

DATASHEET - P3-100/XM



Main switch, P3, 100 A, rear mounting, 3 pole

**Part no. P3-100/XM
172837**

| General specifications | |
|--|---|
| Product name | Eaton Moeller® series P3 Main switch |
| Part no. | P3-100/XM |
| EAN | 4015081694204 |
| Product Length/Depth | 82 millimetre |
| Product height | 84 millimetre |
| Product width | 72 millimetre |
| Product weight | 0.29 kilogram |
| Certifications | CSA-C22.2 No. 94 VDE 0660 CSA IEC/EN 60204 UL UL File No.: E36332 UL 60947-4-1 CSA File No.: 012528 IEC/EN 60947-3 CSA Class No.: 3211-05 CSA-C22.2 No. 60947-4-1-14 CE UL Category Control No.: NLRV IEC/EN 60947 |
| Product Tradename | P3 |
| Product Type | Main switch |
| Product Sub Type | None |
| Catalog Notes | Rated Short-time Withstand Current (Icw) for a time of 1 second |
| Features & Functions | |
| Features | Version as main switch |
| Number of poles | 3 |
| General information | |
| Accessories | Auxiliary contact or neutral conductor fitted by user. |
| Degree of protection | NEMA 1 |
| Degree of protection (front side) | IP65 |
| Lifespan, mechanical | 100,000 Operations |
| Mounting method | Rear mounting |
| Mounting position | As required |
| Operating frequency | 1200 Operations/h |
| Overvoltage category | III |
| Pollution degree | 3 |
| 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 | Branch circuits, suitable as motor disconnect, (UL/CSA) Ground mounting Intermediate mounting |
| 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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78 |
| Terminal capacities | |
| Terminal capacity | 14 - 2 AWG, solid or flexible with ferrule |

| | | |
|--|--|---|
| | | 1 x (2.5 - 35) mm ² , solid or stranded 2 x (1.5 - 6) mm ² , flexible with ferrules to DIN 46228 1 x (1.5 - 25) mm ² , flexible with ferrules to DIN 46228 2 x (2.5 - 10) mm ² , solid or stranded |
| Screw size | | M5, Terminal screw |
| Tightening torque | | 3 Nm, Screw terminals 26.5 lb-in, Screw terminals |
| Electrical rating | | |
| Rated breaking capacity at 220/230 V (cos phi to IEC 60947-3) | | 760 A |
| Rated breaking capacity at 400/415 V (cos phi to IEC 60947-3) | | 740 A |
| Rated breaking capacity at 500 V (cos phi to IEC 60947-3) | | 880 A |
| Rated breaking capacity at 660/690 V (cos phi to IEC 60947-3) | | 520 A |
| Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V | | 71 A |
| Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V | | 71 A |
| Rated operational current (Ie) at AC-3, 500 V | | 65 A |
| Rated operational current (Ie) at AC-3, 660 V, 690 V | | 23.8 A |
| Rated operational current (Ie) at AC-21, 440 V | | 100 A |
| Rated operational current (Ie) at AC-23A, 230 V | | 100 A |
| Rated operational current (Ie) at AC-23A, 400 V, 415 V | | 100 A |
| Rated operational current (Ie) at AC-23A, 500 V | | 96 A |
| Rated operational current (Ie) at AC-23A, 690 V | | 68 A |
| Rated operational current (Ie) at DC-1, load-break switches I/r = 1 ms | | 100 A |
| Rated operational current (Ie) at DC-23A, 24 V | | 50 A |
| Rated operational current (Ie) at DC-23A, 48 V | | 50 A |
| Rated operational current (Ie) at DC-23A, 60 V | | 50 A |
| Rated operational current (Ie) at DC-23A, 120 V | | 25 A |
| Rated operational power at AC-3, 380/400 V, 50 Hz | | 37 kW |
| Rated operational power at AC-3, 415 V, 50 Hz | | 37 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 | | 55 kW |
| Rated operational power at AC-23A, 690 V, 50 Hz | | 55 kW |
| Rated operational voltage (Ue) at AC - max | | 690 V |
| Rated uninterrupted current (Iu) | | 100 A |
| Uninterrupted current | | Rated uninterrupted current Iu is specified for max. cross-section. |
| Short-circuit rating | | |
| Rated conditional short-circuit current (Iq) | | 80 kA (Supply side) 4 kA (Load side) |
| Rated short-time withstand current (Icw) | | 2 kA |
| Short-circuit current rating (basic rating) | | 10 kA, SCCR (UL/CSA) 150A, max. Fuse, SCCR (UL/CSA) |
| Short-circuit protection rating | | 100 A gG/gL, Fuse, Contacts |
| Switching capacity | | |
| Load rating | | 1.6 x I# (with intermittent operation class 12, 40 % duty factor) 1.3 x I# (with intermittent operation class 12, 60 % duty factor) 2 x I# (with intermittent operation class 12, 25 % duty factor) |
| 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 |
| Number of contacts in series at DC-23A, 120 V | | 3 |
| Switching capacity (main contacts, general use) | | 100 A, If used with neutral conductor IU = max. 90 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) P600 (UL/CSA) |
| Rated making capacity up to 690 V (cos phi to IEC/EN 60947-3) | | 950 A |
| Voltage per contact pair in series | | 60 V |
| Motor rating | | |

