



SIMATIC ET 200SP MultiFieldbus interface module IM 155-6 MF High Feature, PN IO, Ethernet IP, Modbus TCP, max. 64 I/O modules and 16 ET 200AL modules, S2 redundancy, multi hot swap, 0.25 ms, isochronous mode, optional PN strain relief PN security class 1 including server module (6ES7193-6PA00-0AA0)

General information

Product type designation	IM 155-6 MF HF
Firmware version	V6.4.1
• FW update possible	Yes
Vendor identification (VendorID)	002AH
Device identifier (DeviceID)	0313H
Manufacturer ID according to ODVA (VendorID)	0x04E3
Device ID according to ODVA (Product code)	0FA2H

Product function

• I&M data	Yes; I&M0 to I&M4
• Module swapping during operation (hot swapping)	Yes; Multi-hot swapping
• Isochronous mode	Yes
• IRT	Yes
• Tool changer	Yes; Docking station and docking unit
• Local coupling, IO data	Yes
— Number of coupling modules	6; 1x output + max. 5x input

Engineering with

• STEP 7 TIA Portal configurable/integrated from version	V20
• STEP 7 configurable/integrated from version	V5.7 SP3
• PROFINET from GSD version/GSD revision	GSDML V2.45
• Multi Fieldbus Configuration Tool (MFCT)	V1.5.2.0 or higher

Configuration control

via dataset	Yes
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Supply voltage

Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Short-circuit protection	Yes

Mains buffering

• Mains/voltage failure stored energy time	10 ms
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Input current

Current consumption (rated value)	550 mA
Current consumption, max.	650 mA
Inrush current, max.	1 A
I ² t	0.05 A ² ·s

Power loss

Power loss, typ.	2 W
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Address area

Address space per module	
• Address space per module, max.	288 byte; For input and output data respectively
Address space per station	
• Address space per station, max.	1 440 byte
Hardware configuration	
Rack	
• Quantity of operable ET 200SP modules, max.	64
• Quantity of operable ET 200AL modules, max.	16
Submodules	
• Number of submodules per station, max.	256
Interfaces	
Transmission procedure	100BASE-TX
Number of PROFINET interfaces	1; 2 ports (switch)
1. Interface	
Interface types	
• RJ 45 (Ethernet)	Yes; with BusAdapter
• Number of ports	2; with BusAdapter
• integrated switch	Yes
• BusAdapter (PROFINET)	Yes; BA 2x RJ45, BA 2x M12, BA 2x FC
Protocols	
• PROFINET IO Device	Yes
• Open IE communication	Yes
• Media redundancy	Yes; PROFINET MRP client
PROFINET IO Device	
Services	
— IRT	Yes; 250 µs to 4 ms in 125 µs frame
— Dynamic Frame Packing (DFP)	Yes
— Fast Forwarding	Yes
— Fragmentation	Yes
— PROFIenergy	Yes
— Prioritized startup	Yes
— Shared device	Yes
— Number of IO Controllers with shared device, max.	14; 2x PN controller + 2x EtherNet/IP scanner + 10x Modbus TCP master
Interface types	
RJ 45 (Ethernet)	
• Transmission procedure	PROFINET with 100 Mbit/s full duplex (100BASE-TX)
• 100 Mbps	Yes
• Autonegotiation	Yes
• Autocrossing	Yes
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	Yes
PROFIBUS	No
EtherNet/IP	Yes
Modbus TCP	Yes
Number of connections	
• Number of MtM communication relationships/connections, max.	16
Redundancy mode	
• PROFINET system redundancy (S2)	Yes; NAP S2
• PROFINET system redundancy (R1)	No
• H-Sync forwarding	Yes
Media redundancy	
— MRP	Yes
— MRPD	Yes
EtherNet/IP	
Services	
— CIP Implicit Messaging	Yes
— CIP Explicit Messaging	Yes

— CIP Safety	No
— Configuration control via Explicit Messaging	No
— Shared device	Yes; 2x PN controller + 2x EtherNet/IP scanner + 10x Modbus TCP master
— Number of scanners with shared device, max.	2
Updating times	
— Requested Packet Interval (RPI)	2 ms
Address area	
— Address space per module, max.	288 byte; (246 byte outputs / 288 byte inputs)
— ForwardOpen (Class1 & 32 bit Header)	500 byte; (246 byte outputs / 500 byte inputs)
— LargeForwardOpen (Class3)	4 002 byte
Connections	
— Number of rack connections	2
Modbus TCP	
Services	
— 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
Address space per station	
— 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)
Updating time	
— I/O request interval	2 ms
Connections	
— number of connections per device	9; (1x inputs / 2x outputs / 4x volatile registers / 2x Device Info)
Open IE communication	
• TCP/IP	Yes
• UDP	Yes
• SNMP	Yes
• LLDP	Yes
• ARP	Yes
• IGMP	Yes
• Multicast	Yes
• Broadcast	Yes
• IPv4	Yes
• IPv6	No
Isochronous mode	
Equidistance	Yes
shortest clock pulse	250 µs
max. cycle	4 ms
Bus cycle time (TDP), min.	250 µs
Jitter, max.	1 µs
Interrupts/diagnostics/status information	
Status indicator	Yes
Alarms	Yes
Diagnostics function	Yes
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
• MAINT LED	Yes; Yellow LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• NS LED	Yes; green/red LED

• MS LED • IO LED • Connection display LINK TX/RX	Yes; green/red LED		
	Yes; red-green-yellow LED		
	Yes; 2x green link LEDs on BusAdapter		
Potential separation			
between backplane bus and electronics	No		
between PROFINET and all other circuits	Yes; 1500 V AC (type test)		
between supply and all other circuits	No		
Permissible potential difference			
between different circuits	Safety extra low voltage SELV		
Isolation			
Isolation tested with	707 V DC (type test)		
Standards, approvals, certificates			
Network loading class	3		
Security			
PROFINET Security Class	1		
signed firmware update	Yes		
Secure Boot	No		
safely removing data	Yes		
data integrity	Yes		
Ambient conditions			
Ambient temperature during operation			
• horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max.	-30 °C; No condensation		
	60 °C		
	-30 °C; No condensation		
	50 °C		
Altitude during operation relating to sea level			
• Installation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP system manual		
Connection method			
ET-Connection			
• via BU/BA Send	Yes; + 16 ET 200AL modules		
Mechanics/material			
Strain relief	Yes; Optional		
Dimensions			
Width	50 mm		
Height	117 mm		
Depth	74 mm		
Weights			
Weight, approx.	120 g; without BusAdapter		
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
Approvals / Certificates			
General Product Approval			



[Manufacturer Declaration](#)

[Miscellaneous](#)

[PROFINET](#)



General Product Approval

For use in hazardous locations



[China RoHS](#)



For use in hazardous locations

[FM](#)

[CCC-Ex](#)



IECEx

[Miscellaneous](#)

[Type Examination Certificate](#)

For use in hazardous locations

Maritime application

[CCC-Ex](#)



LRS

[NK / Nippon Kaiji Kyokai](#)

Maritime application



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

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

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