# DATASHEET - PLS6-D5/4-MW



## Miniature circuit breaker (MCB), 5A, 4p, type D characteristic

Powering Business Worldwide\*

Part no. PLS6-D5/4-MW Catalog No. 243103

Similar to illustration

| Delivery program                                     |                 |    |  |
|--|-----------------|----|--|
| Basic function                                       |                 |    | Miniature circuit-breakers                             |
| Number of poles                                      |                 |    | 4 pole   |
| Tripping characteristic                              |                 |    | D  |
| Application  |                 |    | Switchgear for residential and commercial applications |
| Rated current  | In              | Α  | 5  |
| Rated switching capacity according to IEC/EN 60898-1 | I <sub>cn</sub> | kA | 6  |
| Product range  |                 |    | PLS6   |

### **Technical data**

**Electrical** 

|--|

## **Design verification as per IEC/EN 61439**

| echnical data for design verification   |                   |    |  |
|---|-------------------|----|--|
| Rated operational current for specified heat dissipation  | In                | Α  | 5  |
| Heat dissipation per pole, current-dependent  | P <sub>vid</sub>  | W  | 0  |
| Equipment heat dissipation, current-dependent   | P <sub>vid</sub>  | W  | 6.8  |
| Static heat dissipation, non-current-dependent  | P <sub>vs</sub>   | W  | 0  |
| Heat dissipation capacity   | P <sub>diss</sub> | W  | 0  |
| Operating ambient temperature min.  |                   | °C | -25  |
| Operating ambient temperature max.  |                   | °C | 75   |
|   |                   |    | linear, per +1 °C, results in a 0.5% reduction of current carrying capacity  |
| C/EN 61439 design verification  |                   |    |  |
| 10.2 Strength of materials and parts  |                   |    |  |
| 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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects $$ |                   |    | Meets the product standard's requirements.   |
| 10.2.4 Resistance to ultra-violet (UV) radiation  |                   |    | Meets the product standard's requirements.   |
| 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 Insulation properties  |                   |    |  |
| 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 7.0**

