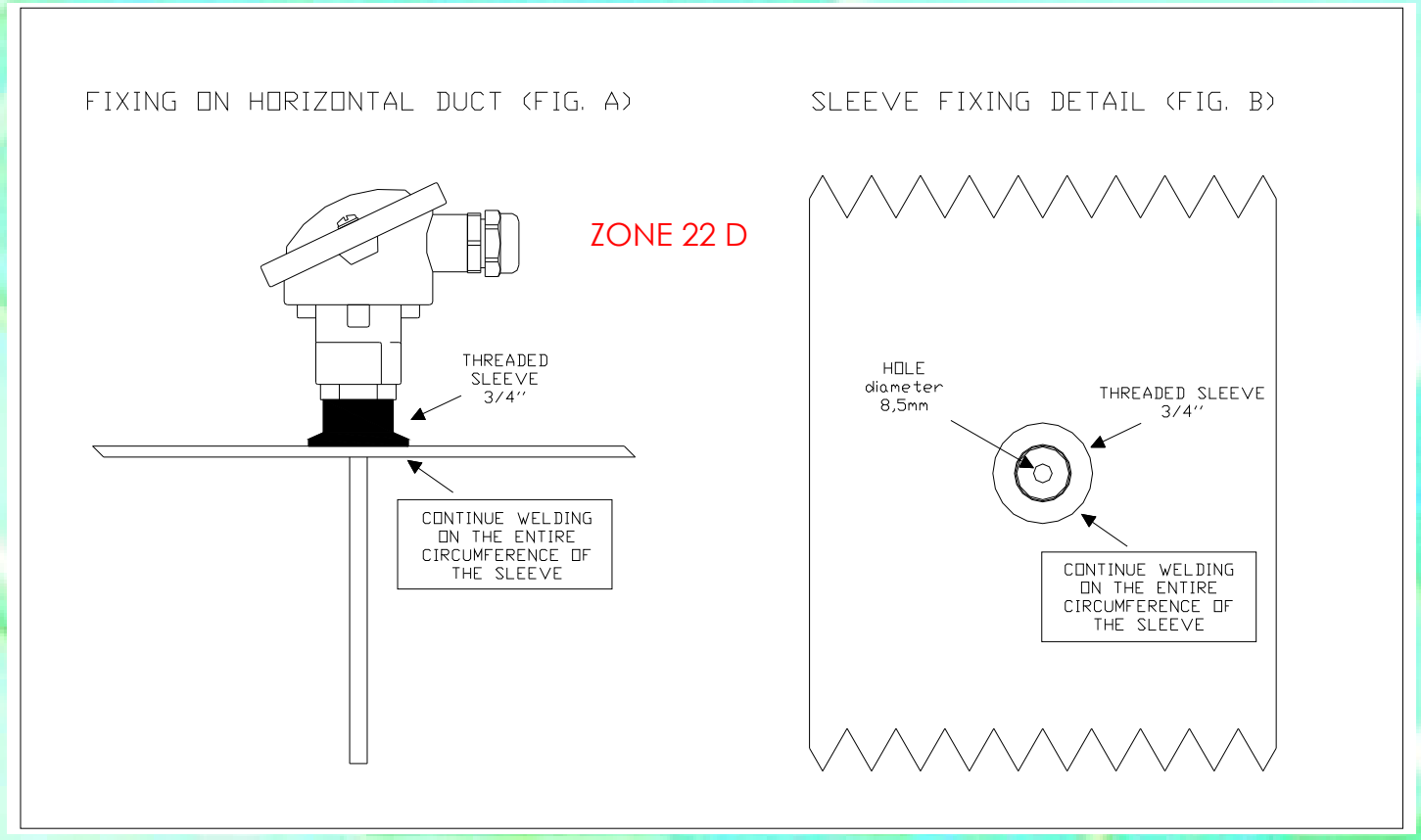
PROBE TEST

Connect the probe to form a GM826SD, check the activation of the alarming output by the sensor. With the probe in function (powered), heat the Stylus and check by Led The outputs used (thermovelocimetric or threshold).
Repeat the same test 2-3 times in a time of 10-15 minutes and check that the response of the probe is always the same.
MANUAL SIMULATION TEST
it is possible to simulate the activation of the outputs holding the button P1 for about 2 seconds. It activates output 1, holding it down until about 5 sec. It activates output 2.

