

Contactors relays DILAT  
Contactors DILMT  
ZBT motor protection relays

# The space-saving alternatives for machine building



**EATON**

*Powering Business Worldwide*

# Compact, easy and flexible: DILMT contactors

The new contactor relays and DILMT contactors are just as flexible as the applications in which they can be used. They can be integrated into a diverse range of applications – efficiently and in a space-saving manner.



DILAT  
DILMT7-12  
27 mm

DILMT17-32  
36 mm

DILMT40-65  
55 mm

DILMT80-95  
72 mm

Available in four narrow frame sizes, they cover a current range from 7 A to 95 A. Their compact size achieves space savings of up to 40% – a major advantage, and not just for applications with limited installation space. Even in standard applications, the reduced installation space results in increased cost efficiency.

In addition to their use in non-motorized applications (AC-1), DILMT contactors in combination with the directly mounted overload ZBT relays are also suitable for switching and protecting asynchronous machines (AC3).

### Scope of application

DILMT contactors can be used to start motors up to 45 kW or to control industrial loads.

When used in combination with the ZBT overload relay, the DILMT contactor becomes a reliable and durable machine and system component.



**Tried and tested technology based on over 100 years' experience**

The DILMT contactors extend the existing range of DILM contactors to create the compact and easy DILMT series.

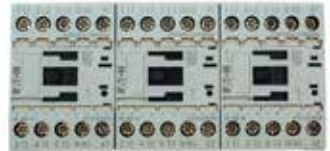
Thanks to years of experience in the field of contactors, the DILMT portfolio has been tailored to the needs of customers and is therefore optimally geared toward their success.

**Five in the space of three!**

DILMT contactors are narrow which means space savings of up to 40%. Up to five DILMT contactors can be used in the switch cabinet in contrast to three conventional contactors which are not as narrow.

DILMT contactors are therefore ideal for use in confined installation areas in various applications.

Thanks to the high number of operating cycles (up to 1,000,000), the DILMT contactor is a reliable and efficient component in any machine or system.



Space savings of up to 40% thanks to the narrow width (27 mm to 72 mm)

**Exceedingly compact, efficient and flexible**

The DILMT series comprises four frame sizes with

- Widths of 27 mm, 36 mm, 55 mm and 72 mm, and
- Current ranges of 12 A, 32 A, 65 A and 95 A.

Directly mounted overload ZBT relays up to 97 A are available for each size. They have a reset button, a manual/automatic mode and a trip indicator.

The auxiliary contacts can be configured flexibly according to the application and requirements. This means that the DILMT contactor can be used in a purposeful and application-orientated way.

**Accessories**

- Flexible auxiliary contact configuration
- Up to 3 front-mounted auxiliary contacts possible
- Side-mounted auxiliary contact
- Suppressor circuit
- Mechanical interlock
- Overload ZBT relays



Front-mounted auxiliary contacts save space and provide easy access to the contactor



