



Motor-protective circuit-breaker, 3p, I_r = 32 - 40 A, screw connection

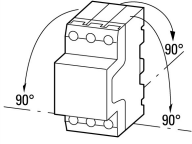
Part no. PKZM4-40
Catalog No. 222354
Eaton Catalog No. XTPR040DC1NL
EL-Nummer (Norway) 4355160

Delivery program

Product range				PKZM4 motor protective circuit-breakers up to 65 A
Basic function				Motor protection
Notes				Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.
Connection technique				Screw terminals
Contact sequence				
Max. motor rating				
AC-3				
220 V 230 V 240 V	P	kW		11
380 V 400 V 415 V	P	kW		20
440 V	P	kW		22
500 V	P	kW		24
660 V 690 V	P	kW		30
Setting range				
Overload releases	I _r	A		32 - 40
short-circuit release				
max.	I _m	A		620
Notes				
Accessories				
3 Standard auxiliary contact			Page	→ 072896
5 Trip-indicating auxiliary contact				→ 072898
6 Shunt release, undervoltage release				→ 073187
Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 part 102				
Can be snap-fitted to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height				
				→ 266165
PTB 10 ATEX 3012, see manual				

Technical data


General				
Standards				IEC/EN 60947, VDE 0660
Climatic proofing				Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature				
Storage		°C		- 40 - 80
Open		°C		-25 - +55

Enclosed	°C	- 25 - 40
Mounting position		
Direction of incoming supply		as required
Degree of protection		
Device		IP20
Terminations		IP00
Protection against direct contact		Finger and back-of-hand proof
Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60068-2-27	g	15
Altitude	m	2000
Terminal capacity main cable		
Screw terminals		
Solid	mm ²	1 x (1 - 50) 2 x (1 - 35)
Flexible with ferrule to DIN 46228	mm ²	1 x (1 - 35) 2 x (1 - 35)
Solid or stranded	AWG	14 - 2
Stripping length	mm	14
Specified tightening torque for terminal screws		
Main cable	Nm	3.3

Main conducting paths

Rated impulse withstand voltage	U_{imp}	V AC	6000
Overvoltage category/pollution degree			III/3
Rated operational voltage	U_e	V AC	690
Rated uninterrupted current = rated operational current	$I_u = I_e$	A	40 open 40 enclosed
Rated frequency	f	Hz	40 - 60
Current heat loss (3 pole at operating temperature)		W	20.7
Lifespan, mechanical	Operations	$\times 10^6$	0.03
Lifespan, electrical (AC-3 at 400 V)	Operations	$\times 10^6$	0.03
Maximum operating frequency		Ops/h	
Max. operating frequency		Ops/h	40
Short-circuit rating			
DC			
Short-circuit rating		kA	60
Notes			up to 250 V
Motor switching capacity			
AC-3 (up to 690 V)		A	65
DC-5 (up to 250 V)		A	63 (3 contacts in series)

Trip blocks

Temperature compensation			
to IEC/EN 60947, VDE 0660	°C	- 5 ... 40	
Operating range	°C	- 25 ... 55	
Temperature compensation residual error for $T > 40$ °C			
Setting range of overload releases	$\times I_u$	0.6 - 1	
short-circuit release		Basic device, fixed: $15.5 \times I_u$	
Short-circuit release tolerance		$\pm 20\%$	
Phase-failure sensitivity		IEC/EN 60947-1-1, VDE 0660 Part 102	

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	40
Heat dissipation per pole, current-dependent	P_{vid}	W	6.9

Equipment heat dissipation, current-dependent	P _{vid}	W	20.7
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 6.0

