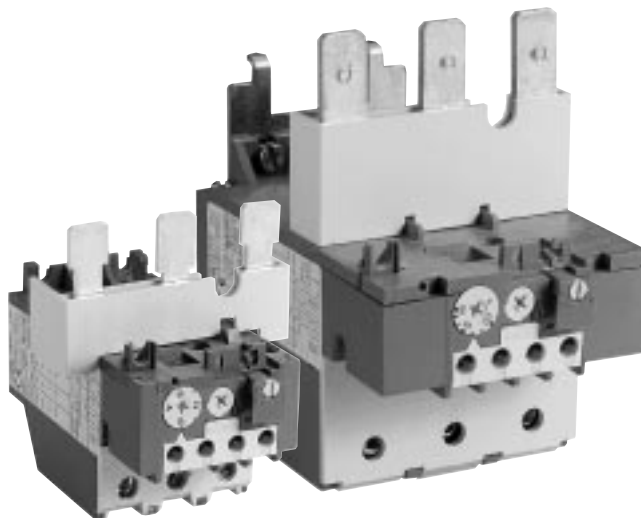




Overload relays

Type TA

Class 10



Description

- Available for starter construction with A Line contactors and separate panel mounting
- Designed for close couple mounting for 11 contactors, A9 – A110
- Separate base mounting available for all overload relays
- Class 10 adjustable overload relays are standard with all ABB Line starters
- Reset can also be adjusted to function as a stop button
- Screwdriver guide holes
- All terminal screws are available from the front
- UL File No: E48139
- CSA File No: LR98336
- Trip indication
- Remote trip and reset option available
- Single phase and phase unbalance protection
- Isolated alarm circuit (N.O.) contact
- Ambient compensation: -25°C to +55°C (-13°F to +131°F)
- Manual test
- Manual or automatic reset
- Factory calibrated and tested
- Wide adjustment range

Catalog number explanation

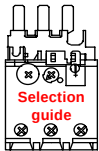
TA25DU 0.16

Frame size _____ Amp rating

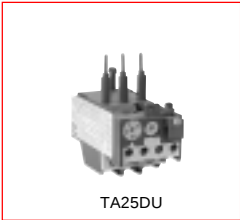
Index

- Features 3.1
- OLRs for A9 – A110 3.4
- Technical data 3.7
- Approximate dimensions 3.12

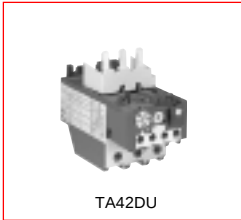
Selection guide
for Overload relays



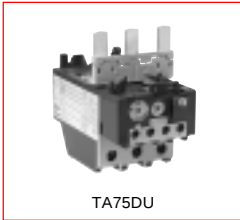
Thermal O/L relays



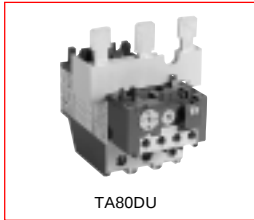
TA25DU



TA42DU



TA75DU



TA80DU

Types

Main characteristics

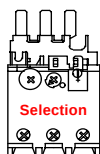
Construction	3 pole with ambient temperature compensation. Protection against single phase operation. Built in auxiliary contacts: 1N.O. + 1N.C. 			
Resetting	Convertible: Manual to Automatic			
Setting ranges	Number	18	3	6
	from to	0.1 – 0.16A 24 – 32A	18 – 25A 29 – 42A	18 – 25A 60 – 80A

