

# Electromagnetic starters of the PML series

TU3420-091-05758109-2016



PML series electromagnetic contactors (hereinafter referred to as "contactors") are intended for use as switching devices in electric drive control circuits, mainly in stationary installations for remote start-up by direct connection to the network, stopping and reversing three-phase asynchronous electric motors with a short-circuited rotor in electrical installations up to 660 V AC, 50 and 60 Hz.

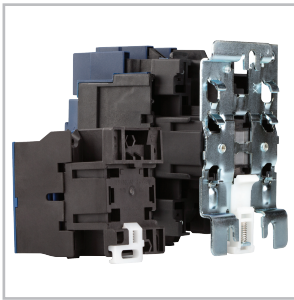
Contactors of the PML series can be used in conjunction with the thermal relays of the RTL series, providing protection of the controlled electric motors against currents of continuous overloads of unacceptable duration and from the currents arising when one of the phases breaks.



## Benefits

- Implementation of any technical solutions
  - full range of products for currents from 10 to 800 A;
  - it is possible to increase the number of auxiliary contacts due to the PKL and PKB attachments. (Information on p. 390 of the catalog "Thermal Overload Relays RTL Series and Accessories for PML and PM12").
- Products are ideally adapted for all types of warehouses:
  - a large and easy-to-read label makes it easier for the warehouse staff to navigate through the products;
  - for the automated processing by WMS systems, the products have unique product codes and bar codes provided.
- Ensuring reliable operation and safety of operation
  - reliable fixation of conductors of any shape, preventing self-unscrewing;
  - use of PML series contactors with a DC coil provides efficient energy saving.

## Design features



Universal mounting method for both DIN-rail and mounting plate.



The optimum mode of operation, the absence of noise and increased reliability of operation is ensured by the use of special technology for manufacturing the magnetic system of contactors.



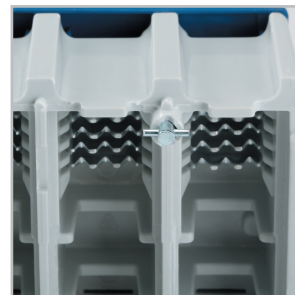
The contactor has a high wear resistance and a small value of contact resistance of the contacts due to the use of silver-based contact parts and coatings on the contact group.



Possibility of operation in harsh Russian conditions at ambient temperatures from -40 to +55 °C.



Wide range of contactors for the degree of protection: IP00, IP20, IP40 IP54 allows you to choose a device for placement in all conditions.



Possibility of installation in places with constant working vibration due to fastening of the top cover with screws with fixation, excluding self-unscrewing.



Ability to provide operational control of the state of the contact group based on the degree of wear of the notches on the contacts.



Simplicity of work when removing the control coils without the use of special tools, by inserting the lock on the coil into the contactor case.



The design of contactors for rated currents above 100 A allows to simultaneously install two additional attachments in any set, which expands the capabilities of the auxiliary circuit.



High rigidity of the structure and reduction of mounting errors for contactors with rated currents over 100 A is provided by the presence of a factory connection in the main circuit, installation of contactors on two metal rails and mechanical interlocking.

## Designation structure

### Contactor PML-MX<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>-X<sub>5</sub>A-X<sub>6</sub>X<sub>7</sub>-UHL4-B-KEAZ

<b>Contactor</b>	- Product group								
<b>PML</b>	- Series								
<b>M</b>	- Mini contactor								
<b>X<sub>1</sub></b>	- Designation of rated current: 1 - 6 A, 2 - 9 A, 3 - 12 A								
<b>X<sub>2</sub></b>	- Version acc. to the purpose: 1 - non-reversing; 5 - reversing								
<b>X<sub>3</sub></b>	- Version acc. to the protection degree: 0 - IP00, 6 - IP20								
<b>X<sub>4</sub></b>	Auxiliary contacts								
	<table border="1"> <thead> <tr> <th>Value</th> <th>Type of current control circuit</th> <th>Number of contacts</th> </tr> </thead> <tbody> <tr> <td>0</td> <td rowspan="2">AC</td> <td>13</td> </tr> <tr> <td>1</td> <td>1p</td> </tr> </tbody> </table>	Value	Type of current control circuit	Number of contacts	0	AC	13	1	1p
	Value	Type of current control circuit	Number of contacts						
	0	AC	13						
1	1p								
<b>X<sub>5</sub></b>	- Rated operating current, A								
<b>X<sub>6</sub></b>	- Rated control circuit voltage, V								
<b>X<sub>7</sub></b>	- Type of current control circuit								
<b>UHL4</b>	- Climatic category UHL and placement category according to GOST 15150								
<b>B</b>	- Version on wear resistance								
<b>KEAZ</b>	- Trademark								

### Contactor PML-X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>DM1K-X<sub>5</sub>A-X<sub>6</sub>X<sub>7</sub>-UHLX<sub>8</sub>-X<sub>9</sub>-KEAZ



<b>Contactor</b>	- Product group																																			
<b>PML</b>	- Series																																			
<b>X<sub>1</sub></b>	- Value of the contactor depending on the rated current: 1 - 10 A and 16 A, 2 - 25 A and 32 A, 3 - 40 A and 50 A, 4 - 63 A and 80 A, 5 - 100 A and 125 A, 6 - 160 A, 7 - 250 A, 8 - 400 A, 9 - 630 and 800 A																																			
<b>X<sub>2</sub></b>	- Version acc. to the purpose: 1 - non-reversing; 5 - reversing with mechanical interlock																																			
<b>X<sub>3</sub></b>	- Version acc. to the protection degree: 0 - IP00, 1 - IP54, 4 - IP40, 6 - IP20																																			
<b>X<sub>4</sub></b>	- Number and design of the auxiliary circuit contacts																																			
	<table border="1"> <thead> <tr> <th>Value</th> <th>Type of current control circuit</th> <th>Contactors for currents 10, 16, 25, 32 A</th> <th>Contactors for currents 40, 63, 80, 100 A</th> <th>Contactors for currents 125, 160, 250, 400, 630, 800 A</th> </tr> </thead> <tbody> <tr> <td>0</td> <td rowspan="4">AC</td> <td>13, 13+1p*</td> <td>13+1p</td> <td>13+1p**</td> </tr> <tr> <td>1</td> <td>1p</td> <td>-</td> <td>23+2p**</td> </tr> <tr> <td>2</td> <td>-</td> <td>-</td> <td>33+3p**</td> </tr> <tr> <td>3</td> <td>-</td> <td>-</td> <td>33+1p**</td> </tr> <tr> <td>4</td> <td rowspan="3">DC</td> <td>-</td> <td>-</td> <td>53+1p**</td> </tr> <tr> <td>5</td> <td>13</td> <td>13+1p</td> <td>-</td> </tr> <tr> <td>6</td> <td>1p</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Value	Type of current control circuit	Contactors for currents 10, 16, 25, 32 A	Contactors for currents 40, 63, 80, 100 A	Contactors for currents 125, 160, 250, 400, 630, 800 A	0	AC	13, 13+1p*	13+1p	13+1p**	1	1p	-	23+2p**	2	-	-	33+3p**	3	-	-	33+1p**	4	DC	-	-	53+1p**	5	13	13+1p	-	6	1p	-	-
	Value	Type of current control circuit	Contactors for currents 10, 16, 25, 32 A	Contactors for currents 40, 63, 80, 100 A	Contactors for currents 125, 160, 250, 400, 630, 800 A																															
	0	AC	13, 13+1p*	13+1p	13+1p**																															
	1		1p	-	23+2p**																															
	2		-	-	33+3p**																															
	3		-	-	33+1p**																															
	4	DC	-	-	53+1p**																															
5	13		13+1p	-																																
6	1p		-	-																																
* For upgraded reversing contactors																																				
** For currents of 125-800 A it is provided with installation of the PKL contact attachments																																				
<b>D</b>	- Contactor with rated current: 16 A - for 1 value, 32 A - for 2 value, 80 A - for 4 value, 100 A - for 5 value,																																			
<b>M</b>	- Version of contactors with the possibility of mounting both on a standard rail and screws on the plane																																			
<b>1</b>	- Contactor with a rated current of 50 A for 3 value																																			
<b>K</b>	- Special contactor for switching the capacitive loads																																			
<b>X<sub>5</sub></b>	- Rated operating current, A																																			
<b>X<sub>6</sub></b>	- Control circuit voltage, V																																			
<b>X<sub>7</sub></b>	- Type of current control circuit (AC, DC)																																			
<b>UHLX<sub>8</sub></b>	- Climatic category UHL and placement category (2, 4) according to GOST 15150																																			
<b>X<sub>9</sub></b>	- Version on wear resistance (A, B, V)																																			
<b>KEAZ</b>	- Trademark																																			

Example of recording contactor designation for rated current 10 A, performance for wear resistance B, non-reversing, degree of protection IP20, with 1 "3" auxiliary contact, with switching coil for voltage of 220 V, frequency 50 Hz when ordering it and in the documentation of another product:


Contactor PML-1160M-10A-220AC-UHL4-B-KEAZ

## Specifications

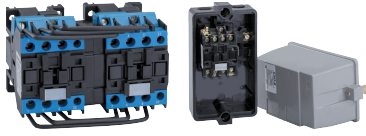
### PML mini-contactors with AC control coil

Parameter name	Parameter designation					
Series						
	PML-M1160M	PML-M1161M	PML-M2160M	PML-M2161M	PML-M3160M	PML-M3161M
Type of main circuit current	alternating					
Rated current, A	6		9		12	
Motor power (AC-3) at 380V 50 Hz, kW	3		4		5,5	
Auxiliary contacts «3» - closing «p» - opening	1 «3»	1 «p»	1 «3»	1 «p»	1 «3»	1 «p»
Version	non-reversing					
Type of climate version	UHL-4					
Degree of protection	IP00	IP00	IP00	IP00	IP00	IP00
Execution on switching wear resistance, million cycles (AC-3)	B-1					
Execution on mechanical wear resistance, million cycles	B-10					
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/2400					
Rated operating current, A (AC-3) up to 380 V	6		9		12	
Rated operating current, A (AC-3) at 660 V	3.8		5		6.5	
Rated operating current, A (AC-1)	16		20			
Rated operating current, A (AC-4) up to 380 V	1.5		3.5		5	
Rated operating current, A (AC-4) at 660 V	-		1.5		2	
Rated voltage of the main circuit, V	up to 660					
Rated voltage of control circuit of alternating current with frequency of 50 Hz, 60 Hz, V	24, 36, 40, 42, 48, 110, 120, 127, 220, 230, 240, 380, 400, 415, 440, 480, 500, 660					
Rated insulation voltage, V	660					
Power consumed by the coil						
enabling, W	30					
holding, W	4,6					
Contacting switching time, ms	17±8					
Dimensions						
Overall (HxWxD), mm	49x45x57			59x46x58		
Mounting, mm	40x34 (4 screws M4)			50x35 (4 screws M4)		
Weight, max kg	0,2					


## PML contactors with AC control coil

Parameter name	Parameter designation										
Series											
	PML-1100	PML-1160M	PML-1101	PML-1161M	PML-1110	PML-1500	PML-1501	PML-1560M	PML-1561M	PML-1511	
Type of main circuit current	alternating										
Rated current, A	10										
Motor power (AC-3) at 380V 50 Hz, kW	4,0										
Auxiliary contacts «3» - closing «p» - opening	1 «3»		1 «p»		-	1 «3»		1 «p»		1 «3»	1 «p»
Version	non-reversing					reversing					
Type of climate version	UHL-4				UHL-2	UHL-4				UHL-2	
Degree of protection	IP00	IP20	IP00	IP20	IP54	IP00		IP20		IP54	
Execution on switching wear resistance, million cycles (AC-3)	A-3.0 B-1.5				B-1.5	A-3.0 B-1.5				B-1.5	
Execution on mechanical wear resistance, million cycles	A-20 B-10				B-10	A-20 B-10				B-10	
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/2400										
Rated operating current, A (AC-3) up to 380 V	10										
Rated operating current, A (AC-3) at 660 V	6										
Rated operating current, A (AC-1)	20										
Rated operating current, A (AC-4) up to 380 V	3,5										
Rated operating current, A (AC-4) at 660 V	1,5										
Rated voltage of the main circuit, V	up to 660										
Rated voltage of control circuit of alternating current with frequency of 50 Hz, 60 Hz, V	24, 36, 40, 42, 48, 110, 120, 127, 220, 230, 240, 380, 400, 415, 440, 480, 500, 660										
Rated insulation voltage, V	660										
Power consumed by the coil											
switching on, VA	70										
hold, VA	8										
Contactors switching time, ms	17±8										
Dimensions											
Overall (HxWxD), mm	76x47x82				161x89x147,5	78x105x82				281x124x127,5	
Mounting, mm	50x35 (4 screws M4)				140 (2 screws M5)	50x95 (6 screws M4)				261 (2 screws M5)	
Weight, max kg	0.4				0.8	0.9				2	

## PML contactors with AC control coil



Наименование	параметра Parameter designation							
Series								
	PML-1100DM	PML-1160DM	PML-1101DM	PML-1161DM	PML-1110Д	PML-1560DM	PML-1561DM	PML-1511D
Type of main circuit current	alternating							
Rated current, A	16							
Motor power (AC-3) at 380V 50 Hz, kW	7,5							
Auxiliary contacts «3» - closing «p» - opening	1 «3»		1 «p»		-	1 «3»	1 «p»	
Version	non-reversing					reversing		
Type of climate version	UHL-4				UHL-2	UHL-4		UHL-2
Degree of protection	IP00	IP20			IP54	IP20		IP54
Execution on switching wear resistance, million cycles (AC-3)	B-1.0		A-2.0 B-1.0		B-1.0		A-2.0 B-1.0	B-1.0
Execution on mechanical wear resistance, million cycles	B-10		A-20 B-10		B-10		A-20 B-10	B-10
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/1200							
Rated operating current, A (AC-3) up to 380 V	16							
Rated operating current, A (AC-3) at 660 V	12							
Rated operating current, A (AC-1)	32							
Rated operating current, A (AC-4) up to 380 V	7,7							
Rated operating current, A (AC-4) at 660 V	3,8							
Rated voltage of the main circuit, V	up to 660							
Rated voltage of the AC control circuit of 50 Hz 60 Hz, V	24, 36, 40, 42, 48, 110, 120, 127, 220, 230, 240, 380, 400, 415, 440, 480, 500, 660							
Rated insulation voltage, V	660							
Power consumed by the coil								
switching on, VA	70							
hold, VA	8							
Contactors switching time, ms	17±8							
Dimensions								
Overall (HxWxD), mm	76x47x87				186x102x135	78x105x87		281x124x144
Mounting, mm	50x35 (4 screws M4)				165,5 (2 screws M5)	50x95 (6 screws M4)		261 (2 screws M5)
Weight, max kg	0.4				1.1	0.9		2.6

## PML contactors with AC control coil

Parameter name	Parameter designation													
Series														
	PML-2100	PML-2160M	PML-2101	PML-2161M	PML-2110	PML-2161MK	PML-2500	PML-2560M	PML-2501	PML-2561M	PML-2511			
Type of main circuit current	alternating													
Rated current, A	25													
Motor power (AC-3) at 380V 50 Hz, kW	11					12.5 *		11						
Auxiliary contacts «3» - closing «p» - opening	1 «3»		1 «p»		-		1 «p»		1 «3»		1 «p»			
Version	non-reversing						reversing							
Type of climate version	UHL-4				UHL-2		UHL-4				UHL-2			
Degree of protection	IP00	IP20	IP00	IP20	IP54	IP20	IP00	IP20	IP00	IP20	IP00	IP54		
Execution on switching wear resistance, million cycles (AC-3)	B-1.0		A-2.0 B-1.0		B-1.0		B-0.2		B-1.0		A-2.0 B-1.0			
Execution on mechanical wear resistance, million cycles	B-10		A-16 B-10		B-10		B-2.0		B-10		A-16 B-10			
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/1200													
Rated operating current, A (AC-3) up to 380 V	25													
Rated operating current, A (AC-3) at 660 V	16													
Rated operating current, A (AC-1)	40													
Rated operating current, A (AC-4) up to 380 V	8.5													
Rated operating current, A (AC-4) at 660 V	4.4													
Rated voltage of the main circuit, V	up to 660													
Rated voltage of the AC control circuit of 50 Hz 60 Hz, V	24, 36, 40, 42, 48, 110, 120, 127, 220, 230, 240, 380, 400, 415, 440, 480, 500, 660													
Rated insulation voltage, V	660													
Power consumed by the coil														
switching on, VA	110													
hold, VA	11													
Contacting switching time, ms	17±8													
Dimensions														
Overall (HxWxD), mm	86x57x95				186x102x135		80,6x56x127		90x125x95				281x124x144	
Mounting, mm	48x40 (4 screws M4)				165,5 (2 screws M5)		50x40 (2 screws M4)		50x111 (6 screws M4)				261 (2 screws M4)	
Weight, max kg	0.57				1.1		0.65		1.4				2.6	

\* Switched capacitive load, kVAR


## PML contactors with AC control coil

Parameter name	Parameter designation										
Series											
	PML-2160DM	PML-2161DM	PML-2560DM	PML-2561DM	PML-3100	PML-3160M	PML-3161DMK	PML-3110	PML-3110D	PML-3500	PML-3560M
Type of main circuit current	alternating										
Rated current, A	32				40						
Motor power (AC-3) at 380V 50 Hz, kW	15				18.5		25*		18.5		
Auxiliary contacts «3» - closing «p» - opening	1 «3»	1 «p»	1 «3»	1 «p»	1 «3» + 1 «p»		1 «p»		-	1 «3» + 1 «p»	
Version	non-reversing		reversing		non-reversing				reversing		
Type of climate version	UHL-4							UHL-2		UHL-4	
Degree of protection	IP20				IP00	IP20		IP54		IP00	IP20
Execution on switching wear resistance, million cycles (AC-3)	B-1.0				A-2.0 B-1.0		B-0.1		B-1.0		A-2.0 B-1.0
Execution on mechanical wear resistance, million cycles	B-10				A-16 B-10		B-1.0		B-10		A-16 B-10
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/1200										
Rated operating current, A (AC-3) up to 380 V	32				40						
Rated operating current, A (AC-3) at 660 V	21				25						
Rated operating current, A (AC-1)	50				60						
Rated operating current, A (AC-4) up to 380 V	12				16						
Rated operating current, A (AC-4) at 660 V	7.5				10						
Rated voltage of the main circuit, V	up to 660										
Rated voltage of control circuit of alternating current with frequency of 50 Hz, 60 Hz, V	24, 36, 40, 42, 48, 110, 120, 127, 220, 230, 240, 380, 400, 415, 440, 480, 500, 660										
Rated insulation voltage, V	660										
Power consumed by the coil											
switching on, VA	110				200						
hold, VA	11				20						
Contactors switching time, ms	17±8				22±8						
Dimensions											
Overall (HxWxD), mm	86x57x100		90x125x100		129x77x116		81,6x56x135 (130)		282x16x165		129x165x116
Mounting, mm	48x40 (3 screws M4)		50x111 (6 screws M4)		100x40 (3 screws M6)		50x40 (2 screws M4)		260 (2 screws M5)		100x90 (6 screws M6)
Weight, max kg	0.6		1.4		1.35		0.7		2.8		2

\* Switched capacitive load, kVA<sub>r</sub>





**PML contactors with AC control coil**

Parameter name	Parameter designation										
Series											
	PML-3510	PML-3511Д	PML-3160M1	PML-3560M1	PML-4100	PML-4160M	PML-4160MK	PML-4110	PML-4500	PML-4560M	PML-4510
Type of main circuit current	alternating										
Rated current, A	40		50		63						
Motor power (AC-3) at 380V 50 Hz, kW	18,5		22		30		40*		30		
Auxiliary contacts «3» - closing «p» - opening	-		1 «3» + 1 «p»				1 «p»		1 «3» + 1 «p»		-
Version	reversing		non-reversing		reversing		non-reversing			reversing	
Type of climate version	UHL-2		UHL-4				UHL-2		UHL-4		UHL-2
Degree of protection	IP54		IP20		IP00		IP20		IP54		IP00
Execution on switching wear resistance, million cycles (AC-3)	B-1.0		A-2.0		B-1.0		B-0.1		B-1.0		A-2.0
Execution on mechanical wear resistance, million cycles	B-10		A-16		B-10		B-1.0		B-10		A-16
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/1200										
Rated operating current, A (AC-3) up to 380 V	40		50		63						
Rated operating current, A (AC-3) at 660 V	25		32		40						
Rated operating current, A (AC-1)	60		80								
Rated operating current, A (AC-4) up to 380 V	16		24		25,2						
Rated operating current, A (AC-4) at 660 V	10		12		16						
Rated voltage of the main circuit, V	up to 660										
Rated voltage of control circuit of alternating current with frequency of 50 Hz, 60 Hz, V	24, 36, 40, 42, 48, 110, 120, 127, 220, 230, 240, 380, 400, 415, 440, 480, 500, 660										
Rated insulation voltage, V	660										
Power consumed by the coil											
switching on, VA	200										
hold, VA	20										
Contactors switching time, ms	22±8										
Dimensions											
Overall (HxWxD), mm	309x258x171,5	220x169x170,5	129x77x116	129x165x116	129x77x116	125x76x150 (180)	280x165x166	129x165x116	309x258x171,5		
Mounting, mm	165x165 (4 screws M6)	260 (2 screws M5)	100x40 (3 screws M6)	100x90 (6 screws M6)	100x40 (3 screws M6)	105x40 (3 screws M6)	260 (2 screws M5)	100x90 (6 screws M6)	165x165 (4 screws M6)		
Weight, max kg	5.7	2.82	1.35	2.9	1.35	1.5	2.8	2.9	5.7		

