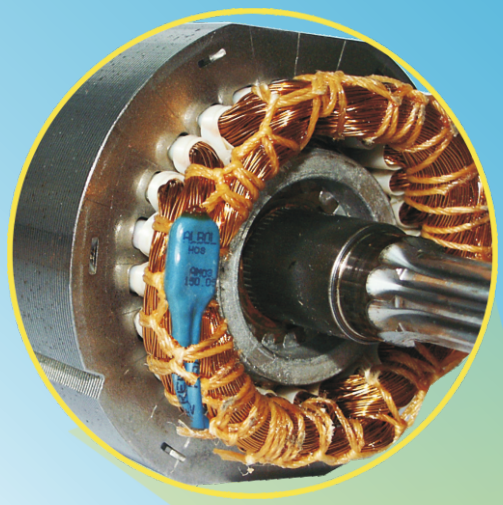
RoHS Compliant

ALBOL

Marketing and sales

Albol Electronic & Mechanical Products Ltd.



Thermal cut-outs

Factory in Poland

TOMIC S. A.

Marking of thermal cut-outs type: AM, AB, AC, AA.

AM03 . 140 . 05 . 60/60 - 10

- AM03 — Type of thermal cut-out
- 140 — Rated switching temperature
- 05 — Switching temperature tolerance (05 : ±5K; 07 : ±7,5K; 10 : ±10K)
- 60/60 — First conductor length / Second conductor length
- 10 — Strip length

Marking of thermal cut-outs type: AH, AK, AS.

AH03 . 140 . 05 - A1

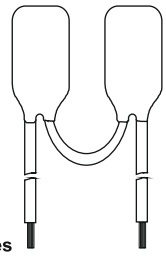
- AH03 — Type of thermal cut-out
- 140 — Rated switching temperature
- 05 — Switching temperature tolerance (05 : ±5K; 07 : ±7,5K; 10 : ±10K)
- A1 — Base of AS (A1 : 45°; A2 : 90°)

Marking of thermal cut-outs type: AR.

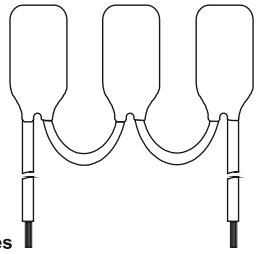
AR03 . 140 . 05 - W1 - S1

- AR03 — Type of thermal cut-out
- 140 — Rated switching temperature
- 05 — Switching temperature tolerance (05 : ±5K; 07 : ±7,5K; 10 : ±10K)
- W1 — Conector 6,3mm (W1: with straight lead 0°; W2: with deflect lead 45°; W3: with deflect lead 90°)
- S1 — (S1: Clamping screw rolled M4÷M8; S2: Clamping screw hexagonal M4÷M8; S3: Rotational holder)

Options:

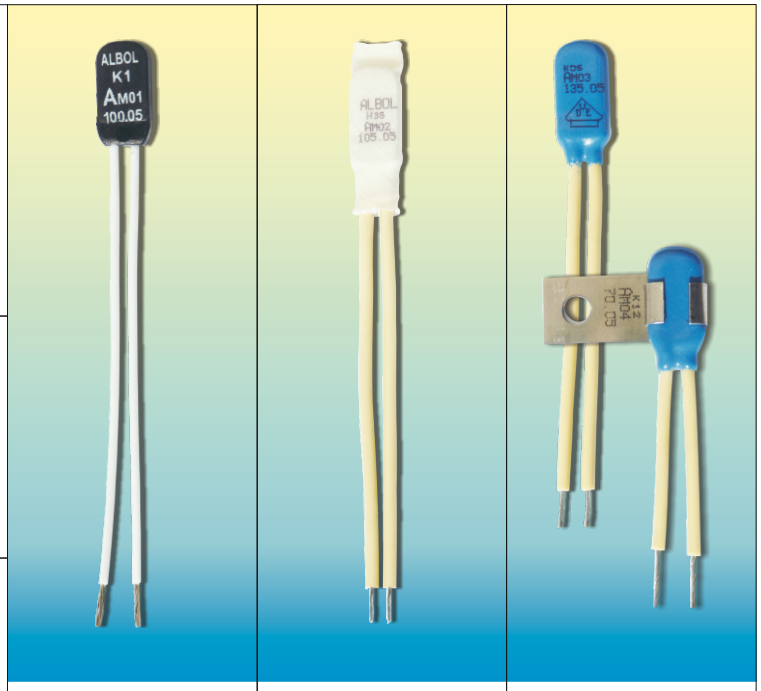


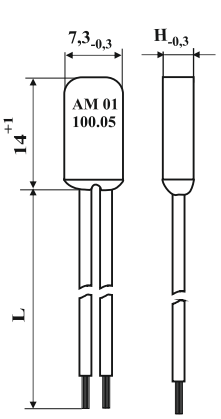
*Double cables



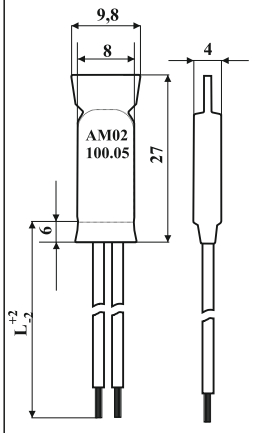
*Triple cables

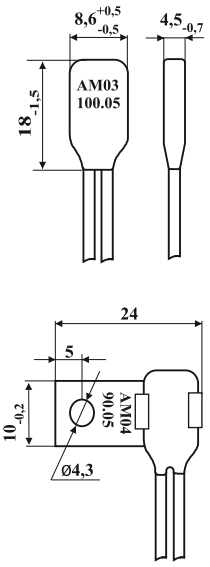
* non-standard temperatures acc. to customer requirements





