

Motor-protective circuit-breaker, 3p, Ir=0.3-1.2A, standard

Powering Business Worldwide*

Part no. PKE12/XTU-1,2
Article no. 121731
Catalog No. XTPE1P2BCSNL

Delivery program

Delivery program							
Product range					PKE motor prote protection up to	ctive circuit-breakers with electronic 32 A	c wide-range overload
Basic function					Motor protection Motor protection	n n for heavy starting duty	
Single unit/Complete unit					Complete device	e with standard knob	
					IE3	✓	
Notes						motors with efficiency class IE3. es are identified by the logo on their p	packaging.
Setting range of overload releases	S		I _r	А	0.3 - 1.2		
Function					With overload re	elease	
Rated uninterrupted current = rate	d operational current		$I_u = I_e$	Α	1.2		
Motor rating							
AC-3							
220 V 230 V 240 V			Р	kW	0.18		
380 V 400 V 415 V			Р	kW	0.37		
440 V			Р	kW	0.37		
500 V			Р	kW	0.37		
660 V 690 V			Р	kW	0.75		
Connection to SmartWire-DT					No		
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	410 V					
P	1	I A			1	I A	l
kW 0.06	A 0.37	A			A -	A -	Α -
0.09	0.54	0.31			-	- -	-
0.12	0.72	0.41			0.37	0.33	-
0.18	1.04	0.6			0.54	0.48	0.35
0.25	-	0.8			0.76	0.7	0.5
0.37	-	1.1			1.02	0.9	0.7
0.55	-	-			-		0.9
0.75	-	-			-	<u>-</u>	1.1

Technical data

General

delicitui			
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	θ	°C	-40 - +80
Open		°C	-25 - +55
Enclosed		°C	-25 - +40
Mounting position			90°
Direction of incoming supply			as required