Frame Size 1

Frame Size 2








Frame Size 3

Frame Size 4

# Overview of data

## Contactors, accessories, contactor relay

	230 V P kW	400 V P kW	$I_{th} = I_e$ A	AC operation 230 V 50 Hz, 240 V 60 Hz	AC operation 24 V 50/60 Hz	DC operation 24 V DC
				<b>Type</b> article no.	<b>Type</b> article no.	<b>Type</b> article no.
<b>DILMT contactors</b>						
	2.2	3	20	<b>DILMT7(230V50HZ/240V60HZ)</b> 190994	<b>DILMT7(24V50/60HZ)</b> 197613	<b>DILMT7(RDC24)</b> 190977
	2.5	4	20	<b>DILMT9(230V50HZ/240V60HZ)</b> 190995	<b>DILMT9(24V50/60HZ)</b> 197614	<b>DILMT9(RDC24)</b> 190978
	3.5	5.5	20	<b>DILMT12(230V50HZ/240V60HZ)</b> 190996	<b>DILMT12(24V50/60HZ)</b> 197615	<b>DILMT12(RDC24)</b> <b>190979</b>
	5	7.5	25	<b>DILMT17(230V50HZ/240V60HZ)</b> 190997	<b>DILMT17(24V50/60HZ)</b> 197616	<b>DILMT17(RDC24)</b> 190980
	7.5	11	35	<b>DILMT25(230V50HZ/240V60HZ)</b> 190998	<b>DILMT25(24V50/60HZ)</b> 197617	<b>DILMT25(RDC24)</b> 190981
	10	15	40	<b>DILMT32(230V50HZ/240V60HZ)</b> 190999	<b>DILMT32(24V50/60HZ)</b> 197618	<b>DILMT32(RDC24)</b> 190982
	12.5	18.5	60	<b>DILMT40(230V50HZ/240V60HZ)</b> 191000	<b>DILMT40(24V50/60HZ)</b> 197619	<b>DILMT40(RDC24)</b> 190983
	15.5	22	70	<b>DILMT50(230V50HZ/240V60HZ)</b> 191001	<b>DILMT50(24V50/60HZ)</b> 197620	<b>DILMT50(RDC24)</b> 190984
	20	30	80	<b>DILMT65(230V50HZ/240V60HZ)</b> 190964	<b>DILMT65(24V50/60HZ)</b> 197621	<b>DILMT65(RDC24)</b> 190985
	25	37	110	<b>DILMT80(230V50HZ/240V60HZ)</b> 190965	<b>DILMT80(24V50/60HZ)</b> 197622	<b>DILMT80(RDC24)</b> 190986
	30	45	120	<b>DILMT95(230V50HZ/240V60HZ)</b> 190966	<b>DILMT95(24V50/60HZ)</b> 197623	<b>DILMT95(RDC24)</b> 190987

			$I_{th} = I_e$ A	<b>Type</b> article no.	<b>Type</b> article no.	<b>Type</b> article no.
<b>DILAT contactor relay</b>						
	3 N/O	-	10	<b>DILAT-30(230V50HZ/240V60HZ)</b> 190990	<b>DILAT-30(24V50/60HZ)</b> 197624	<b>DILAT-30(RDC24)</b> 190967
	2 N/O	1 N/C	10	<b>DILAT-21(230V50HZ/240V60HZ)</b> 190991	<b>DILAT-21(24V50/60HZ)</b> 197625	<b>DILAT-21(RDC24)</b> 190968
	1 N/O	2 N/C	10	<b>DILAT-12(230V50HZ/240V60HZ)</b> 190992	<b>DILAT-12(24V50/60HZ)</b> 197626	<b>DILAT-12(RDC24)</b> 190969
	-	3 N/C	10	<b>DILAT-03(230V50HZ/240V60HZ)</b> 190993	<b>DILAT-03(24V50/60HZ)</b> 197627	<b>DILAT-03(RDC24)</b> 190970

Can be used for	<b>Type</b> article no.	Can be used for	<b>Type</b> article no.
<b>Side-mounted auxiliary contact 1NO / 1NC (can be mounted on the right)</b>	<b>DILMT95-XHI11-SR</b> 190974	<b>Adapter plate for DIN rail mounting</b>	<b>DILMT95-XC72</b> 190958
<b>DILMT40 – DILMT95</b>		<b>DILMT80-DILM95</b>	

## Front-mounted auxiliary contacts, motor protection relays

		Can be used for	Type article no.
<b>Front-mounted auxiliary contacts DILT</b>			
-	1 N/C	DILAT DILMT7-DILMT12 DILMT17-DILMT32 DILMT40-DILMT65 DILMT80-DILM95	<b>DILT-XHI01</b> 190989
1 N/O	-		<b>DILT-XHI10</b> 190988
-	2 N/C	DILAT DILMT7-DILMT12	<b>DILT-XHI02</b> 190973
1 N/O	1 N/C		<b>DILT-XHI11</b> 190972
2 N/O	-		<b>DILT-XHI20</b> 190971


