



Figure similar

SIPLUS ET 200SP CPU 1512SP F-1 rail based on 6ES7512-1SM03-0AB0 with conformal coating OT4: -40...+70 °C ST1/2: 85 °C for 10 minutes . central processing unit with work memory 600 KB for program and 2 MB for data, 1st interface: PROFINET IRT with 3-port switch, 25 ns bit performance, SIMATIC Memory Card required, BusAdapter required for port 1 and 2

| General information                                      |                                                             |
|----------------------------------------------------------|-------------------------------------------------------------|
| Product type designation                                 | CPU 1512SP F-1 PN                                           |
| Firmware version                                         |                                                             |
| • FW update possible                                     | Yes                                                         |
| based on                                                 | <a href="#">6ES7512-1SM03-0AB0</a>                          |
| Product function                                         |                                                             |
| • I&M data                                               | Yes; I&M0 to I&M3                                           |
| • Module swapping during operation (hot swapping)        | Yes; Multi-hot swapping                                     |
| • Isochronous mode                                       | Yes; only with PROFINET; with minimum OB 6x cycle of 500 µs |
| Engineering with                                         |                                                             |
| • STEP 7 TIA Portal configurable/integrated from version | see entry ID: 109746275                                     |
| Configuration control                                    |                                                             |
| via dataset                                              | Yes                                                         |
| Control elements                                         |                                                             |
| Mode selector switch                                     | 1                                                           |
| 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                                          |                                                             |
| • Mains/voltage failure stored energy time               | 10 ms                                                       |
| Input current                                            |                                                             |
| Current consumption (rated value)                        | 0.51 A                                                      |
| Current consumption, max.                                | 0.7 A                                                       |
| Inrush current, max.                                     | 1.34 A; Rated value                                         |
| I <sup>2</sup> t                                         | 0.3 A <sup>2</sup> ·s                                       |
| Power                                                    |                                                             |
| Infeed power to the backplane bus                        | 8.05 W                                                      |
| Power loss                                               |                                                             |
| Power loss, typ.                                         | 6.5 W                                                       |
| Memory                                                   |                                                             |
| Number of slots for SIMATIC memory card                  | 1                                                           |
| SIMATIC memory card required                             | Yes                                                         |
| Work memory                                              |                                                             |
| • integrated (for program)                               | 600 kbyte                                                   |
| • integrated (for data)                                  | 2 Mbyte                                                     |
| Load memory                                              |                                                             |
| • Plug-in (SIMATIC Memory Card), max.                    | 32 Gbyte                                                    |

|                                                           |                                                                                                                                                       |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Backup                                                    |                                                                                                                                                       |
| • maintenance-free                                        | Yes                                                                                                                                                   |
| CPU processing times                                      |                                                                                                                                                       |
| for bit operations, typ.                                  | 25 ns                                                                                                                                                 |
| for word operations, typ.                                 | 32 ns                                                                                                                                                 |
| for fixed point arithmetic, typ.                          | 42 ns                                                                                                                                                 |
| for floating point arithmetic, typ.                       | 170 ns                                                                                                                                                |
| CPU-blocks                                                |                                                                                                                                                       |
| Number of elements (total)                                | 4 000; Blocks (OB, FB, FC, DB) and UDTs                                                                                                               |
| DB                                                        |                                                                                                                                                       |
| • Number range                                            | 1 ... 60 999; subdivided into: number range that can be used by the user: 1 ... 59 999, and number range of DBs created via SFC 86: 60 000 ... 60 999 |
| • Size, max.                                              | 2 Mbyte; For DBs with absolute addressing, the max. size is 64 KB                                                                                     |
| FB                                                        |                                                                                                                                                       |
| • Number range                                            | 0 ... 65 535                                                                                                                                          |
| • Size, max.                                              | 600 kbyte                                                                                                                                             |
| FC                                                        |                                                                                                                                                       |
| • Number range                                            | 0 ... 65 535                                                                                                                                          |
| • Size, max.                                              | 600 kbyte                                                                                                                                             |
| OB                                                        |                                                                                                                                                       |
| • Size, max.                                              | 600 kbyte                                                                                                                                             |
| • Number of free cycle OBs                                | 100                                                                                                                                                   |
| • Number of time alarm OBs                                | 20                                                                                                                                                    |
| • Number of delay alarm OBs                               | 20                                                                                                                                                    |
| • Number of cyclic interrupt OBs                          | 20; With minimum OB 3x cycle of 250 µs                                                                                                                |
| • Number of process alarm OBs                             | 50                                                                                                                                                    |
| • Number of DPV1 alarm OBs                                | 3                                                                                                                                                     |
| • Number of isochronous mode OBs                          | 1                                                                                                                                                     |
| • Number of technology synchronous alarm OBs              | 2                                                                                                                                                     |
| • Number of startup OBs                                   | 100                                                                                                                                                   |
| • Number of asynchronous error OBs                        | 4                                                                                                                                                     |
| • Number of synchronous error OBs                         | 2                                                                                                                                                     |
| • Number of diagnostic alarm OBs                          | 1                                                                                                                                                     |
| Nesting depth                                             |                                                                                                                                                       |
| • per priority class                                      | 24; Up to 8 possible for F-blocks                                                                                                                     |