Device Device Device Device Protection Device Protection Device Protection P				
Terminations	Degree of protection			
Busbar tag shroud to EN 50274 Finger and back-of-hand proof Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60008-2-27 0 2 25 Alkitude nm Max 2000 Cornational capacity screw torminals mm² 1 x11 - 5 Solid x11 - 5 2 x11 - 5 Solid or strande mm² 1 x11 - 5 Solid or strande mm² 1 x11 - 5 Specified fightening torque for terminal screws mm² 1 x1 - 6 Specified sightening torque for terminal screws mm² 1 x2 - 6 Specified sightening torque for terminal screws mm² 1 x2 - 6 Specified sightening torque for terminal screws mm² 1 x2 - 6 Main cable mm² 1 x2 - 7 Main cable mm² 1 x2 - 7 Main cable mm² 1 x2 - 7 Rated inputs owithstand voltage mm² 1 x2 - 7 Rated operational voltage y x2 - 8 2 x2 - 2 Rated originational voltage y x2 - 2 2 x2 - 2 Rated frequency y x2 - 2 2 x2 - 2 <t< td=""><td>Device</td><td></td><td></td><td>IP20</td></t<>	Device			IP20
Mehanical shock resistance half-sinusoidal shock 10 ms to IEC 60088-2-27 8 9 25 Alibude m Max 2000 Terminal capacity screw terminals mm² 1x1 - 6} Solid mm² 1x1 - 6} Floxible with ferrule to DIN 46228 m² 1x1 - 6} Solid or stranded Mm² 1x1 - 10 Specified fightening to rque for terminal screws m² 1x - 10 Main cable m² 1x - 10 Main cable m² 1x - 10 Tested impulse with stand voltage m² 1x - 10 Rated impulse with stand voltages y YAC 600 Rated operational voltage y YAC 80 Rated streaming with stand voltage y YAC 80 Rated specified surprising temperature y 40 90 Rated specified current = rated operational current y 40 90 40 90 Rated frequency y y 00 90 40 90 90 90 90 <t< td=""><td>Terminations</td><td></td><td></td><td>IP00</td></t<>	Terminations			IP00
Altude Image: Properties of the properties o	Busbar tag shroud to EN 50274			Finger- and back-of-hand proof
Terminal capacity screw terminals Solid Solid Floxible with ferrule to DIN 46228 Floxible with ferrule to DIN 46228 Solid or stranded Solid	Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60068-2-27		g	25
Solid or stranded	Altitude		m	Max. 2000
Flexible with ferrule to DIN 48228	Terminal capacity screw terminals		mm^2	
Solid or stranded Specified tightening torque for terminal screws Main cable Control circuit cables Main cubse Main conducting paths Sated impulse withstand voltage Overvoltage category/pollution degree Rated operational voltage Rated perational voltage Poperations A to 8 Do 90 A (vivith PKE-XTU(A)-1,2) Do 90 A (vivith PKE-XTU(A	Solid		mm ²	
Specified tightening torque for terminal screws Main cable Control circuit cables Main conducting paths Tated impulse withstand voltage Overvoltage category/pollution degree Rated operational voltage Rated operational voltage Rated uninterrupted current = rated operational current Rated impulse since transparent programment in the programment of the	Flexible with ferrule to DIN 46228		mm ²	
Main cable Control circuit cables Main conducting paths Rated inpulse withstand voltage Overvoltage category/pollution degree Rated operational voltage Rated operational current Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Max. operating frequency Other technical data (sheet catalogue) Motor switching capacity School	Solid or stranded		AWG	14 - 10
Control circuit cables Name 1 Main conducting paths VAC 6000 Rated impulse withstand voltage Ump VAC 6000 Overvoltage category/pollution degree III/3 III/3 Rated operational voltage Ue VAC 690 Rated uninterrupted current = rated operational current I _u = I _e A 1.2 Rated frequency f HZ 40 - 60 Current hear loss (3 pole at operating temperature) W 0.4 (with PKE-XTU(A)-1.2) Lifespan, electrical (AC-3 at 400 V) W 0.9 (with PKE-XTU(A)-1.2) Lifespan, electrical (AC-3 at 400 V) V 0.05 Maximum operating frequency Ops./h 60 Max. operating frequency Ops./h 60 Other technical data (sheet catalogue) Xame Switching capacity Motor switching capacity Xame Xame AC-3 (up to 690 V) Xame Xame Temperature compensation Xame Xame Temperature compensation residual error for T > 40 °C Xame Xame	Specified tightening torque for terminal screws			
Main conducting paths Rated impulse withstand voltage Overvoltage category/pollution degree Rated operational voltage Rated operational voltage Rated uninterrupted current = rated operational current I U E V AC 990 Rated frequency I U E V AC 12 Rated frequency I Hz 2 40 - 60 Current heat loss (3 pole at operating temperature) I Gerations (3 pole at operating temperature) I Lifespan, mechanical Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Max. operating frequency Max. operating frequency Motor switching capacity AC-3 (up to 690 V) Tamperature compensation Farmerature compensation Farmerature compensation Farmerature compensation residual error for T > 40 °C Setting range of overload releases AC-C icruit release Rated impulse withstand voltage Va C 6000 AC-C icruit release With thing capacity AC-C icruit release AC-C icruit release With the compensation residual error for T > 40 °C Setting range of overload releases AC-C icruit release AC-C	Main cable		Nm	1.7
Rated inpulse withstand voltage Overvoltage category/pollution degree Rated operational voltage Rated operational voltage Rated operational voltage Rated uninterrupted current = rated operational current Rated frequency Current heat loss (3 pole at operating temperature) Lifespan, mechanical Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Max. operating frequency Abort switching capacity Abort switching capacity AC-3 (up to 890 V) AC-3 (up to 890 V) Temperature compensation residual error for T > 40 °C Setting range of overload releases Ac-3 (up to 890 V) Ac-3 (up to 890 V) Ac-3 (up to 890 V) Ac-4 (up to 150 V) Ac-5 (voltable post of the Ac-4 (up to 150 V) A	Control circuit cables		Nm	1
Overvoltage category/pollution degree Rated operational voltage Rated operational voltage Rated uninterrupted current = rated operational current I Je 10	Main conducting paths			
Rated operational voltage Rated uninterrupted current = rated operational current Rated frequency Current heat loss (3 pole at operating temperature) Lifespan, mechanical Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical frequency Maximum operating frequency Maxo operating frequency Maxo operating frequency Motor switching capacity AC-3 (up to 690 V) Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release ### V AC ### V AC ### AC-3 (up to Kego V)	Rated impulse withstand voltage	U _{imp}	V AC	6000
