

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

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

| <b>General specifications</b>                  |   |
|--|---|
| 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                                 | IEC/EN 60947<br>UL Category Control No.: NLRV<br>CE<br>CSA-C22.2 No. 60947-4-1-14<br>CSA Class No.: 3211-05<br>IEC/EN 60947-3<br>CSA File No.: 012528<br>UL 60947-4-1<br>UL File No.: E36332<br>UL<br>IEC/EN 60204<br>CSA<br>VDE 0660<br>CSA-C22.2 No. 94 |
| 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   |
| <b>Features &amp; Functions</b>                |   |
| Features                                       | Version as main switch  |
| Number of poles                                | 3   |
| <b>General information</b>                     |   |
| 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                                   | Intermediate mounting<br>Ground mounting<br>Branch circuits, suitable as motor disconnect, (UL/CSA)   |
| <b>Climatic environmental conditions</b>       |   |
| 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<br>Damp heat, cyclic, to IEC 60068-2-30  |
| <b>Terminal capacities</b>                     |   |
| Terminal capacity                              | 2 x (2.5 - 10) mm <sup>2</sup> , solid or stranded  |

|  |  |   |
|--|--|---|
|  |  | 1 x (1.5 - 25) mm <sup>2</sup> , flexible with ferrules to DIN 46228<br>2 x (1.5 - 6) mm <sup>2</sup> , flexible with ferrules to DIN 46228<br>1 x (2.5 - 35) mm <sup>2</sup> , solid or stranded<br>14 - 2 AWG, solid or flexible with ferrule |
| Screw size   |  | M5, Terminal screw  |
| Tightening torque  |  | 26.5 lb-in, Screw terminals<br>3 Nm, Screw terminals  |
| <b>Electrical rating</b>   |  |   |
| 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.   |
| <b>Short-circuit rating</b>  |  |   |
| Rated conditional short-circuit current (Iq)                           |  | 4 kA (Load side)<br>80 kA (Supply side)   |
| Rated short-time withstand current (Icw)                               |  | 2 kA  |
| Short-circuit current rating (basic rating)                            |  | 150A, max. Fuse, SCCR (UL/CSA)<br>10 kA, SCCR (UL/CSA)  |
| Short-circuit protection rating  |  | 100 A gG/gL, Fuse, Contacts   |
| <b>Switching capacity</b>  |  |   |
| Load rating  |  | 2 x I# (with intermittent operation class 12, 25 % duty factor)<br>1.3 x I# (with intermittent operation class 12, 60 % duty factor)<br>1.6 x I# (with intermittent operation class 12, 40 % 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)                    |  | P600 (UL/CSA)<br>A600 (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  |
| <b>Motor rating</b>  |  |   |

|   |  |       |
|---|--|-------|
| 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 <sub>vid</sub>                   |  | 0 W  |
| Heat dissipation capacity P <sub>diss</sub>                                      |  | 0 W  |
| Heat dissipation per pole, current-dependent P <sub>vid</sub>                    |  | 7.5 W  |
| Rated operational current for specified heat dissipation (I <sub>n</sub> )       |  | 100 A  |
| Static heat dissipation, non-current-dependent P <sub>vs</sub>                   |  | 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 8.0

|   |  |     |
|---|--|-----|
| Low-voltage industrial components (EG000017) / Switch disconnecter (EC000216)   |  |     |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ecl@ss10.0.1-27-37-14-03 [AKF060013]) |  |     |
| 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                         |
| Degree of protection (IP), front side                   |    | IP65                                     |
| Degree of protection (NEMA)                             |    | 1  |