H = 2,8 for AM01
H = 3,3 for AM01*





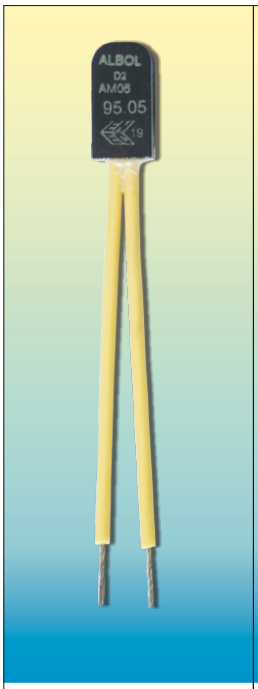
Contact configuration - abbreviations

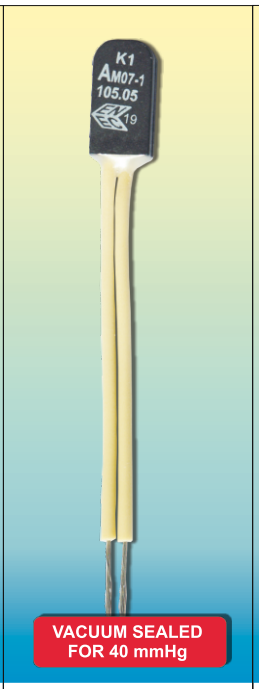
n.c. normally closed
n.o. normally open

SPST single-pole single-throw
DPST double-pole single-throw
SPDT single-pole double-throw
3PST triple-pole single-throw

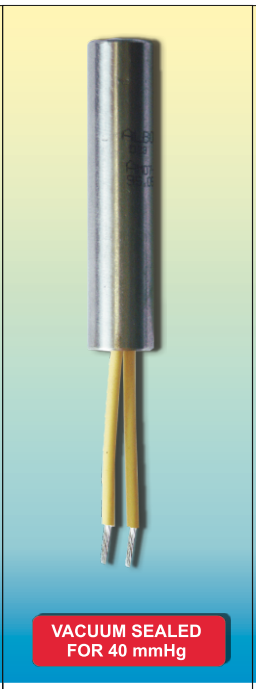
	Technical data / Type of thermal cut-out	AM01 | AM01*	AM02	AM03 AM04
1	Contact configuration	SPST n.c.	SPST n.c.	SPST n.c.
2	Rated voltage	250V; AC	250V; AC	250V; AC
3	Rated current of resistance loading Izn, cosφ = 1,0 of resistance and induction loading Ix, cosφ = 0,6	 2,5 A 1,6 A	 2,5 A 1,6 A	 2,5 A 1,6 A
4	Number of switching cycles at rated loading	10 000 cycles	10 000 cycles	10 000 cycles
5	Maximum loading / number of automatic cycles	3,6 A / 2000 cycles	3,6 A / 2000 cycles	3,6 A / 2000 cycles
6	Range of rated switching temperatures	65°C - 130°C | 65°C - 150°C*	65°C - 150°C	65°C - 150°C
7	Switching temperature tolerance	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K
8	Switching differential	30 ± 15 K	30 ± 15 K	30 ± 15 K
9	Speed of temperature changes	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min
10	Degree of pollution (acc. to EN-60730-1)	2	2	2
11	Thermal resistance	max 170°C | 190°C* / 1 min	max 190°C / 1 min	max 190°C / 1 min
12	Degree of protection	IP 00	IP 00	IP 00
13	PTI of material used for insulation	250 V	250 V	250 V
14	Construction	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic
15	Electrical strength of insulation	1 000 V | 2000 V*; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz
16	Contact resistance	max ≤ 40 mΩ	max ≤ 40 mΩ	max ≤ 40 mΩ
17	Approvals acc. to design for	VDE, UL, BEAB	VDE, UL, BEAB	VDE, UL, BEAB