Mounted with contactors

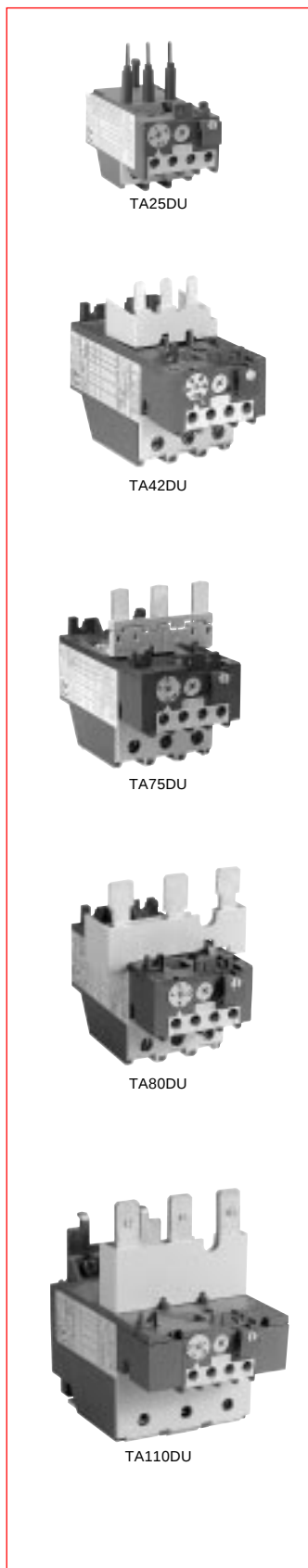
Mounting kit	No kit is required for mounting thermal O/L relays below contactors			
Types of contactors for combined mounting	A9 A12 A16 A26 A30 A40	BC9 BC16 BC18 BC25 BC30	A30 A40	A50 A63 A75 AE50 AE63 AE75
			A95 A110 AE95 AE110	

Mounted separately (i.e. separate from contactor)

Separate mounting kit	DB25	DB80
Accessories		
Tripping coil	DS25-A	
Resetting coil	DR25-A	
Terminal shroud	Terminals protected against direct contact (without the addition of terminal shrouds)	
Function markers	BA5-50	



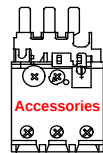
Type TA, Class 10 for Contactors A9 – A110



For contactor	Setting range A	Catalog number	List price
A9 – A40 BC9 – BC30 ^①	0.1 – 0.16	TA25DU0.16	\$ 63
	0.16 – 0.25	TA25DU0.25	
	0.25 – 0.4	TA25DU0.4	
	0.4 – 0.63	TA25DU0.63	
	0.63 – 1.0	TA25DU1.0	
	1.0 – 1.4	TA25DU1.4	
	1.3 – 1.8	TA25DU1.8	
	1.7 – 2.4	TA25DU2.4	
	2.2 – 3.1	TA25DU3.1	
	2.8 – 4.0	TA25DU4.0	
	3.5 – 5.0	TA25DU5.0	
	4.5 – 6.5	TA25DU6.5	
	6.0 – 8.5	TA25DU8.5	
	7.5 – 11	TA25DU11	
	10 – 14	TA25DU14	
	13 – 19	TA25DU19	
	18 – 25	TA25DU25	
	24 – 32	TA25DU32	
A30 – A40	18 – 25	TA42DU25	78
	22 – 32	TA42DU32	
	29 – 42	TA42DU42	
A(E)50 – A(E)75	18 – 25	TA75DU25	102
	22 – 32	TA75DU32	
	29 – 42	TA75DU42	
	36 – 52	TA75DU52	
	45 – 63	TA75DU63	
A(E)95 – A(E)110	60 – 80	TA75DU80	135
	29 – 42	TA80DU42	
	36 – 52	TA80DU52	
	45 – 63	TA80DU63	
	60 – 80	TA80DU80	165
	65 – 90	TA110DU90	
	80 – 110	TA110DU110	

① To select an overload relay for BC9 – BC30 contactors, delete the "A" from the catalog number. Ex.: BC9-30-01-04 contactors with setting range of 1.3 – 1.8: OLR catalog number will be T25DU1.8

