

Motor-protective circuit-breaker, 3p, Ir=1-4A, standard

Part no. PKE12/XTU-4
Article no. 121732
Catalog No. XTPE004BCSNL

Powering Business Worldwide

Delivery programme

Product range			PKE motor protective circuit-breakers with electronic wide-range overload protection up to 32 A
Basic function			Motor protection Motor protection for heavy starting duty
Single unit/Complete unit			Complete device with standard knob
			IE3
Notes			Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.
Setting range of overload releases	I_r	A	1 - 4
Function			With overload release
Rated uninterrupted current = rated operational current	$I_u = I_e$	A	4

Motor rating

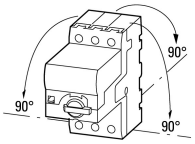
AC-3			
220 V 230 V 240 V	P	kW	0.75
380 V 400 V 415 V	P	kW	1.5
440 V	P	kW	1.5
500 V	P	kW	2.2
660 V 690 V	P	kW	3
Connection to SmartWire-DT			No

Motor output/rated motor current

Motor rating	Rated motor current AC-3				
	220 V 230 V 240 V	380 V 400 V 415 V	440 V	500 V	660 V 690 V
P	I	I	I	I	I
kW	A	A	A	A	A
0.18	1.04	-	-	-	-
0.25	1.4	-	-	-	-
0.37	2	1.1	1.02	-	-
0.55	2.7	1.5	1.39	1.2	-
0.75	3.2	1.9	1.68	1.5	1.1
1.1	-	2.6	2.41	2.1	1.5
1.5	-	3.6	3.28	2.9	2.1
2.2	-	-	-	4	2.9
3	-	-	-	-	3.8

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		°C	
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
Busbar tag shroud to EN 50274			Finger- and back-of-hand proof
Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60068-2-27		g	25
Altitude		m	Max. 2000
Terminal capacity screw terminals		mm^2	
Solid		mm^2	1 x (1 - 6) 2 x (1 - 6)
Flexible with ferrule to DIN 46228		mm^2	1 x (1 - 6) 2 x (1 - 6)
Solid or stranded		AWG	14 - 10
Specified tightening torque for terminal screws			
Main cable		Nm	1.7
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	4
Rated frequency	f	Hz	40 - 60
Current heat loss (3 pole at operating temperature)		W	0.5 (with PKE-XTU(A)-4)
Lifespan, mechanical	Operations	x 10^6	0.05
Lifespan, electrical (AC-3 at 400 V)			
Lifespan, electrical	Operations	x 10^6	0.05
Maximum operating frequency		Ops./h	
Max. operating frequency		Ops/h	60
Other technical data (sheet catalogue)			Switching capacity
Motor switching capacity		kA_{rms}	
AC-3 (up to 690 V)		A	4

Trip blocks

Temperature compensation		°C	-5 - +40 (to IEC/EN 60947, VDE 0660) -25 - +55 (operating range)
Temperature compensation residual error for T > 40 °C			±55 (Arbeitsbereich)
Setting range of overload releases			0.25 - 1 x I_u
Fixed short-circuit release			Basic device 15.5 x I_u Trip block 15 x I_r delayed approx. 60 ms
Short-circuit release tolerance			± 20%
Phase-failure sensitivity			yes

Data for design verification according to IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	4
Equipment heat dissipation, current-dependent	P_{vid}	W	0.5
Heat dissipation capacity	P_{diss}	W	0
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.

