

Specifications



Eaton 280924

Eaton Moeller® series P5 Main switch, P5, 160 A, flush mounting, 3 pole + N, Emergency switching off function, With red rotary handle and yellow locking ring, Lockable in the 0 (Off) position

General specifications

PRODUCT NAME	Eaton Moeller® series P5 Main switch
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CATALOG NUMBER	280924
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MODEL CODE	P5-160/EA/SVB/N
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EAN	4015082809249
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PRODUCT LENGTH/DEPTH	150 mm
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PRODUCT HEIGHT	150 mm
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PRODUCT WIDTH	130 mm
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PRODUCT WEIGHT	1.444 kg
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CERTIFICATIONS	UL Category Control No.: NLRV, NLRV7 UL 508 CSA Class No.: 3211-05 CE CSA-C22.2 No. 14-05 IEC/EN 60947 VDE 0660 UL File No.: E36332 IEC/EN 60947-3 IEC/EN 60204 UL CSA CSA-C22.2 No. 94 CSA File No.: 223805
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CATALOG NOTES	Rated Short-time Withstand Current (Icw) for a time of 1 second
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Actuator

ACTUATOR COLOR	Red
ACTUATOR TYPE	Door coupling rotary drive

Contacts

CONTROL CIRCUIT RELIABILITY	1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10 mA)
NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0

Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MAX	50 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °C
CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30

Design verification

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.
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 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS	Meets the product standard's requirements.

10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION	UV resistance only in connection with protective shield.
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.
10.9.2 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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	5 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	5 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	160 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W

Electrical rating

**RATED BREAKING
CAPACITY AT 220/230 V** 900 A
(COS PHI TO IEC 60947-3)

**RATED BREAKING
CAPACITY AT 400/415 V** 850 A
(COS PHI TO IEC 60947-3)

**RATED BREAKING
CAPACITY AT 500 V (COS
PHI TO IEC 60947-3)** 850 A

**RATED BREAKING
CAPACITY AT 660/690 V** 340 A
(COS PHI TO IEC 60947-3)

**RATED OPERATIONAL
CURRENT (IE) AT AC-21,
440 V** 160 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
230 V** 103 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
400 V, 415 V** 105 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
500 V** 106 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
690 V** 42 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
220 V, 230 V, 240 V** 103 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
380 V, 400 V, 415 V** 85 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
500 V** 80 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
660 V, 690 V** 42 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1,
LOAD-BREAK SWITCHES
L/R = 1 MS** 160 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-23A,
120 V** 50 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-23A,
24 V** 160 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-23A,** 160 A

Features & functions

FEATURES

Version as main switch
Version as maintenance-
/service switch
Version as emergency stop
installation

FITTED WITH:

Red rotary handle and
yellow locking ring

FUNCTIONS

Interlockable
Emergency switching off
function

LOCKING FACILITY

Lockable in the 0 (Off)
position

NUMBER OF POLES

4

48 V	
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 60 V	160 A
RATED OPERATIONAL POWER AT AC-23A, 220/230 V, 50 HZ	30 kW
RATED OPERATIONAL POWER AT AC-23A, 400 V, 50 HZ	55 kW
RATED OPERATIONAL POWER AT AC-23A, 500 V, 50 HZ	75 kW
RATED OPERATIONAL POWER AT AC-23A, 690 V, 50 HZ	37 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	45 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	45 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	55 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	37 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V
RATED UNINTERRUPTED CURRENT (IU)	160 A
UNINTERRUPTED CURRENT	Rated uninterrupted current I _u is specified for max. cross-section.

