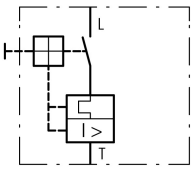
Motor-protective circuit-breaker, 3p, Ir=10-16A, screw connection

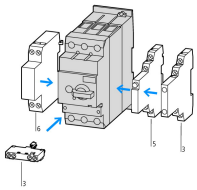
Part no. PKZM4-16
Article no. 222350
Catalog No. XTPR016DC1NL

Powering Business Worldwide

Delivery programme

Product range			PKZM4 motor protective circuit-breakers up to 65 A
Basic function			Motor protection
Connection technique			Screw terminals
Contact sequence			
Max. motor rating			
AC-3			
220 V 230 V 240 V	P	kW	4
380 V 400 V 415 V	P	kW	7.5
440 V	P	kW	9
500 V	P	kW	9
660 V 690 V	P	kW	12.5
Setting range			
Overload releases 	I_r	A	10 - 16
Short-circuit releases 			
max.	I_{rm}	A	248

Notes



Accessories	**Page**
3 Standard auxiliary contact	→ 072896
5 Trip-indicating auxiliary contact	→ 072898
6 Shunt release, undervoltage release	→ 073187

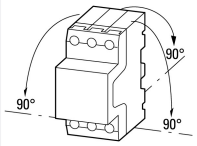
Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 part 102
Can be snap-fitted to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height
→ 266165

PTB 10 ATEX 3012, see manual

Technical data

General

Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Storage	ϑ	°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 capacities		mm^2	
Solid		mm^2	1 x (1 - 50) 2 x (1 - 35)
Flexible with ferrule		mm^2	1 x (1 - 35) 2 x (1 - 35)
Solid or stranded		AWG	14 - 2
Specified tightening torque for terminal screws			
Main cable		Nm	3.3
Control circuit cables		Nm	1

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	16 open 16 enclosed
Rated uninterrupted current = rated operational current	$I_u = I_e$	A	16
Rated frequency	f	Hz	40 - 60
Current heat loss (3 pole at operating temperature)		W	14.1
Lifespan, mechanical	Operations	$x\ 10^6$	0.03
Lifespan, electrical	Operations		30000
Maximum operating frequency		Ops./h	
Max. operating frequency		Ops/h	40
Motor switching capacity		kA_{rms}	
DC - 5		V	250/60 kA
DC-5 (up to 250 V)		A	63 (3 contacts in series)

Trip blocks

Temperature compensation		°C	-5 - +40 (to IEC/EN 60947, VDE 0660) -25 - +55 (operating range)
Temperature compensation residual error for T > 40°			0.25 %/K
Setting range of overload releases			0.6 - 1 x I_u
short-circuit release			Basic device, fixed: 15.5 x I_u
Short-circuit release tolerance			± 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	16
Heat dissipation per pole, current-dependent	P_{vid}	W	4.7
Equipment heat dissipation, current-dependent	P_{vid}	W	14.1
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])

