

# Product data sheet

Specifications



## Direct online SIL starter, TeSys island, 15A AC-1, 9A AC-3, 4kW / 5hp

TPRSS009

### Main

<b>Range</b>	TeSys
<b>Product name</b>	TeSys island
<b>Device short name</b>	TPRSS
<b>Product or component type</b>	SIL motor starter
<b>Motor starter type</b>	Direct on line
<b>Device presentation</b>	Direct starter connected to an automation controller through a bus coupler Operational only when connected to a bus coupler
<b>Function available</b>	Upstream voltage presence detection Electrical line and load protection Power and energy monitoring when connected with TPRVM voltage module Safe stop function available when connected with a TPRSM module
<b>Product compatibility</b>	TPRBC bus coupler TPRVM voltage interface module TPRSM SIL interface module
<b>Poles description</b>	3P (3 NO)
<b>Utilisation category</b>	AC-1 AC-2 AC-3 AC-4
<b>Motor power kW</b>	2.2 kW at 230 V 50 Hz (AC-3) 4 kW at 380...415 V 50 Hz (AC-3) 4 kW at 440 V 50 Hz (AC-3) 5.5 kW at 500 V 50 Hz (AC-3) 5.5 kW at 690 V 50 Hz (AC-3)
<b>Motor power HP (UL / CSA)</b>	0.33 hp at 120 V AC 60 Hz for 1 phase motors 1 hp at 240 V AC 60 Hz for 1 phase motors 2 hp at 208 V AC 60 Hz for 3 phases motors 2 hp at 240 V AC 60 Hz for 3 phases motors 5 hp at 480 V AC 60 Hz for 3 phases motors 7.5 hp at 600 V AC 60 Hz for 3 phases motors
<b>[Ue] rated operational voltage</b>	<= 690 V AC 47...63 Hz
<b>[Ie] rated operational current</b>	9 A (at <50 °C) at <= 440 V AC-3 15 A (at <50 °C) at <= 440 V AC-1
<b>[Ith] conventional free air thermal current</b>	15 A (at 50 °C)
<b>[Ui] rated insulation voltage</b>	690 V conforming to IEC 60947-4-1 600 V conforming to UL 60947-4-1 600 V conforming to CSA C22.2 No 60947-4-1
<b>[Uimp] rated impulse withstand voltage</b>	6 kV conforming to IEC 60947-1
<b>Overvoltage category</b>	III

<b>Thermal protection adjustment range</b>	0.18...9 A
<b>Thermal overload class</b>	Class 5...30
<b>Reset</b>	Remotely or automatically
<b>Irms rated making capacity</b>	250 A at 440 V conforming to IEC 60947
<b>Rated breaking capacity</b>	250 A at 440 V conforming to IEC 60947
<b>[Icw] rated short-time withstand current</b>	210 A 40 °C - 1 s 105 A 40 °C - 10 s 61 A 40 °C - 1 min 30 A 40 °C - 10 min
<b>Average impedance</b>	2.5 mOhm - Ith 15 A 50 Hz
<b>Power dissipation per pole</b>	0.2 W AC-3 - Ith 9 A 0.56 W AC-1 - Ith 15 A
<b>[Uc] control circuit voltage</b>	24 V DC supplied by the bus coupler
<b>Current consumption</b>	160 mA contactor sealed 160 mA contactor closing
<b>Power dissipation in W</b>	3.5 W at Ie AC-3
<b>Complementary</b>	
<b>Mechanical durability</b>	30 Mcycles
<b>Electrical durability</b>	2 Mcycles 9 A AC-3 at Ue 440 V 1.2 Mcycles 15 A AC-1 at Ue 440 V
<b>Maximum operating rate</b>	3600 cyc/mn AC-3
<b>Operating time</b>	< 100 ms closing < 30 ms opening
<b>Safety function</b>	Safe stop: category 0 conforming to IEC 60204-1 when associated with a TPRSM module Safe stop: category 1 conforming to IEC 60204-1 when associated with a TPRSM module
<b>Safety integrity level</b>	SIL 2 conforming to IEC 61508 in single channel system architecture SILCL 2 conforming to IEC 62061 in single channel system architecture PL = d category 2 conforming to ISO 13849-1 in single channel system architecture
<b>Safety performance level</b>	B10d = 1369863 cycles contactor with nominal load conforming to EN/ISO 13849-1 B10d = 20000000 cycles contactor with mechanical load conforming to EN/ISO 13849-1
<b>Protection type</b>	Thermal overload protection Motor overheat Overcurrent Undercurrent Jam Long start Stall Rapid cycle lockout Rapid restart lockout Phase sequence Phase loss Phase reversal Phase unbalance Ground current
<b>Monitoring type</b>	Time device ON Time device switch ON Number of faults Number of switching cycles Number of device power cycles Average current Iavg Average voltage Vavg Max current Imax Max voltage Vmax Active and reactive power with voltage module Active and reactive energy with voltage module True power factor with voltage module
<b>Local signalling</b>	1 LED (green/red) for DS (device status) 1 LED (green/red) for LS (load status)
<b>Standards</b>	EN/IEC 60947-1 EN/IEC 60947-4-1 UL 60947-4-1 CSA C22.2 No 60947-4-1
<b>Product certifications</b>	EAC UL

<b>Mounting mode</b>	Horizontal and vertical (35 mm symmetrical DIN rail)
<b>Connections - terminals</b>	Screw-clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> (AWG 16...AWG 12) rigid Screw-clamp terminals 2 cable(s) 1...4 mm <sup>2</sup> (AWG 16...AWG 12) rigid Screw-clamp terminals 1 cable(s) 1.5...4 mm <sup>2</sup> (AWG 16...AWG 12) flexible without cable end Screw-clamp terminals 2 cable(s) 1.5...4 mm <sup>2</sup> (AWG 16...AWG 12) flexible without cable end Screw-clamp terminals 1 cable(s) 1...4 mm <sup>2</sup> (AWG 16...AWG 12) flexible with cable end Screw-clamp terminals 2 cable(s) 1...2.5 mm <sup>2</sup> (AWG 16...AWG 14) flexible with cable end
<b>Tightening torque</b>	1.7 N.m - with screwdriver flat Ø 6 mm 1.7 N.m - with screwdriver Philips No 2
<b>Width</b>	45 mm
<b>Height</b>	116 mm
<b>Depth</b>	115 mm
<b>Net weight</b>	0.656 kg

## Environment

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

## Packing Units

<b>Unit Type of Package 1</b>	PCE
<b>Number of Units in Package 1</b>	1
<b>Package 1 Weight</b>	714.0 g
<b>Package 1 Height</b>	5 cm
<b>Package 1 width</b>	12.5 cm
<b>Package 1 Length</b>	13 cm
<b>Unit Type of Package 2</b>	S02
<b>Number of Units in Package 2</b>	14
<b>Package 2 Weight</b>	10.338 kg
<b>Package 2 Height</b>	15 cm
<b>Package 2 width</b>	30 cm
<b>Package 2 Length</b>	40 cm

## Offer Sustainability

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

## Contractual warranty

<b>Warranty</b>	18 months
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