

Types 5207 to 5277 Temperature Sensors

with Pt 1000 resistors

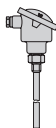
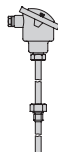


Application

Sensors for measuring temperatures in HVAC systems.
Versions with Pt 1000 resistors. Basic values according to
Class B of DIN EN 60751.



Table 1: Screw-in-, duct, contact, and outdoor sensors with Pt 1000 resistors

Screw-in sensor	•	•	•	•	•	•			
Duct sensor							•		
Contact sensor								•	
Outdoor sensor									•
Number of resistors	1	1	1	1	1	1	1	1	1
Pt 1000 resistors	See Table 4								
Sensor length mm	80	160	250	160	250	400	60 to 280	–	
Sensor shaft G ½ made of ¹⁾	Brass			1.4571			Nickel-plated brass	–	
Nominal pressure PN	16			40			–		
Permissible temperatures									
Medium °C	–20 to 150			–60 to 400			–20 to 150	–20 to 120	–35 to 85
Ambient °C	–20 to 70			–20 to 70			–20 to 70	–20 to 120	–35 to 85
Degree of protection acc. to EN 60529 IP	54			54			41	42	44
Weight kg (approx.)	0.4	0.4	0.5	0.4	0.5	0.6	0.6	0.04	0.1
Compliance	CE ENEC								
Type	5207-21	5207-27	5207-26	5207-47	5207-46	5207-48	5217	5267-2	5227-2
Style									
Preferable scope of application	Flow or return flow pipes, domestic hot water heating, heating systems						Supply air, mixed air, exhaust air (non-corrosive air and gases)	Flow or return flow pipes	Exterior walls of buildings

¹⁾ Flange connection with duct sensors instead of G ½

Table 2: Room sensors with Pt 1000 resistors

Room sensor with potentiometer and mode selector switch		•	•
Number of Pt 1000 resistors		1	1
Pt 1000 resistors		See Table 4	
Permissible temperatures			
Medium	°C	–20 to 60	–20 to 60
Ambient	°C	–20 to 60	–20 to 60
Degree of protection acc. to EN 60529	IP	30	30
Weight	kg (approx.)	0.08	0.08
Compliance		CE ENEC	
Type		5257-5	5257-7
Style			
Preferable scope of application		Recreation rooms and offices	

Connection to controllers		5257-5	5257-7
Controllers for HVAC systems			
TROVIS 5475-2		•	
TROVIS 5476		•	
TROVIS 5573		•	
TROVIS 5575		•	
TROVIS 5576		•	
TROVIS 5578		•	
TROVIS 5579		•	
TROVIS 5571 (PLC)		•	
Electric actuators with process controllers			
TROVIS 5725-7			•
TROVIS 5757-7			•

Table 3: Immersion sensors with Pt 1000 resistors (can also be used as contact sensors)¹⁾

Immersion sensor with thermowell/ contact sensor	•		
Number of Pt 1000 resistors	1		
Pt 1000 resistors	See Table 4		
Sensor length mm	50		
Permissible temperatures			
Medium °C	-50 to 180		
Ambient °C	-50 to 180		
Degree of protection acc. to EN 60529 IP	52		
Weight kg (approx.)	0.23	0.23	0.25
Length of connecting cable m	2	3	5
Compliance			
Type	5277-2	5277-3	5277-5
Style			
Preferable scope of application	Immersion sensor with connecting cable. Thermowell required Flow or return flow pipes, domestic hot water heating, heating systems		

¹⁾ **Accessories for Types 5277-2/-3/-5**

- Brass thermowell, G ½, PN 16
Immersion length 80 mm Order no. 1099-0807
Immersion length 160 mm Order no. 8525-5005
- CrNiMo steel thermowell, G ½, PN 40
Immersion length 80 mm Order no. 1099-0805
Immersion length 250 mm Order no. 1099-0806
Immersion length 160 mm Order no. 8525-5011
- Mounting kit for contact sensor Order no. 8524-0020

Note

It is not necessary to calibrate the line with temperature sensors with Pt 1000 resistors. In cases where the length of line between sensor and controller exceeds 100 m, the cross-section of the wire must be at least 1.5 mm². The connecting cable between temperature sensor and controller must be routed separately from live power cables.

