

## Product data sheet

### Characteristics

## TPRSS009

SIL motor starter, TeSys island, 15A at AC-1,  
9A at AC-3, 4kW, 5hp, DOL type





## Main

|                                             |                                                                                                                                                                                                                                                                                     |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range                                       | TeSys                                                                                                                                                                                                                                                                               |
| Product name                                | TeSys island                                                                                                                                                                                                                                                                        |
| Device short name                           | TPRSS                                                                                                                                                                                                                                                                               |
| Product or component type                   | SIL motor starter                                                                                                                                                                                                                                                                   |
| Motor starter type                          | Direct on line                                                                                                                                                                                                                                                                      |
| Device presentation                         | Direct starter connected to an automation controller through a bus coupler<br>Operational only when connected to a bus coupler                                                                                                                                                      |
| Function available                          | Upstream voltage presence detection<br>Electrical line and load protection<br>Power and energy monitoring when connected with TPRVM voltage module<br>Safe stop function available when connected with a TPRS module                                                                |
| Product compatibility                       | TPRBC bus coupler<br>TPRVM voltage interface module<br>TPRSM SIL interface module                                                                                                                                                                                                   |
| Poles description                           | 3P (3 NO)                                                                                                                                                                                                                                                                           |
| Utilisation category                        | AC-1<br>AC-2<br>AC-3<br>AC-4<br>AC-3e                                                                                                                                                                                                                                               |
| Motor power kW                              | 2.2 KW at 230 V 50 Hz (AC-3)<br>4 KW at 380...415 V 50 Hz (AC-3)<br>4 KW at 440 V 50 Hz (AC-3)<br>5.5 KW at 500 V 50 Hz (AC-3)<br>5.5 kW at 690 V 50 Hz (AC-3)                                                                                                                      |
| Motor power HP (UL / CSA)                   | 0.33 Hp at 120 V AC 60 Hz for 1 phase motors<br>1 Hp at 240 V AC 60 Hz for 1 phase motors<br>2 Hp at 208 V AC 60 Hz for 3 phases motors<br>2 Hp at 240 V AC 60 Hz for 3 phases motors<br>5 Hp at 480 V AC 60 Hz for 3 phases motors<br>7.5 hp at 600 V AC 60 Hz for 3 phases motors |
| [Ue] rated operational voltage              | <= 690 V AC 47...63 Hz                                                                                                                                                                                                                                                              |
| [Ie] rated operational current              | 9 A (at <50 °C) at <= 440 V AC-3<br>15 A (at <50 °C) at <= 440 V AC-1                                                                                                                                                                                                               |
| [Ith] conventional free air thermal current | 15 A (at 50 °C)                                                                                                                                                                                                                                                                     |
| [Ui] rated insulation voltage               | 690 V conforming to IEC 60947-4-1<br>600 V conforming to UL 60947-4-1<br>600 V conforming to CSA C22.2 No 60947-4-1                                                                                                                                                                 |
| [Uimp] rated impulse withstand voltage      | 6 kV conforming to IEC 60947-1                                                                                                                                                                                                                                                      |
| Overvoltage category                        | III                                                                                                                                                                                                                                                                                 |
| Thermal protection adjustment range         | 0.18...9 A                                                                                                                                                                                                                                                                          |
| Thermal overload class                      | Class 5...30                                                                                                                                                                                                                                                                        |
| Reset                                       | Remotely or automatically                                                                                                                                                                                                                                                           |
| Irms rated making capacity                  | 250 A at 440 V conforming to IEC 60947                                                                                                                                                                                                                                              |
| Rated breaking capacity                     | 250 A at 440 V conforming to IEC 60947                                                                                                                                                                                                                                              |
| [Icw] rated short-time withstand current    | 210 A 40 °C - 1 s<br>105 A 40 °C - 10 s<br>61 A 40 °C - 1 min<br>30 A 40 °C - 10 min                                                                                                                                                                                                |
| Average impedance                           | 2.5 mOhm - Ith 15 A 50 Hz                                                                                                                                                                                                                                                           |
| Power dissipation per pole                  | 0.2 W AC-3 - Ith 9 A<br>0.56 W AC-1 - Ith 15 A                                                                                                                                                                                                                                      |
| [Uc] control circuit voltage                | 24 V DC supplied by the bus coupler                                                                                                                                                                                                                                                 |

|                        |                                                     |
|------------------------|-----------------------------------------------------|
| Current consumption    | 160 mA contactor sealed<br>160 mA contactor closing |
| Power dissipation in W | 3.5 W at Ie AC-3                                    |

