

Thermal Fuses

FEATURES

- broad product range for many applications and loads
- temperature stable
- high temperature sensitivity
- wide temperature range
- small size
- simple installation
- varied connections

L 10
L 50
MTH
MTN
MTR
MTS
MTV
MWS
S3M
TDM
TS 1

DESCRIPTION

Thermal fuses are components which will automatically open a circuit and switch off an appliance, if the permissible operating temperature of the appliance is exceeded.

The response temperature can only be set by the manufacturer. In order to repair the circuit, the complete thermal fuse must be replaced.

Thermal fuses have a solid, dust and dirt-tight housing. They react to ambient temperature and are generally insensitive to current at rated levels.

INSTALLATION TIPS

To ensure loss-free heat transfer, installation or mounting should be directly onto the heat source. When soldering onto the electrical connections, care must be taken to provide appropriate heat-sinking (e. g. heat-conducting pliers). Where necessary, allow ease of access for retrofit.

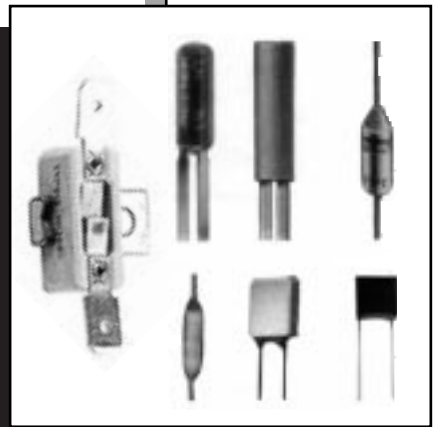
Fuses are partly sealed against varnish etc. Connections can be customised – e. g. flexible leads, wire, push-on terminals or formed to specification on request.

APPLICATIONS

Appliances and equipment, electrical plant and machinery.

Examples

Cookers	Hot water appliances	Information technology
Stoves	Hair appliances	Computers
Grills	Hair driers	Laboratory equipment
Fryers	Hand driers	Cleaning appliances
Waffle irons	Extractor hoods	Motors
Coffee machines	Ventilators	Transformers
Gas heaters	Radio + TV's	Choker
Boilers	Recorders	Coils
	Office machinery	Pumps
		Industrial plant



CANTHERM

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Technical Data

Type	Voltage 50–60 Hz U _N	Current		Response temperature range T _f °C	Tolerance K	Standard- connections
		cos φ 1,0	cos φ 0,6			
L 10*	250 V	3A/8 A	6,3 A	71 bis 150	+0–10K	silver-plated copper, flat, section 1.8 x 0.5, leads 0.25 mm ² or 0.5 mm ² or wire Ø 0.8 silicone insulated wire leads Ø 1.0 mm wire Ø 0.53 mm wire Ø 0.5 mm wire Ø 0.55 mm wire Ø 0.6 mm wire Ø 0.7 mm wire Ø 1.2 mm wire Ø 0.53 mm wire Ø 0.58 mm wire Ø 0.6 mm wire Ø 1.0 mm wire Ø 1.0 mm push-on 6.3 x 0.8 mm (V or H) Solder tags, push-on, weldable connection
L 50	250 V	10 A		72 upto 240	+0– 5K	
MTN	250 V	1 A		103 upto 169	+0–10K	
MTM	250 V	1 A		102 upto 130	+0–10K	
MTH	250 V	2 A		103 upto 169	+0–10K	
MTR	250 V	3 A		98 upto 128	+0–10K	
MTS	250 V	5 A		100 upto 150	+0–10K	
MWS*	250 V	12 A		100 upto 150	+0–10K	
MTV OVS	250 V	1 A		103 upto 169	+0–10K	
MTV OOV	250 V	2 A		103 upto 169	+0–10K	
S 3 M 5 A	250 V	5 A	4,5 A	77 upto 184	+0– 5K	
S 3 M 10 A	250 V	10 A	8,0 A	72 upto 240	+0– 5K	
S 3 M 16 A	250 V	16 A		72 upto 240	+0– 5K	
TDM	250 V	15 A		99 upto 150	+0– 7K	
T S 1	250 V	7 A		238 upto 335	+0–10K	

