



T 5220 EN

Types 5207 to 5277 Temperature Sensors with Pt1000 resistor



Application

- Measurement of temperatures in HVAC systems
- Versions with Pt1000 resistors; basic values according to Class B of DIN EN 60751

Table 1: Screw-in, duct, contact and outdoor sensors with Pt1000 resistors

Type	5207-21	5207-27	5207-26	5207-47	5207-46	5207-48	5217 ²⁾	5267-3	5227-4
Style									
Preferable scope of application	Flow or return pipes for DHW applications, heating systems						Supply air, mixed air, exhaust air (non-corrosive air and gases)	Flow or return flow pipes	Exterior walls of buildings
Screw-in sensor	✓	✓	✓	✓	✓	✓			
Duct sensor							✓		
Contact sensor								✓	
Outdoor sensor									✓
Number of resistors	1								
Pt1000 resistors	See Values for resistance thermometers on page 4.								
Sensor length in mm	80	160	250	160	250	400	60 to 280	-	
Sensor shaft G ½ made of ¹⁾	Brass			1.4571			Nickel-plated brass	-	
Pressure rating PN	16			40			-		
Permissible temperature range in °C									
Medium	-20 to +150			-60 to +400			-20 to +150	-50 to +120	-
Ambient	-20 to +70			-20 to +70			-20 to +70	-50 to +100	-50 to +90
Degree of protection acc. to EN 60529	IP54			IP54			IP41	IP65	IP43
Weight in kg	0.4	0.4	0.5	0.4	0.5	0.6	0.6	0.04	0.04
Conformity									

¹⁾ Flange connection with duct sensors instead of G ½

²⁾ Discontinued device

Room sensors and room panels

Measurement of room temperature in recreation rooms and offices



Type 5257-51

- Remote control of heating controllers
- Room sensor to measure the room temperature
- Changing the room temperature set point and mode switch

Type 5257-71

- Remote control of electric actuators with process controller
- Room sensor to measure the room temperature
- Changing the room temperature set point with mode switch

Table 2: Type 5257-x1 Room Sensors

Type	5257-51	5257-71 ¹⁾
Style		
Number of resistors	1	1
Set point correction and mode switch	✓	✓
Pt1000 resistors	See Values for resistance thermometers on page 4.	
Permissible temperature range in °C	-35 to +70	
Degree of protection acc. to EN 60529	IP30	
Weight in kg	0.07	
Conformity	CE	

¹⁾ See associated Data Sheet ► T 5220 for possible connections to SAMSON controllers

	Type 5257-51	Type 5257-71
Heating and District Heating Controllers (HVAC)		
TROVIS 5573	✓	
TROVIS 5573-1	✓	
TROVIS 5575 ¹⁾	✓	
TROVIS 5576 ¹⁾	✓	
TROVIS 5578 ¹⁾	✓	
TROVIS 5578-E	✓	
TROVIS 5579 ¹⁾	✓	
TROVIS 5430 ¹⁾	✓	
TROVIS 5431 ¹⁾	✓	
TROVIS 5432 ¹⁾	✓	
TROVIS 5433 ¹⁾	✓	
TROVIS 5475-2 ¹⁾	✓	
TROVIS 5476 ¹⁾	✓	
TROVIS 5479 ¹⁾	✓	
TROVIS 5571 (PLC) ¹⁾	✓	

	Type 5257-51	Type 5257-71
Electric actuators with process controllers		
TROVIS 5757-7 ¹⁾		✓
TROVIS 5725-7 ¹⁾		✓

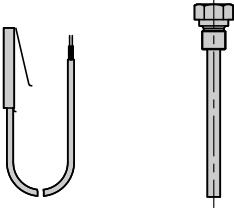
¹⁾ No longer available

Immersion sensors with thermowell

Measurement of water temperature in heating supply pipes and return pipes, in hot water heaters and thermal plants

Used with thermowell or as contact sensor (see Table 4 for accessories)

Table 3: Technical data · Type 5277-x1

Type	5277-21	5277-31	5277-51
Style			
Resistors	Pt1000		
Qty.	1		
Length [mm]			
Sensor	50		
Connecting cable	2000	3000	5000
Sensor shaft material	Brass, CrNiMo steel		
Pressure rating	PN 16 and 40		
Permissible temperature range	-50 to +180 °C		
Degree of protection acc. to EN 60529	IP67		
Weight in kg	0.065	0.101	0.165
Conformity	CE		
Data sheet	▶ T 5220		

i Note

It is not necessary to calibrate the line with temperature sensors with Pt1000 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.

