

# Universal capillary thermostat RTKSA

Capillary system – TÜV-tested



## Technical data

<b>Colour:</b>	Anthracite grey (similar to RAL 7016), front side transparent
<b>Sensor material:</b>	Cu
<b>Sensor length:</b>	2 m
<b>Max. sensor temperature</b>	Top scale value +15%
<b>Max. head temperature:</b>	80 °C
<b>Permissible atmospheric humidity:</b>	Max. 95% rel. humidity, non-condensing
<b>Operating voltage:</b>	none
<b>Max. switching current:</b>	<b>NC contact:</b> 16 (2.5) A at 230 VAC +10% 0.25 A at 230 VDC +10% <b>NO contact TR/TW/STW:</b> 6.3 (2.5) A at 230 VAC +10% 0.25 A at 230 VDC +10% <b>NO contact TB:</b> 2.0 (0.4) A at 230 VAC +10% 0.25 A at 230 VDC +10%
<b>Min. switching current:</b>	Min. 100 mA at 24 V (AC/DC)
<b>Max. switching voltage:</b>	230 VAC 50/60 Hz, 230 VDC
<b>Min. switching voltage:</b>	24 VAC/50 Hz, 24 VDC
<b>Switching element:</b>	microswitch
<b>Switching contact:</b>	toggler, potential-free
<b>Control range:</b>	heating or cooling
<b>Electrical connection:</b>	Push-in terminals
<b>Mounting/attachment:</b>	Wall mounting or with optional process connection (immersion sleeve, protection coil or mounting set JZ-31 for pipe mounting)
<b>Protection class:</b>	I
<b>Protection rating:</b>	RTKSA-xxx.x0x IP 40, RTKSA-xxx.x1x IP 54, optional IP 65
<b>Safety and EMC:</b>	In accordance with DIN EN 60730 (VDE 0631)
<b>Sensor:</b>	liquid-filled capillary
<b>General features:</b>	Scale: degrees Celsius

## Application

This series of devices was specially developed for use in heating technology; in boiler systems or storage tanks; district heating transfer stations and heat transfer systems; in ventilation technology to monitor supply air or as limiters for electrical heating coils, as well as for controlling and monitoring temperatures in pipelines and tanks.

Immersion sleeves, protection coils and mounting sets are not included in the scope of delivery. The JZ-29 mounting set must be used in conjunction with immersion sleeves or protection coils. When used as contact controller (pipe mounting), mounting set JZ-31 must be used.

**Type testing by TÜV in accordance with DIN EN 14597**



Type	Item no.	Control range	Hysteresis	Sensor Ø x L	Features	PG
RTKSA-000.100	KA000000	0... 50 °C	1.3 K	6 x 175 mm	TR, external setting	II
RTKSA-000.200	KA000001	0... 120 °C	3 K	6 x 87 mm	TR, external setting	II
RTKSA-000.300	KA000002	20... 150 °C	9.1 K	6 x 56 mm	TR, external setting	II
RTKSA-001.100	KA000100	0... 50 °C	1.3 K	6 x 175 mm	TW, internal setting	II
RTKSA-001.200	KA000101	0... 120 °C	3 K	6 x 87 mm	TW, internal setting	II
RTKSA-001.300	KA000102	20... 150 °C	9.1 K	6 x 56 mm	TW, internal setting	II
RTKSA-001.301	KA000103	20... 150 °C	3.3 K	6 x 82 mm	TW, internal setting	II
RTKSA-002.310	KA000201	20... 150 °C	-10... -15 K*	6 x 55 mm	TB, internal setting, external reset	II
RTKSA-002.410	KA000200	30... 110 °C	-10... -15 K*	6 x 72 mm	TB, internal setting, external reset	II
RTKSA-003.310	KA000300	20... 150 °C	-10... -15 K*	6 x 55 mm	STB, internal setting, external reset	II
RTKSA-004.310	KA000400	20... 150 °C	-10 K	6 x 55 mm	STW, internal setting	II

TR = temperature controller, TW = temperature monitor, TB = temperature limiter, STB = safety temperature limiter, STW = safety temperature monitor  
\* Manual reset after cooling down by 10–15 K (depending on configured setpoint)

