Installation
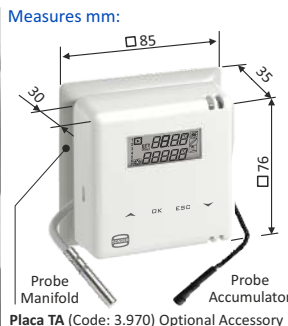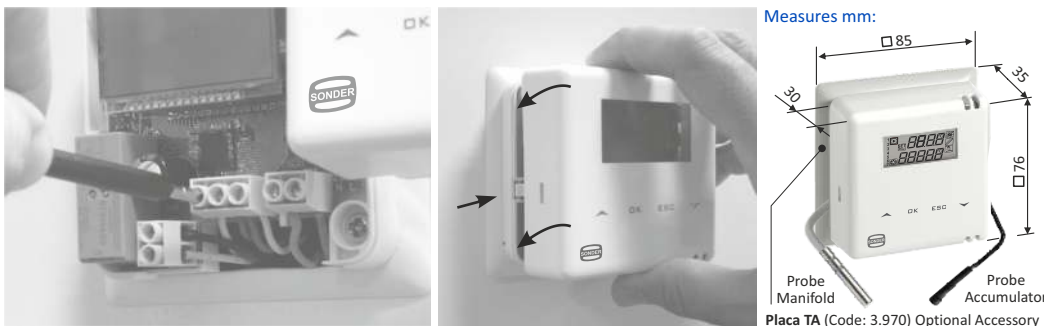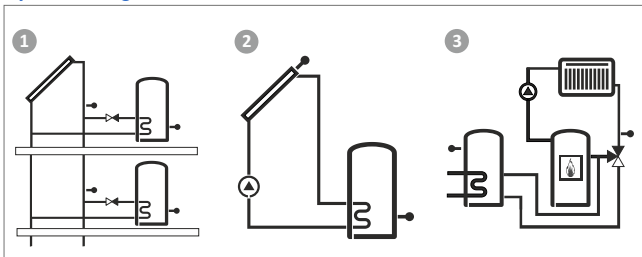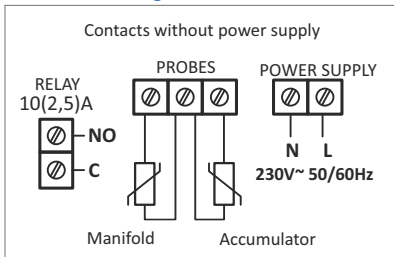

ASSEMBLY NOTE. In order to attach the hood of the device, you do not need to hold it with your hand, use the base to do it. This will also prevent you from pulling on the cable.

Measures mm:

□ 85
30
35
□ 76

Probe Manifold
Probe Accumulator

Placa TA (Code: 3.970) Optional Accessory

Hydraulic Diagram

① ② ③

Electrical Drawing

Contacts without power supply

RELAY 10(2,5)A
PROBES
POWER SUPPLY

NO
C

Manifold   Accumulator

N   L
230V~ 50/60Hz

Guarantee Conditions

This appliance has a three-years guarantee limited to replacement of defective parts. Transports not included.
We will not accept any responsibility for damage caused to the appliance by poor handling.
The guarantee does not include:
- Appliances with a damaged, effaced or altered series number.
- Appliances which have not been connected or used following the instructions that accompany it.
- Appliances which have been altered without the prior consent of the manufacturer.
- Appliances damaged by blows of liquid spills or gaseous emissions.

VERY IMPORTANT:
This appliance should be mounted on a universal embedded box.
Device designed for a clean pollution situation.
This control is not a safety device and should not be used as such, is the responsibility to incorporate appropriate protection for each type of facility (**homologated**) installer.
Independent control device mounting, and connection via fixed pipeline.
We reserve the right of modify without prior notice.

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□ CE ☒

Cod.: 5796 ESP.V2 FEB16

Description and Operation

Allegro 401S is a mini control point for differential control. It controls 2 probes and 1 Relay. The relay is activated or deactivated, depending on the temperature difference between the probes and the programmed parameter configuration. The probes can be PTC2000 or PT1000 , they are set within the parameters and from factory comes with 2 PTC2000. The device shows the temperatures of the Manifold and the Accumulator in addition to icons indicating the status of the installation, the outside temperature trend (increasing or decreasing). You can consult statistics on temperatures and the System's operation hours. Among other applications it is ideal for controlling 3-channel valves in apartment blocks.

Basic Operation Examples (Solar Panels):
· **Differential Control >** When the temperature difference between the two probes is greater than that defined in **diFa** the Relay (connected to a pump) will be activated and the liquid in the circuit will circulate until it reaches **diFd**.
· **Anti-frost Function >** With the Anti-frost function activated, if the temperature of the manifold is less than that defined in **Anti**, the Relay is activated to enable the heat-bearing liquid to circulate until it reaches the temperature defined in **Anti + the differential defined in diFt**.