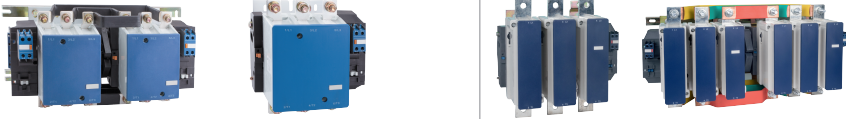
\* Switched capacitive load, kVAR

## PML contactors with AC control coil


Parameter name	Parameter designation						
Series							
	PML-4160DM	PML-4560DM	PML-4160DMK	PML-5160DM	PML-5560DM	PML-5100	PML-5500
Type of main circuit current	alternating						
Rated current, A	80			100		125	
Motor power (AC-3) at 380V 50 Hz, kW	37		50*	40		55	
Auxiliary contacts «3» - closing «p» - opening	1 «3» + 1 «p»						
Version	non-reversing	reversing	non-reversing	reversing	non-reversing	reversing	
Type of climate version	UHL-4						
Degree of protection	IP20					IP00	
Execution on switching wear resistance, million cycles (AC-3)	B-1.0		B-0.1	B-0.75			
Execution on mechanical wear resistance, million cycles	B-5.0		B-1.0	B-5.0			
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/750					2400/600	
Rated operating current, A (AC-3) up to 380 V	80			100		125	
Rated operating current, A (AC-3) at 660 V	50			55		86	
Rated operating current, A (AC-1)	100					200	
Rated operating current, A (AC-4) up to 380 V	32			30		37,5	
Rated operating current, A (AC-4) at 660 V	20			16,5		18	
Rated voltage of the main circuit, V	up to 660						
Rated voltage of control circuit of alternating current with frequency of 50 Hz, 60 Hz, V	24, 36, 40, 42, 48, 110, 120, 127, 220, 230, 240, 380, 400, 415, 440, 480, 500, 660						
Rated insulation voltage, V	660						
Power consumed by the coil							
switching on, VA	200					500±40	
hold, VA	20					46±8	
Contactors switching time, ms	22±8					55±30	
Dimensions							
Overall (HxWxD), mm	129x87x127	129x165x127	126x85,5x160 (195)	129x87x127	129x165x127	163x167x172	163x350x182
Mounting, mm	100x40 (3 screws M6)	100x90 (6 screws M6)	105x40 (3 screws M6)	100x40 (3 screws M6)	100x90 (6 screws M6)	115x80 (4 screws M6)	115x330 (4 screws M6)
Weight, max kg	1.6	3.3	1.6	3.3	4.6	9.8	

\* Switched capacitive load, kVAr


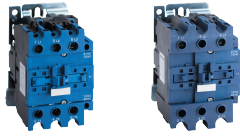
## PML contactors with AC control coil

Parameter name	Parameter designation									
Series										
	PML-6100	PML-6500	PML-7100	PML-7500	PML-8100	PML-8500	PML-9100	PML-9500	PML-9100D	PML-9500D
Type of main circuit current	alternating									
Rated current, A	160		250		400		630		800	
Motor power (AC-3) at 380V 50 Hz, kW	75		132		200		335		450	
Auxiliary contacts «3» - closing «p» - opening	1 «3» + 1 «p»									
Version	non-reversing	reversing	non-reversing	reversing	non-reversing	reversing	non-reversing	reversing	non-reversing	reversing
Type of climate version	UHL-4									
Degree of protection	IP00									
Execution on switching wear resistance, million cycles (AC-3)	B-0.75		B-0.5				B-0.3			
Execution on mechanical wear resistance, million cycles	B-5.0						B-3			
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	2400/600									
Rated operating current, A (AC-3) up to 380 V	160		250		400		630		800	
Rated operating current, A (AC-3) at 660 V	108		170		303		462		486	
Rated operating current, A (AC-1)	200		315		450		800		1000	
Rated operating current, A (AC-4) up to 380 V	48		75		120		188		295	
Rated operating current, A (AC-4) at 660 V	24		37,5		60		107		110	
Rated voltage of the main circuit, V	up to 660									
Rated voltage of control circuit of alternating current with frequency of 50 Hz, 60 Hz, V	110, 120, 127, 220, 230, 240, 380, 400									
Rated insulation voltage, V	660									
Power consumed by the coil										
switching on, VA	500±40		800±65		1100±90		1100±90			
hold, VA	46±8		56±8		75±15		75±15			
Contactors switching time, ms	55±30		42±13		75±35		75±35			
Dimensions										
Overall (HxWxD), mm	171x167x172	171x350x182	203x202x215	203x450x225	206x213x220	206x485x232,5	304x309x255	304x650x355	304x309x255	304x650x355
Mounting, mm	115x80 (4 screws M6)	115x330 (4 screws M6)	115x96 (4 screws M6)	120x430 (4 screws M6)	180x80 (4 screws M8)	180x465 (4 screws M8)	190x625 (4 screws M6)	190x625 (4 screws M6)	190x625 (4 screws M6)	190x625 (4 screws M6)
Weight, max kg	4.7	10	6.6	14.3	7.2	16.3	18	41.5	19.5	44.5



## PML contactors with DC control coil

Parameter name	Parameter designation											
Series												
	PML-1165M	PML-1166M	PML-1565M	PML-1566M	PML-1165DM	PML-1166DM	PML-1565DM	PML-1566DM	PML-2165M	PML-2166M	PML-2565M	PML-2566M
Type of main circuit current	alternating											
Rated current, A	10				16				25			
Motor power (AC-3) at 380V 50 Hz, kW	4.0				7.5				11			
Auxiliary contacts «3» - closing «p» - opening	1 «3»	1 «p»	1 «3»	1 «p»	1 «3»	1 «p»	1 «3»	1 «p»	1 «3»	1 «p»	1 «3»	1 «p»
Version	non-reversing		reversing		non-reversing		reversing		non-reversing		reversing	
Type of climate version	UHL-4											
Degree of protection	IP20											
Execution on switching wear resistance, million cycles (AC-3)	B-1.5				B-1.0							
Execution on mechanical wear resistance, million cycles	B-10											
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/2400				3600/1200							
Rated operating current, A (AC-3) up to 380 V	10				16				25			
Rated operating current, A (AC-3) at 660 V	6				12				16			
Rated operating current, A (AC-1)	20				32				40			
Rated operating current, A (AC-4) up to 380 V	4				7.7				10			
Rated operating current, A (AC-4) at 660 V	2.4				3.6				6.4			
Rated voltage of the main circuit, V	up to 660											
Type of current control circuit	direct											
Rated voltage of the DC control circuit, V	12, 24, 36, 48, 110, 220											
Rated insulation voltage, V	660											
Power consumed by the coil												
enabling, W					8,3				9,5			
holding, W					8,3				9,5			
Contacting switching time, ms	17±8											
Dimensions												
Overall (HxWxD), mm	76x47x116		78x105x116		76x47x122		78x105x122		86x57x131		90x125x131	
Mounting, mm	50x35 (4 screws M4)		50x95 (6 screws M4)		50x35 (4 screws M4)		50x95 (6 винтов M4)		48x40 (4 screws M4)		50x111 (6 screws M4)	
Weight, max kg	0.6		1.2		0.6		1.2		0.8		1.7	

**PML contactors with DC control coil**

Parameter name	Parameter designation								
Series									
	PML-2165DM	PML-2166DM	PML-2565DM	PML-2566DM	PML-3165M	PML-3165M1	PML-4165M	PML-4165DM	PML-5165DM
Type of main circuit current									
Rated current, A	32				40	50	63	80	100
Motor power (AC-3) at 380V 50 Hz, kW	15				18,5	22	30	37	40
Auxiliary contacts «3» - closing «p» - opening	1 «3»	1 «p»	1 «3»	1 «p»	1 «3» + 1 «p»				
Version	non-reversing		reversing		non-reversing				
Type of climate version	UHL-4								
Degree of protection	IP20								
Execution on switching wear resistance, million cycles (AC-3)	B-1,0								B-0,75
Execution on mechanical wear resistance, million cycles	B-10						B-5		
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/1200						3600/750		
Rated operating current, A (AC-3) up to 380 V	32				40	50	63	80	100
Rated operating current, A (AC-3) at 660 V	21				25	32	40	50	55
Rated operating current, A (AC-1)	50				60	80		100	125
Rated operating current, A (AC-4) up to 380 V	12				18.5	24	28	37	44
Rated operating current, A (AC-4) at 660 V	7.5				9	12	14	17.3	21.3
Rated voltage of the main circuit, V	up to 660								
Type of current control circuit	direct								
Rated voltage of the DC control circuit, V	12, 24, 36, 48, 110, 220								
Rated insulation voltage, V	660								
Power consumed by the coil									
enabling, W	9,5				20				
holding, W	9,5				20				
Contactors switching time, ms	17±8				22±8				
Dimensions									
Overall (HxWxD), mm	86x57x138		90x125x138		129x77x173			129x87x188	
Mounting, mm	48x40 (4 screws M4)		50x111 (6 screws M4)		100x40 (3 screws M6)				
Weight, max kg	0.8		1.75		2.43			2.61	

## Item numbers

Appearance	Name	Rated current, I <sub>e</sub> , A (AC-3) at 380V	Protection Class	Motor power (AC-3) at 380V 50 Hz, kW	Aux. contacts «3» - closing «p» - opening	Item number
<b>PML mini-contactors with AC control coil</b>						
	Contactor PML-M1160-6A-110AC-UHL4-B	6	IP20	3	1 «3»	256602
	Contactor PML-M1160-6A-220AC-UHL4-B		IP20	3	1 «3»	256603
	Contactor PML-M1160-6A-24AC-UHL4-B		IP20	3	1 «3»	256604
	Contactor PML-M1160-6A-36AC-UHL4-B		IP20	3	1 «3»	256605
	Contactor PML-M1160-6A-380AC-UHL4-B		IP20	3	1 «3»	256606
	Contactor PML-M1161-6A-220AC-UHL4-B		IP20	3	1 «p»	256610
	Contactor PML-M1161-6A-380AC-UHL4-B		IP20	3	1 «p»	256613
	Contactor PML-M2160-9A-110AC-UHL4-B	9	IP20	4	1 «3»	256616
	Contactor PML-M2160-9A-220AC-UHL4-B		IP20	4	1 «3»	256617
	Contactor PML-M2160-9A-24AC-UHL4-B		IP20	4	1 «3»	256618
	Contactor PML-M2160-9A-36AC-UHL4-B		IP20	4	1 «3»	256619
	Contactor PML-M2160-9A-380AC-UHL4-B		IP20	4	1 «3»	256620
	Contactor PML-M2161-9A-110AC-UHL4-B		IP20	4	1 «p»	256623
	Contactor PML-M2161-9A-220AC-UHL4-B		IP20	4	1 «p»	256624
	Contactor PML-M2161-9A-380AC-UHL4-B		IP20	4	1 «p»	256627
	Contactor PML-M3160-12A-110AC-UHL4-B		12	IP20	5.5	1 «3»
	Contactor PML-M3160-12A-220AC-UHL4-B	IP20		5.5	1 «3»	256631
	Contactor PML-M3160-12A-24AC-UHL4-B	IP20		5.5	1 «3»	256632
	Contactor PML-M3160-12A-36AC-UHL4-B	IP20		5.5	1 «3»	256633
	Contactor PML-M3160-12A-380AC-UHL4-B	IP20		5.5	1 «3»	256634
	Contactor PML-M3161-12A-220AC-UHL4-B	IP20		5.5	1 «p»	256638
	Contactor PML-M3161-12A-380AC-UHL4-B	IP20		5.5	1 «p»	256641

Appearance	Name	Rated current, I <sub>e</sub> , A (AC-3) at 380V	Protection class	Motor power (AC-3) at 380V 50 Hz, kW	Aux. contacts «3» - closing «p» - opening	Version by switching wear resistance, mln of cycles	Item number
<b>PML contactors with AC control coil</b>							
    	Contactor PML-1100-10A-220AC-UHL4-B	10	IP00	5.5	1 «3»	A-3.0; B-1.5	110538
	Contactor PML-1160M-10A-220AC-UHL4-B		IP20	5.5	1 «3»	A-3.0; B-1.5	110551
	Contactor PML-1101-10A-220AC-UHL4-B		IP00	5.5	1 «p»	A-3.0; B-1.5	229699
	Contactor PML-1161M-10A-220AC-UHL4-B		IP20	5.5	1 «p»	A-3.0; B-1.5	229702
	Contactor PML-1110-10A-220AC-UHL2-B		IP54	5.5	-	B-1.5	229710
	Contactor PML-1500-10A-220AC-UHL4-B		IP00	5.5	1 «3»	A-3.0; B-1.5	110557
	Contactor PML-1501-10A-220AC-UHL4-B		IP00	5.5	1 «p»	A-3.0; B-1.5	229705
	Contactor PML-1560M-10A-220AC-UHL4-B		IP20	5.5	1 «3»	A-3.0; B-1.5	110566
	Contactor PML-1561M-10A-220AC-UHL4-B		IP20	5.5	1 «p»	A-3.0; B-1.5	229708
	Contactor PML-1511-10A-220AC-UHL2-B		IP54	5.5	1 «p»	B-1.5	229714
  	Contactor PML-1100DM-16A-220AC-UHL4-B	16	IP20	7.5	1 «3»	A-2.0; B-1.0	138112
	Contactor PML-1160DM-16A-220AC-UHL4-B		IP20	7.5	1 «3»	A-2.0; B-1.0	110546
	Contactor PML-1161DM-16A-220AC-UHL4-B		IP20	7.5	1 «3»	A-2.0; B-1.0	229722
	Contactor PML-1560DM-16A-220AC-UHL4-B		IP20	7.5	1 «3»	A-2.0; B-1.0	110562
	Contactor PML-1561DM-16A-220AC-UHL4-B		IP20	7.5	1 «p»	A-2.0; B-1.0	229724
	Contactor PML-1541Д-16A-220AC-UHL2-B		IP40	7.5	2 «p»	B-1.0	235720
   	Contactor PML-2100-25A-220AC-UHL4-B	25	IP00	11	1 «3»	A-2.0; B-1.0	110570
	Contactor PML-2101-25A-220AC-UHL4-B		IP00	11	1 «p»	A-2.0; B-1.0	229727
	Contactor PML-2161M-25A-220AC-UHL4-B		IP20	11	1 «p»	A-2.0; B-1.0	229730
	Contactor PML-2110-25A-220AC-UHL2-B		IP54	11	-	B-1.0	229738
	Contactor PML-2160M-25A-220AC-UHL4-B		IP20	11	1 «3»	A-2.0; B-1.0	110580
	Contactor PML-2161MK-25A-220AC-UHL4-B		IP20	12.5	1 «p»	B-0.2	229783
    	Contactor PML-2500-25A-220AC-UHL4-B		IP00	11	1 «3»	A-2.0; B-1.0	110586
	Contactor PML-2560M-25A-220AC-UHL4-B		IP20	11	1 «3»	A-2.0; B-1.0	110593
	Contactor PML-2501-25A-220AC-UHL4-B		IP00	11	1 «p»	A-2.0; B-1.0	229733
	Contactor PML-2561M-25A-220AC-UHL4-B		IP20	11	1 «p»	A-2.0; B-1.0	229736
	Contactor PML-2511-25A-220AC-UHL2-B		IP54	11	2 «p»	B-1.0	229742

Appearance	Name	Rated current, I <sub>e</sub> , A (AC-3) at 380V	Protection Class	Motor power (AC-3) at 380V 50 Hz, kW	Aux. contacts «3» - closing «p» - opening	Version by switching wear resistance, mln of cycles	Item number
	Contactor PML-2160DM-32A-220AC-UHL4-B	32	IP20	18.5	1 «3»	B-1.0	110577
	Contactor PML-2560DM-32A-220AC-UHL4-B		IP20	18.5	1 «3»	B-1.0	110590
 	Contactor PML-3100-40A-220AC-UHL4-B	40	IP00	18.5	1 «3» + 1 «p»	A-2.0; B-1.0	110598
	Contactor PML-3160M-40A-220AC-UHL4-B		IP20	18.5	1 «3» + 1 «p»	A-2.0; B-1.0	110604
	Contactor PML-3161DMK-40A-220AC-UHL4-B		IP20	25	1 «p»	B-0.1	229785
	Contactor PML-3110-40A-220AC-UHL2-B		IP54	18.5	1 «p»	B-1.0	229759
	Contactor PML-3500-40A-220AC-UHL4-B		IP00	18.5	1 «3» + 1 «p»	A-2.0; B-1.0	110614
	Contactor PML-3560M-40A-220AC-UHL4-B		IP20	18.5	1 «3» + 1 «p»	A-2.0; B-1.0	110618
	Contactor PML-3510-40A-220AC-UHL2-B		IP54	18.5	-	B-1.0	229763
	Contactor PML-3160M1-50A-220AC-UHL4-B	50	IP20	22	1 «3» + 1 «p»	B-1.0	110611
	Contactor PML-3560M1-50A-220AC-UHL4-B		IP20	22	1 «3» + 1 «p»	B-1.0	110622
	Contactor PML-4100-63A-220AC-UHL4-B	63	IP00	30	1 «3» + 1 «p»	A-2.0; B-1.0	110626
	Contactor PML-4160M-63A-220AC-UHL4-B		IP20	30	1 «3» + 1 «p»	A-2.0; B-1.0	110637
	Contactor PML-4160MK-63A-220AC-UHL4-B		IP20	40	1 «3» + 1 «p»	B-0.1	229787
	Contactor PML-4110-63A-220AC-UHL2-B		IP54	30	1 «p»	B-1.0	229771
	Contactor PML-4500-63A-220AC-UHL4-B		IP00	30	1 «3» + 1 «p»	A-2.0; B-1.0	110642
	Contactor PML-4560M-63A-220AC-UHL4-B		IP20	30	1 «3» + 1 «p»	A-2.0; B-1.0	110649
	Contactor PML-4510-63A-220AC-UHL2-B		IP54	30	-	B-1.0	229775
	Contactor PML-4160DM-80A-220AC-UHL4-B	80	IP20	37	1 «3» + 1 «p»	B-1.0	110633
	Contactor PML-4560DM-80A-220AC-UHL4-B		IP20	37	1 «3» + 1 «p»	B-1.0	110645
	Contactor PML-4160DMK-80A-220AC-UHL4-B		IP20	50	1 «3» + 1 «p»	B-0.1	229789
	Contactor PML-5160DM-100A-220AC-UHL4-B	100	IP20	45	1 «3» + 1 «p»	B-0.75	110653
	Contactor PML-5560DM-100A-220AC-UHL4-B		IP20	45	1 «3» + 1 «p»	B-0.75	110657

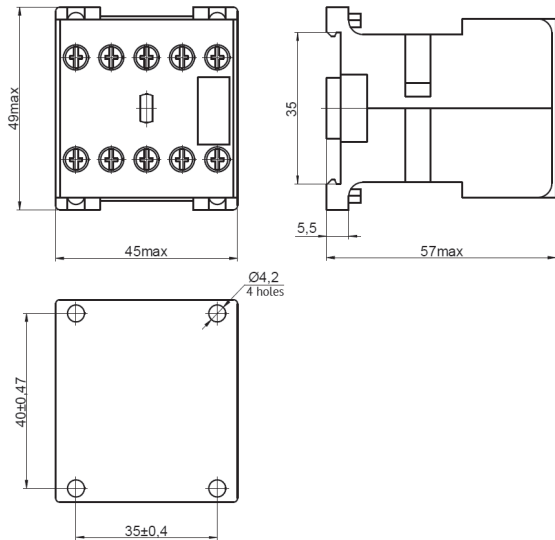


Appearance	Name	Rated current, Ie, A (AC-3) at 380V	Protection class	Motor power (AC-3) at 380V 50 Hz, kW	Aux. contacts «3» - closing «p» - opening	Version by switching wear resistance, mln of cycles	Item number
	Contactor PML-5100-125A-220AC-UHL4-B	125	IP00	55	1 «3»+ 1 «p»	B-0.75	112913
	Contactor PML-5500-125A-220AC-UHL4-B		IP00	55	1 «3»+ 1 «p»	B-0.75	112915
	Contactor PML-6100-160A-220AC-UHL4-B	160	IP00	75	1 «3»+ 1 «p»	B-0.75	112917
	Contactor PML-6500-160A-220AC-UHL4-B		IP00	75	1 «3»+ 1 «p»	B-0.75	112920
	Contactor PML-7100-250A-220AC-UHL4-B	250	IP00	132	1 «3»+ 1 «p»	B-0.5	112924
	Contactor PML-7500-250A-220AC-UHL4-B		IP00	132	1 «3»+ 1 «p»	B-0.5	112926
	Contactor PML-8100-400A-220AC-UHL4-B	400	IP00	200	1 «3»+ 1 «p»	B-0.5	112923
	Contactor PML-8500-400A-220AC-UHL4-B		IP00	200	1 «3»+ 1 «p»	B-0.5	112919
<b>PML contactors with DC control coil</b>							
	Contactor PML-1165M-10A-24DC-UHL4-B	10	IP20	5.5	1 «3»	B-1.5	227144
	Contactor PML-1166M-10A-24DC-UHL4-B		IP20	5.5	1 «p»	B-1.5	246150
	Contactor PML-1565M-10A-24DC-UHL4-B		IP20	5.5	1 «3»	B-1.5	227147
	Contactor PML-1566M-10A-24DC-UHL4-B		IP20	5.5	1 «p»	B-1.5	244636
	Contactor PML-1165DM-16A-24DC-UHL4-B	16	IP20	7.5	1 «3»	B-1.0	253192
	Contactor PML-1166DM-16A-24DC-UHL4-B		IP20	7.5	1 «p»	B-1.0	253193
	Contactor PML-1565DM-16A-24DC-UHL4-B		IP20	7.5	1 «3»	B-1.0	253186
	Contactor PML-1566DM-16A-24DC-UHL4-B		IP20	7.5	1 «p»	B-1.0	253189
	Contactor PML-2165M-25A-24DC-UHL4-B	25	IP20	11	1 «3»	B-1.0	227150
	Contactor PML-2166M-25A-24DC-UHL4-B		IP20	11	1 «p»	B-1.0	246151
	Contactor PML-2565M-25A-24DC-UHL4-B		IP20	11	1 «3»	B-1.0	227153
	Contactor PML-2566M-25A-24DC-UHL4-B		IP20	11	1 «p»	B-1.0	246152
	Contactor PML-2165DM-32A-24DC-UHL4-B	32	IP20	18.5	1 «3»	B-1.0	246143
	Contactor PML-2166DM-32A-24DC-UHL4-B		IP20	18.5	1 «p»	B-1.0	246144
	Contactor PML-2565DM-32A-24DC-UHL4-B		IP20	18.5	1 «3»	B-1.0	253205
	Contactor PML-2566DM-32A-24DC-UHL4-B		IP20	18.5	1 «p»	B-1.0	253207
	Contactor PML-3165M-40A-24DC-UHL4-B	40	IP20	18.5	1 «3»+ 1 «p»	B-1.0	253202
	Contactor PML-3165M1-50A-24DC-UHL4-B	50	IP20	22	1 «3»+ 1 «p»	B-1.0	253210
	Contactor PML-4165M-63A-24DC-UHL4-B	63	IP20	30	1 «3»+ 1 «p»	B-1.0	253212
	Contactor PML-4165DM-80A-24DC-UHL4-B	80	IP20	37	1 «3»+ 1 «p»	B-1.0	253214
	Contactor PML-5165DM-100A-24DC-UHL4-B	100	IP20	45	1 «3»+ 1 «p»	B-0.75	253215

\* В таблице представлены не все возможные исполнения, с более полным перечнем Вы можете ознакомиться на нашем сайте или позвонив нам в компанию.

