

Specifications



Photo is representative

Eaton 280931

Eaton Moeller® series P5 Main switch, P5, 160 A, rear mounting, 3 pole, STOP function, With black rotary handle and locking ring, Lockable in the 0 (Off) position

General specifications

PRODUCT NAME	Eaton Moeller® series P5 Main switch
CATALOG NUMBER	280931
EAN	4015082809317
PRODUCT LENGTH/DEPTH	115 mm
PRODUCT HEIGHT	150 mm
PRODUCT WIDTH	130 mm
PRODUCT WEIGHT	1.353 kg
COMPLIANCES	CE Marked EN 60947-3 CSA Std. C22.2 No. 14-05 IEC 60947 UL 508 VDE CSA-C22.2 No. 94 IEC/EN 60947-3 UL Category Control No.: NLRV, NLRV7
CERTIFICATIONS	CE IEC/EN 60947 CSA Class No.: 3211-05 VDE 0660 CSA CSA File No.: 223805 CSA-C22.2 No. 14-05 IEC/EN 60204 UL UL File No.: E36332
CATALOG NOTES	Rated Short-time Withstand Current (Icw) for a time of 1 second
MODEL CODE	P5-160/V/SVB-SW

Features & Functions

FEATURES	Version as maintenance- /service switch Version as main switch
FITTED WITH:	Black rotary handle and locking ring
FUNCTIONS	Interlockable STOP function
LOCKING FACILITY	Lockable in the 0 (Off) position
NUMBER OF POLES	3

Climatic environmental conditions

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

General

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	Branch circuits, suitable as motor disconnect, (UL/CSA) Intermediate mounting

Terminal capacities

TERMINAL CAPACITY	2 x 35 mm ² , solid or stranded 1 x 95 mm ² , solid or stranded 2/0 AWG, flexible 2 x 13 x 1.5 mm Number of segments x width x thickness, copper strip 2 x 25 mm ² , flexible with ferrules to DIN 46228 3/0 AWG, solid or flexible conductor with ferrule 1 x 70 mm ² , flexible with ferrules to DIN 46228 1 x 13 x 3 mm Number of segments x width x thickness, copper strip
SCREW SIZE	5 mm AF, Hexagon socket- head spanner, Terminal

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

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-3,** 103 A
220 V, 230 V, 240 V

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

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

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

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

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

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

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

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

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

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

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

Short-circuit rating

**RATED CONDITIONAL
SHORT-CIRCUIT CURRENT** 30 kA
(IQ)

**RATED SHORT-TIME
WITHSTAND CURRENT** 3 kA, Contacts, 1 second
(ICW) 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

RATED OPERATIONAL CURRENT (IE) AT DC-23A, 60 V	160 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 120 V	50 A
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, 690 V, 50 HZ	37 kW
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 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.

Switching capacity

LOAD RATING	2 x I _e (with intermittent operation class 12, 25 % duty factor)
	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)

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

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

3

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)

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

SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)

10A, IU, (UL/CSA)

SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)

A600 (UL/CSA)

RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947-3)

1050 A

VOLTAGE PER CONTACT PAIR IN SERIES

42 V

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

Contacts

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

ACTUATOR COLOR	Black
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ACTUATOR TYPE	Door coupling rotary drive
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Design verification

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
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.

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	DA-DC-00004930.pdf DA-DC-00004899.pdf
DRAWINGS	eaton-rotary-switches-mounting-p5-main-switch-dimensions-004.eps eaton-rotary-switches-padlock-t0-main-switch-dimensions.eps 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.280931.edz
INSTALLATION INSTRUCTIONS	IL03802011Z2021_10.pdf
INSTALLATION VIDEOS	Eaton's P Switch-disconnectors used in a factory
MCAD MODEL	p5_160_v_svb_sw p5_160_v_svb_sw.stp
WIRING DIAGRAMS	eaton-rotary-switches-p5-main-switch-wiring-diagram.eps

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.
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.

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

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