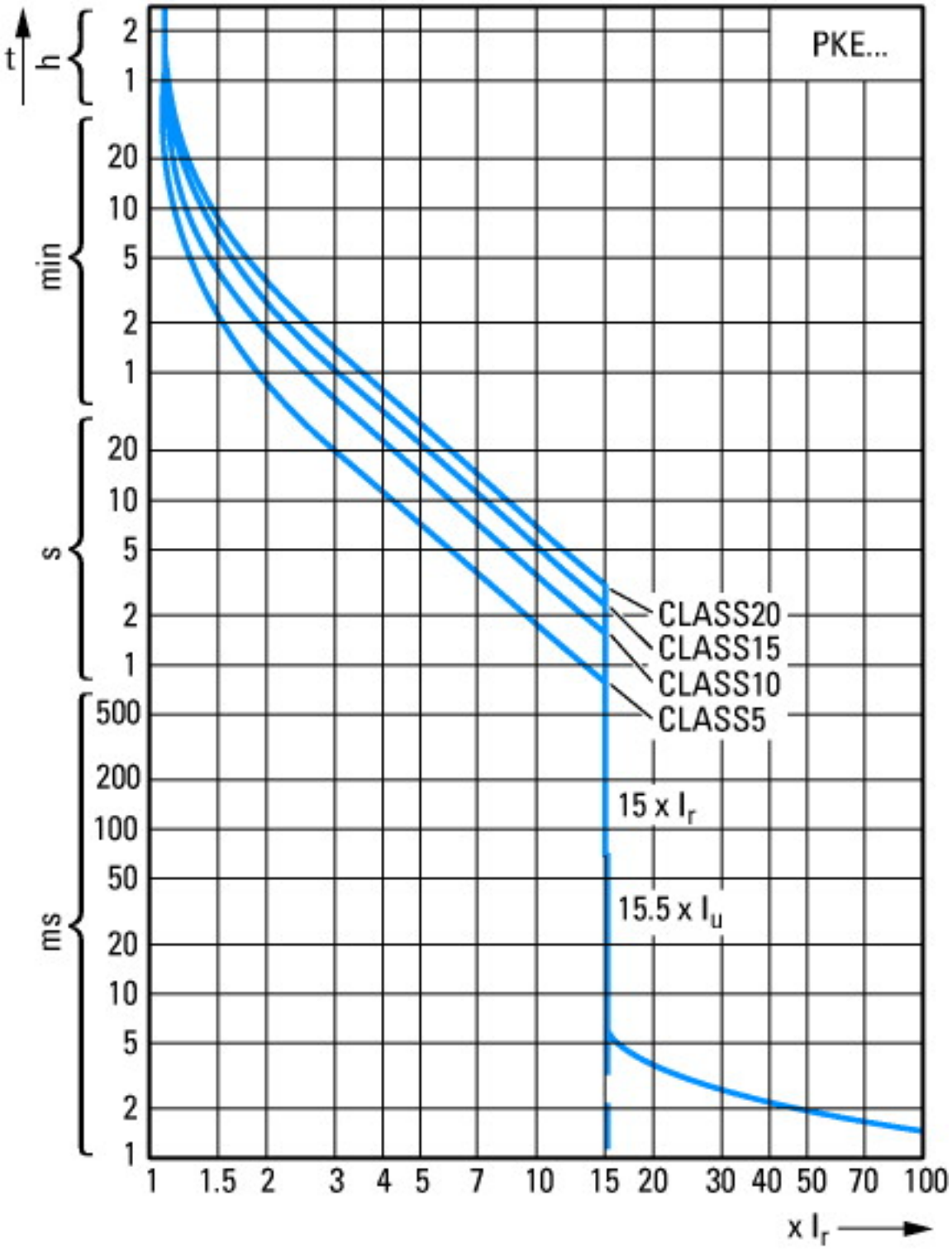
Technical data ETIM 5.0

Low-voltage industrial components (EG000017) / Motor protective circuit-breaker (EC000074)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker motor protection (ecl@ss8-27-37-04-01 [AGZ529012])		
Setting range overload protector	A	1 - 4
Adjustment range undelayed short-circuit release	A	60 - 60
Phase failure sensitive		Yes
Switch off technique		Electronic
Rated operating voltage	V	690 - 690
Rated permanent current Iu	A	4
Rated operation power at AC-3, 230 V	kW	0.75
Rated operation power at AC-3, 400 V	kW	1.5
Connection type main current circuit		Screw connection
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	100
Degree of protection (IP)		IP20