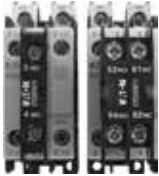



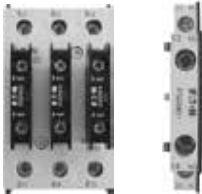

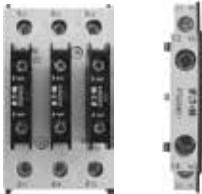
Can be used for:	<b>DILMT7-DILMT12</b>		<b>DILMT17-DILMT32</b>		<b>DILMT40-DILM65</b>		<b>DILMT80-DILMT95</b>	
	Type	article no.	Type	article no.	Type	article no.	Type	article no.
<b>Bimetal relay ZBT</b>								
<b>Current range / A</b>								
0.1 – 0.16	<b>ZBT12-0.16</b>	190959	-	-	-	-	-	-
0.16 – 0.24	<b>ZBT12-0.24</b>	190960	-	-	-	-	-	-
0.24 – 0.4	<b>ZBT12-0.4</b>	190961	-	-	-	-	-	-
0.4 – 0.6	<b>ZBT12-0.6</b>	190962	-	-	-	-	-	-
0.6 – 1	<b>ZBT12-1</b>	190963	-	-	-	-	-	-
1 – 1.6	<b>ZBT12-1.6</b>	190934	-	-	-	-	-	-
1.6 – 2.4	<b>ZBT12-2.4</b>	190936	-	-	-	-	-	-
2.4 – 4	<b>ZBT12-4</b>	190935	-	-	-	-	-	-
4 – 6	<b>ZBT12-6</b>	190937	-	-	-	-	-	-
6 – 10	<b>ZBT12-10</b>	190938	-	-	-	-	-	-
9 – 12	<b>ZBT12-12</b>	190939	-	-	-	-	-	-
12 – 16	-	-	<b>ZBT32-16</b>	190940	-	-	-	-
16 – 24 / 17 – 25	-	-	<b>ZBT32-24</b>	190941	<b>ZBT65-24</b>	190943	-	-
24 – 32 / 23 – 32	-	-	<b>ZBT32-32</b>	190942	<b>ZBT65-32</b>	190944	-	-
30 – 40	-	-	-	-	<b>ZBT65-40</b>	190945	-	-
37 – 50	-	-	-	-	<b>ZBT65-50</b>	190946	<b>ZBT95-50</b>	190948
48 – 65	-	-	-	-	<b>ZBT65-65</b>	190947	<b>ZBT95-65</b>	190949
63 – 80	-	-	-	-	-	-	<b>ZBT95-80</b>	190950
77 – 97	-	-	-	-	-	-	<b>ZBT95-97</b>	190951

# Overview of data

## Mechanical interlock, suppressor circuit, terminal capacities

		Can be used for	Type article no.										
<b>Mechanical interlock XMV</b>													
		DILMT7-DILMT12	<b>DILMT12-XMV</b> 190954										
		DILMT17-DILMT32	<b>DILMT32-XMV</b> 190955										
		DILMT40-DILMT65	<b>DILMT65-XMV</b> 190956										
		DILMT80-DILM95	<b>DILMT95-XMV</b> 190957										
<b>Suppressor circuit XSP</b>													
RC	110-240 VAC	DILMT7-12 DILMT17-32	<b>DILMT32-XSPR240</b> 190975										
		DILMT40-DILMT65 DILMT80-DILM95	<b>DILMT95-XSPR240</b> 190952										
Varistor	110-240 VAC	DILMT7-12 DILMT17-32	<b>DILMT32-XSPV240</b> 190976										
		DILMT40-DILMT65 DILMT80-DILM95	<b>DILMT95-XSPV240</b> 190953										
		Coil connections A1/A2 DILAT/ DILMT7-95	Auxiliary contacts DILT-XHI...										
<b>Terminal capacities</b>													
Solid		1x(0.75-2.5)	1x(0.75-2.5)										
Stranded		2x(0.75-2.5)	2x(0.75-2.5)										
Stranded with ferrule													
<b>Short-circuit protection max. Fuse</b>													
Coordination type "1"	gL/gG 690 V	A	20	20	20	50	50	50	63	80	100	160	160

