## DATASHEET - P3-100/E/N

On-Off switch, P3, 100 A, flush mounting, 3 pole + N, with black thumb grip and front plate



| Part no.  | P3-100/E/N |
|-----------|------------|
|           | 031759     |
| EL Number | 1456134    |
| (Norway)  |            |

## **General specifications**

| General specifications                         |   |
|--|---|
| Product name                                   | Eaton Moeller® series P3 On-Off switch  |
| Part no.                                       | P3-100/E/N  |
| EAN  | 4015080317593   |
| Product Length/Depth                           | 100 millimetre  |
| Product height                                 | 90 millimetre   |
| Product width                                  | 90 millimetre   |
| Product weight                                 | 0.4 kilogram  |
| Certifications                                 | UL Category Control No.: NLRV<br>IEC/EN 60947-3<br>CSA-C22.2 No. 94<br>IEC/EN 60204<br>IEC/EN 60947<br>CE<br>CSA<br>VDE 0660<br>UL File No.: E36332<br>CSA Class No.: 3211-05<br>UL 60947-4-1<br>UL<br>CSA File No.: 012528<br>CSA-C22.2 No. 60947-4-1-14 |
| Product Tradename                              | P3  |
| Product Type                                   | On-Off switch   |
| Product Sub Type                               | None  |
| Catalog Notes                                  | Rated Short-time Withstand Current (Icw) for a time of 1 second   |
| Features & Functions                           |   |
| Fitted with:                                   | Black thumb grip and front plate  |
| Number of poles                                | 4   |
| General information                            |   |
| Accessories                                    | Auxiliary contact fitted by user.   |
| Degree of protection                           | NEMA 12   |
| Degree of protection (front side)              | IP65  |
| Lifespan, mechanical                           | 100,000 Operations  |
| Mounting method                                | Flush mounting  |
| Mounting position                              | As required   |
| Operating frequency                            | 1200 Operations/h   |
| Overvoltage category                           | III 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                                   | Front mounting 4-hole<br>Branch circuits, suitable as motor disconnect, (UL/CSA)  |
| 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<br>Damp heat, cyclic, to IEC 60068-2-30  |
| Terminal capacities                            |   |

**Terminal capacities** 

| Terminal capacity  | $2 \times (2.5 - 10) \text{ mm}^2$ , solid or stranded<br>$1 \times (2.5 - 35) \text{ mm}^2$ , solid or stranded<br>$2 \times (1.5 - 6) \text{ mm}^2$ , flexible with ferrules to DIN 46228<br>$1 \times (1.5 - 25) \text{ mm}^2$ , flexible with ferrules to DIN 46228<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   |
| 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, 500 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                        | 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 (lu)                                       | 100 A  |
| Uninterrupted current  | Rated uninterrupted current lu is specified for max. cross-section.  |
| Short-circuit rating   |  |
| 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  |
| Switching capacity   |  |
| Load rating  | 2 x l# (with intermittent operation class 12, 25 % duty factor)<br>1.6 x l# (with intermittent operation class 12, 40 % duty factor)<br>1.3 x l# (with intermittent operation class 12, 60 % 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)<br>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   |  |
|  | 1 feilure not 100 000 quitability anarching statistically determined at 24 V DC 10   |
| 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   | Black  |
| Actuator type  | Short thumb-grip   |
| Design verification  |  |
| Equipment heat dissipation, current-dependent Pvid                               | 0 W  |
| Heat dissipation capacity Pdiss  | 0 W  |
| Heat dissipation per pole, current-dependent Pvid                                | 7.5 W  |
| Rated operational current for specified heat dissipation (In)                    | 100 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.   |
| 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 disconnector (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])

| Version as main switch                 | No |
|--|----|
| Version as maintenance-/service switch | No |
| Version as safety switch               | No |