| Counters, timers and their retentivity                    |                                                                                                                                                       |
| S7 counter                                                |                                                                                                                                                       |
| • Number                                                  | 2 048                                                                                                                                                 |
| Retentivity                                               |                                                                                                                                                       |
| — adjustable                                              | Yes                                                                                                                                                   |
| IEC counter                                               |                                                                                                                                                       |
| • Number                                                  | Any (only limited by the main memory)                                                                                                                 |
| Retentivity                                               |                                                                                                                                                       |
| — adjustable                                              | Yes                                                                                                                                                   |
| S7 times                                                  |                                                                                                                                                       |
| • Number                                                  | 2 048                                                                                                                                                 |
| Retentivity                                               |                                                                                                                                                       |
| — adjustable                                              | Yes                                                                                                                                                   |
| IEC timer                                                 |                                                                                                                                                       |
| • Number                                                  | Any (only limited by the main memory)                                                                                                                 |
| Retentivity                                               |                                                                                                                                                       |
| — adjustable                                              | Yes                                                                                                                                                   |
| Data areas and their retentivity                          |                                                                                                                                                       |
| Retentive data area (incl. timers, counters, flags), max. | 256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB                           |
| Flag                                                      |                                                                                                                                                       |
| • Size, max.                                              | 16 kbyte                                                                                                                                              |
| • Number of clock memories                                | 8; 8 clock memory bit, grouped into one clock memory byte                                                                                             |
| Data blocks                                               |                                                                                                                                                       |
| • Retentivity adjustable                                  | Yes                                                                                                                                                   |
| • Retentivity preset                                      | No                                                                                                                                                    |

|                                               |                                                                                                                                                                                                                                   |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Local data</b>                             |                                                                                                                                                                                                                                   |
| • per priority class, max.                    | 64 kbyte; max. 16 KB per block                                                                                                                                                                                                    |
| <b>Address area</b>                           |                                                                                                                                                                                                                                   |
| Number of IO modules                          | 2 048; max. number of modules / submodules                                                                                                                                                                                        |
| <b>I/O address area</b>                       |                                                                                                                                                                                                                                   |
| • Inputs                                      | 32 kbyte; All inputs are in the process image                                                                                                                                                                                     |
| • Outputs                                     | 32 kbyte; All outputs are in the process image                                                                                                                                                                                    |
| <b>per integrated IO subsystem</b>            |                                                                                                                                                                                                                                   |
| — Inputs (volume)                             | 8 kbyte                                                                                                                                                                                                                           |
| — Outputs (volume)                            | 8 kbyte                                                                                                                                                                                                                           |
| <b>per CM/CP</b>                              |                                                                                                                                                                                                                                   |
| — Inputs (volume)                             | 8 kbyte                                                                                                                                                                                                                           |
| — Outputs (volume)                            | 8 kbyte                                                                                                                                                                                                                           |
| <b>Subprocess images</b>                      |                                                                                                                                                                                                                                   |
| • Number of subprocess images, max.           | 32                                                                                                                                                                                                                                |
| <b>Address space per module</b>               |                                                                                                                                                                                                                                   |
| • Address space per module, max.              | 288 byte; For input and output data respectively                                                                                                                                                                                  |
| <b>Address space per station</b>              |                                                                                                                                                                                                                                   |
| • Address space per station, max.             | 2 560 byte; for central inputs and outputs; depending on configuration; 2 048 bytes for ET 200SP modules + 512 bytes for ET 200AL modules                                                                                         |
| <b>Hardware configuration</b>                 |                                                                                                                                                                                                                                   |
| Number of distributed IO systems              | 32; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link) |
| <b>Number of DP masters</b>                   |                                                                                                                                                                                                                                   |
| • Via CM                                      | 1                                                                                                                                                                                                                                 |
| <b>Number of IO Controllers</b>               |                                                                                                                                                                                                                                   |
