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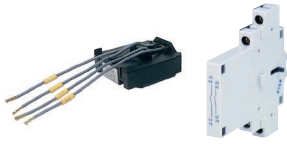
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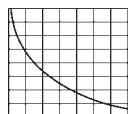
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## Manual Motor Starters



Thermal Overload Release Setting Range A	Ratings AC3 at 400V kW	690V kW	Magnetic short circuit trip A	Type	Pack pcs.	Weight kg/pc.
0,1 - <b>0,16</b>	<b>0,02</b>	0,06	1,92	<b>MU25A-0,16</b> <b>MU25A-0,25</b> <b>MU25A-0,4</b>	1	0,25
0,16 - <b>0,25</b>	<b>0,06</b>	0,12	3,0		1	0,25
0,25 - <b>0,4</b>	<b>0,09</b>	0,18	4,8		1	0,25
0,4 - <b>0,63</b>	<b>0,12</b>	0,25	7,6	<b>MU25A-0,63</b> <b>MU25A-1</b> <b>MU25A-1,6</b>	1	0,25
0,63 - <b>1</b>	<b>0,25</b>	0,55	12,0		1	0,25
1 - <b>1,6</b>	<b>0,55</b>	1,1	19,2		1	0,25
1,6 - <b>2,5</b>	<b>0,75</b>	1,5	30	<b>MU25A-2,5</b> <b>MU25A-4</b> <b>MU25A-6,3</b>	1	0,25
2,5 - <b>4</b>	<b>1,5</b>	3	48		1	0,25
4 - <b>6,3</b>	<b>2,5</b>	4	75,6		1	0,25
6,3 - <b>10</b>	<b>4</b>	7,5	120	<b>MU25A-10</b> <b>MU25A-16</b> <b>MU25A-20</b>	1	0,25
10 - <b>16</b>	<b>7,5</b>	11	192		1	0,25
16 - <b>20</b>	<b>9</b>	12	240		1	0,25
20 - <b>25</b>	<b>12,5</b>	22	300	<b>MU25A-25</b> <b>MU25A-32</b>	1	0,25
25 - <b>32</b>	<b>15</b>		384		1	0,25

## Auxiliary Contact Blocks, for side mounting, max. 2 pieces



Contacts				Rated Operational Current AC15 230V A	Rated Operational Current AC1 400V A		Type	Pack pcs.	Weight kg/pc.
NO	NC	EM <sup>1)</sup>			500V A				
1	-	-	-	<b>3,5</b>	2	6	<b>MU25A-PS10</b> <b>MU25A-PS01</b> <b>MU25A-PS20</b> <b>MU25A-PS11</b>	10	0,03
-	1	-	-	<b>3,5</b>	2	6		10	0,03
2	-	-	-	<b>3,5</b>	2	6		10	0,03
1	1	-	-	<b>3,5</b>	2	6		10	0,03
-	2	-	-	<b>3,5</b>	2	6	<b>MU25A-PS02</b> <b>MU25A-PV11</b> <b>MU25A-PV20</b>	10	0,03
-	1	1	-	<b>3,5</b>	2	6		10	0,03
-	-	2	-	<b>3,5</b>	2	6		10	0,03

## Transverse Auxiliary Contact Block, max. 1 piece



Contacts				Rated Operational Current AC15 230V A	Rated Operational Current AC1 400V A		Type	Pack pcs.	Weight kg/pc.
NO	NC	EM <sup>1)</sup>			500V A				
1	1	-	-	<b>1</b>		5	<b>MU25A-PA11</b>	10	0,02

## Auxiliary Contact Blocks for mounting under the cover, max. 1 piece



Contacts				Rated Operational Current AC15 230V A	Rated Operational Current AC1 400V A		Type	Pack pcs.	Weight kg/pc.
NO	NC	EM <sup>1)</sup>			500V A				
1	1	-	-	<b>3,5</b>	2	6	<b>MU25A-PE11</b>	10	0,02

## Trip Alarm Auxiliary Switch for mounting under the cover, max. 1 piece



Contacts				Rated Operational Current AC15 230V A	Rated Operational Current AC1 400V A		Type	Pack pcs.	Weight kg/pc.
NO	NC	EM <sup>1)</sup>			500V A				
1	-	-	-	<b>3,5</b>	2	6	<b>MU25A-PM10</b> <b>MU25A-PM01</b>	10	0,02
-	1	-	-	<b>3,5</b>	2	6		10	0,02