Accessories for Overload relays



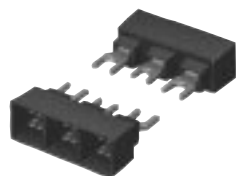
DB25/25A



DB80



DB200



LC26-B1

Separate mounting kits

For O/L relays	Amps	Catalog number	List price
TA25DU	0.1 – 25	DB25/25A	\$ 30
TA25DU	24 – 32	DB25/32A	38
TA42DU, TA75DU, TA80DU	18 – 80	DB80	45
TA110DU	100 – 200	DB200	60

Flat pin terminal blocks

Mounting on:	Catalog number	List price
TA25DU relay	LC30-T	\$ 6
DB25/25A or DB25/32A	LC26-B1	6

Terminal block— AWG #8 cable

Mounting on:	Catalog number	List price
TA25DU (25A or less) or DB25/25A	DX25	\$ 15

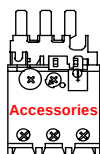
Description

LC terminal blocks can be used to convert standard connections into Faston connections: 2 x 6.3 mm or 4 x 2.8 mm per pole. The connections are protected against accidental contact.

The LC30-T has a terminal block for the 3 power terminals and a second for the 4 auxiliary terminals of a TA25 DU thermal O/L relay.

The LC26-B1 has two identical terminal blocks each for 3 power terminals. This block allows the power terminals to be mounted with two DB25 kits or a TA25DU thermal O/L relay and DB25 kit assembly.

NOTE: According to DIN 46429 part 1 and NFC 20-120 the max. capacity of a Faston connection is 25 A.



Accessories for Overload relays



DS25A



DR25A

Remote tripping coils

U voltage at 50/60 Hz		Catalog number	List price
DS25-A remote tripping coil		DS25-A-24 DS25-A-48 DS25-A-110 DS25-A-220/380 DS25-A-500	\$ 60
DS25-A remote resetting coil		DR25-A-24 DR25-A-48 DR25-A-110 DR25-A-220/380 DR25-A-500	

Application

- The DS25-A coil is used for remote electrical tripping of the TA25 DU thermal O/L relay and is connected to the relay's normally closed 95-96 auxiliary contact.
- The DR 25-A coil is used for remote electrical resetting of the TA25DU thermal O/L relay which is adjusted for "Manual resetting"; it is connected to the relay's normally open 97-98 auxiliary contact.

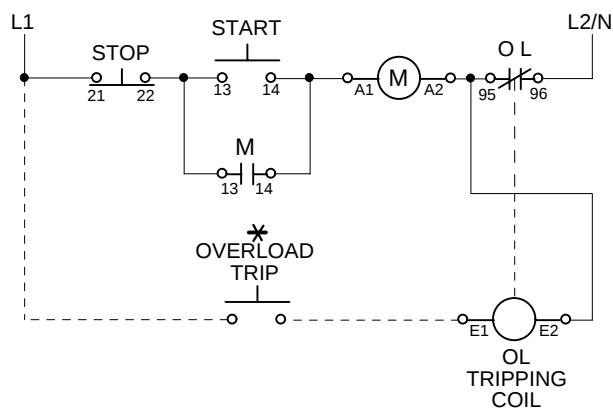
The coils are not designed for continuous duty. Impulse duration: 0.2 to 0.35 s.

Set the button to "Man" (Manual resetting).