Thermal cut-outs

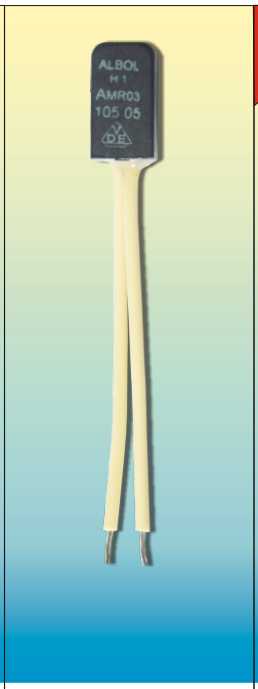




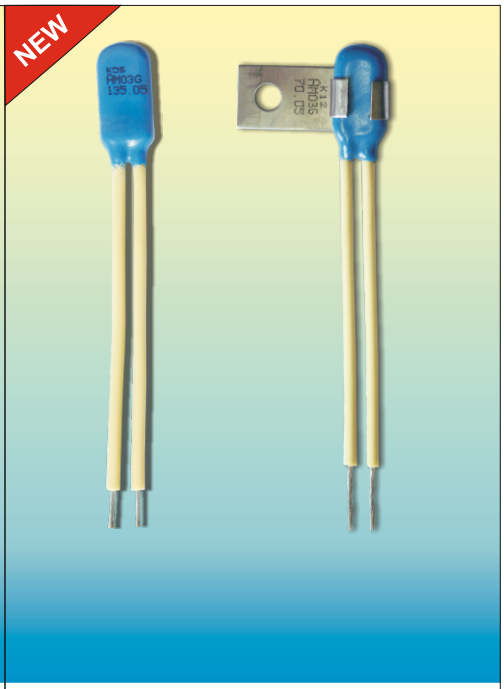
VACUUM SEALED FOR 40 mmHg

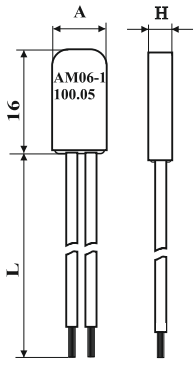


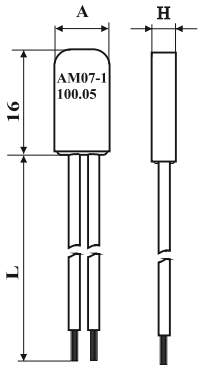
VACUUM SEALED FOR 40 mmHg

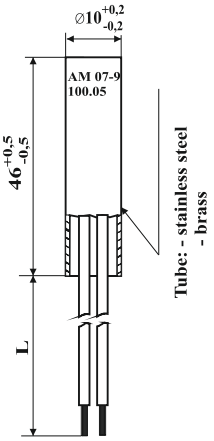


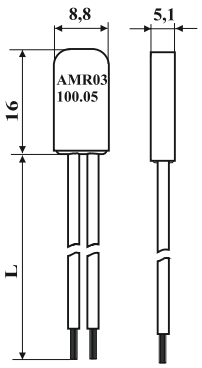
NEW



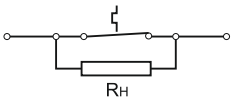


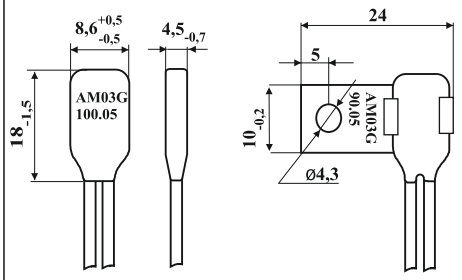




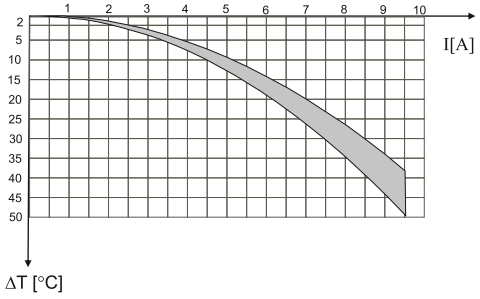


with holding resistor R_H





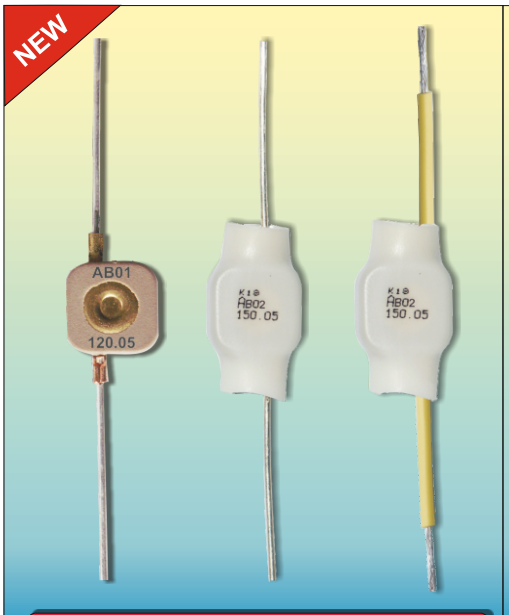
Open temperature drop vs. curent for AM03G



		H	A
AM06-1	AM07-1	plastic case	4,4	8,2
AM06-2	AM07-2	metal case	5,6	8,5
AM06-3	AM07-3	metal case and sleeve	6,4	9,1

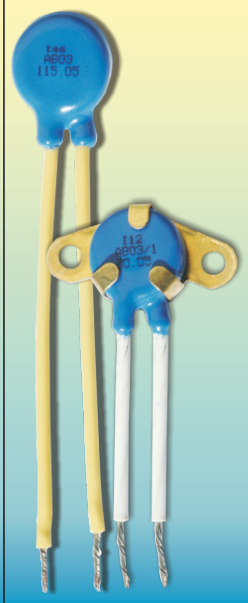
	AM06	AM07	AM07-9	AMR03	AM03G
1	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.
2	250V; AC	250V; AC	250V; AC	250V; AC	250V; AC
3	2,5 A 1,6 A	2,5 A 1,6 A	2,5 A 1,6 A	2,5 A 1,6 A	4,5 A 1,6 A
4	10 000 cycles	10 000 cycles	10 000 cycles	3 000 cycles	10 000 cycles
5	3,6 A / 2000 cycles	3,6 A / 2000 cycles	3,6 A / 2000 cycles	3,6 A / 2000 cycles	6 A / 2000 cycles
6	65°C - 160°C	65°C - 160°C	65°C - 180°C	65°C - 150°C	65°C - 150°C
7	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K
8	30 ± 15 K	30 ± 15 K	30 ± 15 K	voltage maintained	30 ± 15 K
9	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min
10	2	2	2	2	2
11	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min	max 190°C / 1 min	max 190°C / 1 min
12	IP 54	IP 68	IP 68	IP 00	IP 00
13	250 V	250 V	250 V	250 V	250 V
14	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic
15	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz
16	max ≤ 40 mΩ	max ≤ 40 mΩ	max ≤ 40 mΩ	max ≤ 40 mΩ	max ≤ 40 mΩ
17	BEAB, ENEC	BEAB, ENEC		VDE	

