



JUMO frostTHERM-AT/-DR

Surface-mounted or DIN rail thermostat

Description

The frost protection thermostat is used for temperature monitoring in ventilation and air conditioning systems to prevent damage caused by frost. It has a low switching differential and a high reproducibility. Reset occurs automatically (STW) or manually (STB).

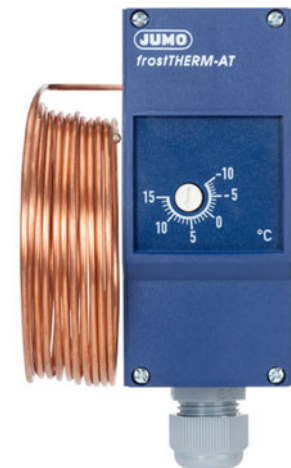
High application flexibility and the latest connection technology are the essential equipment features of this thermostat series. The thermostat case is suitable for all common installation types such as wall, pipe, and DIN rail mounting. The JUMO frostTHERM-DR type is a specific variation with a special case bottom section for DIN rail or wall mounting. This allows easy mounting on mounting rails TH35 according to DIN EN 60715 (e.g. in control cabinets). This version considerably reduces the mounting time.

The PUSH IN terminal technology allows the connection wires to be only inserted into the contact point up to the stop. No tool is required for connecting the wire or braid with the ferrule, thereby increasing safety during wiring. As a result, the costs and time required for connection is considerably reduced compared that of the conventional screw terminal.

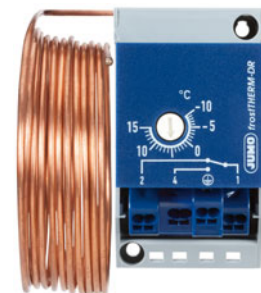
The PUSH IN terminal technology allows direct switching of loads up to 16 A at AC 230 V. The installation costs can be reduced further because a contactor is not required.

Special features

- Reduced installation time by 50 % with PUSH IN connection technology
- Maximum switching capacity 16 A, 230 V
- Protection type
frostTHERM-AT: IP40
frostTHERM-DR: IP20



Type 604100/20-5
frostTHERM-AT (STW)



Type 604100/20-7
frostTHERM-DR (STW)

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO UK LTD
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: sales@jumo.co.uk
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6724 Joy Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



Approval marks and certificates



Certificates for approved device versions are available for download on the manufacturer's website.
 Russian documentation upon request.

Switching function

Safety temperature monitor STW

If the probe line falls below the entered setpoint value over a length of 15 cm with 3 m, 30 cm with 6 m, and 40 cm with 12 m, then electrical circuit 1 to 2 is opened while electrical circuit 1 to 4 is closed due to the changeover function. When the temperature rises, the microswitch is automatically switched back to its original position.

If the measuring system is destroyed (i.e. if the expansion fluid escapes) the pressure in the diaphragm drops and permanently opens electrical circuit 1 to 2 and closes electrical circuit 1 to 4.

Safety temperature limiter STB

In the event of a temperature drop, the safety temperature limiter automatically locks and can only be unlocked manually once the temperature has risen again.

If the measuring system is destroyed (i.e. if the expansion fluid escapes), the pressure in the diaphragm drops and permanently opens electrical circuit 1 to 2 and closes electrical circuit 1 to 4.

Technical data

Electrical data

Electrical contact	Snap-action switch with single-pole changeover contact
Switching capacity	
STW	
On the NC contact (contact deck 1 to 2)	AC 230 V +10%, 16 (2.5) A, $\cos \varphi = 1$ (0.6), DC 230 V +10%, 0.25 A
On the NO contact (contact deck 1 to 4)	AC 230 V +10%, 6.3 (2.5) A, $\cos \varphi = 1$ (0.6), DC 230 V +10%, 0.25 A
STB	
On the NC contact (contact deck 1 to 2)	AC 230 V +10%, 16 (2.5) A, $\cos \varphi = 1$ (0.6), DC 230 V +10%, 0.25 A
On the signal contact (contact deck 1 to 4)	AC 230 V +10%, 2 (0.4) A, $\cos \varphi = 1$ (0.6), DC 230 V +10%, 0.25 A
Electrical connection	PUSH IN terminal technology (plug-type terminal)
Connection cross section	0.75 to 2.5 mm ² finely stranded (single-wire, fine wired with ferrule)
Switching reliability	To ensure high switching reliability, we recommend a minimum load of: AC/DC = 24 V, 100 mA with silver contacts
Switching point accuracy	~ ±2 K
Switching differential	~ 1.5 ±1 K
Factory setting switching point	5 °C