| Circuit breaker (and tiss) (Electrical instalation device) (Selectrical instalation voltage (Selectrical instalation instalation (Selectrical instalation voltage (Selectrical instalation instalation instalation (Selectrical instalation instalation instalation instalation (Selectrical instalation instalation instalation instalation instalation (Selectrical instalation inst                                    | Technical data ETIM 7.0   |     |          |  |  |  |
|--|---|-----|----------|--|--|--|
| Content   Cont   | Circuit breakers and fuses (EG000020) / Miniature circuit breaker (MCB) (EC000042)  |     |          |  |  |  |
| Number of poles (total)         4           Number of protected poles         4           Rated current         A         5           Rated voltage         V         40           Rated insulation voltage Uin         V         40           Rated insulation voltage Uimp         KV         40           Rated short-circuit breaking capacity Icn EN 60888 at 230 V         KA         6           Rated short-circuit breaking capacity Icn EN 608987 at 230 V         KA         6           Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V         KA         0           Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V         KA         0           Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V         KA         0           Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V         KA         0           Voltage type         KA         0         0           Current limiting class         K         0         0           Suitable for flush-mounted installation         K         N         0           Concurrently switching N-neutral         K         2         3           Over voltage category         K         2         3           Pollution degree         K         2 </td <td colspan="6">Electric engineering, automation, process control engineering / Electrical installation, device / Miniature circuit breaker system (MCB) / Miniature circuit breaker (MCB) (ecl@ss10.0.1-27-14-19-01 [AAB905014])</td>   | Electric engineering, automation, process control engineering / Electrical installation, device / Miniature circuit breaker system (MCB) / Miniature circuit breaker (MCB) (ecl@ss10.0.1-27-14-19-01 [AAB905014]) |     |          |  |  |  |
| Number of protected poles         4           Rated current         A         5           Rated voltage         V         40           Rated insulation voltage Uinp         V         40           Rated inpulse withstand voltage Uimp         kV         4           Rated short-circuit breaking capacity Icn EN 60898 at 230 V         kA         6           Rated short-circuit breaking capacity Icn EN 60898 at 400 V         kA         6           Rated short-circuit breaking capacity Icu EC 60947-2 at 230 V         kA         0           Rated short-circuit breaking capacity Icu EC 60947-2 at 400 V         kA         0           Voltage type         kA         0         0           Current limiting class         b         No           Suitable for flush-mounted installation         b         No           Concurrently switching N-neutral         b         No           Over voltage category         b         3           Pollution degree         b         4           Additional equipment possible         y         Yes           Width in number of modular spacings         m         7           Built-in depth         m         70           Degree of protection (IP)         y         25-55  | Release characteristic  |     | D        |  |  |  |
| Rated current         A         5           Rated voltage         V         400           Rated insulation voltage Ui         V         440           Rated insulation voltage Uimp         VV         440           Rated short-circuit breaking capacity Ion EN 60898 at 230 V         KA         6           Rated short-circuit breaking capacity Ion EN 60898 at 400 V         KA         6           Rated short-circuit breaking capacity Ion EN 60898 at 400 V         KA         0           Rated short-circuit breaking capacity Ion EN 60898 at 400 V         KA         0           Rated short-circuit breaking capacity Ion EN 60898 at 400 V         KA         0           Rated short-circuit breaking capacity Ion EN 60898 at 400 V         KA         0           Rated short-circuit breaking capacity Ion EN 608947-2 at 230 V         KA         0           Rated short-circuit breaking capacity Ion EN 60847-2 at 230 V         KA         0           Rated short-circuit breaking capacity Ion EN 60847-2 at 230 V         KA         0           Coltage type         AC         AC           Current limiting class         No         No           Suitable for flush-mounted installation         No         No           Over voltage category         Pollution degree         Yes  | Number of poles (total)   |     | 4        |  |  |  |
| Rated voltage         V         400           Rated insulation voltage Ui         V         440           Rated impulse withstand voltage Uimp         kV         4           Rated short-circuit breaking capacity Icn EN 60898 at 230 V         kA         6           Rated short-circuit breaking capacity Icn EN 60898 at 400 V         kA         6           Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V         kA         0           Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V         kA         0           Voltage type         kA         0         C           Frequency         AC         AC           Current limiting class         Built-in depth         No         No           Concurrently switching N-neutral         No         No           Concurrently switching N-neutral         No         No           Over voltage category         No         No           Pollution degree         Yes         No           Additional equipment possible         Yes           Width in number of modular spacings         mm         No           Built-in depth         mm         70.5           Degree of protection (IP)         mm         70.5           Amient temperature during operating   | Number of protected poles   |     | 4        |  |  |  |
| Rated insulation voltage Uin         V         440           Rated insulation voltage Uinp         kV         4           Rated short-circuit breaking capacity Icn EN 60898 at 230 V         kA         6           Rated short-circuit breaking capacity Icn EN 60898 at 400 V         kA         6           Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V         kA         0           Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V         kA         0           Voltage type         kA         0           Current limiting class         kA         50-60           Suitable for flush-mounted installation         kA         No           Concurrently switching N-neutral         kA         3           Over voltage category         kA         3           Pollution degree         kA         x           Additional equipment possible         k         ys           Writch in number of modular spacings         k         ys           Built-in depth         p         p         p           Degree of protection (IP)         p         p           Ambient temperature during operating         c         c         c           Connectable conductor cross section multi-wired         m         m         p  | Rated current   | Α   | 5        |  |  |  |
| Rated impulse withstand voltage Uimp Rated short-circuit breaking capacity Icn EN 60898 at 230 V Rated short-circuit breaking capacity Icn EN 60898 at 400 V Rated short-circuit breaking capacity Icn IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icn IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icn IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icn IEC 60947-2 at 240 V Rated short-circuit breaking capacity Icn IEC 60947-2 at 240 V Rated short-circuit breaking capacity Icn IEC 60947-2 at 250 V | Rated voltage   | V   | 400      |  |  |  |