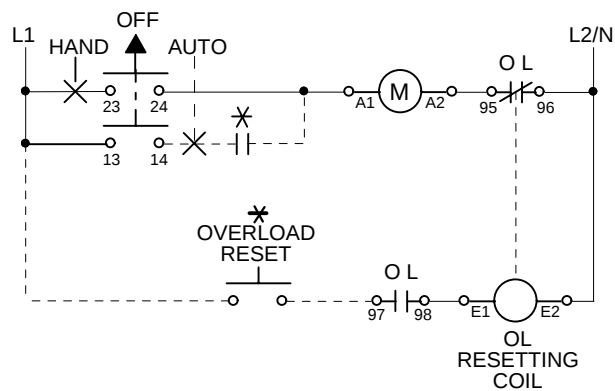
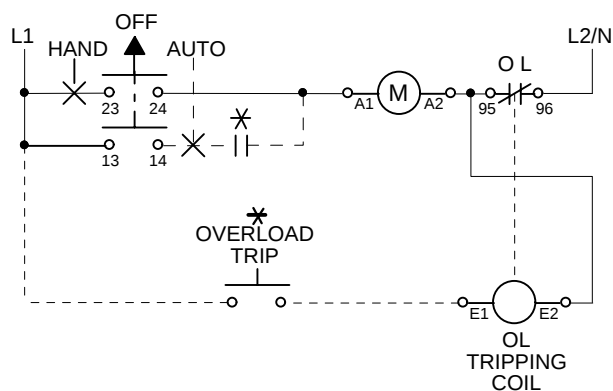
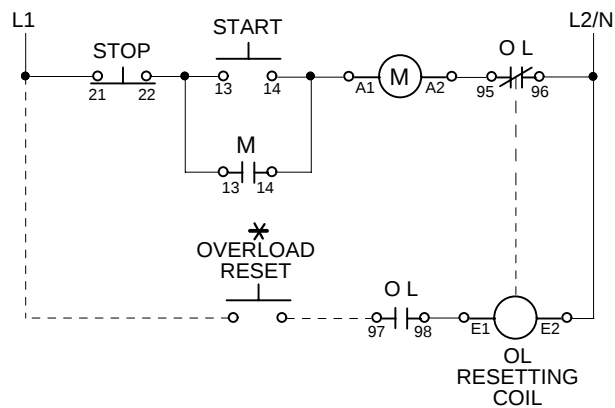
Mounting: clipped on to TA25DU thermal O/L relay.

Installation diagrams

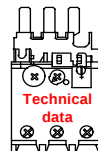
For connection of DS25-A to TA25DU relay



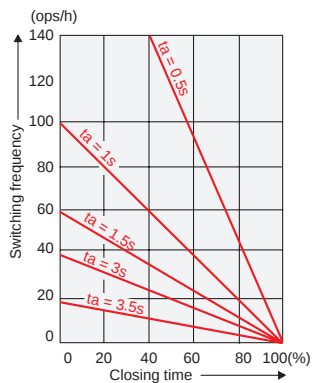
For connection of DR25-A to TA25DU relay



Technical data for Overload relays TA25DU – TA110DU



Intermittent duty



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

Switching frequency

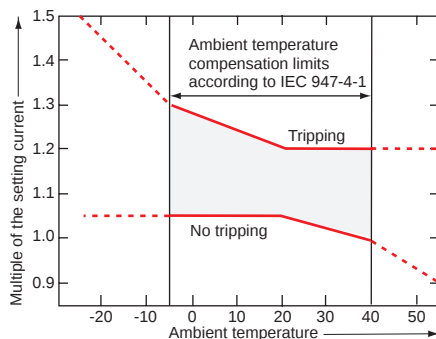
To avoid nuisance tripping, TA and T thermal O/L relays have been designed to withstand roughly 15 switching operations per hour with an approximately equal distribution between working and rest cycles.

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

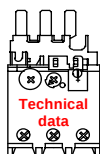
Thermal O/L relays are compensated against ambient temperature variations by a compensation bimetal which is sensitive to the ambient temperature.

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

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

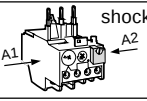
Resetting: TA25DU – TA110DU thermal O/L relays have convertible manual/automatic resetting.

Delivery: in manual resetting mode.