Type 5267 Contact Sensor suitable for pipes up to Ø 60 mm. On assembly, the supplied heat-conducting paste must be applied between the sensor (copper protective tube) and the pipe.

Terminals for sensors (Types 5227, 5257 and 5267) must have a maximum wire cross-section of 1.5 mm².

Table 4: Resistance values for Type 5207 to 5277 Sensors with Pt 1000 resistors

Temperature °C	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20
Resistance Ω	862.5	882.2	901.9	921.6	941.2	960.9	980.4	1000.0	1019.5	1039.0	1058.5	1077.9
Temperature °C	25	30	35	40	45	50	55	60	65	70	75	80
Resistance Ω	1097.3	1116.7	1136.1	1155.4	1174.7	1194.0	1213.2	1232.4	1251.6	1270.8	1289.9	1308.9
Temperature °C	85	90	95	100	105	110	115	120	125	130	135	140
Resistance Ω	1328.0	1347.1	1366.1	1385.1	1404.0	1422.9	1441.8	1460.7	1479.5	1498.3	1517.1	1535.8
Temperature °C	145	150	155	160	165	170	175	180	185	190	195	200
Resistance Ω	1554.6	1573.3	1591.9	1610.5	1629.1	1647.7	1666.3	1684.8	1703.3	1721.7	1740.2	1758.6

Screw-in sensors

Type 5207-2

Type 5217; immersion depth adjustable between 60 and 280 mm

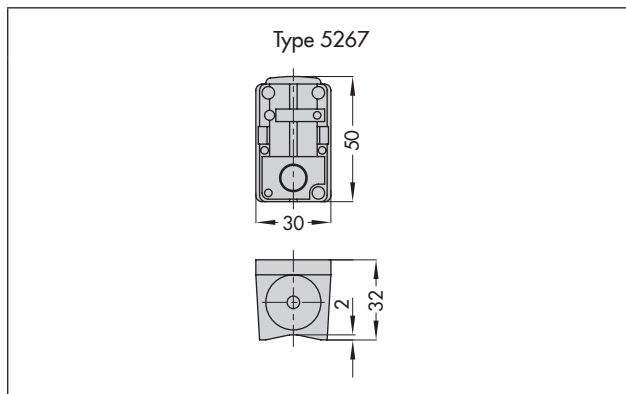
Type 5207-4

Sample application

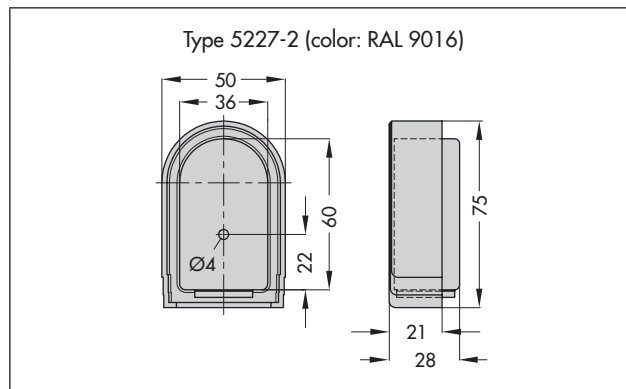
Pipe installations:

- a) On elbows, against the direction of flow
- b) In smaller pipes, positioned at an angle against the direction of flow
- c) At a right angle to the flow

