

I/O systems

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

Interface modules > IM 155-6

Technical specifications (continued)

Article number	6ES7155-6AR00-0AN0 ET 200SP, IM155-6PN BASIC	6ES7155-6AA01-0BN0 ET 200SP, IM155-6PN ST INCL. BA 2XRJ45	6ES7155-6AU00-0BN0 ET 200SP, IM155-6PN ST	6ES7155-6AU00-0CN0 ET 200SP, IM155-6PN HF	6ES7155-6AU00-0DN0 ET 200SP, IM155-6PN HS	6ES7155-6BA00-0CN0 ET 200SP, IM155-6DP HF INCL. DP-CONNECT.
Ambient conditions						
Ambient temperature during operation						
• horizontal installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
• horizontal installation, max.	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C
• vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
• vertical installation, max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
Dimensions						
Width	35 mm	50 mm	50 mm	50 mm	50 mm	50 mm
Height	117 mm	117 mm	117 mm	117 mm	117 mm	117 mm
Depth	74 mm	74 mm	74 mm	74 mm	74 mm	74 mm
Weights						
Weight, approx.	125 g	190 g; IM 155-6 PN BA with 2x RJ45 ports and server module	147 g; without BusAdapter	147 g; without BusAdapter	147 g; without BusAdapter	150 g

Ordering data

Article No.

Article No.

IM155-6PN Basic PROFINET interface module

With server module; two integrated RJ45 sockets

6ES7155-6AR00-0AN0

IM155-6PN Basic PROFINET interface module

With server module

- With attached SIMATIC BA 2xRJ45 BusAdapter
- Without SIMATIC BusAdapter

6ES7155-6AA01-0BN0

6ES7155-6AU00-0BN0

IM155-6PN High Feature PROFINET interface module

With server module,
without SIMATIC BusAdapter

6ES7155-6AU00-0CN0

IM155-6PN High Speed PROFINET interface module

With server module,
without SIMATIC BusAdapter

6ES7155-6AU00-0DN0

IM155-6DP High Feature PROFIBUS interface module

With server module, with PROFIBUS plug with PG socket

6ES7155-6BA00-0CN0

Accessories

SIMATIC BA 2xRJ45 BusAdapter

For PROFINET interface modules from Standard function class or above; max. cable length 50 m

6ES7193-6AR00-0AA0

SIMATIC BA 2xFC BusAdapter

For PROFINET interface modules from Standard function class or above; for increased vibration and EMC loads; max. cable length 50 m

6ES7193-6AF00-0AA0

SIMATIC BA 2xSCRJ BusAdapter

For PROFINET interface modules from High Feature function class or above; fiber-optic cable connection for POF or PCF; for increased vibration and EMC load capacity; max. cable length 50 m (POF) or 100 m (PCF)

6ES7193-6AP00-0AA0

SIMATIC BA SCRJ/RJ45 BusAdapter

For PROFINET interface modules from High Feature function class or above; with media converter FOC-Cu; for increased vibration and EMC loads; max. cable length 50 m (POF, copper) or 100 m (PCF)

6ES7193-6AP20-0AA0

SIMATIC BA SCRJ/FC BusAdapter

For PROFINET interface modules from High Feature function class or above; with media converter FOC-Cu; for increased vibration and EMC loads; max. cable length 50 m (POF, copper) or 100 m (PCF)

6ES7193-6AP40-0AA0

SIMATIC BA 2XLC BusAdapter

For PROFINET interface modules from High Feature function class or above; with LC fiber-optic connection; for increased vibration and EMC load capacity; max. cable length 2 km

6ES7193-6AG00-0AA0

SIMATIC BA LC/RJ45 BusAdapter

For PROFINET interface modules from High Feature function class or above; with media converter FOC-Cu; for increased vibration and EMC loads; max. cable length 2 km (glass) or 50 m (copper)

6ES7193-6AG20-0AA0

SIMATIC BA LC/FC BusAdapter

For PROFINET interface modules from High Feature function class or above; with media converter FOC-Cu; for increased vibration and EMC loads; max. cable length 2 km (glass) or 50 m (copper)

6ES7193-6AG40-0AA0

Station expansion with IP67 I/O system ET 200AL

ET 200SP
BA-Send 1 x FC BusAdapter

6ES7193-6AS00-0AA0

BaseUnit BU-Send

6ES7193-6BN00-0NE0

Overview



ET 200SP BusAdapter (RJ45)