General information

ACCESSORIES	Auxiliary contact fitted by user.
DEGREE OF PROTECTION	NEMA 12
DEGREE OF PROTECTION (FRONT SIDE)	IP65
LIFESPAN, MECHANICAL	100,000 Operations
MOUNTING METHOD	Flush mounting
MOUNTING POSITION	As required
OPERATING FREQUENCY	50 Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Main switch
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
SAFE ISOLATION	440 V AC, Between the contacts, According to EN 61140
SAFETY PARAMETER (EN ISO 13849-1)	B10d values as per EN ISO 13849-1, table C.1
SUITABLE FOR	Front mounting 4-hole Branch circuits, suitable as motor disconnect, (UL/CSA)

Short-circuit rating

RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)	30 kA
RATED SHORT-TIME WITHSTAND CURRENT (ICW)	3 kA 3 kA, Contacts, 1 second
SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	400A Class RK1, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT)	300 A, Class J, max. Fuse, SCCR (UL/CSA) 65 kA, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING	160 A gG/gL, Fuse, Contacts

Motor rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE 10 HP

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 3-PHASE 20 HP

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE 25 HP

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE 40 HP

ASSIGNED MOTOR POWER AT 277 V, 60 HZ, 1-PHASE 25 HP

ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE 60 HP

ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE 60 HP

Switching capacity

LOAD RATING 1.3 x I_e (with intermittent operation class 12, 60 % duty factor)
1.6 x I_e (with intermittent operation class 12, 40 % duty factor)
2 x I_e (with intermittent operation class 12, 25 % duty factor)

NUMBER OF CONTACTS IN SERIES AT DC-23A, 120 V 3

NUMBER OF CONTACTS IN SERIES AT DC-23A, 24 V 3

NUMBER OF CONTACTS IN SERIES AT DC-23A, 48 V 3

NUMBER OF CONTACTS IN SERIES AT DC-23A, 60 V 3

RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN) 1050 A

Terminal capacities

SCREW SIZE

5 mm AF, Hexagon socket-head spanner, Terminal screw

TERMINAL CAPACITY

1 x 13 x 3 mm Number of segments x width x thickness, copper strip
2/0 AWG, flexible
2 x 13 x 1.5 mm Number of segments x width x thickness, copper strip
1 x 95 mm², solid or stranded
1 x 70 mm², flexible with ferrules to DIN 46228
3/0 AWG, solid or flexible conductor with ferrule
2 x 25 mm², flexible with ferrules to DIN 46228
2 x 35 mm², solid or stranded

TIGHTENING TORQUE

14 Nm, Screw terminals
125 lb-in, Screw terminals

60947-3)

SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)

10A, IU, (UL/CSA)

SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)

A600 (UL/CSA)

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)

200 A, Rated
uninterrupted current
max. (UL/CSA)

VOLTAGE PER CONTACT PAIR IN SERIES

42 V

Resources

BROCHURES

[Brochure - T Rotary Cam switch and P Switch-disconnector](#)

CATALOGUES

[P Switch-disconnectors and T Rotary cam switches catalogue CA042001EN](#)

DECLARATIONS OF CONFORMITY

[eaton-main-switch-declaration-of-conformity-uk251299en.pdf](#)

[eaton-main-switch-declaration-of-conformity-eu250816en.pdf](#)

DRAWINGS

[eaton-rotary-switches-padlock-t0-main-switch-dimensions.eps](#)

[eaton-rotary-switches-mounting-p5-main-switch-dimensions-003.eps](#)

[eaton-rotary-switches-t0-main-switch-symbol.eps](#)

[eaton-rotary-switches-mounting-p1-main-switch-3d-drawing.eps](#)

[eaton-general-mounting-p1-main-switch-symbol.eps](#)

ECAD MODEL

[ETN.280924.edz](#)

INSTALLATION INSTRUCTIONS

[IL03802010Z](#)

INSTALLATION VIDEOS

[Eaton's P Switch-disconnectors used in a factory](#)

MCAD MODEL

[eaton-enclosed-rotary-disconnects-mcad-drawings-p5-125-160-ea-svb-n.dwg](#)

	eaton-erd-mcad-drawings-p5-125-160-ea-svb-n.dwg
	eaton-erd-mcad-3d-models-p5-125-160-ea-svb-n.stp
WIRING DIAGRAMS	eaton-rotary-switches-p5-main-switch-wiring-diagram-002.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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