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Mechanical features

	Surface-mounted thermostat, design 5	DIN rail thermostat, design 7
Case		
Case bottom section	PA (reinforced)	PA (reinforced)
Color	Silver gray RAL 7001	Silver gray RAL 7001
Case lid	ABS with inspection window (PMMA)	—
Color	Cobalt blue RAL 5013	—
Setpoint value adjustment STW, STB	The switching point can be adjusted with a screwdriver once the case lid has been removed. The set switching point can be checked through the inspection glass.	Switching point can adjusted with a screwdriver.
Protection type	DIN EN 60529 IP40, IP65 (extra code 404)	DIN EN 60529 IP20
Electrical connection	Cable gland M20 × 1.5, for cable diameter 6 to 12 mm	Cable connection directly on PUSH IN terminals
Probe line diameter	~ 2.4 mm (or 9.5 mm with 1.8 m capillary)	~ 2.4 mm (or 9.5 mm with 1.8 m capillary)
Case mounting	Wall mounting, pipe mounting	Wall mounting, DIN rail mounting TH35
Weight	~ 0.2 kg	~ 0.2 kg
Admissible storage temperature	-30 to +80 °C	-30 to +80 °C
Admissible ambient temperature on the switching head	-20 to +80 °C ^a	-20 to +80 °C ^a
Admissible max. probe line temperature	120 °C	120 °C
Admissible min. bending radius of the probe line	20 mm	20 mm

^a The ambient temperature must exceed the switching point by 2 °C.

Environmentally relevant information

Probe type	in [mm]	Ø 2.4	Ø 9.5 × 98	Ø 2.4	Ø 2.4	Ø 2.4
	in [mm]	1500	1800	3000	6000	12000
F-gas filling with		R507	R507	R507	R507	R507
GWP (Global Warming Potential)		3985	3985	3985	3985	3985
Filling weight	in [g]	0.20	0.22	0.37	0.73	1.43
	in [kg]	0.00020	0.00022	0.00037	0.00073	0.00143
CO ₂ equivalent	in [kg]	0.797	0.877	1.474	2.909	5.699
	in [t]	0.000797	0.000877	0.001474	0.002909	0.005699

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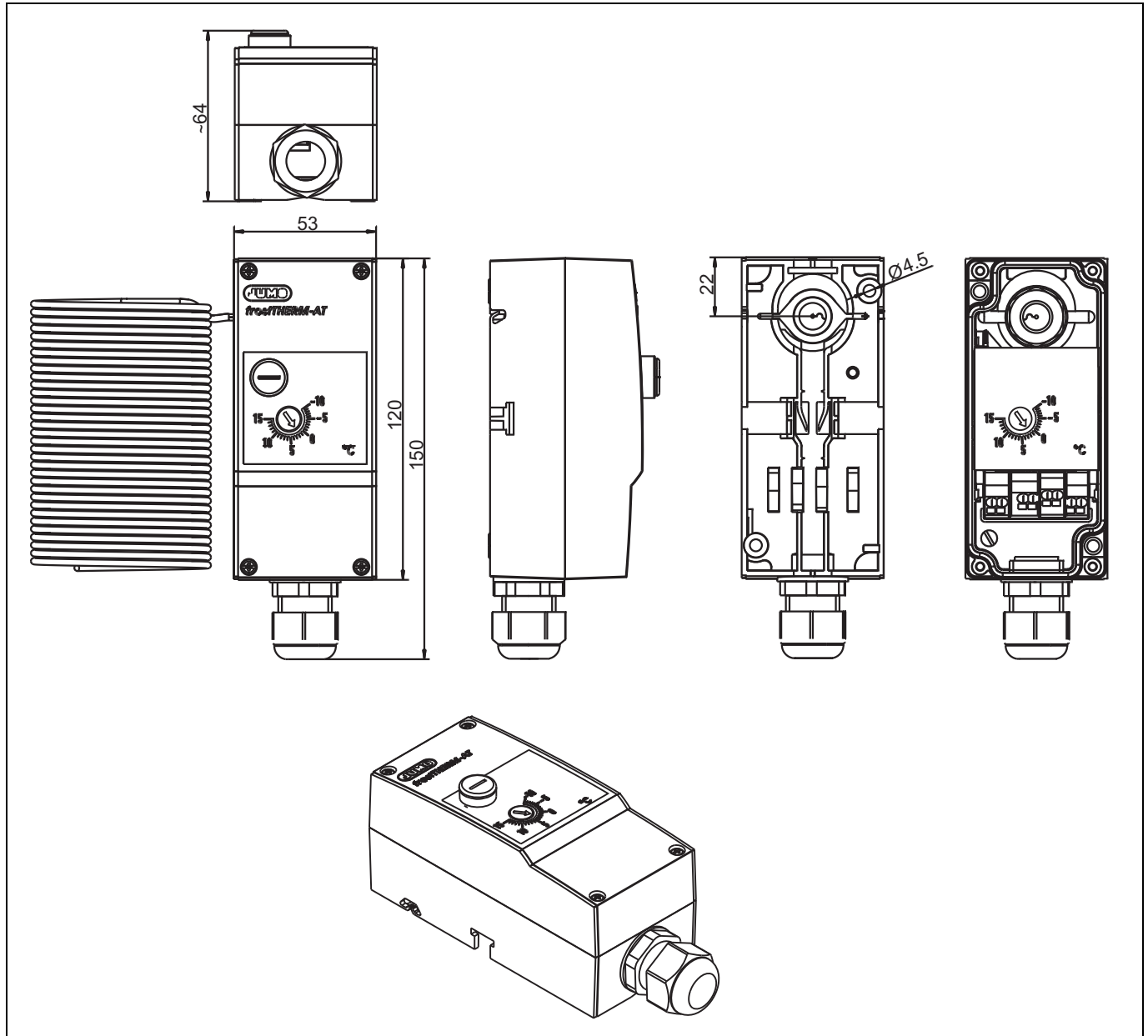
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**Dimensions****JUMO frostTHERM-AT**

