

## Temperature sensors

### Pt 1000 ohm / 0°C

#### AKS 11, AKS 12, AKS 21, AK-HS 1000

##### Application

These sensors are recommended for accurate temperature measurement in applications such as superheating, food safety logs, and other important temperature measurement applications.

##### Functional description

The sensor unit consists of a platinum element the resistance value of which changes proportionally with the temperature. Pt 1000 ohm sensor (1000 ohm at 0°C).

The sensors are adjusted and meet the tolerance requirements of EN 60751 Class B.



Type	Description	Temperature range °C	Sensor/sensor body	Connection/cable	Enclosure	Time constant [s]	Cable length m	Qty	Code
AKS 11 *)	Surface and duct sensor for control and monitoring	-50 to +100	Top: PPO (Noryl) Bottom: stainless steel	PVC cable, 2 x 0.2 mm <sup>2</sup>	IP 67	3 <sup>1)</sup> 10 <sup>2)</sup> 35 <sup>3)</sup>	3.5 m	1	084N0003
							3.5 m + AMP	110	084N0050
							5.5 m	1	084N0005
							5.5 m + AMP	70	084N0051
							8.5 m	1	084N0008
							8.5 m + AMP	50	084N0052
AKS 12	Air temperature sensor for monitoring	-40 to 100	18/8 stainless steel	PVC cable 2 x 0.22 mm <sup>2</sup>	IP 67	15 <sup>2)</sup>	1.5 m	1	084N0036
								30	084N0035
							3.5 m	30	084N0039
							5.5 m	30	084N0038
	5.5 m + AMP	30	084N0037						
AKS 21A **)	Surface sensor with clip	-70 to +180	18/8 stainless steel	Fire-resistant silicone rubber cable, 2 x 0.2 mm <sup>2</sup>	IP 67	6 <sup>1)</sup> 14 <sup>2)</sup> 35 <sup>3)</sup>	2.5 m	1	084N2007
	Surface sensor with shielded cable and clip	-70 to +180					5.0 m	1	084N2008
AKS 21M	Multipurpose sensor	-70 to +180					2.0 m	1	084N2024
							2.5 m	1	084N2003
AKS 21W	Immersion sensor with cable and sensor pocket, welded version	-70 to +180	Immersion sensor, 18/8 stainless steel tube	Fire-resistant silicone rubber cable, 2 x 0.2 mm <sup>2</sup>	IP 56	18 <sup>1)</sup>	2.5 m	1	084N2017
			Weld nipple: free cutting steel						
			Thread nipple: free cutting steel						
AK-HS 1000	Product sensor for HACCP logging	-30 to +50	ABS and PC	PVC cable 2 x 0.25 mm <sup>2</sup>	IP 54	180-900 <sup>3)</sup>	5.5 m	1	084N1007

\*) Recommended for measuring superheat

\*\*) Recommended for hot gas systems

<sup>1)</sup> Agitated liquid.

<sup>2)</sup> Clamped to pipe.

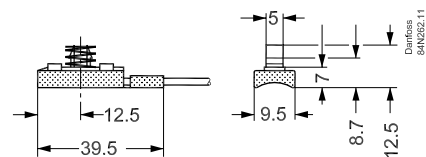
<sup>3)</sup> Air 4 m/s.

AKS 11, AKS 12, AKS 21, AK-HS 1000

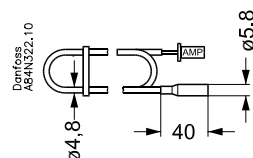
°C	ohm	°C	ohm
0	1000.0		1000.0
1	1003.9	-1	996.1
2	1007.8	-2	992.2
3	1011.7	-3	988.3
4	1015.6	-4	984.4
5	1019.5	-5	980.4
6	1023.4	-6	976.5
7	1027.3	-7	972.6
8	1031.2	-8	968.7
9	1035.1	-9	964.8
10	1039.0	-10	960.9
11	1042.9	-11	956.9
12	1046.8	-12	953.0
13	1050.7	-13	949.1
14	1054.6	-14	945.2
15	1058.5	-15	941.2
16	1062.4	-16	937.3
17	1066.3	-17	933.4
18	1070.2	-18	929.5
19	1074.0	-19	925.5
20	1077.9	-20	921.6
21	1081.8	-21	917.7
22	1085.7	-22	913.7
23	1089.6	-23	909.8
24	1093.5	-24	905.9
25	1097.3	-25	901.9
26	1101.2	-26	898.0
27	1105.1	-27	894.0
28	1109.0	-28	890.1
29	1112.8	-29	886.2
30	1116.7	-30	882.2
31	1120.6	-31	878.3
32	1124.5	-32	874.3
33	1128.3	-33	870.4
34	1132.2	-34	866.4
35	1136.1	-35	862.5
36	1139.9	-36	858.5
37	1143.8	-37	854.6
38	1147.7	-38	850.6
39	1151.5	-39	846.7
40	1155.4	-40	842.7
41	1159.3	-41	838.8
42	1163.1	-42	835.0
43	1167.0	-43	830.8
44	1170.8	-44	826.9
45	1174.7	-45	822.9
46	1178.5	-46	818.9
47	1182.4	-47	815.0
48	1186.3	-48	811.0
49	1190.1	-49	807.0
50	1194.0	-50	803.1

approx. 3.9 ohm/K

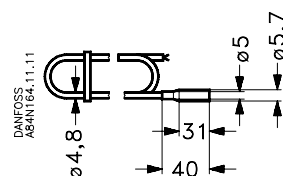
AKS 11



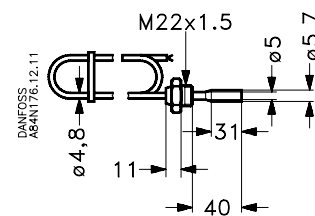
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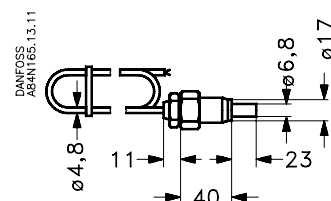
AKS 21A, AKS 21M



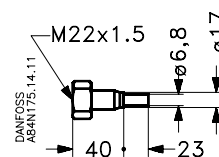
AKS 21W



AKS 21W welded version

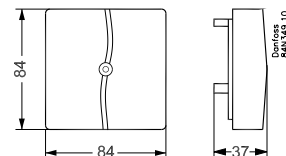


Pocket in welded version for AKS 21W



The tolerance of a Pt1000 sensor is less than  $\pm(0.3 + 0.005 T)$ . This translates into a temperature error of less than 0.5 degree for refrigeration control.

Product sensor for HACCP AK-HS 1000



Sensors with AMP plug:  
connector type AMP ital mod 2, housing 280 358,  
crimp contacts type 280 708-2