Motor temperature · Leak detection monitoring Unit

User's guide

Model : 153-PT

Contents

Summary

1. The monitoring unit senses the winding wire temperature of the motor pump, It is used as temperature detection indicator to prevent damage in advance.

2. In the case of submersible motors, it is necessary to use the water leakage sensor detects flooding and leakage to prevent motor insulation failure in advance.

3. The temperature indicators, particularly using bright and vivid digital number display. At night has the advantage of being able to identify the temperature at a distance.

4. Switch Operation functions of the front section is operated by One-touch. Easy to set up and store with a beep.

5. Wiring connection terminals on the back of the assembly and disassembly as it is removable. The separation is easy and convenient for the A/S replacement.

6. The design of the unit is refined to promote the convenience of the user stable. And it is designed to be friendly.

Installation requirement

1. Power is available from AC110V ~ 220V without additional equipment. A noise prevention countermeasure of the power supply line is used for the primary or secondary of the isolation transformer or use the noise shielding transformer. (**See wiring diagram)**

2. In order to avoid ambient noise interference when installing Please keep about 30 ~ 50Cm distance from the high-frequency generating device.

3. The temperature sensor is composed of electronic circuits operating in a fine current. Therefore, if the high-voltage power lines are adjacent with a strong inductive mixing and impulse noise it will cause malfunction.
When installing the sensor lines it must be separated from the power line, and if one is installed, the distance between the motor and Unit long-range sensor wire is good to use for shielding.

4. It is necessary to install a noise attenuator(Line filter) suitable for the field installation to reduce the noise mixing from the surrounding equipment.

5. Avoid high temperature (direct sunlight) and humid place (underground, sea breeze, rain) and dusty places when installing equipment, and carefully shock or vibrate.

6. Please do not disassemble, change or arbitrary operation for the safety of the human body and the quality of the product.

7. If you have any questions during installation or use, please contact the manufacturer or the place of purchase.

Specifications

* Input Power : AC110V~220V(Free voltage)Tolerance ±5%, Frequency 50/60Hz
* Power Consumption : Average 5W
* Motor Sensor : Pt100 (2-wire Ungrounded)
* Leak Sensor : 2-Electrode
* Leak Detection range : 0-100kΩ
* Current Output : 4mA(0℃) ~ 20mA(250℃)±0.5% Non insulated (RL=250Ω)
* Alarm Output Display : Buzzer beep, Activity indicator
* Integrated Trip Output : Relay dry when alarm occur(1a),
                     Temporary contact output
* Relay contacts to Capacity : AC220v-2a(max)
* Connection Terminal : 4pin(1) 8pin(1) - Removable
* Display Temp Range : 0℃ - 250℃ ±1%
* Set Temp Range : Within 1℃ ~ 250℃
* Operating Temp : -5℃ ~ 50℃
* Relative Humidity : 30% - 80% (non condensing)

* Display Unit : Red 3-Digital Number indicator
* Display Functions-Motor : Setting Temp, Current Temp, Sensor open circuit,
                     Short circuit

* POWER   : Unit operation Power switch

* TEMP/SET   : Temperature setting button

* UP/DN   : Temperature setting up and down button

* RESET   : Re-operation button

* Front panel size : (W)150mm, (H)67mm, (D) 2T
* External appearance : (W)121mm, (H)61mm, (D)135.5mm(Include terminal)
* Panel Cutting : (W)122mm, (H)62mm
* Fix Unit : (W)135mm, (H)47mm (fixed hole) 5ø x 4Ea
* Quality of material : Front(Aluminum), Body(Steal)
* Weight : 0.78Kg

Designation (Front)

153-PT
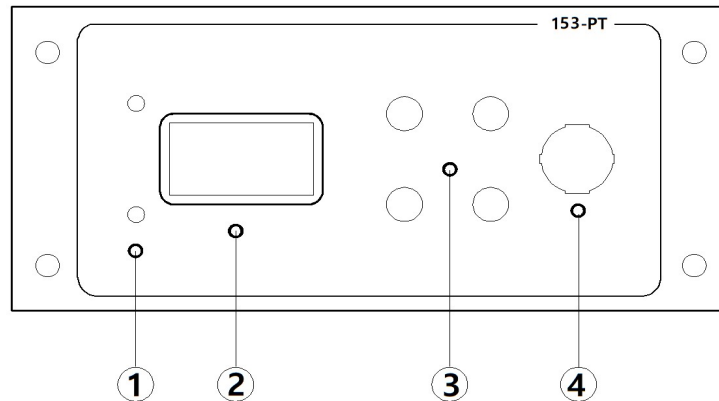
① Alarm LED indicator　　: Motor, Leak

② Temperature indicator : Set temperature, Current temperature,

　　　　　　　　　　　　 Sensor Open circuit / Short circuit

③ Function switch　　　　: Set temperature,

　　　　　　　　　　　　 Temperature Up/Down, Reset

④ Power switch　　　　　: Operation power

Designation (Back)

