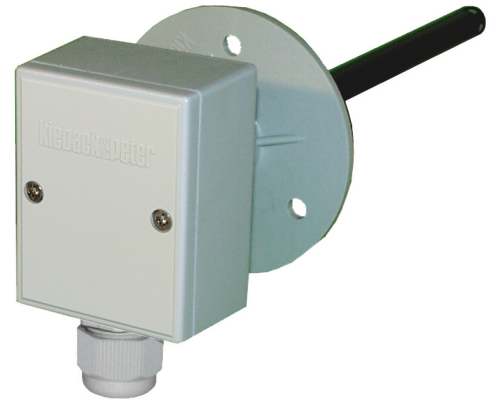


## TLD1, TLD2, TLD3 and TLD4 Duct Temperature Sensors

### Application

TLDx duct temperature sensors are used as controlled variable sensors for duct installation in all outside-temperature controlled or fixed-value controlled ventilation and air conditioning systems. They can also be used for closed-loop room temperature control in industrial spaces and workshops.

The duct temperature sensors are used in conjunction with all loop controllers and control systems that have a sensor connection for the KP10 measuring element.



Content	Page
Important Information Regarding Product Safety .....	2
Item .....	3
Technical Data .....	3
Accessories (not included in delivery) .....	3
Dimensions .....	3
Connection .....	4
Mounting .....	4
Installation .....	5
Temperature/voltage table for measuring element KP10, temperature range -40 °C..120 °C .....	6

Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifiche - Innehåll som skall ändras - Změny vyhrazeny - Zmiany zastrzeżone - Возможны изменения - A változtatások jogát fenntartjuk - 保留未经通知而改动的权力

## Important Information Regarding Product Safety

### Safety Instructions

This data sheet contains information on installing and commissioning the product "TLD1, TLD2, TLD3, TLD4". Each person who carries out work on this product must have read and understood this data sheet. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, the protection provided will be impaired.

Applicable regulations must be observed when installing and using the device. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (Association for Electrical, Electronic & Information Technologies). If the device is used in other countries, it is the responsibility of the system installer or operator to comply with local regulations.

Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers due to technical training, knowledge and experience as well as knowledge of the appropriate regulations.

### Legend



#### WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.



#### CAUTION

Indicates a hazard of low risk which can result in minor or medium bodily injury if it is not avoided.



#### NOTICE

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.



#### NOTE

Indicates additional information that can simplify the work with the product for you.

### Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

**Product Description****TLD1, TLD2, TLD3, TLD4****Item**

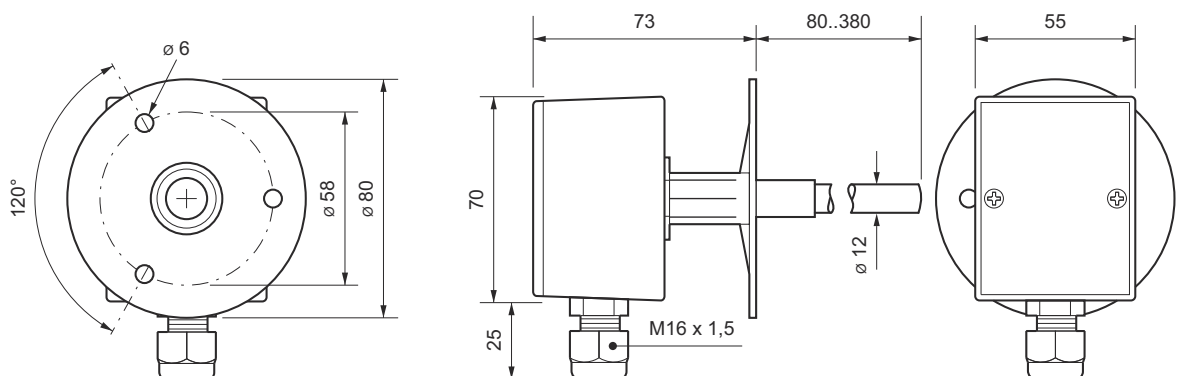
TLD1	Duct temperature sensor with KP10 measuring system, thermowell for measuring element is 100 mm long, duct installation depth is 80 mm
TLD2	Duct temperature sensor with KP10 measuring system, thermowell for measuring element is 200 mm long, duct installation depth is 180 mm
TLD3	Duct temperature sensor with KP10 measuring system, thermowell for measuring element is 300 mm long, duct installation depth is 280 mm
TLD4	Duct temperature sensor with KP10 measuring system, thermowell for measuring element is 400 mm long, duct installation depth is 380 mm

