

Siemens  
EcoTech



SIMATIC ET 200eco PN, DI 8x 24 V DC, M12-L, 8x M12, single and double assignment, input type 3 (IEC 61131), sink input (PNP, sinking input), input delay 0.05..20 ms, channel diagnostics for: wire break at input, encoder power supply short-circuit, 0.25 ms isochronous mode, prioritized startup, MSI, MRP, S2 redundancy, I&M0...3, multi-fieldbus, PN IO, Ethernet IP, Modbus TCP, degree of protection IP67 / IP69K

| General information                                      |                                                                                       |
|----------------------------------------------------------|---------------------------------------------------------------------------------------|
| HW functional status                                     | FS05                                                                                  |
| Firmware version                                         | V5.1.x                                                                                |
| • FW update possible                                     | Yes                                                                                   |
| Vendor identification (VendorID)                         | 002AH                                                                                 |
| Device identifier (DeviceID)                             | 0306H                                                                                 |
| Manufacturer ID according to ODVA (VendorID)             | 04E3H                                                                                 |
| Device ID according to ODVA (Product code)               | 0FA4H                                                                                 |
| Product function                                         |                                                                                       |
| • I&M data                                               | Yes; I&M0 to I&M3                                                                     |
| • Isochronous mode                                       | Yes                                                                                   |
| • IRT                                                    | Yes                                                                                   |
| • Prioritized startup                                    | Yes                                                                                   |
| Engineering with                                         |                                                                                       |
| • STEP 7 TIA Portal configurable/integrated from version | STEP 7 V17 or higher with HSP 0363                                                    |
| • PROFINET from GSD version/GSD revision                 | GSDML V2.4.x                                                                          |
| • Multi Fieldbus Configuration Tool (MFCT)               | from V1.3 SP1                                                                         |
| Operating mode                                           |                                                                                       |
| • DI                                                     | Yes                                                                                   |
| • Counter                                                | No                                                                                    |
| • MSI                                                    | Yes                                                                                   |
| Supply voltage                                           |                                                                                       |
| power supply according to NEC Class 2 required           | No                                                                                    |
| Load voltage 1L+                                         |                                                                                       |
| • Rated value (DC)                                       | 24 V                                                                                  |
| • permissible range, lower limit (DC)                    | 20.4 V                                                                                |
| • permissible range, upper limit (DC)                    | 28.8 V                                                                                |
| • Reverse polarity protection                            | Yes; Against destruction; encoder power supply outputs applied with reversed polarity |
| Input current                                            |                                                                                       |
| Current consumption (rated value)                        | 85 mA; without load                                                                   |
| from load voltage 1L+ (unswitched voltage)               | 12 A; Maximum value                                                                   |
| from load voltage 2L+, max.                              | 12 A; Maximum value                                                                   |
| Encoder supply                                           |                                                                                       |
| Number of outputs                                        | 8                                                                                     |
| 24 V encoder supply                                      |                                                                                       |