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Accessories	Item no.	Length of	Material	Diameter IxA**	Features	PG
<b>THK-2-100</b>	KA969901	100 mm	nickel-plated brass	7.5 x 10 mm	Immersion sleeve	II
<b>THK-2-120</b>	KA969902	120 mm	nickel-plated brass	7.5 x 10 mm	Immersion sleeve	II
<b>THK-2-200</b>	KA969903	200 mm	nickel-plated brass	7.5 x 10 mm	Immersion sleeve	II
<b>THK-2-280</b>	KA969904	280 mm	nickel-plated brass	7.5 x 10 mm	Immersion sleeve	II
<b>THK-2-600</b>	KA969905	600 mm	nickel-plated brass	7.5 x 10 mm	Immersion sleeve	II
<b>NTHK-2-100</b>	KA969906	100 mm	V4A (1.4571)	7.5 x 10 mm	Immersion sleeve	II
<b>NTHK-2-120</b>	KA969907	120 mm	V4A (1.4571)	7.5 x 10 mm	Immersion sleeve	II
<b>NTHK-2-200</b>	KA969908	200 mm	V4A (1.4571)	7.5 x 10 mm	Immersion sleeve	II
<b>NTHK-2-280</b>	KA969909	280 mm	V4A (1.4571)	7.5 x 10 mm	Immersion sleeve	II
<b>THK-2-100 x 17</b>	KA979901	100 mm	nickel-plated brass	14.8 x 17 mm	Immersion sleeve	II
<b>THK-2-200 x 17</b>	KA979902	200 mm	nickel-plated brass	14.8 x 17 mm	Immersion sleeve	II
<b>NTHK-2-100 x 17</b>	KA979903	100 mm	V4 A (1.4571)	14.8 x 17 mm	Immersion sleeve	II
<b>NTHK-2-200 x 17</b>	KA979904	200 mm	V4 A (1.4571)	14.8 x 17 mm	Immersion sleeve	II
<b>SWK-2-100</b>	KA989901	100 mm	steel, nickel-plated	10.5 x 17 mm	Protection coil with flange plate	II
<b>SWK-2-120</b>	KA989902	120 mm	steel, nickel-plated	10.5 x 17 mm	Protection coil with flange plate	II
<b>SWK-2-200</b>	KA989903	200 mm	steel, nickel-plated	10.5 x 17 mm	Protection coil with flange plate	II
<b>SWK-2-280</b>	KA989904	280 mm	steel, nickel-plated	10.5 x 17 mm	Protection coil with flange plate	II

\*\* I = minimum inner diameter / A = nominal outer diameter

See page 218–219 for pictures and dimension diagrams for immersion sleeves/protection coils

Accessories	Item no.	Features	PG
<b>JZ-29</b>	KA999901	Mounting set RTKSA for THK/NTHK/SWK individual controllers	II
<b>JZ-31</b>	KA999903	Mounting set RTKSA for pipe mounting contact controller (worm screw clamp)	II
<b>JZ-33</b>	KA999904	Seal Set for RTKSA (for doublethermostats, 2 pieces necessary), Protection rating: IP 54	II

## Type comparison (old/new type)

Old alre types	Control range	Hysteresis	New alre types	Control range	Hysteresis	Accessories
<b>KR 80.312</b>	fixed at 100 °C	-20 K	<b>RTKSA-003.310</b>	20... 150 °C	-10 K	THK-2-100 + JZ-29
<b>LR 80.312</b>	fixed at 100 °C	-20 K				SWK-2-100 + JZ-29
<b>KR 80.318</b>	fixed at 100 °C	-20 K				THK-2-200 + JZ-29
<b>LR 80.318</b>	fixed at 100 °C	-20 K				SWK-2-200 + JZ-29
<b>KR 80.309</b>	fixed at 75 °C	-20 K				THK-2-100 + JZ-29
<b>LR 80.309</b>	fixed at 75 °C	-20 K				SWK-2-100 + JZ-29
<b>KR 80.310</b>	fixed at 75 °C	-20 K				THK-2-200 + JZ-29
<b>LR 80.310</b>	fixed at 75 °C	-20 K				SWK-2-200 + JZ-29
<b>KR 80.206</b>	30... 65 °C	-8 K	<b>RTKSA-002.410</b>	30... 110 °C	-10 K	THK-2-100 + JZ-29
<b>KR 80.206 IP 54</b>	30... 65 °C	-8 K				THK-2-100 + JZ-29
<b>KR 80.207</b>	60... 95 °C	-8 K				THK-2-100 + JZ-29
<b>LR 80.207</b>	60... 95 °C	-8 K				SWK-2-100 + JZ-29
<b>KR 80.208</b>	85... 120 °C	-8 K	<b>RTKSA-002.310</b>	20... 150 °C	-10 K	THK-2-100 + JZ-29
<b>KR 80.202</b>	95... 130 °C	-8 K				THK-2-100 + JZ-29
<b>KR 80.203</b>	95... 130 °C	-8 K				THK-2-200 + JZ-29
<b>LR 80.203</b>	95... 130 °C	-8 K				SWK-2-200 + JZ-29
<b>KR 80.203 IP 54</b>	95... 130 °C	-8 K				THK-2-200 + JZ-29
<b>WR 81.029-1</b>	0... 35 °C	0.5... 1 K	<b>RTKSA-000.100</b>	0... 50 °C	1.3 K	-
<b>KR 80.003-1</b>	0... 35 °C	1 K				THK-2-200 + JZ-29
<b>LR 80.003-1</b>	0... 35 °C	1 K				SWK-2-200
<b>WR 81.009-2</b>	0... 70 °C	1... 2 K	<b>RTKSA-000.200</b>	0... 120 °C	3 K	-
<b>KR 80.035-2</b>	0... 70 °C	2 K				THK-2-100 + JZ-29
<b>KR 80.027-5</b>	0... 70 °C	5 K				THK-2-100 + JZ-29
<b>LR 80.027-5</b>	0... 70 °C	5 K				SWK-2-100 + JZ-29
<b>LR 80.035-2</b>	0... 70 °C	2 K				SWK-2-100 + JZ-29
<b>KR 80.028-2</b>	0... 70 °C	2 K				THK-2-200 + JZ-29
<b>LR 80.028-2</b>	0... 70 °C	2 K				SWK-2-200 + JZ-29
<b>KR 80.029-2</b>	0... 70 °C	2 K				THK-2-280 + JZ-29
<b>KR 80.029-2 V4A</b>	0... 70 °C	3 K				NTHK-2-280 + JZ-29
<b>LR 80.029-2</b>	0... 70 °C	2 K				SWK-2-280 + JZ-29