BA 2xFC BusAdapter

Some interface modules of the SIPLUS ET 200SP have a universal PROFINET interface for BusAdapters. With the appropriate bus adapter, the type of connection can be adapted to the requirements of the respective application:

- For standard applications with a moderate mechanical and EMC load, the BA 2xRJ45 BusAdapter is used. It offers two sockets for standard RJ45 plugs.
- For machines and systems in which higher mechanical and/or EMC loads act on the devices, the BA 2xFC BusAdapter is recommended. In this case, the bus cables are connected directly by means of FastConnect terminals – similar to the PROFIBUS connector, proven in millions of applications. The technology is extremely quick to assemble and achieves 5 times better vibration resistance and also 5 times greater resistance to electromagnetic interference, when compared to RJ45 plug connectors.
- BusAdapters with connections for fiber-optic cables can be used to cover high potential differences between two stations and/or high EMC loads.

Another advantage of the BusAdapters: In order to repair defective RJ45 sockets or for subsequent conversion to the rugged FastConnect technology or a fiber-optic connection, only the adapter needs to be replaced.

The following interface modules offer a PROFINET connection via BusAdapter:

- SIPLUS IM 155-6PN Standard
- SIPLUS IM 155-6PN High Feature

Note

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 specifications

Article number based on	6AG1193-6AR00-7AA0 6ES7193-6AR00-0AA0 SIPLUS ET 200SP BA 2xRJ45	6AG1193-6AF00-7AA0 6ES7193-6AF00-0AA0 SIPLUS ET 200SP BA 2XFC PN	6AG1193-6AP00-2AA0 6ES7193-6AP00-0AA0 SIPLUS ET 200SP BA 2XSCRJ PN	6AG1193-6AG00-2AA0 6ES7193-6AG00-0AA0 SIPLUS ET 200SP BA 2XLC
Ambient conditions				
Ambient temperature during operation				
• min.	-40 °C; = Tmin; Startup @ -25 °C	-40 °C; = Tmin; Startup @ -25 °C	-40 °C; = Tmin; Startup @ -25 °C	-40 °C; = Tmin
• max.	70 °C; = Tmax	70 °C; = Tmax	60 °C; = Tmax	60 °C; = Tmax
Altitude during operation relating to sea level				
• Installation altitude above sea level, max.			5 000 m	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 080 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 080 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
Relative humidity				
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation

I/O systems

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SIMATIC ET 200SP

SIPLUS BusAdapters

Technical specifications (continued)

Article number based on	6AG1193-6AR00-7AA0 6ES7193-6AR00-0AA0 SIPLUS ET 200SP BA 2xRJ45	6AG1193-6AF00-7AA0 6ES7193-6AF00-0AA0 SIPLUS ET 200SP BA 2XFC PN	6AG1193-6AP00-2AA0 6ES7193-6AP00-0AA0 SIPLUS ET 200SP BA 2XSCRJ PN	6AG1193-6AG00-2AA0 6ES7193-6AG00-0AA0 SIPLUS ET 200SP BA 2XLC
Resistance				
Coolants and lubricants				
- Resistant to commercially available coolants and lubricants			Yes	Yes
Use in stationary industrial systems				
- to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
- to chemically active substances according to 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!	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!	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
- to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3S4 incl. sand, dust; *	Yes; Class 3S4 incl. sand, dust; *
Use on ships/at sea				
- to biologically active substances according to EN 60721-3-6			Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
- to chemically active substances according to EN 60721-3-6			Yes; Class 6C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 6C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
- to mechanically active substances according to EN 60721-3-6			Yes; Class 6S4 incl. sand, dust; *	Yes; Class 6S4 incl. sand, dust; *
Notes				
- Note regarding classification of environmental conditions acc. to EN 60721			* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!