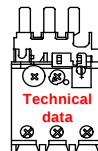
Technical data for Overload relays TA25DU – TA110DU

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 multiples of g				
Resistance to vibrations (±1 mm, 50 Hz)	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 — —
	16 – 8 2 x 1.5 – 6 2 x 1.5 – 4	16 – 8 1 x 10 2 x 0.75 – 6	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 —
	mm ² mm ² mm	mm ² mm ² mm	mm ² mm ² mm	mm ² mm ² mm	mm ² mm ² mm
Terminals and cross-sectional area for auxiliary conductors • screw terminal (screw size) — with cable clamp • conductor cross sectional area — rigid solid or rigid stranded	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	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 x 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	A	3.0	1.5
up to 440V	A	1.9	0.95
up to 500V	A	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	A	10	6
S271/S 281 circuit breaker	A	k3	k1
Maximum potential difference	VAC	500	500
between N.C. and N.O. auxiliary contacts	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

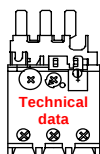
TA80DU Thermal O/L relay

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

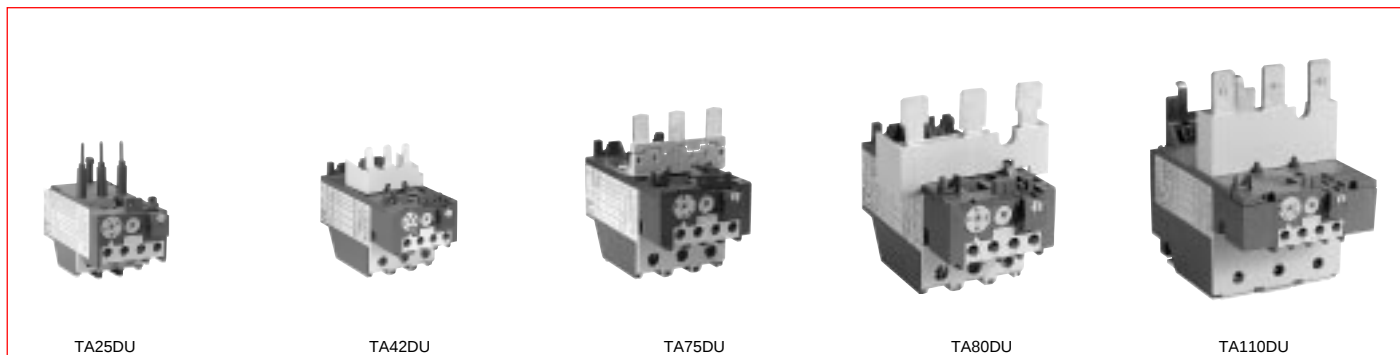
TA110DU Thermal O/L relay

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).

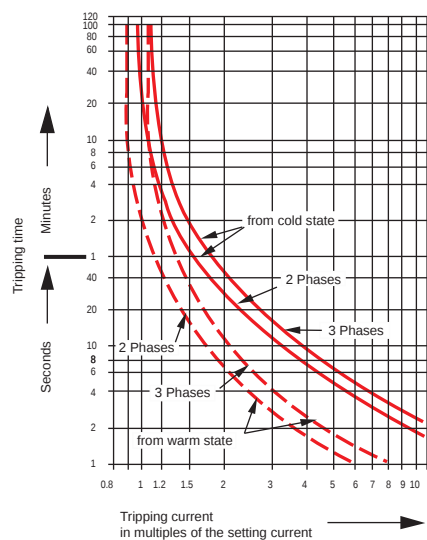
Each relay is temperature compensated and ensures phase failure protection.