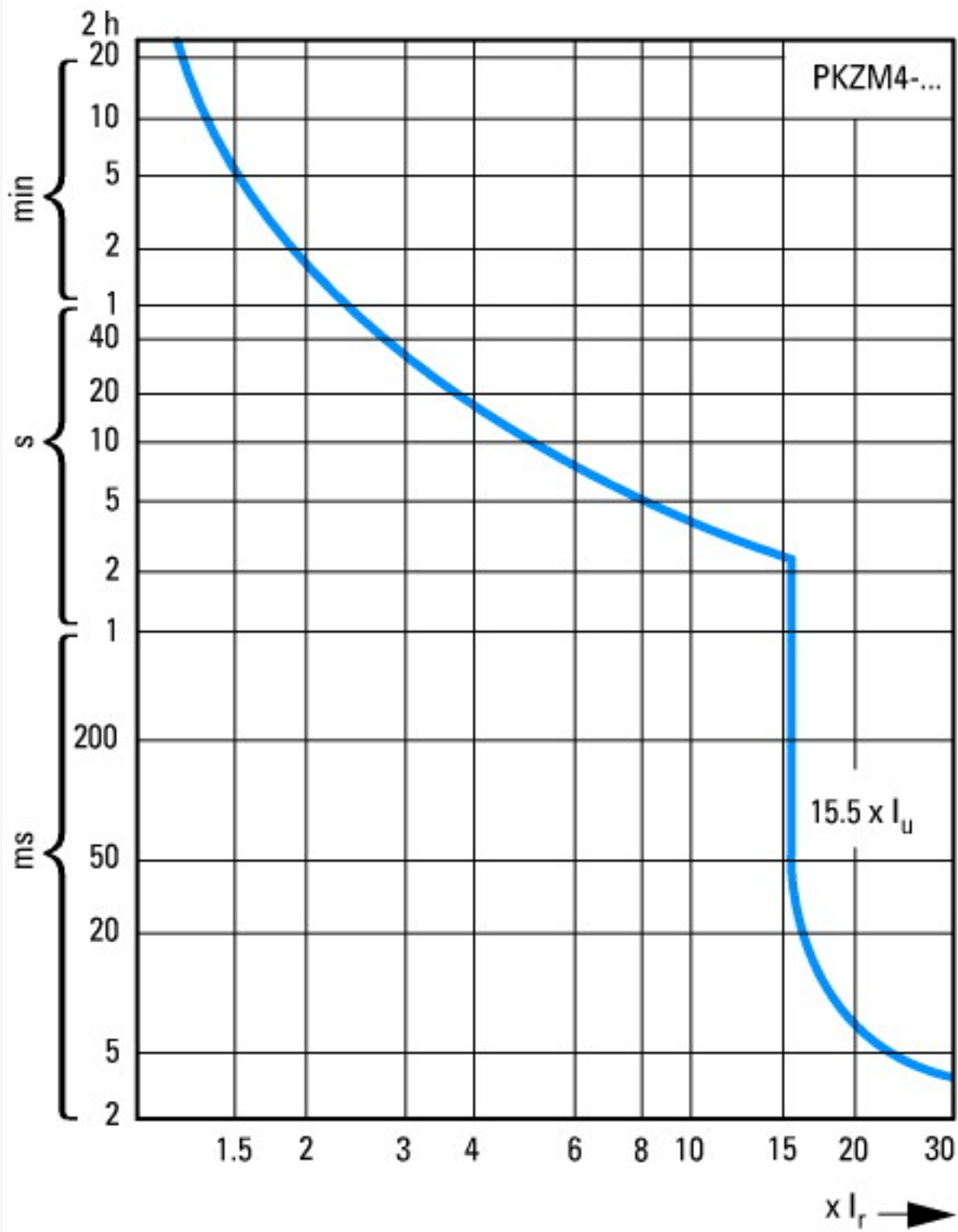
Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss8.1-27-37-04-01 [AGZ529013])			
Overload release current setting		A	32 - 40
Adjustment range undelayed short-circuit release		A	620 - 620
Thermal protection			No
Phase failure sensitive			Yes
Switch off technique			Thermomagnetic
Rated operating voltage		V	690 - 690
Rated permanent current I _u		A	40
Rated operation power at AC-3, 230 V		kW	11
Rated operation power at AC-3, 400 V		kW	20
Type of electrical connection of main circuit			Screw connection
Type of control element			Turn button
Device construction			Built-in device fixed built-in technique
With integrated auxiliary switch			No
With integrated under voltage release			No
Number of poles			3
Rated short-circuit breaking capacity I _{cu} at 400 V, AC		kA	50
Degree of protection (IP)			IP20
Height		mm	140

