



SIMATIC ET 200eco PN, CM 8x IO-Link + DI 4x 24 V DC, M12-L, 8x M12, 4x port class A + 4x port class B, channel diagnostics, shared device with 2 controllers, prioritized startup, 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                                         | V5.2.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)               | 0FA9H                                                                                 |
| Product function                                         |                                                                                       |
| • I&M data                                               | Yes; I&M0 to I&M3, I&M5                                                               |
| • Isochronous mode                                       | No                                                                                    |
| • 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                                           |                                                                                       |
| • IO-Link                                                | Yes                                                                                   |
| • DI                                                     | Yes                                                                                   |
| • DQ                                                     | No                                                                                    |
| • MSI                                                    | No                                                                                    |
| • MSO                                                    | No                                                                                    |
| 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                                                              |
| Load voltage 2L+                                         |                                                                                       |
| • 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 |

|                                                                 |                                                       |
|-----------------------------------------------------------------|-------------------------------------------------------|
| <b>Input current</b>                                            |                                                       |
| Current consumption (rated value)                               | 70 mA; without load                                   |
| from load voltage 1L+ (unswitched voltage)                      | 12 A; Maximum value                                   |
| from load voltage 2L+, max.                                     | 12 A; Maximum value                                   |
| <b>Encoder supply</b>                                           |                                                       |
| Number of outputs                                               | 8                                                     |
| <b>24 V encoder supply</b>                                      |                                                       |
| • Short-circuit protection                                      | Yes; per channel, electronic                          |
| • Output current, max.                                          | 0.5 A; Per channel                                    |
| <b>Power loss</b>                                               |                                                       |
| Power loss, typ.                                                | 5.5 W                                                 |
| <b>Address area</b>                                             |                                                       |
| <b>Address space per module</b>                                 |                                                       |
| • Inputs                                                        | 264 byte; + 8 bytes for QI information                |
| • Outputs                                                       | 256 byte                                              |
| <b>Hardware configuration</b>                                   |                                                       |
| <b>Submodules</b>                                               |                                                       |
| • Number of configurable submodules, max.                       | 9                                                     |
| <b>Digital inputs</b>                                           |                                                       |
| Number of digital inputs                                        | 4                                                     |
| Sourcing/sinking input                                          | P-reading                                             |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes                                                   |
| <b>Number of simultaneously controllable inputs</b>             |                                                       |
| <b>all mounting positions</b>                                   |                                                       |
| — up to 60 °C, max.                                             | 4                                                     |
| <b>Input voltage</b>                                            |                                                       |
| • Rated value (DC)                                              | 24 V                                                  |
| • for signal "0"                                                | -3 to +5V                                             |
| • for signal "1"                                                | +11 to +30V                                           |
| <b>Input current</b>                                            |                                                       |
| • for signal "1", typ.                                          | 2.5 mA                                                |
| <b>Input delay (for rated value of input voltage)</b>           |                                                       |
| <b>for standard inputs</b>                                      |                                                       |
| — at "0" to "1", max.                                           | typically 3 ms                                        |
| — at "1" to "0", max.                                           | typically 3 ms                                        |
| <b>Cable length</b>                                             |                                                       |
| • unshielded, max.                                              | 30 m                                                  |
| <b>IO-Link</b>                                                  |                                                       |
| Number of ports                                                 | 8                                                     |
| • of which simultaneously controllable                          | 8                                                     |
| IO-Link protocol 1.0                                            | Yes                                                   |
| IO-Link protocol 1.1                                            | Yes                                                   |
| Transmission rate                                               | 4.8 kBaud (COM1); 38.4 kBaud (COM2), 230 kBaud (COM3) |
| Cycle time, min.                                                | 2 ms                                                  |
| Size of process data, input per port                            | 33 byte                                               |
| Size of process data, input per module                          | 264 byte                                              |
| Size of process data, output per port                           | 32 byte                                               |
| Size of process data, output per module                         | 256 byte                                              |
| Memory size for device parameter                                | 2 kbyte; for each port                                |
| Master backup                                                   | possible with LIOLink_Master function block           |
| Configuration without S7-PCT                                    | Possible; autostart/manual function                   |
| Cable length unshielded, max.                                   | 20 m                                                  |
| <b>Operating modes</b>                                          |                                                       |
| • IO-Link                                                       | Yes                                                   |
| • DI                                                            | Yes                                                   |
| • DQ                                                            | Yes; max. 100 mA                                      |
| <b>Connection of IO-Link devices</b>                            |                                                       |
| • Port type A                                                   | Yes; via 3-core cable                                 |