## Auxiliary contacts DILT-XHL...

<p><b>Frame size 1</b> 27 mm DILAT DILMT7-12</p>			<p>Max. 1 x single-pole or 1 x two-pole Auxiliary contact</p>
<p><b>Frame size 2</b> 36 mm DILMT17-32</p>			<p>Max. 3 x single-pole Auxiliary contacts</p>
<p><b>Frame size 3</b> 55 mm DILMT40-65</p>			<p>Max. 3 x single-pole auxiliary con- tacts and/or 1 two-pole auxiliary contact mounted on the right-hand side</p>
<p><b>Frame size 4</b> 72 mm DILMT80-95</p>			<p>Max. 3 x single-pole auxiliary con- tacts and/or 1 two-pole auxiliary contact mounted on the right-hand side</p>

# Technical data

## Contact relays

General information			DILAT...	DILT-XHI...	
Standards			IEC/EN 60947, GB14048		
<b>Lifespan, mechanical</b> AC-verified	Operations	X 10 <sup>6</sup>	10	10	
Maximum operating frequency	Operations per hour		3600	3600	
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30		
<b>Ambient temperature</b> Open		°C	-25~55	-25~55	
Storage		°C	-40~80	-40~80	
Protection rating			IP20	IP20	
Weight			kg	0.17	0.02
Contacts					
Rated impulse withstand voltage	U <sub>imp</sub>	VAC	6000	6000	
Surge protection category / pollution degree			III/3	III/3	
Rated insulation voltage	U <sub>i</sub>	VAC	690	690	
Rated operating voltage	U <sub>e</sub>	VAC	660	660	
Rated operational current <b>AC-15</b>					
220 / 240 V	I <sub>e</sub>	A	4	4	
380 / 400 V	I <sub>e</sub>	A	1.9	1.9	
500 V	I <sub>e</sub>	A	1.4		
<b>DC-13</b>					
125 V	I <sub>e</sub>	A	0.55	0.55	
250 V	I <sub>e</sub>	A	0.27	0.27	
Conventional thermal current	I <sub>th</sub>	A	10	10	
Electrical lifetime For U <sub>e</sub> = 230 V, AC-15, 3 A	Operations	x10 <sup>6</sup>	1	1	
Magnet system voltage tolerance				DILAT...	
Power consumption of the coils in cold state for 1.0 x U <sub>c</sub> (50 Hz)	Pick-up	x U <sub>c</sub>		0.85-1.1	
	Pick-up	VA		30	
	Hold	VA		6	
	Hold	W		2	
Power consumption of the coils in cold state for 1.0 x U <sub>c</sub> (DC)	Pick-up	VA		12	
	Hold	W		3	

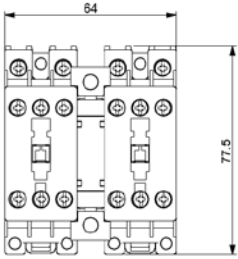
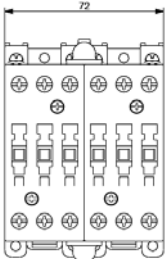
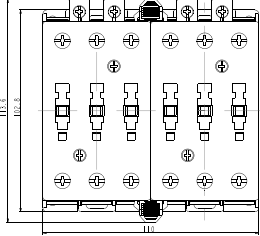
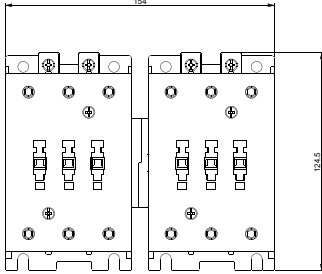
# Contactor

General			DILMT7-12	DILMT17-32	DILMT40-65	DILMT80-95
Standards			IEC/EN 60947, GB14048			
<b>Lifespan, mechanical</b> AC-verified	Operations	X 10 <sup>6</sup>	10	10	5	5
<b>Maximum operating frequency</b> AC operated	Operations per hour		3600	3600	3600	3600
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30			
<b>Ambient temperature</b> Open		°C	-25-55	-25-55	-25-55	-25-55
Storage		°C	-40-80	-40-80	-40-80	-40-80
Protection rating			IP20	IP20	IP20	IP20
Weight		kg	0.17	0.35	0.76	1.25
<b>Terminal capacities</b>		AWG				
Solid		mm <sup>2</sup>	1 x (0.75-2.5)	1 x (1-10)	1 x (2.5-25)	1 x (6-50)
Stranded			2 x (0.75-2.5)	2 x (1-6)	2 x (2.5-16)	2 x (6-25)
Stranded with ferrule					1 x (2.5-10) 2 x (2.5-10)	