| Rated short-circuit breaking capacity Icn EN 60898 at 230 V Rated short-circuit breaking capacity Icn EN 60898 at 400 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V Voltage type  Frequency  Current limiting class  Suitable for flush-mounted installation  Concurrently switching N-neutral  Over voltage category  Pollution degree  Additional equipment possible  Width in number of modular spacings  Built-in depth  Degree of protection (IP)  Ambient temperature during operating  Conectable conductor cross section multi-wired  MA  6  AC  C  AC  NO  AC  Pollution  AC  Pollution  AC  Pollution  AD  Pollution degree  Pollution degree  Additional equipment possible  Width in number of modular spacings  Built-in depth  Degree of protection (IP)  Ambient temperature during operating  Pollution degree  Connectable conductor cross section multi-wired  Pollution  Polluti | Rated insulation voltage Ui   | V   | 440      |  |  |  |
| Rated short-circuit breaking capacity Icn EN 60898 at 400 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V Voltage type  Frequency Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired    KA   0     C   0     C   25 - 55     C   25 - 55     C   125     C | Rated impulse withstand voltage Uimp  | kV  | 4        |  |  |  |
| Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V Voltage type  Requency Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired    KA   0     C  | Rated short-circuit breaking capacity Icn EN 60898 at 230 V   | kA  | 6        |  |  |  |
| Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V  Voltage type  Frequency  Hz  50 - 60  Current limiting class  Suitable for flush-mounted installation  Concurrently switching N-neutral  Over voltage category  Pollution degree  Additional equipment possible  Width in number of modular spacings  Built-in depth  Degree of protection (IP)  Ambient temperature during operating  Connectable conductor cross section multi-wired  kA  C  AC  AC  AC  AC  AC  AC  AC  AC  | Rated short-circuit breaking capacity Icn EN 60898 at 400 V   | kA  | 6        |  |  |  |
| Voltage type Frequency Hz 50 - 60  Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired  AC  AC  AC  AC  PU 50 - 60  No  No  No  Concurrently switching N-neutral No  Ve 4  Pes  Width in number of modular spacings Pu 50 - 55  Connectable conductor cross section multi-wired Pu 50 - 60  No  No  No  No  Concurrently switching N-neutral No  No  Pollution degree Pyes  Concurrently switching N-neutral No  No  No  No  Pollution degree Pyes  Concurrently switching N-neutral No  No  No  Concurrently switching N-neutral No  No  Pollution degree Pyes  Concurrently switching N-neutral No  No  Concurrently switching N-neutral No  No  Concurrently switching N-neutral No  No  Pes  Concurrently switching N-neutral No  No  Pollution degree Pyes  Concurrently switching N-neutral No  No  No  Concurrently switching N-neutral No  No  Concurrently switching N-neutral No  No  Concurrently switching N-neutral No  No  Pes  Concurrently switching N-neutral No  No  Concurrently switching N-neutral No  No  Concurrently switching N-neutral No  No  Pes  Concurrently switching N-neutral No  No  Pes  Concurrently switching N-neutral No  No  No  Concurrently switching N-neutral No  No  Concurrently swi | Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V  | kA  | 0        |  |  |  |
| Frequency Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Currently switching N-neutral No No Voe No No Voe No  | Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V  | kA  | 0        |  |  |  |
| Current limiting class  Suitable for flush-mounted installation  Concurrently switching N-neutral  Over voltage category  Pollution degree  Additional equipment possible  Width in number of modular spacings  Width in number of modular spacings  Built-in depth  mm  70.5  Degree of protection (IP)  Ambient temperature during operating  Connectable conductor cross section multi-wired  3  And  No  No  3  4  Pollution degree  Yes  4  Pollution degree  Pollution degree  1  Pollution degree  Pollution degree  1  Pollution degree  Pollu | Voltage type  |     | AC       |  |  |  |
| Suitable for flush-mounted installation  Concurrently switching N-neutral  Over voltage category  Pollution degree  Additional equipment possible  Width in number of modular spacings  Width in number of modular spacings  Built-in depth  Degree of protection (IP)  Ambient temperature during operating  Connectable conductor cross section multi-wired  No  No  No  4  Pollution degree  2  Additional equipment possible  Wes  4  Po.5  IP20  Ambient temperature during operating  C -25 - 55  Connectable conductor cross section multi-wired  mm² 1 - 25  | Frequency   | Hz  | 50 - 60  |  |  |  |
| Concurrently switching N-neutral  Over voltage category  Pollution degree  Additional equipment possible  Width in number of modular spacings  Width in number of modular spacings  Width in depth  Degree of protection (IP)  Ambient temperature during operating  Connectable conductor cross section multi-wired  No  Yes  4  Pus  70.5  P20  -25 - 55  Connectable conductor cross section multi-wired  No  No  No  1 - 25  | Current limiting class  |     | 3        |  |  |  |
| Over voltage category  Pollution degree  Additional equipment possible  Width in number of modular spacings  Width in number of modular spacings  Built-in depth  Degree of protection (IP)  Ambient temperature during operating  Connectable conductor cross section multi-wired  3  Yes  4  Pun  70.5  IP20  Ambient temperature during operating  C -25 - 55  Connectable conductor cross section multi-wired  mm²  1 - 25   | Suitable for flush-mounted installation   |     | No       |  |  |  |
| Pollution degree 2 Additional equipment possible Yes Width in number of modular spacings 4 Built-in depth mm 70.5 Degree of protection (IP) IP20 Ambient temperature during operating °C -25 -55 Connectable conductor cross section multi-wired mm² 1 - 25  | Concurrently switching N-neutral  |     | No       |  |  |  |
| Additional equipment possible  Width in number of modular spacings  Built-in depth  Degree of protection (IP)  Ambient temperature during operating  Connectable conductor cross section multi-wired  Yes  4  Pu 70.5  Pp 90  Pp 1-25  | Over voltage category   |     | 3        |  |  |  |
| Width in number of modular spacings  Built-in depth  Degree of protection (IP)  Ambient temperature during operating  "C"  -25 - 55  Connectable conductor cross section multi-wired  "m"  1 - 25  | Pollution degree  |     | 2        |  |  |  |
| Built-in depth mm 70.5  Degree of protection (IP) IP20  Ambient temperature during operating °C -25 - 55  Connectable conductor cross section multi-wired mm² 1 - 25   | Additional equipment possible   |     | Yes      |  |  |  |
| Degree of protection (IP)  Ambient temperature during operating  °C -25 - 55  Connectable conductor cross section multi-wired  mm² 1 - 25  | Width in number of modular spacings   |     | 4        |  |  |  |
| Ambient temperature during operating  °C  -25 - 55  Connectable conductor cross section multi-wired  mm²  1 - 25   | Built-in depth  | mm  | 70.5     |  |  |  |
| Connectable conductor cross section multi-wired mm <sup>2</sup> 1 - 25   | Degree of protection (IP)   |     | IP20     |  |  |  |
|  | Ambient temperature during operating  | °C  | -25 - 55 |  |  |  |
| Connectable conductor cross section solid-core mm <sup>2</sup> 1 - 25  | Connectable conductor cross section multi-wired   | mm² | 1 - 25   |  |  |  |
|  | Connectable conductor cross section solid-core  | mm² | 1 - 25   |  |  |  |