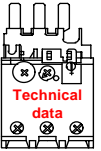
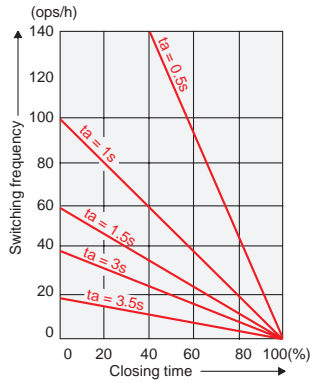


Technical data for Overload relays TA25DU – TA110DU



Intermittent duty



Switching frequency
in relation to load factor.
 t_a : motor starting time

Switching frequency

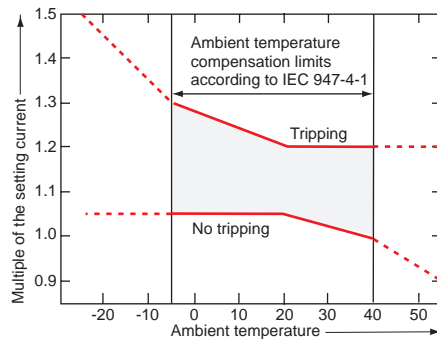
To avoid nuisance tripping, TA and T thermal O/L relays have been designed to withstand roughly 15 switching operations per hour with an approximately equal distribution between working and rest cycles.

In these conditions, the motor starting time must not exceed 1 second and the starting current must be lower than or equal to 6 times the motor I_n .

For intermittent operations, the diagram opposite specifies relay operating limits.

Example: Motor starting time: 1 sec.
Load factor: 40 %
Switching frequency: 60 ops./h according to diagram

Tripping limits at ambient temperatures varying by + 20°C



Ambient temperature compensation

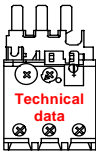
Thermal O/L relays are compensated against ambient temperature variations by a compensation bimetal which is sensitive to the ambient temperature.

Thermal O/L relays are designed to operate between -5°C and $+40^{\circ}\text{C}$ in compliance with standard IEC947-4-1. For a wider range of -25°C to $+55^{\circ}\text{C}$ consult the graph opposite.

Example: tripping at -25°C . Tripping takes place before 1.5 times the setting current.

Resetting: TA25DU – TA110DU thermal O/L relays have convertible manual/automatic resetting.

Delivery: in manual resetting mode.



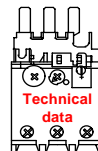
Technical data for Overload relays TA25DU – TA110DU

General technical data

Types	TA25DU	TA42DU	TA75DU	TA80DU	TA110DU
Standards: (main standards: international, European and national)	UL, CSA, IEC947-4-1, VDE0660, NF C63 650, BS4941, EN60947-4-1				
Rated insulation voltage U_i according to IEC947-4-1	600V (UL); 690V (IEC)				
Rated impulse withstand voltage U_{imp} according to IEC947-4-1	6				
Permissible ambient temperature — for storage — with compensation	-40 to +70 -25 to +55 (maximum values: see page 3.7)				
Climatic withstand DIN 50017	Humidity in alternate climate KFW, 30 cycles				
Mounting positions	①				
Shock withstand at nominal I_n Critical direction of shocks A1, A2	shock duration ms 15 multiples of g 12				
Resistance to vibrations (±1 mm, 50 Hz)	multiples of g 8				
Mounting — on contactor — separate with DB - kit	Latching below the contactor, screw fixing on main terminals Using screws: 2 x M4 or 35 mm EN50022				
Terminals and cross-sectional areas for main conductors (motor side) • screw terminal — with cable clamp — via tunnel connector — flat type for lug or busbar • conductor cross-sectional area — rigid solid or rigid stranded — flexible with cable end — recommended busbars	TA25DU setting ranges: from 0.1-0.16A to 18-25 A		TA25DU setting ranges: 24-32 A		
	M4 — —	M5 — —	M6 — —	M6 — —	M6 — —
	— — —	— — —	8 – 1 — —	8 – 1 1 x 2.5 – 35 or 2 x 2.5 x 16 1 x 2.5 – 25 or 2 x 2.5 x 10	8 – 1 — —
AWG mm ² mm ² mm	16 – 8 2 x 1.5 – 6 2 x 1.5 – 4	16 – 8 1 x 10 2 x 0.75 – 6			6 – 1 16 – 35 16 – 35 12 x 3
Terminals and cross-sectional area for auxiliary conductors • screw terminal (screw size) — with cable clamp • conductor cross sectional area — rigid solid or rigid stranded	AWG M 3.5 2 x 18 – 24				
Degree of protection according to IEC144, IEC529 DIN 40 050, NFC20-010 and VDE110/Part. 106	②				③
Pole characteristics					
Number of poles	3				
Setting ranges	see page 3.4				
Tripping class according to IEC947-4	10A				
Operating frequency	Hz 0 – 400				
Tripping frequency without untimely tripping	Up to 15 ops./h or 60 ops./h with 40 % load factor when neither the starting current of $6 \times I_n$ nor the starting time 1s are exceeded.				
Resistance per phase in mΩ and heat dissipation in W at the maximum current setting	see page 3.9				
Protection fuses co-ordination with short circuit protection devices	To be sized per NEC Article 430-152				