Parameter Description

- **Activation Differential (diFA at 6 °C):** Adjustable from 2°C to 20°C.
Relay connection when the difference between the temperature of the manifold probe and the accumulator probe exceeds the value established in the parameter. The **diFA** activation differential must be higher than the **diFd** deactivation differential, if you try to enter a lower value the screen will show **ERROR**.
- **Deactivation Differential (diFd at 2°C):** Adjustable from 1°C to 15°C.
Relay disconnection when the difference between the temperature of manifold probe & accumulator probe is less than the parameter value.
- **Accumulator Temperature Alarm (tALr at 70 °C):** 5 °C to 130 °C.
When the temperature in the accumulator reaches the value indicated in **tAlr**, the relay is deactivated and the Accumulator- ACS icon will flash.
- **Differential (diFt at 2 °C)**: Adjustable from 0.3°C to 9°C.
Temperature margin between connection and reconnection of the relay, for any setpoint temperature, alarm or anti-frost.
- **Type Manifold probe (1tYP in PTC2000)**: Adjustable PT1000 / PTC2000.
Set the type of probe to Manifold, **Pt1** (PT1000) / **PtC2** (PTC2000).
- **Type accumulator probe (2tYP in PTC2000)**:Adjustable PT1000/PTC2000
Set the type of probe to accumulator, **Pt1**(PT1000)/**PtC2**(PTC2000).
- **Manifold probe Calibration (1 CAL at 0°C):** Adjustable from -10... 10°C.
This function allows the temperature of the Manifold to be calibrated.
- **Accumulator probe Calibration (2 CAL at 0°C):** Adjustable -10°C to 10°C.
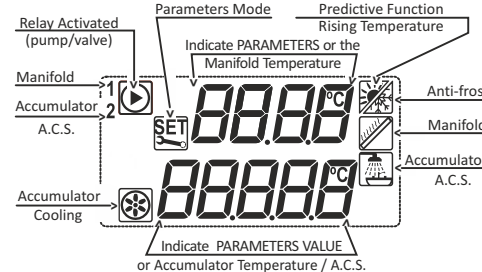This function allows the temperature of the Accumulator to be calibrated.
- **Anti-frost option (Anti at 5°C):** Adjustable in OFF, or from -20 to 10°C.
When the manifold probe goes below this, relay 1 is activated and is disconnected with **Ant + diFt**.
- **Tubular Pickups Function (CtUb in OFF):** Adjustable in ON or OFF. It updates the reading of the probe installed outside the manifolds. When the temperature of the probe has risen by more than 3K, it activates the recirculation of the manifolds, updates the new temperature and saves it.
- **Accumulator Cooling (trEF at 130 °C):** Adjustable from 5 °C to 130 °C.
This function allows you to reduce the temperature of the accumulator. If it detects that the temperature of the Manifold is lower than that of the Accumulator, it actives recirculation.
- **Password (PASS in OFF):** Adjustable in OFF, or from 1 to 9999.
Password-protected access to parameters:
1.- Enter parameters by pressing ▲▼ at the same time for 3 seconds.
2.- **diFA** will appear, press ▼ and **PASS** will appear with the value in **OFF**.
3.- Press **OK**, with ▲ the value advances and goes back by pressing ▼.
4.- Validate by pressing **OK**, after 3 seconds shows **ON**, memorised value.
5.- To exit parameters press **ESC**.

Screen Description

Relay Activated (pump/valve)
Parameters Mode
Predictive Function Rising Temperature
Indicate PARAMETERS or the Manifold Temperature
Manifold
Accumulator A.C.S.
Anti-frost
Manifold
Accumulator A.C.S.
Accumulator Cooling
Indicate PARAMETERS VALUE or Accumulator Temperature / A.C.S.

Entry Into Parameters Settings

1- Enter parameters by pressing ▲▼ at the same time for 3 s.
2- Shows **MENU**, and then the first parameter, **diFA**, pressing ▲ will move to the next parameter, pressing ▼ will go back.
3- Press **OK** , to modify the parameters value showed, with keys ▲▼ set the new value.
4- Press **OK** to validate your selection & value will be memorised.
5- To exit parameters press **ESC.**

Manual Connection / Disconnection Relay

1. Press **ESC** for 3 seconds, enter into forced relay manually & connect the relay. MAN and ▶ displayed on screen.
2. Press the ▲▼ to disconnect or connect the relay.
3. To exit Manual forced can press **ESC** or **OK**.

Statistics and Consultations

Function with Temperature & operation Hours Counter.
1.- Press **OK** for 2 seconds and the first saved value will appear.
2.- Press ▲ to move to the next value and ▼ to go back.
3.- You can delete the displayed value by pressing **OK**.
4.- You can repeat this step for all the values except the Total Hours of Operation Counter (**EHOt**). This value cannot be deleted.
5.- To exit the Statistics and Counter function, press **ESC**.
CONSULTATION VALUES:
1 EtMA> Max Temperature registered by Manifold probe.
2 EtMA> Max Temperature registered by Accumulator probe.
1 EtMi > Min Temperature registered by Manifold probe.
2 EtMi > Min Temperature registered by Accumulator probe.
1 EtAG > Average Temp. of Manifold probe during last hour.
2 EtAG > Average Tem. of Accumulator probe during last hour.
EHOr > Partial Counter Operational Hours Pump / Valve.Total
EHOt > Counter Operational Hours Pump / Valve.

Probe ERROR

Erro - Message in screen when the probe or its cable are cut off or disconnected. It also indicates that the temperature is higher or lower than the working values of the device.

Technical Specifications

Power Supply:	**230Vac 50Hz**.
Maximum cable size for connection:	**2,5mm²**.
Breakage power (Volt-free Contacts):	**10(2,5)A 250V~**.
Probe PT1000 without polarity IP67:	from **-50 to 200°C**.
Probe PTC2000 without polarity IP65:	from **-40 to 140°C**.
Probe PTC2000 without polarity IP67:	from **-50 to 120°C**.
Environment:	Tmin. **0°C**, Tmax. **45°C**, %H.R. **20 ... 85%**.
Storage Temperature:	**maximum 50°C**.
Protection degree:	**IP20**.
Contamination degree:	**2**.
Action type according EN 60730:	**1.B**.
Assigned pulse voltage:	**2500 V**.