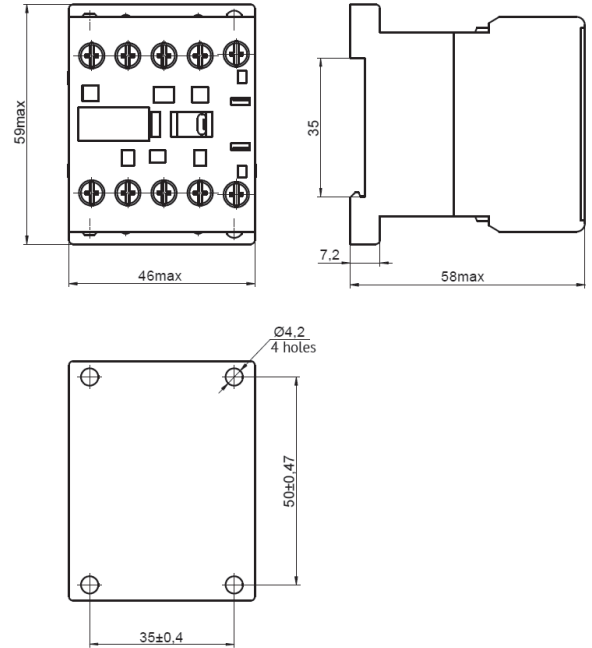
## Overall, installation and mounting dimensions

### Mini-contactors PML-M1160, PML-M1161



Weight – 0.2 kg  
Mounting on 35 mm DIN rail or with M4 screws – 2 pcs.

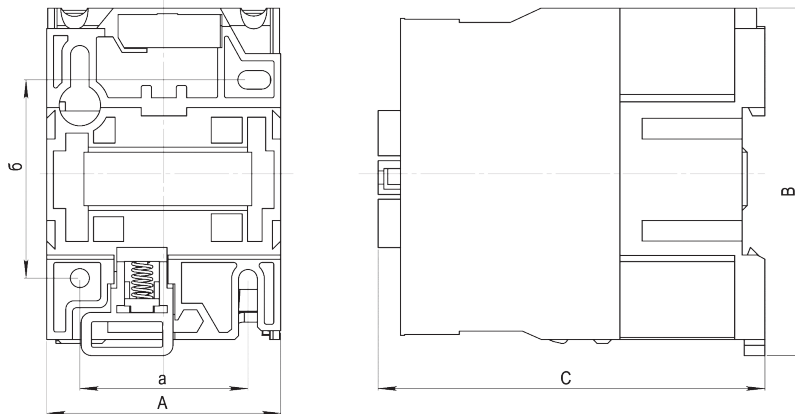
### Mini-contactors PML-M2160, PML-M2161, PML-M3160, PML-M3161



Weight – 0.2 kg  
Mounting on 35 mm DIN rail or with M4 screws – 2 pcs.

### Version 1

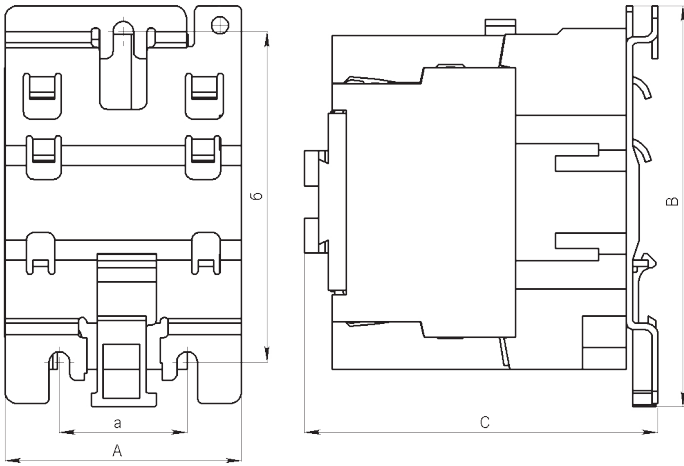
### Non-reversing contactor for rated currents 10, 16, 25, 32 A



Contactor type	Rated current, A	Dimension, mm					Weight, max, kg
		A	B	C	a	b	
PML-1160M	10	47	76	82	34/35	50/60	0,4
PML-1161M							
PML-1100							
PML-1101							
PML-1160DM	16	47	76	87	34/35	50/60	
PML-1161DM							
PML-1100DM							
PML-1101DM							
PML-2160M	25	57	86	95	40	48	0,57
PML-2161M							
PML-2100							
PML-2101							
PML-2160DM	32	57	86	100	40	48	0,6
PML-2161DM							

Dimensions without limit deviations are maximum.  
Contactor mounting M4 screws - 4 pcs.

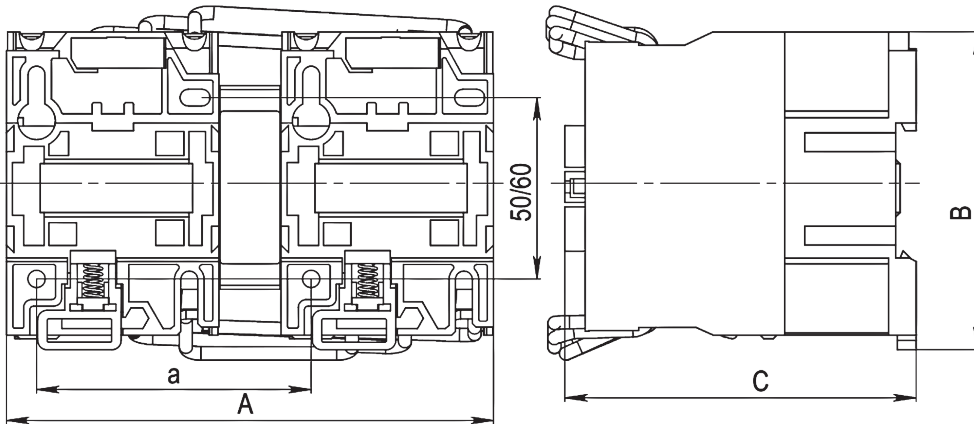
**Non-reversing contactor for rated currents 40, 50, 63, 80, 100 A**



Contactor type	Rated current, A	Dimensions, mm					Weight, kg
		A	B	C	a	b	
PML-3100	40	77	129	116	40	100/110	1,35
PML-3160M							
PML-3160M1	63	87	129	127	40	100/110	1,6
PML-4100							
PML-4160M	80	87	129	127	40	100/110	1,6
PML-4160DM							
PML-5160DM	100	87	129	127	40	100/110	1,6

Dimensions without limit deviations are maximum.  
Contactor mounting M6 screws - 3 pcs.

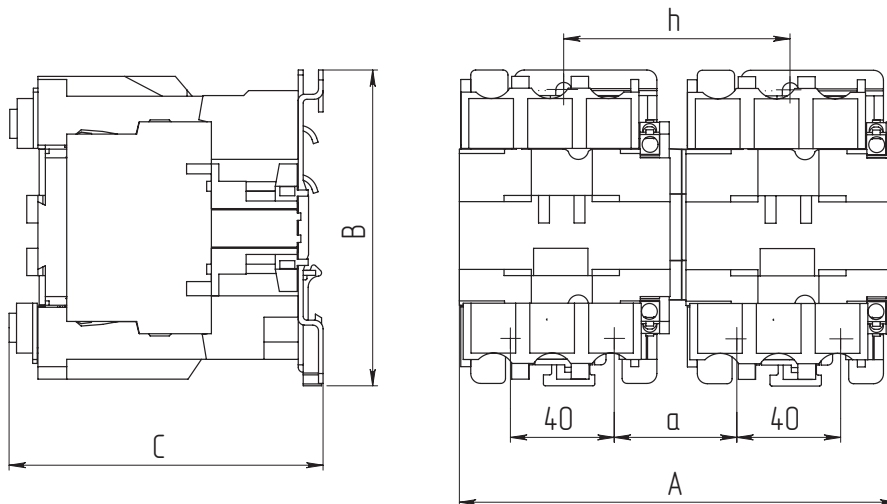
**Reversing contactor for rated currents 10, 16, 25, 32 A**



Contactor type	Rated current, A	Dimensions, mm				Weight max, kg
		A	B	C	a	
PML-1560M	10	105	78	82	95	0,9
PML-1561M						
PML-1500						
PML-1501	16	105	78	87	95	1,4
PML-1560DM						
PML-1561DM						
PML-2560M	25	125	90	95	111	1,4
PML-2561M						
PML-2500						
PML-2501	32	125	90	100	111	1,4
PML-2560DM						
PML-2561DM						

Dimensions without limit deviations are maximum.  
Contactor mounting M4 screws - 4 pcs.

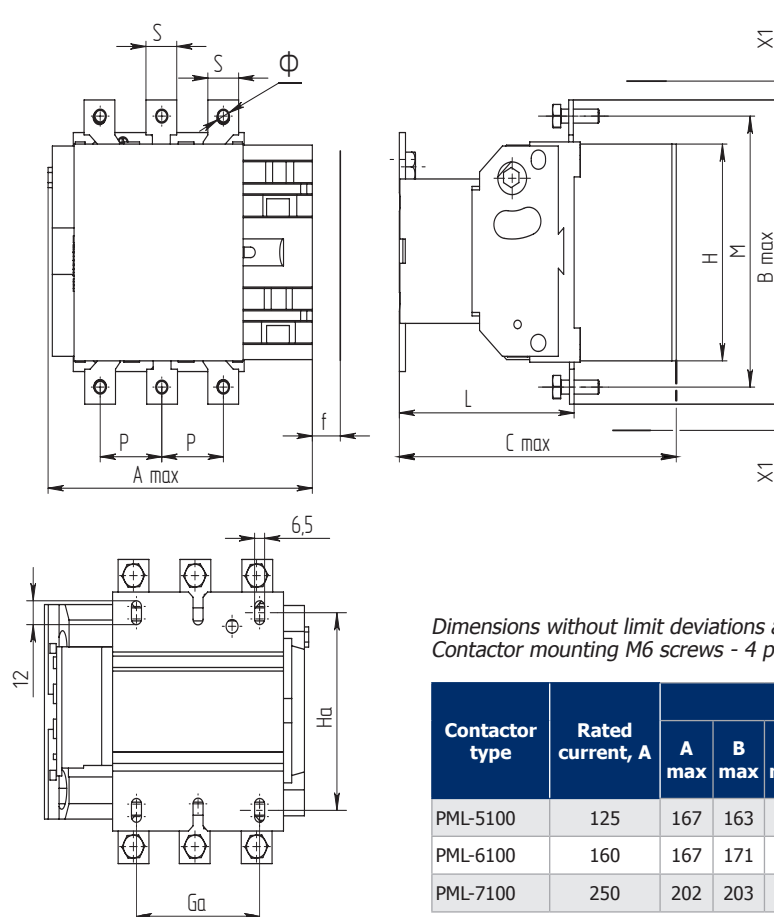
**Reversing contactor for rated currents 40, 50, 63, 80, 100 A**



Contactor type	Rated current, A	Dimensions, mm					Weight, kg
		A	B	C	a	h	
PML-3500M	40	165	129	116	50	90	2,9
PML-3560M	40						
PML-3560M1	50						
PML-4500	63						
PML-4560M	63						
PML-4560DM	80	165	129	127	57	96	3,3
PML-5560DM	100						

Dimensions without limit deviations are maximum.  
Contactor mounting M6 screws - 6 pcs.

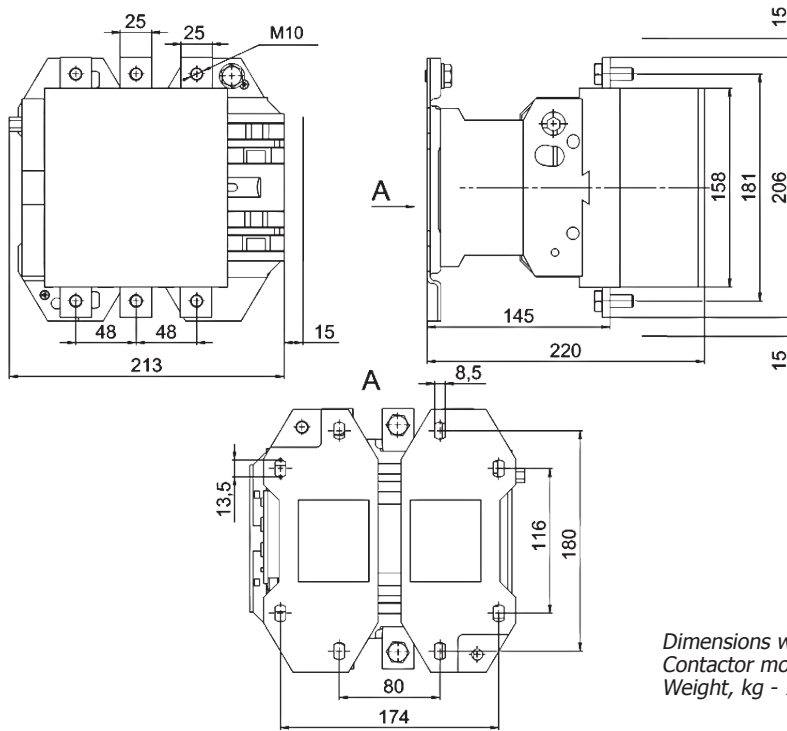
**Non-reversing contactors for rated currents 125, 160, 250 A**



Dimensions without limit deviations are maximum.  
Contactor mounting M6 screws - 4 pcs.

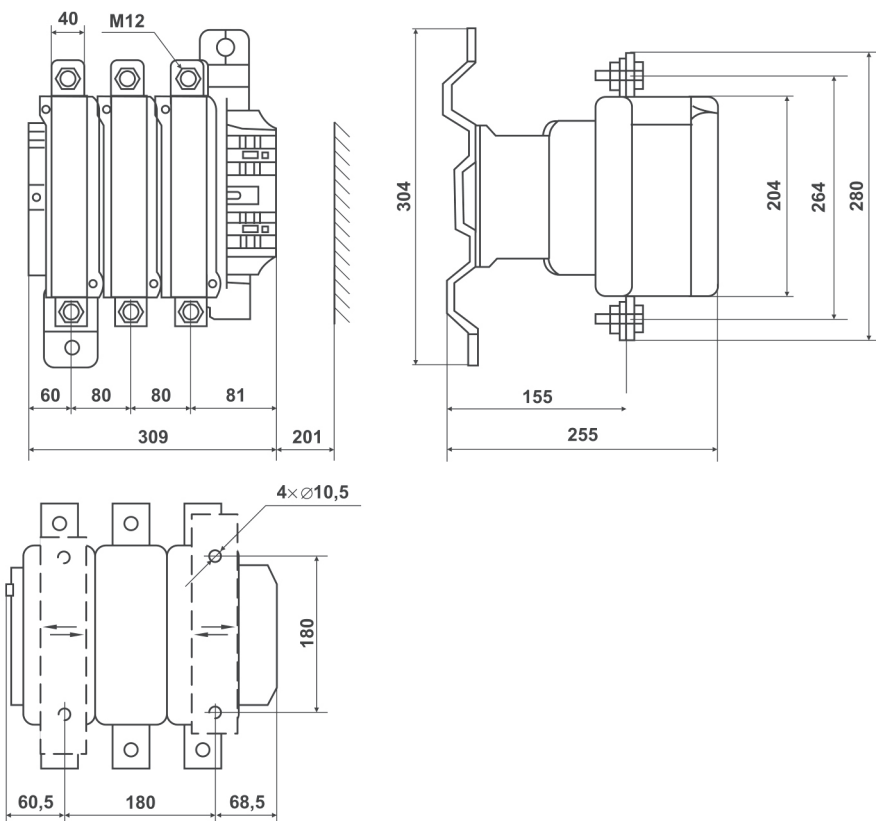
Contactor type	Rated current, A	Dimensions, mm												Weight, kg
		A max	B max	C max	P	S	Φ	M	H	L	X	Ga	Ha	
PML-5100	125	167	163	172	37	20	M6	147	124	107	15	80	110-120	4,6
PML-6100	160	167	171	172	40	20	M8	150	124	107	15	80	110-120	4,7
PML-7100	250	202	203	215	48	25	M10	178	147	141	15	96	110-120	6,6

**Non-reversing contactors for rated current 400 A**



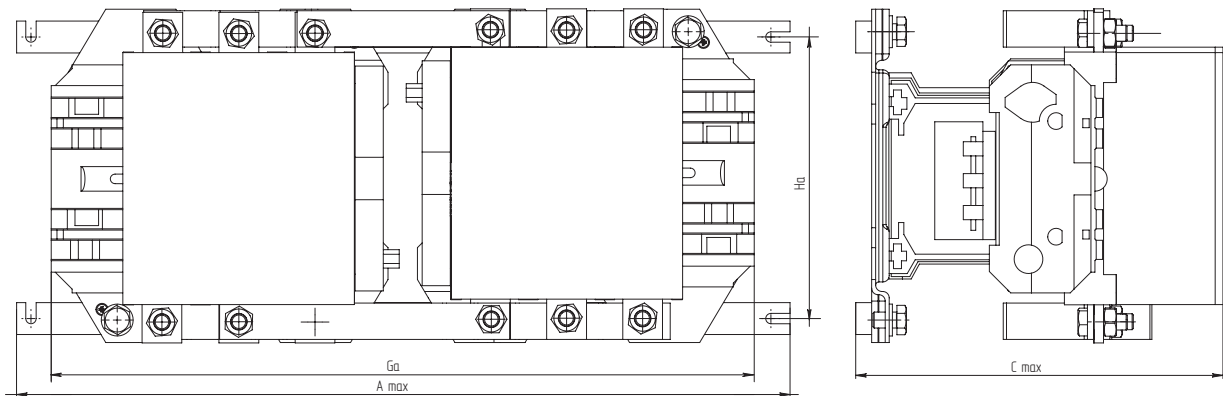
Dimensions without limit deviations are maximum.  
Contactor mounting M8 screws - 4 pcs.  
Weight, kg - 7.2

**Non-reversing contactors for rated current 630-800 A**



Dimensions without limit deviations are maximum.  
Contactor mounting M10 screws - 4 pcs.  
Weight, not more than:  
PML-9100 - 18.0 kg  
PML-9100D - 19.5 kg