|                                                                 |                                                        |
|-----------------------------------------------------------------|--------------------------------------------------------|
| • Short-circuit protection                                      | Yes; per channel, electronic                           |
| • Output current, max.                                          | 100 mA; per output                                     |
| <b>Power loss</b>                                               |                                                        |
| Power loss, typ.                                                | 7.6 W                                                  |
| <b>Address area</b>                                             |                                                        |
| Address space per module                                        |                                                        |
| • Inputs                                                        | 1 byte; + 1 byte for QI information                    |
| <b>Hardware configuration</b>                                   |                                                        |
| Submodules                                                      |                                                        |
| • Number of configurable submodules, max.                       | 2                                                      |
| <b>Digital inputs</b>                                           |                                                        |
| Number of digital inputs                                        | 8                                                      |
| Digital inputs, parameterizable                                 | Yes                                                    |
| Sourcing/sinking input                                          | P-reading                                              |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes                                                    |
| Number of simultaneously controllable inputs                    |                                                        |
| all mounting positions                                          |                                                        |
| — up to 60 °C, max.                                             | 8                                                      |
| Input voltage                                                   |                                                        |
| • Rated value (DC)                                              | 24 V                                                   |
| • for signal "0"                                                | -30 to +5 V                                            |
| • for signal "1"                                                | +11 to +30V                                            |
| Input current                                                   |                                                        |
| • for signal "1", typ.                                          | 2.4 mA                                                 |
| Input delay (for rated value of input voltage)                  |                                                        |
| for standard inputs                                             |                                                        |
| — parameterizable                                               | Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms |
| Cable length                                                    |                                                        |
| • unshielded, max.                                              | 30 m                                                   |
| <b>Encoder</b>                                                  |                                                        |
| Connectable encoders                                            |                                                        |
| • 2-wire sensor                                                 | Yes                                                    |
| — permissible quiescent current (2-wire sensor), max.           | 1.5 mA                                                 |
| <b>Interfaces</b>                                               |                                                        |
| Transmission procedure                                          | 100BASE-TX                                             |
| Number of PROFINET interfaces                                   | 1                                                      |
| <b>1. Interface</b>                                             |                                                        |
| Interface type                                                  | PROFINET with 100 Mbit/s full duplex (100BASE-TX)      |
| Interface types                                                 |                                                        |
| • M12 port                                                      | Yes; 2x M12, 4-pin, D-coded                            |
| • Number of ports                                               | 2                                                      |
| • integrated switch                                             | Yes                                                    |
| Protocols                                                       |                                                        |
| • PROFINET IO Device                                            | Yes                                                    |
| • Open IE communication                                         | Yes                                                    |
| PROFINET IO Device                                              |                                                        |
| Services                                                        |                                                        |
| — IRT                                                           | Yes; 250 µs to 4 ms in 125 µs frame                    |
| — Prioritized startup                                           | Yes                                                    |
| — Shared device                                                 | Yes                                                    |
| <b>Interface types</b>                                          |                                                        |
| M12 port                                                        |                                                        |
| • Autonegotiation                                               | Yes                                                    |
| • Autocrossing                                                  | Yes                                                    |
| • Transmission rate, max.                                       | 100 Mbit/s                                             |
| <b>Protocols</b>                                                |                                                        |
| Supports protocol for PROFINET IO                               | Yes                                                    |
| PROFIsafe                                                       | No                                                     |

|                                                  |                                       |
|--------------------------------------------------|---------------------------------------|
| EtherNet/IP                                      | Yes                                   |
| Modbus TCP                                       | Yes                                   |
| <b>Redundancy mode</b>                           |                                       |
| • PROFINET system redundancy (S2)                | Yes                                   |
| — on S7-1500R/H                                  | Yes                                   |
| — on S7-400H                                     | Yes                                   |
| • PROFINET system redundancy (R1)                | No                                    |
| • H-Sync forwarding                              | Yes                                   |
| <b>Media redundancy</b>                          |                                       |
| — MRP                                            | Yes                                   |
| — MRPD                                           | No                                    |
| <b>EtherNet/IP</b>                               |                                       |
| <b>Services</b>                                  |                                       |
| — CIP Implicit Messaging                         | Yes                                   |
| — CIP Explicit Messaging                         | Yes                                   |
| — CIP Safety                                     | No                                    |
| — Shared device                                  | Yes; 2x EtherNet/IP Scanner           |
| — Number of scanners with shared device, max.    | 2                                     |
| <b>Updating times</b>                            |                                       |
| — Requested Packet Interval (RPI)                | 2 ms                                  |
| <b>Redundancy mode</b>                           |                                       |
| — DLR (Device Level Ring)                        | No                                    |
| <b>Address area</b>                              |                                       |
| — Address space per module, max.                 | 20 byte                               |
| — LargeForwardOpen (Class3)                      | No                                    |
| <b>Modbus TCP</b>                                |                                       |
| <b>Services</b>                                  |                                       |
| — read coils (code=1)                            | Yes                                   |
| — read discrete inputs (code=2)                  | Yes                                   |
| — Read Holding Registers (Code=3)                | Yes                                   |
| — write single coil (code=5)                     | Yes                                   |
| — write multiple coils (code=15)                 | Yes                                   |
| — Write Multiple Registers (Code=16)             | Yes                                   |
| — Parameter change by master                     | No                                    |
| — Modbus TCP Security Protocol                   | No                                    |
| <b>Address space per station</b>                 |                                       |
| — Address space per station, max.                | 20 byte                               |
| — Access-consistent address space                | 2 byte                                |
| <b>Updating time</b>                             |                                       |
| — I/O request interval                           | 2 ms                                  |
| <b>Connections</b>                               |                                       |
| — number of connections per device               | 12                                    |
| <b>Open IE communication</b>                     |                                       |
| • TCP/IP                                         | Yes; (only EtherNet/IP or Modbus TCP) |
| • SNMP                                           | Yes                                   |
| • LLDP                                           | Yes                                   |
| • ARP                                            | Yes                                   |
| <b>Isochronous mode</b>                          |                                       |
| Equidistance                                     | Yes                                   |
| shortest clock pulse                             | 250 µs                                |
| max. cycle                                       | 4 ms                                  |
| Jitter, max.                                     | 10 µs                                 |
| <b>Interrupts/diagnostics/status information</b> |                                       |
| <b>Alarms</b>                                    |                                       |
| • Diagnostic alarm                               | Yes; Parameterizable                  |
| • Maintenance interrupt                          | Yes; Parameterizable                  |
| • Hardware interrupt                             | Yes; Parameterizable                  |
| <b>Diagnoses</b>                                 |                                       |
| • Diagnostic information readable                | Yes                                   |

