



SIMATIC ET 200AL, MultiFieldbus interface module IM 157-1 MF, PN IO, EtherNet/IP, Modbus TCP, PN security class 1, degree of protection IP67

General information	
Product type designation	IM 157-1 MF
HW functional status	FS01
Firmware version	V1.0.x
• FW update possible	Yes
Vendor identification (VendorID)	002AH
Device identifier (DeviceID)	0314H
Manufacturer ID according to ODVA (VendorID)	0x04E3
Device ID according to ODVA (Product code)	0x0FB6
Product function	
• I&M data	Yes; I&M0 to I&M4
• Isochronous mode	No
• IRT	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	STEP 7 V19 or higher
• STEP 7 configurable/integrated from version	from V5.6
• PROFINET from GSD version/GSD revision	GSDML V2.4.x
• Multi Fieldbus Configuration Tool (MFCT)	from V1.5
Configuration control	
via dataset	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
Input current	
Current consumption (rated value)	80 mA
from load voltage 1L+ (unswitched voltage)	4 A; Maximum value
from load voltage 2L+, max.	4 A; Maximum value
Power loss	
Power loss, typ.	2.5 W
Address area	
Address space per module	
• Address space per module, max.	264 byte; For input and output data respectively
Address space per station	
• Address space per station, max.	1 440 byte
Hardware configuration	
Submodules	

• Number of submodules per station, max.	125
<b>Interfaces</b>	
Number of PROFINET interfaces	1; 2 ports (switch)
<b>1. Interface</b>	
Interface type	PROFINET
<b>Interface types</b>	
• M12 port	Yes; 2x M12 D-coded
• integrated switch	Yes
<b>Protocols</b>	
• PROFINET IO Device	Yes
• Open IE communication	Yes
<b>Interface types</b>	
<b>M12 port</b>	
• Transmission procedure	PROFINET with 100 Mbit/s full duplex (100BASE-TX)
• 100 Mbps	Yes; PROFINET with 100 Mbit/s full duplex (100BASE-TX)
• Autonegotiation	Yes
• Autocrossing	Yes
<b>Protocols</b>	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	No
EtherNet/IP	Yes
Modbus TCP	Yes
<b>PROFINET IO Device</b>	
<b>Services</b>	
— IRT	Yes; 250 µs, 500 µs, 1 ms, 2 ms, 4 ms, 8 ms, 16 ms, 32 ms, 64 ms, 128 ms
— PROFInergy	Yes
— Shared device	Yes
— Number of IO Controllers with shared device, max.	14; 4x PN controller + 2x EtherNet/IP scanner + 10x Modbus TCP master
<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	Yes
<b>EtherNet/IP</b>	
<b>Services</b>	
— CIP Implicit Messaging	Yes
— CIP Explicit Messaging	Yes
— CIP Safety	No
— Configuration control via Explicit Messaging	No
— Shared device	Yes; 4x PN controller + 2x EtherNet/IP scanner + 10x Modbus TCP master
— 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.	264 byte
— ForwardOpen (Class1 & 32 bit Header)	500 byte
— LargeForwardOpen (Class3)	4 002 byte
<b>Modbus TCP</b>	
<b>Services</b>	
— read coils (code=1)	Yes
— read discrete inputs (code=2)	Yes
— Read Holding Registers (Code=3)	Yes
— Read Input Register (Code=4)	Yes

— write single coil (code=5)	Yes
— Write Single Register (Code=6)	Yes
— write multiple coils (code=15)	Yes
— Write Multiple Registers (Code=16)	Yes
— Read/Write Multiple Registers (Code=23)	Yes
— Parameter change by master	Yes
— Modbus TCP Security Protocol	No
<b>Address space per station</b>	
— Address space per station, max.	500 byte; (246 byte outputs / 500 byte inputs)
— Access-consistent address space	250 byte; (246 byte outputs / 250 byte inputs)
<b>Updating time</b>	
— I/O request interval	2 ms
<b>Connections</b>	
— number of connections per device	9; (1x inputs / 2x outputs / 4x volatile registers / 2x Device Info)
<b>Open IE communication</b>	
• TCP/IP	Yes
• SNMP	Yes
• LLDP	Yes
• ARP	Yes
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostics indication LED</b>	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
• MAINT LED	Yes; Yellow LED
• NS LED	Yes; green/red LED
• MS LED	Yes; green/red LED
• IO LED	Yes; red/green/yellow LEDs
• Connection display LINK TX/RX	Yes; 2x green LED
<b>Potential separation</b>	
between the load voltages	Yes
between PROFINET and all other circuits	Yes
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Degree and class of protection</b>	
IP degree of protection	IP65/67
<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>product functions / security / header</b>	
PROFINET Security Class	1
signed firmware update	Yes
Secure Boot	Yes
safely removing data	Yes
data integrity	Yes
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• min.	-30 °C
• max.	55 °C
<b>Altitude during operation relating to sea level</b>	
• 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 for supply voltage	M8, 4-pole
ET-Connection	

• ET-Connection

M8, 4-pin, shielded

**Dimensions**

Width	45 mm
Height	159 mm
Depth	40 mm

**Weights**

Weight, approx.	215 g
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**Classifications**

	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	9	EC001604
ETIM	8	EC001604
ETIM	7	EC001604

**Approvals / Certificates**

**General Product Approval**

[Manufacturer Declaration](#)



[KC](#)

[Miscellaneous](#)



General Product Approval

EMV

Industrial Communication



[KC](#)

[PROFINET](#)

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