Rated uninterrupted current = rated operational current Rated frequency f Hz 40-60 Current heat loss (3 pole at operating temperature) Lifespan, mechanical Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical Maximum operating frequency Max. operating frequency Other technical data (sheet catalogue) Motor switching capacity AC-3 (up to 690 V) Temperature compensation Temperature compensation Temperature compensation Temperature compensation Setting range of overload releases short-circuit release AC-3 (up to 690 V) Temperature compensation Temper	Overvoltage category/pollution degree			III/3
Rated frequency Current heat loss (3 pole at operating temperature) Lifespan, mechanical Operations x 10 ⁶ Operations x 10 ⁶ Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical Operations x 10 ⁶ Operations x 1	Rated operational voltage	U _e	V AC	690
Current heat loss (3 pole at operating temperature) Lifespan, mechanical Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical Maximum operating frequency Max. operating frequency Operations Max. operating frequency Operations Motor switching capacity AC-3 (up to 690 V) Temperature compensation Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release AC-3 (up to 690 V) Setting range of overload releases Short-circuit release AC-3 (up to 690 V) Setting range of overload releases Short-circuit release AC-3 (up to 690 V) Setting range of overload releases Short-circuit release AC-3 (up to 690 V) Setting range of overload releases Short-circuit release	Rated uninterrupted current = rated operational current	$I_u = I_e$	Α	1.2
Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical (AC-3 at 400 V) Maximum operating frequency Max. operating frequency Motor switching capacity AC-3 (up to 690 V) Temperature compensation Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release Lifespan, electrical (AC-3 at 400 V) A 10 Derations X 10 ⁶ Dops/h Ops/h Ops/h 60 Switching capacity AC-3 (up to 690 V) A 12 Setting range of overload releases Setting range of overload releases Short-circuit release AC-3 (up to 690 V) BAC-3 (up to 690 V) AC-3 (up to 690 V) AC-4 (to IEC/EN 60947, VDE 0660) -25 - 455 (operating range) -25 - 1x l _u AC-3 (up to 690 V) AC-4 (up to 690 V) -25 - 455 (operating range) -25 - 1x l _u AC-3 (up to 600 V) -25 - 1x l _u AC-3 (up to 600 V) -25 - 1x l _u AC-3 (up to 600 V) -25 - 1x l _u AC-3 (up to 600 V) -25 - 1x l _u AC-3 (up to 600 V) -25 - 1x l _u AC-3 (up to 600 V) -25 - 1x l _u AC-3 (up to 600 V) -25 - 1x l _u -25 -	Rated frequency	f	Hz	40 - 60
Lifespan, electrical (AC-3 at 400 V) Lifespan, electrical Operations x 10 ⁶ Ops./h Maximum operating frequency Max. operating frequency Other technical data (sheet catalogue) Motor switching capacity AC-3 (up to 690 V) Trip blocks Temperature compensation Temperature compensation Temperature compensation Setting range of overload releases short-circuit release Short-circuit release AC-3 (up to 690 V) Basic device, fixed: 15.5 x I _u trip block, fixed: 15.5 x I _u telayed approx. 60 ms	Current heat loss (3 pole at operating temperature)		W	0.4 (with PKE-XTU(A)-1,2)
Lifespan, electrical Maximum operating frequency Max. operating frequency Ops/h Op	Lifespan, mechanical	Operations	x 10 ⁶	0.05
Maximum operating frequency Max. operating frequency Ops/h Other technical data (sheet catalogue) Motor switching capacity AC-3 (up to 690 V) AC-3 (up to 690 V) Trip blocks Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release Max. operating frequency Ops/h 60 Switching capacity AA-7 Switching capacity A-12 Temperature to Max. operating frequency Setting range of overload releases Setting range of overload releases Setting range of overload releases AR-7 Setting range of overload releases AR-7 Setting range of overload releases	Lifespan, electrical (AC-3 at 400 V)			
Max. operating frequency Ops/h Other technical data (sheet catalogue) Motor switching capacity AC-3 (up to 690 V) AC-3 (up to 690 V) AC-3 (up to 690 V) Trip blocks Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases Setting range of overload releases Max. operating frequency Ops/h 60 Switching capacity AC-3 (up to 690 V) A 1.2 Trip blocks -5 - +40 (to IEC/EN 60947, VDE 0660) -25 - +55 (operating range) ±55 (Arbeitsbereich) O.25 - 1 x I _u Short-circuit release Basic device, fixed: 15.5 x I _v delayed approx. 60 ms	Lifespan, electrical	Operations	x 10 ⁶	0.05
Other technical data (sheet catalogue) Motor switching capacity AC-3 (up to 690 V) AC-3 (up to 690 V) Trip blocks Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release Switching capacity KA _{rms} Switching capacity KA _{rms} **C **C **C **C **C **C **C *	Maximum operating frequency		Ops./h	
Motor switching capacity AC-3 (up to 690 V) A 1.2 Trip blocks Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release Motor switching capacity A 1.2 **C	Max. operating frequency		Ops/h	60
AC-3 (up to 690 V) A 1.2 Trip blocks Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release AC-3 (up to 690 V) A 1.2 **C	Other technical data (sheet catalogue)			Switching capacity
Trip blocks Temperature compensation Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release Setting range of overload releases Setting range of over	Motor switching capacity		kA_{rms}	
Temperature compensation C			Α	1.2
Temperature compensation residual error for T > 40 °C Setting range of overload releases short-circuit release short-directive release short-d	Trip blocks			
Setting range of overload releases 0.25 - 1 x I _u short-circuit release Basic device, fixed: 15.5 x I _u Trip block, fixed: 15.5 x I _r delayed approx. 60 ms	Temperature compensation		°C	
short-circuit release Basic device, fixed: 15.5 x I _u Trip block, fixed: 15.5 x I _r delayed approx. 60 ms	Temperature compensation residual error for T $>$ 40 °C			±55 (Arbeitsbereich)
Trip block, fixed: 15.5 x I _r delayed approx. 60 ms	Setting range of overload releases			0.25 - 1 x I _u
Short-circuit release tolerance ± 20%	short-circuit release			Trip block, fixed: 15.5 x I _r
	Short-circuit release tolerance			± 20%