Rated Functioning Temperatures / Marking

Sales designation	L10			MTN			MTH			MTR			MTS			MWS							
Type	S/G/L			N			H			R			S			S							
Rated functioning temperatures	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C					
Designation	71	41	175	103	N2	70	180	103	H100	70	180	98	R 95	75	180	100	S 95	70	180	100	S 95*	70	180
	77	47	175	117	N3*	85	180	117	H110	85	180	108	R 105	90	180	110	S105	80	180	110	S105*	80	180
	85	55	175	127	N4*	95	180	127	H125	95	180	130	R 125	110	180	130	S125	100	180	130	S125*	80	180
	90	60	175	136	N5*	105	180	136	H130	105	180					143	S138*	110	180	143	S138*	110	180
	100	70	175	140	N6	105	180	140	H135	105	180					150	S145*	120	180	150	S145*	120	180
	108	78	175	150	N7	115	180	150	H145	115	180												
	118	88	175	169	N8*	180		165	H160*	130	180												
	130	100	175					169	H169*	130	180												
	140	110	175																				
	150	120	175																				

Sales designation	MTM			MTV			MTV			TS1			TDM					
Type	M			OVS			OOV			915			V/H					
Rated functioning temperatures	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C			
Designation	M10	102	75	165	VS10	103	70	160	V100	103	70	160				90*	68	250
	M20	115	85	165	VS11	117	95	160	V110	117	95	160	238	200	350	99	83	250
	M30	125	90	165	VS12	128	100	160	V125	131	95	160				110	86	250
	M33	130	100	165	VS13	136	100	160	V130	135	100	160	308*	260	460	120	96	250
					VS14	150	115	160	V145	150	115	160	335	290	460	130	112	250
					VS16*	169	130	180	V169*	169	130	180				140	125	250
																150	135	250

Sales designation	S 3 M			S 3 M			L 50			S 3 M			
Rated current I _n	5 (4,5) A			10 (8) A			10 A			16 A			
Connections	01			00			01			G900, G902, G904, G905, G906, G908, G912, G913			
Execution	A004			A003			A004			A003			
Rated functioning temperatures	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	T _f °C	T _c °C	T _m °C	
Designation	72	–	–	G4A00072C	G4A01072C	47	100	G4A00072C	G5A00072C	G5A01072C	47	175	
	77	G7F01077C	62	125	G4A00077C	G4A01077C	52	125	G4A00077C	G5A00077C	G5A01077C	52	200
	84	G7F01084C	69	125	G4A00084C	G4A01084C	59	125	G4A00084C	G5A00084C	G5A01084C	59	200
	93	G7F01093C	78	140	G4A00093C	G4A01093C	68	140	–	G5A00093C	G5A01093C	68	215
	98	G7F01098C	83	140	G4A00098C	G4A01098C	73	140	G4A00098C	G5A00098C	G5A01098C	73	215
	104	–	–	–	G4A00104C	G4A01104C	79	150	G4A00104C	G5A00104C	G5A01104C	79	225
	110	G7F01110C	95	140	G4A00110C	G4A01110C	85	150	G4A00110C	G5A00110C	G5A01110C	85	225
	117	G7F01117C	102	140	G4A00117C	G4A01117C	92	160	G4A00117C	G5A00117C	G5A01117C	92	235
	121	G7F01121C	106	150	G4A00121C	G4A01121C	96	160	G4A00121C	G5A00121C	G5A01121C	96	235
	128	G7F01128C	113	150	G4A00128C	G4A01128C	103	160	G4A00128C	G5A00128C	G5A01128C	103	235
	144	G7F01144C	129	175	G4A00144C	G4A01144C	119	175	G4A00144C	G5A00144C	G5A01144C	119	250
	152	G7F01152C	137	175	G4A00152C	G4A01152C	127	175	G4A00152C	G5A00152C	G5A01152C	127	250
	167	G7F01167C	152	200	G4A00167C	G4A01167C	142	210	G4A00167C	G5A00167C	G5A01167C	142	285
	184	G7F01184C*	159	200	G4A00184C	G4A01184C	159	210	G4A00184C	G5A00184C	G5A01184C	159	285
	192	–	–	–	G4A00192C	G4A01192C	167	210	G4A00192C	G5A00192C	G5A01192C	167	285
	216	–	–	–	G4A00216C	G4A01216C	200	375	G4A00216C	G5A00216C	G5A01216C	191	350
	229	–	–	–	G4A00229C	G4A01229C	200	375	G4A00229C	G5A00229C	G5A01229C	200	300
	240	–	–	–	G4A00240C	G4A01240C	200	375	G4A00240C	G5A00240C	G5A01240C	200	300