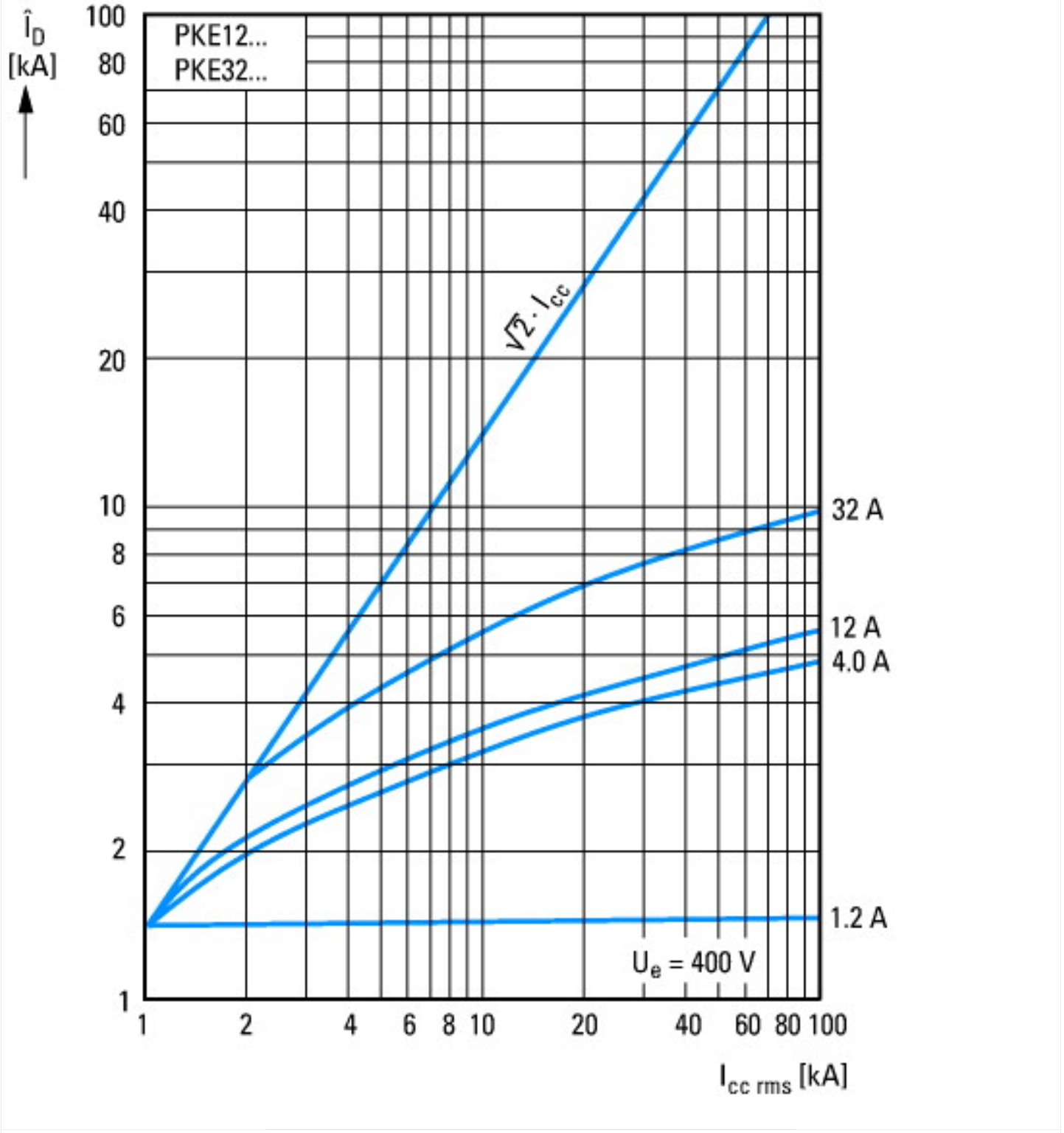
Approvals

Product Standards		UL508; CSA-C22.2 No.14-10;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