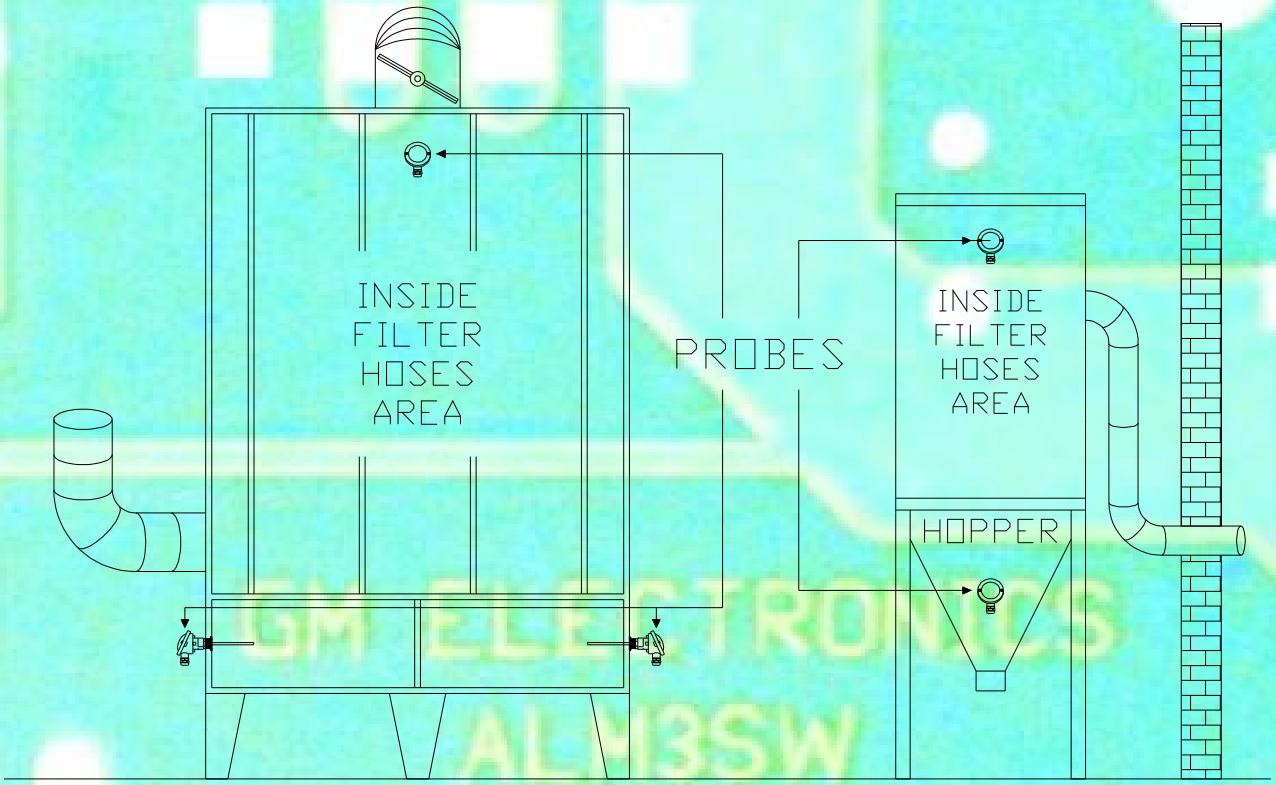
PROBE INSTALLATION

NOTE: The following instructions are provided for installation on filters, sub-filters, silos, storage in metal construction (eg, metal sheet).

1) Obtain (from the supplier of plumbing materials) a threaded sleeve ½ " about 2cm long.
2) Drill a hole the diameter of 8,5 mm on the sheet where you will mount the probe
3) Position the threaded sleeve in the center of the drilled hole, weld the sleeve to the plate along its entire circumference. Finish welding and coating eventually with zinc to prevent rust.
   IMPORTANT! The weld will seal perfectly **SEAL** entire circumference of the sleeve.
4) Insert the probe from the side of the stylus into the hole of the sleeve (Fig. 7) and screw the threaded portion of the stylus to the sleeve by tightening properly, to improve sealing and insulation may be desirable (even if it is dust and not of liquid) to use products such as hemp or niplex between the threads.



EXAMPLE OF POSITIONING OF SENSORS ON FILTERS SILOS



MAINTENANCE

1) Make a check on the state of the sensors at least every 4 months or less. also depending on the type of materials (powders) with which the probe works
2) Remove the probe from the sleeve and check the condition of the stylus
3) Perform basic electrical controls, such as grounding, fastening clamps, and conservation status of the cables

Carry out various tests of operation (activations, outputs, etc.). According to use as thermovelocimetric or thresholds, checking the LEDs on board and reports to external units.

WARNING!!!

1) Read this manual carefully in its entirety before installing or servicing the mentioned equipment.
2) The installation and maintenance of the equipment should only be performed by qualified personnel such as: electricians, technical of fire safety systems or industrial automation systems, all qualified.
3) Perform installation and maintenance equipment with suction off.

ATEX

- This product complies with **ATEX** directive **94 / 4 / CE**
- This product GMSTV001D (-EX version), is suitable for installation in ATEX classified environments relatively to dust:
"category 3" zone 22

II 3D EEx IP65 T85 °C

CE

DECLARATION OF CONFORMITY

GM SISTEMI of Guarnieri Massimo
Headquartered in via dell'Artigianato 29 SALIZZOLE (VR) ITALY
tel. & Fax 045-6900919

DECLARE
UNDER ITS OWN LIABILITY THAT THE PRODUCT:

GMSTV001D-EX
THERMOVELOCIMETRIC PROBE

To which this declaration refers

meets the essential requirements of the directives:
2006/95/CE
2004/108/CE

Salizzole (VR) , ITALY

GM SISTEMI
Legal Representative
Guarnieri Massimo