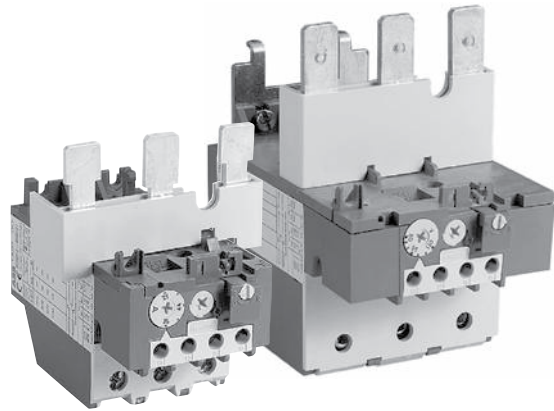


Thermal Overload relays



Thermal overload relays

Type TA
Class 10
Class 20



Description

- Available for starter construction with A Line contactors and separate panel mounting
- Designed for close couple mounting
- 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

Tripping classes of the thermal overload relays

Standard classes in IEC 947-4-1 are classes: 10 A, 10, 20, 30. The tripping class indicates according to IEC 947-4-1 the maximum tripping time in seconds under specified conditions of test at 7.2 times the setting current and specifies tripping and non tripping times for 1.5 and 7.2 times the setting current. Mostly used class is 10 A.

Abstract from IEC 947-4-1

Tripping class	10 A	10	20	30
Max. tripping time at 1.5 x setting current (warm state) (s)	120	240	480	720
Tripping time at 7.2 x setting current (cold state) (s)	2 – 10	4 – 10	6 – 20	9 – 30
At 1.05 x setting current	no tripping			

Description

TA thermal overload relays are used with A Line contactors for the protection of motors having a nominal voltage of up to 600VAC max per UL/CSA (690VAC and 800VDC per IEC).

Product range

• Standard relays:

Types: TA25DU, TA42DU, TA75DU, TA80DU, TA110DU, TA200DU and TA450DU

- TA25 to TA110 and TA200 are directly connected in the motor circuit.
- TA450DU relays are fed through a linear type transformer

• Special construction

Thermal overload relays with different certifications and approvals. Relays for protection EEx e motors.

Construction and function

• General

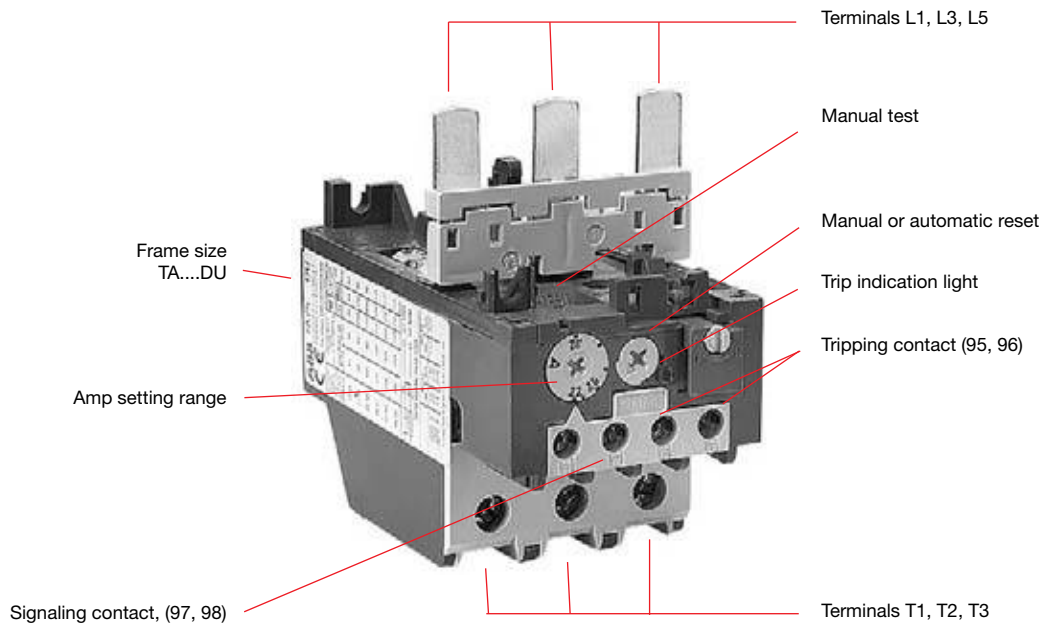
Thermal O/L relays and their accessories meet UL, CSA and most other important international standards (IEC), European standards (EN) and the most important national standards (DIN-VDE, NFC-UTE, BS, etc.). They meet the certification and approval directives required throughout the world.