| And operation over and C-23. 400 V     60 - 60       Rated permanent current ta CA-23. 400 V     A     100       Rated permanent current ta CA-23. 400 V     KM     100       Rated opersion ower at AC-23. 400 V     KM     3       Rated opersion ower at AC-23. 400 V     KM     3       Rated opersion ower at AC-23. 400 V     KM     3       Rated opersion ower at AC-23. 400 V     KM     5       Switching onwer at AC-23. 400 V     KM     5       Switching onwer at AC-23. 400 V     KM     5       Switching onwer at AC-24. 400 V     KM     5       Switching onwer at AC-25. 400 V     KM     5       Switching onwer at AC-24. 400 V     KM     6       Number of suikilary contacts as normally closed contact     KM     6       Number of suikilary contacts as normally closed contact     KM     6     6       Number of suikilary contacts as normally closed contact     KM     6     6   | Mannian an ann an tao in ta Ultim                       |    | N  |
|--|---|----|--|
| Number of switchs     I     I       Max. rated operation voltage Ue AC     V     800       Rated operation youtage     A     100       Rated operation youtage Ue AC     X00 V     800       Rated operation youtage Ue AC     X00 V     800       Rated operation youtage Ue AC     X00 V     700       Rated operation youtage Ue AC     X00 V     700       Rated operation youtage Ue AC     X00 V     700       Rated operation youtage TAC     X00 V     700       Conditioned rated short-circuit current Iq     KA     800       Number of suillary contacts as normally open contact     F     600       Number of suillary contacts as change-over contact     F     600       Number of suillary contacts as change-over contact     F     600       Number of suillary contacts as change-over contact     F     600       Number of suillary contacts as change-over contact     F     600  |   |    |  |
| Aracta doperation voltage Ue AC     V     Biol       Rated operation voltage Ue AC     V     500-680       Rated permanent current U     A     00       Rated permanent current at AC-23, 400 V     A     00       Rated operation power at AC-3, 400 V     KM     7       Rated operation power at AC-3, 400 V     KM     7       Rated operation power at AC-3, 400 V     KM     5       Switching power at AC-3, 400 V     KM     6       Number of puxiliary contacts as normally closed contact     KM     6       Number of auxiliary contacts as normally closed contact     M     6       Switch of from mounting entregenated   | •   |    |  |
| Number of availage     V     80- 690       Rated permanent current lu     60     Au       Rated permanent current at AC-23, 400 V     Au     100       Rated permanent current at AC-23, 400 V     KM     3       Rated permanent current at AC-21, 400 V     KM     3       Rated permanent current at AC-23, 400 V     KM     3       Rated spermanent current at AC-23, 400 V     KM     3       Rated spermanent current at AC-21, 400 V     KM     3       Rated opermain power at AC-23, 400 V     KM     3       Switching power at AC-23, 400 V     KM<   |   |    |  |
| And demendent current lument     A     0       Rated permanent current at AC-23, 400 V     A     00       Bated permanent current at AC-21, 400 V     G     A       Bated permanent current at AC-21, 400 V     G     A       Bated permanent current at AC-21, 400 V     G     A       Bated permanent current at AC-21, 400 V     G     A       Bated permanent current at AC-21, 400 V     G     A       Bated permanent current at AC-21, 400 V     G     B       Bated permanent current at AC-23, 400 V     G     B       Switching power at AC-23, 400 V     G     B       Switching power at AC-23, 400 V     G     B       Conditioned rated short-circuit current lq     KM     B       Number of auxiliary contacts as normally copen contact     KM     B       Number of auxiliary contacts as normally copen contact     M     B       Number of auxiliary contacts as normally copen contact     M     B       Number of auxiliary contacts as normally copen contact     M     B       Subter of normonting - Dole     M     B       Sutataber of normonting - Dole     M  | Max. rated operation voltage Ue AC                      | V  | 690                                      |
| Rated permanent current at AC-23, 400 V   A   00     Rated operation power at AC-3, 400 V   KW   37     Rated operation power at AC-3, 400 V   KM   5     Rated operation power at AC-23, 400 V   KW   5     Rated short-time withstand current tew   KW   5     Switching power at 400 V   KW   5     Conditioned rated short-tircuit current op   KW   5     Number of auxiliary contacts as normally closed contact   KW   6     Number of auxiliary contacts as normally closed contact   KW   6     Number of auxiliary contacts as normally closed contact   KW   6     Number of auxiliary contacts as normally closed contact   KW   6     Number of auxiliary contacts as normally closed contact   KW   6     Number of auxiliary contacts as normally closed contact   KW   6     Number of auxiliary contacts as normally closed contact   KW   6     Number of auxiliary contacts as normally closed contact   KW   6     Subtai for from nounting Contact   KW   6   6     Subtai for from nounting Contro   KW   No   No     Subtai for from nounting Contact<  | Rated operating voltage                                 | V  | 690 - 690                                |