- Port type B Yes; additional device supply: max. 2 A per port, max. 6 A per module
- via three-wire connection Yes

## Interfaces

|                               |            |
|-------------------------------|------------|
| Transmission procedure        | 100BASE-TX |
| Number of PROFINET interfaces | 1          |

### 1. Interface

|                |                                                   |
|----------------|---------------------------------------------------|
| 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                                 |
| — Number of IO Controllers with shared device, max. | 2                                   |

#### Interface types

|                           |            |
|---------------------------|------------|
| M12 port                  |            |
| • Autonegotiation         | Yes        |
| • Autocrossing            | Yes        |
| • Transmission rate, max. | 100 Mbit/s |

#### Protocols

|                                   |     |
|-----------------------------------|-----|
| Supports protocol for PROFINET IO | Yes |
| PROFIsafe                         | No  |
| EtherNet/IP                       | Yes |
| Modbus TCP                        | Yes |

|                                   |     |
|-----------------------------------|-----|
| Redundancy mode                   |     |
| • PROFINET system redundancy (S2) | Yes |
| — on S7-1500R/H                   | Yes |
| — on S7-400H                      | Yes |
| • PROFINET system redundancy (R1) | No  |
| • H-Sync forwarding               | Yes |

|                  |     |
|------------------|-----|
| Media redundancy |     |
| — MRP            | Yes |
| — MRPD           | No  |

#### EtherNet/IP

|                                               |                             |
|-----------------------------------------------|-----------------------------|
| Services                                      |                             |
| — 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                           |

|                                   |      |
|-----------------------------------|------|
| Updating times                    |      |
| — Requested Packet Interval (RPI) | 2 ms |

|                           |    |
|---------------------------|----|
| Redundancy mode           |    |
| — DLR (Device Level Ring) | No |

|                                  |          |
|----------------------------------|----------|
| Address area                     |          |
| — Address space per module, max. | 300 byte |
| — LargeForwardOpen (Class3)      | No       |

