



Figure similar

SIPLUS ET 200SP IM155-6PN HF based on 6ES7155-6AU01-0CN0 with conformal coating, -40...+70 °C, 2-port interface module 1 slot for BusAdapter, max. 64 I/O modules, and 16 ET 200AL modules, S2 redundancy, multi hot swap, 0.25 ms, isochronous mode, optional PN strain relief, including server module (6AG1193-6PA00-7AA0)

General information	
Product type designation	IM 155-6 PN/2 HF
Firmware version	
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> <li>Module swapping during operation (hot swapping)</li> </ul>	Yes; Multi-hot swapping
<ul style="list-style-type: none"> <li>Isochronous mode</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Tool changer</li> </ul>	Yes; Docking station and docking unit
<ul style="list-style-type: none"> <li>Local coupling, IO data</li> </ul>	No
<ul style="list-style-type: none"> <li>Local coupling, data records</li> </ul>	No
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	see entry ID: 109746275
Configuration control	
via dataset	Yes
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
Mains buffering	
<ul style="list-style-type: none"> <li>Mains/voltage failure stored energy time</li> </ul>	10 ms
Input current	
Current consumption, max.	700 mA
Inrush current, max.	4.5 A
$I^2t$	0.25 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	2.4 W
Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Address space per module, max.</li> </ul>	288 byte; For input and output data respectively
Address space per station	
<ul style="list-style-type: none"> <li>Address space per station, max.</li> </ul>	1 440 byte; Dependent on configuration
Hardware configuration	
Rack	
<ul style="list-style-type: none"> <li>Modules per rack, max.</li> </ul>	64; + 16 ET 200AL modules
Submodules	
<ul style="list-style-type: none"> <li>Number of submodules per station, max.</li> </ul>	256
Time stamping	

Accuracy	10 ms
<b>Interfaces</b>	
Number of PROFINET interfaces	1; 2 ports (switch)
<b>1. Interface</b>	
<b>Interface types</b>	
<ul style="list-style-type: none"> <li>Number of ports</li> <li>integrated switch</li> <li>BusAdapter (PROFINET)</li> </ul>	2; via BusAdapter Yes Yes; Compatible BusAdapter: BA 2x RJ45, BA 2x FC, BA 2x SCRJ, BA SCRJ / RJ45, BA SCRJ / FC, BA 2x LC, BA LC / RJ45, BA LC / FC
<b>Protocols</b>	
<ul style="list-style-type: none"> <li>PROFINET IO Device</li> <li>Open IE communication</li> <li>Media redundancy</li> </ul>	Yes Yes Yes; PROFINET MRP
<b>PROFINET IO Device</b>	
<b>Services</b>	
— IRT	Yes; 250 $\mu$ s, 500 $\mu$ s, 1 ms, 2 ms, 4 ms additionally with IRT with high performance: 250 $\mu$ s to 4 ms in 125 $\mu$ s frame
— PROFIenergy	Yes
— Prioritized startup	Yes
— Shared device	Yes
— Number of IO Controllers with shared device, max.	4
<b>Interface types</b>	
<b>RJ 45 (Ethernet)</b>	
<ul style="list-style-type: none"> <li>Transmission procedure</li> <li>10 Mbps</li> <li>100 Mbps</li> <li>Autonegotiation</li> <li>Autocrossing</li> </ul>	PROFINET with 100 Mbit/s full duplex (100BASE-TX) No Yes; PROFINET with 100 Mbit/s full duplex (100BASE-TX) Yes Yes
<b>Protocols</b>	
<b>Number of connections</b>	
<ul style="list-style-type: none"> <li>Number of MtM communication relationships/connections, max.</li> </ul>	16
<b>Redundancy mode</b>	
<ul style="list-style-type: none"> <li>PROFINET system redundancy (S2)</li> <li>PROFINET system redundancy (R1)</li> <li>H-Sync forwarding</li> </ul>	Yes; NAP S2 No Yes
<b>Media redundancy</b>	
— MRP	Yes
— MRPD	No
<b>Open IE communication</b>	
<ul style="list-style-type: none"> <li>TCP/IP</li> <li>SNMP</li> <li>LLDP</li> </ul>	Yes Yes Yes
<b>Isochronous mode</b>	
Equidistance	Yes
shortest clock pulse	250 $\mu$ s
max. cycle	4 ms
Bus cycle time (TDP), min.	250 $\mu$ s
Jitter, max.	1 $\mu$ s
<b>Interrupts/diagnostics/status information</b>	
Status indicator	Yes
Alarms	Yes
Diagnostics function	Yes
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>RUN LED</li> <li>ERROR LED</li> <li>MAINT LED</li> <li>Monitoring of the supply voltage (PWR-LED)</li> <li>Connection display LINK TX/RX</li> </ul>	Yes; green LED Yes; red LED Yes; Yellow LED Yes; green PWR LED Yes; 2x green link LEDs on BusAdapter
<b>Potential separation</b>	
between backplane bus and electronics	No

between PROFINET and all other circuits	Yes
between supply and all other circuits	No
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Standards, approvals, certificates</b>	
Network loading class	3
Security level	According to Security Level 1 Test Cases V1.1.1
<b>Ambient conditions</b>	
Ambient temperature during operation	
<ul style="list-style-type: none"> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> </ul>	-40 °C; = Tmin (incl. condensation/frost) 70 °C; = Tmax -40 °C; = Tmin (incl. condensation/frost) 50 °C; = Tmax
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure-altitude</li> </ul>	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	
<ul style="list-style-type: none"> <li>With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
Resistance	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
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
— to chemically active substances according to EN 60721-3-3	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, *
— Against mechanical environmental conditions acc. to EN 60721-3-3	Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)
Use on ships/at sea	
— to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)
— to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (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 6S3 incl. sand, dust; *
— Against mechanical environmental conditions acc. to EN 60721-3-6	Yes; Class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)
Usage in industrial process technology	
— Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)
— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
<ul style="list-style-type: none"> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>Protection against fouling acc. to EN 60664-3</li> <li>Military testing according to MIL-I-46058C, Amendment 7</li> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	Yes; Class 2 for high reliability  Yes; Type 1 protection  Yes; Discoloration of coating possible during service life  Yes; Conformal coating, Class A
<b>connection method</b>	
ET-Connection	
<ul style="list-style-type: none"> <li>via BU/BA Send</li> </ul>	Yes; + 16 ET 200AL modules
<b>Mechanics/material</b>	
Strain relief	Yes; Optional

Dimensions	
Width	50 mm
Height	117 mm
Depth	74 mm
Weights	
Weight, approx.	120 g; without BusAdapter

**last modified:** 3/31/2023 