Route the sensor lines and other supply voltage lines separately.

The Type 5267-3 Contact Sensor is suitable for pipes with up to 60 mm diameter. On assembly, the supplied heat-conducting paste must be applied between the sensor (copper protective tube) and the pipe.

The maximum permissible wire cross-section is 1.5 mm² for terminals for sensors (Types 5227-4, 5257-xx and 5267-3).

Values for resistance thermometers

Pt1000 sensors

Temperature in °C	-100	-90	-80	-70	-60	-50	-40	-35	-30	-25	-20
Resistance in Ω	602.6	643.0	683.3	723.3	763.3	803.1	842.7	862.5	882.2	901.9	921.6
Temperature in °C	-15	-10	-5	0	+5	+10	+15	+20	+25	+30	+35
Resistance in Ω	941.2	960.9	980.4	1000.0	1019.5	1039.0	1058.5	1077.9	1097.3	1116.7	1136.1
Temperature in °C	+40	+45	+50	+55	+60	+65	+70	+75	+80	+85	+90
Resistance in Ω	1155.4	1174.7	1194.0	1213.2	1232.4	1251.6	1270.8	1289.9	1309.0	1328.1	1347.1
Temperature in °C	+95	+100	+105	+110	+115	+120	+125	+130	+135	+140	+145
Resistance in Ω	1366.1	1385.1	1404.0	1422.9	1441.8	1460.7	1479.5	1498.3	1517.1	1535.8	1554.6
Temperature in °C	+150	+155	+160	+165	+170	+175	+180	+185	+190	+195	+200
Resistance in Ω	1573.3	1591.9	1610.5	1629.1	1647.7	1666.3	1684.8	1703.3	1721.7	1740.2	1758.6

