



Benefits

- Up to 100,000 cycles
- Various terminals on-hand
- Small tolerances and hysteresis available
- Response temperatures from 0°C up to 260°C

Applications

- Household appliances
- Electronics
- Machinery



Technical data

ratings \ control type		11EN	03EN	52N	60EN ¹⁾	05EN	15N	23EN
function		automatic				manual		
version		normally closed / normally open				normally closed		
VDE	rated current at 250 Vac (cos φ 0,95)	16 A	16 A	16 A	10 A	16 A	16 A	16 A
	switching cycles	10,000	10,000	10,000	100,000	3,000	6,000	3,000
	max. temperature T _a (steps in 5 K)	150 °C	150 °C	230 °C ²⁾	150 °C	150 °C	40 °C ... 250 °C	150 °C
UL	rated current at 240 Vac (cos φ 1,0)	10 A	10 A	10 A	—	10 A	16 A	10 A
	switching cycles	100,000	100,000	100,000	—	6,000	6,000	6,000
	max. temperature T _a (steps in 5 K)	150 °C	150 °C	230 °C	—	150 °C	250 °C	150 °C
tolerance		T _a <100°C: ± 3 K / T _a >100°C: ± 4 K / T _a >140°C: ± 5 K						
contact resistance		< 30 mΩ						
hysteresis / reset temperature		T _a <100°C: 10 K ± 4 K / T _a >100°C: 15 K ± 5 K / T _a >140°C: 20 K ± 5 K				customer-specific		
degrees of protection provided by enclosures (EN 60529)		IP00 (60EN IP54)						
suitable for use in protection class		I, II						
certifications	VDE 	EN 60730-1 / -2-9						
	UL (E43273 / E201152) 	UL873 / UL60730-1A / -2-9 ⁴⁾						
	CSA 	C22.2 No. 24 ³⁾						

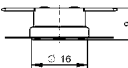
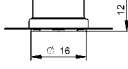
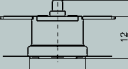
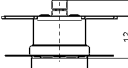
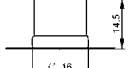
¹⁾ no certification

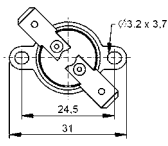
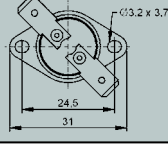
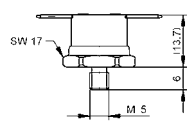
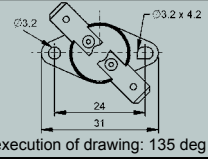
²⁾ type 55H up to 260°C

³⁾ different ratings

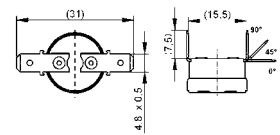
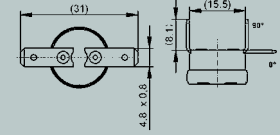
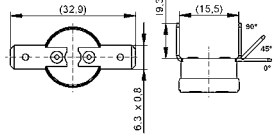
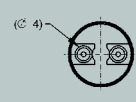
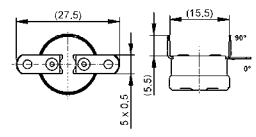
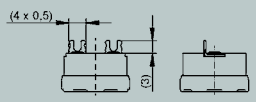
⁴⁾ type 15N

Standard types

type	nc	no	code	illustration	drawing dimensions (mm)	technical description
R28 11EN	1	3	standard dielectric strength 2,000 Vac			terminals 6.3 x 0.8, housing thermosetting plastic 9mm, moving bracket small, cap aluminium
R28 03EN	1	3	standard dielectric strength 2,000 Vac			terminals 6.3 x 0.8, housing thermosetting plastic 12mm, moving bracket small, cap aluminium
R28 52N	1	3	standard dielectric strength 2,000 Vac			terminals 6.3 x 0.8, housing ceramic 12mm, moving bracket small, cap aluminium
R27 05EN	1		manual dielectric strength 1,800 Vac			terminals 6.3 x 0.8, housing thermosetting plastic, moving bracket small, cap aluminium, reset pin
R27 15N	1		manual dielectric strength 1,800 Vac			terminals 6.3 x 0.8, housing ceramic, moving bracket small, cap aluminium, reset pin ceramic
R29 23EN	1		manual dielectric strength 2,000 Vac			terminals 6.3 x 0.8, housing thermosetting plastic, moving bracket small, cap aluminium, reset pin
R28 60EN	1	3	tight against humidity dielectric strength 1,800 Vac			lead wire 1.25mm ² , housing thermosetting plastic, fix bracket, cap aluminium, degree of protection IP54