**Technical Data**

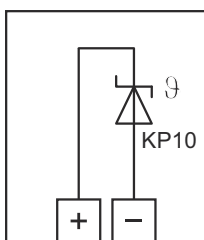
Function	Temperature voltage transmitter
Measured quantity	Temperature
Measuring element	Active measuring element KP10 Output: 2.731 V at 0 °C, TC = 10 mV/K
Measuring tolerance	Typically $\pm 0.2\text{K}$
Time constant	T = 35 s at 2 m/s air velocity
Measuring range	Minimum temperature = -40 °C/Maximum temperature = +120 °C
Ambient temp. Sensor	-40 °C..+120 °C
Ambient temperature	-40 °C..+80 °C
Ambient humidity	0 % to 95 % relative humidity, not permanently condensing
Connection	Screw terminals, max. 1.5 mm <sup>2</sup>
Connection housing	Light gray plastic housing, cable entry M16 x 1.5
Degree of protection	IP65

**Accessories (not included in delivery)**

B3	Socket flange for variable installation depth
Z21	Wall bracket for temperature sensor

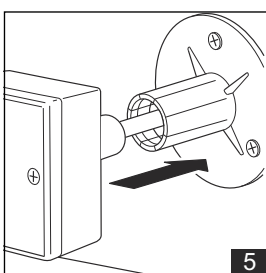
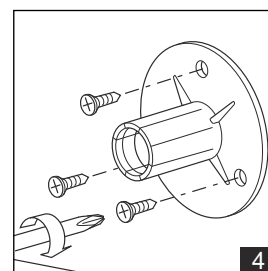
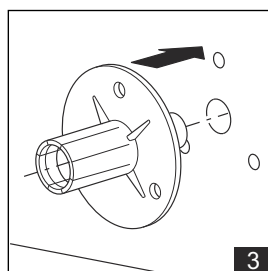
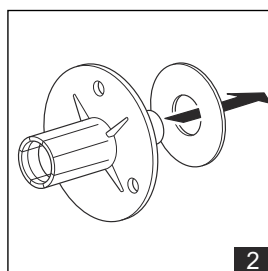
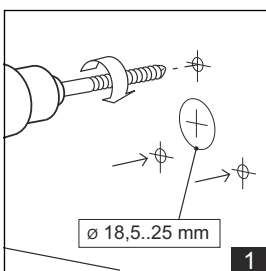
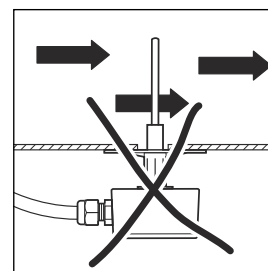
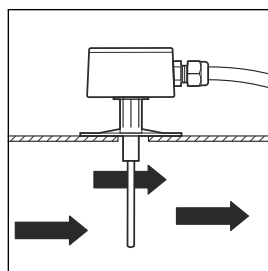
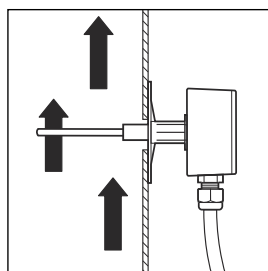
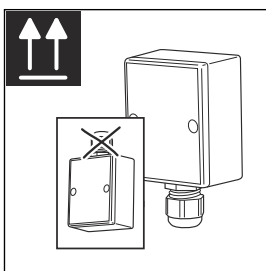
**Dimensions**

**Connection**



**Mounting**

Comply with the specified mounting position.



- ▶ Screw the socket flange (with gasket) tightly onto the ventilation duct.
- ▶ Insert the duct temperature sensor into the socket flange until it locks into place.
- ▶ Be sure to leave enough space to connect the device.

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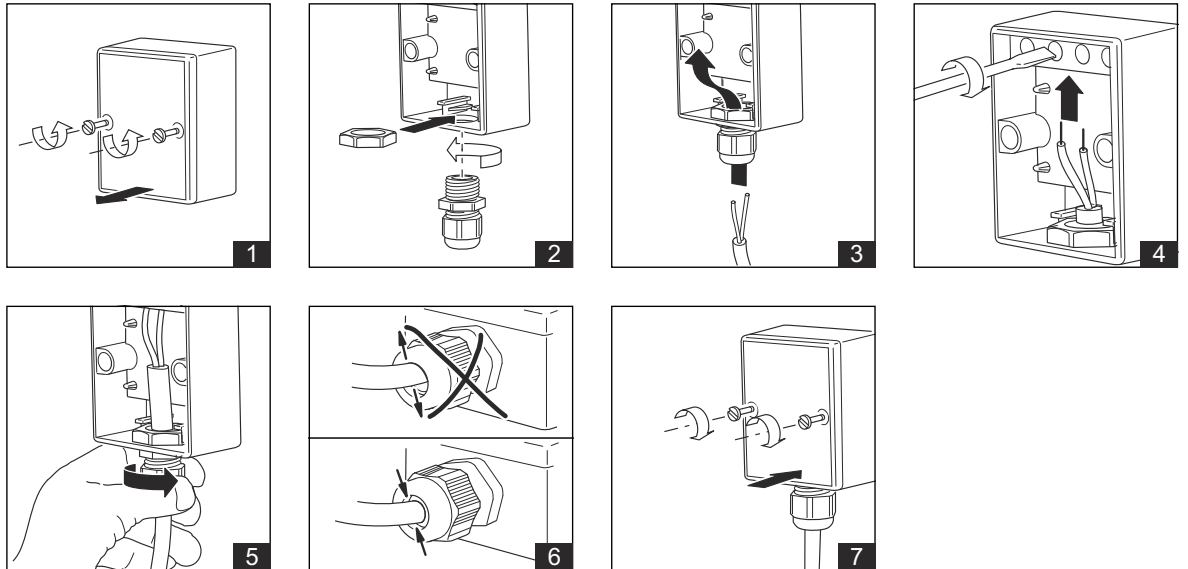
**Installation**