| • integrated                                  | 1                                                                                                                                                                                                                                 |
| • Via CM                                      | 0                                                                                                                                                                                                                                 |
| <b>Rack</b>                                   |                                                                                                                                                                                                                                   |
| • Modules per rack, max.                      | 82; CPU + 64 modules + server module (mounting width max. 1 m) + 16 ET 200AL modules; > 60 °C ambient temperature: CPU + 16 modules + server module + 16 ET 200AL modules                                                         |
| • Quantity of operable ET 200SP modules, max. | 64; > 60 °C ambient temperature: 16 modules                                                                                                                                                                                       |
| • Quantity of operable ET 200AL modules, max. | 16                                                                                                                                                                                                                                |
| • Number of lines, max.                       | 1                                                                                                                                                                                                                                 |
| <b>PtP CM</b>                                 |                                                                                                                                                                                                                                   |
| • Number of PtP CMs                           | the number of connectable PtP CMs is only limited by the number of available slots                                                                                                                                                |
| <b>Time of day</b>                            |                                                                                                                                                                                                                                   |
| <b>Clock</b>                                  |                                                                                                                                                                                                                                   |
| • Type                                        | Hardware clock                                                                                                                                                                                                                    |
| • Backup time                                 | 6 wk; At 40 °C ambient temperature, typically                                                                                                                                                                                     |
| • Deviation per day, max.                     | 10 s; Typ.: 2 s                                                                                                                                                                                                                   |
| <b>Operating hours counter</b>                |                                                                                                                                                                                                                                   |
| • Number                                      | 16                                                                                                                                                                                                                                |
| <b>Clock synchronization</b>                  |                                                                                                                                                                                                                                   |
| • supported                                   | Yes                                                                                                                                                                                                                               |
| • to DP, master                               | Yes; Via CM DP module                                                                                                                                                                                                             |
| • on DP, device                               | Yes; Via CM DP module                                                                                                                                                                                                             |
| • in AS, master                               | Yes                                                                                                                                                                                                                               |
| • in AS, device                               | Yes                                                                                                                                                                                                                               |
| • on Ethernet via NTP                         | Yes                                                                                                                                                                                                                               |
| <b>Interfaces</b>                             |                                                                                                                                                                                                                                   |
| Number of PROFINET interfaces                 | 1                                                                                                                                                                                                                                 |
| Number of PROFIBUS interfaces                 | 1; Via CM DP module                                                                                                                                                                                                               |
| Optical interface                             | No                                                                                                                                                                                                                                |
| <b>1. Interface</b>                           |                                                                                                                                                                                                                                   |
| <b>Interface types</b>                        |                                                                                                                                                                                                                                   |
| • RJ 45 (Ethernet)                            | Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45                                                                                                                                                                        |
| • Number of ports                             | 3; 1. integr. + 2. via BusAdapter                                                                                                                                                                                                 |
| • integrated switch                           | Yes                                                                                                                                                                                                                               |

|                                                                               |                                                                                                                                                                        |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • BusAdapter (PROFINET)                                                       | Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12                                                                                                           |
| <b>Protocols</b>                                                              |                                                                                                                                                                        |
| • IP protocol                                                                 | Yes; IPv4                                                                                                                                                              |
| • PROFINET IO Controller                                                      | Yes                                                                                                                                                                    |
| • PROFINET IO Device                                                          | Yes                                                                                                                                                                    |
| • SIMATIC communication                                                       | Yes                                                                                                                                                                    |
| • Open IE communication                                                       | Yes; Optionally also encrypted                                                                                                                                         |
| • Web server                                                                  | Yes                                                                                                                                                                    |
| • Media redundancy                                                            | Yes                                                                                                                                                                    |
| <b>PROFINET IO Controller</b>                                                 |                                                                                                                                                                        |
| <b>Services</b>                                                               |                                                                                                                                                                        |
| — PG/OP communication                                                         | Yes                                                                                                                                                                    |
| — Isochronous mode                                                            | Yes                                                                                                                                                                    |
