Honeywell

FEMA

ALF, TF, KF, and RF
High-Accuracy Immersion, Duct, Room, and Surface Temperature Sensors

ALF   KF

TF   RF

SPECIFICATIONS

Nominal value

PT100	100 Ω at 0 °C
PT1000	1000 Ω at 0 °C

Accuracy

PT-sensors	IEC751 Class A $\pm(0.15$ K $+0.2\% \bullet |t|)$ (t in °C)

Sensitivity

PT100	≈ 0.385 Ω / K
PT1000	≈ 3.85 Ω / K

Electrical Data

Measuring current	1mA
Insulation resistance	≥ 100 MΩ at 20°C (500 Vdc)
Circuit type	3-wire connection
Cable connection	via PG11 and screw terminals

Protection Class

Protection class	IP65

FEATURES

- Cost-effective universal temperature sensors.
- High accuracy due to Class A restrictions.
- High protection class (IP65).
- Duct and immersion sensors including immersion well and/or mounting flange.
- Easy installation.
- Universal solution for industry and HVAC.

GENERAL

The ALF, TF, KF, and RF temperature sensors are designed for universal use in machine construction, process control, HVAC, as well as for environmental and agricultural applications. Cost-effective and highly accurate sensor technology allows use in a wide field of applications where PT100 and PT1000 sensor technology is a standard.

MODELS

OS no.	description	sensor temp. range	sensor
ALF21	surface sensor	-30...+110 °C	PT100
ALF31	surface sensor	-30...+110 °C	PT1000
TF21	immersion sensor*	-30...+150 °C	PT100
TF31	immersion sensor*	-30...+150 °C	PT1000
KF21	air duct sensor*	-30...+150 °C	PT100
KF31	air duct sensor*	-30...+150 °C	PT1000
RF21	room sensor	-50...+80 °C	PT100
RF31	room sensor	-50...+80 °C	PT1000
*Temperature range of plastic housing: -35...+80 °C			

CE

ELECTRICAL CONNECTION

Wire the temperature sensor in accordance with the overall wiring circuit diagram. The terminals are insensitive to polarity; thus, even if the wires are connected in reverse, no malfunction will occur. In order to minimize the influence of EMC, keep wiring to the controller as short as possible. ALF, TF, KF, and RF sensor series are 3-wire types and thus compensate the influence of cable lengths. However, if the controller does not support 3-wire connection, they can also be used in a 2-wire manner (connect 1-3).
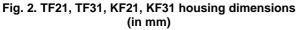
Fig. 1. 1 x 3-wire circuit

COMPATIBILITY

All PT1000 sensors can be used together with SmartTemp evaluation module TST...EPT1K.

All sensors can be used together with the APT600 and APT650 programmable temperature displays.
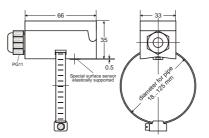
DIMENSIONS

Fig. 2. TF21, TF31, KF21, KF31 housing dimensions (in mm)

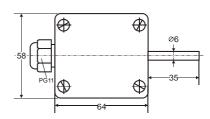**Fig. 3. ALF21, ALF31 dimensions (in mm)**
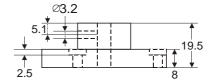
Fig. 4. RF21, RF31 dimensions (in mm)

ACCESSORIES

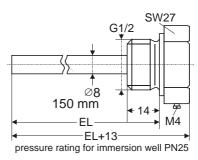**Fig. 5. KF21, KF31 mounting flange dimensions (in mm)**

Fig. 6. TF21, TF31 immersion well dimensions (in mm)

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Manufacturing location certified to **DIN EN ISO 9001/14001**