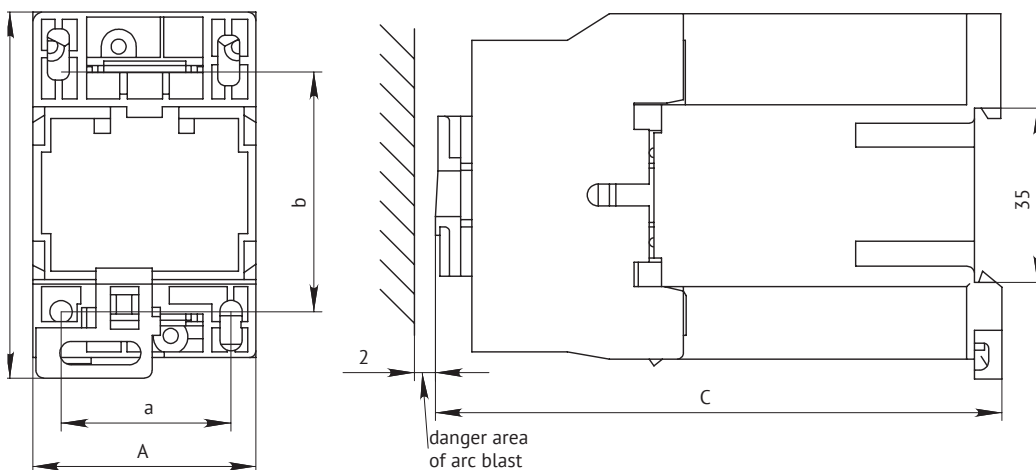
**Reversing contactors for rated currents 125-800 A**



Contactor type	Rated current, A	Dimensions, mm				Weight, kg
		A max	Ga	C max	Ha	
PML-5500	125	350	330	182	115	9,8
PML-6500	160	350	330	182	115	10
PML-7500	250	450	430	225	120	14,3
PML-8500	400	485	485	232,5	180	16,3
PML-9500	630	650	625	255	190	41,5
PML-9500D	800					44,5

Dimensions without limit deviations are maximum.  
 Contactor mounting screws:  
 M6 - 4 pcs. PML-5500, PML-6500, PML-7500;  
 M8 - 4 pcs. PML-8500;  
 M10 - 4 pcs. PML-9500, PML-9500D

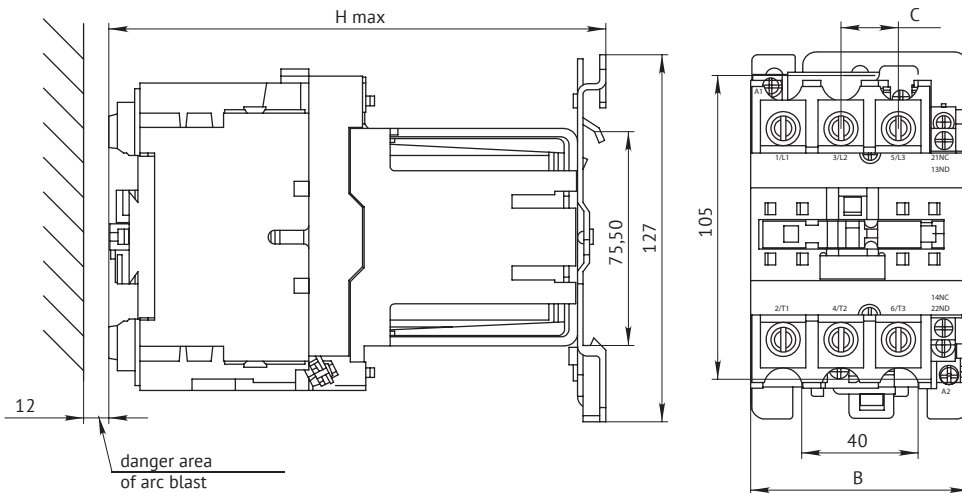
**Non-reversing contactors for rated currents 10, 16, 25, 32 A with DC control**



Contactor type	Rated current, A	Dimensions, mm					Weight max, kg
		A	B	C	a	b	
PML-1165M	10	47	76	116	34/35	50/60	0,6
PML-1166M							
PML-1165DM	16	47	76	122	34/35	50/60	0,6
PML-1166DM							
PML-2165M	25	57	86	131	40	48	0,8
PML-2166M							
PML-2165DM	32	57	86	138	40	48	0,8
PML-2166DM							

Dimensions without limit deviations are maximum.  
 Mounting on 35 mm DIN rail or with screws  
 M4 - 2 pcs.

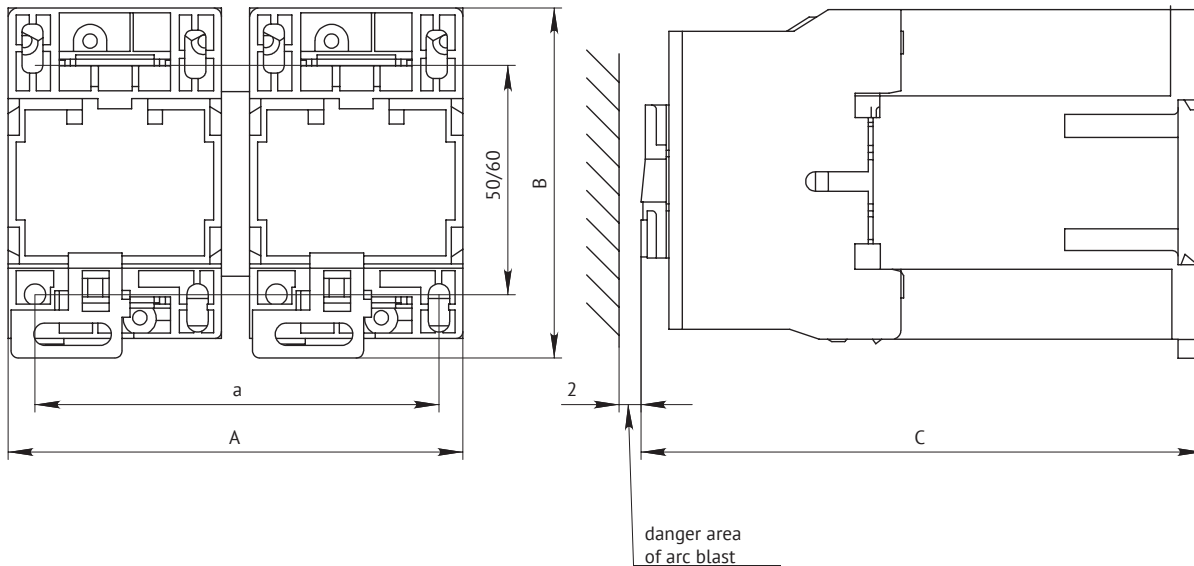
**Non-reversing contactors for rated currents 40, 50, 63, 80, 100 A with DC control**



Contactor type	Rated current, A	Dimensions, mm			Weight max, kg
		B	C	H max	
PML-3165M	40	75,5	20	171,8	2,43
PML-3165M1	50				
PML-4165M	63				
PML-4165DM	80	86	23,5	186	2,61
PML-5165DM	100				

Dimensions without limit deviations are maximum. Mounting on 75 mm DIN rail or with screws M6 - 3 pcs.

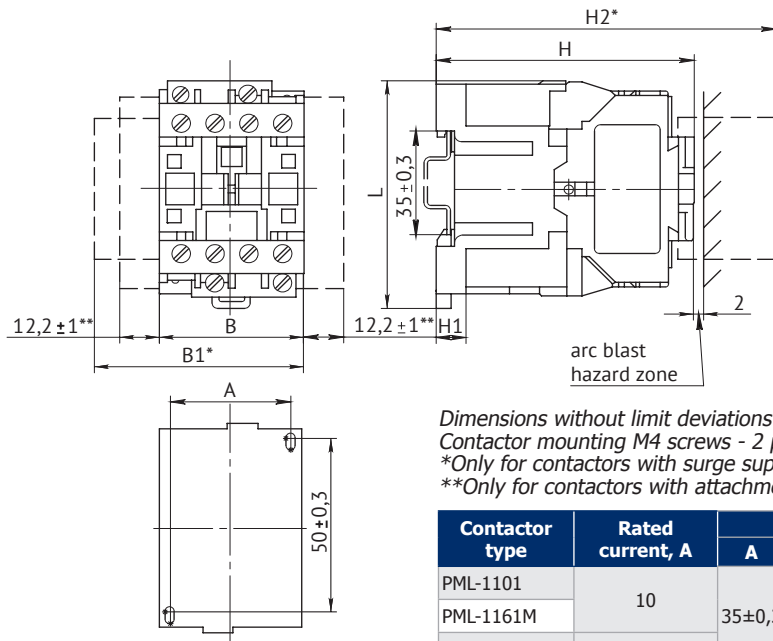
**Reversing contactors for rated currents 10, 16, 25, 32 A with DC control**



Contactor type	Rated current, A	Dimensions, mm				Weight max, kg
		A	B	C	a	
PML-1565M	10	105	76	116	95	1,2
PML-1566M						
PML-1565DM	16	105	76	122	95	1,2
PML-1566DM						
PML-2565M	25	125	86	131	111	1,7
PML-2566M						
PML-2565DM	32	125	86	138	111	1,75
PML-2566DM						

Dimensions without limit deviations are maximum. Mounting on 35 mm DIN rail or with screws M4 - 4 pcs.

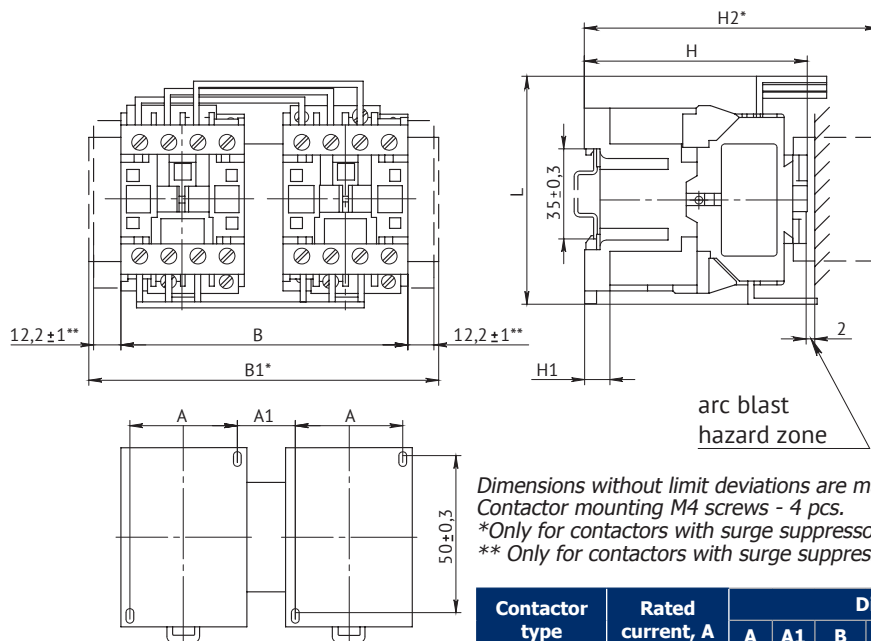
**Contactors of wear resistance type A**  
**Non-reversing contactors for rated currents 10, 16, 25 and 40 A and with reduced weight and dimensional parameters for rated currents 40 A**



Dimensions without limit deviations are maximum.  
 Contactor mounting M4 screws - 2 pcs.  
 \*Only for contactors with surge suppressors.  
 \*\*Only for contactors with attachments PKB.

Contactor type	Rated current, A	Dimensions, mm							Weight, kg
		A	B	B1*	H	H1	H2* max	I	
PML-1101	10	35±0,3	45	65	79,7	9,2	111,2	71,8	0,32; 0,36*; 0,38**
PML-1161M			46	66			116,2		
PML-1161DM	16				85				0,34; 0,38*; 0,4**
PML-2101	25	40±0,3	57	77	95	6,2	126,8	81,6	0,55; 0,57*; 0,6**
PML-2161M							101		
PML-3160DM	40								0,6; 0,64*; 0,66**
PML-3161DM									

**Reversing contactors for rated currents 10, 16, 25 A**  
**and with reduced weight and overall dimensions for rated currents 40 A**



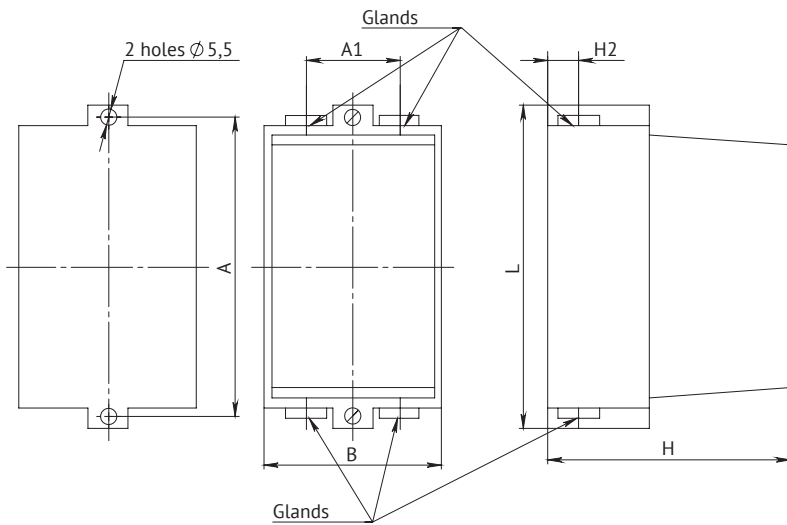
Dimensions without limit deviations are maximum.  
 Contactor mounting M4 screws - 4 pcs.  
 \*Only for contactors with surge suppressors.  
 \*\* Only for contactors with surge suppressors.

Contactor type	Rated current, A	Dimensions, mm								Weight, kg
		A	A1	B	B1*	H	H1	H2* max	I	
PML-1501	10	35,5	24,5	104	144,5	86	9,2	111	79	0,68; 0,76*; 0,74**
PML-1561M				106	146,5			116		
PML-1561DM	16					89				
PML-2501	25	40,5	31,5	128,5	168,5	103	6,2	127	93	1,21; 1,31*; 1,27**
PML-2561M								133		
PML-3561DM	40					86				



**Contactors in the shell.**

**Non-reversing contactors in the shell for rated currents 10, 16, 25 A**

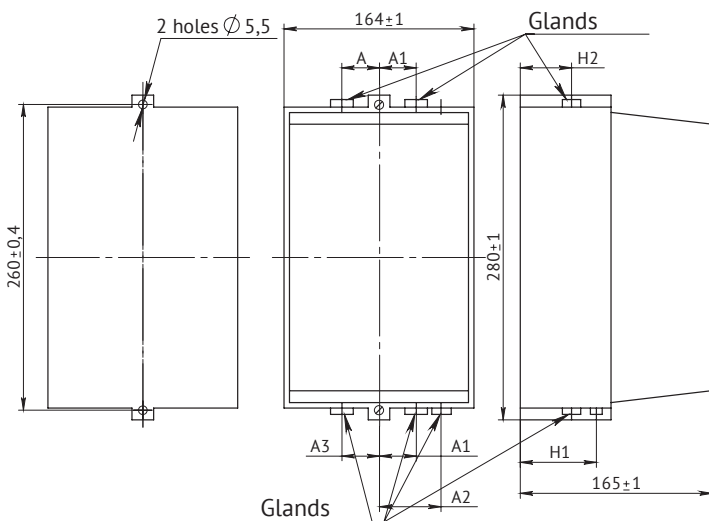


Contactor type	Rated current, A	Dimensions, mm						Weight, kg
		A	A1	B	L	H	H2	
PML-1110	10	140.5	46.5	89	161	117.5	18.5	0.8
PML-1140								
PML-1110D	16	165.5	52.5	102	186	135	19.5	1.1
PML-1140D								
PML-2110	25	165.5	52.5	102	186	135	19.5	1.1
PML-2140								

Dimensions without limit deviations are maximum.  
Contactor mounting M5 screws - 2 pcs.

**Non-reversing contactors in the shell for rated currents 40, 63 A**

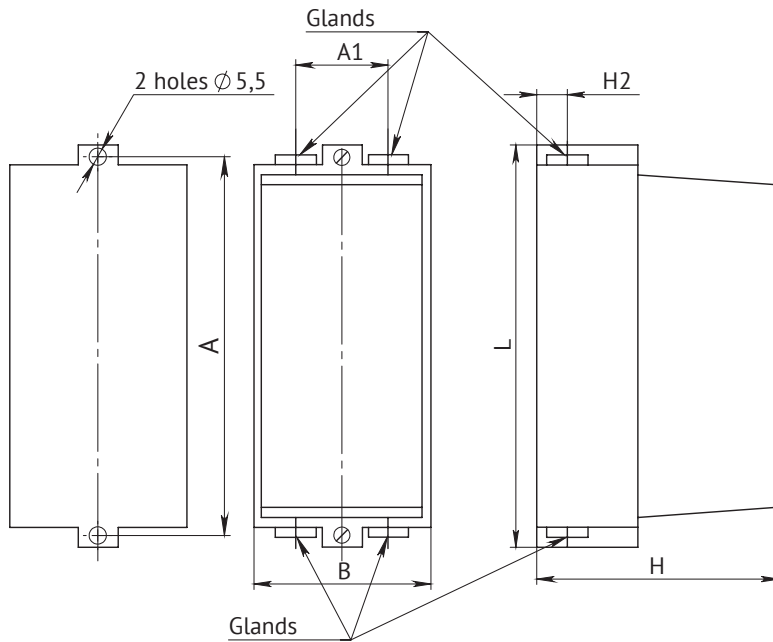
**Reversing contactors for 40 A with reduced weight and overall dimensions without a relay in a shell**



Contactor type	Rated current, A	Dimensions, mm						Weight, kg
		A	A1	A2	A3	H1	H2	
PML-3110	40	-	-	-	-	-	-	2.8
PML-3110D		-	35	61	35	31.5	31.5	2.0
PML-3140		-	35	61	35	31.5	31.5	2.8
PML-3140D		-	35	61	35	31.5	31.5	2.0
PML-4110	63	42.5	42.5	-	42.5	-	44.5	2.8
PML-4140								

Dimensions without limit deviations are maximum.  
Contactor mounting M5 screws - 2 pcs.

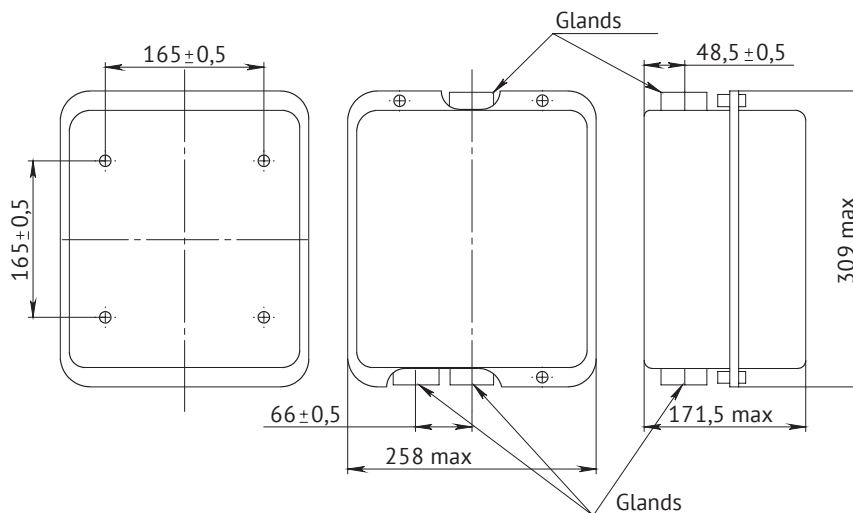
**Reversing contactors for rated currents 10, 16, 25 A in a shell**



Contactor type	Rated current, A	Dimension, mm						Weight, kg
		A	A1	B	L	H	H2	
PML-1511	10	261	46,5	124	281	127,5	18,5	2,0
PML-1541			52,5					
PML-1511Д	16	261	52,5	124	281	144	19,5	2,6
PML-1541Д								2,5
PML-2511	25	261	52,5	124	281	144	19,5	2,6
PML-2541								2,5

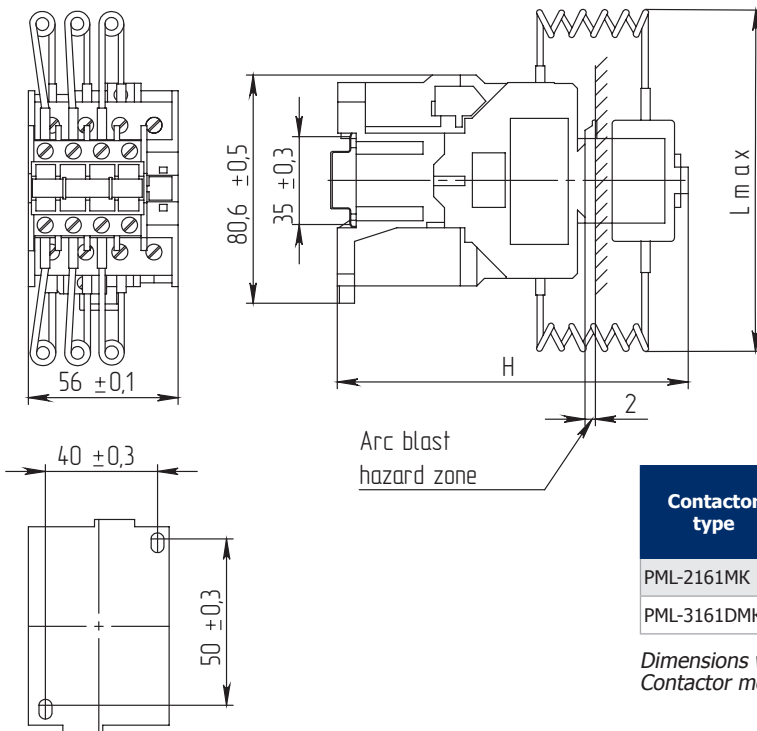
*Dimensions without limit deviations are maximum.  
Contactor mounting M5 screws - 2 pcs.*