Main contacts			DILMT7-12	DILMT17-32	DILMT40-65	DILMT80-95
Rated impulse withstand voltage	$U_{imp}$	V AC	6000	6000	6000	6000
Surge protection category / pollution degree			III/3	III/3	III/3	III/3
Rated insulation voltage	$U_i$	V AC	690	690	690	690
Rated operating voltage	$U_e$	V AC	660	660	660	660
Electrical lifetime AC-3 / 400 V		Operations	1,000,000	1,000,000	900,000	900,000
AC-4 / 400 V		Operations	100,000	100,000		
<b>Power drives voltage tolerance</b>	Pick-up	X $U_e$	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1
Power consumption of the coils in cold state for 1.0 x $U_e$ (50 Hz)	Pick-up	VA	30	80	190	300
	Hold	VA	6	8.1	20	26
	Hold	W	2	2.4	4	6
Power consumption of the coils in cold state for 1.0 x $U_e$ (DC)	Pick-up	VA	12	12	65	90
	Hold	W	3	3	4	5

## Dimensions

### Mechanical interlock

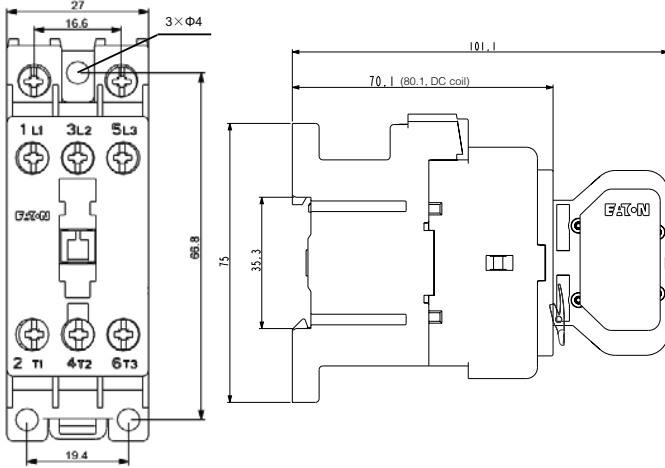
DILMT12-XMV	DILMT32-XMV	DILMT65-XMV	DILMT95-XMV
			