Width	mm	55
Depth	mm	160

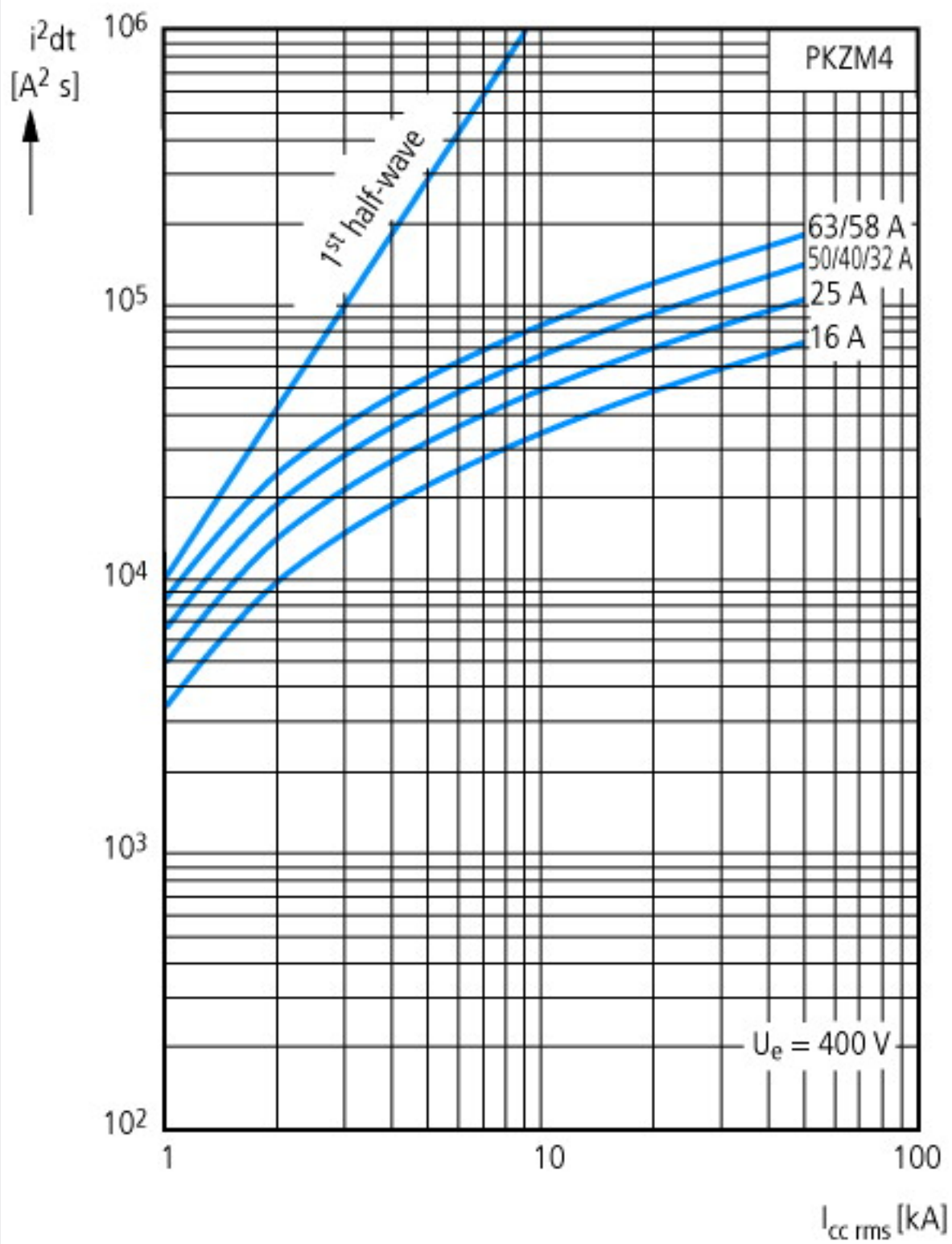
Approvals

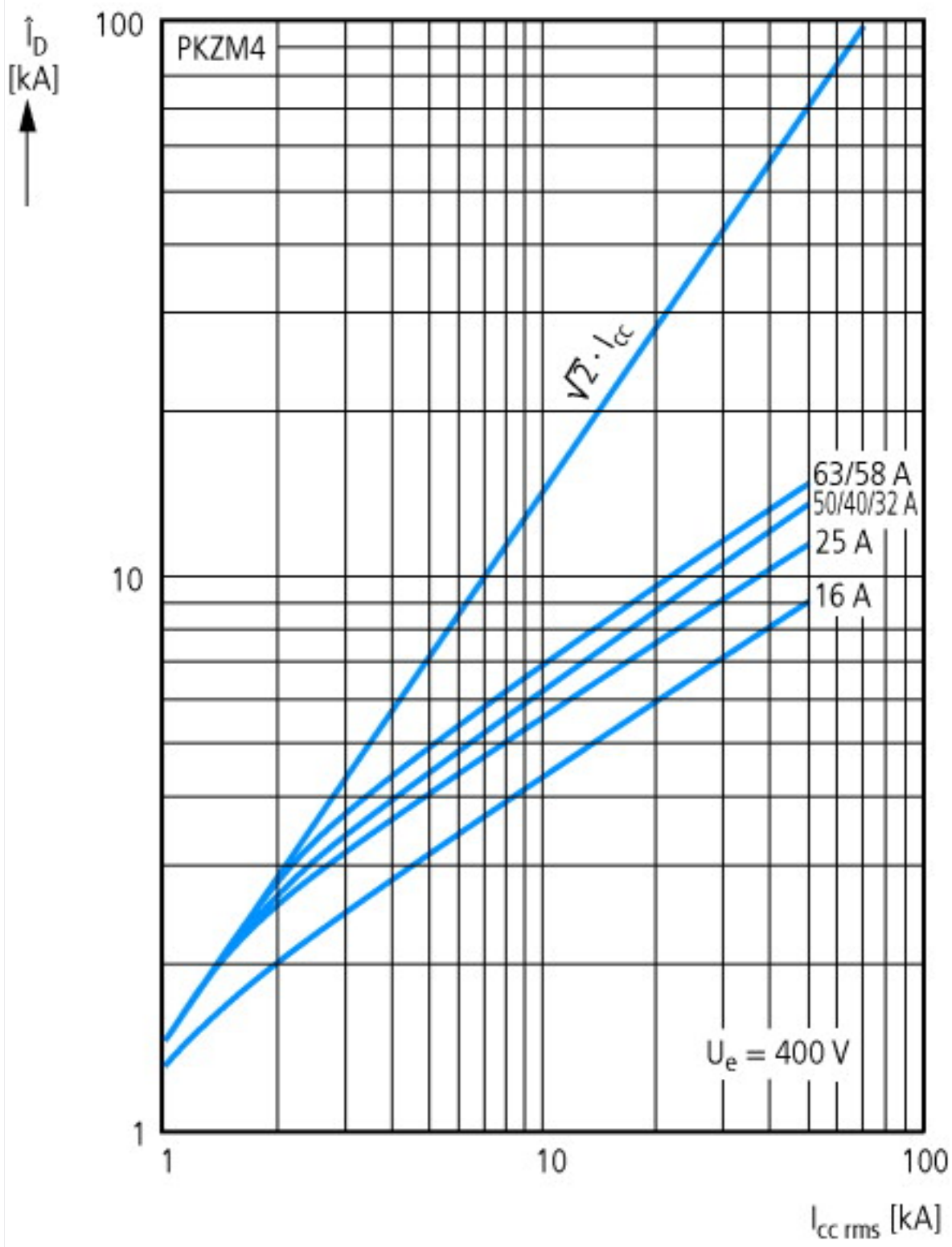
Product Standards		IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.		E36332
UL Category Control No.		NLRV
CSA File No.		165628
CSA Class No.		3211-05
North America Certification		UL listed, CSA certified
Specially designed for North America		No
Suitable for		Branch circuit: Manual type E if used with terminal, or suitable for group installations