| Add germanent current at AC-21,400 V     Image: provide at AC-3,400 V     Image: provide at AC-23,400 V     Image: provide AT AC-3,400 V <td>Rated permanent current lu</td> <td>А</td> <td>100</td>  | Rated permanent current lu                              | А  | 100                                      |
| And operation power at AC-3, 400 V     Image: Add operation power at AC-23, 400 V  | Rated permanent current at AC-23, 400 V                 | А  | 100                                      |
| Add short-time withstand current low     Image: Add short-   | Rated permanent current at AC-21, 400 V                 | А  | 100                                      |
| Rated operation power at AC-23, 400 V     KM     5       Switching power at 400 V     5     5       Conditioned rated short-circuit current lq     KA     8       Number of poles     4     4       Number of auxiliary contacts as normally closed contact     Fee ge     0       Number of auxiliary contacts as normally closed contact     Fee ge     0       Number of auxiliary contacts as normally closed contact     Fee ge     0       Number of auxiliary contacts as normally closed contact     Fee ge     0       Number of auxiliary contacts as normally closed contact     Fee ge     0       Number of auxiliary contacts as normally closed contact     Fee ge     0       Number of auxiliary contacts as normally closed contact     Fee ge     No       Motor drive optional     Fee ge     No     No       Notar drive prisonal     Fee ge     No     No       Suitable for from mounting 4-hole     Fee ge     Suitable for from mounting 4-hole     No       Suitable for from mounting 1 shallation     Fee ge     Back     No       Suitable for intermediate mounting     Fee ge     Sort thumb-grip <td< td=""><td>Rated operation power at AC-3, 400 V</td><td>kW</td><td>37</td></td<>  | Rated operation power at AC-3, 400 V                    | kW | 37                                       |
| Withing power at 400 VSConditioned rated short-circuit current lqIA80Number of polesIA4Number of auxiliary contacts as normally closed contactIA1Number of auxiliary contacts as normally closed contactIA0Number of auxiliary contacts as change-over contactIA0Number of auxiliary contacts as change-over contactIANoNumber of auxiliary contacts as change-over contactIANoSuitable for from mounting contreIAIANoSuitable for intermediate mountingIAIANoSuitable for intermediate mountingIAIAIASuitable for intermediate mountingIAIAIAColour control elementIAIAIAType of control elementIAIAIAType of electrical connection of main circuitIAIAIAType of ontaction (IP), front sideIAIAIA </td <td>Rated short-time withstand current lcw</td> <td>kA</td> <td>2</td>   | Rated short-time withstand current lcw                  | kA | 2  |
| Any optimized rated short-circuit current lq   Image: A provide a status as normally closed contact   Image: A provide a status as normally closed contac   | Rated operation power at AC-23, 400 V                   | kW | 55                                       |
| Number of poles     4       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     0       Motor drive integrated     0       Voltage release optional     0       Device construction     0       Suitable for from mounting 4-hole     0       Suitable for from mounting centre     0       Suitable for first mounting centre     0       Suitable for first mounting centre     0       Suitable for intermediate mounting     0  | Switching power at 400 V                                | kW | 55                                       |
| Auxiliary contacts as normally closed contact     Import of auxiliary contacts as normally open contacts     Import of auxiliary contacts as normally open contacts     Import of auxiliary contacts as normally   | Conditioned rated short-circuit current Iq              | kA | 80                                       |
| Number of auxiliary contacts as change-over contact     Image: provide statistication of the sta | Number of poles   |    | 4  |
| Number of auxiliary contacts as change-over contact     Point of auxiliary contacts as change-over contacts     Point of auxiliary contacts as change-over contacts     Point of auxiliary contacts     Point of   | Number of auxiliary contacts as normally closed contact |    | 0  |
| Motor drive optional     No       Motor drive integrated     No       Voltage release optional     No       Device construction     Suitable for floor mounting       Suitable for floor mounting 4-hole     No       Suitable for front mounting centre     No       Suitable for front mounting centre     No       Suitable for front mounting centre     No       Suitable for intermediate mounting     No       Colour control element     No       Type of central connection of main circuit     No       Type of protection (IP), front side     Server connection       Bager of protection (IP), front side     If Server connection  | Number of auxiliary contacts as normally open contact   |    | 0  |
| Motor drive integrated     Motor drive integrated<  | Number of auxiliary contacts as change-over contact     |    | 0  |