Dimensions

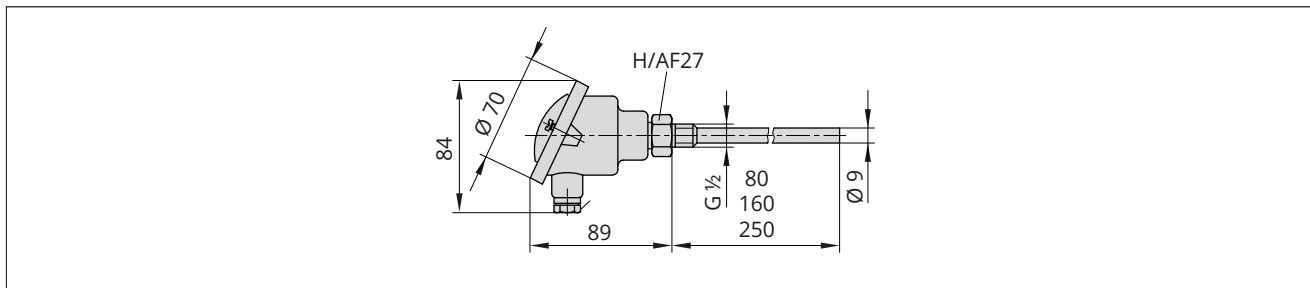


Fig. 1: Dimensions in mm · Type 5207-2x Screw-in Sensor

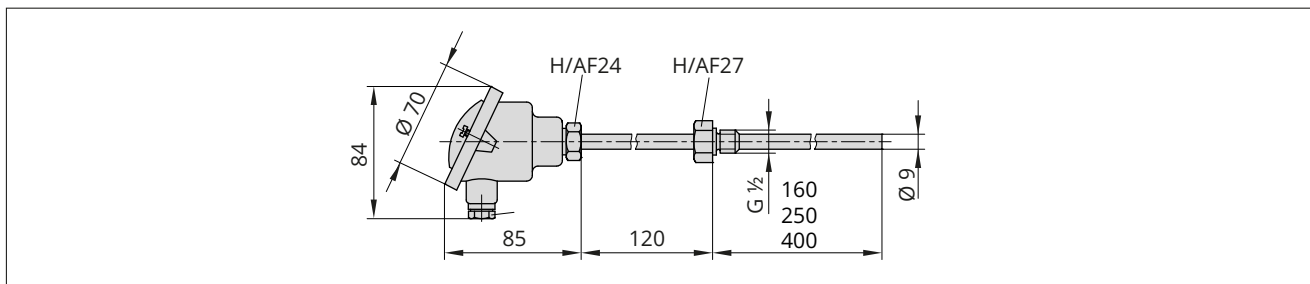


Fig. 2: Dimensions in mm · Type 5207-4x Screw-in Sensor

Sample application

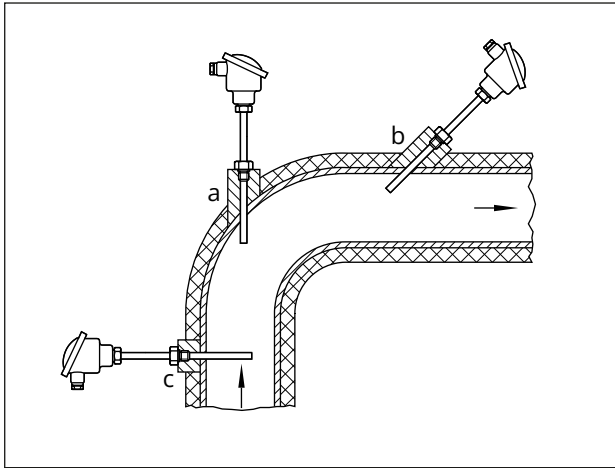


Fig. 3: Sample application for pipe installation

- a On elbow pieces, 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

