

Immersion Temperature Sensor

4...20mA: HPT-324P



Product Type

Active output temperature sensor.
Range of operation -20...70 °C / <100 % r. h.

Application

Obtaining liquid or air temperature in heating, ventilation and air conditioning plants. (Threaded installation)

Order number description

Order number	Operating Voltage	Measuring Range	Output Signal	Operating limits	Response time (No Liquid Move)	Probe Length
HPT-324P	DC 15...30V	0...50 °C	4...20 mA	Sensing tube	~ 3 min	10 cm.
		0...120 °C		-40...120 °C		
		-40...70 °C		Body		15 cm.
				-20...70 °C		

Function

The sensor monitors the liquid/air temperature via its sensing element. The passing current of the sensor varies in the range of 4...20mA as a function of the temperature. This current variation through the sensor is used for further handling by a suitable controller.

Mechanical design

The unit has been designed for standard thread mounting specially for pipe installation.

The units consist of a base and cover. The base carries the connection terminals and installation thread. Thread and sensing element are made of stainless steel 304. The body material is flame-retardant polymer.

Cable entry is via a PG-9 gland. Be careful of tightening cable gland sufficiently in order to assure housing IP55 protection.

Disposal



These devices are considered electronics devices for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic waste.

Dispose of the device via the channels provided for this purpose. Comply with all local and currently applicable laws and regulations. Plastic and metal sections are better to recycle separately.

Engineering notes

Due to current output of the sensor there is not limitation like those in resistance type and voltage type signals. However keep the cable in minimum possible length to reduce noise interference.

Screened and twisted-pair cable is necessary for noisy environments. Cable screen shall be connected to earth from controller side and consider gland size while assembling sensor.

Mounting notes

Sensor tube inside liquid pipe or air duct shall be exposed to flow and not dead or circular media. Hereby prevent around pipe or duct bends installation.

The unit must not be exposed to direct solar radiation.

The permissible ambient conditions should be observed.

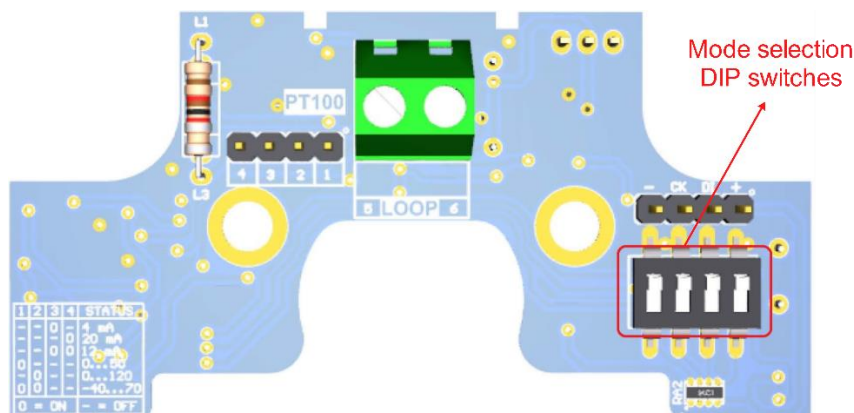
Be sure of proper sealing after installation.

Technical Data

Power supply	Operating voltage	15...30Vdc
	Power consumption	<1VA
	Polarity	No polarity
Functional data	Range of use	Refer to "Page 1"
	Type of measurement & output	Temperature 4...20mA 2-Wire
	Measuring range	0...50°C
		0...120°C
		-40...70°C
Probe length	10 cm & 15 cm	
Temperature sensor	Pt100	
Degree of protection	Safety class	Not defined
	Degree of protection for housing	IP55
Electrical connections	Screw terminals	Max. 2x1.5mm ²
	Perm. Cable lengths	Refer to "Engineering notes"
Environmental conditions	Operation condition	Temperature: -20...70°C
		Humidity: 0...<100% r.h.

DIP switches setting

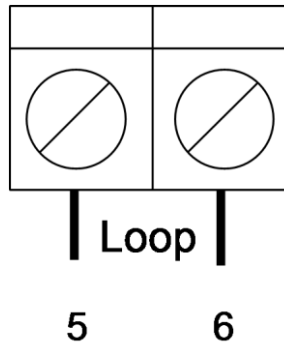
A four-row DIP switch is located on the electronic circuit of the sensor to specify type of output signal. Test mode capability as well as normal current signal in relative to temperature value is considered to be used in controller or PLC program evaluation.



DIP switches status				Output current	Test Function
1	2	3	4		
--	--	█	--	4mA fixed	
--	--	--	█	20mA fixed	
--	--	█	█	12mA fixed	
█	--	--	--	Temp. Scale: 0...50°C	
--	█	--	--	Temp. Scale: 0...120°C	
█	█	--	--	Temp. Scale: -40...70°C	
█ = On		-- = Off			

Fixed current outputs are used only for test.
 Select one of scaled outputs in relative to area temperature.

Internal diagram



The sensor is not polarity sensitive.
 Avoid applying voltages greater than 30VDC.

Dimensions (mm)