Contact sensor

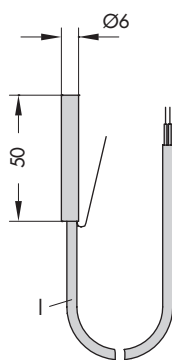


Outdoor sensor

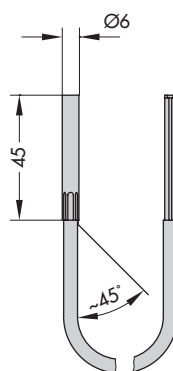


Immersion sensors

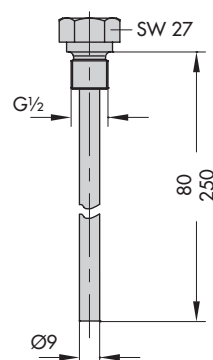
Type 5277-2



Type 5277-3 and Type 5277-5



Thermowell for immersion sensor
Type 5277-2, Type 5277-3 and Type 5277-5



Length of connecting cable

Type 5277-2: $l = 2$ m, silicone connecting cable

Type 5277-3: $l = 3$ m, silicone connecting cable

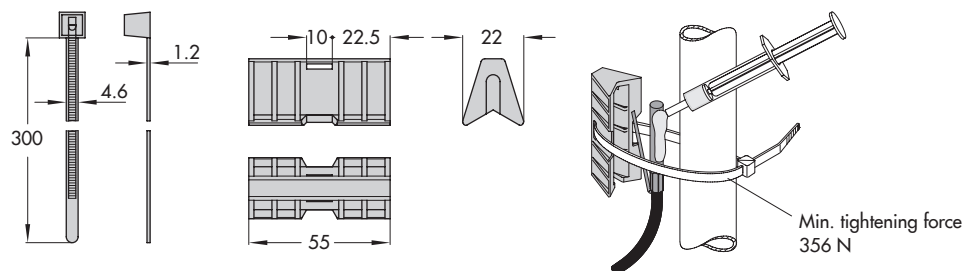
Type 5277-5: $l = 5$ m, silicone connecting cable

Bracket and cable tie in a mounting kit (order no. 8524-0020)

A mounting kit (order no. 8524-0020) is required if a Type 5277 Sensor is intended to be used as a contact sensor.

The application range is between -40 and 105 °C (briefly up to 145 °C), the sensor is resistant against oil, fuel oil and grease.

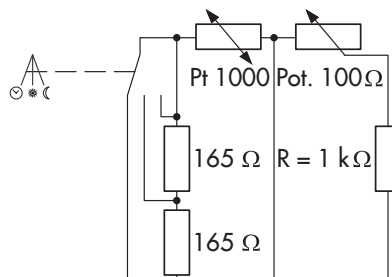
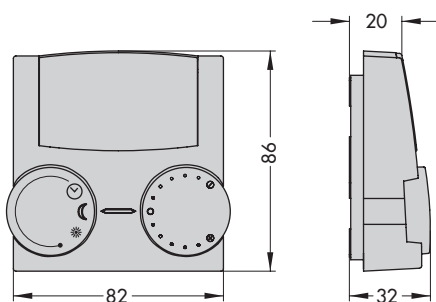
Apply heat-conducting paste (syringe) to the sensor. Clamp the sensor between the pipe and bracket. Fasten the sensor on a clean pipe using the cable tie.



Type 5257-5 and Type 5257-7

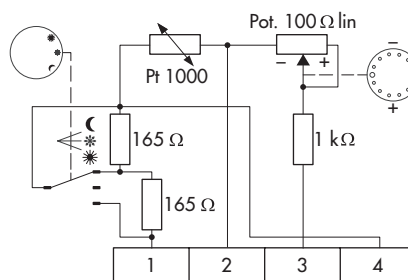
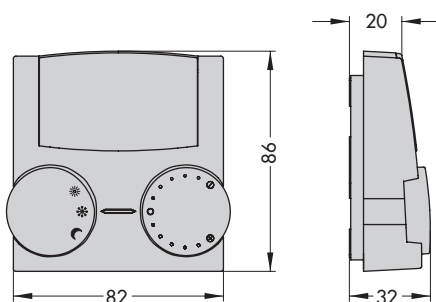
Remote control with room sensor for changing the room temperature set point, with heating program switch

Type 5257-5 Room Sensor



- ⌚ Continuous automatic operation
- ☾ Continuous night mode (reduced operation)
- ☼ Continuous day mode (rated operation)

Type 5257-7 Room Panel



- ☼ Continuous day mode (rated operation)
- ❄ Off/frost protection
- ☾ Continuous night mode (reduced operation)

Specifications subject to change without notice



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