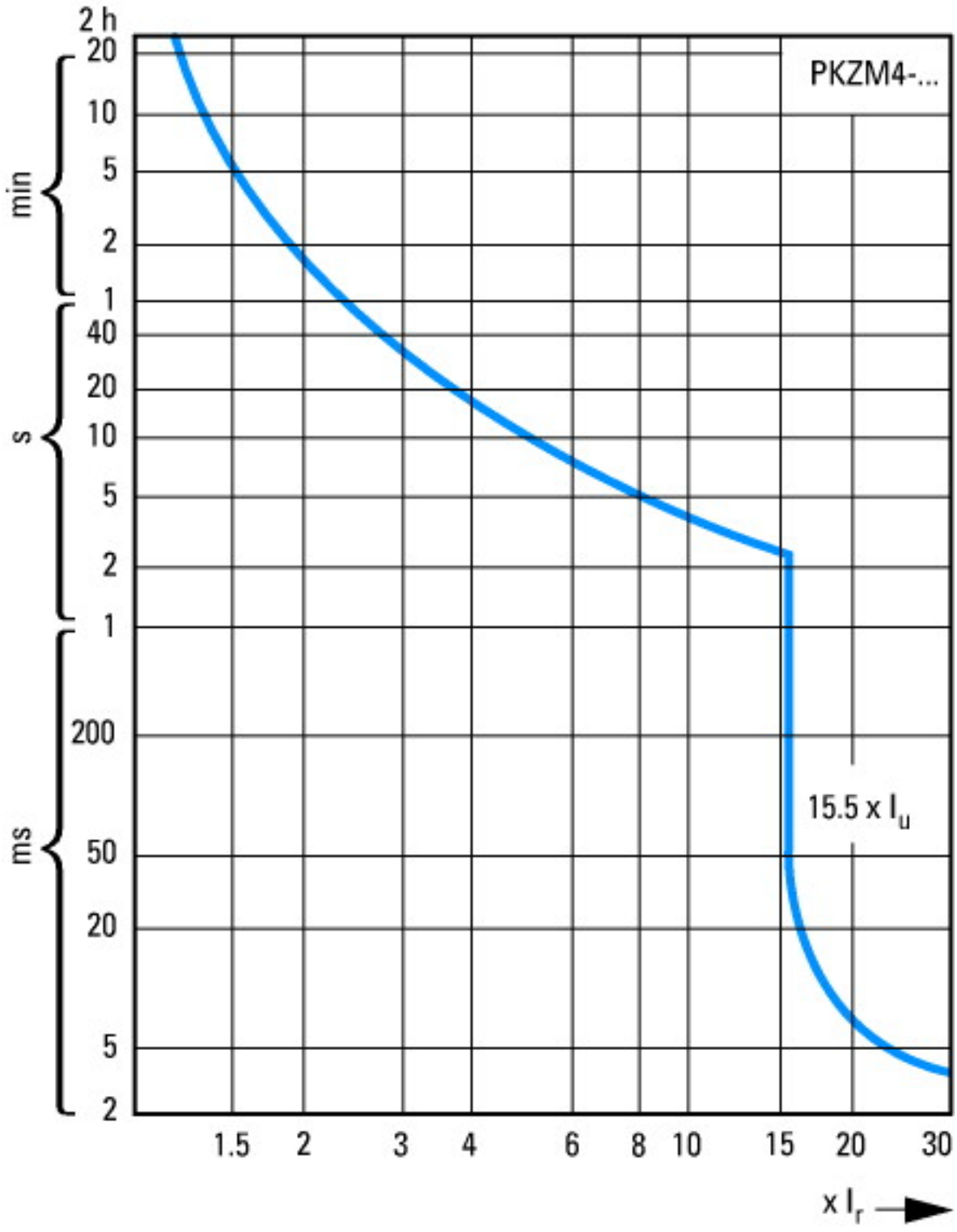
Overload release current setting	A	10 - 16
Adjustment range undelayed short-circuit release	A	248 - 248
Thermal protection		No
Phase failure sensitive		Yes
Switch off technique		Thermomagnetic
Rated operating voltage	V	690 - 690
Rated permanent current Iu	A	16
Rated operation power at AC-3, 230 V	kW	4
Rated operation power at AC-3, 400 V	kW	7.5
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 Icu at 400 V, AC	kA	150
Degree of protection (IP)		IP20
Height	mm	140
Width	mm	55
Depth	mm	160