| — Direct data exchange                                                        | Yes; Requirement: IRT and isochronous mode (MRPD optional)                                                                                                             |
| — IRT                                                                         | Yes                                                                                                                                                                    |
| — PROFINergy                                                                  | Yes; per user program                                                                                                                                                  |
| — Prioritized startup                                                         | Yes; Max. 32 PROFINET devices                                                                                                                                          |
| — Number of connectable IO Devices, max.                                      | 128; In total, up to 512 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET                                                                       |
| — Of which IO devices with IRT, max.                                          | 64                                                                                                                                                                     |
| — Number of connectable IO Devices for RT, max.                               | 128                                                                                                                                                                    |
| — of which in line, max.                                                      | 128                                                                                                                                                                    |
| — Number of IO Devices that can be simultaneously activated/deactivated, max. | 8; in total across all interfaces                                                                                                                                      |
| — Number of IO Devices per tool, max.                                         | 8                                                                                                                                                                      |
| — Updating times                                                              | The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data |
| <b>Update time for IRT</b>                                                    |                                                                                                                                                                        |
| — for send cycle of 250 µs                                                    | 250 µs to 4 ms; Note: In the case of IRT with isochronous mode, the minimum update time of 500 µs of the isochronous OB is decisive                                    |
| — for send cycle of 500 µs                                                    | 500 µs to 8 ms; Note: In the case of IRT with isochronous mode, the minimum update time of 625 µs of the isochronous OB is decisive                                    |
| — for send cycle of 1 ms                                                      | 1 ms to 16 ms                                                                                                                                                          |
| — for send cycle of 2 ms                                                      | 2 ms to 32 ms                                                                                                                                                          |
| — for send cycle of 4 ms                                                      | 4 ms to 64 ms                                                                                                                                                          |
| — With IRT and parameterization of "odd" send cycles                          | Update time = set "odd" send clock (any multiple of 125 µs: 375 µs, 625 µs ... 3 875 µs)                                                                               |
| <b>Update time for RT</b>                                                     |                                                                                                                                                                        |
| — for send cycle of 250 µs                                                    | 250 µs to 128 ms                                                                                                                                                       |
| — for send cycle of 500 µs                                                    | 500 µs to 256 ms                                                                                                                                                       |
| — for send cycle of 1 ms                                                      | 1 ms to 512 ms                                                                                                                                                         |
| — for send cycle of 2 ms                                                      | 2 ms to 512 ms                                                                                                                                                         |
| — for send cycle of 4 ms                                                      | 4 ms to 512 ms                                                                                                                                                         |
| <b>PROFINET IO Device</b>                                                     |                                                                                                                                                                        |
| <b>Services</b>                                                               |                                                                                                                                                                        |
| — PG/OP communication                                                         | Yes                                                                                                                                                                    |
| — Isochronous mode                                                            | No                                                                                                                                                                     |
| — IRT                                                                         | Yes                                                                                                                                                                    |
| — PROFINergy                                                                  | Yes; per user program                                                                                                                                                  |
| — Shared device                                                               | Yes                                                                                                                                                                    |
| — Number of IO Controllers with shared device, max.                           | 4                                                                                                                                                                      |
| — activation/deactivation of I-devices                                        | Yes; per user program                                                                                                                                                  |
| — Asset management record                                                     | Yes; per user program                                                                                                                                                  |
| <b>2. Interface</b>                                                           |                                                                                                                                                                        |
| <b>Interface types</b>                                                        |                                                                                                                                                                        |
| • RS 485                                                                      | Yes; Via CM DP module                                                                                                                                                  |
| • Number of ports                                                             | 1                                                                                                                                                                      |
| <b>Protocols</b>                                                              |                                                                                                                                                                        |
| • PROFIBUS DP master                                                          | Yes                                                                                                                                                                    |
| • PROFIBUS DP device                                                          | Yes                                                                                                                                                                    |
| • SIMATIC communication                                                       | Yes                                                                                                                                                                    |
| <b>PROFIBUS DP master</b>                                                     |                                                                                                                                                                        |

|                                                                                                                      |                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Number of connections, max.</li> <li>• max. number of DP devices</li> </ul> | 48; Of which 4 each reserved for ES and HMI<br>125; In total, up to 512 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET |
| <b>Services</b>                                                                                                      |                                                                                                                                                 |
| — PG/OP communication                                                                                                | Yes                                                                                                                                             |
| — Equidistance                                                                                                       | No                                                                                                                                              |
| — Isochronous mode                                                                                                   | No                                                                                                                                              |