# Dimensions

## Contactors

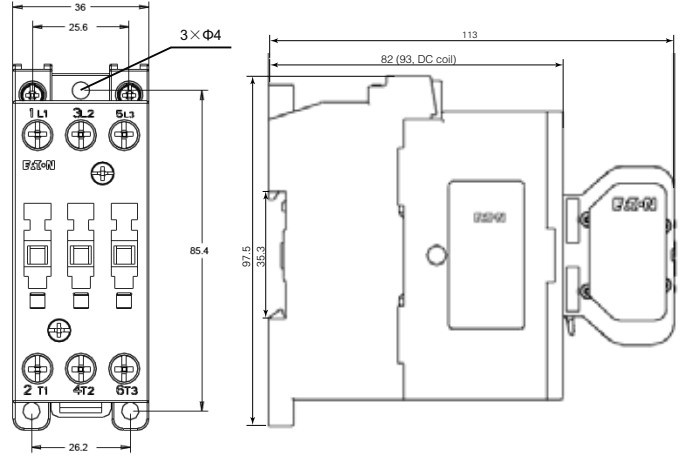
### Size 1

DILAT  
DILMT7-DILMT12



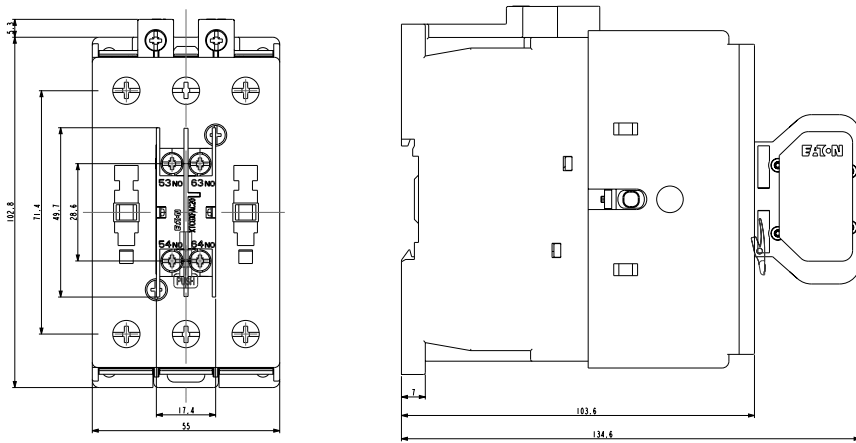
### Size 2

DILMT17-DILMT32



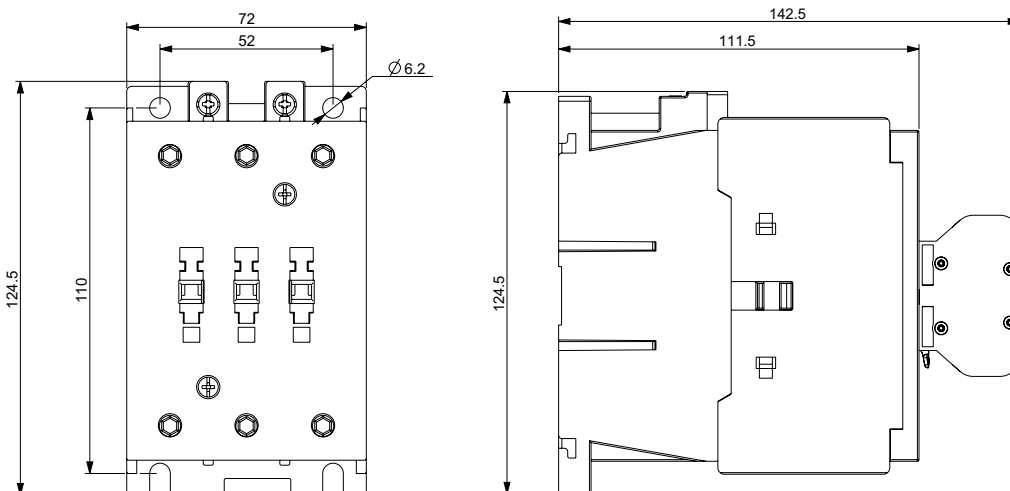
### Size 3

DILMT40-DILMT65



### Size 4

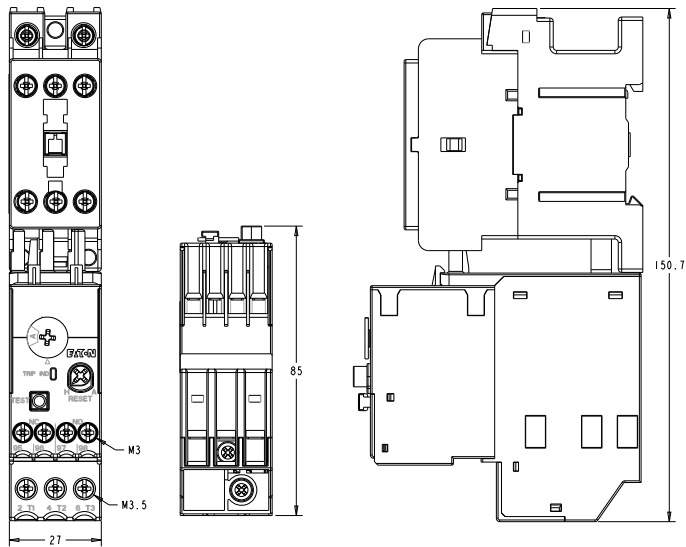
DILMT80-DILMT95



# Thermal overload relay

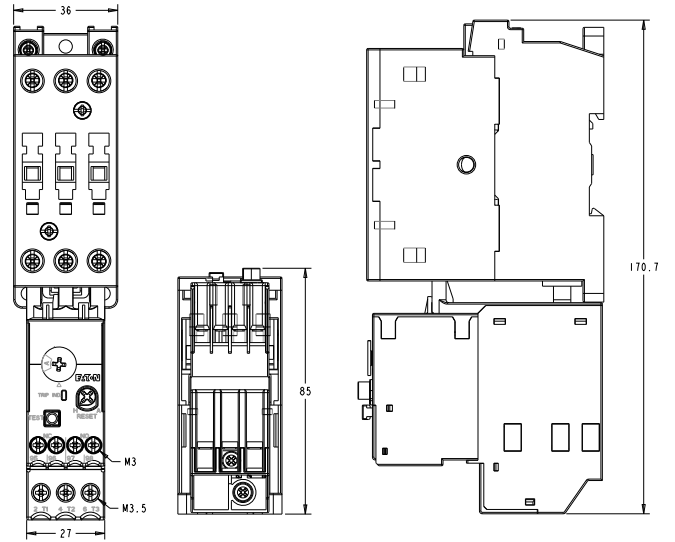
