D-42607 Solingen
D-42659 Solingen
Phone +49 212 81 40 45-46
e-Mail: mail@juchheim-solingen.de
Internet: www.juchheim-solingen.de

Postfach 10 07 08
Ritterstr. 87-89
Fax +49 212 81 55 00

JUCHHEIM Heju SOLINGEN
Temperatur · Druck · Feuchte

Panel-mounting thermostat Type EMf-80

approved to DIN 3440 as
STB = safety temperature limiter
DVGW — approved to EC gas directive (90/396/EEC)

General description

Panel-mounting thermostats Type EM-80 are used as safety temperature limiters on open and closed water heating systems to DIN 4751. The essential information when ordering is shown in the Technical Data with a grey background.

Operating principle

The Type EM-80 panel-mounting thermostats operate on the principle of liquid expansion.

Technical description

Switching action

A temperature rise above the limit setting opens the circuit and the snap-action switch is locked out mechanically.
After cooling down by approx. 10°C below the set limit, the switch can be reset.

Self-monitoring action

Failure of the measuring system (leakage of the expansion liquid) causes the circuit 1–2 to open permanently. The thermostat cannot be reset.
At temperatures below –10°C the same circuit opens, but closes again automatically when the temperature rises.

Type designation

EM f -80

EM	panel-mounting thermostat with single-pole snap-action switch
f	with capillary
-80	safety temperature limiter (STB) with n.c. (opening) contact and lock-out, switching point fixed at the factory
/U	safety temperature limiter (STB) with changeover contact
/au	gold-plated switch contacts

Extra Codes

Case fixing

standard	central fixing with M 10 x 1 cap nut
b1	with 2 screws M 4 spaced 28 mm
b2	with 2 screws M 3 spaced 33 mm
b3	with 2 screws M 3 spaced 22 mm
bk	attaching the STB to a thermostat TR, series EM, using a link clip (extra charge)

Standard accessory

Operating Instructions B 60.2026

Technical data

Case
steel, zink-plated

Capillary
1.5 mm dia., copper, length normally 1 m, (min. bending radius 5mm)

Probe
Cylindrical bulb, copper, 6 mm dia.

Switch
Snap-action switch with single-pole n. c. contact opening on temperature rise (changeover contact at extra charge)

Maximum current rating

EM-80	230 V AC, 10(2) A, p.f. = 1(0.6) 230 V DC, 0.25 A
EM-80/au	24 V AC/DC, 0.1 A

contact resistance 2.5 to 5 mΩ

Electrical connection
normally:
faston connectors A 6.3x0.8 mm, DIN 46 244 at rear
Code X:
screw terminals up to 2.5 mm^2 conductor cross-section (extra charge)

Limit setting
optionally +60°C to +180°C
(permanently set at factory)

Mean ambient temperature
referred to limit setting

Switching point displacement
based on a deviation from +22°C ambient temperature:
higher ambient temperature = lower switching point;
lower ambient temperature = higher switching point

at switch head:	0.35 °C per °C
at capillary:	0.07 °C per °C per m

If the ambient temperature differs appreciably from the +22°C calibration temperature, it is possible to allow for this during calibration (at extra charge).

Temperature compensation
Code TK
Please refer to the diagram for detailed information.

Permitted ambient temperature at switch head and capillary

in operation:	+80°C max.
	–40°C min.

Storage temperature

	+50°C max.
	–50°C min.

Permitted temperature at temperature probe

	max. limit setting +15%
	min. –50°C

Protection
EN 60 529-IP00

Operating medium
water, oil, dry steam

Time constant

in water	45 sec max.
in oil	60 sec max.
in air/steam	120 sec max.

Operating position
unrestricted

Mountings and pockets
to Data Sheet 60.6710.

Ordering example

Panel-mounting thermostat, Type EMf-80
switch-off temperature fixed at 120°C in factory.
capillary 1 m
probe connection A
probe 6 mm dia., copper

DIN registration No. STB 82694
DVGW registration No. CE-0085 AR 0124

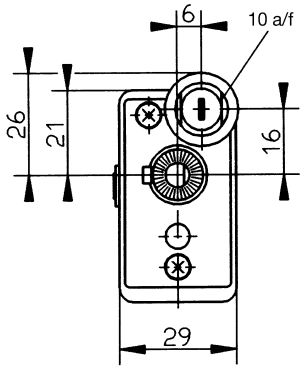
Safety note

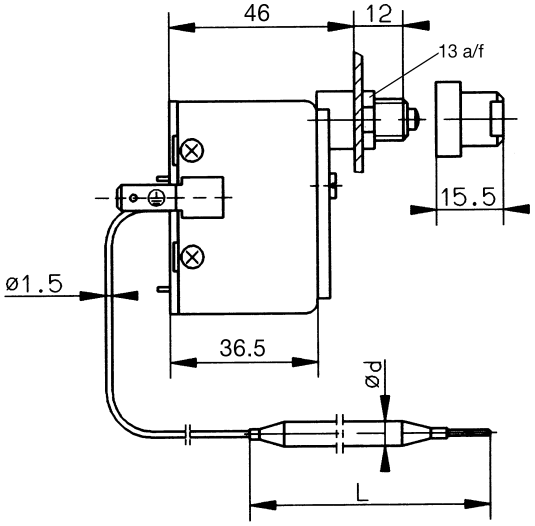
At present there is no report concerning danger to health over short periods and at low concentration, e.g. after a break in the measuring system.

