# Product data sheet
## Characteristics

# TM4ES4
network switch module, Modicon M241, 4 Ethernet switchs



## Main

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|---|---|
| Product or component type | Ethernet unmanaged switch |

## Complementary

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|---|---|
| Range compatibility | Modicon M251<br>Modicon M241 |
| Product compatibility | Modicon M241 logic controller<br>Modicon M251 logic controller |
| Current consumption | 360 mA at 5 V DC for communication bus |
| Integrated connection type | Ethernet: 4 RJ45 connector |
| Transmission rate | 10/100 Mbit/s |
| Port Ethernet | 10BASE-T/100BASE-TX - 4 port(s) copper cable |
| Web services | Web server |
| Communication service | Modbus TCP server<br>Modbus TCP slave device<br>FTP<br>NGVL<br>Monitoring<br>IEC VAR ACCESS<br>Programming<br>SNMP<br>Modbus TCP client<br>Downloading<br>Updating firmware<br>Ethernet/IP slave device<br>DHCP client |
| Maximum number of connections | 8 Modbus server<br>16 Ethernet/IP device |
| Communication port protocol | Ethernet IP/Modbus TCP<br>TCP (Transmission Control Protocol)<br>UDP (User Datagram Protocol)<br>SNMP |
| Redundancy | No |
| Local signalling | 1 LED (green) for PWR<br>1 LED per channel (green/yellow) for Ethernet link<br>1 LED per channel (green) for Ethernet port activity |
| Electrical connection | RJ45 4 connectors for connecting Ethernet network<br>Screw connector terminal for connecting the functional ground |
| Marking | CE |

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| Surge withstand | 1 KV power lines (DC) common mode conforming to IEC 61000-4-5<br>2 KV power lines (AC) common mode conforming to IEC 61000-4-5<br>2 KV relay output common mode conforming to IEC 61000-4-5<br>1 KV I/O common mode conforming to IEC 61000-4-5<br>1 KV shielded cable common mode conforming to IEC 61000-4-5<br>0.5 KV power lines (DC) differential mode conforming to IEC 61000-4-5<br>1 KV power lines (AC) differential mode conforming to IEC 61000-4-5<br>1 KV relay output differential mode conforming to IEC 61000-4-5<br>0.5 KV I/O differential mode conforming to IEC 61000-4-5 |
| Mounting support | Top hat type TH35-15 rail conforming to IEC 60715<br>Top hat type TH35-7.5 rail conforming to IEC 60715<br>plate or panel with fixing kit |
| Width | 25 Mm |
| Height | 90 Mm |
| Depth | 90 Mm |
| Net weight | 0.125 Kg |

## Environment

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|---|---|
| Standards | UL 508<br>IEC 61131-2 |
| Product certifications | cULus[RETURN]C-Tick |
| Resistance to electrostatic discharge | 8 KV in air conforming to IEC 61000-4-2<br>4 KV on contact conforming to IEC 61000-4-2<br>8 KV in air conforming to Marine specification (LR, ABS, DNV, GL)<br>6 KV on contact conforming to Marine specification (LR, ABS, DNV, GL) |
| Resistance to electromagnetic fields | 10 V/M 80 MHz...1 GHz conforming to IEC 61000-4-3<br>3 V/M 1.4 GHz...2 GHz conforming to IEC 61000-4-3<br>1 V/M 2...2.7 GHz conforming to IEC 61000-4-3 |
| Resistance to fast transients | 2 KV (power lines) conforming to IEC 61000-4-4<br>2 KV (relay output) conforming to IEC 61000-4-4<br>1.5 KV (I/O) conforming to IEC 61000-4-4<br>1 KV (Ethernet line) conforming to IEC 61000-4-4<br>1 KV (serial link) conforming to IEC 61000-4-4 |
| Resistance to conducted disturbances | 10 V 0.15...80 MHz conforming to IEC 61000-4-6<br>3 V 0.1...80 MHz conforming to Marine specification (LR, ABS, DNV, GL)<br>10 V spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz) conforming to Marine specifica |
| Electromagnetic emission | Conducted emissions - test level: 79 dBµV/m QP/66 dBµV/m AV ( power lines (AC)) at 0.15…0.5 M<br>Conducted emissions - test level: 73 dBµV/m QP/60 dBµV/m AV ( power lines (AC)) at 0.5…300 M<br>Conducted emissions - test level: 120...69 dBµV/m QP ( power lines) at 10…150 kHz conforming<br>Conducted emissions - test level: 63 dBµV/m QP ( power lines) at 1.5…30 MHz conforming to IEC<br>Radiated emissions - test level: 40 dBµV/m QP class A at 30…230 MHz conforming to IEC 55011<br>Radiated emissions - test level: 60...54 dBµV/m QP at 30…100 MHz conforming to Marine specifi<br>Radiated emissions - test level: 24 dBµV/m QP at 156…165 MHz conforming to Marine specificati<br>Conducted emissions - test level: 79...63 dBµV/m QP ( power lines) at 150…1500 kHz conforming<br>Radiated emissions - test level: 47 dBµV/m QP class A at 230…1000 MHz conforming to IEC 550<br>Radiated emissions - test level: 80...50 dµV/m QP at 150…30000 kHz conforming to Marine speci<br>Radiated emissions - test level: 54 dBµV/m QP at 100…2000 MHz conforming to Marine specifica |
| Ambient air temperature for operation | -10…55 °C horizontal installation<br>-10…50 °C vertical installation |
| Ambient air temperature for storage | -25…70 °C |
| Relative humidity | 10…95 %, without condensation (in operation)<br>10…95 %, without condensation (in storage) |
| IP degree of protection | IP20 with protective cover in place |
| Pollution degree | 2 |
| Operating altitude | 0...2000 m |
| Storage altitude | 0…3000 M |
| Vibration resistance | 1 mm at 5…13.2 Hz on symmetrical rail<br>3 gn at 8.7…150 Hz on symmetrical rail<br>1 mm at 5…13.2 Hz on panel mounting<br>0.7 gn at 13.2…100 Hz on panel mounting |
| Shock resistance | 15 gn for 11 ms |