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**CAUTION**

Electrical installation for connecting the device may only be carried out by qualified technicians. Ensure that this process complies with guidelines from the VDE (Association for Electrical, Electronic & Information Technologies) and local wiring regulations.

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Temperature/voltage table for measuring element KP10, temperature range -40 °C..120 °C

T (°C)	U (V DC)	T (°C)	U (V DC)	T (°C)	U (V DC)	T (°C)	U (V DC)	T (°C)	U (V DC)
<b>-40</b>	<b>2,33</b>	<b>-5</b>	<b>2,68</b>	<b>30</b>	<b>3,03</b>	<b>65</b>	<b>3,38</b>	<b>100</b>	<b>3,73</b>
-39	2,34	-4	2,69	31	3,04	66	3,39	101	3,74
-38	2,35	-3	2,70	32	3,05	67	3,40	102	3,75
-37	2,36	-2	2,71	33	3,06	68	3,41	103	3,76
-36	2,37	-1	2,72	34	3,07	69	3,42	104	3,77
<b>-35</b>	<b>2,38</b>	<b>0</b>	<b>2,73</b>	<b>35</b>	<b>3,08</b>	<b>70</b>	<b>3,43</b>	<b>105</b>	<b>3,78</b>
-34	2,39	1	2,74	36	3,09	71	3,44	106	3,79
-33	2,40	2	2,75	37	3,10	72	3,45	107	3,80
-32	2,41	3	2,76	38	3,11	73	3,46	108	3,81
-31	2,42	4	2,77	39	3,12	74	3,47	109	3,82
<b>-30</b>	<b>2,43</b>	<b>5</b>	<b>2,78</b>	<b>40</b>	<b>3,13</b>	<b>75</b>	<b>3,48</b>	<b>110</b>	<b>3,83</b>
-29	2,44	6	2,79	41	3,14	76	3,49	111	3,84
-28	2,45	7	2,80	42	3,15	77	3,50	112	3,85
-27	2,46	8	2,81	43	3,16	78	3,51	113	3,86
-26	2,47	9	2,82	44	3,17	79	3,52	114	3,87
<b>-25</b>	<b>2,48</b>	<b>10</b>	<b>2,83</b>	<b>45</b>	<b>3,18</b>	<b>80</b>	<b>3,53</b>	<b>115</b>	<b>3,88</b>
-24	2,49	11	2,84	46	3,19	81	3,54	116	3,89
-23	2,50	12	2,85	47	3,20	82	3,55	117	3,90
-22	2,51	13	2,86	48	3,21	83	3,56	118	3,91
-21	2,52	14	2,87	49	3,22	84	3,57	119	3,92
<b>-20</b>	<b>2,53</b>	<b>15</b>	<b>2,88</b>	<b>50</b>	<b>3,23</b>	<b>85</b>	<b>3,58</b>	<b>120</b>	<b>3,93</b>
-19	2,54	16	2,89	51	3,24	86	3,59		
-18	2,55	17	2,90	52	3,25	87	3,60		
-17	2,56	18	2,91	53	3,26	88	3,61		
-16	2,57	19	2,92	54	3,27	89	3,62		
<b>-15</b>	<b>2,58</b>	<b>20</b>	<b>2,93</b>	<b>55</b>	<b>3,28</b>	<b>90</b>	<b>3,63</b>		
-14	2,59	21	2,94	56	3,29	91	3,64		
-13	2,60	22	2,95	57	3,30	92	3,65		
-12	2,61	23	2,96	58	3,31	93	3,66		
-11	2,62	24	2,97	59	3,32	94	3,67		
<b>-10</b>	<b>2,63</b>	<b>25</b>	<b>2,98</b>	<b>60</b>	<b>3,33</b>	<b>95</b>	<b>3,68</b>		
-9	2,64	26	2,99	61	3,34	96	3,69		
-8	2,65	27	3,00	62	3,35	97	3,70		
-7	2,66	28	3,01	63	3,36	98	3,71		
-6	2,67	29	3,02	64	3,37	99	3,72		
<b>-5</b>	<b>2,68</b>	<b>30</b>	<b>3,03</b>	<b>65</b>	<b>3,38</b>	<b>100</b>	<b>3,73</b>		