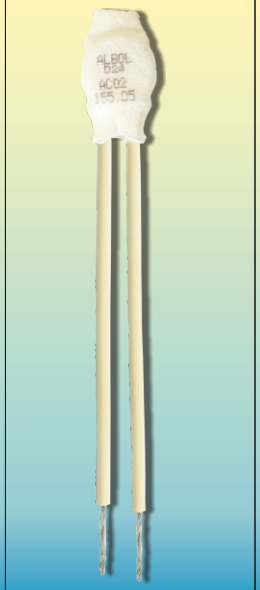
NEW

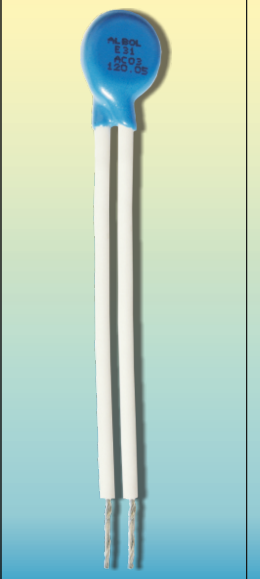


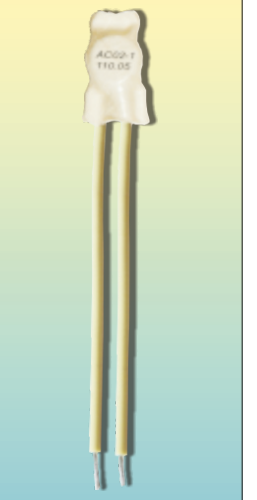
PRESSURE RESISTANCE OF HOUSING - 1500 N*

* uniform pressure on the whole surface

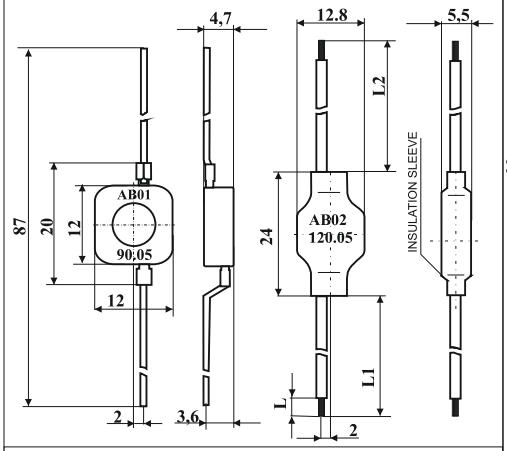


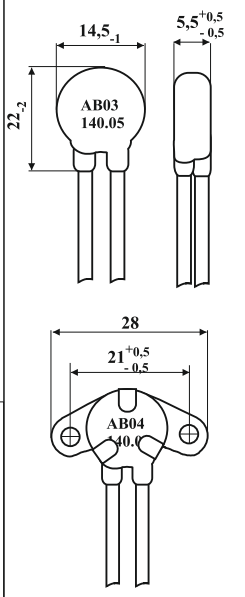


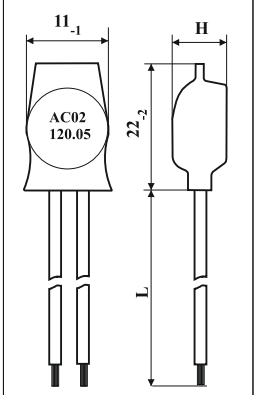




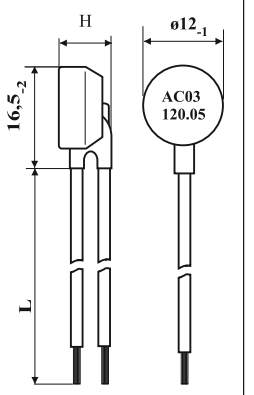
SMALL DIMENSIONS



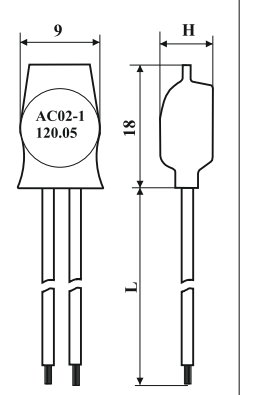




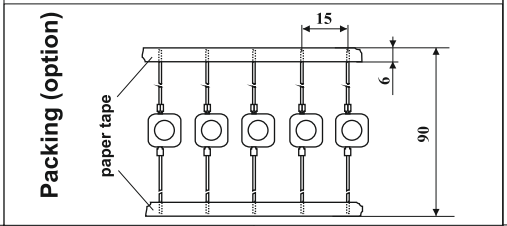
H = 6,9 for silicone cable
H = 6,6 for PTFE cable