Characteristics



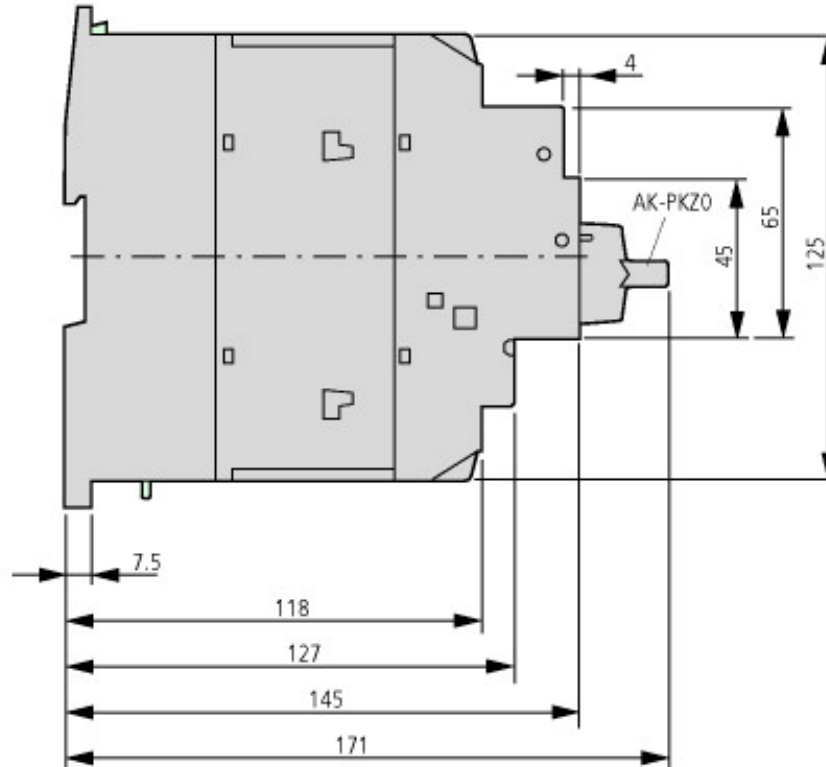
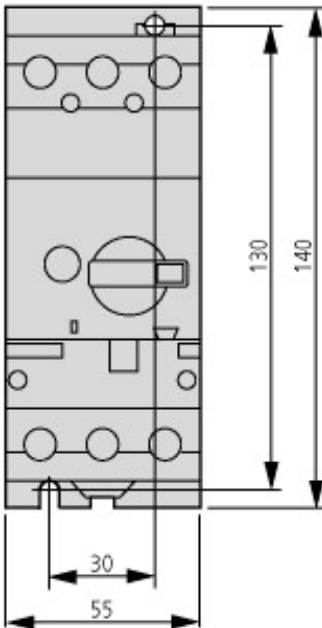
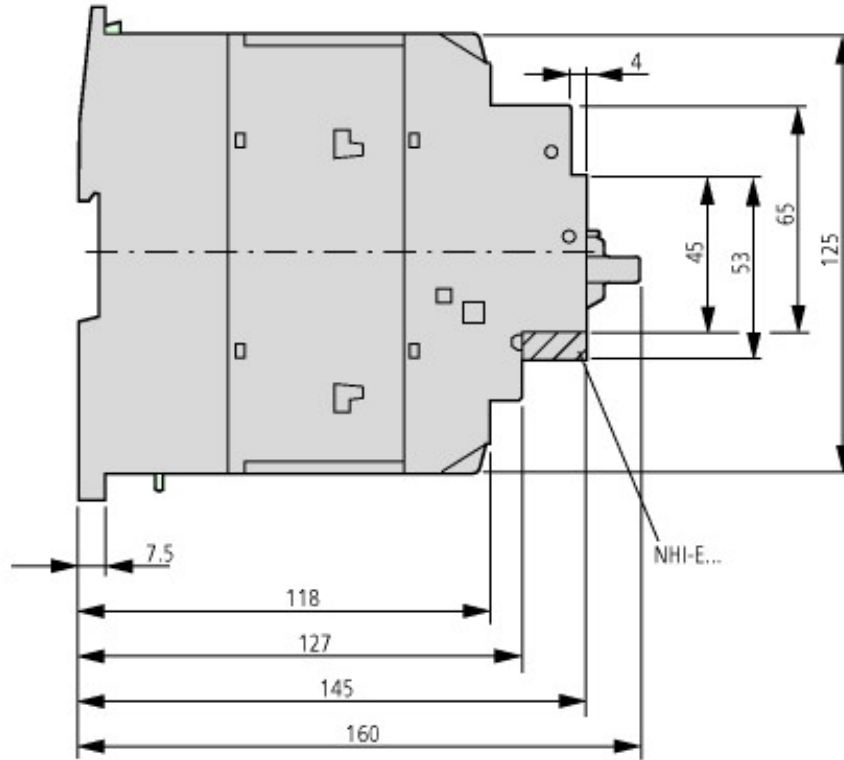
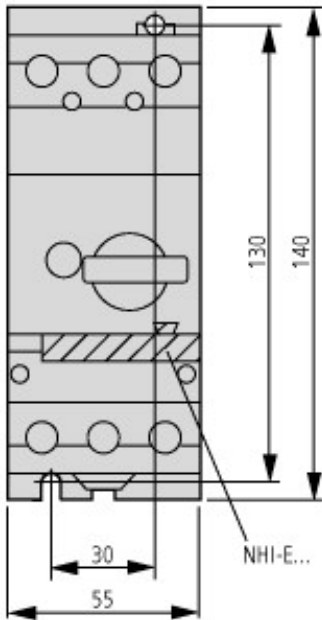
Tripping characteristics





Let-through characteristics

Dimensions



PKZM4-... +AK-PKZO

Additional product information (links)

IL03407012Z (AWA1210-1859) Motor-protective circuit-breaker

IL03407012Z (AWA1210-1859) Motor-protective circuit-breaker ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407012Z2014_02.pdf

MN03402002Z (AWB1210-1457) PKZM4 motor-protective circuit-breakers, overload monitoring of Ex e motors

MN03402002Z (AWB1210-1457) PKZM4 motor-protective circuit-breakers, overload monitoring of Ex e motors - Deutsch / English ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03402002Z_DE_EN.pdf

switching capacity of the circuit-breakers <http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=7.36>

Motor starters and "Special Purpose Ratings" for the North American market http://www.moeller.net/binary/ver_techpapers/ver953en.pdf

Busbar Component Adapters for modern Industrial control panels http://www.moeller.net/binary/ver_techpapers/ver960en.pdf

