

Specifications



Photo is representative

Eaton 280928

Eaton Moeller® series P5 Main switch, P5, 160 A, rear mounting, 3 pole, 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
CATALOG NUMBER	280928
MODEL CODE	P5-160/V/SVB
EAN	4015082809287
PRODUCT LENGTH/DEPTH	115 mm
PRODUCT HEIGHT	150 mm
PRODUCT WIDTH	130 mm
PRODUCT WEIGHT	1.343 kg
CERTIFICATIONS	CSA CSA File No.: 223805 UL Category Control No.: NLRV, NLRV7 CSA-C22.2 No. 94 CE IEC/EN 60947-3 IEC/EN 60204 UL File No.: E36332 IEC/EN 60947 UL 508 CSA Class No.: 3211-05 CSA-C22.2 No. 14-05 UL VDE 0660
CATALOG NOTES	Rated Short-time Withstand Current (Icw) for a time of 1 second

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
(COS PHI TO IEC 60947-3)** 900 A

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

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

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

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

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

3

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 or neutral conductor fitted by user.
DEGREE OF PROTECTION	NEMA 12
DEGREE OF PROTECTION (FRONT SIDE)	IP65
LIFESPAN, MECHANICAL	100,000 Operations
MOUNTING METHOD	Rear 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	Intermediate mounting 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, Contacts, 1 second 3 kA
SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	10 kA, SCCR (UL/CSA) 400A Class RK1, max. Fuse, 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 2 x I_e (with intermittent operation class 12, 25 % duty factor)
1.6 x I_e (with intermittent operation class 12, 40 % duty factor)
1.3 x I_e (with intermittent operation class 12, 60 % 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 1050 A

(COS PHI TO IEC/EN
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

Terminal capacities

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

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

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

Resources

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

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

**DECLARATIONS OF
CONFORMITY** [eaton-main-switch-
declaration-of-conformity-
eu250816en.pdf](#)

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

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

[eaton-rotary-switches-
mounting-p5-main-switch-
dimensions-004.eps](#)

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

[eaton-rotary-switches-
mounting-p1-main-switch-
3d-drawing-002.eps](#)

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

ECAD MODEL [ETN.280928.edz](#)

**INSTALLATION
INSTRUCTIONS** [IL03802011Z2021_10.pdf](#)

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

MCAD MODEL [eaton-erd-mcad-drawings-
p5-125-160-v-svb.dwg](#)

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

[eaton-enclosed-rotary-disconnects-mcad-3d-models-p5-125-160-v-svb.stp](#)

[eaton-erd-mcad-3d-models-p5-125-160-v-svb.stp](#)

WIRING DIAGRAMS

[eaton-rotary-switches-p5-main-switch-wiring-diagram.eps](#)

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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