

# TEMPERATURE

## IMMERSION THERMISTOR AND RTD SENSORS KTW\* SERIES



### DESCRIPTION

The Kele KTW\* Immersion Thermistor and RTD Sensors are designed to be cost-effective with accuracies of  $\pm 0.5^{\circ}\text{F}$  ( $\pm 0.28^{\circ}\text{C}$ ). Each sensor is constructed for easy installation with any building automation system (BAS). The thermistor is made of a very stable, pre-aged material that offer long-life reliability for HVAC control. The platinum RTD comes in 100 $\Omega$  and 1000 $\Omega$  versions. All sensors come with a three-year warranty.

### FEATURES

- Economical
- Metal enclosures with stainless steel probes
- Three-year warranty
- $\pm 0.5^{\circ}\text{F}$  ( $\pm 0.28^{\circ}\text{C}$ ) accuracy
- Wide selection of thermistor or RTD sensors

### APPLICATION

The KTW Series Sensors are waterproof and feature a 304 stainless steel probe and brass fitting. The fitting has 1/2" NPSM female threads to accept the standard Greenfield fitting. It also has 1/8" NPSM male threads for installing into an optional Model WEL-B thermowell. The thermowells are designed with close tolerances, eliminating the need for thermal grease under normal conditions. Each well is designed so that the sensor assembly can be easily removed after installation. The well screws into a 1/2" FNPT saddle (or Thredolet<sup>®</sup> fitting) furnished by the installing contractor.



### OPTIONS

- 304 stainless steel well, maximum temperature 900°F (482°C), maximum pressure 3000 psig (20,685 kPa)
- Handy-box enclosure
- Custom lengths (wells available)
- 1/2" LB conduit fitting
- Liquid-tight fitting
- Weather resistant box
- Matched pairs used for BTU measurement
- NIST Traceable

### SPECIFICATIONS

<b>Accuracy</b>		<b>Temperature Coefficient</b>	
Thermistor	$\pm 0.50^{\circ}\text{F}$ (0.28°C)	Thermistor	Negative temperature coefficient
RTD	$\pm 0.60^{\circ}\text{F}$ (0.33°C)	RTD	Positive temperature coefficient
<b>Sensor Type</b>		<b>Enclosure Rating</b>	depends on model
Thermistor	2.252 k $\Omega$ , 3 k $\Omega$ , 10 k $\Omega$ Type II, III & III w/11K shunt, 20 k $\Omega$ , 100 k $\Omega$	<b>Mounting</b>	1/2" conduit fitting directly to duct or wall
<b>RTD</b>		<b>Wiring Terminations</b>	8', 24 AWG gray wire leads, type 71 & 81 sensors have 18" leads
Type 81	100 $\Omega$ Pt 385 Curve	<b>Probe</b>	Seamless 304 stainless steel tube, 1/4" OD
Type 85	1000 $\Omega$ Pt 385 Curve	<b>Weight</b>	
Type 91	1000 $\Omega$ Pt 375 Curve	KTWNB	0.65 lb (0.30 Kg) standard w/o options
<b>Temperature Range</b>		KTW	1.1 lb (0.5 Kg) w/o options
Thermistor/RTD	-40° to 221°F (-40° to 105°C)	<b>Approvals</b>	CE
<b>Temperature Stability</b>		<b>Warranty</b>	3 years
Thermistor	0.24°F (0.13°C) over five years		
RTD	Max 0.04% after 1k hours @ 500 °C		
<b>Heat Dissipation</b>	2.7 mW/°C (power needed to raise the temperature 1°C)		



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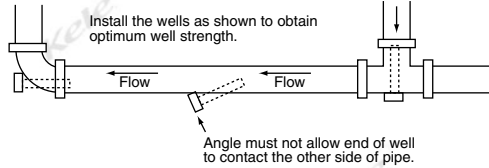
#### MOUNTING

##### Mounting

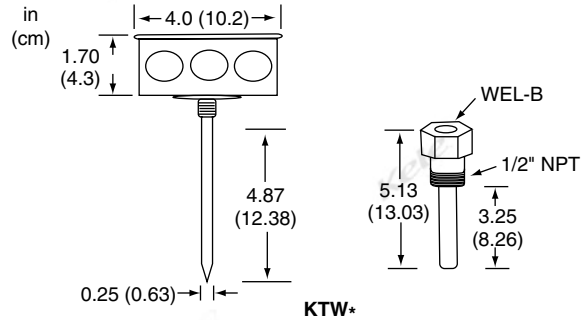
Install well into customer-supplied 1/2" FNPT saddle (or Thredolet®). Screw sensor into the well via the 1/8" NPSM brass fitting.

