280924
P5-160/EA/SVB/N

DELIVERY PROGRAM

Delivery program

Technical data

Product range
Main switch
maintenance switch
Repair switch

Design verification as per IEC/EN 61439

Part group reference
P5

Technical data ETIM 7.0

Stop Function
Emergency switching off function

Approvals

With red rotary handle and yellow locking ring

Dimensions

Information about equipment supplied
auxiliary contact fitted by user.

Number of poles
3 pole + N

Auxiliary contacts

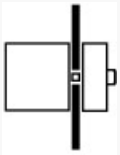
0 N/O

0 N/C

Locking facility
Lockable in the 0 (Off) position

Degree of Protection
Front IP65

Design
flush mounting



Contact sequence

Function

Motor rating AC-23A, 50 - 60 Hz [P]

400 V [P]
55 kW

Rated uninterrupted current [I_u]
160 A

Note on rated uninterrupted current I_u
Rated uninterrupted current I_u is specified for max. cross-section.

TECHNICAL DATA

General

Standards
IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL
Switch-disconnector according to IEC/EN 60947-3

Climatic proofing
Damp heat, constant, to IEC 60068-2-78
Damp heat, cyclic, to IEC 60068-2-30

Ambient temperature
Open
-25 - +50 °C

Ambient temperature
Enclosed
-25 - +40 °C

Overvoltage category/pollution degree
III/3

Rated impulse withstand voltage [U_{imp}]
8000 V AC

Mounting position
As required

Contacts

Mechanical variables
Number of poles
3 pole + N

Mechanical variables
Auxiliary contacts

0 N/O

Mechanical variables
Auxiliary contacts

0 N/C

Electrical characteristics
Rated operational voltage [U_e]

690 V AC

Electrical characteristics
Rated uninterrupted current [I_u]
160 A

Electrical characteristics
Note on rated uninterrupted current I_u
Rated uninterrupted current I_u is specified for max. cross-section.

Load rating with intermittent operation, class 12
AB 25 % DF
2 x I_e

Load rating with intermittent operation, class 12
AB 40 % DF
1.6 x I_e

Load rating with intermittent operation, class 12
AB 60 % DF
1.3 x I_e

Short-circuit rating
Fuse
160 A gG/gL

Rated short-time withstand current (1 s current) [I_{cw}]
3000 A_{rms}

Note on rated short-time withstand current Icw
Current for a time of 1 second

Rated conditional short-circuit current [I_q]
30 kA

Switching capacity

cos ϕ rated making capacity as per IEC 60947-3
1050 A

Rated breaking capacity cos ϕ to IEC 60947-3
230 V
900 A

Rated breaking capacity cos ϕ to IEC 60947-3
400/415 V
850 A

Rated breaking capacity cos ϕ to IEC 60947-3
500 V
850 A

Rated breaking capacity cos ϕ to IEC 60947-3
690 V
340 A

Safe isolation to EN 61140
between the contacts
440 V AC

Safe isolation to EN 61140
Current heat loss per contact at I_e
10 W

Lifespan, mechanical [Operations]
> 0.1 x 10^6

Maximum operating frequency [Operations/h]
50

AC
AC-3
Rating, motor load switch [P]
220 V 230 V [P]
30 kW

AC
AC-3
Rating, motor load switch [P]
400 V 415 V [P]
45 kW

AC
AC-3
Rating, motor load switch [P]
500 V [P]
55 kW

AC
AC-3
Rating, motor load switch [P]
690 V [P]
37 kW

AC
AC-3
Rated operational current motor load switch
230 V [I_e]
103 A

AC
AC-3
Rated operational current motor load switch
400V 415 V [I_e]
85 A

AC
AC-3
Rated operational current motor load switch
500 V [I_e]
80 A

AC
AC-3
Rated operational current motor load switch
690 V [I_e]
42 A

AC
AC-23A
Motor rating AC-23A, 50 - 60 Hz [P]
230 V [P]
30 kW

AC
AC-23A
Motor rating AC-23A, 50 - 60 Hz [P]
400 V 415 V [P]
55 kW

AC
AC-23A
Motor rating AC-23A, 50 - 60 Hz [P]
500 V [P]
75 kW

AC
AC-23A
Motor rating AC-23A, 50 - 60 Hz [P]
690 V [P]
37 kW

AC
AC-23A
Rated operational current motor load switch
230 V [I_e]

103 A

AC
AC-23A
Rated operational current motor load switch
400 V 415 V [I_e]
105 A

AC
AC-23A
Rated operational current motor load switch
500 V [I_e]
106 A

AC
AC-23A
Rated operational current motor load switch
690 V [I_e]
42 A

DC
DC-1, Load-break switches L/R = 1 ms
Rated operational current [I_e]
160 A

DC
DC-1, Load-break switches L/R = 1 ms
Voltage per contact pair in series
42 V

DC
DC-23A, motor load switch L/R = 15 ms
24 V
Rated operational current [I_e]
160 A