Ordering data

Article No.	Article No.
SIPLUS BA 2xRJ45 BusAdapter (Extended temperature range and exposure to environmental substances) for IM 155-6PN ST, HF	6AG1193-6AR00-7AA0
SIPLUS BA 2xFC BusAdapter (Extended temperature range and exposure to environmental substances) for IM 155-6PN ST, HF; for increased resistance to vibration and EMC loads	6AG1193-6AF00-7AA0
SIPLUS BA 2xSCRJ BusAdapter (Extended temperature range and exposure to environmental substances) for IM 155-6PN HF; fiber-optic connection for POF or PCF cables up to 250 m, with monitoring of damping	6AG1193-6AP00-2AA0
SIPLUS BA 2xLC BusAdapter (Extended temperature range and exposure to environmental substances) For IM 155-6PN HF; 2 glass FO connections	6AG1193-6AG00-2AA0
Reference identification label 10 sheets of 16 labels, for printing with thermal transfer card printer or plotter	6ES7193-6LF30-0AW0

Technical specifications (continued)

Article number	6ES7158-3AD10-0XA0 SIMATIC PN/PN Coupler
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
• Connection to network LINK (green)	Yes; 2x green link LEDs on BusAdapter
Potential separation	
between supply voltage and electronics	Yes; to power input 2
between Ethernet and electronics	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Network loading class	3
Security level	According to Security Level 1 Test Cases V1.1.4

Article number	6ES7158-3AD10-0XA0 SIMATIC PN/PN Coupler
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C; = Tmax for horizontal installation; for vertical installation Tmax = 50 °C
Altitude during operation relating to sea level	
• Ambient air temperature-barometric pressure-altitude	Up to max. 2 000 m
Dimensions	
Width	100 mm; Minimized with good handling
Height	117 mm
Depth	74 mm; with mounting rail
Weights	
Weight, approx.	200 g; without BusAdapter

Ordering data

Article No.

PN/PN coupler	6ES7158-3AD10-0XA0
For deterministic data exchange between max. 4 PN controllers per side, also beyond network boundaries Transfer of PROFI-safe, I/O, MSI, MSO and data record communication, redundant power supply PN connection via SIMATIC BusAdapter (BA) Delivery without BusAdapter	
Accessories	
DIN rail 35 mm	
• Length: 483 mm for 19" cabinets	6ES5710-8MA11
• Length: 530 mm for 600 mm cabinets	6ES5710-8MA21
• Length: 830 mm for 900 mm cabinets	6ES5710-8MA31
• Length: 2 m	6ES5710-8MA41
BusAdapter BA 2xRJ45	6ES7193-6AR00-0AA0
PROFINET BusAdapter with standard Ethernet socket	
BusAdapter BA 2xFC	6ES7193-6AF00-0AA0
PROFINET BusAdapter with FastConnect Ethernet connection; for increased vibration and EMC load capacity	
BusAdapter BA 2xSCRJ	6ES7193-6AP00-0AA0
PROFINET BusAdapter with fiber-optic connection for POF or PCF cables up to 250 m, with monitoring of damping	
BusAdapter BA SCR/RJ45	6ES7193-6AP20-0AA0
PROFINET BusAdapter; with media converter FO-Cu; 1 x SCRJ FO connection, 1 x RJ45 connection	
BusAdapter BA SCRJ/FC	6ES7193-6AP40-0AA0
PROFINET BusAdapter; with media converter FO-Cu; 1 x SCRJ FO connection, 1 x FastConnect connection for direct connection of the bus cable	

Article No.

BA 2XLC BusAdapter	6ES7193-6AG00-0AA0
PROFINET BusAdapter; 2 glass fiber-optic connections	
BA LC/RJ45 BusAdapter	6ES7193-6AG20-0AA0
PROFINET BusAdapter; with media converter glass FO-CU; 1 x LC connection, 1 x RJ45 connection	
BA LC/FC BusAdapter	6ES7193-6AG40-0AA0
PROFINET BusAdapter; with media converter glass FO-CU; 1 x LC connection, 1 x FastConnect connection for direct connection of the bus cable	
Reference identification label	6ES7193-6LF30-0AW0
10 sheets of 16 labels each	
Labeling strips	
500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer	6ES7193-6LR10-0AA0
500 labeling strips on roll, yellow, for inscription with thermal transfer roll printer	6ES7193-6LR10-0AG0
1 000 labeling strips DIN A4, light gray, card, for inscription with laser printer	6ES7193-6LA10-0AA0
1 000 labeling strips DIN A4, yellow, card, for inscription with laser printer	6ES7193-6LA10-0AG0
Spare parts	
Cover for bus adapter interface	6ES7591-3AA00-0AA0
5 units	
Power supply connector	
For connecting the 24 V DC supply voltage	
• With push-in terminals	6ES7193-4JB00-0AA0
• With screw-type terminals	6ES7193-4JB50-0AA0