DATASHEET - PKE12/XTU-12



Motor-protective circuit-breaker, Complete device with standard knob, Electronic, 3 - 12 A, With overload release

Part no.	**PKE12/XTU-12**
Catalog No.	**121733**
Alternate Catalog No.	**XTPE012BCSNL**
EL-Nummer (Norway)	**4355187**

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 standard knob
			IE3
Notes			Also suitable for motors with efficiency class IE3.
Connection technique			Screw terminals
Setting range of overload releases	I_r	A	3 - 12
Function			With overload release
Rated uninterrupted current = rated operational current	$I_u = I_e$	A	12

Motor rating

AC-3			
220 V 230 V 240 V	P	kW	3
380 V 400 V 415 V	P	kW	5.5
440 V	P	kW	5.5
500 V	P	kW	5.5
660 V 690 V	P	kW	7.5

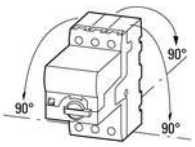
Motor output/rated motor current

Motor rating	Rated motor current				
AC-3					
	220 V	380 V	440 V	500 V	660 V
	230 V	400 V			690 V
	240 V	415 V			
P	I	I	I	I	I
kW	A	A	A	A	A
0.75	3.2	-	-	-	-
1.1	4.6	-	-	-	-
1.5	6.3	3.6	3.3	-	-
2.2	8.7	5	4.6	4	-
3	11.5	6.6	6	5.3	3.8
4	-	8.5	7.7	6.8	4.9
5.5	-	11.3	10.2	9	6.5
7.5	-	-	-	-	8.8

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	12
Rated frequency	f	Hz	40 - 60
Current heat loss (3 pole at operating temperature)		W	3.6
Lifespan, mechanical	Operations	$x\ 10^6$	0.05
Lifespan, electrical (AC-3 at 400 V)			
Lifespan, electrical	Operations	$x\ 10^6$	0.05
Max. operating frequency		Ops/h	60
Motor switching capacity			
AC-3 (up to 690V)		A	12
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		$x\ I_u$	0.25 - 1
short-circuit release			Basic device, fixed: 15.5 x I_u Trip block, fixed: 15.5 x I_r delayed approx. 60 ms
Short-circuit release tolerance			± 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	3
230 V 240 V		HP	3
460 V 480 V		HP	7.5
575 V 600 V		HP	10
Single-phase			
115 V 120 V		HP	1
230 V 240 V		HP	1.5
General use		A	12
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	12
Heat dissipation per pole, current-dependent	P_{vid}	W	1.2
Equipment heat dissipation, current-dependent	P_{vid}	W	3.6
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.