Design verification as per IEC/EN 61439

Phase-failure sensitivity

3			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	1.2
Heat dissipation per pole, current-dependent	P_{vid}	W	0.1
Equipment heat dissipation, current-dependent	P _{vid}	W	0.3
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
EC/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)

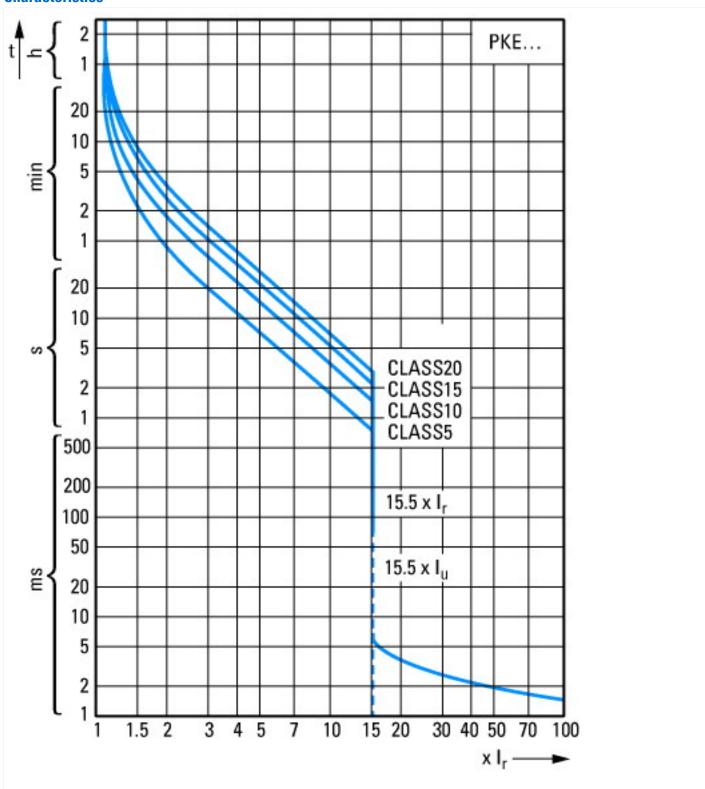
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss8.1-27-37-04-01 [AGZ529013])

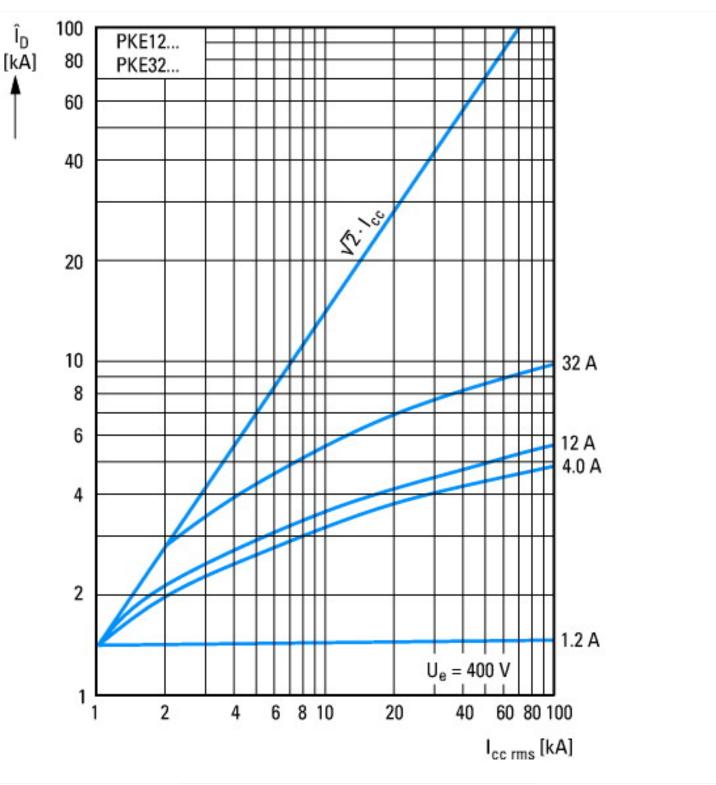
Overload release current setting	Α	0.3 - 1.2
Adjustment range undelayed short-circuit release	Α	18.6 - 18.6
Thermal protection		No
Phase failure sensitive		Yes
Switch off technique		Electronic
Rated operating voltage	V	690 - 690
Rated permanent current lu	А	1.2
Rated operation power at AC-3, 230 V	kW	0.12
Rated operation power at AC-3, 400 V	kW	0.25
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

