





Motor-protective circuit-breaker, 3p, +control option 1-4A

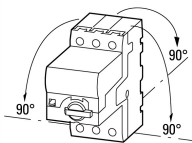
Part no. PKE12/AK/XTU-4
Catalog No. 158244
Alternate Catalog No. XTPE004BCS

Delivery program

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 AK lockable rotary handle
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
Motor output/rated motor current			
Motor rating	Rated motor current		
	AC-3		
	220 V	380 V	440 V
	230 V	400 V	500 V
	240 V	415 V	660 V
P	I	I	I
kW	A	A	A
0.18	1.04	-	-
0.25	1.4	-	-
0.37	2	1.1	-
0.55	2.7	1.5	1.2
0.75	3.2	1.9	1.5
1.1	-	2.6	2.1
1.5	-	3.6	2.9
2.2	-	-	4
3	-	-	-

Technical data

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
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 when actuated from front (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 main cable			
Screw terminals			
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
Stripping length		mm	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	0.9
Lifespan, mechanical	Operations	$\times 10^6$	0.05
Lifespan, electrical (AC-3 at 400 V)			
Lifespan, electrical	Operations	$\times 10^6$	0.05
Max. operating frequency		Ops/h	60
Motor switching capacity			
AC-3 (up to 690V)		A	4
AC-4 cycle operation			
Minimum current flow times		ms	500 (Class 5) 700 (Class 10) 900 (Class 15) 1000 (Class 20)
Minimum cut-out periods		ms	500
Note		ms	In AC-4 cycle operation, going below the minimum current flow time can cause overheating of the load (motor). For all combinations with an SWD activation, you need not adhere to the minimum current flow times and minimum cut-out periods.

Trip blocks

Temperature compensation			
to IEC/EN 60947, VDE 0660		°C	- 5 ... 40
Operating range		°C	- 25 ... 55
Setting range of overload releases		$\times I_u$	0.25 - 1
short-circuit release			Basic device, fixed: $15.5 \times I_u$ Trip block, fixed: $15.5 \times I_r$ delayed approx. 60 ms
Short-circuit release tolerance			$\pm 20\%$
Phase-failure sensitivity			IEC/EN 60947-4-1, VDE 0660 Part 102

Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		HP	0.75
230 V 240 V		HP	0.75
460 V		HP	2

480 V			
575 V 600 V		HP	3
Single-phase			
115 V 120 V		HP	0.125
230 V 240 V		HP	0.33
Short Circuit Current Rating, group protection		SCCR	
600 V High Fault			
SCCR (fuse)		kA	100
max. Fuse		A	100 Class J

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	4
Heat dissipation per pole, current-dependent	P_{vid}	W	0.3
Equipment heat dissipation, current-dependent	P_{vid}	W	0.9
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 7.0

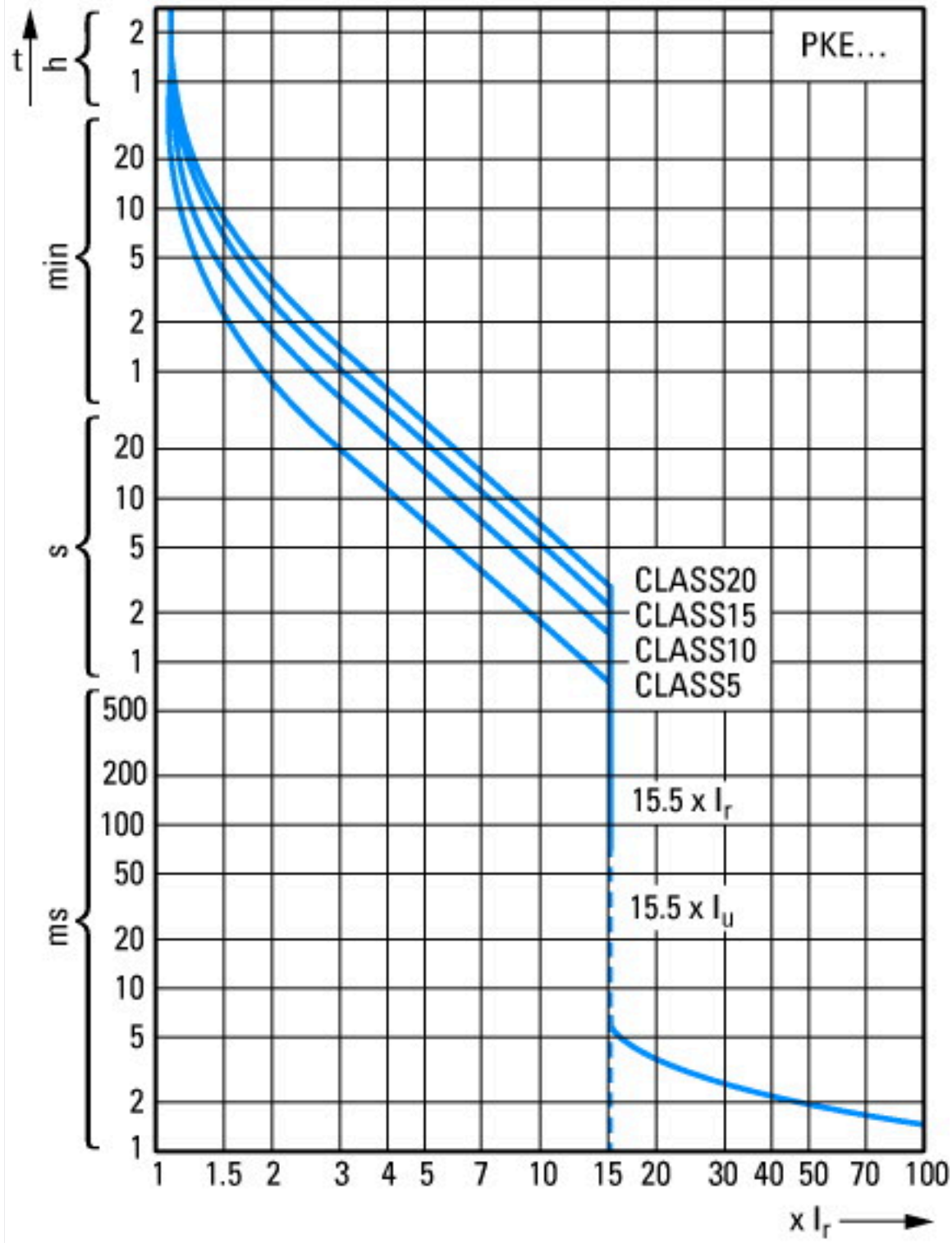
Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss10.0.1-27-37-04-01 [AGZ529016])			
Overload release current setting		A	1 - 4
Adjustment range undelayed short-circuit release		A	62 - 62
With thermal protection			Yes

