MTM5581 Intelligent Temperature Switch

Features

- Temperature measurement for gas and liquid
- Optional for PNP , voltage and current output
- Peak value display
- Ranges drift function
- PNP switch point setting, time delay setting for action
- Modbus communication
- OLED display
- Environment reference temperature display
- Display rotate 180º
- Body rotate 330º
- Change-over of different units: ℃ or℉

Introduction

MTM5581 is an intelligent temperature switch combining temperature measurement, local display and control together. It usesadvanced industrial-grade MCU as core and high accuracy PT100 temperature sensor as sensing element. MTM5581 has quick response, high accuracy and stable performance. It can be widely used for equipment matching andtemperature measurement and control in industrial process or lab etc..

MTM5581 is able to visually process the process temperature and switch contacts status through switch output, analog output and display screen. It has various output signals for different application. MTM5581 switch has functions such as time delay setting, ranges drift setting (scales: 25%~100%FS), The body can rotate 330º; display can rotate 180º in order for viewer to face up to the display screen. OLED display is very clear to read. With special designation and construction, it has two construction: integrated and separated. Both are easy for installation.
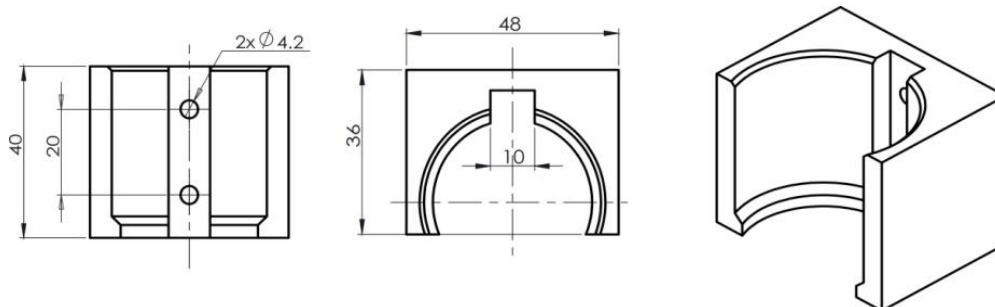
Specifications

Range: -50℃~200℃ （-58℉~392℉）
 Range drift: 25%FS~100%FS
 Accuracy: ±1.0℃(±2.0℉)
 Resolution: 0.1℃
 Power supply: 12V~30VDC
 Sealing: PTFE gasket
 Thermal drift：±0.15%/10K
 Response: about 50mS
	Outputs：
	   2 switches + voltage output: 2×PNP + 0V~5VDC/10VDC
	   2 switches + current output: 2×PNP + 0mA/4mA~20mADC
	     Switch current:1.0A(Max.)
	     Switch reaction: <10ms
	     Switch time delay: 0.0s~99.9s
	     Switch action pattern:Hys.Mode/Win.Mode

Screen display: Blue 128×64 OLED Switch display: 2 red LED Display units: ℃ ¦ ℉ Key: 3 silicone rubber keys, please operate according to instructions on the screen. Main screen: measured media temperature Sub screen: environment temperature[②] Peak display: Temperature peak in process	Media Temperature: -50℃~200℃ Environment Temperature: -20℃~80℃ Storage Temperature: -40℃~80℃ Relative Humidity: 0%~85% EMC: GB/T 17626.2/3/4-2006 Shock:≤10g/10Hz...500Hz(IEC 60068-2-6-2007) Impact: ≤50g/11ms(IEC 60068-2-27-2008) Protection: IP65

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Pipe and housing: SS

Contact media material: SS

Display board: PMMA

Sealing: PTFE gasket

Sensing element: PT100

Electric connection: M12×1 round plug

Pressure connection: M20x1.5male

Gross weight: 300g (integrated)

580g (separated)

Outline Construction and Display

Integrated Construction	Separated Construction	Forward up display
Unit: mm		

MS801mounting bracket (optional components):

Note: MCU core working temperature is for reference.