① On a support at an angle of ±30° in relation to the vertical plane (standard position). Other positions possible except mounting on a horizontal plane (in this case the tripping mechanism would be located above the bimetals).
 ② All the terminals are protected against direct contact according to VDE0106/Part. 100. (without additional terminal shrouds).
 ③ All the terminals are protected against direct contact according to VDE0106/Part. 100. (with additional terminal shrouds).

Technical data for Overload relays TA25DU – TA110DU



Auxiliary contacts		Normally Closed N.C.	Normally Open N.O.	
Terminal marking		95 – 96	97 – 97	
Rated insulation voltage U_i	VAC	500	500	
Conventional thermal current (in free air) I_{th}	A	10	6	
Rated operation current I_e , AC-15	up to 240V	3.0	1.5	
	up to 440V	1.9	0.95	
	up to 500V	1.0	0.75	
Rated operational current I_e , DC-13	up to 250V	A	0.12	0.04
Protection against short circuits gG (gl) fuses (according to IEC269 S271/S 281 circuit breaker	A	10	6	
	A	k3	k1	
Maximum potential difference between N.C. and N.O. auxiliary contacts	VAC	500	500	
	VDC	440	440	

Resistance and Joule Loss per phase

TA25DU Thermal O/L relay

Setting range	Resistance per phase	Joule loss per phase at max. setting current
from – to A A	mΩ	W
0.1 – 0.16	85850.0	2.2
0.16 – 0.25	85150.0	2.2
0.25 – 0.4	13750.0	2.2
0.4 – 0.63	5370.0	2.2
0.63 – 1.0	2190.0	2.2
1.0 – 1.4	1120.0	2.2
1.3 – 1.8	670.0	2.2
1.7 – 2.4	383.0	2.2
2.2 – 3.1	229.0	2.2
2.8 – 4.0	137.0	2.2
3.5 – 5.0	87.5	2.2
4.5 – 6.5	61.0	2.2
6.0 – 8.5	30.4	2.2
7.5 – 11	18.2	2.2
10 – 14	11.2	2.2
13 – 19	6.3	2.3
18 – 25	4.7	2.9
24 – 32	3.2	3.3

TA42DU Thermal O/L relay

Setting range	Resistance per phase	Joule loss per phase
A – A	mΩ	W
18 – 25	5.5	3.43
22 – 32	2.89	2.91
29 – 42	1.84	3.24

TA75DU Thermal O/L relay

18 – 25	5.5	3.43
22 – 32	2.89	2.91
29 – 42	1.84	3.24
36 – 52	1.3	3.51
45 – 63	0.936	3.72
60 – 80	0.615	3.94