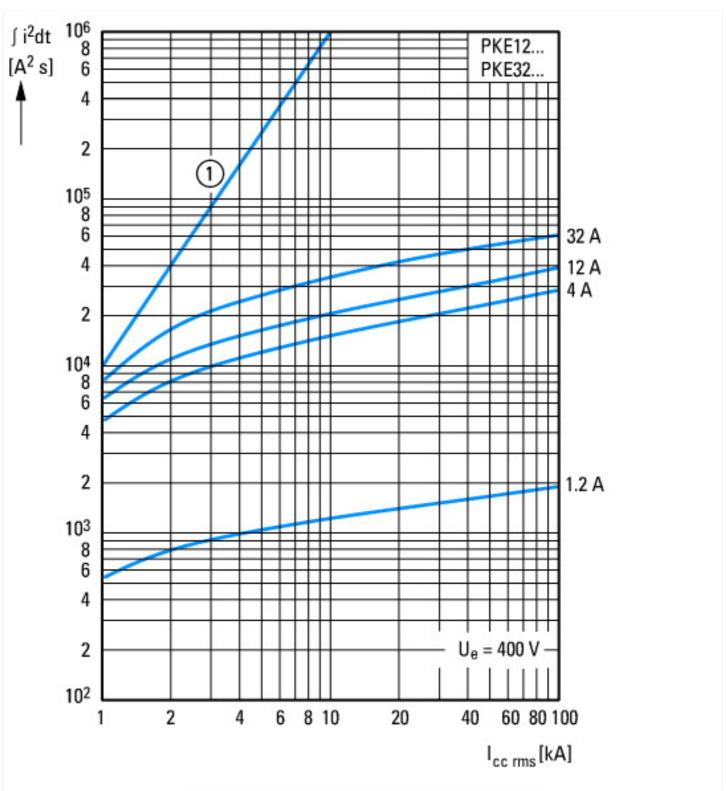
Approvals

• •	
Product Standards	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

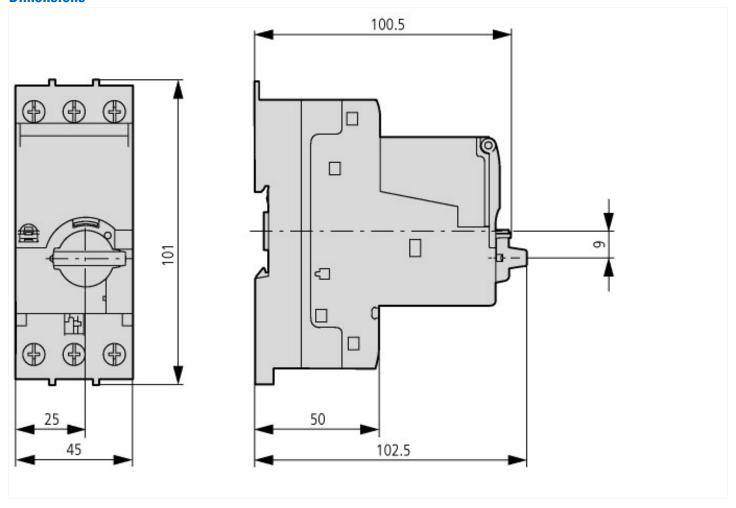
Characteristics







Dimensions



Additional product information (links)

IL03402019Z (AWA1210-2490) PKE moto	r-nrotactiva circuit-hraakar witl	h wide-ranne overload protection
1E034020132 (AVVA1210-2430) 1 KL 111010	1-biorective culcuit-pieavei mit	ii wide-range overioau protection

IL03402019Z (AWA1210-2490) PKE motorprotective 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

WINUS4020042 FRE12 and FRE52 motor-protecti	ive circuit-breakers, overload illollitoring of Ex e illotors
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	http://www.moeller.net/binary/ver_techpapers/ver960en.pdf