① ② ③ ④

⑤ ⑥ ⑦ ⑧ ⑨ ⑩
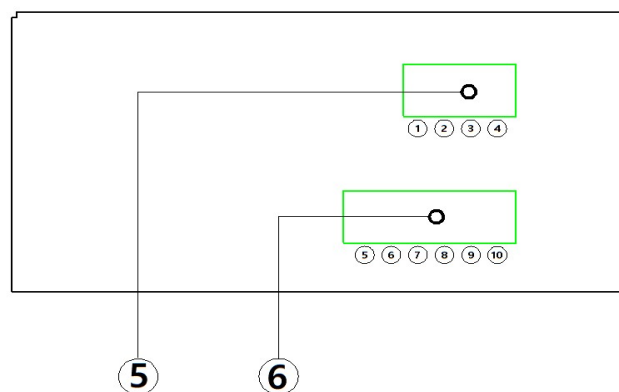
⑤ Terminal : Pt100Ω sensor input, Temperature proportional current output

⑥ Terminal : Leak input, power input

　　　　　 Integral (Temperature , Leak) relay output

Operation explanation

1. Fixed to the panel.

2. Connect the sensors and power wires to the rear terminal block by number.

3. Make sure that the terminal block or wiring does not change.

4. Check the input power(AC110V~220V) on

5. Turn the power switch.

Temperature settings

1. Press the front panel temperature setting switch once briefly.

2. Press the Up/Down switch to set the desired temperature (1℃ - 250℃)
   * The temperature is basically be set to **100°C**.

   * Press the Up/Down switch once to change the temperature by **1℃**.
     and Press it continuously to change the number.

3. After setting the temperature, it saves automatically after about 2 seconds
   without pressing the switch The current temperature display is switched and
   the temperature detection is carried out.

4. If an error occurs during operation, press the reset switch once for a long
   time, or restart the power switch.

Check the alarm status (Sensor, Temperature)

1. If the Pt100Ω sensor connection is open circuit, be marked with " **O P n** ".

2. If the Pt100Ω sensor connection is short circuit, be marked with " **S h t** ".

3. In the case of the above situations the alarm part

    indicator lights up and a beep tone sounds.
    * After 8~10 seconds, the trip relay operates and the motor is turned off.
    * The relay will automatically return when the alarm is released.

4. If the current temperature exceeds the set temperature, the alarm part

    indicator lights up and a beep tone sounds.
    * After 8~10 seconds, the trip relay operates and the motor is turned off.
    * The relay will automatically return when the alarm is released.

Check the alarm status (Water leakage)

1. The sensor detects the water leakage or immersion in the motor, and the water leakage indicator lights up after 3 seconds.
   If the alarm persists, after 5 seconds the trip relay operates and the motor is turned off.

⚠️   *** Failure to use the specified sensor may result in malfunction. Therefore, use a sensor that is compatible with the device.**
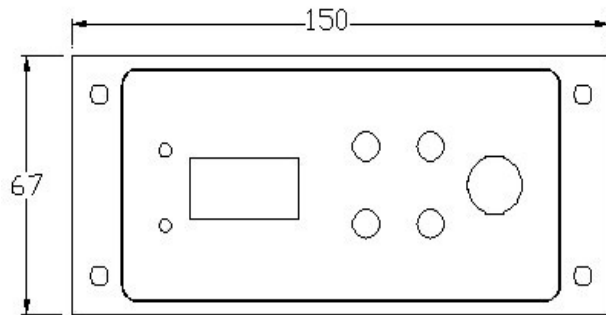
2. Relay is activated when alarm occurs either temperature or leak alarm, and the relay will automatically return when the alarm is released.
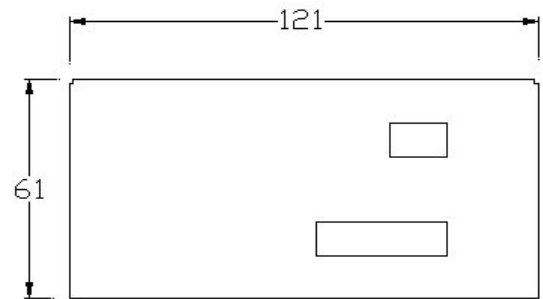
⚠️   *** If an alarm occurs, turn off the unit and check the cause of the alarm.**
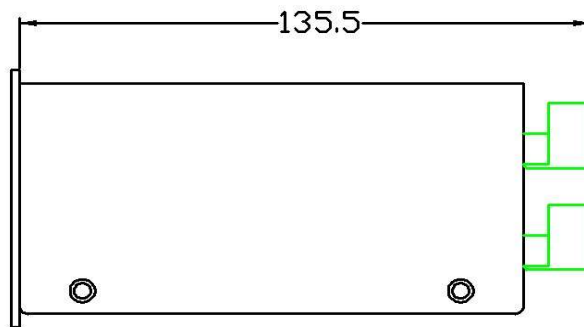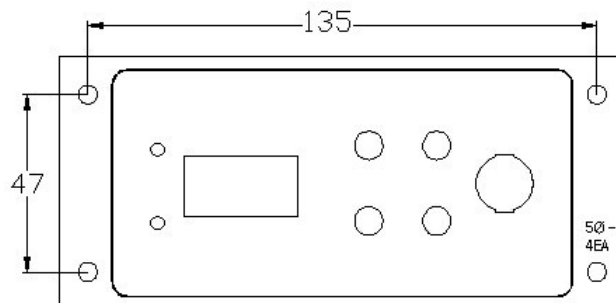
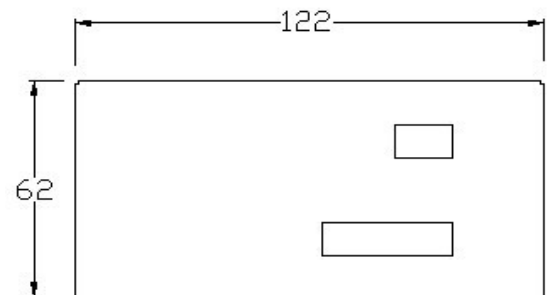# Product appearance drawings