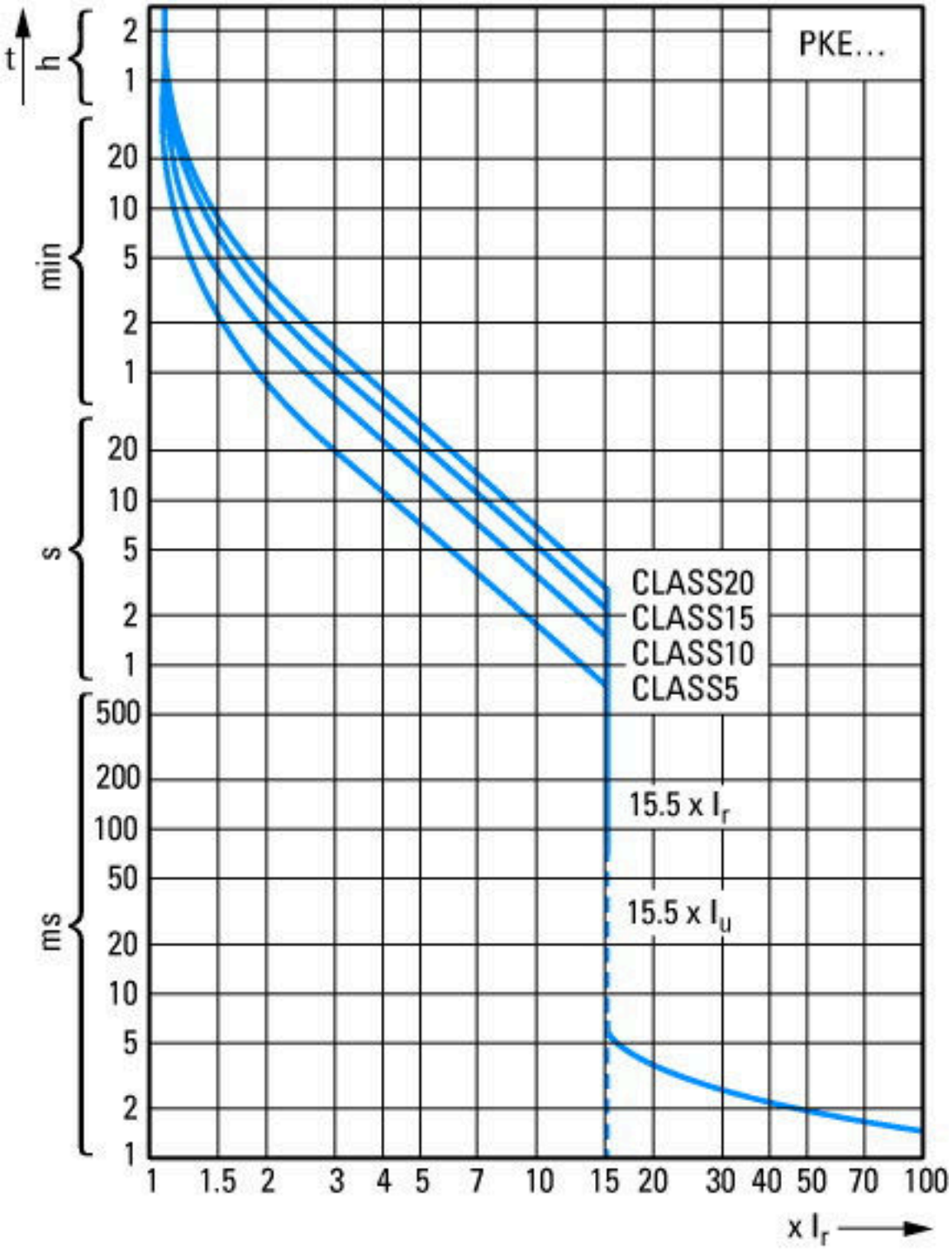
Technical data ETIM 7.0

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	3 - 12
Adjustment range undelayed short-circuit release		A	186 - 186
With thermal protection			Yes
Phase failure sensitive			Yes
Switch off technique			Electronic
Rated operating voltage		V	690 - 690
Rated permanent current Iu		A	12
Rated operation power at AC-3, 230 V		kW	3
Rated operation power at AC-3, 400 V		kW	5.5
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	100
Degree of protection (IP)			IP20
Height		mm	102.5
Width		mm	45
Depth		mm	102.5