Ranges Drift

MTM5581 is able for ranges drift between 25%FS and 100%FS. Analog output changes along with range scale. And also, analog output can be reversal. E.g, 4mA-20mADC can be changed into 20mA~4mA; 0V~5VDC to 5V~0VDC. Take -50℃~200℃ current output as an example:

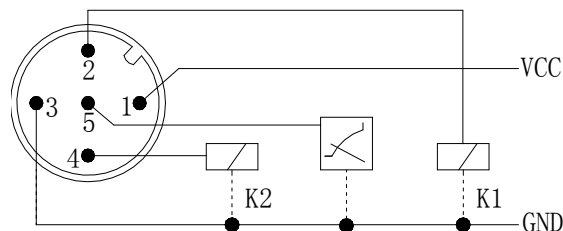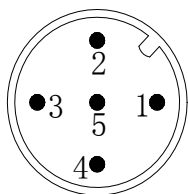| Range	Range Drift percent	New range	New range scale	
-50℃~200℃①	25%FS②	62.5℃②	-50℃~12.5℃ 12.5℃~75℃③ 75.5℃~138℃ 137.5℃~200℃	
	50%FS	125℃	-50℃~75℃ 15℃~140℃ 75℃~200℃	
	75%FS	187.5℃	-50℃~137.5℃ 12.5℃~200℃	
	100%FS	250℃	-50℃~200℃	
-50℃~200℃①	25%FS②	62.5℃② reversal output	12.5℃~75℃④	

Note: Accuracy will decrease for ranges drift.

Electric Connection

(1)5-pin plug pin definition and wire connection:

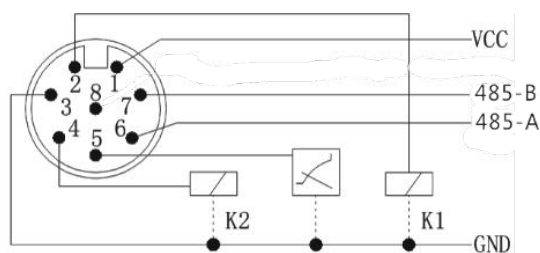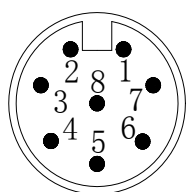| Wire	Color	2×PNP+ Voltage	2×PNP+ Current
1	Red	VCC	
2	Yellow	K1- Output	
3	Black	GND	
4	Blue	K2-Output	
5	Green	0V~5/10V	0/4mA~20mA

(2) 8-pin plug pin definition and wire connection:

Code	Wire color	2×PNP+ Voltage	2×PNP+ Current
1	Red	VCC	
2	Yellow	K1- Output	
3	Black	GND	
4	Blue	K2-Output	
5	Green	0V～5/10V	0/4mA～20mA
6	Brown	485-A	
7	White	485-B	
8	-		

Switch Action：

Hys. Mode	Win. Mode
①Action Value ②Release Value ③Difference between ①and ②/hysteresis ④ Output status of NO ⑤ Output status of NC	① Upper action value ② Lower action value ④ Output status of NO ⑤ Output status of NC
Setting range for switch points： Action Value: -46.25℃～200℃ Release Value: -47.5℃～198.75℃ Action Value-Release Value≥1.25℃	Switch point setting ranges： Upper Action Value: -46.25℃～200℃ Lower Action Value:-47.5℃～198.75℃ Upper Action Value-Lower Action Value≥1.25℃
Switch action time delay can be set: 0.0s~99.9s	

Optional Components

MS801   Mounting Bracket

MS901   2m RVVP cable with 5-pin M12X1 female right angle plug

MS902   2m RVVP cable with 8-pin M12X1 female right angle plug

Order Guide

MTM5581	Intelligent Temperature Switch (-50℃～200℃)						
	Code	Construction					
	Null	Integrated construction					
	F	Separated construction					
		Code	Output				
		2KV	2×PNP+0V～5/10VDC				
		2KA	2×PNP+0/4mA～20mADC				
			Code	Thread			
			C1	M20x1.5 male			
			C3	G1/2 male			
				Code	Probe length（mm）		
				L	L: 20、100、200（200only for separate construction）		
					Code	Others	
					R5	5-pin M12X1 male plug	
					R8	8-pin M12X1 male plug for Modbus communication	
MTM5581	F	2KA	C₁	20	R₅	the whole spec.	

Notes

1. MTM5581 standard electric connection is 5-pin M12X1 male plug without Modbus communication.

2. Thread can be customized according to user's request. Please make clear note in purchase order.

3. If users have special request for specifications and functions, please contact our company.