T_f: Rated functioning temperature T_f is the temperature at which the thermal fuse cuts off under determined conditions.

T_c: Holding temperature T_c is the highest temperature at which the thermal fuse does not change its circuit during a determined period and under determined conditions.

The temperature ratings T_c mentioned here are only recommendations. They can be reduced or increased depending on the application.

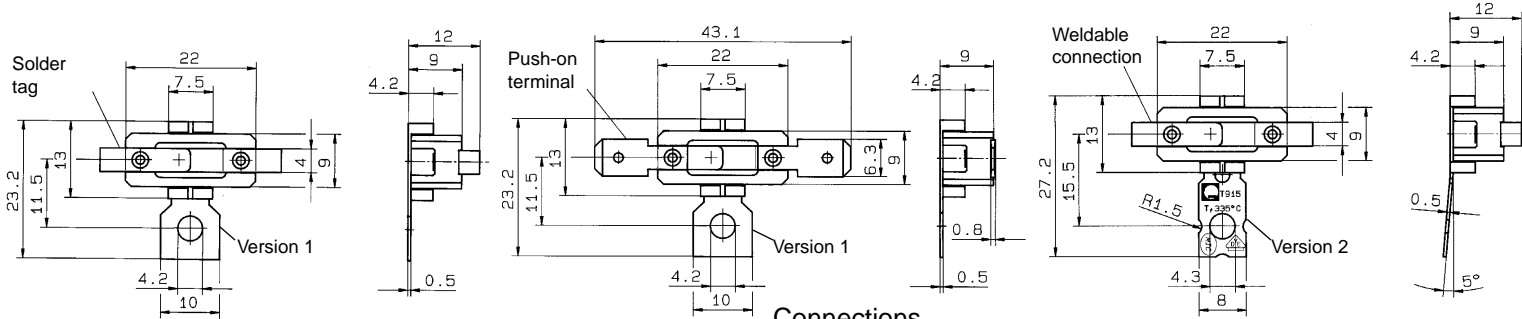
T_m: Maximum temperature limit T_m is the temperature determined by the manufacturer below which the mechanical and electrical parameters of the thermal fuse are not affected during a determined period after the change of the circuit.

Attention!

- Self heating by current passing through the thermal fuse must be taken into consideration when selecting the proper type required for the application.
- Thermal fuses with forced air cooling are suited for higher current ratings. Please ask.
- Minimum rate of temperature change 0.1 K/min.
* without approval

Further technical specifications on request.

