

I/O systems

SIMATIC ET 200 systems for the control cabinet
SIMATIC ET 200M

Interface modules > IM 153-4 PN

Overview



- For connecting ET 200M to PROFINET IO (via copper line, RJ45) as an IO device
- 2 versions:
 - IM 153-4 PN Standard
 - IM 153-4 PN High Feature: supports, in contrast to the STANDARD version, the operation of PROFI-safe F and HART modules. The operation of an S7-400H (system redundancy) is likewise possible
- Integrated 2-port switch
- 12 modules per station
- Usable I/O capacity: 192 bytes each
- Active bus backplane to hot-swap modules available as an option
- Baud rate 10 Mbps / 100 Mbps (autonegotiation / full duplex)
- I&M functions according to PNO Guideline Order No. 3.502, Version V1.1

Note:

Micro Memory Card with at least 64 KB required if not all the stations in the network support LLDP (Link Layer Discovery Protocol; proximity detection).

Technical specifications

Article number	6ES7153-4AA01-0XB0 IM153-4 PN IO FOR 12 MODULES S7-300	6ES7153-4BA00-0XB0 IM153-4 PN IO HF FOR 12 MODULES S7-300
General information		
Product type designation	IM 153-4 PN ST	IM 153-4 PN HF
Supply voltage		
Rated value (DC)	24 V	24 V
• 24 V DC	Yes	Yes
permissible range (ripple included), lower limit (DC)	20.4 V	18.5 V
permissible range (ripple included), upper limit (DC)	28.8 V	30.2 V
external protection for power supply lines (recommendation)	In a construction with grounded reference potential, a fuse is necessary for redundant interface modules (Recommendation: 2.5 A)	In a construction with grounded reference potential, a fuse is necessary for redundant interface modules (Recommendation: 2.5 A)
Mains buffering		
• Mains/voltage failure stored energy time	5 ms	5 ms
Input current		
Current consumption, max.	600 mA; with 24 V DC supply	600 mA; with 24 V DC supply
Inrush current, typ.	4 A	4 A
I ² t	0.09 A ² ·s	0.09 A ² ·s
Output voltage		
Rated value (DC)	5 V	5 V
Output current		
for backplane bus (5 V DC), max.	1.5 A	1.5 A
Power loss		
Power loss, typ.	6 W	6 W
Address area		
Addressing volume		
• Inputs	192 byte	672 byte; Extended HART user data
• Outputs	192 byte	192 byte
Hardware configuration		
Number of modules per DP slave interface, max.	12	12

Technical specifications (continued)

Article number	6ES7153-4AA01-0XB0 IM153-4 PN IO FOR 12 MODULES S7-300	6ES7153-4BA00-0XB0 IM153-4 PN IO HF FOR 12 MODULES S7-300
Protocols		
Bus protocol/transmission protocol	PROFINET IO	PROFINET IO
Interrupts/diagnostics/ status information		
Diagnostics indication LED		
• Connection to network LINK (green)	Yes	Yes
• Transmit/receive RX/TX (yellow)	Yes	Yes
Isolation		
Isolation tested with	500 V DC	Between PROFINET and 24 V supply: 1 500 V AC, between functional grounding and 24 V supply: 500 V DC
Degree and class of protection		
Degree of protection acc. to EN 60529		
• IP20	Yes	Yes
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	60 °C	60 °C
Air pressure acc. to IEC 60068-2-13		
• Installation altitude above sea level, max.	2 000 m	2 000 m
Dimensions		
Width	40 mm	40 mm
Height	125 mm	125 mm
Depth	118 mm	118 mm
Weights		
Weight, approx.	215 g	215 g

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Interface modules > IM 153-4 PN