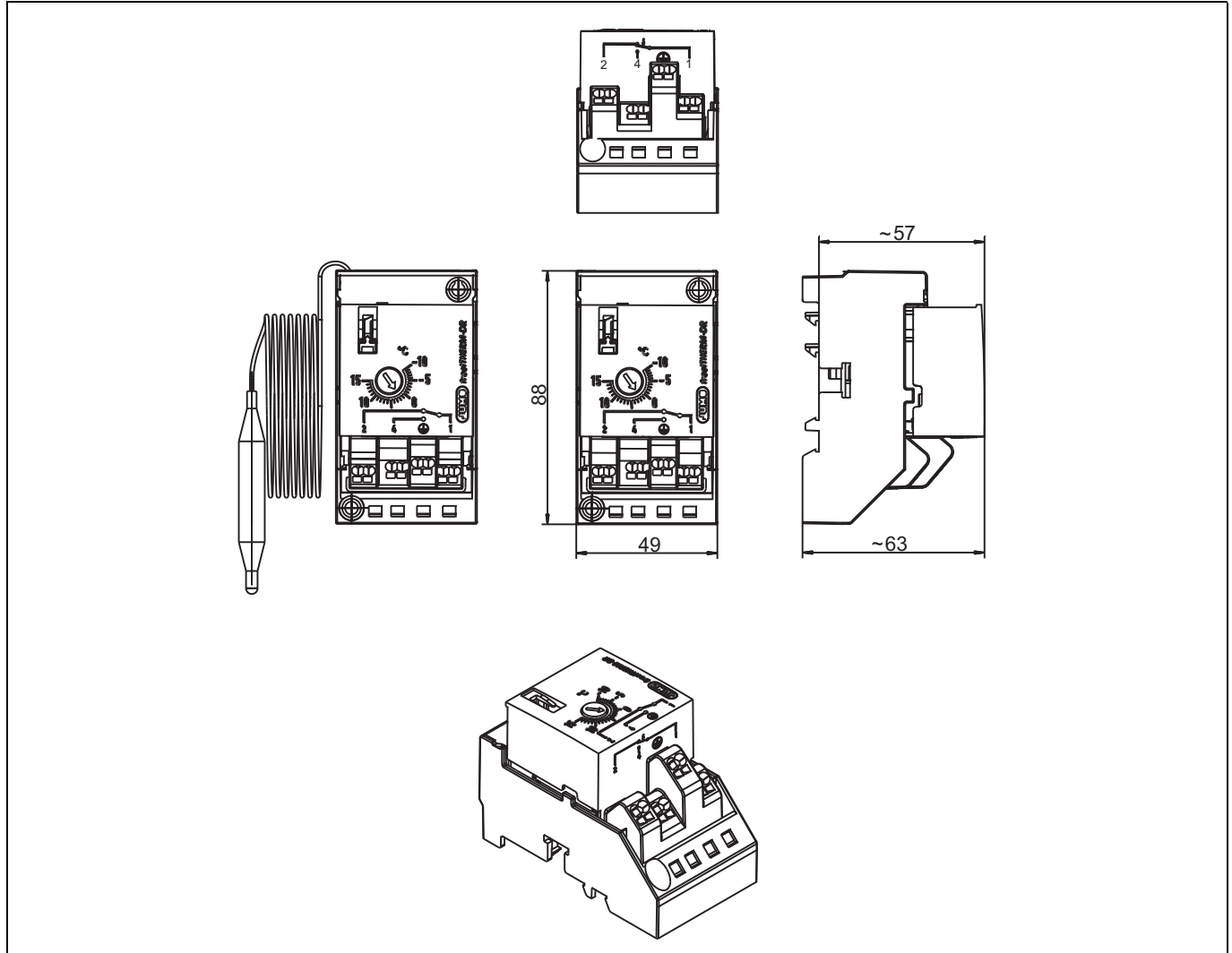
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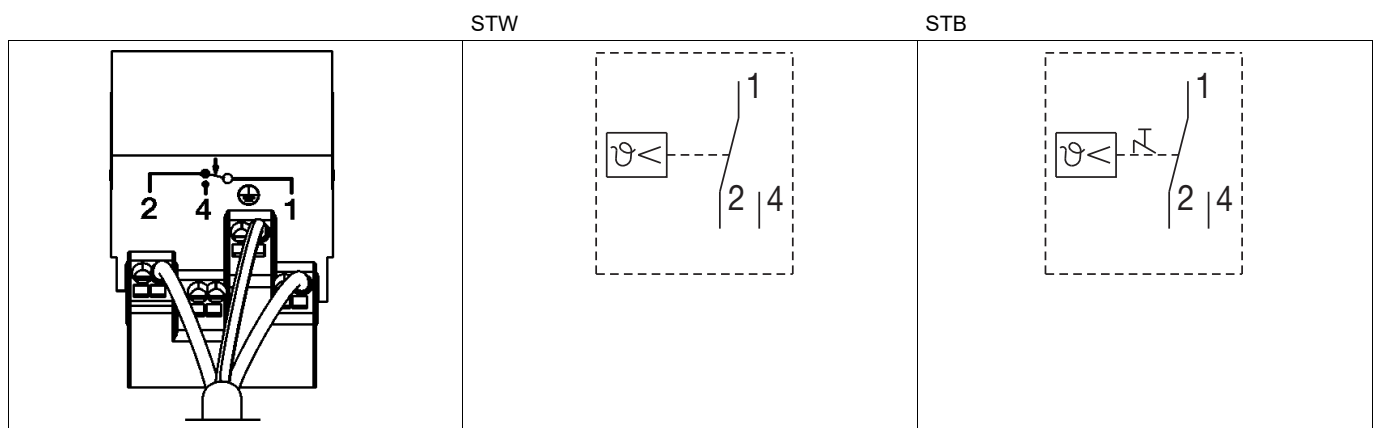
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Connection diagram

