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SIMATIC ET 200eco PN, CM 4x IO-Link + DIQ 12x 24 V DC/0.5 A/2 A, M12-L, 8x M12, 4x port class A 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	From FS03
Firmware version	V5.1.x
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
Vendor identification (VendorID)	002AH
Device identifier (DeviceID)	0306H
Manufacturer ID according to ODVA (VendorID)	04E3H
Device ID according to ODVA (Product code)	0FADH
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> <li>Isochronous mode</li> <li>IRT</li> <li>Prioritized startup</li> </ul>	Yes; I&M0 to I&M3 No Yes Yes
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> <li>PROFINET from GSD version/GSD revision</li> <li>Multi Fieldbus Configuration Tool (MFCT)</li> </ul>	STEP 7 V17 or higher with HSP 0378 GSDML V2.4.x V1.4.1 or higher
Operating mode	
<ul style="list-style-type: none"> <li>IO-Link</li> <li>DI</li> <li>DQ</li> <li>MSI</li> <li>MSO</li> </ul>	Yes Yes Yes Yes Yes
Supply voltage	
power supply according to NEC Class 2 required	No
Load voltage 1L+	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>permissible range, lower limit (DC)</li> <li>permissible range, upper limit (DC)</li> <li>Reverse polarity protection</li> </ul>	24 V 20.4 V 28.8 V Yes; against destruction
Load voltage 2L+	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>permissible range, lower limit (DC)</li> <li>permissible range, upper limit (DC)</li> <li>Reverse polarity protection</li> </ul>	24 V 20.4 V 28.8 V Yes; against destruction
Input current	

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	4
<b>24 V encoder supply</b>	
• Short-circuit protection	Yes; per channel, electronic
• Output current, max.	2 A; Per channel
<b>Power loss</b>	
Power loss, typ.	9.7 W
<b>Address area</b>	
Address space per module	
• Inputs	146 byte; + 8 bytes for QI information
• Outputs	130 byte
<b>Hardware configuration</b>	
Submodules	
• Number of configurable submodules, max.	6
<b>Digital inputs</b>	
Number of digital inputs	12; Parameterizable as DIQ
• in groups of	4
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.	12
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+11 to +30V
Input current	
• for signal "1", typ.	2.5 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>Digital outputs</b>	
Number of digital outputs	12; Parameterizable as DIQ
• in groups of	2 load groups for 4 or 8 outputs each
Current-sourcing	Yes
output type acc. to IEC 61131, type 0.5	Yes
Short-circuit protection	Yes; per channel, electronic
• Response threshold, typ.	0.5 A: 1 A / 2 A: 3 A
Limitation of inductive shutdown voltage to	0.5 A: Type 1L+ (-70 V) / 2 A: Type (-18 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
• with resistive load, max.	0.5 A / 2 A
• with inductive load, max.	0.5 A / 2 A
• on lamp load, max.	0.5 A: 5 W / 2 A 10 W
Load resistance range	
• lower limit	0.5 A: 48 ohms / 2 A: 12 ohms
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	1L+ (-0.8 V) / 2L+ (-0.8 V)
Output current	
• for signal "1" rated value	0.5 A / 2 A
• for signal "1" permissible range, max.	0.5 A / 2 A
• for signal "0" residual current, max.	0.1 mA

<b>Output delay with resistive load</b>	
<ul style="list-style-type: none"> <li>• "0" to "1", max.</li> <li>• "1" to "0", max.</li> </ul>	0.5 A: 100 µs / 2 A: 150 µs; at rated load 0.5 A: 150 µs / 2 A: 2.5 ms; at rated load
<b>Parallel switching of two outputs</b>	
<ul style="list-style-type: none"> <li>• for uprating</li> <li>• for redundant control of a load</li> </ul>	No Yes
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>• with resistive load, max.</li> <li>• with inductive load, max.</li> <li>• on lamp load, max.</li> </ul>	0.5 A: 100 Hz / 2 A: 40 Hz 0.5 Hz 1 Hz
<b>Total current of the outputs</b>	
<ul style="list-style-type: none"> <li>• Current per group, max.</li> <li>• Current per module, max.</li> </ul>	1L+: 2 A / 2L+: 5.5 A 7.5 A
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• unshielded, max.</li> </ul>	30 m
<b>Encoder</b>	
<b>Connectable encoders</b>	
<ul style="list-style-type: none"> <li>• 2-wire sensor</li> <li>— permissible quiescent current (2-wire sensor), max.</li> </ul>	Yes 1.5 mA
<b>IO-Link</b>	
Number of ports	4
<ul style="list-style-type: none"> <li>• of which simultaneously controllable</li> </ul>	4
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	132 byte
Size of process data, output per port	32 byte
Size of process data, output per module	128 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>	
<ul style="list-style-type: none"> <li>• IO-Link</li> <li>• DI</li> <li>• DQ</li> </ul>	Yes Yes Yes; max. 100 mA
<b>Connection of IO-Link devices</b>	
<ul style="list-style-type: none"> <li>• Port type A</li> <li>• Port type B</li> <li>• via three-wire connection</li> </ul>	Yes; via 3-core cable No Yes
<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)
<b>Interface types</b>	
<ul style="list-style-type: none"> <li>• M12 port</li> <li>• Number of ports</li> <li>• integrated switch</li> </ul>	Yes; 2x M12, 4-pin, D-coded 2 Yes
<b>Protocols</b>	
<ul style="list-style-type: none"> <li>• PROFINET IO Device</li> <li>• Open IE communication</li> </ul>	Yes Yes
<b>PROFINET IO Device</b>	
<b>Services</b>	
<ul style="list-style-type: none"> <li>— IRT</li> <li>— Prioritized startup</li> <li>— Shared device</li> </ul>	Yes; 250 µs to 4 ms in 125 µs frame Yes 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

### Address space per station

- Address space per station, max. 300 byte
- Access-consistent address space 2 byte

### Updating time

- I/O request interval 2 ms

### Connections

- number of connections per device 12

## Open IE communication

- TCP/IP Yes; (only EtherNet/IP or Modbus TCP)
- SNMP Yes
- LLDP Yes
- ARP Yes

## Interrupts/diagnostics/status information

Substitute values connectable Yes

## Alarms

• Diagnostic alarm	Yes; Parameterizable
• Maintenance interrupt	Yes; Parameterizable
• Hardware interrupt	Yes; Parameterizable
<b>Diagnoses</b>	
• Diagnostic information readable	Yes
• Monitoring the supply voltage	Yes
— parameterizable	Yes
• Wire break	Yes; DI, input current < 0.3 mA, per channel
• 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 LED
• 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	Yes
• between the channels and the power supply of the electronics	8 channels are non-isolated and 8 channels are isolated from supply voltage 1L+
<b>Isolation</b>	
tested with	
• 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
Highest safety class achievable for safety-related tripping of standard modules	
• 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	ATEX, UKEX, IECEx, CCCEX for Zone 2
• Explosion protection category for dust	ATEX, UKEX, IECEx, CCCEX for Zone 22
<b>Security</b>	
signed firmware update	Yes
safely removing data	Yes
<b>Ambient conditions</b>	
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
<b>Connection method</b>	
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
<b>Dimensions</b>	
Width	45 mm

Height	200 mm
Depth	48 mm
<b>Weights</b>	
Weight, approx.	780 g

<b>Classifications</b>			
		Version	Classification
	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

**Approvals / Certificates**

**General Product Approval**

[Manufacturer Declaration](#)



[Miscellaneous](#)



**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](#)

last modified:

5/15/2026