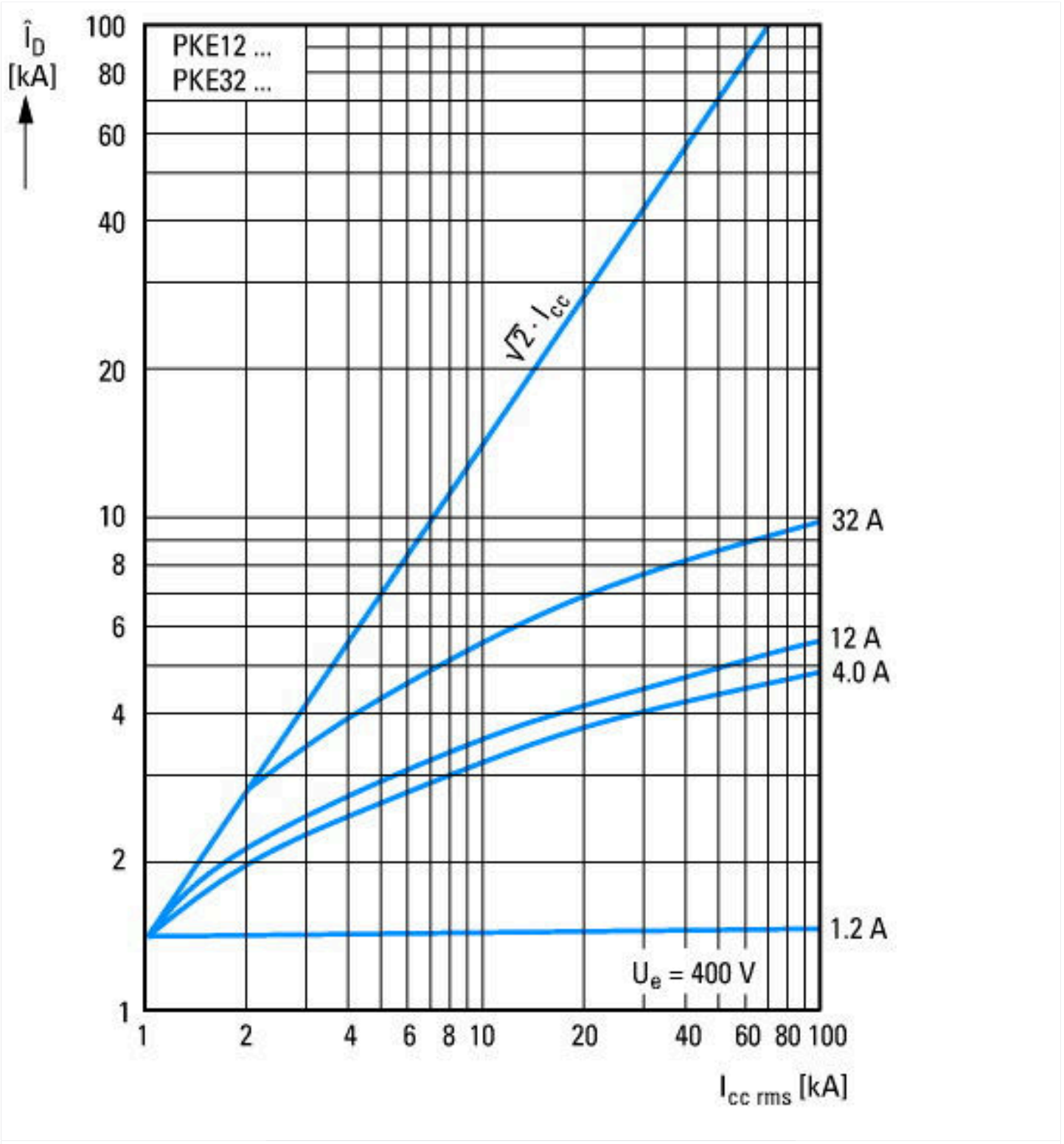
Approvals

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

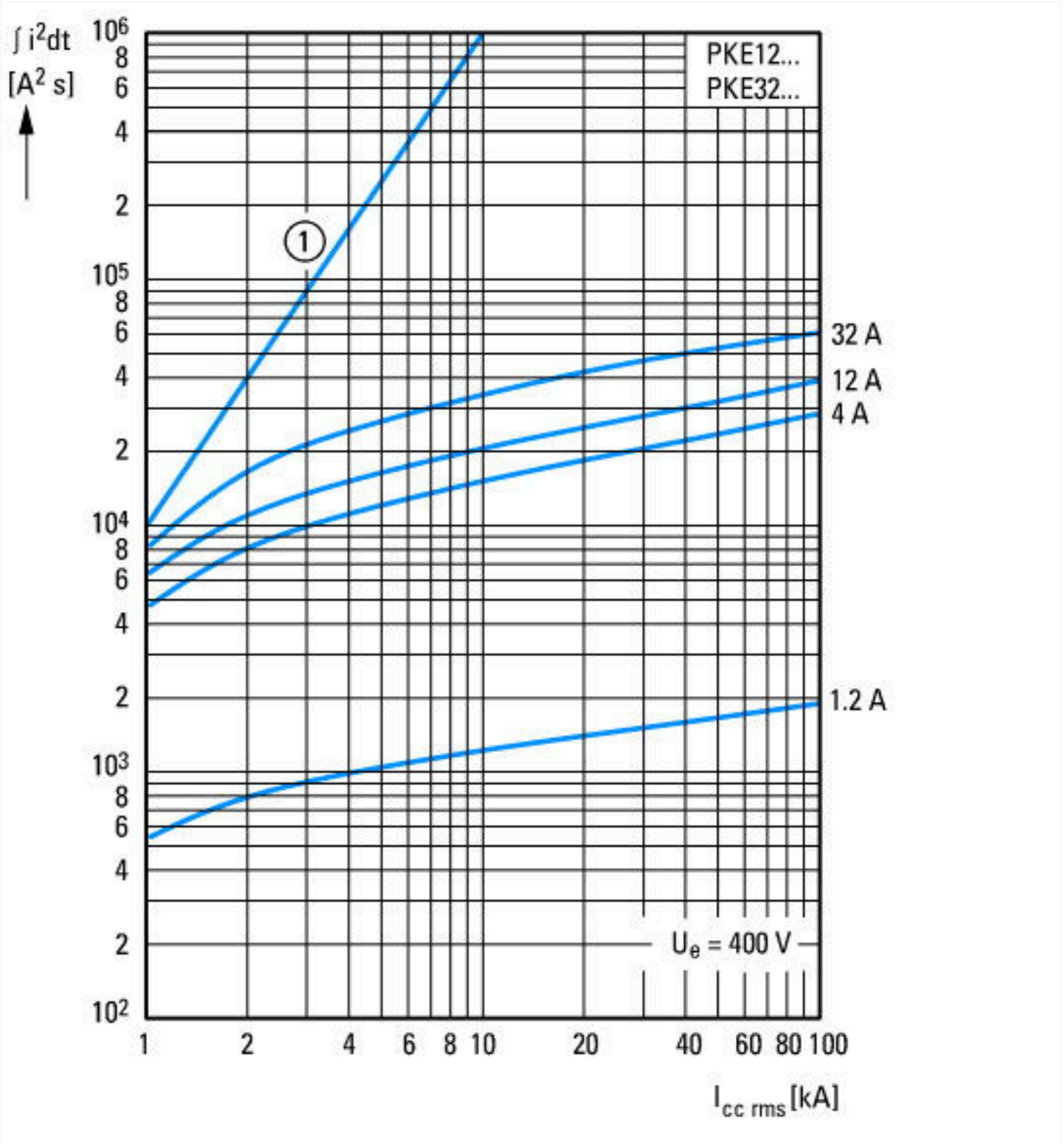
Characteristics



Tripping characteristics

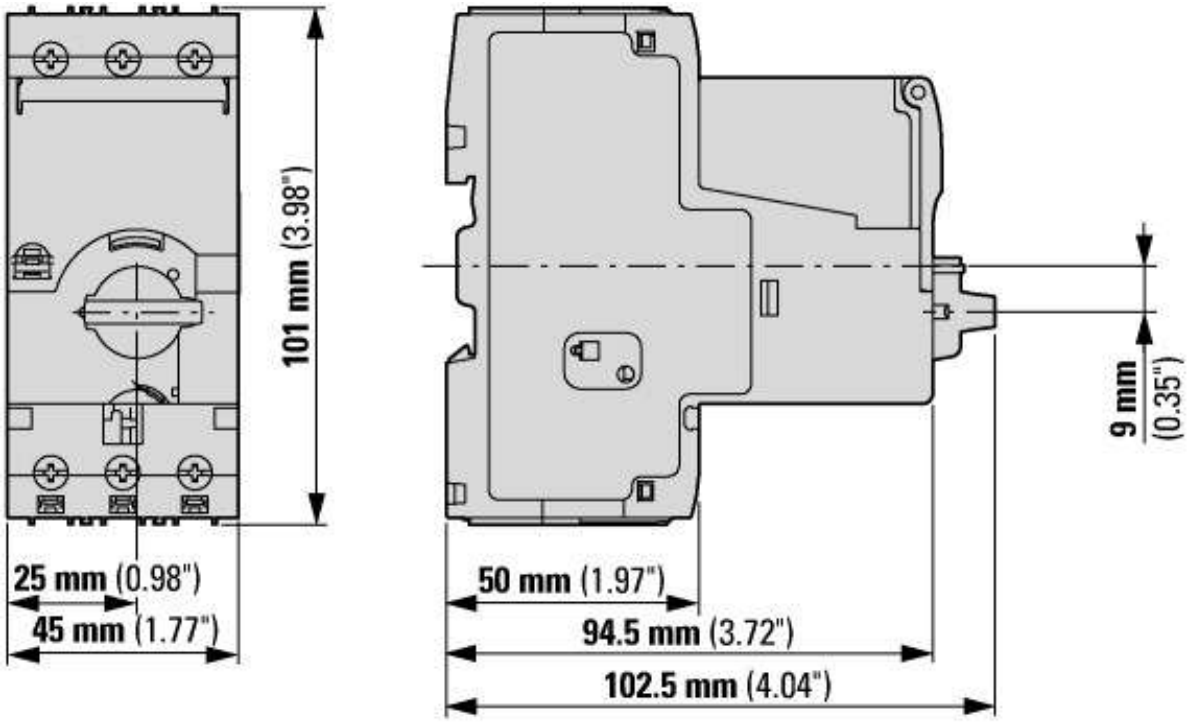


Let-through current



① 1 half-cycle
Let-through energy

Dimensions



Additional product information (links)

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

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