**Reversing contactors PML-3510, PML-3540, PML-4510, PML-4540 for rated currents of 40 and 63 A without a relay in a shell**



*Contactor mounting M5 screws - 4 pcs.  
Weight, max, kg - 5.7*

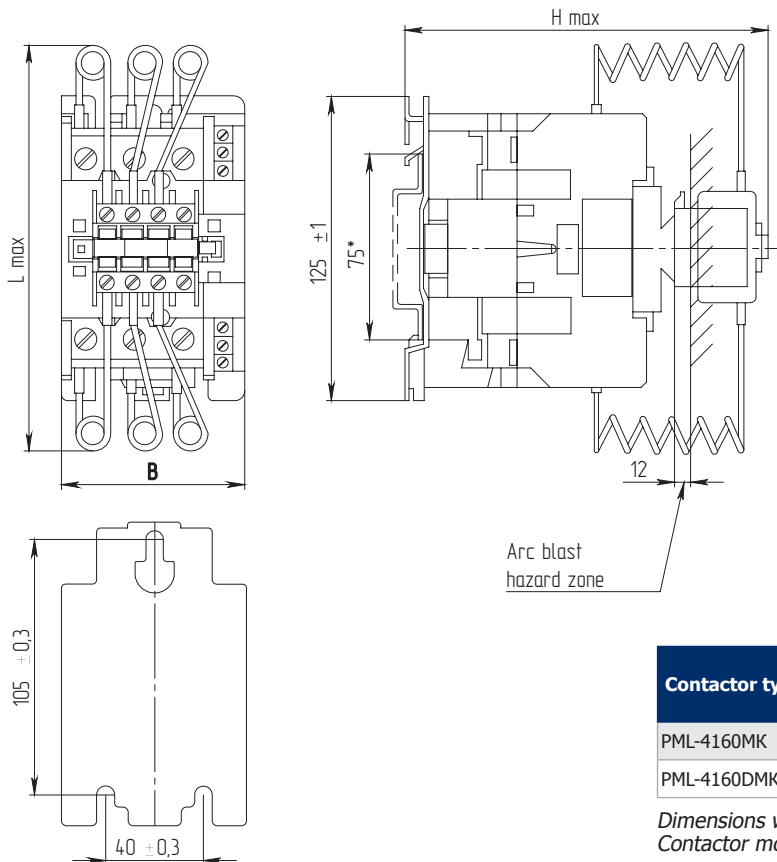
**Special contactors.**  
**Special contactors for rated currents 25, 40 A**



Contactor type	Rated current, A	Dimension, mm		Weight, kg	Note
		L	H		
PML-2161MK	25	140 max	127 max	0,65	12,5 kVAr
PML-3161DMK	40	130 max	135 max	0,70	25,0 kVAr

Dimensions without limit deviations are maximum.  
Contactor mounting M4 screws - 2 pcs.

**Special contactors for rated currents 63 and 80 A**



Contactor type	Rated current, A	Dimensions, mm			Weight, kg	Note
		L	B	H		
PML-4160MK	63	180 max	76	150 max	1,5	40 kVAr
PML-4160DMK	80	195 max	85,5	160 max	1,6	50 kVAr

Dimensions without limit deviations are maximum.  
Contactor mounting M6 screws - 3 pcs.

## Electromagnetic starters of the PML series

TU3420-091-05758109-2016



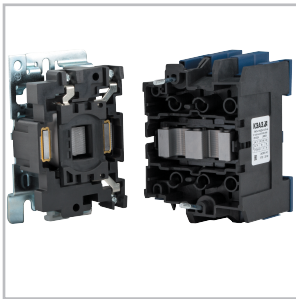
Electromagnetic starters of the PML series (hereinafter referred to as "starters") are intended for use as switching devices in electric drive control circuits, mainly in stationary installations, for remote start directly connected to the network, stopping and reversing three-phase asynchronous electric motors with a short-circuited rotor at voltages up to 660 V AC current frequency of 50 and 60 Hz. The starters are equipped with thermal relays of the RTL series TU3425-041 -05758109-2008, which ensures protection of the controlled electric motors against overloads of unacceptable duration and against currents arising from the break of one of the phases.



### Benefits

- Implementation of any technical solutions
  - it is possible to increase the number of auxiliary contacts due to the PKL and PKB attachments. (Information on p. 390 of the catalog "Thermal Overload Relays RTL Series and Accessories for PML and PM12");
  - the most modern thermal relays based on a single actuator for different values for currents up to 500A.
- Products are ideally adapted for all types of warehouses:
  - a large and easy-to-read label makes it easier for the warehouse staff to navigate through the products;
  - for the automated processing by WMS systems, the products have unique product codes and bar codes provided.
- Ensuring reliable operation and safety of operation
  - contactors for currents from 40 A are supplied in a metal sheath providing mechanical protection and reliability of the design;
  - reduction of installation time and elimination of errors when connecting the starter due to the complete set of the factory control scheme.

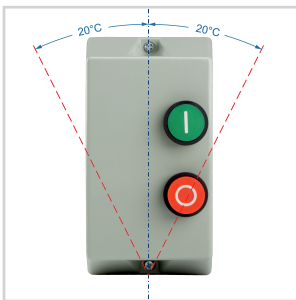
## Design features



The optimum mode of operation, the absence of noise and increased reliability of operation is ensured by the use of special technology for manufacturing the magnetic system of contactors.



Possibility of operation in harsh Russian conditions at ambient temperatures from -40 to 55°C.



Ample opportunities on the layout of boards by mounting devices both vertically and turning right / left to 20°.



Possibility of use in various operating conditions due to the shell with a degree of protection IP54.

## Designation structure

### Starter PML-X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>D-X<sub>5</sub>A-X<sub>6</sub>AC-(X<sub>7</sub>A)-UHL3-B-KEAZ

<b>Starter</b>	- Product group		
<b>PML</b>	- Series		
<b>X<sub>1</sub></b>	- A digit indicating the value of the starter depending on the rated current: 1 - 10 A and 16 A, 2 - 25 A and 32 A, 3 - 40 A, 4 - 63 A, 5 - 100 A		
<b>X<sub>2</sub></b>	- A digit indicating the target version: 2 - non-reversing		
<b>X<sub>3</sub></b>	- A digit indicating the protection degree: 2 - IP54 with "Start" and "Stop" buttons		
<b>X<sub>4</sub></b>	- A digit indicating the number and design of the auxiliary circuit contacts:		
	<b>Value</b>	<b>Rated currents</b>	
		<b>10, 16, 25, 32</b>	<b>40, 63, 100</b>
	0	1 «3»	1 «3» + 1 «p»
1	1 «p»	-	
<b>D</b>	- Letter indicating starters with rated current: 16 A - for 1 value, 32 A - for 2 value, 100 A - for 5 value,		
<b>X<sub>5</sub></b>	- Rated current, A (10, 16, 25, 32, 40, 63, 100)		
<b>X<sub>6</sub></b>	- Control voltage, V and type of current		
<b>X<sub>7</sub></b>	- Current setting range of the relay, A		
<b>UHL3</b>	- Designation of a type of a climatic category in accordance with GOST 15150		
<b>B</b>	- Letter indicating wear resistance performance		
<b>KEAZ</b>	- Trademark		

Example of recording starter designation for rated current 10 A, performance for wear resistance B, non-reversing, degree of protection IP54, with 1 "з" auxiliary contact, with switching coil for voltage of 220 V, frequency 50 Hz, with current setting range of relay (7-10 A) when ordering it and in the documentation of another product:  
Starter PML-1220-10A-220AC-(7-10 A)-UHL3-B-KEAZ

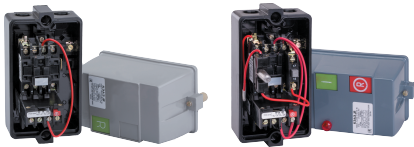
## Designation structure

### Starter PML-X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>D-X<sub>5</sub>A-X<sub>6</sub>AC-(X<sub>7</sub>A)-UHL2-B-KEAZ


<b>Starter</b>	- Product group		
<b>PML</b>	- Series		
<b>X<sub>1</sub></b>	- A digit indicating the value of the starter depending on the rated current: 1 - 10 A and 16 A, 2 - 25 A , 3 - 40 A, 4 - 63 A		
<b>X<sub>2</sub></b>	- A digit indicating the target version: 2 — non-reversing, 6 — reversing with electrical and mechanical interlocks, 7 — star-delta		
<b>X<sub>3</sub></b>	- Execution by the presence of buttons: 1 - with the "Relay" button 2 - with "Start" and "Stop" buttons 3 - with the "Start" "Stop" buttons and a signal lamp (made only for voltages 127, 220 and 380 V, 50 Hz)		
<b>X<sub>4</sub></b>	- Execution according to the number and purpose of the auxiliary circuit contacts:		
	<b>Value</b>	<b>Rated currents, A</b>	
		<b>10, 16, 25, 40 (with reduced weight and size parameters)</b>	
	0	1«3»	1«3» + 1«p»
	1	1«3» + 2«p»	-
<b>Д</b>	- With a rated current of 16 A - for 1 value; with reduced weight and size parameters - for 3 value		
<b>X<sub>5</sub></b>	- Rated current, A (10, 16, 25, 32, 40, 63)		
<b>X<sub>6</sub></b>	- Control voltage, V and type of current		
<b>X<sub>7</sub></b>	- Current setting range of the relay, A		
<b>UHL2</b>	- Designation of a type of a climatic category in accordance with GOST 15150		
<b>B</b>	- Letter indicating wear resistance performance		
<b>KEAZ</b>	- Trademark		

Example of recording starter designation for rated current 10 A, performance for wear resistance B, non-reversing, degree of protection IP54, with the "Start" "Stop" buttons and a signal lamp, with 1 "3" auxiliary contact, with switching coil for voltage of 220 V, frequency 50 Hz, with current setting range of relay (7-10 A ) when ordering it and in the documentation of another product: Starter PML-1230-10A-220AC-(7-10A)-UHL2-B-KEAZ

## Specifications


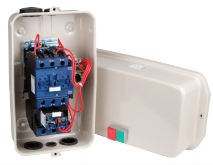
Parameter name	Parameter designation					
						
Series	PML-1210 PML-1230	PML-1611 PML-1621 PML-1631	PML-1210D PML-1230D	PML-1611D PML-1621D PML-1631D	PML-2210 PML-2230	PML-2611 PML-2621 PML-2631
Type of main circuit current	alternating					
Rated current, A	10		16		25	
Motor power (AC-3) at 380 V 50 Hz, kW	4,0		7,5		11	
Auxiliary contacts «3» - closing «p» - opening	1 «3»	1 «3» + 2 «p»	1 «3»	1 «3» + 2 «p»	1 «3»	1 «3» + 2 «p»
Version	non-reversing	reversing	non-reversing	reversing	non-reversing	reversing
Type of climate version	UHL2					
Degree of protection	IP54					
Execution on switching wear resistance, million cycles (AC-3)	B-1,5	B-1,0				
Execution on mechanical wear resistance, million cycles	B-10					
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/2400			3600/1200		
Rated operating current, A (AC-3) up to 380 V	10		16		23	
Rated operating current, A (AC-3) at 660 V	5		10		15	
Rated operating current, A (AC-1)	20		32		40	
Rated operating current, A (AC-4) up to 380 V	3,5		7,7		8,5	
Rated operating current, A (AC-4) at 660 V	1,5		3,8		4,4	
Rated voltage of the main circuit, V	up to 660					
Type of current control circuit	alternating					
Rated control circuit voltage, V	24, 36, 42, 48, 110, 120, 127*, 220*, 240, 380*, 400, 415, 440, 480, 660					
Power consumed by the coil						
switching on, VA	70				110	
hold, VA	8				11	
Rated insulation voltage, V	660					
Dimensions						
Overall (HxWxD), mm	160x87x116,5	280x123x143	185x101x134	280x123x143	185x101x134	280x123x143
Mounting, mm	140 (2 screws M5)	260 (2 screws M5)	165 (2 screws M5)	260 (2 screws M5)	165 (2 screws M5)	260 (2 screws M5)
Weight, max kg	1,04	2,15	1,2	2,7	1,2	2,7
	1,13	2,23	1,29	2,77	1,29	2,77
		2,27		2,85		2,85

\* Rated control circuit voltage for starters PML-1230, PML-1631, PML-1230D, PML-1631D, PML-2230, PML-2631




Parameter name	Parameter designation					
						
Series	PML-3210 PML-3230	PML-3210D PML-3220D PML-3230D	PML-3611D PML-3621D PML-3631D	PML-3610 PML-3620 PML-3630	PML-4210 PML-4230	PML-4610 PML-4620 PML-4630
Type of main circuit current	alternating					
Rated current, A	40				63	
Motor power (AC-3) at 380 V 50 Hz, kW	18,5				30	
Auxiliary contacts «3» - closing «p» - opening	1 «3» + 1 «p»	1 «3»	1 «3» + 2 «p»	1 «3»	1 «3» + 1 «p»	1 «3»
Version	non-reversing		reversing		non-reversing	reversing
Type of climate version	UHL2					
Degree of protection	IP54					
Execution on switching wear resistance, million cycles (AC-3)	B-1,0					
Execution on mechanical wear resistance, million cycles	B-10					
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/1200					
Rated operating current, A (AC-3) up to 380 V	34				53	
Rated operating current, A (AC-3) at 660 V	21				43	
Rated operating current, A (AC-1)	60				80	
Rated operating current, A (AC-4) up to 380 V	18,5				28	
Rated operating current, A (AC-4) at 660 V	9				14	
Rated voltage of the main circuit, V	up to 660					
Type of current control circuit	alternating					
Rated control circuit voltage, V	24, 36, 42, 48, 110, 120, 127*, 220*, 240, 380*, 400, 415, 440, 480, 660					
Power consumed by the coil						
switching on, VA	200					
hold, VA	20					
Rated insulation voltage, V	660					
Dimensions						
Overall (HxWxD), mm	280x164x166	280x164x170	280x164x166	258x175x309	280x164x166	258x175x309
Mounting, mm	260 (2 screws M5)			165x165 (4 screws M6)	260 (2 screws M5)	165x165 (4 screws M6)
Weight, max kg	3,1	2,4	3,24	6	3,11	6
	3,15	2,42	3,24	6,08	3,16	6,08
		2,44	3,3	6,12		6,12

\* Rated control circuit voltage for starters PML-3230, PML-3230D, PML-3630, PML-3631D, PML-4230, PML-4630



Parameter name	Parameter designation						
							
Series	PML-1220	PML-1220D	PML-2220	PML-2220D	PML-3220	PML-4220	PML-5220D
Type of main circuit current	alternating						
Rated current, A	10	16	25	32	40	63	100
Motor power (AC-3) at 380 V 50 Hz, kW	4,0	7,5	11	15	18,5	30	45
Auxiliary contacts «3» - closing «p» - opening	1 «3»				1 «3» + 1 «p»		
Version	non-reversing						
Type of climate version	UHL3						
Degree of protection	IP54						
Execution on switching wear resistance, million cycles (AC-3)	B-1,5	B-1,0					
Execution on mechanical wear resistance, million cycles	B-10						B-5
Maximum frequency of switching on without load / with load, switching on per hour (AC-3)	3600/2400	3600/1200					3600/750
Rated operating current, A (AC-3) up to 380 V	10	16	23	28	34	53	86
Rated operating current, A (AC-3) at 660 V	5	10	15	18	21	43	56
Rated operating current, A (AC-1)	20	32	40	50	60	80	120
Rated operating current, A (AC-4) up to 380 V	3,5	7,7	8,5	12	18,5	28	44
Rated operating current, A (AC-4) at 660 V	1,5	3,8	4,4	7,5	9	14	21,3
Rated voltage of the main circuit, V	up to 660						
Type of current control circuit	Alternating						
Rated control circuit voltage, V	24, 36, 42, 48, 110, 120, 127, 220, 240, 380, 400, 415, 440, 480, 660						
Power consumed by the coil							
switching on, VA	70		110		200		
hold, VA	8		11		20		
Rated insulation voltage, V	660						
Dimensions							
Overall (HxWxD), mm	166x88x140		185x101x142		312x180x181		
Mounting, mm	150 (2 screws M5)		165 (2 screws M5)		200x105 (4 screws M6)		
Weight, max kg	1,3		1,5	1,6	2,4	3,2	4,2

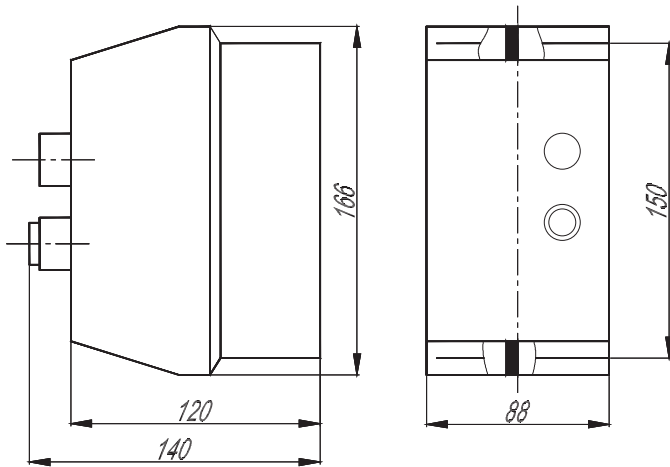
## Item numbers

	Name	Rated current, I <sub>n</sub> , A (AC-3) at 380 V	Motor power (AC-3) at 380 V 50 Hz, kW	Auxiliary contacts «3» - closing «p» - opening	Execution on switching wear resistance, million cycles	Item number			
Climatic category UHL2									
	Starter PML-1210-10A-220AC-(7-10A)-UHL2-B	10	5,5	1 «3»	B-1,5	229712			
	Starter PML-1230-10A-220AC-(7-10A)-UHL2-B		5,5			227122			
	Starter PML-1611-10A-220AC-(7-10A)-UHL2-B		5,5	1 «3» + 2 «p»		229716			
	Starter PML-1621-10A-220AC-(7-10A)-UHL2-B		5,5			229718			
	Starter PML-1631-10A-220AC-(7-10A)-UHL2-B		5,5			229720			
			Starter PML-1210Д-16A-220AC-(5,5-8A)-UHL2-B	16		7,5	1 «3»	B-1,0	232971
Starter PML-1230Д-16A-220AC-(12-18A)-UHL2-B		7,5	227126						
Starter PML-2210-25A-220AC-(18-25A)-UHL2-B		25	11	1 «3»	229740				
Starter PML-2230-25A-220AC-(17-25A)-UHL2-B			11		227130				
Starter PML-2611-25A-220AC-(18-25A)-UHL2-B			11	1 «3» + 2 «p»	229744				
Starter PML-2621-25A-220AC-(18-25A)-UHL2-B			11		229746				
Starter PML-2631-25A-220AC-(18-25A)-UHL2-B			11		229748				
			Starter PML-3210-40A-220AC-(30-41A)-UHL2-B	40	18,5	1 «3» + 1 «p»	B-1,0		229761
			Starter PML-3230-40A-220AC-(30-40A)-UHL2-B		18,5				227135
			Starter PML-3610-40A-220AC-(30-41A)-UHL2-B		18,5	1 «3»			229765
	Starter PML-3620-40A-220AC-(30-41A)-UHL2-B	18,5	229767						
	Starter PML-3630-40A-220AC-(30-41A)-UHL2-B	18,5	229769						
		Starter PML-4210-63A-220AC-(47-64A)-UHL2-B	63		30	1 «3» + 1 «p»		229773	
		Starter PML-4230-63A-220AC-(48-65A)-UHL2-B		30	227138				
		Starter PML-4610-63A-220AC-(47-64A)-UHL2-B		30	1 «3»	229777			
		Starter PML-4620-40A-220AC-(47-64A)-UHL2-B		30		229779			
		Starter PML-4630-63A-220AC-(47-64A)-UHL2-B		30		229781			
		Climatic category UHL3							
		Starter PML-1220-10A-220AC-(7-10A)-UHL3-B	10	5,5	1 «3»	B-1,5		110687	
Starter PML-1220B-16A-220AC-(12-18A)-UHL3-B		16	7,5	B-1,0			110702		
Starter PML-2220-25A-220AC-(17-25A)-UHL3-B		25	11				110709		
Starter PML-2220B-32A-220AC-(23-32A)-UHL4		32	15	1 «3» + 1 «p»		225515			
Starter PML-3220-40A-220AC-(30-40A)-UHL3-B		40	18,5			110722			
Starter PML-4220-63A-220AC-(48-65A)-UHL3-B		63	30			110727			
Starter PML-5220B-100A-220AC-(80-93A)-UHL3-B		100	45			110733			

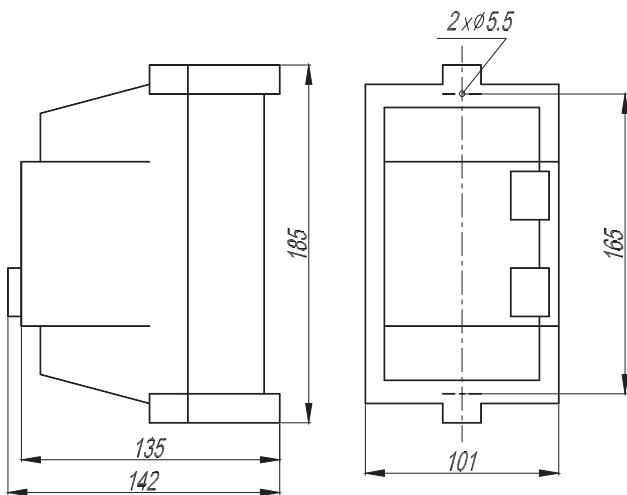
\* Not all possible versions are presented in the table, you can find a more complete list on our website or by calling us.