Thermal overload relays are 3 pole. The motor current flows through their bimetals (1 per phase) which are indirectly heated. Under the effect of the heating, the bimetals bend, cause the relay to trip and the position of the auxiliary contacts to change.

The relay setting range is graduated in amps. In compliance with international and national standards, the setting current is the motor nominal current and not the tripping current (no tripping at 1.05 x setting current, tripping at 1.2 times setting current).

The tripping curves (cold or warm starting, 3 phases and 2 phases) are shown on page 2.14.

The relays are built to be self protecting in the event of an overload until the short circuit protection device is activated.



Selection guide TA25DU – TA80DU



TA25DU



TA42DU



TA75DU



TA80DU

Types

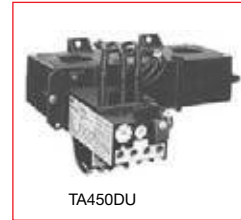
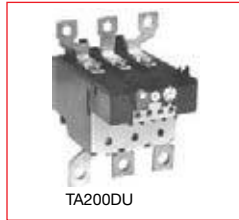
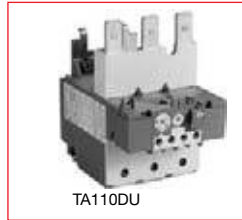
Main characteristics

Construction	3 pole with ambient temperature variation 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	4
	from	0.1 – 0.16A	18 – 25A	18 – 25A	29 – 42A
	to	24 – 32A	29 – 42A	60 – 80A	60 – 80A
Mounted with contactors	No kit is required for mounting thermal O/L relays below contactors				
Types of contactors for combined mounting	A/AE/AL9 A/AE/AL12 A/AE/AL16				
	A/AE/AL26 A/AE/AL30 A/AE/AL40	A/AE30 A/AE40		A/AE/AF50 A/AE/AF63 A/AE/AF75	A/AE/AF95 A/AE/AF110
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	

Selection guide

TA110DU – TA450DU

Thermal
Overload
relays



Types

Main characteristics

Construction	3 pole with ambient temperature variation compensation. Protection against single phase operation. Built in auxiliary contacts: 1N.O. + 1N.C.		

Resetting	Convertible: manual to automatic			
Setting ranges	Number	2	6	3
	from A	65 – 90	65 – 90	130 – 185
	to A	80 – 110	150 – 200	220 – 310

Mounted with contactors

Mounting kit	No kit is required for mounting thermal O/L relays		See page 2.7.	
Types of contactors for combined mounting				
	A/AE/AF95 A/AE/AF110			
	A/AF145 A/AF185		A/AF210 + DT450/A300 A/AF260 + DT450/A300 A/AF300 + DT450/A300	
Mounted separately (i.e. separate from contactor)	DB200		No kit required for separate mounting of thermal O/L relays	

Accessories				
Tripping coil				
Resetting coil				
Terminal shroud	⓪	LT200 –	LT450 –	
Function markers	BA5-50			

⓪ Terminals protected against direct contact (without the addition of terminal shrouds)

