

# TPRAN2X1

Analog IO module, TeSys island, 2 inputs, 1 output, 24VDC, Twisted shielded pairs cable





## Main

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Range                      | TeSys                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Product name               | TeSys island                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Device short name          | TPRAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Product or component type  | Analog IO module                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Device presentation        | IO module providing 2 analog inputs and 1 analog output<br>Enabling advanced control functions in a TeSys island system<br>Operational only when connected to a bus coupler TPRBC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Function of module         | Measurement of voltage, current or temperature on 2 configurable analog inputs<br>Driving voltage or current source on 1 configurable analog output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Product compatibility      | TPRBC bus coupler                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Analogue input number      | 2 isolated with common point                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Analogue input type        | Current 4...20 mA<br>Current 0...20 mA<br>Voltage 0...10 V<br>Voltage - 10...10 V<br>Temperature probe - 60...180 °C temperature probe: Ni 100<br>Temperature probe - 60...180 °C temperature probe: Ni 1000<br>Temperature probe -200...+850 °C temperature probe: Pt 100<br>Temperature probe - 200...600 °C temperature probe: Pt 1000<br>Thermocouple - 200...1000 °C thermocouple J<br>Thermocouple - 200...1300 °C thermocouple K<br>Thermocouple 0...1760 °C thermocouple R<br>Thermocouple 0...1760 °C thermocouple S<br>Thermocouple 0...1820 °C thermocouple B<br>Thermocouple - 200...400 °C thermocouple T<br>Thermocouple - 200...1300 °C thermocouple N<br>Thermocouple - 200...800 °C thermocouple E<br>Thermocouple 0...2315 °C thermocouple C |
| Measurement accuracy       | +/- 0.1 % of full scale voltage 25 °C<br>+/- 0.1 % of full scale current 25 °C<br>+/- 0.1 % of full scale temperature probe 25 °C<br>+/- 0.1 % of full scale in positive temperature range thermocouple 25 °C<br>+/- 0.4 % of full scale in negative temperature range thermocouple 25 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Analogue input resolution  | 15 bits + sign full scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Input impedance            | <= 50 Ohm current<br>>= 1 MOhm voltage<br>>= 1 MOhm thermocouple<br>>= 1 MOhm temperature probe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Analogue output number     | 1 isolated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Analogue output type       | Current 4...20 mA<br>Current 0...20 mA<br>Voltage 0...10 V<br>Voltage - 10...10 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Analogue output resolution | 12 bits, 4...20 mA full scale<br>12 bits, 0...20 mA full scale<br>12 bits, 0...10 V full scale<br>11 bits + sign, - 10...10 V full scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Type of cable              | Twisted shielded pairs cable <30 m for input/output circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Local signalling           | 1 LED (green/red) for DS (device status)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Complementary

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [Us] rated supply voltage              | 24 V DC supplied by the bus coupler                                                                                                                                                                                                                                                                                                                                                                    |
| Current consumption                    | 160 mA                                                                                                                                                                                                                                                                                                                                                                                                 |
| Power dissipation in W                 | 0.5 W maximum                                                                                                                                                                                                                                                                                                                                                                                          |
| [Uimp] rated impulse withstand voltage | 0.5 kV conforming to IEC 61010-1                                                                                                                                                                                                                                                                                                                                                                       |
| Standards                              | IEC 61010-2-201<br>UL 61010-2-201<br>CSA C22.2 No 61010-2-201                                                                                                                                                                                                                                                                                                                                          |
| Product certifications                 | CSA[RETURN]UL[RETURN]EAC (pending)                                                                                                                                                                                                                                                                                                                                                                     |
| Mounting mode                          | Horizontal and vertical (35 mm symmetrical rail)                                                                                                                                                                                                                                                                                                                                                       |
| Connections - terminals                | Input/Output circuit: removable spring terminal block 8 cable(s) 0.2...2.5 mm <sup>2</sup> (AWG 24...AWG 14) rigid<br>Input/Output circuit: removable spring terminal block 8 cable(s) 0.2...2.5 mm <sup>2</sup> (AWG 24...AWG 14) flexible without cable end<br>Input/output circuit: removable spring terminal block 8 cable(s) 0.25...2.5 mm <sup>2</sup> (AWG 22...AWG 14) flexible with cable end |
| Width                                  | 25 mm                                                                                                                                                                                                                                                                                                                                                                                                  |
| Height                                 | 118 mm                                                                                                                                                                                                                                                                                                                                                                                                 |
| Depth                                  | 114 mm                                                                                                                                                                                                                                                                                                                                                                                                 |
| Net weight                             | 0.172 kg                                                                                                                                                                                                                                                                                                                                                                                               |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient air temperature for storage   | -25...70 °C                                                                                                                                                                                                                                                                                                                                       |
| Ambient air temperature for operation | -10...60 °C                                                                                                                                                                                                                                                                                                                                       |
| 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                                                                                                                                                                                                                                                                                                                        |
| 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 fields, level 3, 10 V/m, conforming to EN/IEC 61000-4-3<br>Fast transients immunity test, level 3, 2 kV, conforming to EN/IEC 61000-4-4<br>Surge immunity test (common mode), level 3, 2 kV, conforming to EN/IEC 61000-4-5 |

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | PCE       |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 6.500 cm  |
| Package 1 Width              | 13.500 cm |
| Package 1 Length             | 15.500 cm |
| Package 1 Weight             | 245.000 g |
| Unit Type of Package 2       | S03       |
| Number of Units in Package 2 | 16        |
| Package 2 Height             | 30.000 cm |
| Package 2 Width              | 30.000 cm |
| Package 2 Length             | 40.000 cm |
| Package 2 Weight             | 4.654 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 |
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