## Overall and installation dimensions of starters of climatic categories UHL3

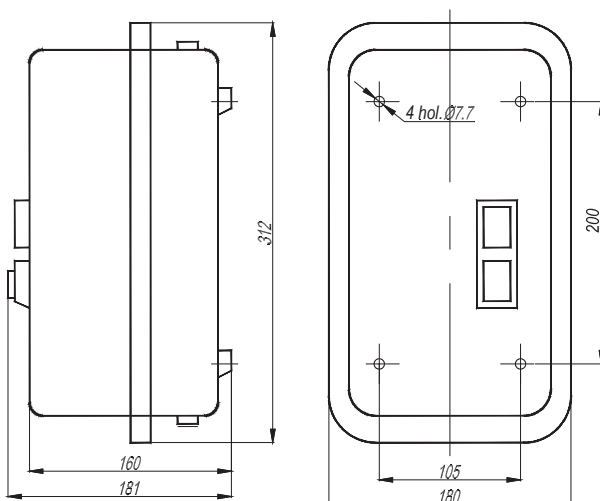
### PML-1220, PML-1220D starters for rated currents of 10 and 16 A in a plastic shell



### PML-2220, PML-2220D starters for rated currents of 25 and 32 A in a plastic shell

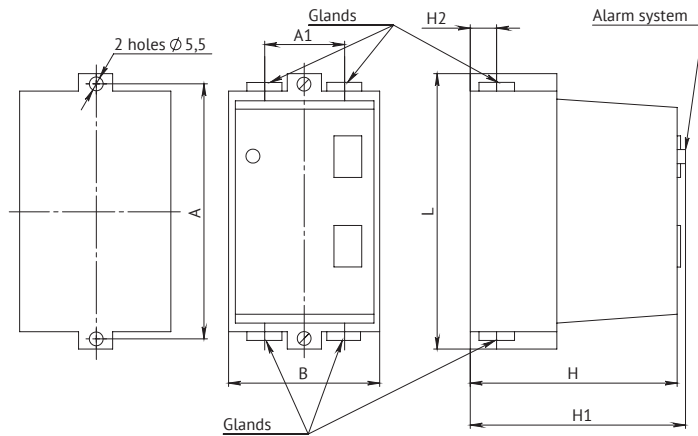


### PML-3220, PML-4220, PML-5220D starters for rated currents of 40, 63 and 100 A in a metal shell



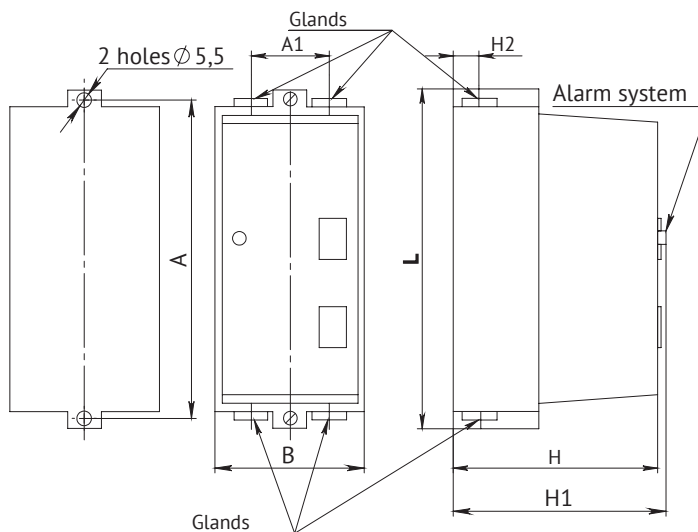
## Overall and installation dimensions of starters of climatic categories UHL2

### Non-reversing starters of 1 and 2 values in a plastic shell



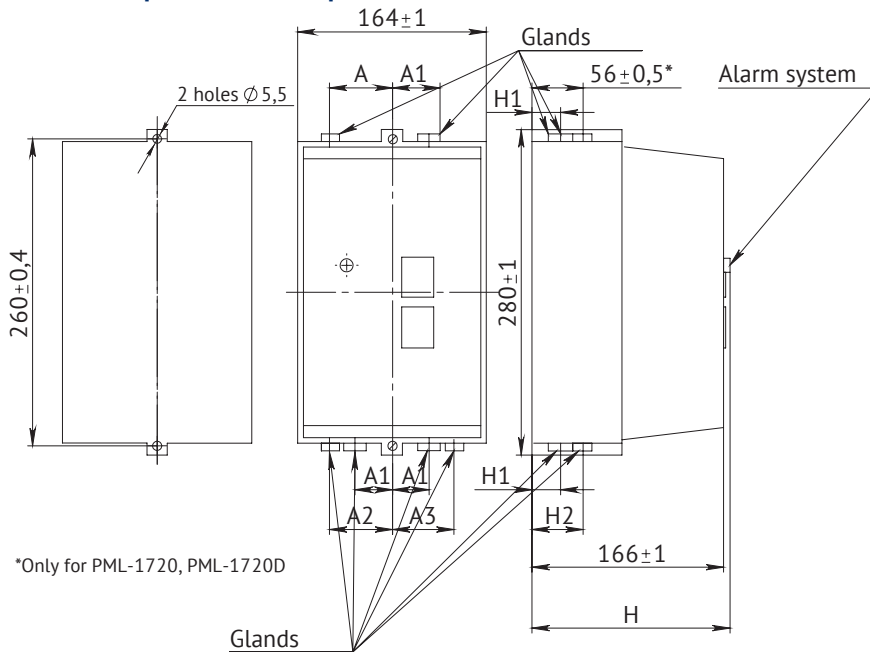
Starter type	A	A1	B	L	H	H1	H2	Screw for fastening	Weight, kg
PML-1210	140 ± 0,4	46 ± 0,3	87 ± 1	160 ± 1	116,5 ± 1	-	18 ± 0,3	M5 - 6g 2 screws	1,04
PML-1220						1,04			
PML-1230						124,5 ± 1			1,13
PML-1210D	165 ± 0,4	52 ± 0,3	101 ± 1	185 ± 1	134 ± 1	-	19 ± 0,3		1,20
PML-1220D						1,20			
PML-1230D						142 ± 1			1,29
PML-2210						-			1,20
PML-2220						-			1,20
PML-2230						142 ± 1			1,29

### Reversing starters of 1 and 2 values in a plastic shell



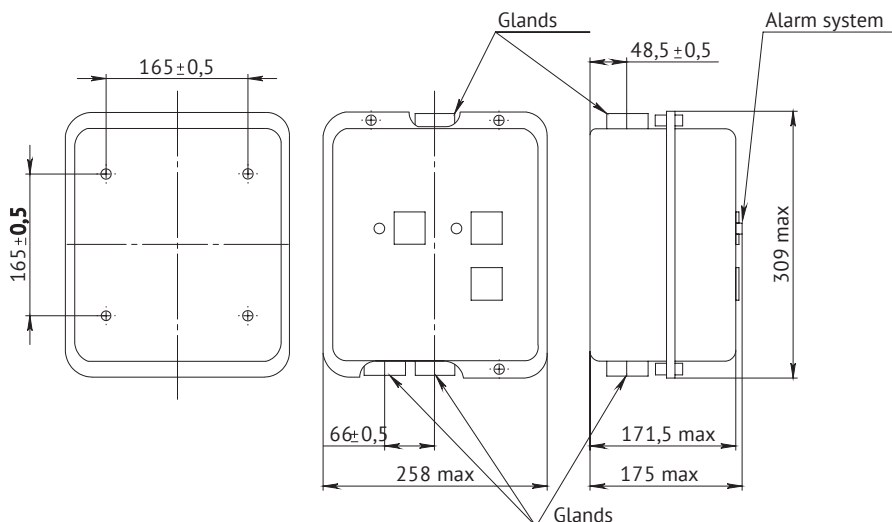
Starter type	A	A1	B	L	H	H1	H2	Screw for fastening	Weight, kg		
PML-1611	260 ± 0,7	46 ± 0,3	123 ± 1	280 ± 1	130,5 ± 1	-	18 ± 0,3	M5 - 6g 2 screws	2,15		
PML-1621						2,23					
PML-1631						136,5 ± 1			2,27		
PML-1611D		52 ± 0,3			143 ± 1	149 ± 1	149 ± 1		-	19 ± 0,3	2,70
PML-1621D									2,77		
PML-1631D									2,85		
PML-2611									-		2,70
PML-1621									-		2,77
PML-1631									149 ± 1		2,85

**Non-reversing starters of 3 and 4 values in a shell, reversing starters of 3 value with reduced weight and dimensional parameters in a plastic shell**



Starter type	A	A1	B	L	H	H1	H2	Screw for fastening	Weight, kg
PML-3210	-	34,5±0,5	-	60,5±0,5	-	31 ± 0,5	59 ± 0,5	M5 - 6g 2 screws	3,100
PML-3220					3,130				
PML-3230					170,5 ± 1				3,156
PML-3210D					-				2,400
PML-3220D					170,5 ± 1				2,420
PML-3230D					-				2,440
PML-3611D					170,5 ± 1				3,200
PML-3621D					-				3,240
PML-3631D					44 ± 0,5				3,300
PML-4210					42 ± 0,5				42 ± 0,5
PML-4220	170,5 ± 1	3,140							
PML-4230	54 ± 0,5	30 ± 0,5	54 ± 0,5	54 ± 0,5	-	26 ± 0,5	56 ± 0,5	3,160	
PML-1720	3,300								
PML-1720D	3,300								

**Reversing starters of 3 and 4 values in a metal shell**



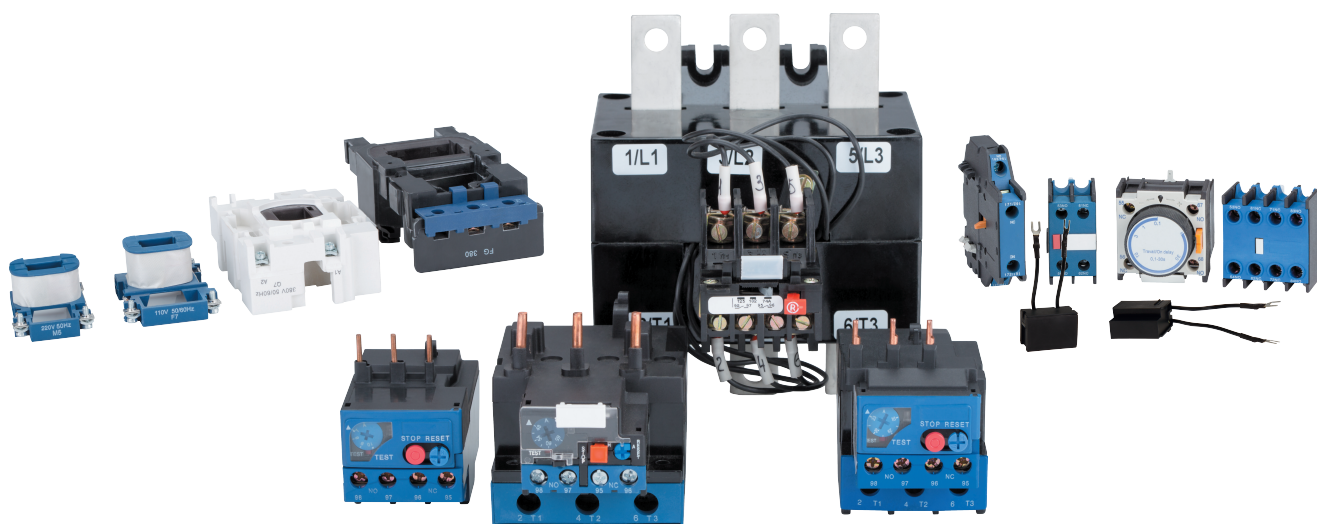
Starter type	Screw for fastening	Weight, kg
PML-3610	M5 - 6g 4 screws	6,00
PML-3620		6,08
PML-3630		6,12
PML-4610		6,00
PML-4620		6,08
PML-4630		6,12

# Thermal overload relay RTL and accessories for PML and PM12



Thermal overload relays of RTL series TU3425-041-05758109-2008 are designed to protect AC motors from current overloads of unacceptable duration, including those that occur during the loss of one of the phases, severe starting conditions and jamming of the rotor. They are used in control systems of load-lifting mechanisms (elevators, cranes, etc.), fans, pumps, heat curtains, furnaces, machine tools, lighting, in automatic failover switch systems (ABP).

Contact attachments PKL, PKB TU3425-045-05758109-2008 are designed to increase the number of auxiliary contacts of contactors. The time delay attachments PVL TU3425-045-05758109-2008 enable and disable contactors with a time delay from 0.1 to 180 s.



## Benefits

- Implementation of any technical solutions
  - the range of accessories and thermal relays of the RTL series is fully adapted for both the lines of contactors and starters of the PML and PM12 series;
  - a wide range of modern thermal relays for currents up to 500 A;
  - a wide range of control coils, V: 24 to 660 (AC); 24 to 220 (DC).
- Convenience in work
  - possibility to manually stop the motor with the STOP button;
  - selection of the return mode of the RTL relay to work. Automatic (self-return), manual return is carried out by the RESET button;
  - possibility to install thermal relays, both on DIN-rail and on the mounting panel.

## Design features



- Presence of temperature compensator.
- Built-in 1 "p" and 1 "з" contacts.
- Choice of return to work: manual or self-return.



Thermal relays of RTL series can be mounted either directly to the contactor, or separately using the KRL Terminal strip (screws or DIN-rail).



- The STOP and RESET control buttons are located on the front panel of the RTL relay.



- Possibility to regulate the current setting.

## Thermal overload relays of RTL series

### Designation structure

#### Thermal overload relay RTL-X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>-X<sub>4</sub>-X<sub>5</sub>A-(X<sub>6</sub>A)-UHL4-KEAZ

<b>Thermal overload relay</b>	- Product group
<b>RTL</b>	- Series
<b>X<sub>1</sub></b>	- Rated relay current: 1 - up to 25 A, 2 - up to 100 A (up to 80 A for I1), 3 - up to 250 A, 4 - up to 510 A
<b>X<sub>2</sub></b>	- Current setting range (conditionally)
<b>X<sub>3</sub></b>	- D - version of the relay with reduced overall dimensions (for rated current of 36 A)
<b>X<sub>4</sub></b>	- Relay return method: 1 - manual, 2 - manual and self-return
<b>X<sub>5</sub></b>	- Rated current, A:
<b>X<sub>6</sub></b>	- Current setting range of the relay, A
<b>UHL4</b>	- Type of a climatic category in accordance with GOST 15150
<b>KEAZ</b>	- Trademark

Example of recording the designation of a relay at a rated current of 100 A with a current setting range of 48-65 A, with self-return, for installation directly on the PML contactor when ordering and in the documentation of another product: Thermal overload relay RTL-2059-2-100A-(48-65A)-UHL4-KEAZ


### Designation structure

#### Terminal strip KRL-X<sub>1</sub>X<sub>2</sub>-UHL4-KEAZ






<b>Terminal strip</b>	- Product group
<b>KRL</b>	- Letter designation
<b>X<sub>1</sub>X<sub>2</sub></b>	- Rated current and relay type: 1 - 25A RTL-1000; 2D - 36A RTL-2000D; 2 - 100A RTL-2000
<b>UHL4</b>	- Type of climatic category and placement category according to GOST 15150
<b>KEAZ</b>	- Trademark

Example of recording the designation of a relay at rated current up to 100 A with a current setting range of 48-65 A, with self-return, for individual installation with a KRL-2 Terminal strip:  
 Thermal overload relay RTL-2059-2-100A-(48-65A)-UHL4-KEAZ; Terminal strip KRL-2-UHL4-KEAZ.

## Technical characteristics of the relay series RTL

Parameter name	Parameter designation																	
																		
Series	RTL-1001	RTL-1002	RTL-1003	RTL-1004	RTL-1005	RTL-1006	RTL-1006D	RTL-1007	RTL-1008	RTL-1010	RTL-1012	RTL-1014	RTL-1016	RTL-1021	RTL-1022	RTL-1023		
Rated current, A	25																	
Current setting range, A																		
of the relay	0.1-0.16	0.16-0.25	0.25-0.4	0.4-0.63	0.63-1	1-1.6	1.25-2	1.6-2.5	2.5-4	4-6	5.5-8	7-10	9-13	12-18	17-25	23-32		
relay version 1	0.1-0.17	0.16-0.26	0.25-0.4	0.38-0.65	0.61-1	0.95-1.6	-	1.5-2.6	2.4-4	3.8-6	5.5-8	7-10	9.5-14	13-19	18-25	-		
Designation of the range of the current setting	001	002	003	004	005	006	006Д	007	008	010	012	014	016	021	022	023		
Relay return method:																		
of the relay	Manual and self return																	
relay version 1	Manual						-	Manual						-				
Power consumption by one pole of the relay, W, max	2,5												3,0					
Motor power, kW																		
220 V	-	-	-	-	-	-	0.37	0.37	0.75	1.1	1.8	2.2	3.0	4.0	5.5	7.5		
380 V	-	-	-	-	-	0.37	0.75	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15		
660 V	-	-	-	0.37	0.75	1.1	1.5	1.5	3.0	4.0	5.5	7.5	10	15	18.5	22		
Rated cross-section of connecting wires, mm <sup>2</sup>																		
Cu	1.0												1.5	1.5	2.5	4.0	6.0	
Al	2.5												4.0				6.0	10.0
Overall dimensions (HxWxD), mm																		
of the relay	66x45x94																	
relay version 1	56x44x90						-	56x44x90						-				
Weight, max kg																		
of the relay	0,175																	
relay version 1	0,125						-	0,125						-				






Parameter name	Parameter designation														
															
Series	RTL-2053A	RTL-2055A	RTL-2053	RTL-2055	RTL-2057	RTL-2059	RTL-2061	RTL-2063	RTL-2064	RTL-3125	RTL-3170	RTL-3270	RTL-4410	RTL-4510	
Rated current, A	36		100 (80)*						250			500			
Current setting range, A															
of the relay	25-32	28-36	23-32	30-40	37-50	48-65	55-70	63-80	80-95	-	-	-	-	-	
relay version 1	-	-	23-32	30-41	38-52	47-64	54-74	63-86	-	74-125	102-170	165-270	250-410	310-510	
Designation of the range of the current setting	053D	055D	053	055	057	059	061	063	064	125	170	270	410	510	
Relay return method:															
of the relay	Manual and self-return									-	-	-	-	-	
relay version 1	-	-	Manual						-	Manual					
Power consumption by one pole of the relay, W, max	2,5	3,5				4,5		6,0		2,5					
Motor power, kW															
220 V	7,5	10	7,5	10	11	15	18,5	22	30	30	45	65	110	140	
380 V	15	18,5	15	18,5	22	25	30	37	59	59	80	110	185	257	
660 V	22	30	22	30	37	45	55	7,6	110	110	140	200	335	445	
Rated cross-section of connecting wires, mm <sup>2</sup>															
Cu	6.0	10.0	6.0	10.0	10.0	16.0	25.0	25.0	35.0	50.0	70.0	120	240	2x150	
Al	10.0	16.0	10.0	16.0	16.0	25.0	25.0	35.0	50.0	70.0	120	-	-	-	
Overall dimensions (HxWxD), mm															
of the relay	78x55x94		83x72x117						-	-	-	-	-	-	
relay version 1	-	-	75x64x116						160x129x176			182x171x210	194x171x210		
Weight, max kg															
of the relay	0,25		0,50						-						
relay version 1	-	-	0,36						-	2,1		3,4	3,8		