## Packing Units

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|---|---|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 5.635 Cm |
| Package 1 Width | 11.532 Cm |
| Package 1 Length | 17.033 Cm |
| Package 1 Weight | 210.0 G |
| Unit Type of Package 2 | S03 |
| Number of Units in Package 2 | 20 |
| Package 2 Height | 30 Cm |
| Package 2 Width | 30 Cm |
| Package 2 Length | 40 Cm |
| Package 2 Weight | 5.04 Kg |
| Unit Type of Package 3 | P06 |
| Number of Units in Package 3 | 160 |
| Package 3 Height | 75 Cm |
| Package 3 Width | 60 Cm |
| Package 3 Length | 80 Cm |
| Package 3 Weight | 48 Kg |

## Offer Sustainability

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| Recyclability potential, in % | 0 |
| Total lifecycle Carbon footprint | 96 kg CO2 eq. |
| Carbon footprint of the manufacturing phase [A1 to A3] | 24.52987101482221 |
| Carbon footprint of the manufacturing phase [A1 to A3] | 25 kg CO2 eq. |
| Carbon footprint of the distribution phase [A4] | 0.008057151095235932 |
| Carbon footprint of the distribution phase [A4] | 0 kg CO2 eq. |
| Carbon footprint of the installation phase [A5] | 0.003287669447066496 |
| Carbon footprint of the installation phase [A5] | 0 kg CO2 eq. |
| Carbon footprint of the use phase [B2, B3, B4, B6] | 71.09680428130878 |
| Carbon footprint of the use phase [B2, B3, B4, B6] | 71 kg CO2 eq. |
| Mercury free | Yes |
| Sustainable packaging | Yes |
| Carbon footprint of the end-of-life phase [C1 to C4] | 0.3329293442925289 |
| Carbon footprint of the end-of-life phase [C1 to C4] | 0.3 kg CO2 eq. |
| Environmental Disclosure | Product Environmental Profile |
| Total lifecycle Carbon footprint | 96 |
| Packaging made with recycled cardboard | Yes |
| Packaging without single use plastic | Yes |
| SCIP Number | 5f9bf620-80e3-4249-adf7-f86659e9a73e |
| REACh Regulation | Reference contains Substances of Very High Concern above the threshold |
| EU RoHS Directive | Compliant By Exemption |
| California proposition 65 | WARNING: This product can expose you to chemicals including: Lead and lead compounds, wi |
| PVC free | Yes |
| End of life manual availability | End Of Life Information |
| Take-back | No |
| WEEE Label | The product must be disposed on European Union markets following specific waste collection a |

## Contractual warranty

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| Warranty (in months) | 18 |

Product Life Status : Commercialised