1) early make

## Shunt Release for mounting under the cover



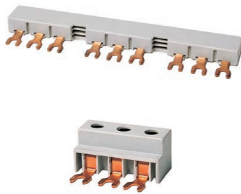
Rated Control Voltage and Frequency V	Power Consumption		Type	Pack pcs.	Weight kg/pc.
	VA	W			
24V 50/60Hz	2,7	1,8	<b>MU25A-A24</b>	10	0,06
110V 50Hz, 110-120V 60Hz	2,7	1,8	<b>MU25A-A110</b>	10	0,06
220-230V 50Hz, 240V 60Hz	2,7	1,8	<b>MU25A-A230</b>	10	0,06
380-415V 50Hz, 440V 60Hz	2,7	1,8	<b>MU25A-A400</b>	10	0,06

## Under-voltage Release for mounting under the cover



Rated Control Voltage and Frequency V	Power Consumption		Type	Pack pcs.	Weight kg/pc.
	VA	W			
24V 50/60Hz	2,7	1,8	<b>MU25A-U24</b>	10	0,06
110V 50Hz, 110-120V 60Hz	2,7	1,8	<b>MU25A-U110</b>	10	0,06
220-230V 50Hz, 240V 60Hz	2,7	1,8	<b>MU25A-U230</b>	10	0,06
380-415V 50Hz, 440V 60Hz	2,7	1,8	<b>MU25A-U400</b>	10	0,06

## Accessories



Description	Specification	Type	Pack pcs.	Weight kg/pc.
Busbar Connector Fully Isolated, U <sub>i</sub> 690V, I <sub>u</sub> 63A				
Busbar	For 2 units 3-pole, 99mm long	<b>MU25A-D99</b>	10	0,036
Busbar	For 3 units 3-pole, 154mm long	<b>MU25A-D154</b>	10	0,060
Busbar	For 4 units 3-pole, 208mm long	<b>MU25A-D208</b>	10	0,084
Busbar	For 5 units 3-pole, 262mm long	<b>MU25A-D262</b>	10	0,107
Supply Block	solid or stranded: max. 25mm <sup>2</sup> flexible: max. 16mm <sup>2</sup>	<b>MU25A-DB</b>	10	0,034
Spacing piece ½TE	for ambient temperature >40°C	<b>P730</b>	10	0,013



Enclosures				
Moulded Enclosure	Protection to IP55	<b>MU25A-O55</b>	1	0,24
Moulded Front Plate	Protection to IP55	<b>MU25A-C55</b>	1	0,16
Locking Bracket	Suitable for 3 padlocks in "OFF"-position, stirrup diameter of the padlock max. 8 mm	<b>MU25A-Z</b>	1	0,10
Stop Button	Mushroom head	<b>MU25A-NAT</b>	1	0,04
Emergency Stop Button	latch, release by turning	<b>MU25A-NAV</b>	1	0,04
Emergency Stop Button	latch, release by key	<b>MU25A-NAS</b>	1	0,04
Neutral Conductor Block	for mounting in enclosure and front plate Wiring cross section 0,75 - 2,5mm <sup>2</sup>	<b>MU25A-NL</b>	10	0,01
Moulded Enclosure for 5-pole CEE-plug	Protection to IP54 with phase changing	<b>MU25A-GC1</b>	1	0,40