TS1 Type 915



Fixing lug Version 1 or Version 2

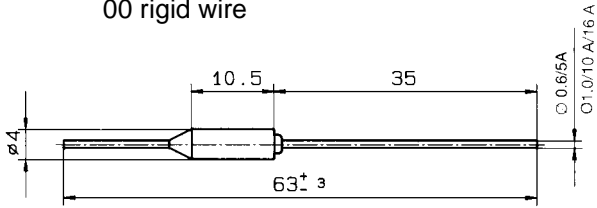
- | | | |
|------------------------------------|------------------------|--|
| Code 11 Version 1 steel (standard) | 21 Version 2 steel | Code 03 Solder tag (standard) |
| 10 Version 1 aluminium | 20 Version 2 aluminium | 10 Weldable connection steel |
| 12 Version 1 brass | 22 Version 2 brass | 21 Push-on terminal 6.3 x 0.8 nickel-plated brass. |
| | | 40 Push-on terminal 4.8 x 0.8 nickel-plated brass. |

Connections

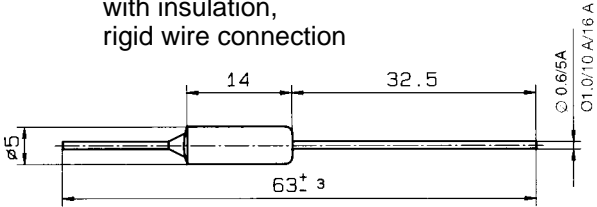
- Code 03 Solder tag (standard)
 10 Weldable connection steel
 21 Push-on terminal 6.3 x 0.8 nickel-plated brass.
 40 Push-on terminal 4.8 x 0.8 nickel-plated brass.

SMS

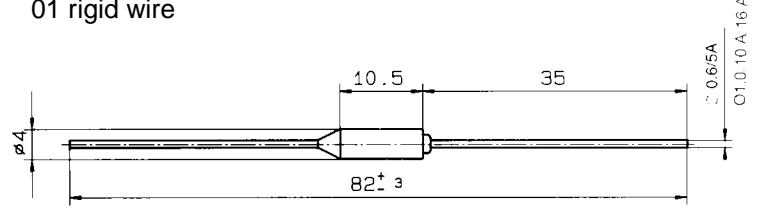
Connections 00 rigid wire



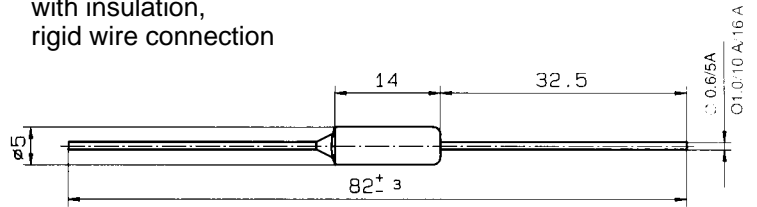
Connection
A003 special version
upto max. 141 °C
with insulation,
rigid wire connection



Connections 01 rigid wire

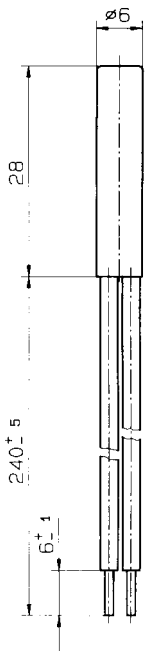


Connection
A004 special version
upto max. 141 °C
with insulation,
rigid wire connection

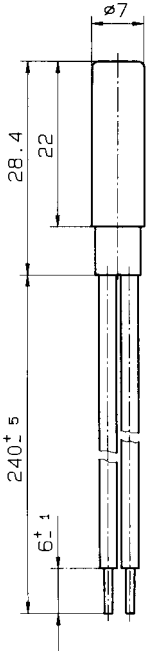


L 50

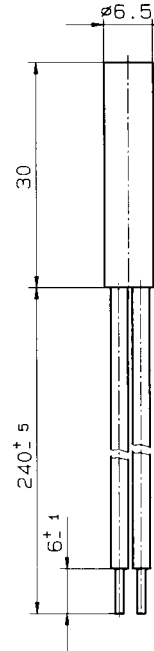
- Type G 900 (upto 125 °C)
- Type G 904 (upto 152 °C)
- Type G 908 (upto 184 °C)