|                                                                                                                                                                                                                                               |                                                                                                                                                                                            |         |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------|
| <ul style="list-style-type: none"><li>Monitoring the supply voltage<ul style="list-style-type: none"><li>— parameterizable</li></ul></li><li>Wire break</li><li>Short-circuit encoder supply</li></ul>                                        | Yes<br>Yes<br>Yes; DI, input current < 0.3 mA, per channel<br>Yes; Per channel group                                                                                                       |         |                |
| Diagnostics indication LED                                                                                                                                                                                                                    |                                                                                                                                                                                            |         |                |
| <ul style="list-style-type: none"><li>RUN LED</li><li>ERROR LED</li><li>MAINT LED</li><li>NS LED</li><li>MS LED</li><li>IO LED</li><li>Channel status display</li><li>for channel diagnostics</li><li>Connection display LINK TX/RX</li></ul> | Yes; green LED<br>Yes; red LED<br>Yes; Yellow LED<br>Yes; green/red LED<br>Yes; green/red LED<br>Yes; red/green/yellow LEDs<br>Yes; green LED<br>Yes; red LED<br>Yes; green LED, only link |         |                |
| Potential separation                                                                                                                                                                                                                          |                                                                                                                                                                                            |         |                |
| between the load voltages                                                                                                                                                                                                                     | Yes                                                                                                                                                                                        |         |                |
| between Ethernet and electronics                                                                                                                                                                                                              | Yes                                                                                                                                                                                        |         |                |
| Potential separation channels                                                                                                                                                                                                                 |                                                                                                                                                                                            |         |                |
| <ul style="list-style-type: none"><li>between the channels</li><li>between the channels and the power supply of the electronics</li></ul>                                                                                                     | No<br>No                                                                                                                                                                                   |         |                |
| Isolation                                                                                                                                                                                                                                     |                                                                                                                                                                                            |         |                |
| tested with                                                                                                                                                                                                                                   |                                                                                                                                                                                            |         |                |
| <ul style="list-style-type: none"><li>24 V DC circuits</li><li>Test voltage for interface, rms value [Vrms]</li></ul>                                                                                                                         | 707 V DC (type test)<br>1 500 V; According to IEEE 802.3                                                                                                                                   |         |                |
| Degree and class of protection                                                                                                                                                                                                                |                                                                                                                                                                                            |         |                |
| IP degree of protection                                                                                                                                                                                                                       | IP65/67/69K                                                                                                                                                                                |         |                |
| Standards, approvals, certificates                                                                                                                                                                                                            |                                                                                                                                                                                            |         |                |
| Suitable for safety-related tripping of standard modules                                                                                                                                                                                      | Yes; from FS01                                                                                                                                                                             |         |                |
| Highest safety class achievable for safety-related tripping of standard modules                                                                                                                                                               |                                                                                                                                                                                            |         |                |
| <ul style="list-style-type: none"><li>Performance level according to ISO 13849-1</li><li>Category according to ISO 13849-1</li><li>SIL acc. to IEC 62061</li><li>remark on safety-oriented shutdown</li></ul>                                 | PL d<br>Cat. 3<br>SIL 2<br><a href="https://support.industry.siemens.com/cs/de/en/view/39198632">https://support.industry.siemens.com/cs/de/en/view/39198632</a>                           |         |                |
| Use in hazardous areas                                                                                                                                                                                                                        |                                                                                                                                                                                            |         |                |
| <ul style="list-style-type: none"><li>Explosion protection category for gas</li><li>Explosion protection category for dust</li></ul>                                                                                                          | ATEX, UKEX, IECEx, CCCEX for Zone 2<br>ATEX, UKEX, IECEx, CCCEX for Zone 22                                                                                                                |         |                |
| Security                                                                                                                                                                                                                                      |                                                                                                                                                                                            |         |                |
| signed firmware update                                                                                                                                                                                                                        | Yes                                                                                                                                                                                        |         |                |
| safely removing data                                                                                                                                                                                                                          | Yes                                                                                                                                                                                        |         |                |
| Ambient conditions                                                                                                                                                                                                                            |                                                                                                                                                                                            |         |                |
| Ambient temperature during operation                                                                                                                                                                                                          |                                                                                                                                                                                            |         |                |
| <ul style="list-style-type: none"><li>min.</li><li>max.</li></ul>                                                                                                                                                                             | -40 °C<br>60 °C                                                                                                                                                                            |         |                |
| Altitude during operation relating to sea level                                                                                                                                                                                               |                                                                                                                                                                                            |         |                |
| <ul style="list-style-type: none"><li>Ambient air temperature-barometric pressure-altitude</li></ul>                                                                                                                                          | Up to max. 5 000 m, at installation height > 2 000 m additional restrictions                                                                                                               |         |                |
| Connection method                                                                                                                                                                                                                             |                                                                                                                                                                                            |         |                |
| Design of electrical connection                                                                                                                                                                                                               | 4/5-pin M12 circular connectors                                                                                                                                                            |         |                |
| Design of electrical connection for the inputs and outputs                                                                                                                                                                                    | M12, 5-pin, A-coded                                                                                                                                                                        |         |                |
| Design of electrical connection for supply voltage                                                                                                                                                                                            | M12, 4-pin, L-coded                                                                                                                                                                        |         |                |
| Dimensions                                                                                                                                                                                                                                    |                                                                                                                                                                                            |         |                |
| Width                                                                                                                                                                                                                                         | 45 mm                                                                                                                                                                                      |         |                |
| Height                                                                                                                                                                                                                                        | 200 mm                                                                                                                                                                                     |         |                |
| Depth                                                                                                                                                                                                                                         | 48 mm                                                                                                                                                                                      |         |                |
| Weights                                                                                                                                                                                                                                       |                                                                                                                                                                                            |         |                |
| Weight, approx.                                                                                                                                                                                                                               | 780 g                                                                                                                                                                                      |         |                |
| Classifications                                                                                                                                                                                                                               |                                                                                                                                                                                            |         |                |
|                                                                                                                                                                                                                                               |                                                                                                                                                                                            | Version | Classification |