|                                   |     |
|-----------------------------------|-----|
| Modbus TCP                        |     |
| Services                          |     |
| — 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.                                                      | 300 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>Interrupts/diagnostics/status information</b>                                       |                                                                                                                                       |
| <b>Alarms</b>                                                                          |                                                                                                                                       |
| • Diagnostic alarm                                                                     | Yes; Parameterizable                                                                                                                  |
| • Maintenance interrupt                                                                | Yes; Parameterizable                                                                                                                  |
| <b>Diagnoses</b>                                                                       |                                                                                                                                       |
| • Diagnostic information readable                                                      | Yes                                                                                                                                   |
| • Monitoring the supply voltage                                                        | Yes                                                                                                                                   |
| — Parameterizable                                                                      | Yes                                                                                                                                   |
| • Wire break                                                                           | Yes                                                                                                                                   |
| • Short-circuit encoder supply                                                         | Yes; Per channel                                                                                                                      |
| <b>Diagnostics indication LED</b>                                                      |                                                                                                                                       |
| • RUN LED                                                                              | Yes; green LED                                                                                                                        |
| • ERROR LED                                                                            | Yes; red LED                                                                                                                          |
| • MAINT LED                                                                            | Yes; Yellow LED                                                                                                                       |
| • Monitoring of the supply voltage (PWR-LED)                                           | Yes; green LED                                                                                                                        |
| • NS LED                                                                               | Yes; green/red LED                                                                                                                    |
| • MS LED                                                                               | Yes; green/red LED                                                                                                                    |
| • IO LED                                                                               | Yes; red/green/yellow LEDs                                                                                                            |
| • Channel status display                                                               | Yes; green LED                                                                                                                        |
| • for channel diagnostics                                                              | Yes; red LED                                                                                                                          |
| • For load voltage monitoring                                                          | Yes; green LED                                                                                                                        |
| • Connection display LINK TX/RX                                                        | Yes; green LED, only link                                                                                                             |
| <b>Potential separation</b>                                                            |                                                                                                                                       |
| between the load voltages                                                              | Yes                                                                                                                                   |
| between Ethernet and electronics                                                       | Yes                                                                                                                                   |
| <b>Potential separation channels</b>                                                   |                                                                                                                                       |
| • between the channels                                                                 | No                                                                                                                                    |
| • between the channels and the power supply of the electronics                         | No                                                                                                                                    |
| <b>Isolation</b>                                                                       |                                                                                                                                       |
| <b>tested with</b>                                                                     |                                                                                                                                       |
| • 24 V DC circuits                                                                     | 707 V DC (type test)                                                                                                                  |
| • Test voltage for interface, rms value [Vrms]                                         | 1 500 V; According to IEEE 802.3                                                                                                      |
| <b>Degree and class of protection</b>                                                  |                                                                                                                                       |
| IP degree of protection                                                                | IP65/67/69K                                                                                                                           |
| <b>Standards, approvals, certificates</b>                                              |                                                                                                                                       |
| Suitable for safety-related tripping of standard modules                               | Yes; from FS01                                                                                                                        |
| <b>Highest safety class achievable for safety-related tripping of standard modules</b> |                                                                                                                                       |
| • Performance level according to ISO 13849-1                                           | PL d                                                                                                                                  |
| • Category according to ISO 13849-1                                                    | Cat. 3                                                                                                                                |
| • SIL acc. to IEC 62061                                                                | SIL 2                                                                                                                                 |
| • remark on safety-oriented shutdown                                                   | <a href="https://support.industry.siemens.com/cs/de/en/view/39198632">https://support.industry.siemens.com/cs/de/en/view/39198632</a> |
| <b>Use in hazardous areas</b>                                                          |                                                                                                                                       |

- Explosion protection category for gas
- Explosion protection category for dust

ATEX, UKEX, IECEx, CCCEx for Zone 2  
ATEX, UKEX, IECEx, CCCEx for Zone 22

#### Security

|                        |     |
|------------------------|-----|
| signed firmware update | Yes |
| safely removing data   | Yes |

#### Ambient conditions

|                                                        |                                                                                                      |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Ambient temperature during operation                   |                                                                                                      |
| • min.                                                 | -40 °C                                                                                               |
| • max.                                                 | 60 °C                                                                                                |
| Altitude during operation relating to sea level        |                                                                                                      |
| • Ambient air temperature-barometric pressure-altitude | Up to max. 5 000 m, at installation height > 2 000 m additional restrictions, see manual for details |

#### 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      | 27-24-26-08    |
| eClass | 14      | 27-24-26-08    |
| eClass | 12      | 27-24-26-08    |
| eClass | 9.1     | 27-24-26-08    |
| eClass | 9       | 27-24-26-08    |
| eClass | 8       | 27-24-26-08    |
| eClass | 7.1     | 27-24-26-08    |
| eClass | 6       | 27-24-26-08    |
| ETIM   | 10      | EC001604       |
| ETIM   | 9       | EC001604       |
| ETIM   | 8       | EC001604       |
| ETIM   | 7       | EC001604       |
| IDEA   | 4       | 3564           |
| UNSPSC | 15      | 32-15-17-05    |

#### Approvals / Certificates

##### General Product Approval

[Miscellaneous](#)

[Manufacturer Declaration](#)



##### General Product Approval

##### For use in hazardous locations



[China RoHS](#)

[CCC-Ex](#)



[Miscellaneous](#)

##### For use in hazardous locations

##### Maritime application

[CCC-Ex](#)



[NK / Nippon Kaiji Kyokai](#)

|                      |       |                               |             |
|----------------------|-------|-------------------------------|-------------|
| Maritime application | other | Food, Pharmaceutical, Medical | Environment |
|----------------------|-------|-------------------------------|-------------|



[CCS \(China Classification Society\)](#)

[KR \(Korean Register of Shipping\)](#)



[Confirmation](#)



|             |                          |
|-------------|--------------------------|
| Environment | Industrial Communication |
|-------------|--------------------------|



[PROFINET](#)

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