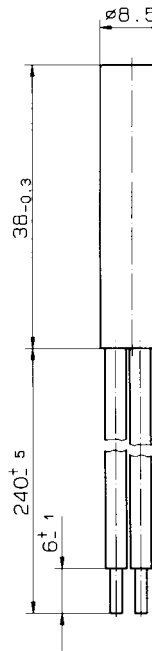
Type G 902
(upto 184 °C
with brass case)



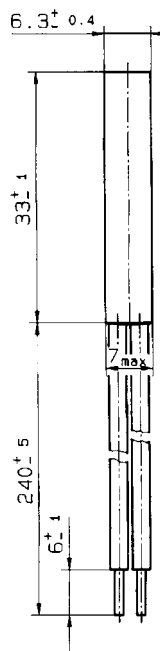
Type G 905
(upto 150 °C,
ceramic)



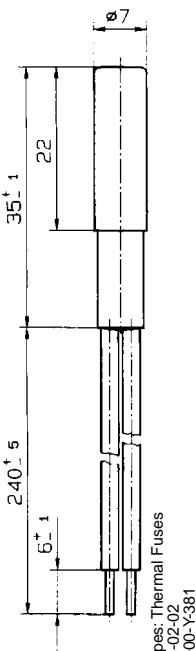
Type G 906
(upto 184 °C)

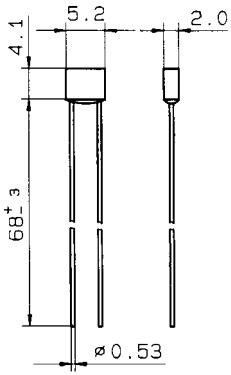
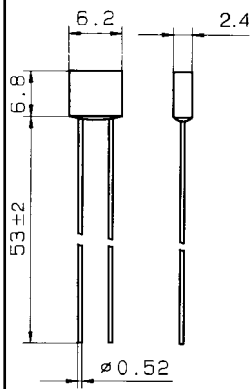
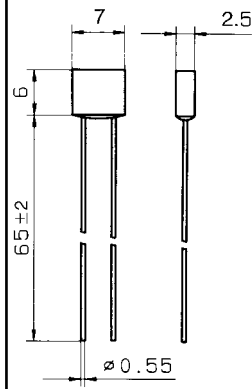
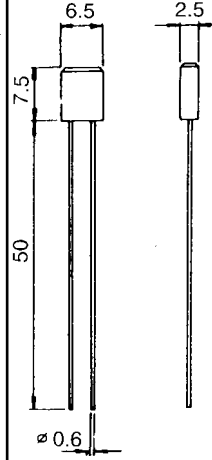
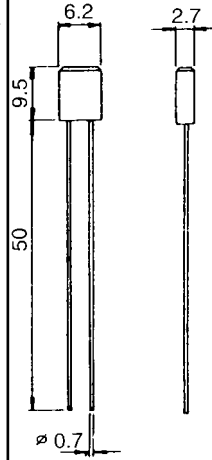
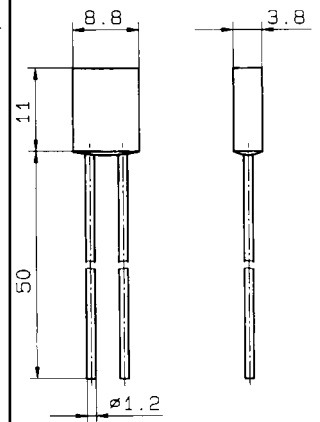
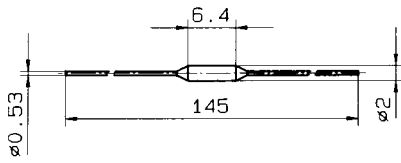
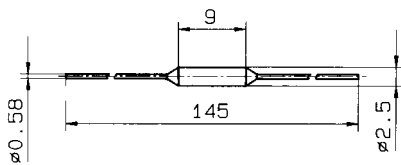
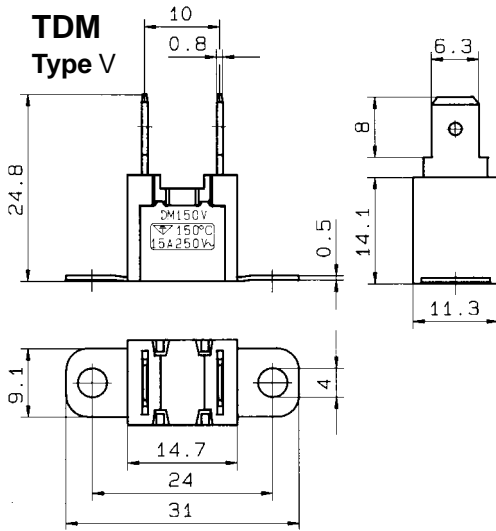
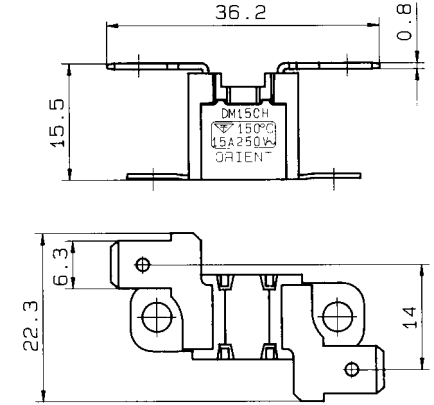