The connection diagram in the data sheet provides information on product selection.

For the electrical connection, only use the installation instructions or the operating manual!



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Order details

(1)	Basic type
604100	JUMO frostTHERM-AT/-DR
(2)	Basic type extensions
20	Safety temperatur monitor (STW)
70	Safety temperature limiter (STB)
(3)	Design
5	Surface-mounted thermostat (standard)
7	DIN rail thermostat with probe line
(4)	Control range 1
140	-10 to +15 °C
(5)	Probe line
12000	12,000 mm
1800	1,800 mm
3000	3,000 mm
6000	6,000 mm
(6)	Probe diameter
0	Without
9.5	9.5 mm
(7)	Probe material
40	Cu (copper)
(8)	Extra codes
000	Without
404	Protection type IP65

Order code (1) (2) (3) (4) (5) (6) (7) (8)
 Order example 604100 / 20 - 5 - 140 - 3000 - 0 - 40 / 404

Stock versions

Order code	Control range °C	Probe line	Extra codes	Part no.
604100/20-5-140-3000-0-40/000	-10 to +15	3000 mm	Without	60003347
604100/20-5-140-6000-0-40/000	-10 to +15	6000 mm	Without	60003348
604100/20-5-140-3000-0-40/404	-10 to +15	3000 mm	Protection type IP65	60003349
604100/20-5-140-6000-0-40/404	-10 to +15	6000 mm	Protection type IP65	60003350

Accessories

Description	Part no.
Set of brackets for probe line (6 parts packaged)	00558730
Set of brackets for probe line (3 parts packaged)	00558731

Trademark information

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