| | | |
|---|--|-------|
| Assigned motor power at 115/120 V, 60 Hz, 1-phase | | 5 HP |
| Assigned motor power at 200/208 V, 60 Hz, 1-phase | | 10 HP |
| Assigned motor power at 200/208 V, 60 Hz, 3-phase | | 20 HP |
| Assigned motor power at 230/240 V, 60 Hz, 1-phase | | 15 HP |
| Assigned motor power at 230/240 V, 60 Hz, 3-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 | | 75 HP |

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 |

Actuator

| | | |
|----------------|--|-------|
| Actuator color | | Other |
| Actuator type | | Other |

Design verification

| | | |
|--|--|--|
| Equipment heat dissipation, current-dependent P _{vid} | | 0 W |
| Heat dissipation capacity P _{diss} | | 0 W |
| Heat dissipation per pole, current-dependent P _{vid} | | 7.5 W |
| Rated operational current for specified heat dissipation (I _n) | | 100 A |
| Static heat dissipation, non-current-dependent P _{vs} | | 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. |
| 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. |

Technical data ETIM 9.0

| | | |
|---|--|-----|
| Low-voltage industrial components (EG000017) / Switch disconnecter (low voltage) (EC000216) | | |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ecl@ss13-27-37-14-03 [AKF060018]) | | |
| Version as main switch | | Yes |
| Version as maintenance-/service switch | | No |
| Version as safety switch | | No |
| Version as emergency stop installation | | No |
| Version as reversing switch | | No |

| | | |
|---|----|--|
| Number of switches | | 1 |
| Max. rated operation voltage Ue AC | V | 690 |
| Rated operating voltage | V | 690 - 690 |
| Rated permanent current Iu | A | 100 |
| Rated permanent current at AC-23, 400 V | A | 100 |
| Rated permanent current at AC-21, 400 V | A | 100 |
| Rated operation power at AC-3, 400 V | kW | 37 |
| Rated short-time withstand current Icw | kA | 2 |
| Rated operation power at AC-23, 400 V | kW | 55 |
| Switching power at 400 V | kW | 55 |
| Conditioned rated short-circuit current Iq | kA | 80 |
| Number of poles | | 3 |
| 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 floor mounting | | Yes |
| Suitable for front mounting 4-hole | | No |
| Suitable for front mounting centre | | No |
| Suitable for distribution board installation | | No |
| Suitable for intermediate mounting | | Yes |
| Colour control element | | Other |
| Type of control element | | Other |
| Interlockable | | No |
| Type of electrical connection of main circuit | | Screw connection |
| With pre-assembled cabling | | No |
| Degree of protection (IP), front side | | IP65 |
| Degree of protection (NEMA) | | 1 |
| Width | mm | 72 |
| Height | mm | 84 |
| Depth | mm | 82 |
| Width in number of modular spacings | | |