# Manual Motor Starters

Data according to IEC 947, IEC 204, EN 60947, EN 60204, VDE 0660, VDE 0113

Type			MU25A			
<b>Main Contacts</b>						
<b>Rated insulation voltage <math>U_i</math></b>	V~ <sup>1)</sup>		690			
Rated operational current $I_e$ ( $=I_{th}$ ) open, at 50°C	A		25			
<b>Mechanical life</b>			S x 10 <sup>6</sup>			
<b>Contact life</b> at $I_e$ /AC3	S x 10 <sup>6</sup>		0,1			
<b>Tripping class</b> according to IEC 60947-4-1			10A			
<b>Rated ultimate short-circuit breaking capacity <math>I_{cu}</math></b>			220-240V AC	380-415V AC	500V AC	660-690V AC
Values for open unit, when incoming supply on upper terminals						
Setting range						
	to 1A	kA	100	100	100	100
	1 - 1,6A	kA	100	100	100	100
	1,6 - 2,5A	kA	100	100	3	2,5
	2,5 - 4A	kA	100	100	3	2,5
	4 - 6,3A	kA	100	100	3	2,5
	6,3 - 10A	kA	100	6/50 <sup>2)</sup>	3	2,5
	10 - 16A	kA	10/100 <sup>2)</sup>	6/50 <sup>2)</sup>	2,5	2
	16 - 20A	kA	10/100 <sup>2)</sup>	6/50 <sup>2)</sup>	2,5	2
	20 - 25A	kA	10/100 <sup>2)</sup>	6/50 <sup>2)</sup>	2,5	2
	25 - 32A	kA	10/100 <sup>2)</sup>	6/50 <sup>2)</sup>	2,5	2
<b>Short circuit protection</b>			220-240V AC	380-415V AC	500V AC	660-690V AC
Setting range						
	to 1A	A	-	-	-	-
	1 - 1,6A	A	-	-	-	-
	1,6 - 2,5A	A	-	-	25	20
Fuse gL(gG) only necessary if the short circuit current could be greater than the rated ultimate short-circuit breaking capacity						
	2,5 - 4A	A	-	-	35	25
	4 - 6,3A	A	-	-	50	35
	6,3 - 10A	A	-	80	50	35
	10 - 16A	A	80	80	63	35
	16 - 20A	A	80	80	63	50
	20 - 25A	A	80	80	63	50
	25 - 32A	A	80	80	63	50
<b>Maximum ambient temperature</b>						
Operation			open °C			
			enclosed °C			
Temperature compensation			°C			
			-25 to +55			
			-25 to +40			
			-20 to +55			
<b>Power loss</b>						
at rated current, warm condition			W			
			6 - 8			
<b>Auxiliary Contacts</b>						
<b>Rated insulation voltage <math>U_i</math></b>			V~			
			500			
<b>Thermal rated current <math>I_{th}</math></b>			Ambient temperature max. 50°C			
			A			
			6			
<b>Utilization category AC15</b>						
Rated operational current $I_e$			220-240V	A	3,5	
			380-415V	A	2	
			500V	A	1	
<b>Short circuit protection</b>						
max. fuse size			gL (gG)			
			A			
			6			
<b>Cable cross-section</b>						
Main connector			solid or stranded			
			flexible			
			mm <sup>2</sup>			
			0,75 - 4			
			0,75 - 2,5			
			flexible with multicore cable end			
			mm <sup>2</sup>			
			0,75 - 2,5			
Cables per clamp			2			
Auxiliary connector			solid or stranded			
			flexible			
			mm <sup>2</sup>			
			0,75 - 2,5			
			0,75 - 1,5			
			flexible with multicore cable end			
			mm <sup>2</sup>			
			0,75 - 1,5			
Cables per clamp			2			
<b>Resistance to shock according to IEC 68-2-27</b>						
Operation			g / ms			
Solidity			g / ms			
			4 / 11			
			30 / 18			

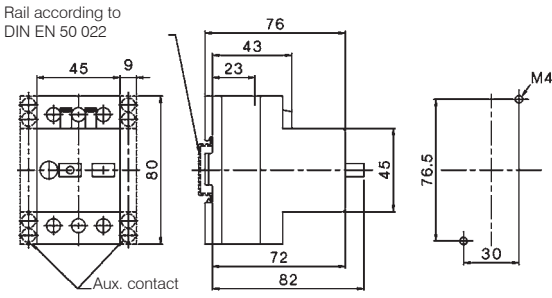
1) Suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry):  $U_{imp} = 6kV$ .

