



SIMATIC ET 200SP, PROFINET, 3-port interface module, IM 155-6PN/3 High Feature, 2 slots for BusAdapter, max. 64 I/O modules and 16 ET 200AL modules, S2 redundancy, multi-hotswap, 0.25 ms, isochronous mode, optional PN strain relief, including server module

| General information                                      |                                                             |
|----------------------------------------------------------|-------------------------------------------------------------|
| Product type designation                                 | IM 155-6 PN/3 HF                                            |
| HW functional status                                     | From FS02                                                   |
| Firmware version                                         | V4.2                                                        |
| • FW update possible                                     | Yes                                                         |
| Product function                                         |                                                             |
| • I&M data                                               | Yes; I&M0 to I&M3                                           |
| • Module swapping during operation (hot swapping)        | Yes; Multi-hot swapping                                     |
| • Isochronous mode                                       | Yes                                                         |
| • Tool changer                                           | Yes; Docking station and docking unit                       |
| • Local coupling, IO data                                | Yes                                                         |
| — Number of coupling modules                             | 16                                                          |
| — Number of coupling submodules per module               | 4                                                           |
| Engineering with                                         |                                                             |
| • STEP 7 TIA Portal configurable/integrated from version | V15.1                                                       |
| • STEP 7 configurable/integrated from version            | use GSD file                                                |
| • PROFINET from GSD version/GSD revision                 | GSDML V2.45                                                 |
| 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                                                         |
| Short-circuit protection                                 | Yes                                                         |
| Mains buffering                                          |                                                             |
| • Mains/voltage failure stored energy time               | 10 ms                                                       |
| Input current                                            |                                                             |
| Current consumption (rated value)                        | 175 mA; At 24 V, 2 slots 2x RJ45 BusAdapter, no I/O modules |
| Current consumption, max.                                | 950 mA                                                      |
| Inrush current, max.                                     | 9 A                                                         |
| $I^2t$                                                   | 0.34 A <sup>2</sup> ·s                                      |
| Power loss                                               |                                                             |
| Power loss, typ.                                         | 4.9 W                                                       |
| 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                                                  |

|                                                               |                                                                                                 |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Hardware configuration</b>                                 |                                                                                                 |
| <b>Rack</b>                                                   |                                                                                                 |
| • Quantity of operable ET 200SP modules, max.                 | 64                                                                                              |
| • Quantity of operable ET 200AL modules, max.                 | 16                                                                                              |
| <b>Submodules</b>                                             |                                                                                                 |
| • Number of submodules per station, max.                      | 256                                                                                             |
| <b>Interfaces</b>                                             |                                                                                                 |
| Transmission procedure                                        | 100BASE-TX                                                                                      |
| Number of PROFINET interfaces                                 | 1; 3 ports (switch)                                                                             |
| <b>1. Interface</b>                                           |                                                                                                 |
| <b>Interface types</b>                                        |                                                                                                 |
| • RJ 45 (Ethernet)                                            | Yes; with BusAdapter                                                                            |
| • Number of ports                                             | 3; with 2 compatible BusAdapters:                                                               |
| • integrated switch                                           | Yes                                                                                             |
| • BusAdapter (PROFINET)                                       | Yes; 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>                                              |                                                                                                 |
| • PROFINET IO Device                                          | Yes                                                                                             |
| • Open IE communication                                       | Yes                                                                                             |
| • Media redundancy                                            | Yes; PROFINET MRP client                                                                        |
| <b>PROFINET IO Device</b>                                     |                                                                                                 |
| <b>Services</b>                                               |                                                                                                 |
| — IRT                                                         | Yes; 250 µs to 4 ms in 125 µs frame                                                             |
| — Dynamic Frame Packing (DFP)                                 | No                                                                                              |
| — 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>                                       |                                                                                                 |
| • Transmission procedure                                      | PROFINET with 100 Mbit/s full duplex (100BASE-TX)                                               |
| • 100 Mbps                                                    | Yes                                                                                             |
| • Autonegotiation                                             | Yes                                                                                             |
| • Autocrossing                                                | Yes                                                                                             |
| <b>Protocols</b>                                              |                                                                                                 |
| Supports protocol for PROFINET IO                             | Yes                                                                                             |
| PROFIsafe                                                     | Yes                                                                                             |
| PROFIBUS                                                      | No                                                                                              |
| EtherNet/IP                                                   | No                                                                                              |
| Modbus TCP                                                    | No                                                                                              |
| <b>Number of connections</b>                                  |                                                                                                 |
| • Number of MtM communication relationships/connections, max. | 16                                                                                              |
| <b>Redundancy mode</b>                                        |                                                                                                 |
| • PROFINET system redundancy (S2)                             | Yes; NAP S2                                                                                     |
| • PROFINET system redundancy (R1)                             | No                                                                                              |
| • H-Sync forwarding                                           | Yes                                                                                             |
| <b>Media redundancy</b>                                       |                                                                                                 |
| — MRP                                                         | Yes                                                                                             |
| — MRPD                                                        | No                                                                                              |
| <b>Open IE communication</b>                                  |                                                                                                 |
| • TCP/IP                                                      | Yes                                                                                             |
| • SNMP                                                        | Yes                                                                                             |
| • LLDP                                                        | Yes                                                                                             |
| <b>Isochronous mode</b>                                       |                                                                                                 |
| Equidistance                                                  | Yes                                                                                             |
| shortest clock pulse                                          | 250 µs                                                                                          |
| max. cycle                                                    | 4 ms                                                                                            |
| Bus cycle time (TDP), min.                                    | 250 µs                                                                                          |