Type G 912
(upto 240 °C)

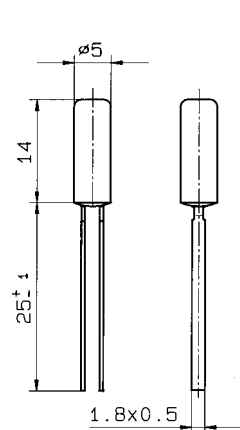


Type G 913
(upto 240 °C,
with brass case)

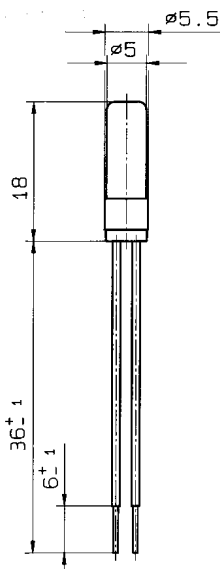


MTN (1 A)**MTM (1 A)****MTH (2 A)****MTR (3 A)****MTS (5 A)****MWS (12 A)****MTV****Type OVS (1 A)****Type OOV (2 A)****TDM****Type V****Type H****L 10 (8 A)**

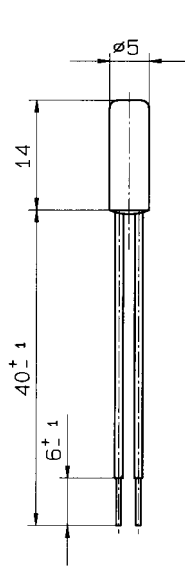
Type S000
connections
1.8 x 0.5

**L 10 (8 A)**

Type G 911
L604 wire
L520 leads
0.5 mm² insulated

**L 10 (3 A)**

Type L514
leads 0.25 mm²

**QUALITY ASSURANCE / APPROVAL**

These thermal fuses comply with international standards and undergo continuous checks in production. Production item testing, voltage testing.

Specific application sheets and approval details are available on request.

ORDERING EXAMPLE MTH

Quantity	Designation	Type	Temperature °C T _f
50000	MTH	00H	140

ORDERING EXAMPLE S3M

Quantity	Designation	Version	Code	Temperature °C T _f
10000	S3M	00	G4A00117C	117

We reserve the right to change specifications without prior notice.

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