\* - for overload relay Version 1

## Item numbers

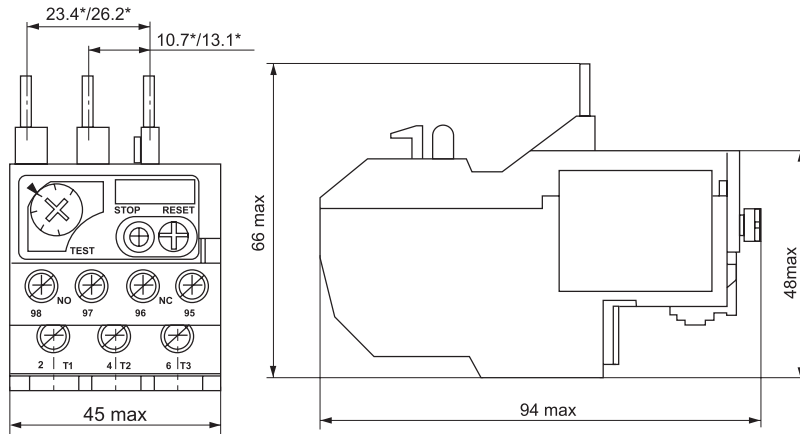
	Name	Rated current, A	Setpoint range, A	Motor power (AC-3) at 380 V 50 Hz, kW			Relay return method	Item number
				220	380	660		
  	RTL-1001-2-25A-(0,1-0,16A)-UHL4	25	0.1-0.16	-	-	-	manual and self return	110735
	RTL-1002-2-25A-(0,16-0,25A)-UHL4		0.16-0.25	-	-	-		110736
	RTL-1003-2-25A-(0,25-0,4A)-UHL4		0.25-0.4	-	-	-		110737
	RTL-1004-2-25A-(0,4-0,63A)-UHL4		0.4-0.63	-	-	0.37		110738
	RTL-1005-2-25A-(0,63-1A)-UHL4		0.63-1.0	-	-	0.75		110739
	RTL-1006-2-25A-(1-1,6A)-UHL4		1-1.6	-	0.37	0.75		110740
	RTL-1006Д-2-25A-(1,25-2A)-UHL4		1.25-2	0.37	0.75	1.5		110741
	RTL-1007-2-25A-(1,6-2,5A)-UHL4		1.6-2.5	0.37	0.75	2.2		110742
	RTL-1008-2-25A-(2,5-4A)-UHL4		2.5-4.0	0.75	1.5	3.0		110743
	RTL-1010-2-25A-(4-6A)-UHL4		4.0-6.0	1.1	2.2	4.0		110744
	RTL-1012-2-25A-(5,5-8A)-UHL4		5.5-8.0	1.8	3.0	5.5		110745
	RTL-1014-2-25A-(7-10A)-UHL4		7.0-10	2.2	4.0	7.5		110746
	RTL-1016-2-25A-(9-13A)-UHL4		9.0-13	3.0	5.5	10		110747
	RTL-1021-2-25A-(12-18A)-UHL4		12.0-18	4.0	7.5	15		110748
	RTL-1022-2-25A-(17-25A)-UHL4		17-25	5.5	11	18.5		110749
	RTL-1023-2-25A-(23-32A)-UHL4		23-32	7.5	15	22		110750
	RTL-2053Д-2-36A-(25-32A)-UHL4		25-32	7.5	15	22		110752
	RTL-2055Д-2-36A-(28-36A)-UHL4		28-36	10	18.5	30		110754
	RTL-2053-2-100A-(23-32A)-UHL4		23-32	7.5	15	22		110751
	RTL-2055-2-100A-(30-40A)-UHL4		30-40	10	18.5	30		110753
RTL-2057-2-100A-(37-50A)-UHL4	37-50	11	22	37	110755			
RTL-2059-2-100A-(48-65A)-UHL4	48-65	15	25	45	110756			
RTL-2061-2-100A-(55-70A)-UHL4	55-70	18.5	30	55	110757			
RTL-2063-2-100A-(63-80A)-UHL4	63-80	22	37	7.6	110758			
RTL-2064-2-100A-(80-93A)-UHL4	80-95	30	59	110	110759			
Relay version 1								
   	RTL-1001M-1-25A-(0,1-0,17A)-I1-UHL4	25	0.1-0.17	-	-	-	manual	231007
	RTL-1002M-1-25A-(0,16-0,26A)-I1-UHL4		0.16-0.26	-	-	-		231008
	RTL-1003M-1-25A-(0,24-0,4A)-I1-UHL4		0.25-0.4	-	-	-		231009
	RTL-1004M-1-25A-(0,38-0,65A)-I1-UHL4		0.38-0.65	-	-	0.37		231010
	RTL-1005M-1-25A-(0,61-1A)-I1-UHL4		0.61-1.0	-	-	0.75		231011
	RTL-1006M-1-25A-(0,95-1,6A)-I1-UHL4		0.95-1.6	-	0.37	0.75		231012
	RTL-1007M-1-25A-(1,5-2,6A)-I1-UHL4		1.5-2.6	0.37	0.75	2.2		231013
	RTL-1008M-1-25A-(2,4-4A)-I1-UHL4		2.4-4.0	0.75	1.5	3.0		231014
	RTL-1010M-1-25A-(3,8-6A)-I1-UHL4		3.8-6.0	1.1	2.2	4.0		231015
	RTL-1012M-1-25A-(5,5-8A)-I1-UHL4		5.5-8.0	1.8	3.0	5.5		231016
	RTL-1014M-1-25A-(7-10A)-I1-UHL4		7.0-10	2.2	4.0	7.5		231017
	RTL-1016M-1-25A-(9,5-14A)-I1-UHL4		9.5-14	3.0	5.5	10		231018
	RTL-1021M-1-25A-(13-19A)-I1-UHL4		13-19	4.0	7.5	15		231019
	RTL-1022M-1-25A-(18-25A)-I1-UHL4		18-25	5.5	11	18.5		231020
	RTL-2053M-1-80A-(23-32A)-I1-UHL4		23-32	7.5	15	22		231021
	RTL-2055M-1-80A-(30-41A)-I1-UHL4		30-41	10	18.5	30		231022
	RTL-2057M-1-80A-(38-52A)-I1-UHL4		38-52	11	22	37		231023
	RTL-2059M-1-80A-(47-64A)-I1-UHL4		47-64	15	25	45		231024
	RTL-2061M-1-80A-(54-74A)-I1-UHL4		54-74	18.5	30	55		231025
	RTL-2063M-1-80A-(63-86A)-I1-UHL4		63-86	22	37	7.6		231026
RTL-3125-1-250A-(74-125A)-UHL4	74-125	30	59	110	227117			
RTL-3170-1-250A-(102-170A)-UHL4	102-170	45	80	140	227118			
RTL-3270-1-250A-(165-270A)-UHL4	165-270	65	110	200	227119			
RTL-4410-1-500A-(250-410A)-UHL4	250-410	110	185	335	227120			
RTL-4510-1-500A-(310-510A)-UHL4	310-510	140	257	445	227121			

## Item numbers KRL

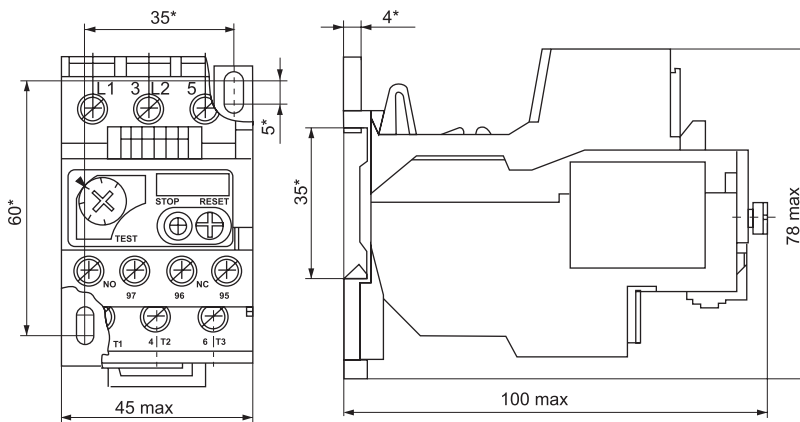
	Name	For thermal overload relays	Item number
	Terminal strip KRL-1-UHL4	RTL-1000	110534
	Terminal strip KRL-2D-UHL4	RTL-2000Д	110536
	Terminal strip KRL-2-UHL4	RTL-2000	110535

Note: not suitable for overload relays Version 1.

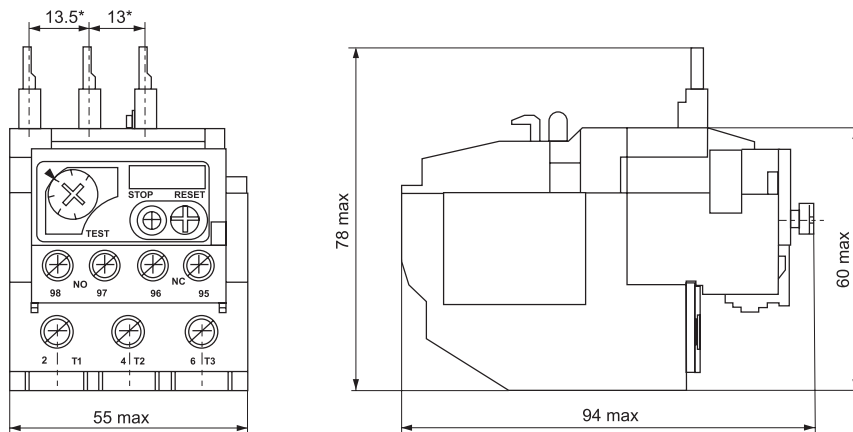
## Overall and installation dimensions of the relay series RTL



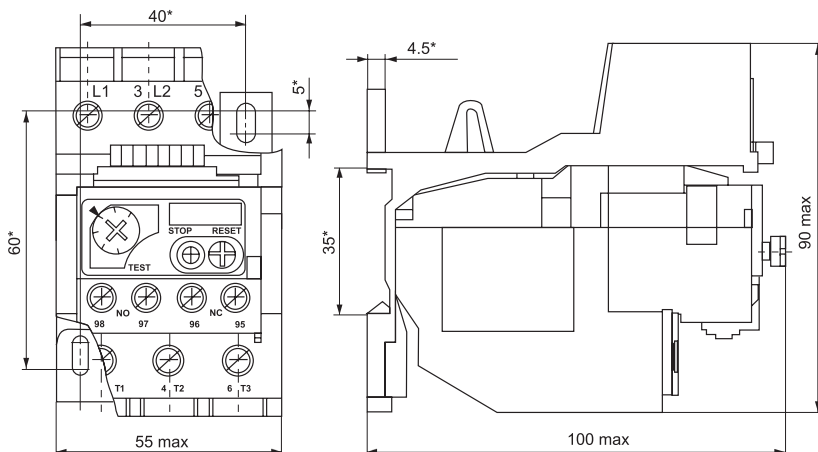
**Relay RTL-1000 for connection to the contactor**



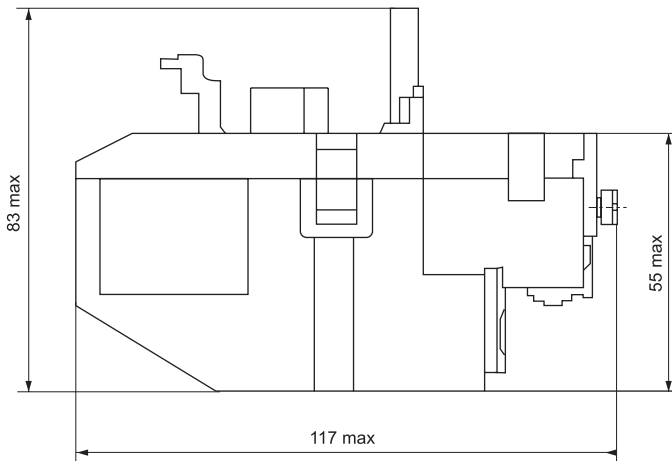
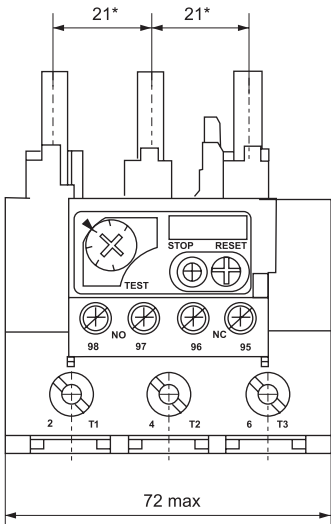
**Relay RTL-1000 for individual installation with the Terminal strip KRL-1**



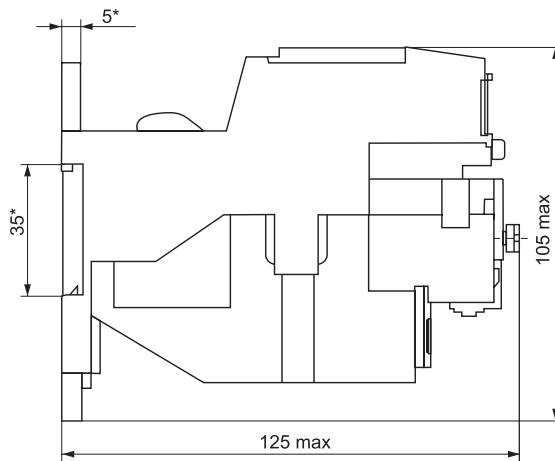
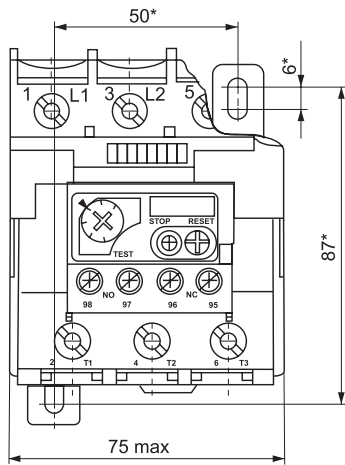
**Relay RTL-2000D for connection to the contactor**



**Relay RTL-2000D for individual installation with the Terminal strip KRL-2D**

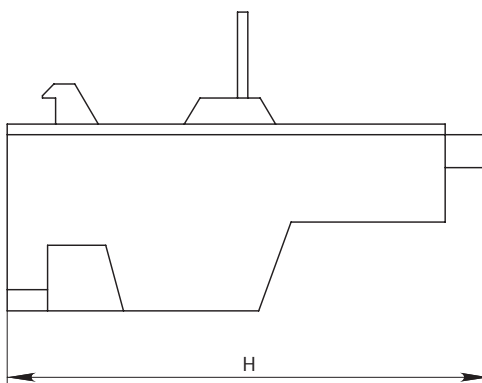
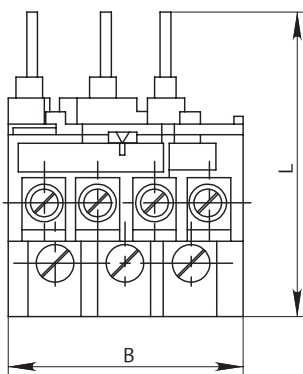


**Relay RTL-2000 for connection to the contactor**



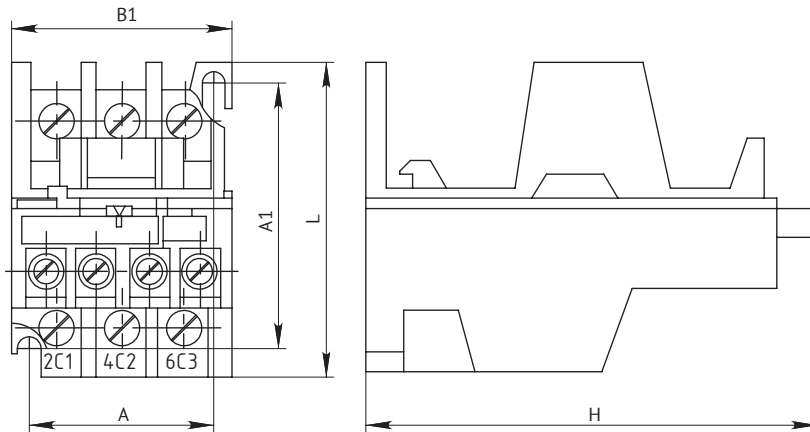
**Relay RTL-2000 for individual installation with the Terminal strip KRL-2**

**Version 1**



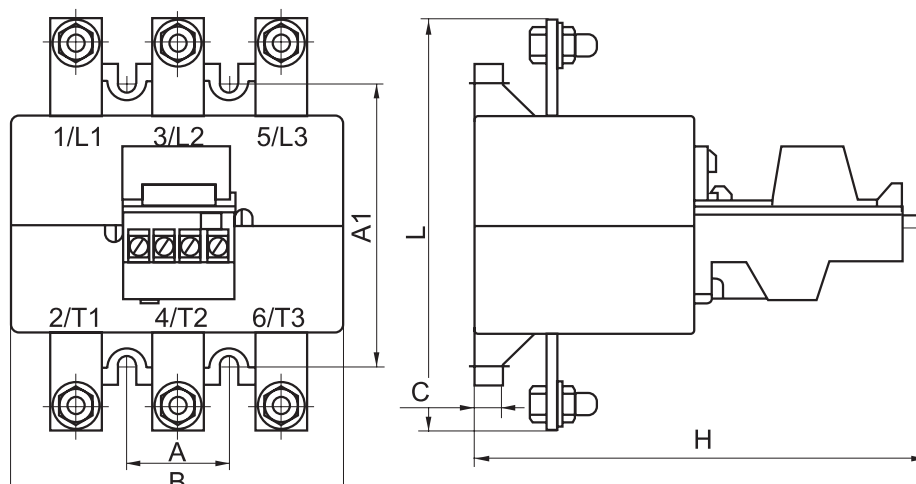
**Relay RTL-1000, RTL-2000 for connection to the contactor**

Relay Type Designation	Rated current, A	A	A1	B	H	L	Picture	Weight, max kg	Screw for fastening
RTL-1000	25	-	-	44±0,5	90±0,5	56±1	B.8	0,125	M4- 2 pcs.
RTL-2000	80	-	-	63,5±0,5	116±0,5	73±0,5	B.8	0,36	



Relay type  
RTL-1000,  
RTL-2000 for  
individual  
installation with the  
Terminal strip KRL-1,  
KRL-2

Relay Type Designation	Rated current, A	A	A1	B1	H	L	Picture	Weight, max kg	Screw for fastening
RTL-1000	25	35±0,5	50±0,5	44±0,5	90±0,5	61±1	B.7	0,16	M4 - 2 pcs.
RTL-2000	80	50±0,5	50±0,5	75±0,5	116±0,5	76,3±0,5	B.7	0,505	

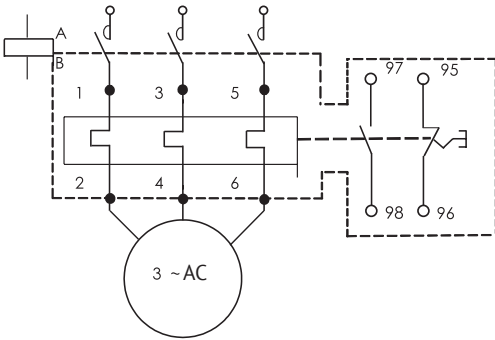


Relay  
RTL-3000,  
RTL-4000 for  
individual  
installation

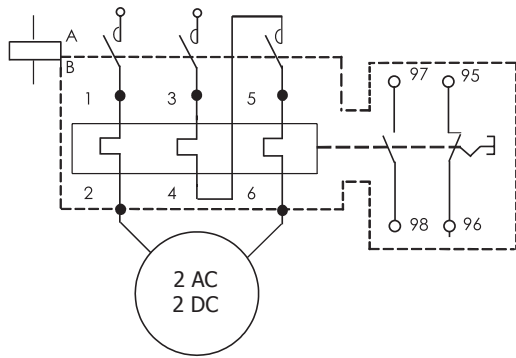
Relay Type Designation	Rated current, A	A	A1	B	H	L	C	Weight, max kg	Screw for relay fastening
RTL-3000	250	40±0,3	110±0,5	129±1	176±1	160±1	11±0,3	2,1	M6 - 4 pcs.
RTL-4410	500	49±0,3	130±0,5	171±1	210±1	182±1	12±0,3	3,4	
RTL-4510						194±1		3,8	

### Wiring diagram of the relay in the load circuit

Wiring diagram of the relay in the three-phase load circuit

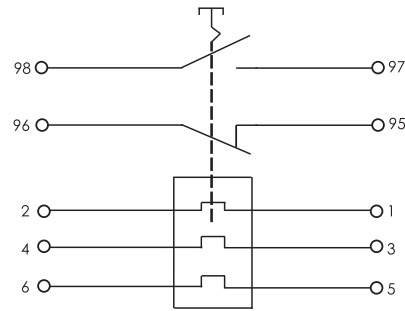


Scheme of connecting the to the two-phase circuit and the DC circuit

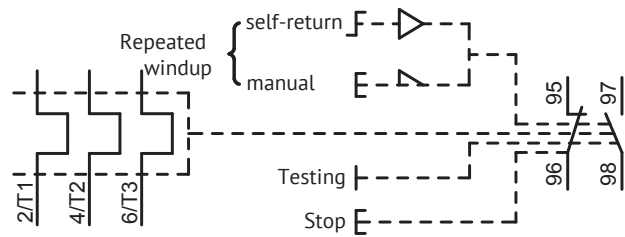


### Electrical schematic diagram

Relay Version 1 (with manual return)

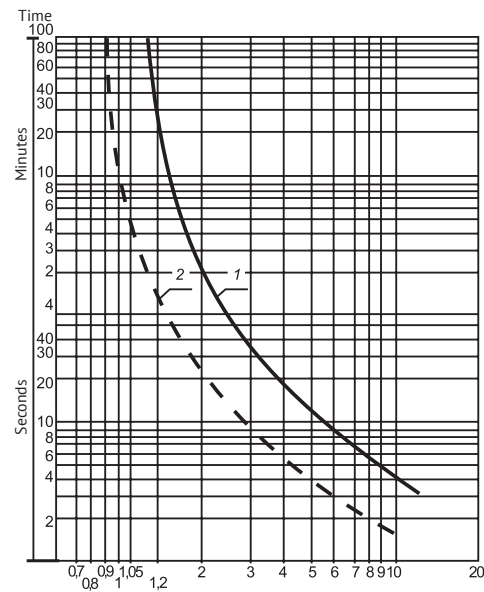


Relay Version 2 (with manual and self-return)