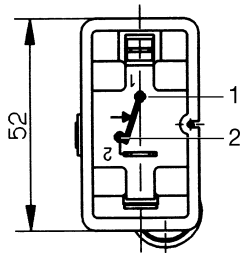
Physical and toxicological properties of the expansion medium which may leak in case of a break in the system.							
Limit setting	Dangerous reactions	Fire/explosion hazard		Water contamination	Toxicological data		
		Ignition temperature	Explosion limit		irritant	danger to health	toxic
up to +200°C	—	+280°C	1.2 — 7.5 % v/v	X	X	X	—

Dimensions

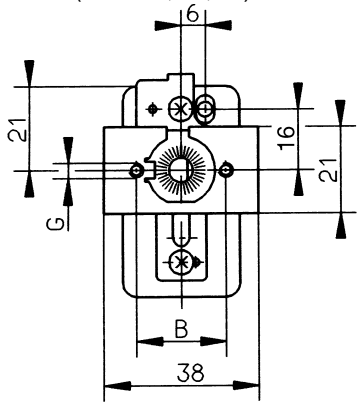
EM-80 with central fixing (standard)

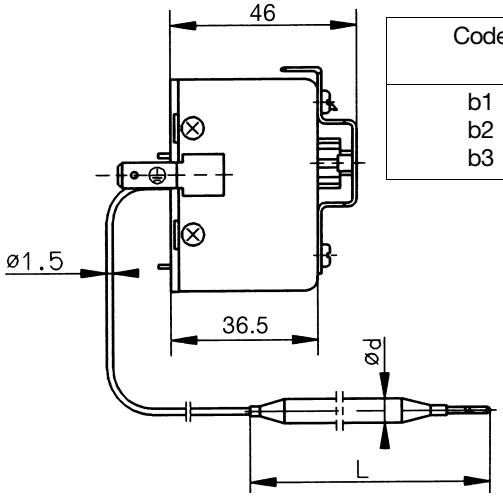






EM-80 with fixing bracket (Code b1, b2, b3)





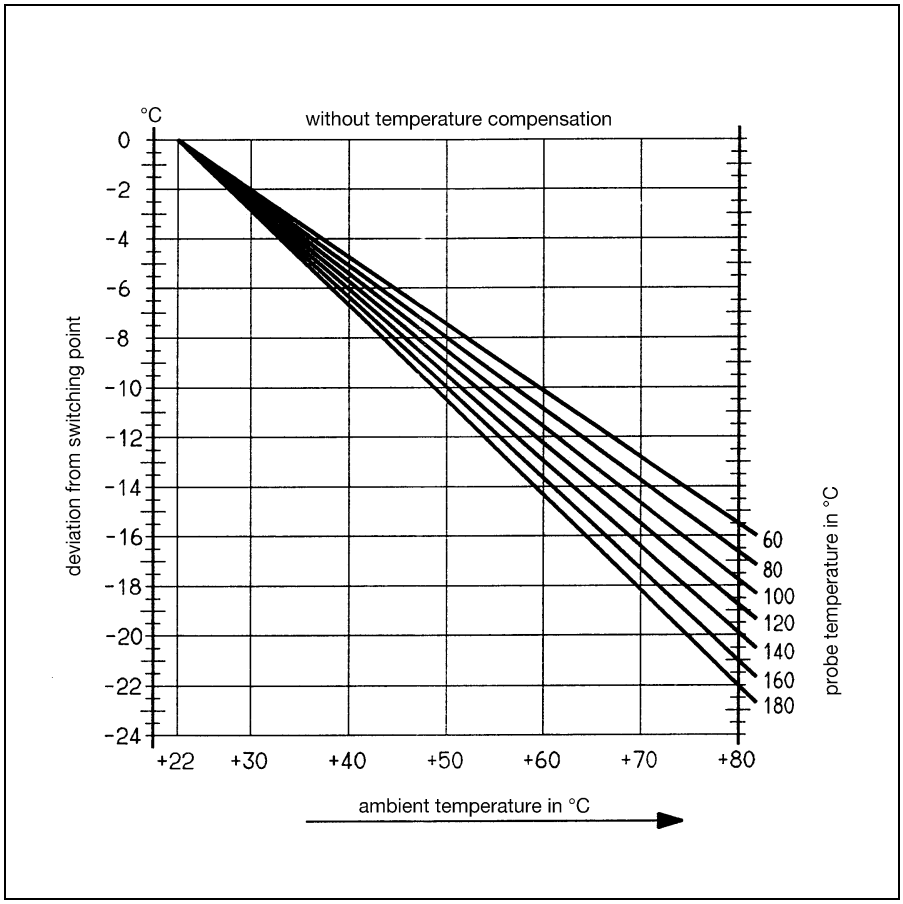
Code	B	Thread G
b1	28	M4
b2	33	M3
b3	22	M3

Temperature compensation (TK)

if the temperature at the switch head deviates from the +22 °C calibration ambient temperature, this will result in a displacement of the switching point. With ambient temperatures that fluctuate considerably it is advisable to use thermostats with temperature compensation (Code TK).

EMf-80 *without* temperature compensation

Switching point deviation depending on the ambient temperature at the switch head, taking into account the probe temperature.



EMf-80 *with* temperature compensation

Switching point deviation depending on the ambient temperature at the switch head, taking into account the probe temperature.
The temperature error at the capillary has not yet been allowed for, and may introduce an additional error of approx. 0.07°C per °C per m.