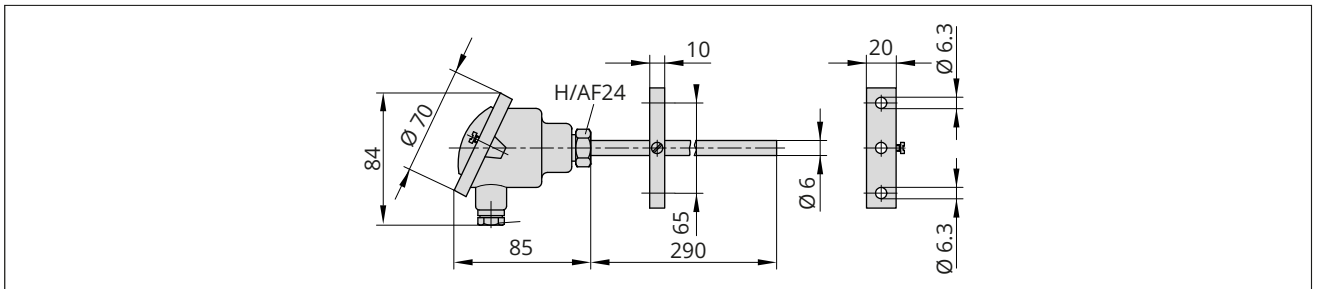


Fig. 4: Dimensions in mm · Type 5217 Duct Sensor

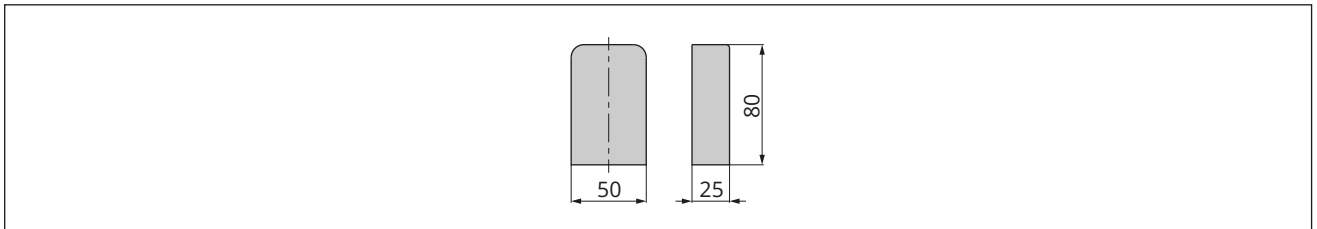


Fig. 5: Dimensions in mm · Type 5227-4 Outdoor Sensor

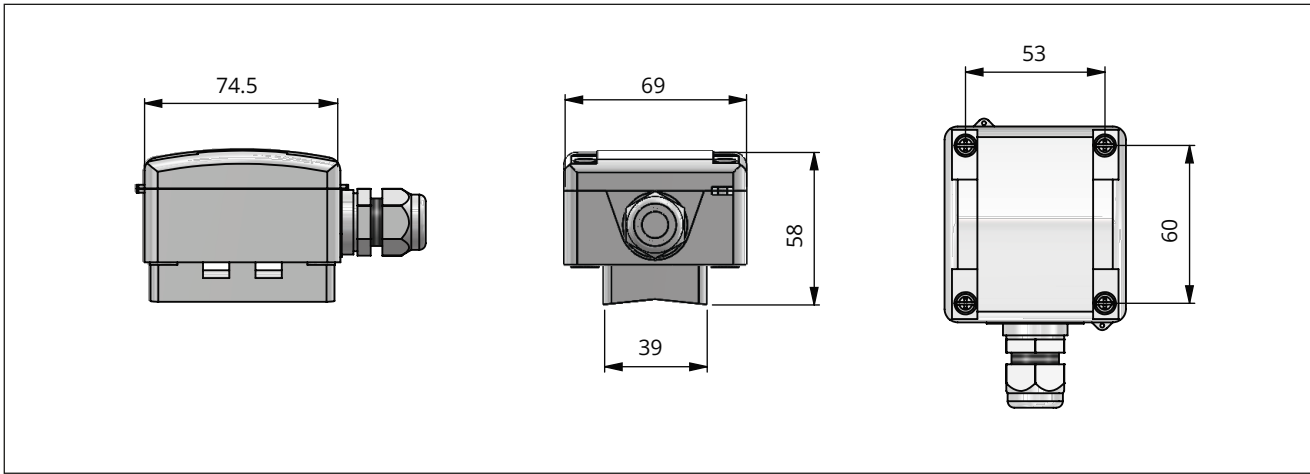


Fig. 6: Dimensions in mm · Type 5267-3 Contact Sensor

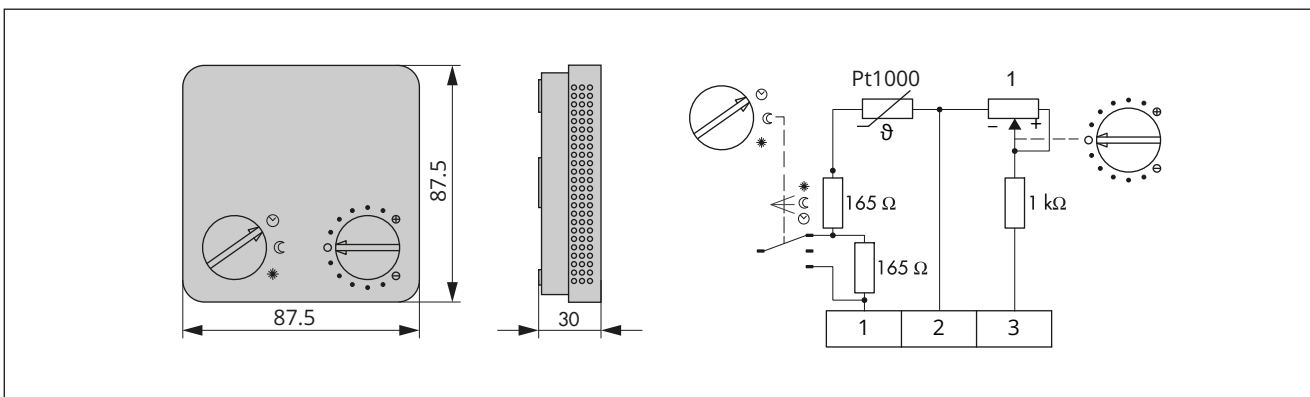


Fig. 7: Dimensions in mm/electrical connection · Type 5257-51 Room Panel