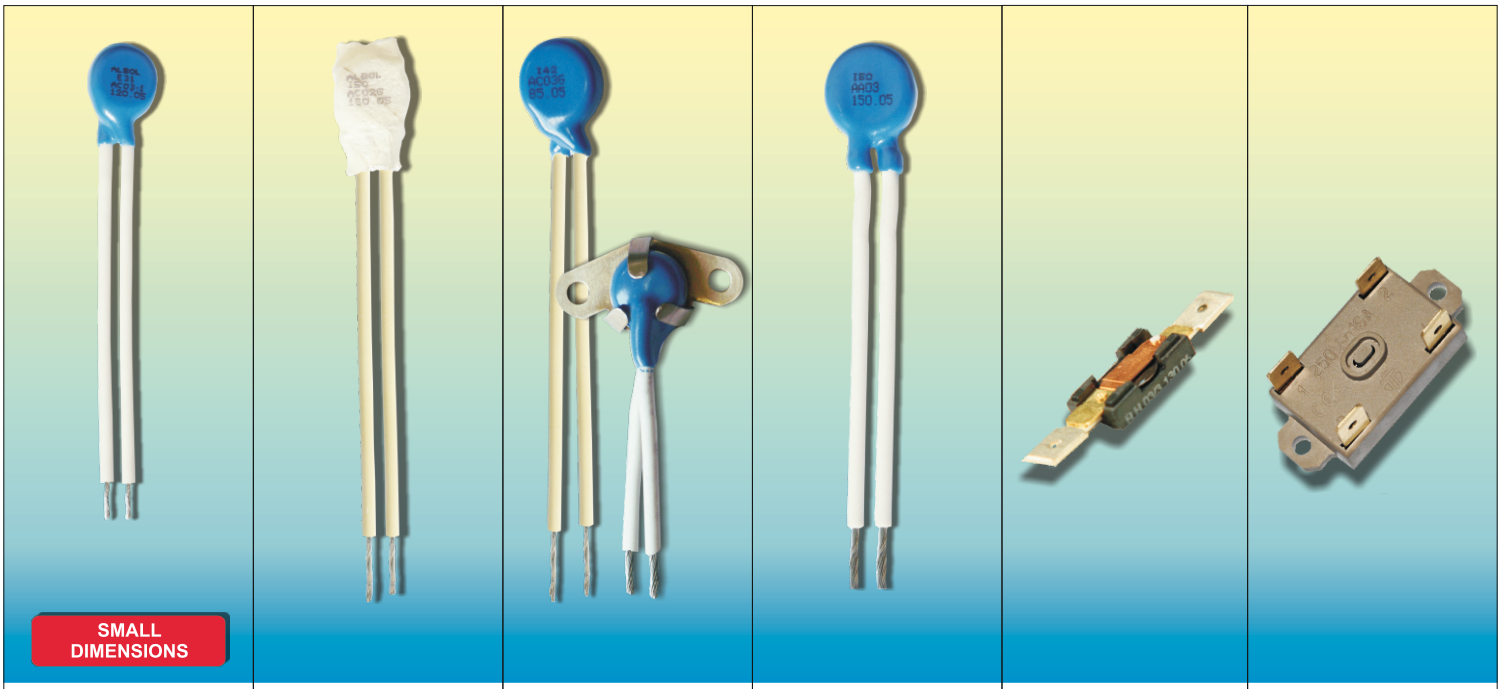
H = 7,7 for silicone cable
H = 7,2 for PTFE cable

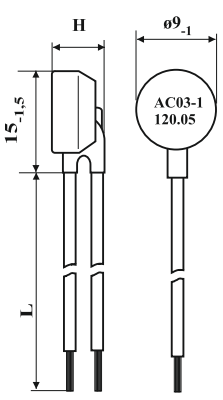


H = 6,9 for silicone cable
H = 6,6 for PTFE cable

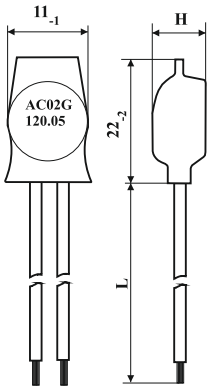


	AB01	AB02	AB03 AB04	AC02	AC03	AC02-1
1	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.
2	250V; AC	250V; AC	250V; AC	250V; AC	250V; AC	250V; AC
3	6,3 A 4,0 A	6,3 A 4,0 A	6,3 A 4,0 A	6,3 A 4,0 A	6,3 A 4,0 A	6,3 A 4,0 A
4	10 000 cycles	10 000 cycles	10 000 cycles	10 000 cycles	10 000 cycles	10 000 cycles
5	10 A / 2000 cycles	10 A / 2000 cycles	10 A / 2000 cycles	10 A / 2000 cycles	10 A / 2000 cycles	10 A / 2000 cycles
6	65°C - 150°C	65°C - 150°C	65°C - 150°C	65°C - 180°C	65°C - 150°C	65°C - 180°C
7	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K
8	30 ± 15 K	30 ± 15 K	30 ± 15 K	30 ± 15 K	30 ± 15 K	30 ± 15 K
9	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min
10	2	2	2	2	2	2
11	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min
12	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
13	250 V	250 V	250 V	250 V	250 V	250 V
14	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic
15	--------	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz
16	max ≤ 25 mΩ	max ≤ 25 mΩ	max ≤ 25 mΩ	max ≤ 25 mΩ	max ≤ 25 mΩ	max ≤ 25 mΩ
17				VDE, UL	VDE	

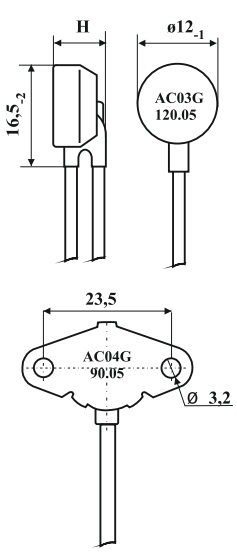




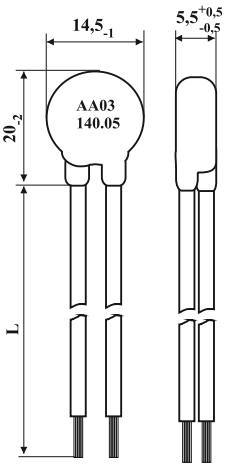
H = 7,4 for silicone cable
H = 6,7 for PTFE cable

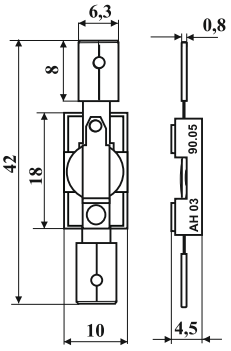


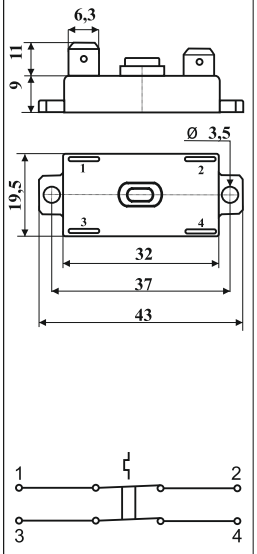
H = 7,2 for silicone cable
H = 6,9 for PTFE cable



