



121733
PKE12/XTU-12

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DELIVERY PROGRAM

Product range
PKE motor protective circuit-breakers with electronic wide-range overload protection up to 32 A

Basic function
Mtor protection
Mtor protection for heavy starting duty

Single unit/Complete unit
Complete device with standard knob



Notes
Also suitable for motors with efficiency class IE3.

Connection technique
Screw terminals

Setting range of overload releases  [I]

3 - 12 A

Function

With overload release

Rated uninterrupted current = rated operational current [$I_u = I_e$]

12 A

Motor rating [P]

AC-3

220 V 230 V 240 V [P]

3 kW

AC-3

380 V 400 V 415 V [P]

5.5 kW

AC-3

440 V [P]

5.5 kW

AC-3

500 V [P]

5.5 kW

AC-3

660 V 690 V [P]

7.5 kW

Motor output/rated motor current

Motor rating	Rated motor current				
	220 V	230 V	240 V	380 V	660 V
AC-3					
				400 V	440 V
				500 V	690 V
					660 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

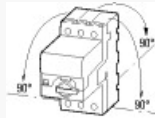
Ambient temperature
Storage
- 40 - 80 °C

Ambient temperature
Open
-25 - +55 °C

Ambient temperature

Enclosed
- 25 - 40 °C

Mounting position



Direction of incoming supply
as required

Degree of protection
Device
IP20

Degree of protection
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
25 g

Altitude
Max. 2000 m

Terminal capacity main cable
Screw terminals
Solid
1 x (1 - 6)
2 x (1 - 6) mm²

Terminal capacity main cable
Screw terminals
Flexible with ferrule to DIN 46228
1 x (1 - 6)
2 x (1 - 6) mm²

Terminal capacity main cable
Screw terminals
Solid or stranded
14 - 10 AWG

Terminal capacity main cable

Screw terminals
Stripping length
10 mm

Specified tightening torque for terminal screws
Main cable
1.7 Nm

Specified tightening torque for terminal screws
Control circuit cables
1 Nm

Main conducting paths

Rated impulse withstand voltage [U_{imp}]
6000 V AC

Overvoltage category/pollution degree
III/3

Rated operational voltage [U_e]
690 V AC

Rated uninterrupted current = rated operational
current [$I_u = I_e$]
12 A

Rated frequency [f]
40 - 60 Hz

Current heat loss (3 pole at operating temperature)
3.6 W

Lifespan, mechanical [Operations]
 0.05×10^6

Lifespan, electrical (AC-3 at 400 V)
Lifespan, electrical [Operations]
 0.05×10^6

Max. operating frequency
60 Ops/h

Mbtor switching capacity
AC-3 (up to 690V)
12 A

AC-4 cycle operation
Minimum current flow times
500 (Class 5)
700 (Class 10)
900 (Class 15)
1000 (Class 20) ms

AC-4 cycle operation
Minimum cut-out periods
500 ms

AC-4 cycle operation
Note
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. ms

Trip blocks

Temperature compensation
to IEC/EN 60947, VDE 0660
- 5...40 °C

Temperature compensation
Operating range
- 25...55 °C

Setting range of overload releases
0.25 - 1 x I_n

short-circuit release
Basic device, fixed: 15.5 x I_n
Trip block, fixed: 15.5 x I_n
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
3 HP

Switching capacity
Maximum motor rating
Three-phase
230 V
240 V
3 HP

Switching capacity
Maximum motor rating
Three-phase
460 V
480 V
7.5 HP

Switching capacity
Maximum motor rating
Three-phase
575 V
600 V
10 HP

Switching capacity
Maximum motor rating
Single-phase
115 V
120 V
1 HP

Switching capacity
Maximum motor rating
Single-phase
230 V
240 V
1.5 HP

Switching capacity
General use
12 A

Short Circuit Current Rating, group protection
600 V High Fault
SCCR (fuse)
100 kA

Short Circuit Current Rating, group protection

600 V High Fault
max. Fuse
100 Class J A

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat
dissipation [I_r]
12 A

Heat dissipation per pole, current-dependent [P_{id}]
1.2 W

Equipment heat dissipation, current-dependent
[P_{id}]
3.6 W

Static heat dissipation, non-current-dependent [P_{is}]
0 W

Heat dissipation capacity [P_{diss}]
0 W

Operating ambient temperature min.
-25 °C

Operating ambient temperature max.
+55 °C

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 Strength of materials and parts
10.2.3.1 Verification of thermal stability of
enclosures
Meets the product standard's requirements.

10.2 Strength of materials and parts
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10.2.3.2 Verification of resistance of insulating materials to normal heat
Meets the product standard's requirements.

10.2 Strength of materials and parts
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 Strength of materials and parts
10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.5 Lifting
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
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 Insulation properties
10.9.3 Impulse withstand voltage
Is the panel builder's responsibility.

10.9 Insulation properties
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) / Mtor protection circuit-breaker (EC000074)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Mtor protection circuit-breaker (ecl@ss10.0.1-27-37-04-01 [AGZ529016])

Overload release current setting
3 - 12 A

Adjustment range undelayed short-circuit release
186 - 186 A

With thermal protection
Yes

Phase failure sensitive
Yes

Switch off technique
Electronic

Rated operating voltage
690 - 690 V

Rated permanent current I_u
12 A

Rated operation power at AC-3, 230 V
3 kW

Rated operation power at AC-3, 400 V
5.5 kW

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 I_{cu} at 400 V,

AC
100 kA

Degree of protection (IP)
IP20

Height
102.5 mm

Width
45 mm

Depth
102.5 mm

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

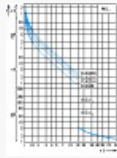
CSA Class No.
3211-05

North America Certification
UL listed, CSA certified

Specially designed for North America
No

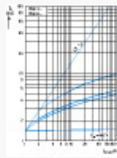
CHARACTERISTICS

Characteristic curve



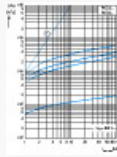
Tripping characteristics

Characteristic curve



Let-through current

Characteristic curve



- 1 half-cycle
Let-through energy

DIMENSIONS