2) with current limiter MBS25-ID50 up to 415V AC

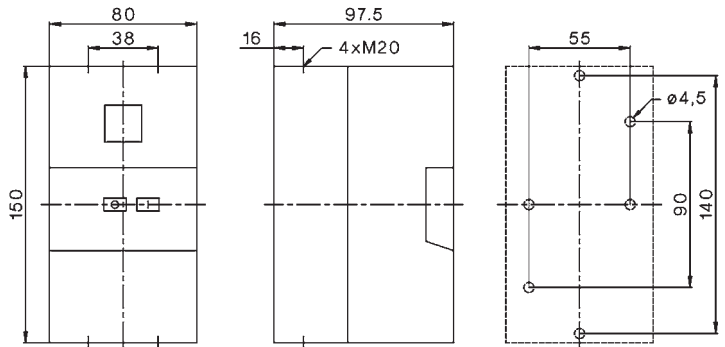
# Manual Motor Starters

## Dimensions

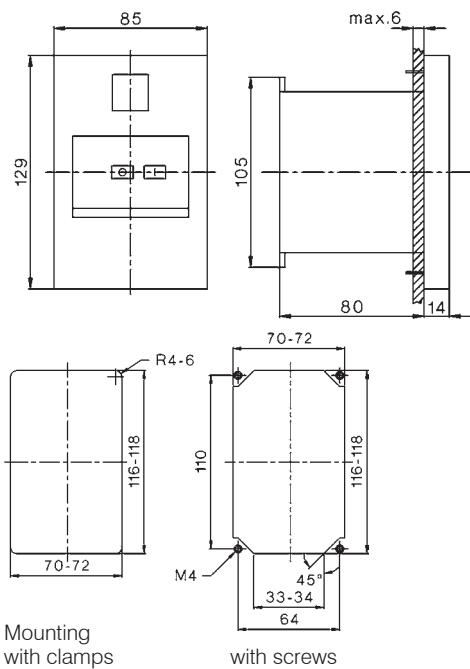
### Manual Motor Starter MU25A



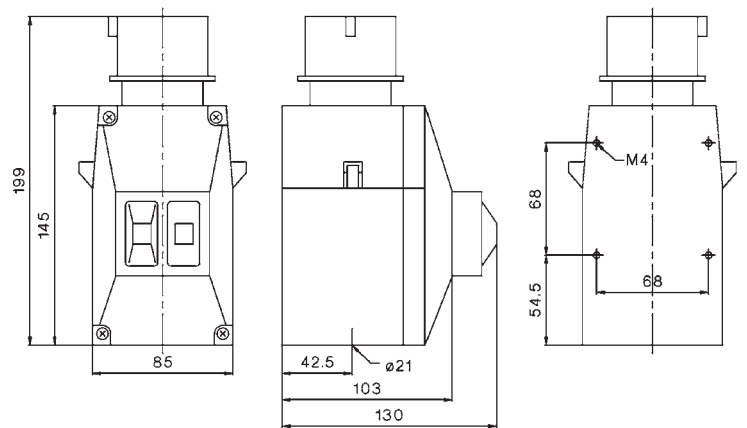
### Moulded Enclosure MU25A-O55



### Moulded Front Plate MU25A-C55



### Moulded Enclosure for 5-pole CEE-plug MU25A-GC1



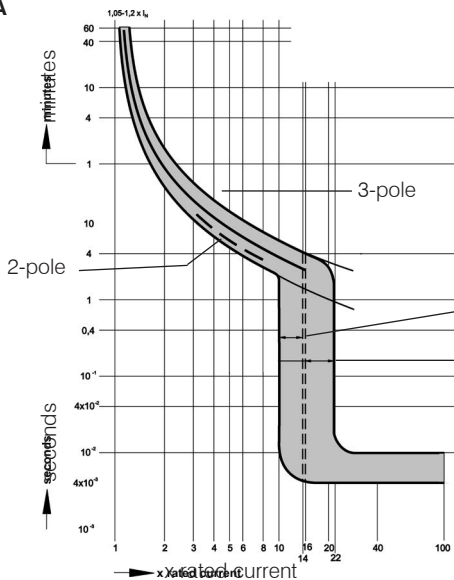
## Temperature Compensation

In case of higher ambient temperature use the following formula:  
**(Ambient temperature - 20) x 0,3 = correction factor in % of the full load motor current**

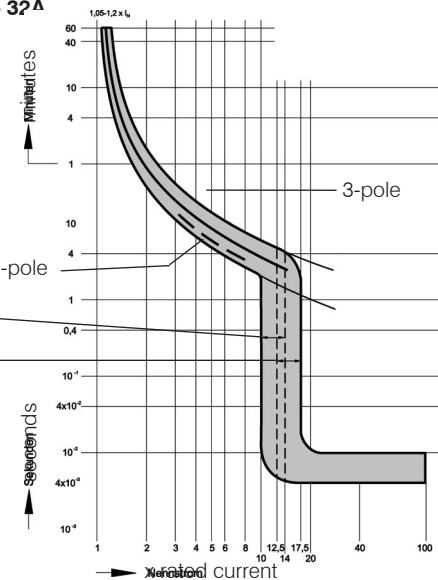
**Example: Ambient temperature 60°C, full load motor current 5A**  
 $(60 - 20) \times 0,3 = 12\%$   
**Setting value: 5A + 12% = 5,6A**