Approvals

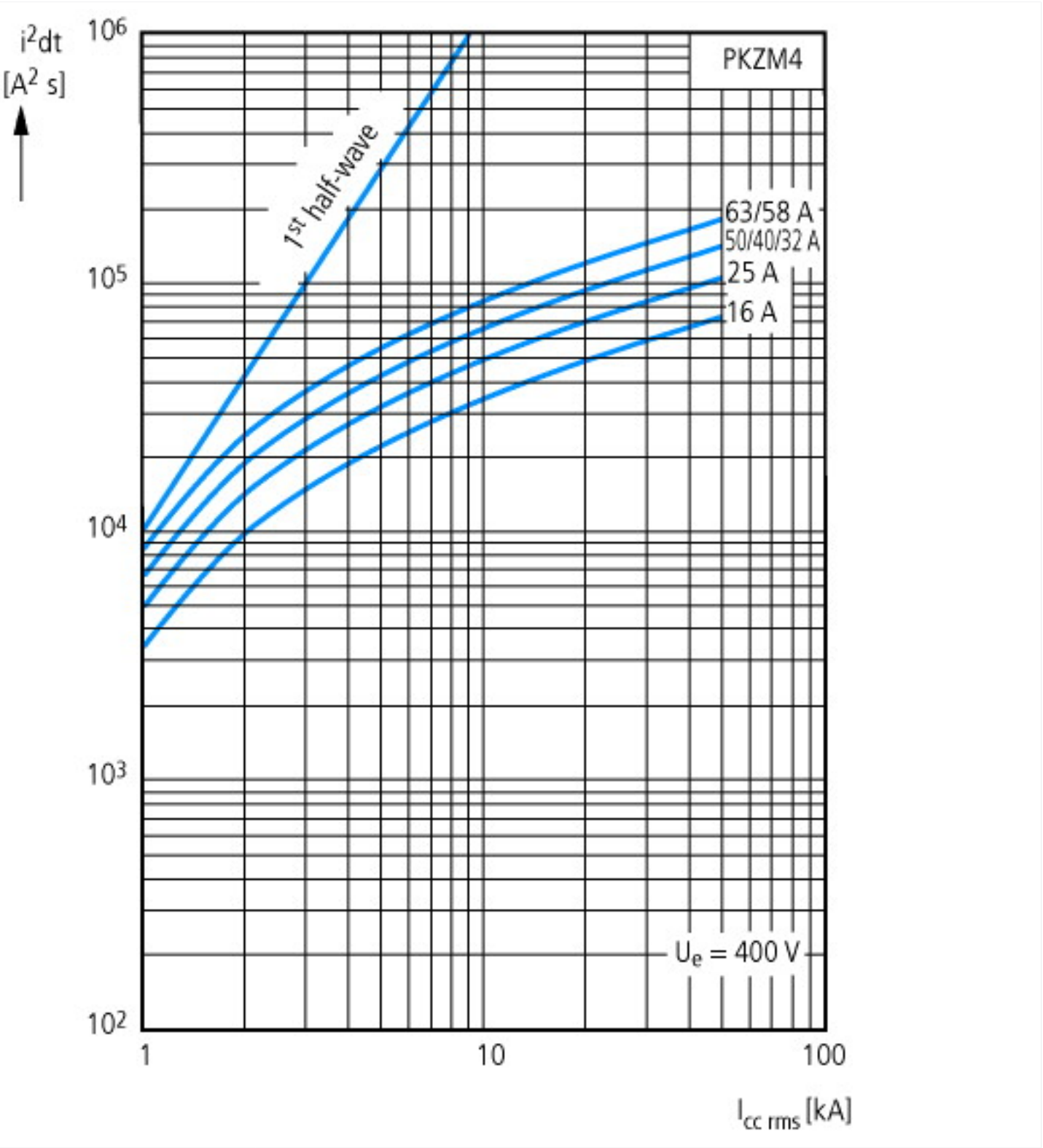
Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-4-1; CE marking
UL File No.	E36332
UL Category Control No.	NLRV