Ordering data	Article No.		Article No.
IM 153-4 PN interface module I/O device to connect an ET 200M to PROFINET Standard High Feature	 6ES7153-4AA01-0XB0 6ES7153-4BA00-0XB0		
Accessories			
Bus modules for ET 200M • For accommodating a power supply and an IM 153 module for the hot-swapping function during RUN, incl. bus module cover • For accommodating two 40-mm-wide I/O modules for the hot-swapping function • For accommodating one 80-mm-wide I/O module for the hot-swapping function	 6ES7195-7HA00-0XA0 6ES7195-7HB00-0XA0 6ES7195-7HC00-0XA0		
SIMATIC Micro Memory Card 64 KB ¹⁾	6ES7953-8LF31-0AA0		
SIMATIC DP DIN rail for ET 200M Accommodates bus modules; for hot-swapping function • Length: 483 mm (19") • Length: 530 mm • Length: 620 mm • Length: 2000 mm	 6ES7195-1GA00-0XA0 6ES7195-1GF30-0XA0 6ES7195-1GG30-0XA0 6ES7195-1GC00-0XA0		
SIMATIC S7-300 DIN rail Length: 160 mm Length: 480 mm (19") Length: 530 mm Length: 830 mm Length: 2000 mm	 6ES7390-1AB60-0AA0 6ES7390-1AE80-0AA0 6ES7390-1AF30-0AA0 6ES7390-1AJ30-0AA0 6ES7390-1BC00-0AA0		
Power supply connector For connection of the 24 V DC power supply; spare part, 1 pack containing 10 units Spring-loaded connections Screw terminal connections	 6ES7193-4JB00-0AA0 6ES7193-4JB50-0AA0		
		S7 Manual Collection Electronic manuals on DVD, multi-language: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	6ES7998-8XC01-8YE0
		S7 Manual Collection update service for 1 year Scope of delivery: Current DVD "S7 Manual Collection" and the three subsequent updates	6ES7998-8XC01-8YE2
		Industrial Ethernet FC RJ45 Plug 180 RJ45 plug connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet 1 unit 10 units 50 units	 6GK1901-1BB10-2AA0 6GK1901-1BB10-2AB0 6GK1901-1BB10-2AE0
		Industrial Ethernet FastConnect installation cables • FastConnect standard cable • FastConnect trailing cable • FastConnect marine cable	 6XV1840-2AH10 6XV1840-3AH10 6XV1840-4AH10
		Industrial Ethernet FastConnect Stripping tool	 6GK1901-1GA00

¹⁾ To operate the IM153-4, an MMC is required with at least 64 KB memory. Cards with higher memory capacity may also be used.

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Interface modules > SIPLUS ET 200M IM 153-4 PN IO

Overview



- For connection of ET 200M as an IO device to PROFINET IO (copper, RJ45)
- 2 versions:
 - IM 153-4 PN STANDARD
 - IM 153-4 PN HIGH FEATURE: compared to the STANDARD version, also allows operation of PROFIsafe F and HART modules
- Integrated 2-port switch
- 12 modules per station
- Usable I/O quantity structure: 192 bytes each
- Active backplane bus for hot swapping of modules optionally available
- Baud rate 10 Mbps / 100 Mbps (Autonegotiation/Full Duplex)
- I&M functions according to PNO-Guideline Order-No. 3.502, Version V1.1

Notes:

Micro Memory Card with min. 64 KB required if not all participants in the network support LLDP (Link Layer Discovery Protocol; proximity detection).

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme-specific information was added.

Technical documentation on SIPLUS can be found here:
<http://www.siemens.com/siplus-extreme>

Technical specifications

Article number	6AG1153-4AA01-7XB0
Based on	6ES7153-4AA01-0XB0 SIPLUS ET 200M IM 153-4 PN IO
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	70 °C; = Tmax; 60 °C @ UL/cUL, ATEX and FM use
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Extended ambient conditions	
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
Relative humidity	
- With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!

Ordering data

Article No.

SIPLUS ET 200M IM 153-4 PN	
Slave interface for connecting an ET 200M to PROFINET for a maximum of 12 S7-300 modules	
• Extended temperature range and exposure to media	6AG1153-4AA01-7XB0
Accessories	
IE FC RJ45 Plug 180	6AG1901-1BB10-7AA0
180° cable outlet; 1 unit	
Additional accessories	See SIMATIC ET 200M IM 153-4 PN interface module, page 9/170