## Size 1

DILMT7-12 + ZBT12-...



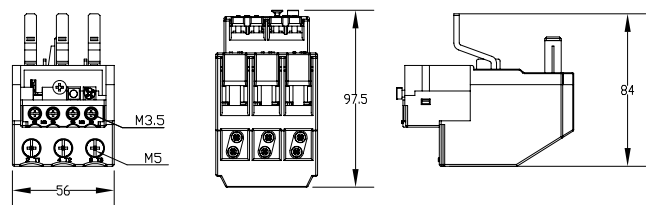
## Size 2

DILMT17-31 + ZBT32-...



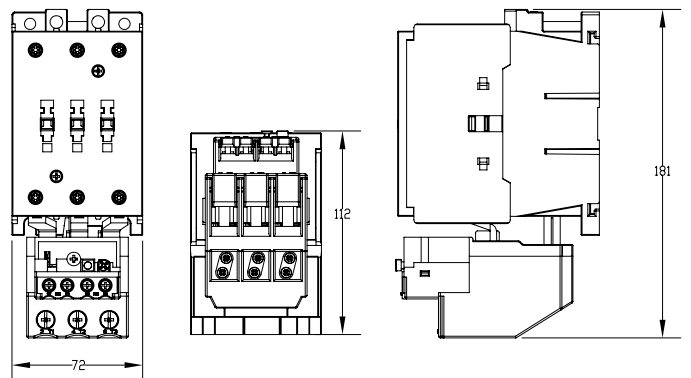
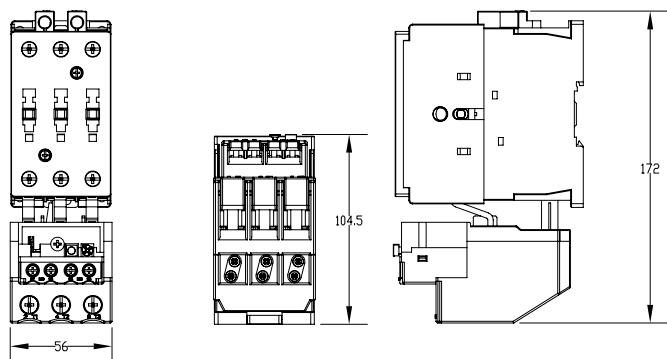
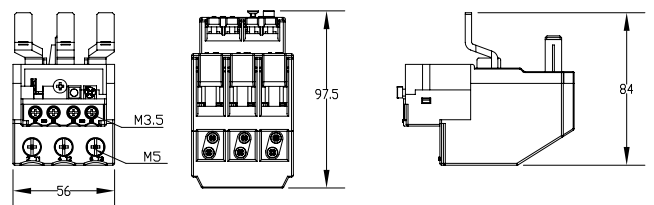
## Size 3

ZBT65-...



## Size 4

ZBT95-...



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