DC
DC-23A, motor load switch L/R = 15 ms
24 V
Contacts
3 Quantity

DC
DC-23A, motor load switch L/R = 15 ms
48 V
Rated operational current [I_e]
160 A

DC
DC-23A, motor load switch L/R = 15 ms
48 V
Contacts

3 Quantity

DC
DC-23A, motor load switch L/R = 15 ms
60 V
Rated operational current [I_e]
160 A

DC
DC-23A, motor load switch L/R = 15 ms
60 V
Contacts
3 Quantity

DC
DC-23A, motor load switch L/R = 15 ms
120 V
Rated operational current [I_e]
50 A

DC
DC-23A, motor load switch L/R = 15 ms
120 V
Contacts
3 Quantity

Control circuit reliability at 24 V DC, 10 mA [Fault probability]
< 10^{-5}, < 1 failure in 100,000 switching operations
H_F

Terminal capacities

Solid or stranded
1 x 95
2 x 35 mm^2

Flexible with ferrules to DIN 46228
1 x 70
2 x 25 mm^2

Copper strip [Number of segments x width x thickness]
1 x 13 x 3
2 x 13 x 1.5 mm

Terminal screw
Allen screw 5

Tightening torque for terminal screw
14 Nm

Technical safety parameters:

Notes
$B10_d$ values as per EN ISO 13849-1, table C1

Rating data for approved types

Contacts
Rated operational voltage [U_e]
600 V AC

Contacts
Rated uninterrupted current max.
Main conducting paths
General use
200 A

Contacts
Rated uninterrupted current max.
Auxiliary contacts
General Use [I_U]
10 A

Contacts
Rated uninterrupted current max.
Auxiliary contacts
Pilot Duty
A 600

Switching capacity
Maximum motor rating
Single-phase
120 V AC
10 HP

Switching capacity
Maximum motor rating
Single-phase
240 V AC
25 HP

Switching capacity
Maximum motor rating
Single-phase
277 V AC
25 HP

Switching capacity
Maximum motor rating
Three-phase
120 V AC
20 HP

Switching capacity
Maximum motor rating
Three-phase
240 V AC
40 HP

Switching capacity
Maximum motor rating
Three-phase
480 V AC
60 HP

Switching capacity
Maximum motor rating
Three-phase
600 V AC
60 HP

Short Circuit Current Rating
Basic Rating
10 kA

Short Circuit Current Rating
max. Fuse
400 Class RK1 A

Short Circuit Current Rating
High fault rating
65 kA

Short Circuit Current Rating
max. Fuse
300, Class J A

Terminal capacity
Solid or flexible conductor with ferrule
3/0 AWG

Terminal capacity
Flexible
2/0 AWG

Terminal capacity

Terminal screw
Allen screw 5

Terminal capacity
Tightening torque
125 lb-in

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n]
160 A

Heat dissipation per pole, current-dependent [P_{vid}]
5 W

Equipment heat dissipation, current-dependent [P_{vid}]
0 W

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

Heat dissipation capacity [P_{diss}]
0 W

Operating ambient temperature min.
-25 °C

Operating ambient temperature max.
+50 °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
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
UV resistance only in connection with protective shield.

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) / Switch disconnector (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])

Version as main switch
Yes

Version as maintenance-/service switch
Yes

Version as safety switch
No

Version as emergency stop installation
Yes

Version as reversing switch
No

Number of switches
1

Max. rated operation voltage Ue AC
690 V

Rated operating voltage
690 - 690 V

Rated permanent current Iu
160 A

Rated permanent current at AC-23, 400 V
105 A

Rated permanent current at AC-21, 400 V
160 A

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

Rated short-time withstand current Icw
3 kA

Rated operation power at AC-23, 400 V
55 kW

Switching power at 400 V

55 kW

Conditioned rated short-circuit current Iq
30 kA

Number of poles
4

Number of auxiliary contacts as normally closed contact
0

Number of auxiliary contacts as normally open contact
0

Number of auxiliary contacts as change-over contact
0

Motor drive optional
No

Motor drive integrated
No

Voltage release optional
No

Device construction
Built-in device fixed built-in technique

Suitable for ground mounting
No

Suitable for front mounting 4-hole
Yes

Suitable for front mounting centre
No

Suitable for distribution board installation
No

Suitable for intermediate mounting
No

Colour control element
Red

Type of control element
Door coupling rotary drive

Interlockable
Yes

Type of electrical connection of main circuit
Frame clamp

Degree of protection (IP), front side
IP65

Degree of protection (NEMA)
12

APPROVALS

Product Standards
UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94;
IEC/EN 60947-3; CE marking

UL File No.
E36332

UL Category Control No.
NLRV, NLRV7

CSA File No.
223805

CSA Class No.
3211-05

North America Certification
UL listed, CSA certified

Suitable for
Branch circuits, suitable as motor disconnect

Degree of Protection
IEC: IP65; UL/CSA Type 1, 12

DIMENSIONS

☐ Drilling dimensions door

☐ 3 padlocks