TA25 - TA450

Class 10

for Contactors A9 – A/AF300



TA25DU



TA42DU



TA75DU



TA80DU



TA110DU

For Contactor	Setting Range A	Suffix Code	Catalog Number
A/AE/AL9 – A/AE/AL40	0.1 - 0.16	A	TA25DU0.16
	0.16 - 0.25	B	TA25DU0.25
	0.25 - 0.4	C	TA25DU0.4
	0.4 - 0.63	D	TA25DU0.63
	0.63 - 1.0	E	TA25DU1.0
	1.0 - 1.4	F	TA25DU1.4
	1.3 - 1.8	G	TA25DU1.8
	1.7 - 2.4	H	TA25DU2.4
	2.2 - 3.1	J	TA25DU3.1
	2.8 - 4.0	K	TA25DU4.0
	3.5 - 5.0	L	TA25DU5.0
	4.5 - 6.5	M	TA25DU6.5
	6.0 - 8.5	N	TA25DU8.5
	7.5 - 11	P	TA25DU11
10 - 14	Q	TA25DU14	
13 - 19	R	TA25DU19	
18 - 25	S	TA25DU25	
24 - 32	T	TA25DU32	
A/AE30 - A/AE/40	18 - 25	A	TA42DU25
	22 - 32	B	TA42DU32
	29 - 42	C	TA42DU42
A/AE/AF50 - A/AE/AF75	18 - 25	A	TA75DU25
	22 - 32	B	TA75DU32
	29 - 42	C	TA75DU42
	36 - 52	D	TA75DU52
	45 - 63	E	TA75DU63
	60 - 80	F	TA75DU80
A/AE/AF95 - A/AE/AF110	29 - 42	C	TA80DU42
	36 - 52	D	TA80DU52
	45 - 63	E	TA80DU63
	60 - 80	F	TA80DU80
	65 - 90	A	TA110DU90
	80 - 110	B	TA110DU110
A/AF145 - A/AF185	65 - 90	A	TA200DU90
	80 - 110	B	TA200DU110
	100 - 135	C	TA200DU135
	110 - 150	D	TA200DU150
	130 - 175	E	TA200DU175
	150 - 200	F	TA200DU200
A/AF210 - A/AF300	130 - 185	A	TA450DU185 ①
	165 - 235	B	TA450DU235
	220 - 310	C	TA450DU310
AF400 - AF750			See electronic overloads, pages 2.21

① TA450 overloads require mounting kits for installation.

TA25 - TA80

Class 20

for Contactors A9 - A80

Thermal
Overload
relays



TA25DU



TA42DU



TA75DU



TA80DU

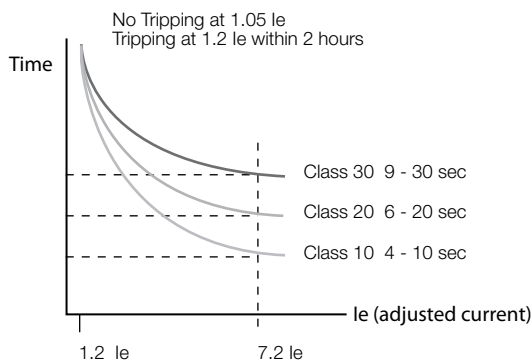
Setting range A ... A	Suffix	Packing unit piece	Reference code	Catalog number
TA25DU trip class 20 for contactors A9 ... A40 and (T) AL9 ... (T) AL30				
1.3 ... 1.8	GZ	1	1SAZ211401R1025	TA25DU1.8-20
1.7 ... 2.4	HZ	1	1SAZ211401R1028	TA25DU2.4-20
2.2 ... 3.1	JZ	1	1SAZ211401R1031	TA25DU3.1-20
2.8 ... 4.0	KZ	1	1SAZ211401R1033	TA25DU4.0-20
3.5 ... 5.0	LZ	1	1SAZ211401R1035	TA25DU5.0-20
4.5 ... 6.5	MZ	1	1SAZ211401R1038	TA25DU6.5-20
6.0 ... 8.5	NZ	1	1SAZ211401R1040	TA25DU8.5-20
7.5 ... 11	PZ	1	1SAZ211401R1043	TA25DU11-20
10 ... 14	QZ	1	1SAZ211401R1045	TA25DU14-20
13 ... 19	RZ	1	1SAZ211401R1047	TA25DU19-20
18 ... 25	SZ	1	1SAZ211401R1051	TA25DU25-20
24 ... 32 ⁽¹⁾	TZ	1	1SAZ211401R1053	TA25DU32-20 ⁽¹⁾

⁽¹⁾ with terminal block DX25: 1x16mm²

Setting range A ... A	Suffix	Packing unit piece	Reference code	Catalog number
TA42DU trip class 20 for contactors A30, A40 and (T) AL30, (T) AL40				
18 ... 25	AZ	1	1SAZ311401R1001	TA42DU25-20
22 ... 32	BZ	1	1SAZ311401R1002	TA42DU32-20
29 ... 42	CZ	1	1SAZ311401R1003	TA42DU42-20

Setting range A ... A	Suffix	Packing unit piece	Reference code	Catalog number
TA75DU trip class 20 for contactors A50 ... A75 and AE50 ... AE75				
18 ... 25	AZ	1	1SAZ321401R1001	TA75DU25-20
22 ... 32	BZ	1	1SAZ321401R1002	TA75DU32-20
29 ... 42	CZ	1	1SAZ321401R1003	TA75DU42-20
36 ... 52	DZ	1	1SAZ321401R1004	TA75DU52-20
45 ... 63	EZ	1	1SAZ321401R1005	TA75DU63-20
60 ... 80	FZ	1	1SAZ321401R1006	TA75DU80-20