- 1 Potentiometer 100 Ω, linear
- ⊙ Automatic mode
- ☾ Night mode (reduced operation)
- * Day mode (rated operation)

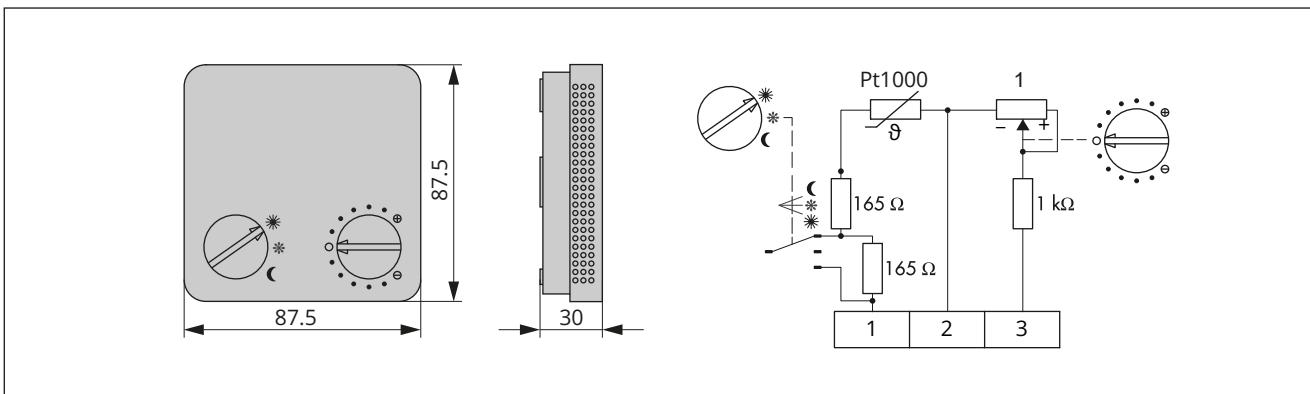


Fig. 8: Dimensions in mm/electrical connection · Type 5257-71 Room Panel

- 1 Potentiometer 100 Ω, linear
- * Day mode (rated operation)
- * OFF/frost protection
- ☾ Night mode (reduced operation)