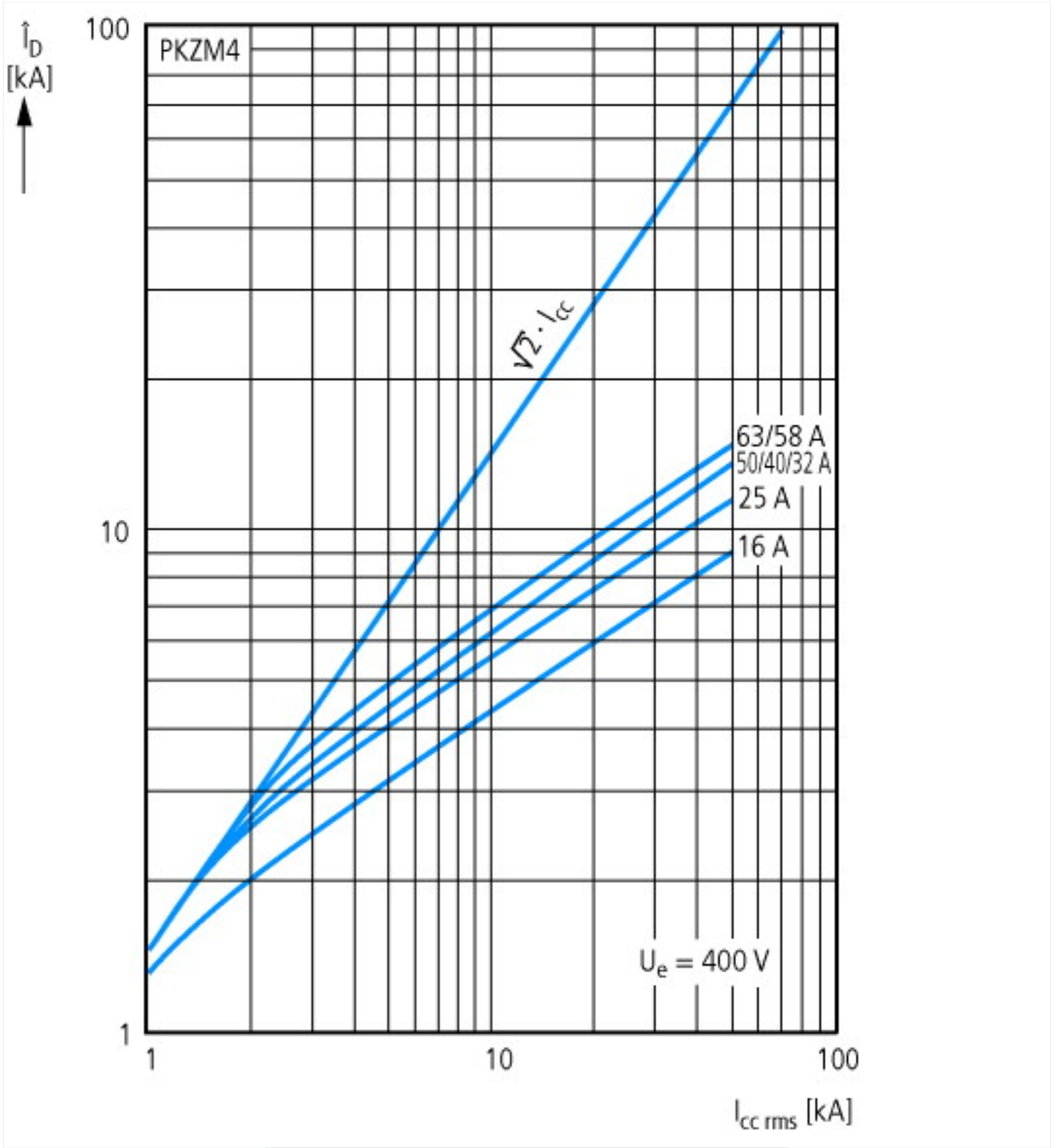
CSA File No.	165628
CSA Class No.	3211-05
North America Certification	UL listed, CSA certified
Specially designed for North America	No
Suitable for	Branch circuit: Manual type E if used with terminal, or suitable for group installations