Setting range A ... A	Suffix	Packing unit piece	Reference code	Catalog number
TA80DU trip class 20 for contactors A95, A110, AE 95 and AE110				
29 ... 42	AZ	1	1SAZ331401R1003	TA80DU42-20
36 ... 52	BZ	1	1SAZ331401R1004	TA80DU52-20
45 ... 63	CZ	1	1SAZ331401R1005	TA80DU63-20
60 ... 80	DZ	1	1SAZ331401R1006	TA80DU80-20





DB25/25A



DB80



DB200

Separate mounting kits

For O/L relays	Amps	Catalog number
TA25DU	0.1 – 25	DB25/25A
TA25DU	24 – 32	DB25/32A
TA42DU, TA75DU, TA80DU	18 – 80	DB80
TA110DU, TA200DU	100 – 200	DB200

Terminal block – AWG #8 cable

Mounting on:	Catalog number
TA25DU (25A or less) or DB25/25A	DX25

LC terminal blocks can be used to convert standard connections into Faston connections: 2 x 6.3mm or 4 x 2.8mm 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 TA25DU 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.

Mounting kit – for TA450 overload relay

For contactor	Catalog number
A145 – A185	DT450/A185
A210 – A300	DT450/A300

Terminal shrouds – for contactors and overload relays

Contactor	Overload relay	Catalog number
A9 – A16 A26 – A40	TA25DU	Included
A30 – A40	TA42DU	Included
A50 – A75	TA75DU	Included
A95 – A110	TA80DU TA110DU	Included
A145 – A185	TA200DU	LT185-AY
A145 – A185	Load side of TA200DU	LT200A185

Terminal lug kits

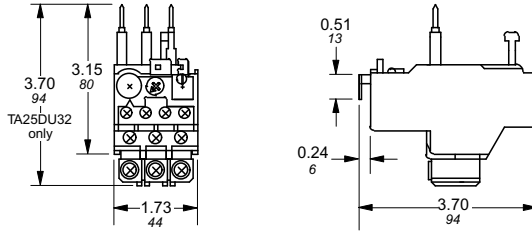
Wire range	For overloads	Catalog number
6 – 250MCM	TA110DU, TA200DU	EHTK210
4 – 400MCM	TA450DU185	ATK300HK
(2) 4 – 500MCM	TA450DU310	ATK300/2HK