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

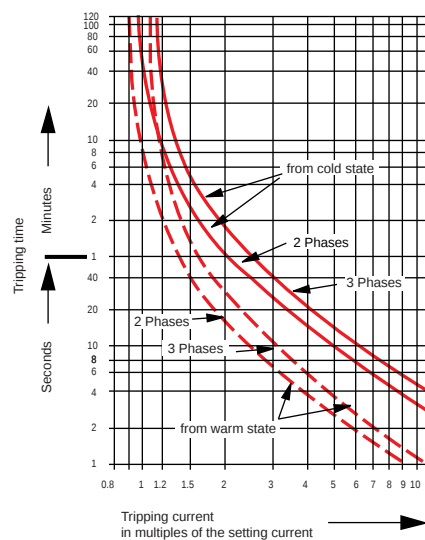
The connecting terminals are delivered in open position with (+,-) posidrive screws and screwdriver guidance. It is advisable to tighten unused terminal screws.

Thermal O/L relay tripping curves

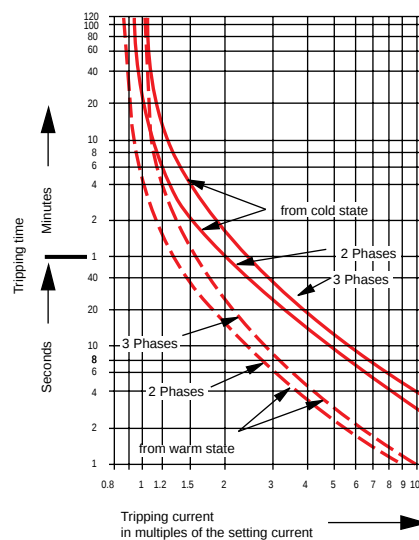
TA25DU, T25DU
(tripping class 10A)



TA42DU, TA75DU and TA80DU
(tripping class 10A)

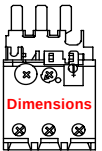


TA110DU
(tripping class 10A)