## Tripping Characteristic

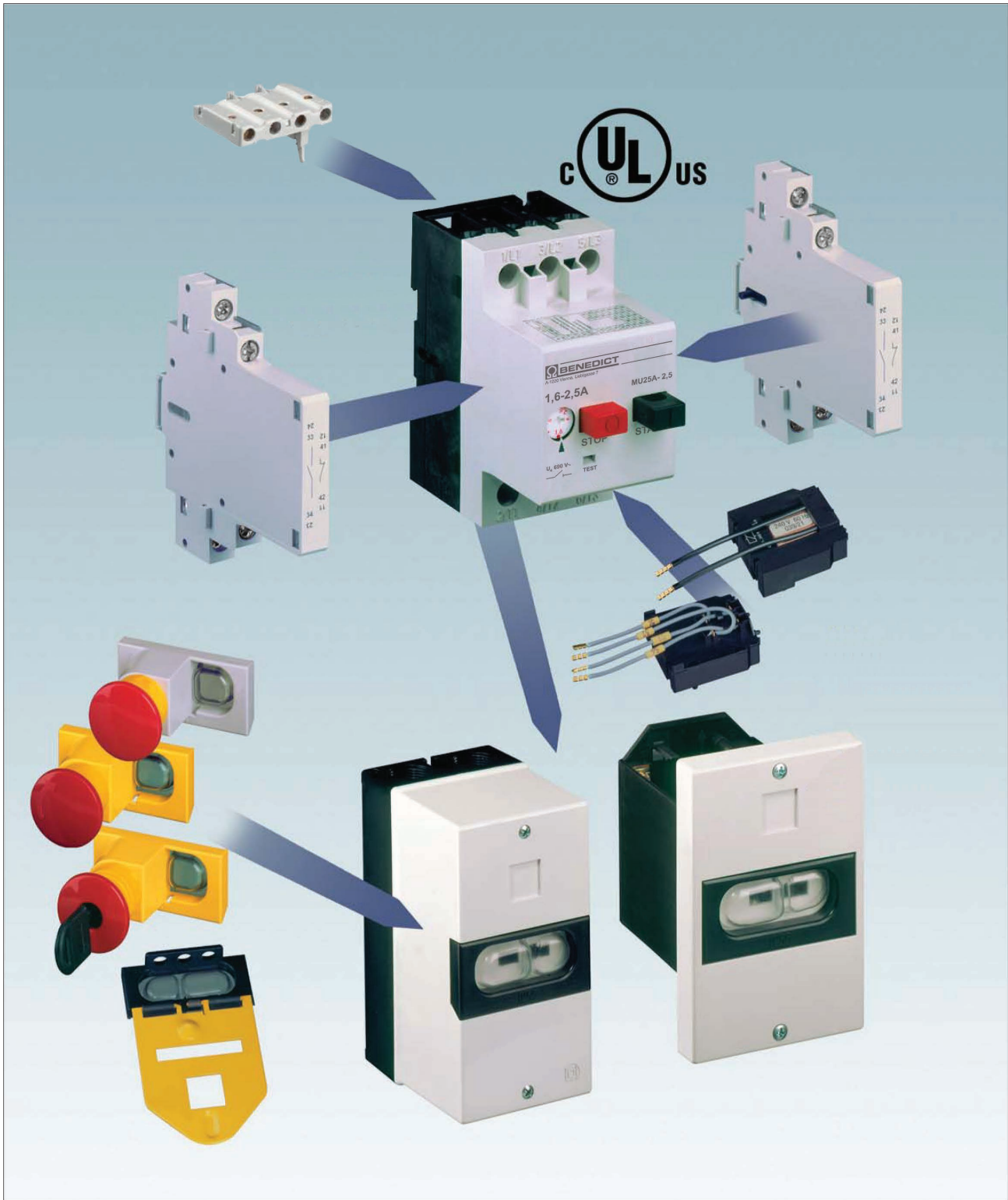
0,16 - 16A



16 - 32A



# System MU25A



## Approvals

Country	USA, Canada UL cUL US LISTED	Switzerland SEV S	Europe CE	CB/CCA- Certificates
Type				
MU25A	o	o	/	-

o In standard version approved / No testing required CE x In test - Not provided for test till now