code	used in type	illustration	drawing dimensions (mm)	technical description
4	R27, R28, R29			moving bracket, small
3	R27, R28, R29			moving bracket
S	R27, R28, R29			stud of M5 x 6 brass, SW17 (also other variations available)
B (+A)	R27, R28, R29			fix bracket possible angles: 0 / 45 / 90 / 135 deg

Terminals

code	used in type	illustration	drawing dimensions (mm)	technical description
brass: 05 (0 deg) brass: 10 (45 deg) brass: 06 (90 deg) steel: 95 (0 deg)	R27, R28, R29			terminals 4.8 x 0.5 brass nickel plated up to T _a max. 150°C >150°C steel nickel plated also available: angle 45 / 90 deg
brass: 45 (0 deg) brass: 46 (90 deg)	R27, R28, R29			terminals 4.8 x 0.8 brass nickel plated up to T _a max. 150°C also available: angle 90 deg
brass: 03 (0 deg) brass: 09 (45 deg) brass: 04 (90 deg) steel: 93 (0 deg) steel: 94 (90 deg)	R27, R28, R29			terminals 6.3 x 0.8 brass nickel plated up to T _a max. 150°C >150°C steel nickel plated also available: angle 45 / 90 deg
00	R27, R28			solder terminals T _a max. 140°C
41 (0 deg) 42 (90 deg)	R27, R28, R29			solder terminals, nickel plated, also available: angle 90 deg T _a max. 140°C
SA	R27, R28			PCB terminals solder terminals T _a max. 140°C



Cap Code 1 in standard execution (T_a 50°C – 199°C), material aluminium



Cap Code T (T_a 0°C – 50°C and $T_a \geq 200^\circ\text{C}$ and all normally open types), material aluminium

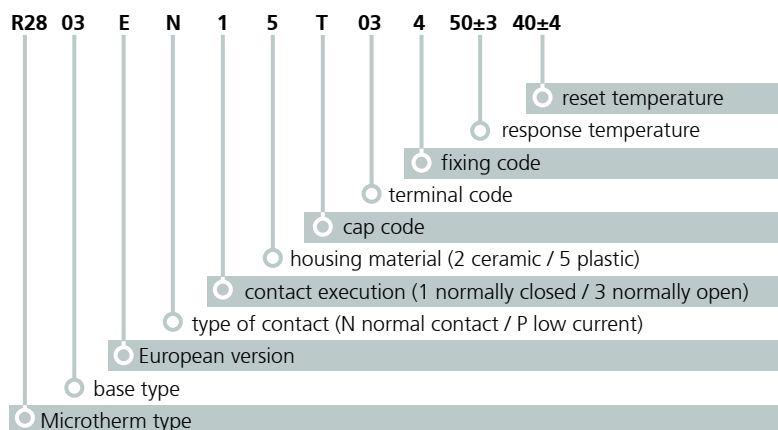
Deviations from standard controls (caps, terminals, fixings) on request.

Especially for electronic applications with voltage 6...120 Vac / 6...30 Vdc and current 10...100 mA, there are switches with crossbar- contacts available.

Controls as single operation device (SOD) up to 150°C and reset temperature minus 35°C are available (type 81ES).

Ordering and marking example

Ordering example



Marking example

A100	norm. closed (B norm. open) response temperature
03EN XXXX	type manufacture code
XXXX	date of manufacture



Representation office:

Microtherm GmbH
Taschenwaldstraße 3
P.O. Box 1208
D-75112 Pforzheim

Fon: +49 (0)7231 787-0
Fax: +49 (0)7231 787-155
E-Mail: info@microtherm.de
Internet: www.microtherm.de

Deviations from standard controls on request.

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