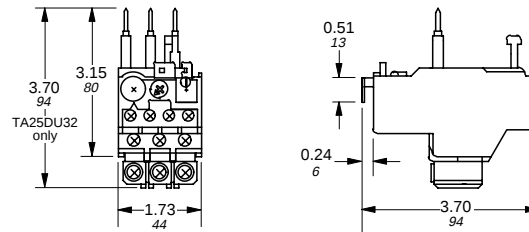


Approximate dimensions for Overload relays T25DU – TA110DU

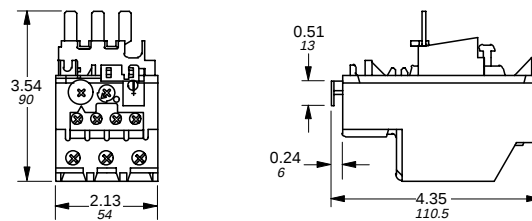
00.00 00.00
Inches
Millimeters



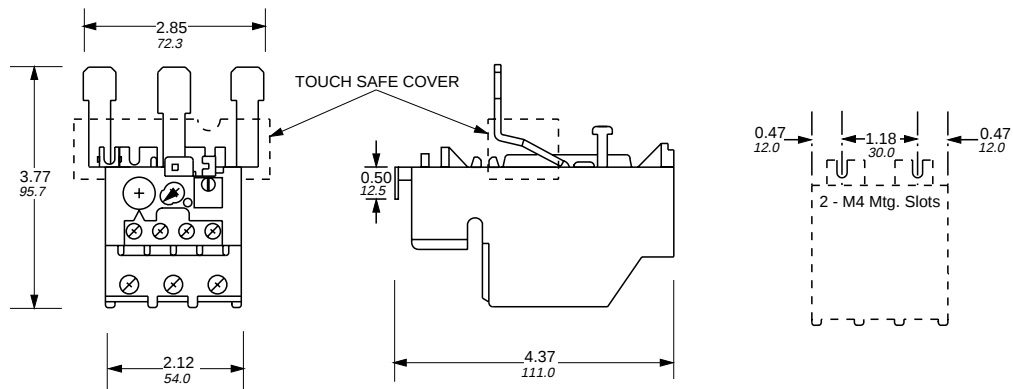
TA25DU



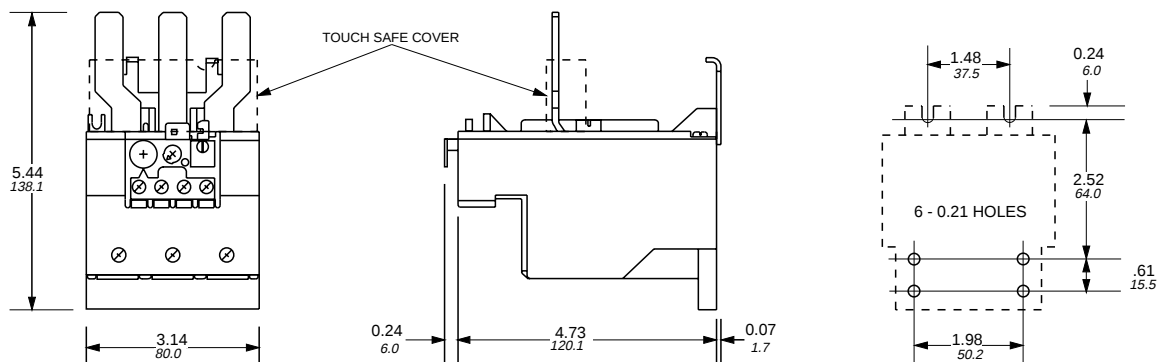
TA42DU



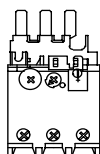
TA75DU & TA80DU



TA110DU



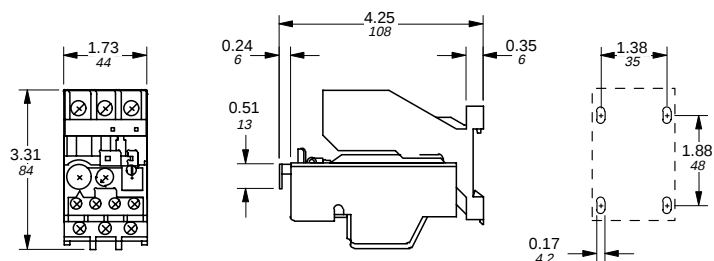
Overload relays



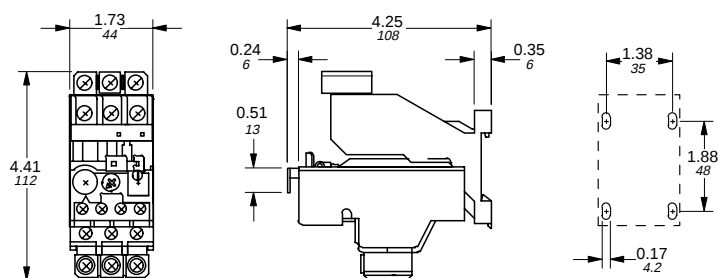
Approximate dimensions for Separate mounting kits TA25DU – TA75DU

00.00 → Inches
00.00 → Millimeters

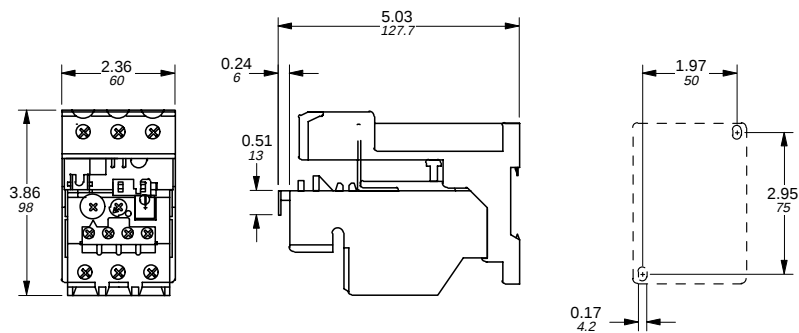
TA25DU & AB25



TA25DU32 & AB32



TA42DU / TA75DU & AB80A



Overload relays