H = 8 for silicone cable
H = 7,5 for PTFE cable

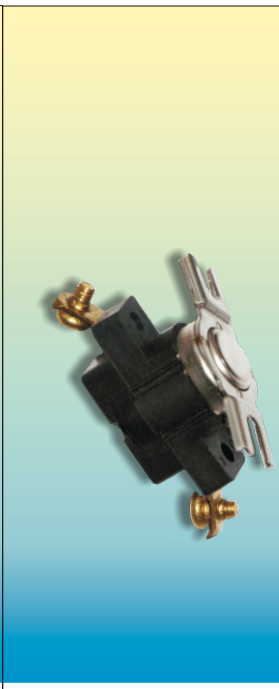


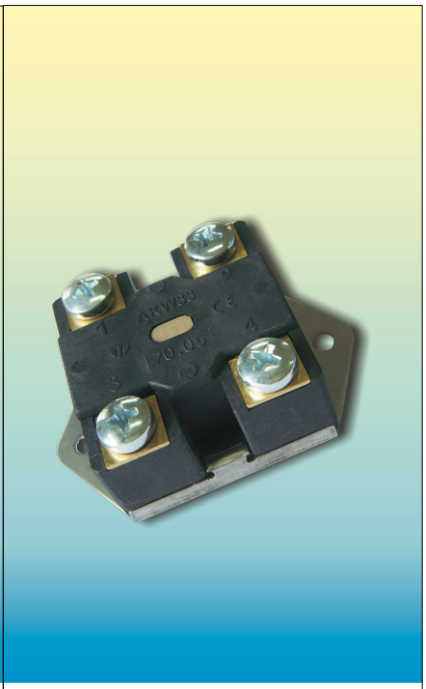


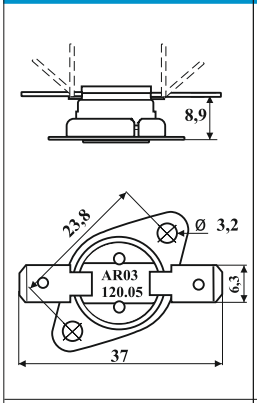


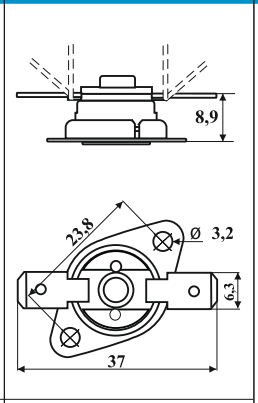
	AC03-1	AC02G	AC03G AC04G	AA03	AH03/3	AK33
1	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.	DPST n.c.
2	250V; AC	250V; AC	250V; AC	250V; AC	250V; AC	250V; AC
3	6,3 A 4,0 A	13 A 6,0 A	13 A 6,0 A	13 A 6,0 A	13 A 2,5 A	16 A per each line 6,0 A per each line
4	10 000 cycles	10 000 cycles	10 000 cycles	10 000 cycles	10 000 cycles	10 000 cycles
5	10 A / 2000 cycles	16 A / 2000 cycles	16 A / 2000 cycles	16 A / 2000 cycles	16 A / 2000 cycles	20 A / 200 cycles
6	65°C - 150°C	65°C - 180°C	65°C - 160°C	65°C - 150°C	65°C - 150°C	65°C - 150°C
7	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K
8	30 ± 15 K	30 ± 15 K	30 ± 15 K	30 ± 15 K	30 ± 15 K	manual reset
9	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min
10	2	2	2	2	2	2
11	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min	max 230°C / 1 min	max 260°C / 1 min
12	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
13	250 V	250 V	250 V	250 V	250 V	250 V
14	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic
15	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	-	2 500 V; 50 Hz
16	max ≤ 25 mΩ	max ≤ 15 mΩ	max ≤ 15 mΩ	max ≤ 15 mΩ	max ≤ 40 mΩ	max ≤ 40 mΩ
17			VDE			