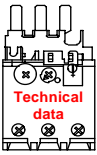
TA80DU Thermal O/L relay

29 – 42	1.84	3.24
36 – 52	1.3	3.51
45 – 63	0.936	3.72
60 – 80	0.615	3.94

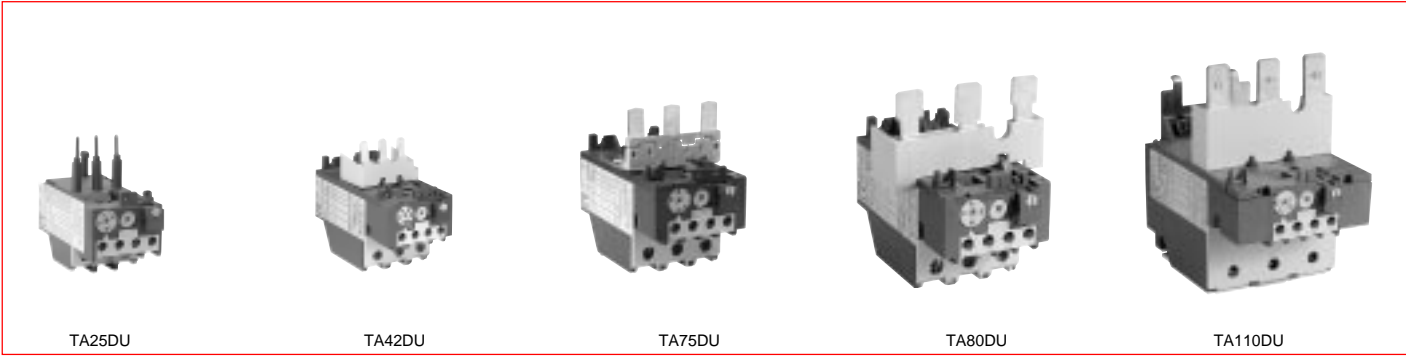
TA110DU Thermal O/L relay

80 – 100	0.378	3.78
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Overload relays



Tripping curves for Overload relays TA25DU – TA110DU



TA-DU and **T-DU** thermal O/L relays are 3 pole with manual or automatic resetting mode selection. The reset button can also be used for stopping.

Built in auxiliary contacts are physically separate and, consequently, can be used in different circuits (control circuit/indication circuit).

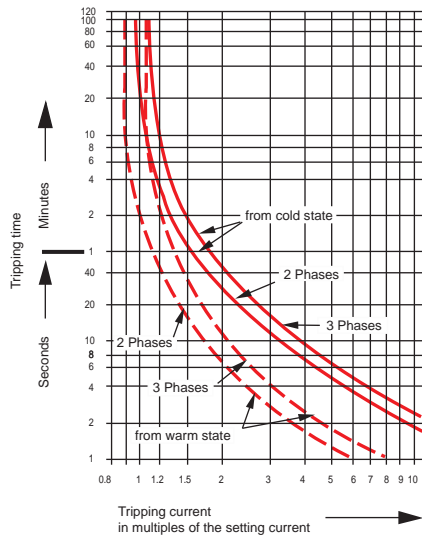
Each relay is temperature compensated and ensures phase failure protection.

Protective relays up to size TA75DU are protected against direct contact from the front face.

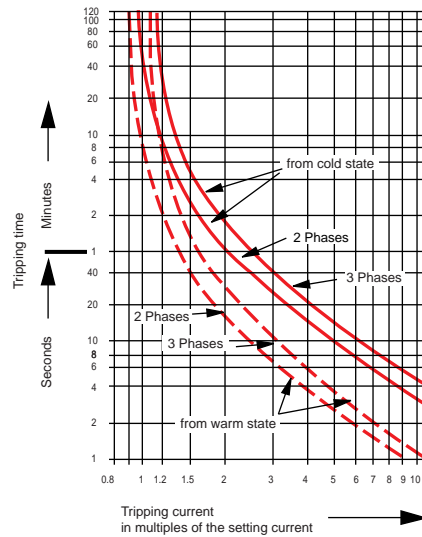
The connecting terminals are delivered in open position with (+,-) posidrive screws and screwdriver guidance. It is advisable to tighten unused terminal screws.

Thermal O/L relay tripping curves

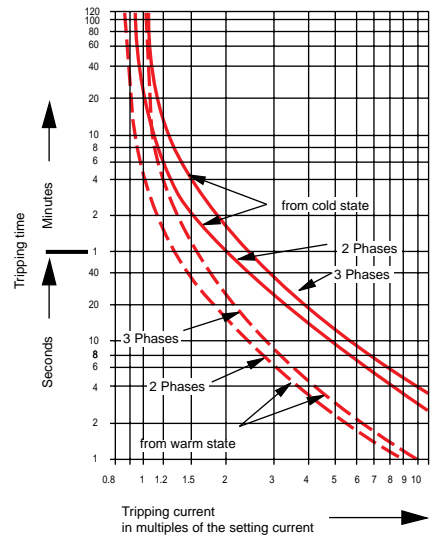
TA25DU, T25DU
(tripping class 10A)



TA42DU, TA75DU and TA80DU
(tripping class 10A)



TA110DU
(tripping class 10A)



Overload relays