| Voltage release optional     No       Device construction     Built- in device fixed built- in technique       Suitable for floor mounting     No       Suitable for floor mounting 4-hole     No       Suitable for front mounting 4-hole     Yes       Suitable for front mounting centre     No       Suitable for distribution board installation     No       Suitable for intermediate mounting     No       Colour control element     Solor control element       Type of control function of main circuit     Solor control main circuit       Type of electrical connection of main circuit     Solor control element       Type of electrical connection (IP), front side     Solor control element   | Motor drive optional                                    |    | No                                       |
| Device constructionBeideBuilt-in device fixed built-in techniqueSuitable for floor mountingNoSuitable for front mounting 4-holeYesSuitable for front mounting centreNoSuitable for distribution board installationNoSuitable for intermediate mountingNoSuitable for intermediate mountingNoColour control elementSolorType of control elementNoInterlockableNoType of electrical connection of main circuitSolorDevice of protection (IP), front sideSolorSuitable of protection (IP), front side <td< td=""><td>Motor drive integrated</td><td></td><td>No</td></td<>  | Motor drive integrated                                  |    | No                                       |
| Suitable for floor mounting   Anderson     Suitable for floor mounting 4-hole   Ves     Suitable for front mounting centre   No     Suitable for distribution board installation   No     Suitable for intermediate mounting   No     Colour control element   No     Type of control element   Sourt humb-grip     Type of electrical connection of main circuit   Source     Bagee of protection (IP), front side   Intermediate   | Voltage release optional                                |    | No                                       |
| Suitable for front mounting 4-hole   Yes     Suitable for front mounting centre   No     Suitable for distribution board installation   No     Suitable for intermediate mounting   No     Colour control element   No     Type of control element   Solutable     Interlockable   No     Type of electrical connection of main circuit   Solutable     Degree of protection (IP), front side   Solutable  | Device construction                                     |    | Built-in device fixed built-in technique |
| Suitable for front mounting centre   No     Suitable for distribution board installation   No     Suitable for intermediate mounting   No     Colour control element   Black     Type of control element   Soitable     Interlockable   No     Type of electrical connection of main circuit   Soitable     Degree of protection (IP), front side   Soitable   | Suitable for floor mounting                             |    | No                                       |
| Suitable for distribution board installation   No     Suitable for intermediate mounting   No     Colour control element   Black     Type of control element   Short thumb-grip     Interlockable   No     Type of electrical connection of main circuit   Store w connection     Degree of protection (IP), front side   Image: Store w connection of main circuit  | Suitable for front mounting 4-hole                      |    | Yes                                      |
| Suitable for intermediate mounting Mo   Suitable for intermediate mounting Mo   Colour control element Black   Type of control element Short thumb-grip   Interlockable No   Type of electrical connection of main circuit Storew connection   Degree of protection (IP), front side Storew connection   | Suitable for front mounting centre                      |    | No                                       |
| Colour control element Black   Type of control element Short thumb-grip   Interlockable No   Type of electrical connection of main circuit Screw connection   Degree of protection (IP), front side Image: Strew connection  | Suitable for distribution board installation            |    | No                                       |
| Type of control element Short thumb-grip   Interlockable No   Type of electrical connection of main circuit Consection   Degree of protection (IP), front side Consection  | Suitable for intermediate mounting                      |    | No                                       |
| Interlockable No   Type of electrical connection of main circuit Screw connection   Degree of protection (IP), front side IP65   | Colour control element                                  |    | Black                                    |
| Type of electrical connection of main circuit Screw connection   Degree of protection (IP), front side IP65  | Type of control element                                 |    | Short thumb-grip                         |
| Degree of protection (IP), front side  | Interlockable   |    | No                                       |
|  | Type of electrical connection of main circuit           |    | Screw connection                         |
|  | Degree of protection (IP), front side                   |    | IP65                                     |
|  | Degree of protection (NEMA)                             |    | 12                                       |