

Specifications



Photo is representative



Eaton 172877

Eaton Moeller® series P1 Main switch, P1, 25 A, rear mounting, 3 pole + N, Emergency switching off function, Lockable in the 0 (Off) position, With metal shaft for a control panel depth of 400 mm P1-25/M4/SVB/N

General specifications

PRODUCT NAME	Eaton Moeller® series P1 Main switch
CATALOG NUMBER	172877
MODEL CODE	P1-25/M4/SVB/N
EAN	4015081694563
PRODUCT LENGTH/DEPTH	340 mm
PRODUCT HEIGHT	70 mm
PRODUCT WIDTH	72 mm
PRODUCT WEIGHT	0.34 kg
CERTIFICATIONS	CSA Class No.: 3211-05 UL 60947-4-1 UL Category Control No.: NLRV IEC/EN 60204 UL VDE 0660 UL File No.: E36332 CE CSA-C22.2 No. 94 IEC/EN 60947 CSA-C22.2 No. 60947-4-1-14 CSA File No.: 012528 CSA IEC/EN 60947-3
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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

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	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	1.1 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	25 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W

Electrical rating

**RATED BREAKING
CAPACITY AT 220/230 V** 190 A
(COS PHI TO IEC 60947-3)

**RATED BREAKING
CAPACITY AT 400/415 V** 150 A
(COS PHI TO IEC 60947-3)

**RATED BREAKING
CAPACITY AT 500 V (COS
PHI TO IEC 60947-3)** 170 A

**RATED BREAKING
CAPACITY AT 660/690 V** 150 A
(COS PHI TO IEC 60947-3)

**RATED OPERATIONAL
CURRENT (IE) AT AC-21,
440 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
230 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
400 V, 415 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
500 V** 17.4 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-23A,
690 V** 12.6 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
220 V, 230 V, 240 V** 19.6 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
380 V, 400 V, 415 V** 15.2 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
500 V** 12.1 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
660 V, 690 V** 8.8 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1,
LOAD-BREAK SWITCHES
L/R = 1 MS** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-23A,
120 V** 12 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-23A,
24 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-23A,** 25 A

Features & functions

FEATURES

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

FITTED WITH:

Metal shaft for a control
panel depth of 400 mm
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	25 A
RATED OPERATIONAL POWER AT AC-23A, 220/230 V, 50 HZ	5.5 kW
RATED OPERATIONAL POWER AT AC-23A, 400 V, 50 HZ	13 kW
RATED OPERATIONAL POWER AT AC-23A, 500 V, 50 HZ	11 kW
RATED OPERATIONAL POWER AT AC-23A, 690 V, 50 HZ	11 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	7.5 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	7.5 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	7.5 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	7.5 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V
RATED UNINTERRUPTED CURRENT (IU)	25 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	300,000 Operations
MOUNTING METHOD	Rear mounting
MOUNTING POSITION	As required
OPERATING FREQUENCY	1200 Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Main switch
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	6000 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
SHOCK RESISTANCE	15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms
SUITABLE FOR	Ground mounting Intermediate mounting Branch circuits, suitable as motor disconnect, (UL/CSA)

Short-circuit rating

RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)	80 kA
RATED SHORT-TIME WITHSTAND CURRENT (ICW)	0.64 kA 640 A, Contacts, 1 second
SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	5 kA, SCCR (UL/CSA) 110A, max. Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT)	10 kA, SCCR (UL/CSA) 50 A, Class J, max. Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING	25 A gG/gL, Fuse, Contacts

Motor rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	1 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 1-PHASE	2 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	3 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	3 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	5 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	10 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	15 HP

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, 120 V	3
NUMBER OF CONTACTS IN SERIES AT DC-23A, 24 V	1
NUMBER OF CONTACTS IN SERIES AT DC-23A, 48 V	2

NUMBER OF CONTACTS IN SERIES AT DC-23A, 60 V	2
RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947-3)	240 A
SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	10A, IU, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	P600 (UL/CSA) A600 (UL/CSA)
SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	20 A, Rated uninterrupted current max. (UL/CSA)
VOLTAGE PER CONTACT PAIR IN SERIES	60 V

Terminal capacities

SCREW SIZE	M4, Terminal screw
TERMINAL CAPACITY	2 x (1 - 4) mm ² , flexible with ferrules to DIN 46228 2 x (1.5 - 6) mm ² , solid or stranded 1 x (1.5 - 6) mm ² , solid or stranded 1 x (1 - 4) mm ² , flexible with ferrules to DIN 46228 14 - 8 AWG, solid or flexible with ferrule
TIGHTENING TORQUE	1.6 Nm, Screw terminals 14.1 lb-in, Screw terminals

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-uk251290en.pdf eaton-main-switch-declaration-of-conformity-eu250807en.pdf
DRAWINGS	eaton-rotary-switches-p1-main-switch-dimensions-006.eps eaton-rotary-switches-padlock-t0-main-switch-dimensions.eps eaton-rotary-switches-mounting-p1-main-switch-3d-drawing-002.eps

	eaton-general-mounting-p1-main-switch-symbol-002.eps eaton-rotary-switches-t0-main-switch-symbol.eps
ECAD MODEL	DA-CE-ETN.P1-25 M4 SVB N
INSTALLATION INSTRUCTIONS	eaton-switch-disconnector-p1-metal-shaft-il008007zu.pdf
INSTALLATION VIDEOS	Eaton's P Switch-disconnectors used in a factory
MCAD MODEL	eaton-enclosed-rotary-disconnects-mcad-drawings-p1-zz31.dwg eaton-erd-mcad-drawings-p1-m4-svb-n.dwg eaton-erd-mcad-3d-models-p1-m4-svb-n.stp
PRODUCT NOTIFICATIONS	MZ008006ZU_Orderform_Customized_Switch.pdf MZ008005ZU_Orderform_Customized_Switch.pdf
WIRING DIAGRAMS	eaton-rotary-switches-on-off-switch-p3-main-switch-wiring-diagram-002.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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