|        |     |             |
|--------|-----|-------------|
| eClass | 16  | 27-24-26-04 |
| eClass | 14  | 27-24-26-04 |
| eClass | 12  | 27-24-26-04 |
| eClass | 9.1 | 27-24-26-04 |
| eClass | 9   | 27-24-26-04 |
| eClass | 8   | 27-24-26-04 |
| eClass | 7.1 | 27-24-26-04 |
| eClass | 6   | 27-24-26-04 |
| ETIM   | 10  | EC001599    |
| ETIM   | 9   | EC001599    |
| ETIM   | 8   | EC001599    |
| ETIM   | 7   | EC001599    |
| IDEA   | 4   | 3566        |
| UNSPSC | 15  | 32-15-17-05 |

Approvals / Certificates

General Product Approval

[Miscellaneous](#)
[Manufacturer Declaration](#)





EG-Konf.

UL

RCM

General Product ApprovalFor use in hazardous locations


[China RoHS](#)
[CCC-Ex](#)


[Miscellaneous](#)

ATEX

IECEX

For use in hazardous locationsMaritime application

[CCC-Ex](#)




[NK / Nippon Kaiji Kyokai](#)

ABS

BUREAU VERITAS

DNV

LRS

Maritime applicationotherFood, Pharmaceutical, MedicalEnvironment


[CCS \(China Classification Society\)](#)
[KR \(Korean Register of Shipping\)](#)

[Confirmation](#)


EnvironmentIndustrial Communication


[PROFINET](#)