150

67

Front

121

61

Back

135.5

Unit : mm

Side

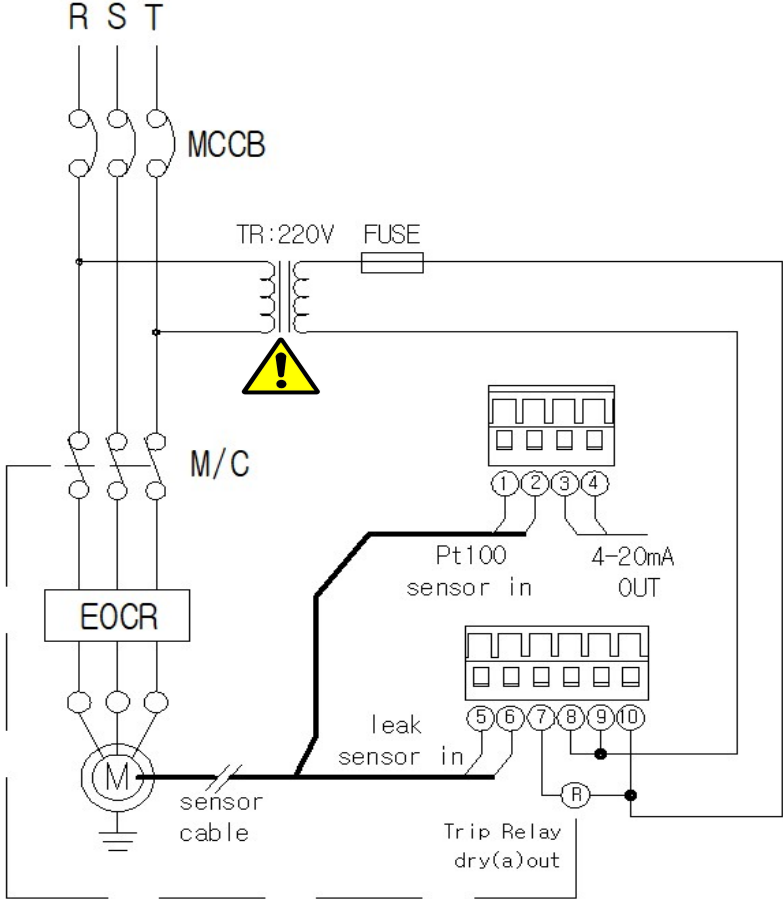# Panel cutout drawing

135

47

5Ø-
4EA

Front fixed hole

122

62

Body cutting

Wiring

Terminal number / Connection information

① ②	Motor Pt100 sensor (2wire-ungrounded) input
+ ③ ④ –	Motor current output (4mA~20mA)
⑤ ⑥	Water leakage sensor input (normal open)
⑦ ⑧	Integrated Trip relay dry (a)contact output
⑨ ⑩	Input power AC 110V~220V, 50/60Hz

Warranty service

Thank you very much for choosing the Monitoring Unit 153-PT

1. The service period is one year from the factory shipment date.

2. Free services are not available in the following cases.

   * Unauthorized dismantling and arbitrary manipulation.
   * Inundation and damage due to natural disaster.
   * Defects and damage caused by careless handling of user.
   * Overvoltage·Overcurrent contamination(lightning, surge, etc..)
   * Defects caused by improper installation and use.

3. Expiration of service period or cost of replacement of consumable parts.

4. The service guarantee is limited to the unit, and other items are
   not related to the manufacturer.