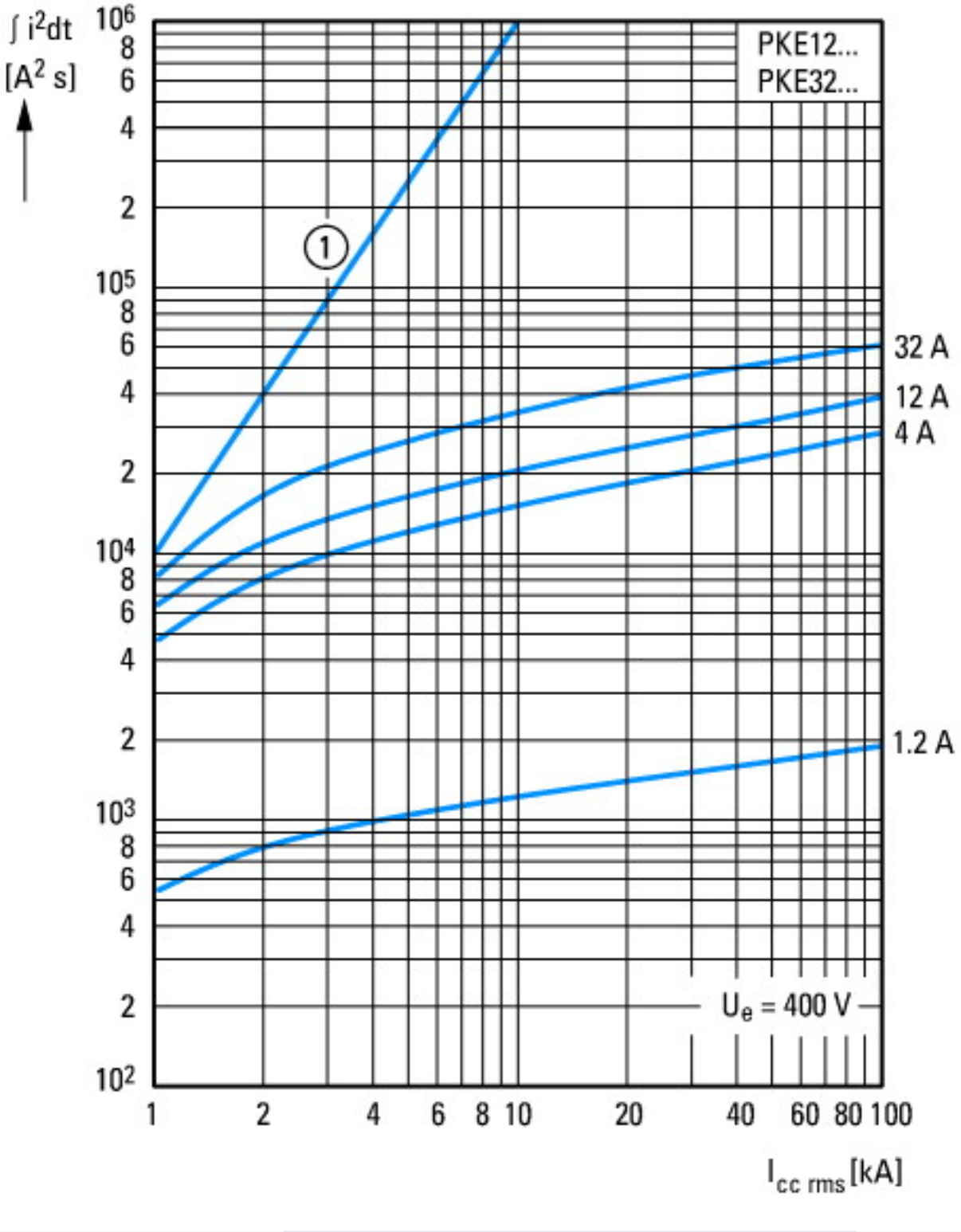
Characteristics



Tripping characteristics

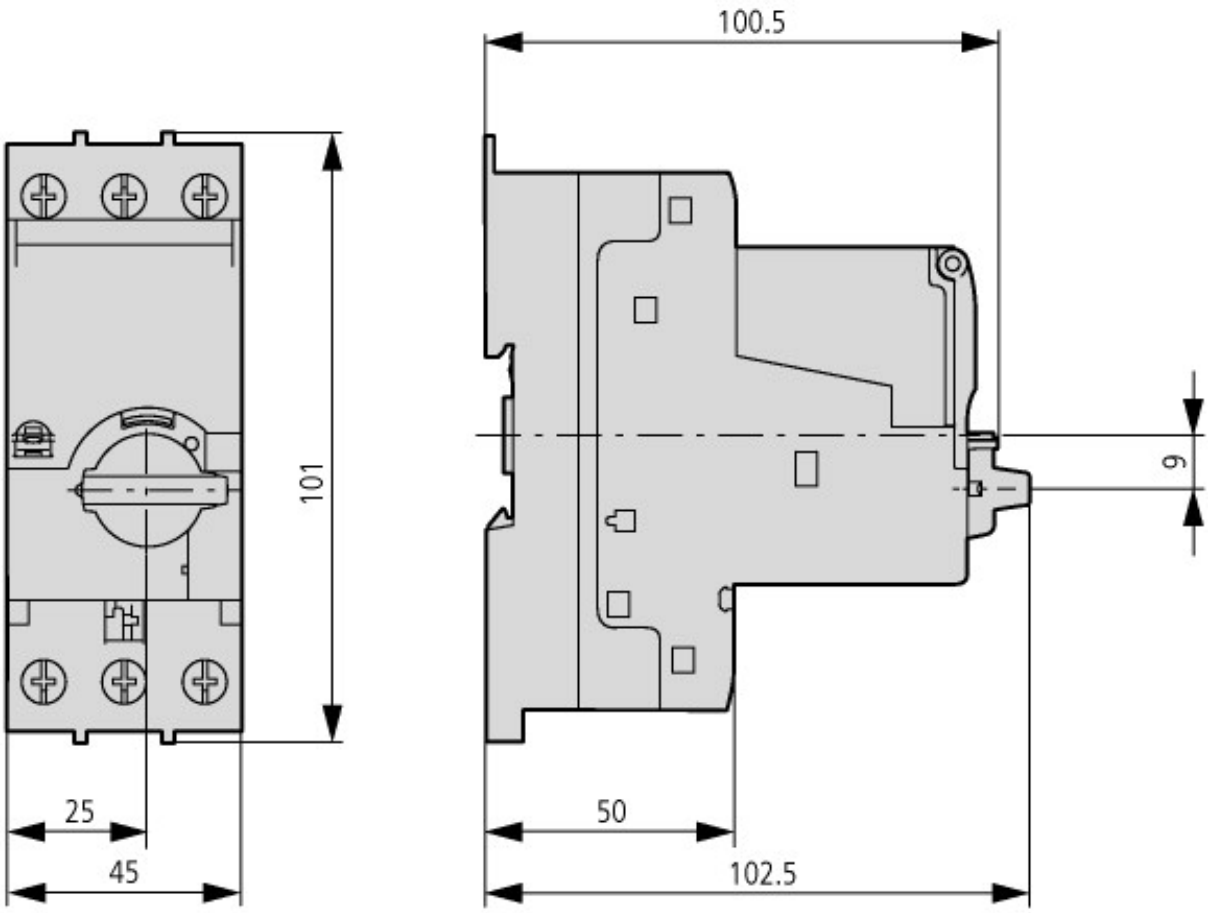


Let-through current



① 1 half-cycle
Let-through energy

Dimensions



Additional product information (links)

IL03402019Z (AWA1210-2490) PKE motor-protective circuit-breaker with wide-range overload protection	
IL03402019Z (AWA1210-2490) PKE motor-protective circuit-breaker with wide-range overload protection	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402019Z2013_11.pdf
MN03402004Z PKE12 and PKE32 motor-protective circuit-breakers; overload monitoring of Ex e motors	
MN03402004Z PKE12 and PKE32 motor-protective circuit-breakers; overload monitoring of Ex e motors - Deutsch / English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03402004Z_DE_EN.pdf
Switching capacity	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=7.32
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

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