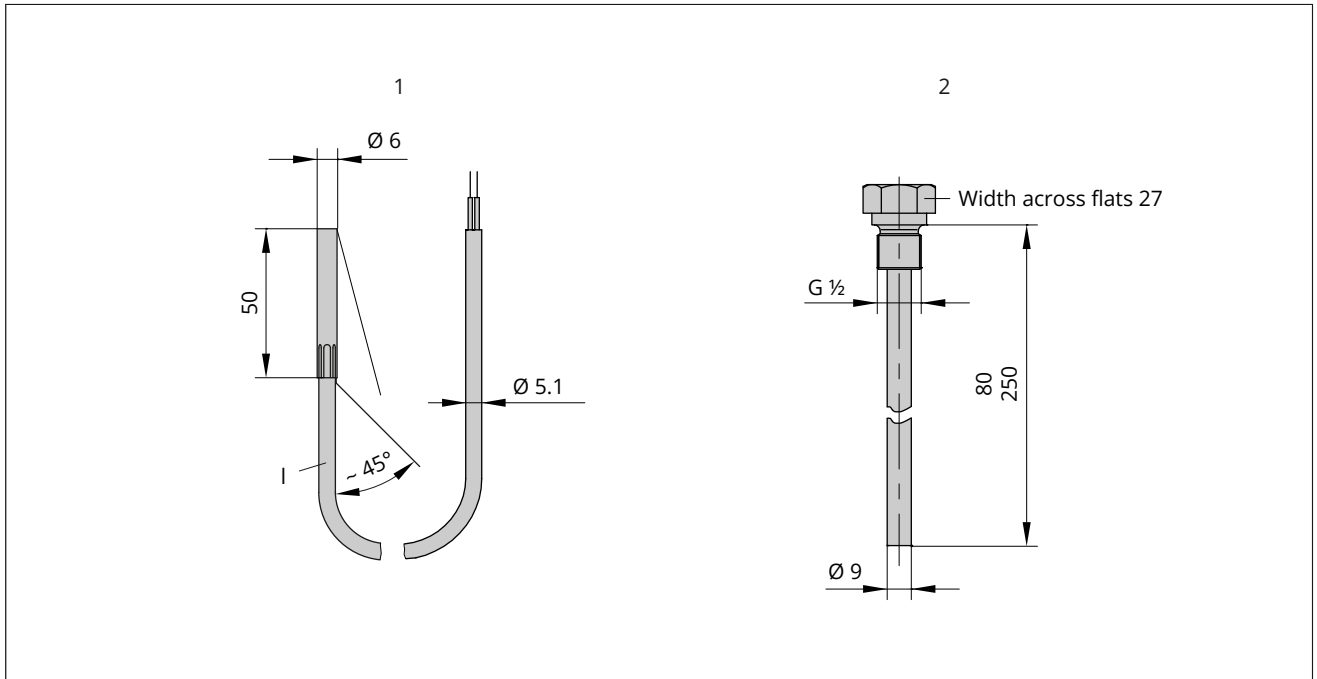


Fig. 9: Dimensions in mm · Immersion sensors

- 1 Types 5277-21/-31/-51
- 2 Thermowell
- l Length of silicone connecting cable
 - Type 5277-21: 2 m
 - Type 5277-31: 3 m
 - Type 5277-31: 5 m

Accessories

Table 4: Accessories for Types 5277-21/-31/-51

Brass thermowell, G ½, 80 mm immersion length, PN 16	Order no. 1099-0807
Brass thermowell, G ½, 160 mm immersion length, PN 16	Order no. 8525-5005
Stainless steel thermowell, G ½, 80 mm immersion length, PN 40	Order no. 1099-0805
Stainless steel thermowell, G ½, 160 mm immersion length, PN 40	Order no. 8525-5011
Stainless steel thermowell, G ½, 250 mm immersion length, PN 40	Order no. 1099-0806
Mounting kit for a Pt1000 immersion sensor as contact sensor	Order no. 100000722

Disposal

SAMSON is a producer registered in Europe, agency in charge

► www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance > Waste electrical and electronic equipment (WEEE)
WEEE reg. no.: DE 62194439



Information on substances listed as substances of very high concern (SVHC) on the candidate list of the REACH regulation can be found in the document "Additional Information on Your Inquiry/Order", which is added to the order documents, if applicable. This document includes the SCIP number assigned to the devices concerned. This number can be entered into the database on the European Chemicals Agency (ECHA) website (► <https://www.echa.europa.eu/scip-database>) to find out more information on the SVHC contained in the device.

i Note

SAMSON can provide you with a recycling passport on request. Simply e-mail us at aftersaleservice@samsongroup.com giving details of your company address.

💡 Tip

On request, SAMSON can appoint a service provider to dismantle and recycle the product as part of a distributor take-back scheme.

- ⇒ Observe local, national and international refuse regulations.
- ⇒ Do not dispose of components, lubricants and hazardous substances together with your other household waste.

Associated Information Sheet

- Sensors and thermostats ▶ T 5200