## Complementary

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mechanical durability    | 30 Mcycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Electrical durability    | 2 Mcycles 9 A AC-3 at Ue 440 V<br>1.2 Mcycles 15 A AC-1 at Ue 440 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Maximum operating rate   | 3600 cyc/mn AC-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Operating time           | < 100 ms closing<br>< 30 ms opening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Safety function          | Safe stop: category 0 conforming to IEC 60204-1 when associated with a TPRSM module<br>Safe stop: category 1 conforming to IEC 60204-1 when associated with a TPRSM module                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Safety integrity level   | SIL 2 conforming to IEC 61508 in single channel system architecture<br>SILCL 2 conforming to IEC 62061 in single channel system architecture<br>PL = d category 2 conforming to ISO 13849-1 in single channel system architecture                                                                                                                                                                                                                                                                                                                                                            |
| Safety performance level | B10d = 1369863 cycles contactor with nominal load conforming to EN/ISO 13849-1<br>B10d = 20000000 cycles contactor with mechanical load conforming to EN/ISO 13849-1                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Protection type          | Thermal overload protection<br>Motor overheat<br>Overcurrent<br>Undercurrent<br>Jam<br>Long start<br>Stall<br>Rapid cycle lockout<br>Rapid restart lockout<br>Phase sequence<br>Phase loss<br>Phase reversal<br>Phase unbalance<br>Ground current                                                                                                                                                                                                                                                                                                                                            |
| Monitoring type          | Time device ON<br>Time device switch ON<br>Number of faults<br>Number of switching cycles<br>Number of device power cycles<br>Average current Iavg<br>Average voltage Vavg<br>Max current Imax<br>Max voltage Vmax<br>Active and reactive power with voltage module<br>Active and reactive energy with voltage module<br>True power factor with voltage module                                                                                                                                                                                                                               |
| Local signalling         | 1 LED (green/red) for DS (device status)<br>1 LED (green/red) for LS (load status)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Standards                | EN/IEC 60947-1<br>EN/IEC 60947-4-1<br>UL 60947-4-1<br>CSA C22.2 No 60947-4-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Product certifications   | EAC[RETURN]UL[RETURN]CSA[RETURN]CCC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Mounting mode            | Horizontal and vertical (35 mm symmetrical DIN rail)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Connections - terminals  | Screw-clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> (AWG 16...AWG 12) rigid<br>Screw-clamp terminals 2 cable(s) 1...4 mm <sup>2</sup> (AWG 16...AWG 12) rigid<br>Screw-clamp terminals 1 cable(s) 1.5...4 mm <sup>2</sup> (AWG 16...AWG 12) flexible without cable end<br>Screw-clamp terminals 2 cable(s) 1.5...4 mm <sup>2</sup> (AWG 16...AWG 12) flexible without cable end<br>Screw-clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> (AWG 16...AWG 12) flexible with cable end<br>Screw-clamp terminals 2 cable(s) 1...2.5 mm <sup>2</sup> (AWG 16...AWG 14) flexible with cable end |
| Tightening torque        | 1.7 N.M - with screwdriver flat Ø 6 mm<br>1.7 N.m - with screwdriver Philips No 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Width                    | 45 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Height                   | 116 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|            |          |
|------------|----------|
| Depth      | 115 mm   |
| Net weight | 0.656 kg |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient air temperature for storage   | -25...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ambient air temperature for operation | -10...50 °C without derating<br>50...60 °C with current derating                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Relative humidity                     | 5...95 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating altitude                    | 0...2000 m without derating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| IP degree of protection               | IP20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Pollution degree                      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Protective treatment                  | TC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fire resistance                       | 960 °C conforming to UL 94<br>850 °C conforming to IEC 60695-2-1<br>650 °C conforming to IEC 60695-2-12                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Shock resistance                      | 15 gn (duration = 11 ms) conforming to IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Vibration resistance                  | 1.5 mm peak to peak (f= 3...13 Hz) conforming to IEC 60068-2-6<br>1 gn (f= 13...200 Hz) conforming to IEC 60068-2-6                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Electromagnetic compatibility         | Electrostatic discharge immunity test, level 3, 8 kV air, 6 kV contact, conforming to EN/IEC 61000-4-2<br>Radiated RF field immunity test, level 3, 10 V/m, conforming to EN/IEC 61000-4-3<br>Fast transient immunity test, level 4, 4 kV, conforming to EN/IEC 61000-4-4<br>Surge immunity test (differential mode), level 3, 2 kV, conforming to EN/IEC 61000-4-5<br>Surge immunity test (common mode), level 4, 4 kV, conforming to EN/IEC 61000-4-5<br>Conducted RF disturbance immunity test, 20 V, conforming to EN/IEC 61000-4-6 |

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | PCE       |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 5 cm      |
| Package 1 Width              | 12.5 cm   |
| Package 1 Length             | 13 cm     |
| Package 1 Weight             | 712 g     |
| Unit Type of Package 2       | S02       |
| Number of Units in Package 2 | 14        |
| Package 2 Height             | 15 cm     |
| Package 2 Width              | 30 cm     |
| Package 2 Length             | 40 cm     |
| Package 2 Weight             | 10.252 kg |

## Offer Sustainability

|                             |                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status    | Green Premium product                                                                                                             |
| REACH Regulation            |  <a href="#">REACH Declaration</a>             |
| EU RoHS Directive           | Compliant with Exemptions                                                                                                         |
| Mercury free                | Yes                                                                                                                               |
| China RoHS Regulation       |  <a href="#">China RoHS Declaration</a>        |
| RoHS exemption information  |  <a href="#">Yes</a>                           |
| Environmental Disclosure    |  <a href="#">Product Environmental Profile</a> |
| Circularity Profile         |  <a href="#">End Of Life Information</a>       |
| WEEE                        | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins       |
| Halogen content performance | Halogen free plastic parts product                                                                                                |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|