##### Wiring

Terminate with butt splice or soldering. Twist on wire connectors are not recommended. Basic model comes with 8' (2.4 m) of 24 AWG wire.



#### DIMENSIONS



#### ORDERING INFORMATION

MODEL	DESCRIPTION
KTW	Well immersion temperature sensor
KTWNB	Well immersion temperature sensor with no box
<b>SENSOR SELECTION</b>	
3	10,000Ω thermistor @ 77°F (25°C), Type III, (gray leads)
11K	10,000Ω thermistor @ 77°F (25°C), Type III with 11K shunt, (gray leads)
21	2252Ω thermistor @ 77°F (25°C), Type II, (gray leads)
22	3000Ω thermistor @ 77°F (25°C), Type II, (gray leads)
24	10,000Ω thermistor @ 77°F (25°C), Type II, (gray leads)
27	100,000Ω thermistor @ 77°F (25°C), Type II, (gray leads)
42	20,000Ω thermistor @ 77°F (25°C), Type IV, (gray leads)
71	100 ultra high accurat RTD @ 32°F (0°C), 385 platinum curve (gray leads)
81	100Ω RTD @ 32°F (0°C), 385 platinum curve (gray leads)
85	1000Ω RTD @ 32°F (0°C), 385 platinum curve (gray leads)
91	1000Ω RTD @ 32°F (0°C), 375 platinum curve (gray leads)
<b>OPTIONS</b>	
B	WEL-B brass well included
QD1/4	Nylon insulated quick disconnect 1/4"
S	WEL-S 304 stainless steel well included
X25	25' (7.6m) lead length 24 AWG
XC25	25' (7.6m) lead length jacketed cable
XCO	1/2" LB conduit fitting
XCP25	25' non-shielded plenum cable
XD	Dual sensors in one probe
XHP	Non-metallic handy box housing ( factory installed)
XL	Custom length insertion probes 1" to 60"
XL2 in	Custom length insertion probe, 2"(5.08 cm)
XL9	Custom length insertion probe, 9"(22.86 cm)
XLT	Liquid-tight fitting (factory installed)
XN	Certificate of conformance
XN1	NIST certificate, one reference point 32°F(0°C)
XN2	NIST certificate, two reference points 32°F/158°F(0°C/70°C)
XN3	NIST certificate, three reference points 32°F/77°F/158°F(0°C/25°C/70°C)
XNB	1/2" MNPT brass close nipple (not available with KTW)
XNG	No Greenfield fitting(1/2" NPSM threads) (not available with KTW)
XP	Matched sensor pair, matched to ±0.1°F, 0.05°C (must order two sensors)
XPA	Ultra high accuracy, all thermistors, ±0.135°F (0.075°C)
XW	Weather resistant housing (not available with KTWNB)
XZ	Three wire RTD connections(Type 81 only) (Not with XC25, XCP25)

KTW

3

B

Example: KTW3-B Immersion sensor with 10,000Ω thermistor and brass well

#### RELATED PRODUCTS

T81U-XR  
T91U-XR  
TCC-111  
TCC-12  
UR  
WEL-B  
WEL-S

100 ohm, Type 81 4-20 mA temperature transmitter, custom rangeable  
1000 ohm, Type 91 4-20 mA temperature transmitter, custom rangeable  
Thermal conductive compound 111 ml tub  
Thermal conductive compound tube, 12 ml  
Moisture-resistant three-wire butt splice  
Brass well  
304 stainless steel well