Approximate dimensions T25DU – TA42DU

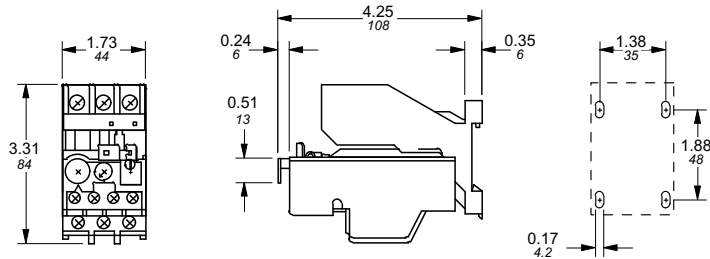
Thermal
Overload
relays

00.00 Inches
00.00 [Millimeters]

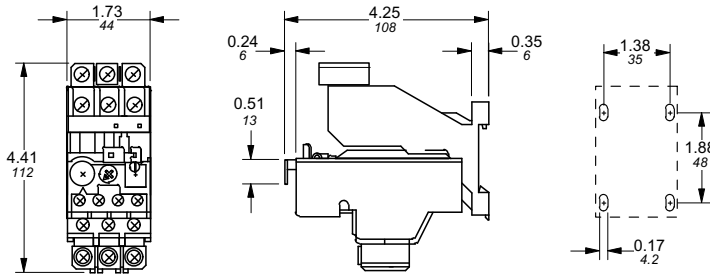
TA25DU



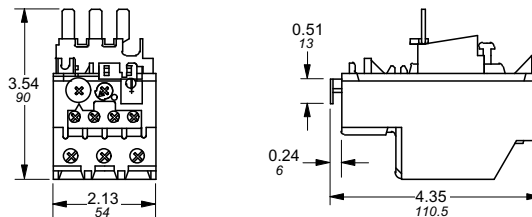
TA25DU & DB25



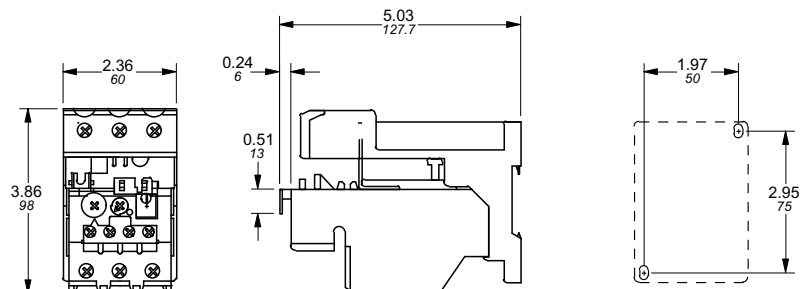
TA25DU & DB25/32



TA42DU



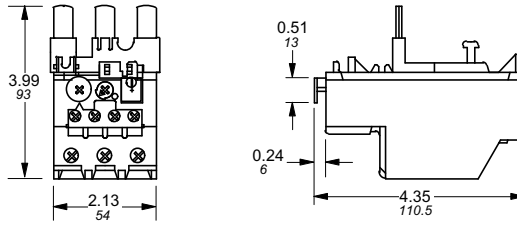
TA42DU / TA75DU & DB80



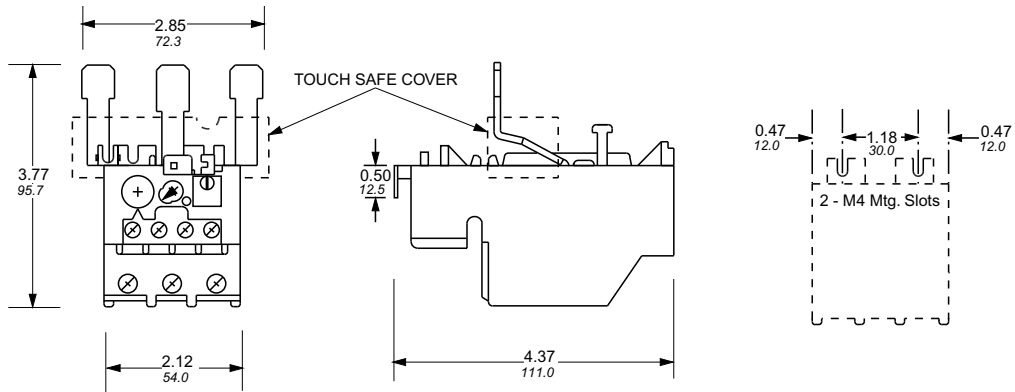
Approximate dimensions TA75DU – TA200DU

00.00 Inches
00.00 [Millimeters]

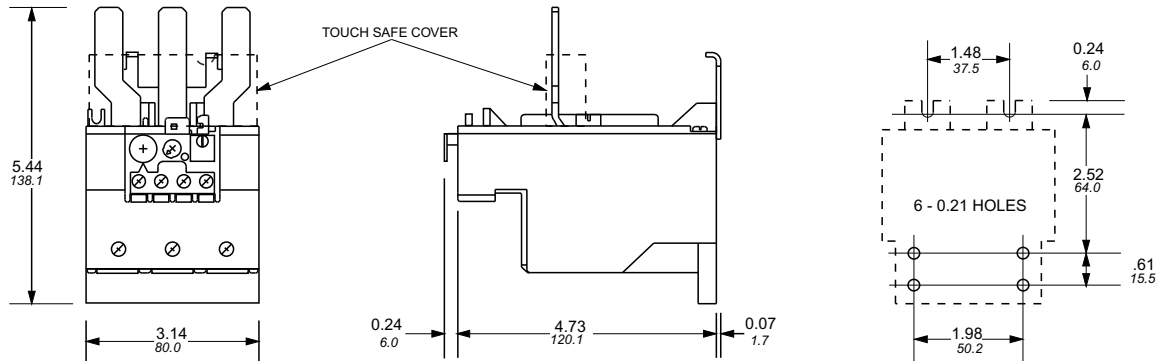
TA75DU



TA80DU



TA110DU



TA200DU