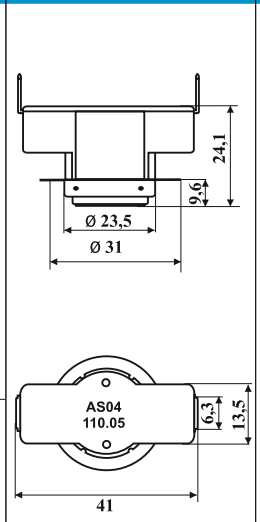
Thermal cut-outs

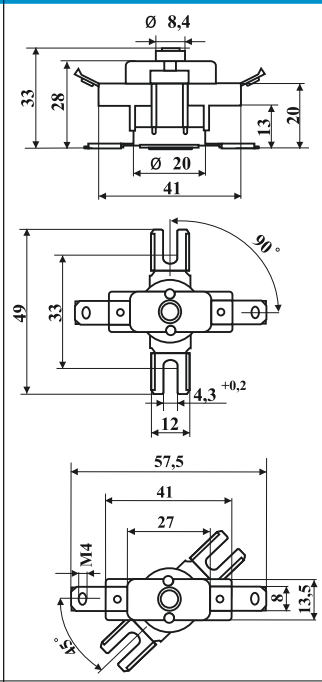


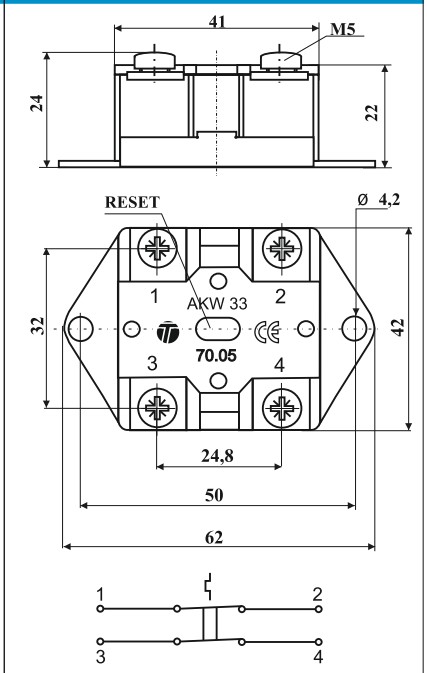




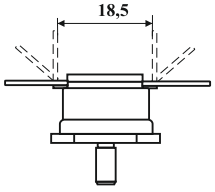




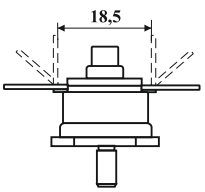




optionally



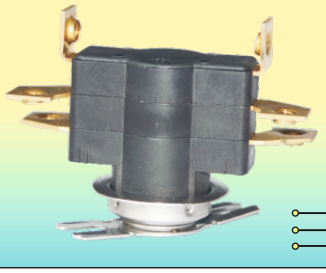
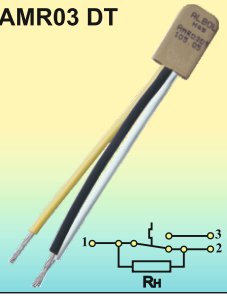
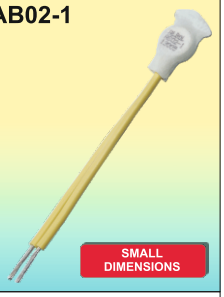
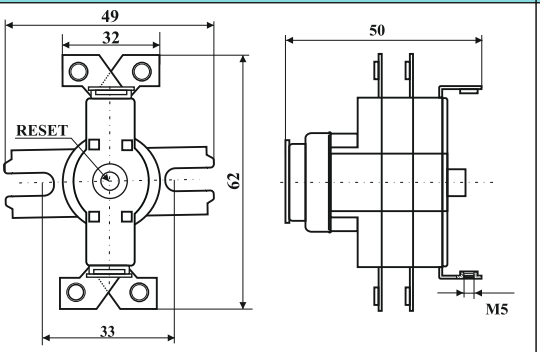
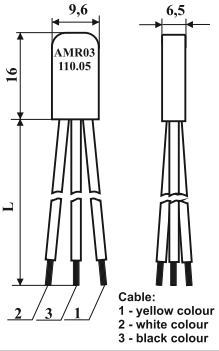
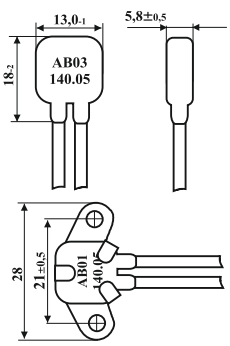
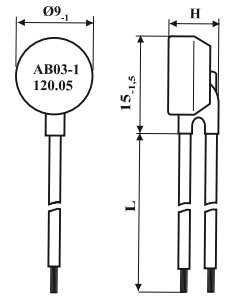
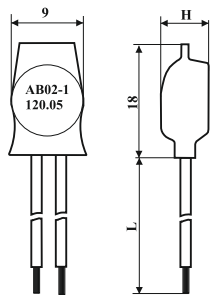
optionally



	AR03	AR33	AS04	AS33	AKW33
1	SPST n.c.	SPST n.c.	SPST n.c.	SPST n.c.	DPST n.c.
2	250V; AC	250V; AC	250V; AC	max 400V; AC	max 400V; AC
3	16 A 6,0 A	16 A 6,0 A	16 A 6,0 A	25A/250 V; 15A/400 V 16A/250 V;10A/400 V	32A/400 V 10A/400 V
4	3 000 cycles	3 000 cycles	10 000 cycles	10 000 cycles	300 cycles
5	20 A / 200 cycles	20 A / 200 cycles	32 A / 200 cycles	32 A / 200 cycles	42A / 30 cycles
6	50°C - 180°C	50°C - 180°C	65°C - 180°C	60°C - 180°C	65°C - 150°C
7	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K	±5K/±7,5K/±10K
8	30 ± 15 K	manual reset	30 ± 15 K	manual reset	manual reset
9	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min	0,5 ÷ 1 K / min
10	2	2	2	2	2
11	max 260°C / 1 min	max 260°C / 1 min	max 260°C / 1 min	max 260°C / 1 min	max 260°C / 1 min
12	IP 00	IP 00	IP 00	IP 00	IP 00
13	250 V	250 V	250 V	250 V	250 V
14	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic	incorporated; non-electronic
15	2 500 V; 50 Hz*	2 500 V; 50 Hz*	2 500 V; 50 Hz*	3750 V; 50 Hz*	3750 V; 50 Hz
16	max ≤ 20 mΩ	max ≤ 20 mΩ	max ≤ 20 mΩ	max ≤ 20 mΩ	max ≤ 40 mΩ
17	VDE	VDE			

*from cup to the terminal

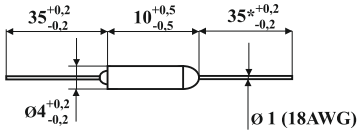
Summary of new products

AST33	AMR03 DT	AB03	AB03-1	AB02-1
			 SMALL DIMENSIONS	 SMALL DIMENSIONS
			 H = 7,4 for silicone cable H = 6,7 for PTFE cable	 H = 6,9 for silicone cable H = 6,6 for PTFE cable

Contact configuration	3PST n.c.	SPDT n.c.	SPST n.c.	SPST n.c.	SPST n.c.
Rated voltage	max 400 V; AC	max 250 V; AC	250 V; AC	250 V; AC	250 V; AC
Max contact rating	40A (300 cycles)	2,5A / 1,6A (3000 cycles)	6,3A / 4A (10 000 cycles)	2,5A / 1,6A (10 000 cycles)	2,5A / 1,6A (10 000 cycles)
Range of temperatures	65°C - 150°C ± 5K	65°C - 150°C ± 5K	65°C - 150°C ± 5K	65°C - 150°C ± 5K	65°C - 180°C ± 5K
Switching differential	manual reset	voltage maintained	30 ± 15K	30 ± 15K	30 ± 15K
Degree of protection	IP 00	IP 00	IP 00	IP 00	IP 00
Dielectric strength	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz	2 500 V; 50 Hz