## Time-current relay characteristics

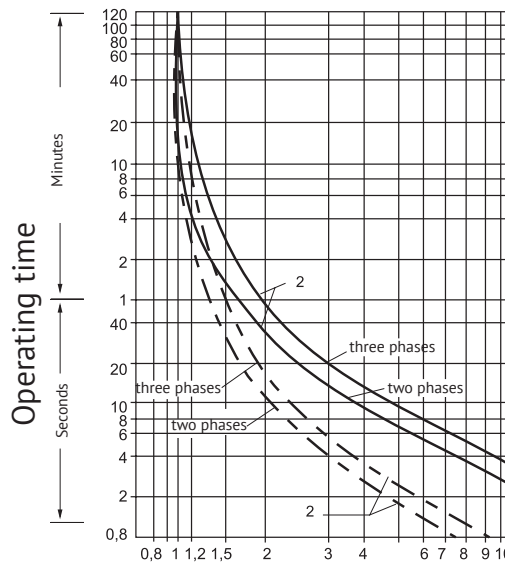
Relay RTL-1000, RTL-2000, RTL-2000D



The current ratio in the circuit in relation to the current setting:

- 1 - when working with a cold state;
- 2 - when working with a hot state;

Relay RTL-3000, RTL-4000

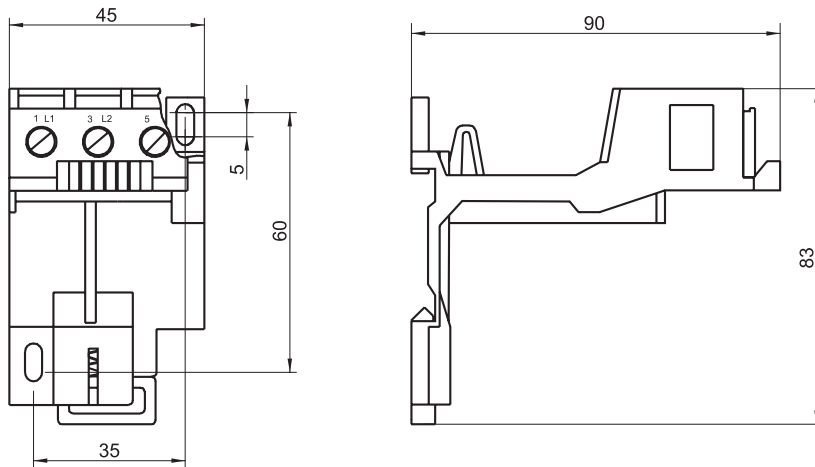


The current ratio in the circuit in relation to the current setting:

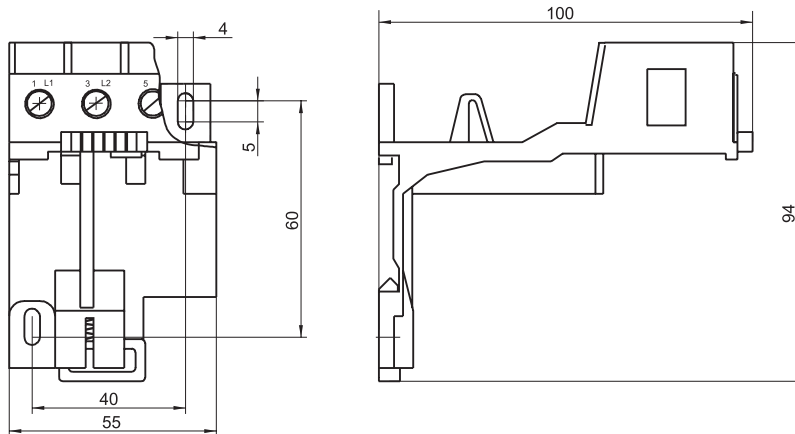
- 1 - during the three-phase operation;
- 2 - during the two-phase operation;

## Overall, installation and mounting dimensions of Terminal strips

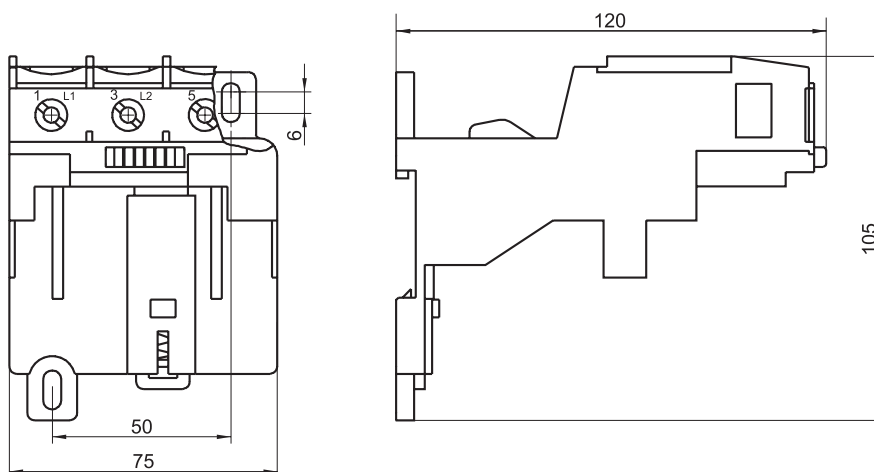
### Terminal strip of KRL-1 type



### Terminal strip of KRL-2D type



### Terminal strip of KRL-2 type





## Accessories for PML and PM12

### Designation structure

#### Overvoltage protection RC OPN 1X<sub>1</sub>X<sub>2</sub>-UHL4-KEAZ

<b>Excess-voltage suppressor</b>	- Product group
<b>RC OPN</b>	- Series
<b>1</b>	- Version by the hardware components: resistive-capacitive (R-C)
<b>X<sub>1</sub></b>	- Version with contactor for currents: 1 - (10-32)A; 2 - (40-100)A
<b>X<sub>2</sub></b>	- Version of the rated voltage and the current of the control circuit: 1 - (24-48) B AC/DC 2 - (100-250) B AC/DC 3 - (380-400) B AC/DC 4 - (200-250) B AC/DC 5 - (100-127) B AC/DC
<b>UHL4</b>	- Climatic category and placement category according to GOST 15150
<b>KEAZ</b>	- Trademark

#### Contact adapter PKL or PKB-X<sub>1</sub>X<sub>2</sub>-UHL4-KEAZ

<b>Contact adapter</b>	- Product group
<b>PKL or PKB</b>	- Series
<b>X<sub>1</sub></b>	- Number of closing "з" contacts
<b>X<sub>2</sub></b>	- Number of opening "р" contacts
<b>UHL4</b>	- Type of a climatic category in accordance with GOST 15150
<b>KEAZ</b>	- Trademark



Example of the recording of the designation of the adapter of the contact series PKL with two "з" closing and two "р" opening contacts:  
Contact adapter PKL-22-UHL4-KEAZ

#### Time delay adapter PVL-X<sub>1</sub>X<sub>2</sub>-UHL4-KEAZ

<b>Time delay attachment</b>	- Product group
<b>PVL</b>	- Series
<b>X<sub>1</sub></b>	- Time delay at switching on - 1 - Time delay at switching off - 2
<b>X<sub>2</sub></b>	- Digit indicating the time delay range: 1 - (0.1-3 s); 2 - (10-180 s); 3 - (0.1-30 s)
<b>UHL4</b>	- Type of a climatic category in accordance with GOST 15150
<b>KEAZ</b>	- Trademark





Example of the recording of the designation of the adapter with a time delay at switching on, with a range of time from 0.1 to 30 s: Time delay adapter PVL-13-UHL4-KEAZ

## Specifications

Parameter name	Parameter designation					
						
OPN type	RC OPN-111	RC OPN-112	RC OPN-113	RC OPN-123	RC OPN-124	RC OPN-125
Coil voltage (US), V	24-48	100-250	380-400	380-400	200-250	100-127
Rated current of the contactor, A	10, 16, 25, 32			40, 63, 80, 100		
Type of current control circuit	AC/DC					

Note.

The limiters are installed on contactors with degree of protection IP00, IP20.

Parameter name	Parameter designation														
															
Series	PKL-02	PKL-20	PKL-11	PKL-22	PKL-04	PKL-40	PKL-13	PKL-31	PKV-11	PVL-11	PVL-12	PVL-13	PVL-21	PVL-22	PVL-23
Name	Contact adapters								Time delay adapters						
Number of contacts															
closing	0	2	1	2	0	4	1	3	1	1					
opening	2	0	1	2	4	0	3	1	1	1					
Time delay															
Range, s	-								0,1-3	10-180	0,1-30	0,1-3	10-180	0,1-30	
Switching type	-								At switching on			At switching off			
Mechanical wear resistance, million cycles	16								5						
Switching wear resistance, million cycles	1,5														
Operating mode	Intermittent-continuous, continuous, intermittent														
Dimensions															
Overall (HxWxD), mm	48x23x38			48x44x38				70x12x72		50x44x59					
Applicability with contactors for currents	from 10 A to 800 A								to 100 A*		from 10 A to 800 A				
Weight, max kg	0,03			0,06				0,06		0,08					

\* For contactors for currents of 80 and 100 A, the installation of the PKB-11 adapter is provided with an adapter.

## Item numbers for PML and PM12

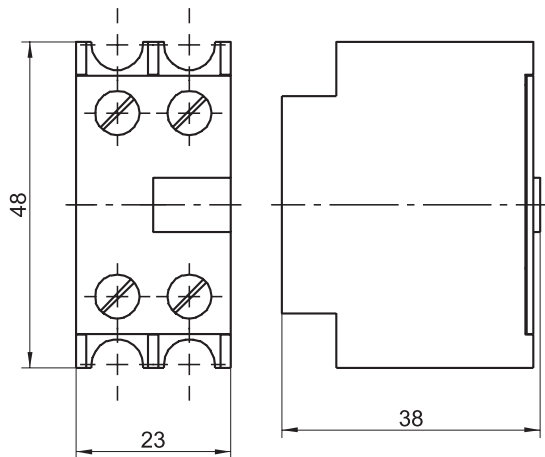
Name	Item number
Overvoltage protection RC OPN-111-UHL4	253247
Overvoltage protection RC OPN-112-UHL4	253249
Overvoltage protection RC OPN-113-UHL4	253250
Overvoltage protection RC OPN-123-UHL4	253251
Overvoltage protection RC OPN-124-UHL4	253252
Overvoltage protection RC OPN-125-UHL4	253248
Set of mechanical interlocks PML-(10-32A)-UHL4	110660
Set of mechanical interlocks PML-(40-63A)-UHL4	110661
Set of mechanical interlocks PML-(80-100A)-UHL4	110662
Time delay adapter PVL-11-UHL4	110663
Time delay adapter PVL-12-UHL4	110664
Time delay adapter PVL-13-UHL4	110665
Time delay adapter PVL-21-UHL4	110666
Time delay adapter PVL-22-UHL4	110667
Time delay adapter PVL-23-UHL4	110668
Contact adapter PKB-11-UHL4	110669
Contact adapter PKL-02-UHL4	110670
Contact adapter PKL-04-UHL4	110671
Contact adapter PKL-11-UHL4	110672
Contact adapter PKL-13-UHL4	110673
Contact adapter PKL-20-UHL4	110674
Contact adapter PKL-22-UHL4	110676
Contact adapter PKL-31-UHL4	110677
Contact adapter PKL-40-UHL4	110678
Coil PML-1-(10-16A)-110AC-UHL4-I1	229791
Coil PML-1-(10-16A)-220AC-UHL4-I1	229792
Coil PML-1-(10-16A)-24AC-UHL4-I1	229793
Coil PML-1-(10-16A)-36AC-UHL4-I1	229794
Coil PML-1-(10-16A)-380AC-UHL4-I1	229795
Coil PML-1-(10-16A)-42AC-UHL4-I1	229796
Coil PML-1-110AC-UHL4	110493
Coil PML-1-220/230AC-UHL4	110495
Coil PML-1-24AC-UHL4	110497
Coil PML-1-36AC-UHL4	110498
Coil PML-1-48AC-UHL4	110504
Coil PML-1-380AC-UHL4	110499
Coil PML-2,3D-(25-40A)-110AC-UHL4-I1	229797
Coil PML-2,3D-(25-40A)-220AC-UHL4-I1	229798
Coil PML-2,3D-(25-40A)-24AC-UHL4-I1	229799
Coil PML-2,3D-(25-40A)-36AC-UHL4-I1	229800
Coil PML-2,3D-(25-40A)-380AC-UHL4-I1	229801
Coil PML-2,3D-(25-40A)-42AC-UHL4-I1	229802
Coil PML-2-110AC-UHL4	110506
Coil PML-2-220/230AC-UHL4	110508
Coil PML-2-24AC-UHL4	110510
Coil PML-2-36AC-UHL4	110511
Coil PML-2-380AC-UHL4	110512
Coil PML-2-42AC-UHL4	110515
Coil PML-3,4,5D-(40-100A)-110AC-UHL4-I1	229803
Coil PML-3,4,5D-(40-100A)-220AC-UHL4-I1	229804
Coil PML-3,4,5D-(40-100A)-24AC-UHL4-I1	229805
Coil PML-3,4,5D-(40-100A)-36AC-UHL4-I1	229806
Coil PML-3,4,5D-(40-100A)-380AC-UHL4-I1	229807
Coil PML-3,4,5D-(40-100A)-42AC-UHL4-I1	229808
Coil PML-3/4/5D-110AC-UHL4	110520
Coil PML-3/4/5D-220/230AC-UHL4	110523
Coil PML-3/4/5D-24AC-UHL4	110525
Coil PML-3/4/5D-36AC-UHL4	110526

\* Not all possible versions are presented in the table, you can find a more complete list on our website or by calling us.

Name	Item number
Coil PML-3/4/5D-380AC-UHL4	110527
Coil PML-3/4/5D-42AC-UHL4	110530
Coil PML-5-110AC-UHL4	238398
Coil PML-5-220AC-UHL4	112910
Coil PML-5-380AC-UHL4	112911
Coil PML-6-220AC-UHL4	112897
Coil PML-6-380AC-UHL4	112898
Coil PML-7-220AC-UHL4	112899
Coil PML-7-380AC-UHL4	112900
Coil PML-8-220AC-UHL4	112901
Coil PML-8-380AC-UHL4	112902

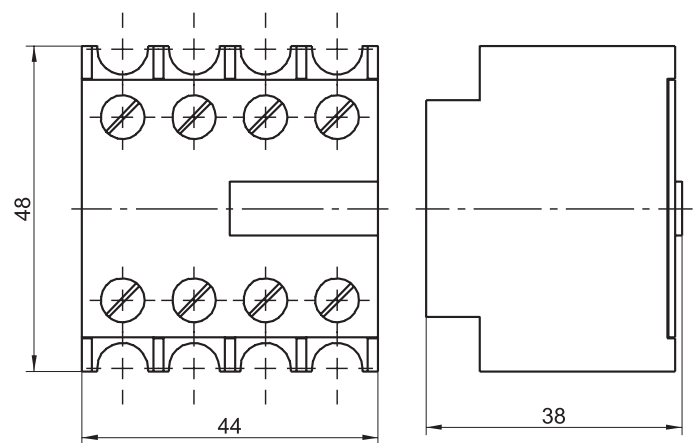
## Overall and installation dimensions of the PKL, PVL and PKB adapters

### Contact adapters PKL-02, PKL-20, PKL-11



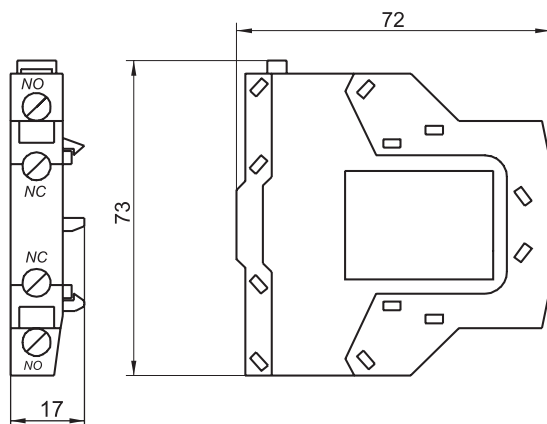
Adapter weight, max, kg - 0,03

### Contact adapters PKL-22, PKL-04, PKL-40, PKL-13, PKL-31



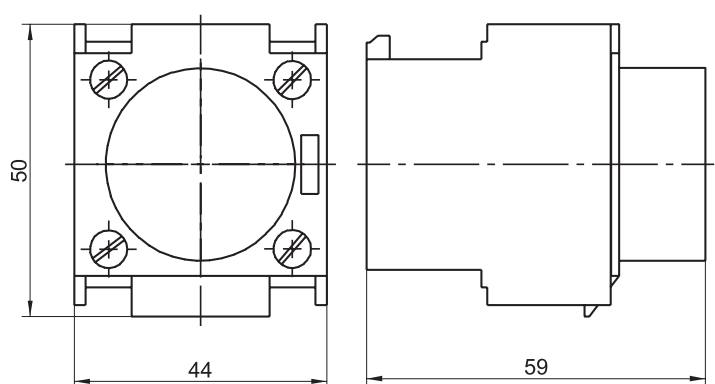
Adapter weight, max, kg - 0,06

### Contact adapters PKB - 11

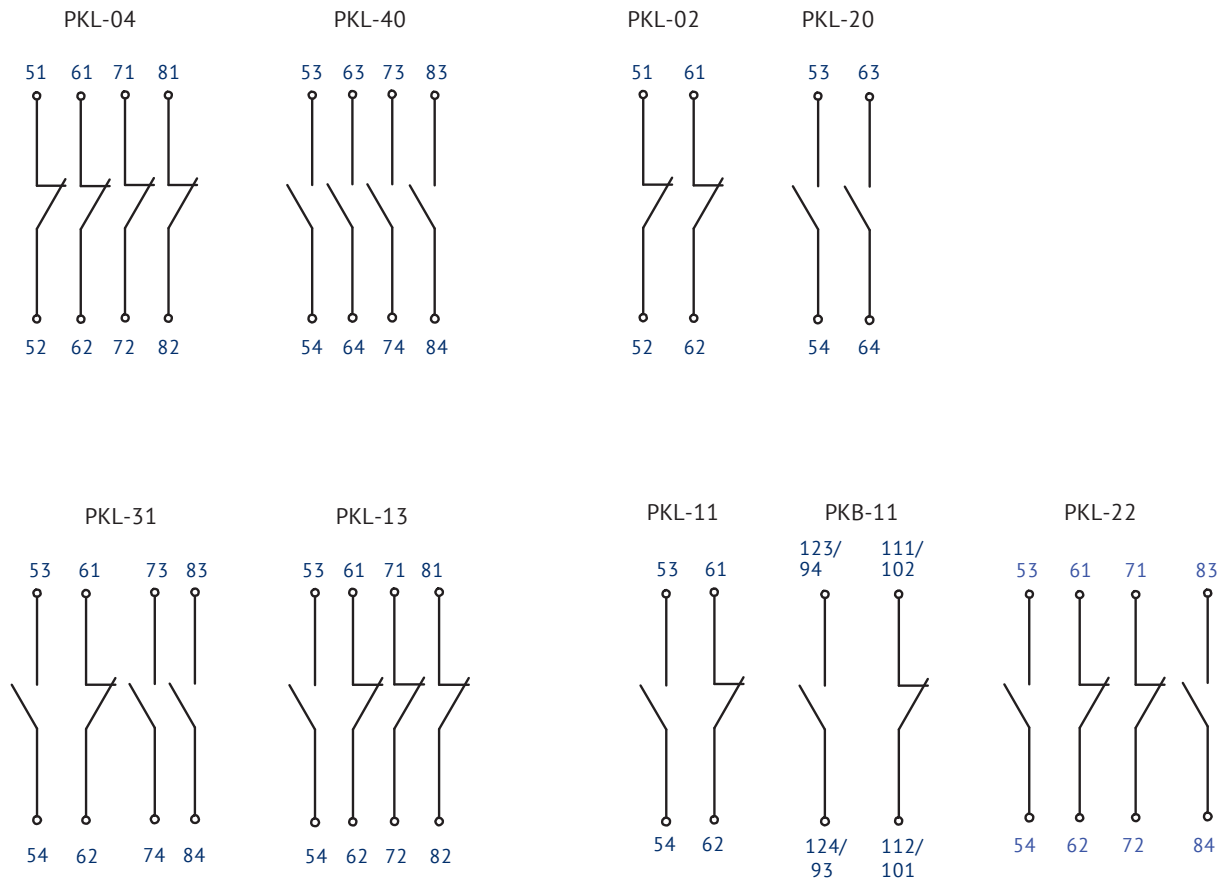


Adapter weight, max, kg - 0,06

### Time delay adapters PVL



## Electrical circuit diagrams of PKL, PKB adapters



## Electrical circuit diagrams of PVL adapters