Characteristics



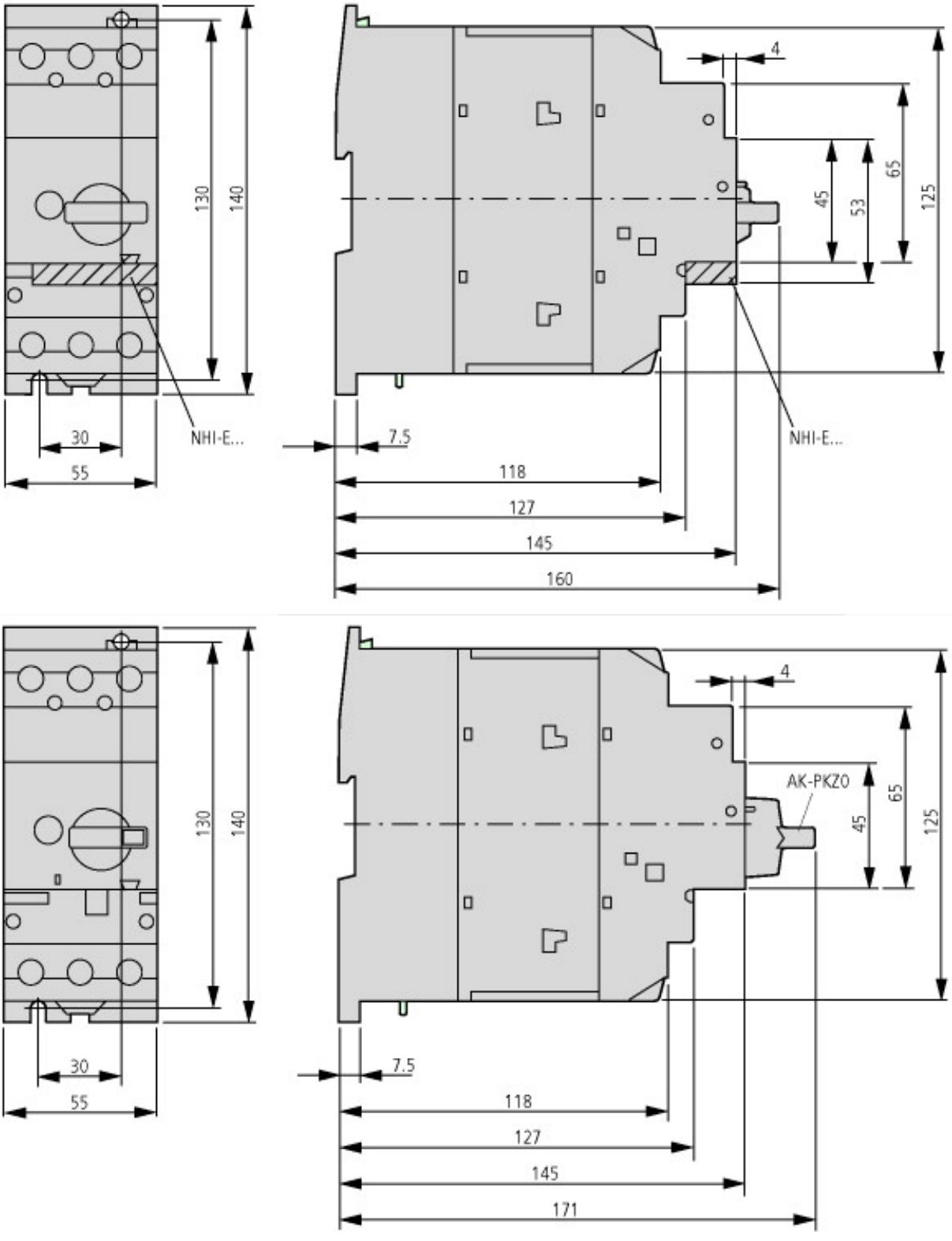
Tripping characteristics


i²dt
[A² s]
10⁶
10⁵
10⁴
10³
10²
PKZM4
1st half-wave
63/58 A
50/40/32 A
25 A
16 A
Ue = 400 V
1
10
100
Icc rms [kA]



Let-through characteristics

Dimensions



PKZM4-… +AK-PKZ0

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