|                                                        |                                                                        |
|--------------------------------------------------------|------------------------------------------------------------------------|
| Jitter, max.                                           | 1 µs                                                                   |
| <b>Interrupts/diagnostics/status information</b>       |                                                                        |
| Status indicator                                       | Yes                                                                    |
| Alarms                                                 | Yes                                                                    |
| Diagnostics function                                   | Yes                                                                    |
| <b>Diagnostics indication LED</b>                      |                                                                        |
| • 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 display LINK TX/RX                        | Yes; 2x green link LEDs on BusAdapter                                  |
| <b>Potential separation</b>                            |                                                                        |
| 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                                                                     |
| <b>Permissible potential difference</b>                |                                                                        |
| between different circuits                             | Safety extra low voltage SELV                                          |
| <b>Isolation</b>                                       |                                                                        |
| Isolation tested with                                  | 707 V DC (type test)                                                   |
| <b>Standards, approvals, certificates</b>              |                                                                        |
| Network loading class                                  | 2                                                                      |
| <b>Security</b>                                        |                                                                        |
| PROFINET Security Class                                | 1                                                                      |
| <b>Ambient conditions</b>                              |                                                                        |
| <b>Ambient temperature during operation</b>            |                                                                        |
| • horizontal installation, min.                        | -30 °C; No condensation                                                |
| • horizontal installation, max.                        | 60 °C                                                                  |
| • vertical installation, min.                          | -30 °C; No condensation                                                |
| • vertical installation, max.                          | 50 °C                                                                  |
| <b>Altitude during operation relating to sea level</b> |                                                                        |
| • Installation altitude above sea level, max.          | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
| <b>Absolute humidity</b>                               |                                                                        |
| • dew point, min.                                      | -60 °C; suitable for dry room applications                             |
| <b>Connection method</b>                               |                                                                        |
| <b>ET-Connection</b>                                   |                                                                        |
| • via BU/BA Send                                       | Yes; + 16 ET 200AL modules                                             |
| <b>Mechanics/material</b>                              |                                                                        |
| Strain relief                                          | Yes; Optional                                                          |
| <b>Dimensions</b>                                      |                                                                        |
| Width                                                  | 100 mm                                                                 |
| Height                                                 | 117 mm                                                                 |
| Depth                                                  | 74 mm                                                                  |
| <b>Weights</b>                                         |                                                                        |
| Weight, approx.                                        | 220 g; without BusAdapter                                              |
| <b>Classifications</b>                                 |                                                                        |

|        | 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    |
| IDEA   | 4  | 3564        |
| UNSPSC | 15 | 32-15-17-05 |

## Approvals / Certificates

### General Product Approval

[Miscellaneous](#)

[Manufacturer Declaration](#)



[PROFINET](#)



### General Product Approval



[China RoHS](#)

### For use in hazardous locations



[FM](#)

[CCC-Ex](#)



[Type Examination Certificate](#)



### For use in hazardous locations

### Maritime application

[Miscellaneous](#)

[CCC-Ex](#)



### Maritime application

### Environment

[NK / Nippon Kaiji Kyokai](#)



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

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

[China RoHS](#)

### Industrial Communication

[PROFINET](#)

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