Thermal fuses

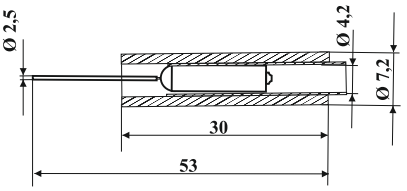
Type SW



* Dimension (mm): long 35,0 ± 3,5. Medium 25,0 ± 3,5. Short 20 ± 2,5

Thermal links

Type BT



TEMPERATURE Ratings

Cat No.	Tf [℃]	Cutoff temperature	Th [℃]	K MARK	UL	C-UL	VDE	TUV	CCC	PSE
SW - 102T	72	72℃ +2℃, -2℃	57							
SW - 105T	77	77℃ +0℃, -4℃	62							
SW - 109T*	84	84℃ +0℃, -5℃	69							
SW - 152T*	90	90℃ +0℃, -4℃	75							
SW - 106T*	91	91℃ +0℃, -4℃	76							
SW - 153T*	93	93℃ +0℃, -5℃	78							
SW - 104T	98	98℃ +2℃, -2℃	83							
SW - 108T*	100	100℃ +0℃, -5℃	85							
SW - 110T*	109	109℃ +0℃, -5℃	94							
SW - 111T*	121	121℃ +0℃, -5℃	106							
SW - 115T	126	126℃ +0℃, -4℃	111							
SW - 129T	128	128℃ +0℃, -5℃	113							

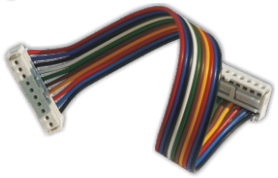
Cat No.	Tf [℃]	Cutoff temperature	Th [℃]	K MARK	UL	C-UL	VDE	TUV	CCC	PSE
SW - 114T*	139	139℃ +0℃, -4℃	124							
SW - 138T*	144	144℃ +0℃, -5℃	127							
SW - 116T	152	152℃ +0℃, -4℃	137							
SW - 120T	167	167℃ +0℃, -4℃	152							
SW - 118T	169	169℃ +0℃, -5℃	154							
SW - 127T	184	184℃ +0℃, -6℃	169							
SW - 122T	192	192℃ +3℃, -3℃	177							
SW - 125T	195	195℃ +0℃, -6℃	180							
SW - 139T*	216	216℃ +0℃, -6℃	200							
SW - 124T*	228	228℃ +0℃, -6℃	200							
SW - 128T*	240	240℃ +0℃, -6℃	200							

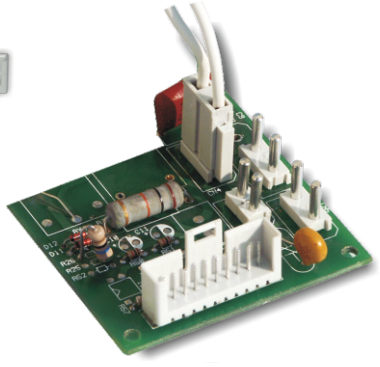
*SW-106T, 108T, 109T, 110T, 111T, 114T, 124T, 128T, 138T, 139T, 152T, 153T, - Dual Ratings by UL 250V 10A& 125V 15A

Approved Applied

Multiple connectors

Multiple connectors for printed circuit boards.
These connectors are intended for indirect connections between circuits of electronic equipment, allowing building of connection system of type wire-board and board-board in 2,54 mm or 5mm raster.
In systems of wire-board the most suitable for connection are conductors with wire cross-section of 0,12 to 0,20 mm².
Maximum working voltage 60V.





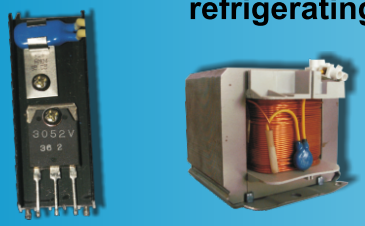
Boxes

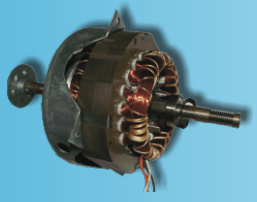
Albol supplies wide rangeof metal and plastic enclosures (mostly black and white).

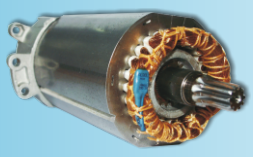
Our products are made in Poland
and are sold all over the world.
The main sales representatives
are situated in England.

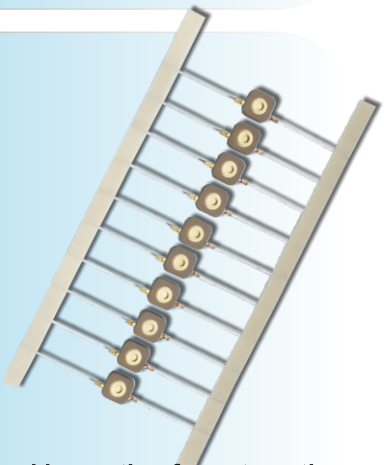
Typical applications of thermal cut-outs:

- Electric motors
- Transformers
- Electronic equipment (printed circuit boards)
- Electrical devices in heating, air conditioning and refrigerating equipment









Packing option for automatic assembling

DIN EN ISO 9001:2000

Registration number: 4226200/QM/09.2005
Certified by VDE Testing and Certification Institute

Marketing and sales

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