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
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	0
Degree of protection (IP)		IP20
Height	mm	102.5
Width	mm	45
Depth	mm	120.5

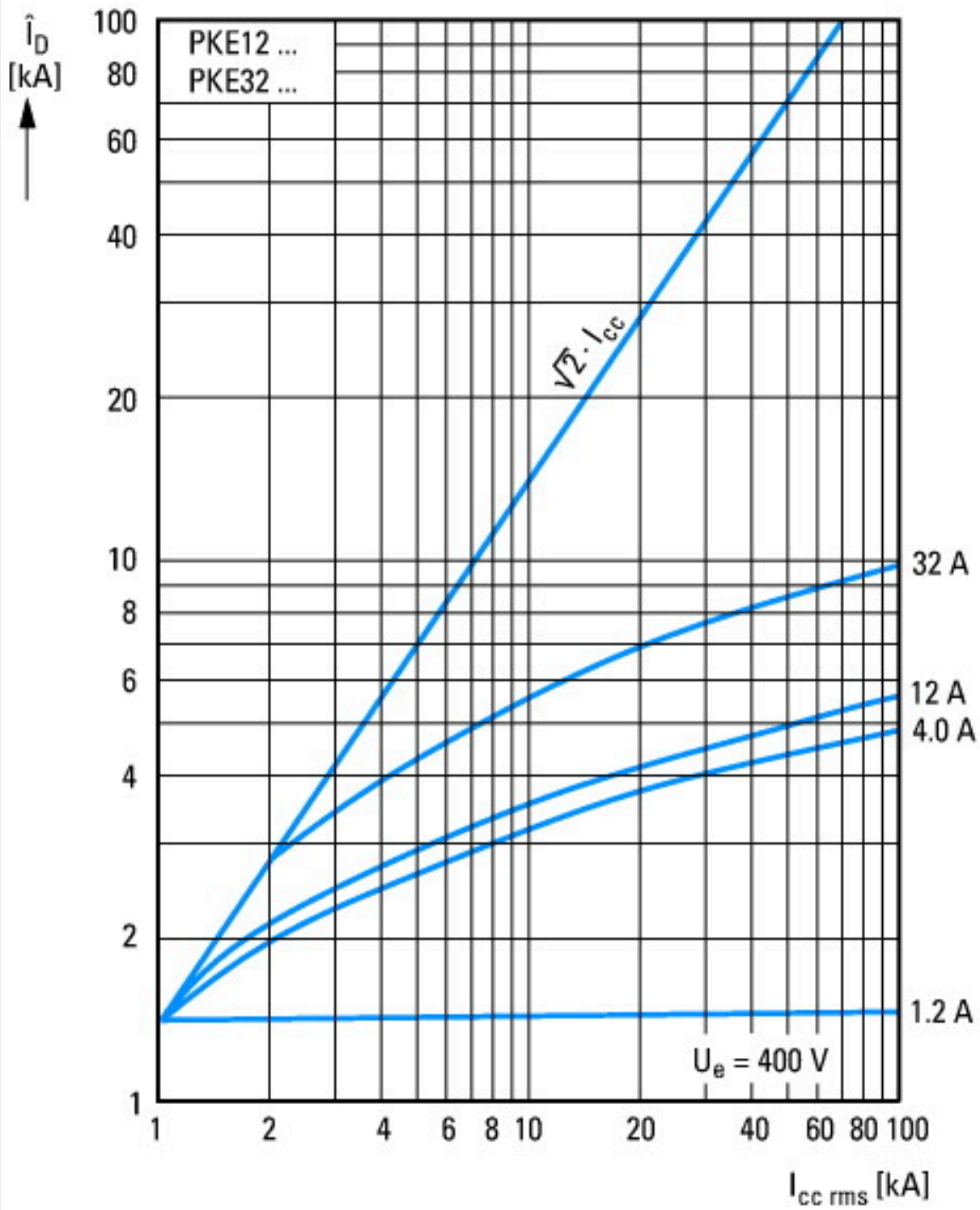
Approvals

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

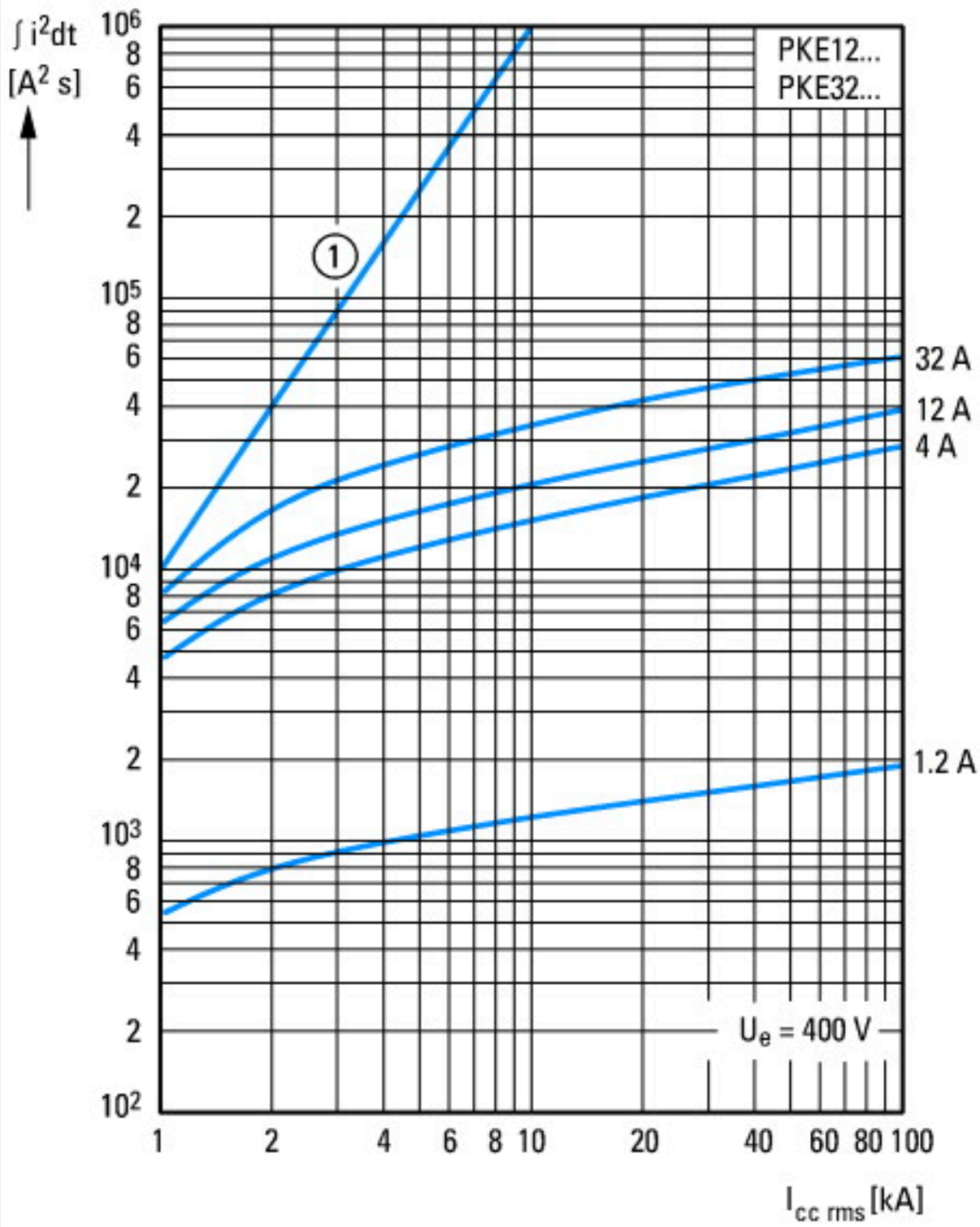
Characteristics



Tripping characteristics

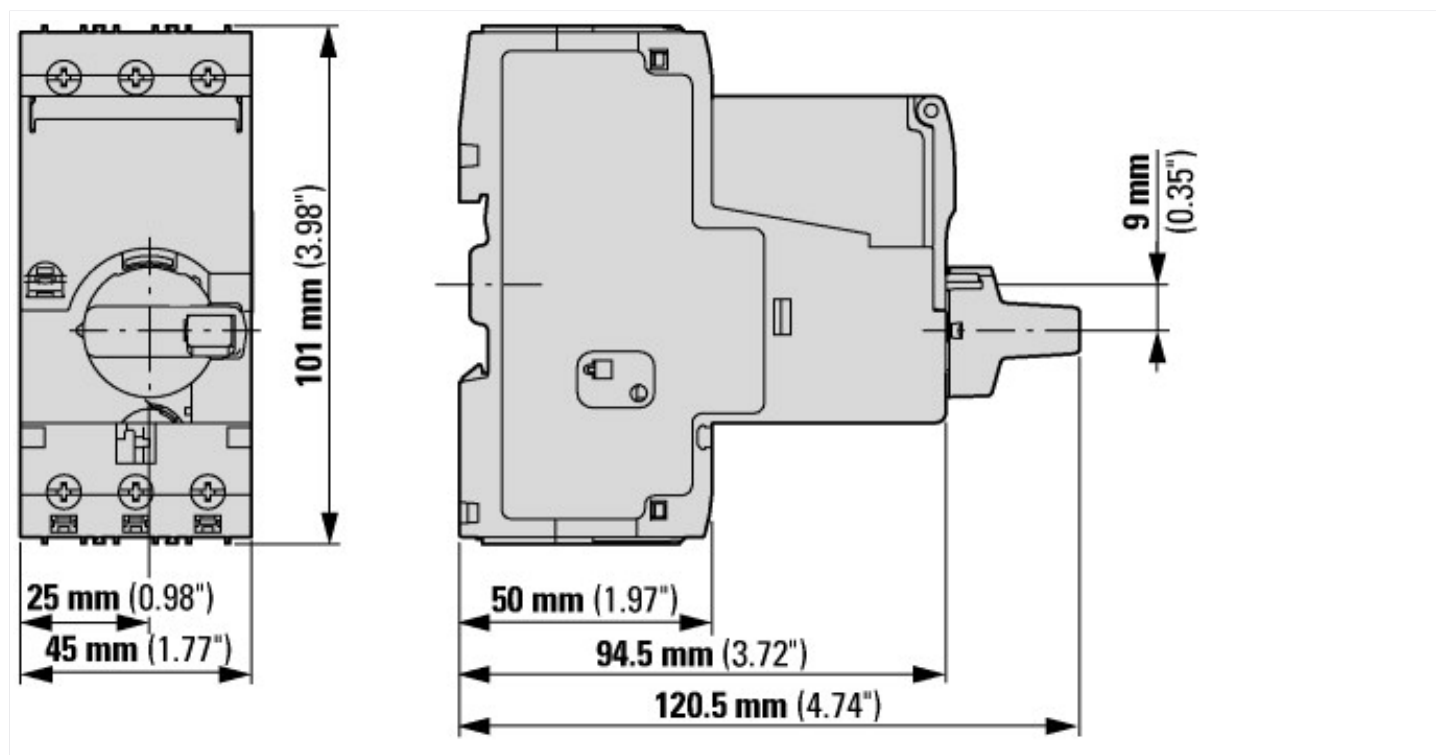


Let-through current



① 1 half-cycle
Let-through energy

Dimensions



Assets (links)

Declaration of CE Conformity

00002850

Instruction Leaflets

IL03402019Z2018_03

Manuals

MN03402004Z_DE_EN (English)

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/IL03402019Z2018_03.pdf

MN03402004Z PKE12, PKE32 and PKE65 motor-protective circuit-breakers; overload monitoring of Ex e motors

MN03402004Z PKE12, PKE32 and PKE65 motor-protective circuit-breakers; overload monitoring of Ex e motors - Deutsch / English

ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03402004Z_DE_EN.pdf

Schaltvermögen

<http://de.ecat.eaton.com/flip-cat/?edition=HPLTEv1&startpage=>

Motor starters and "Special Purpose Ratings" for the North American market

http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf

Busbar Component Adapters for modern Industrial control panels

http://www.moeller.net/binary/ver_techpapers/ver960en.pdf