| — activation/deactivation of DP devices                                                                              | Yes                                                                                                                                             |
| <b>Interface types</b>                                                                                               |                                                                                                                                                 |
| <b>RJ 45 (Ethernet)</b>                                                                                              |                                                                                                                                                 |
| • 100 Mbps                                                                                                           | Yes                                                                                                                                             |
| • Autonegotiation                                                                                                    | Yes                                                                                                                                             |
| • Autocrossing                                                                                                       | Yes                                                                                                                                             |
| • Industrial Ethernet status LED                                                                                     | Yes                                                                                                                                             |
| <b>RS 485</b>                                                                                                        |                                                                                                                                                 |
| • Transmission rate, max.                                                                                            | 12 Mbit/s                                                                                                                                       |
| <b>Protocols</b>                                                                                                     |                                                                                                                                                 |
| PROFIsafe                                                                                                            | Yes; V2.4 / V2.6                                                                                                                                |
| <b>Number of connections</b>                                                                                         |                                                                                                                                                 |
| • Number of connections, max.                                                                                        | 128; via integrated interfaces of the CPU and connected CPs / CMs                                                                               |
| • Number of connections reserved for ES/HMI/web                                                                      | 10                                                                                                                                              |
| • Number of connections via integrated interfaces                                                                    | 88                                                                                                                                              |
| • Number of connections per CP/CM                                                                                    | 32                                                                                                                                              |
| • Number of S7 routing paths                                                                                         | 16                                                                                                                                              |
| <b>Redundancy mode</b>                                                                                               |                                                                                                                                                 |
| • H-Sync forwarding                                                                                                  | Yes                                                                                                                                             |
| <b>Media redundancy</b>                                                                                              |                                                                                                                                                 |
| — Media redundancy                                                                                                   | Yes; only via BusAdapter                                                                                                                        |
| — MRP                                                                                                                | Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client                                                              |
| — MRP interconnection, supported                                                                                     | Yes; as MRP ring node according to IEC 62439-2 Edition 3.0                                                                                      |
| — MRPD                                                                                                               | Yes; Requirement: IRT                                                                                                                           |
| — Switchover time on line break, typ.                                                                                | 200 ms; For MRP, bumpless for MRPD                                                                                                              |
| — Number of stations in the ring, max.                                                                               | 50                                                                                                                                              |
| <b>SIMATIC communication</b>                                                                                         |                                                                                                                                                 |
| • PG/OP communication                                                                                                | Yes; encryption with TLS V1.3 pre-selected                                                                                                      |
| • S7 routing                                                                                                         | Yes                                                                                                                                             |
| • Data record routing                                                                                                | Yes                                                                                                                                             |
| • S7 communication, as server                                                                                        | Yes                                                                                                                                             |
| • S7 communication, as client                                                                                        | Yes                                                                                                                                             |
| • User data per job, max.                                                                                            | See online help (S7 communication, user data size)                                                                                              |
| <b>Open IE communication</b>                                                                                         |                                                                                                                                                 |
| • TCP/IP                                                                                                             | Yes                                                                                                                                             |
| — Data length, max.                                                                                                  | 64 kbyte                                                                                                                                        |
| — several passive connections per port, supported                                                                    | Yes                                                                                                                                             |
| • ISO-on-TCP (RFC1006)                                                                                               | Yes                                                                                                                                             |
| — Data length, max.                                                                                                  | 64 kbyte                                                                                                                                        |
| • UDP                                                                                                                | Yes                                                                                                                                             |
| — Data length, max.                                                                                                  | 2 kbyte; 1 472 bytes for UDP broadcast                                                                                                          |
| — UDP multicast                                                                                                      | Yes; max. 78 multicast circuits                                                                                                                 |
| • DHCP                                                                                                               | Yes                                                                                                                                             |
| • DNS                                                                                                                | Yes                                                                                                                                             |
| • SNMP                                                                                                               | Yes                                                                                                                                             |
| • DCP                                                                                                                | Yes                                                                                                                                             |
| • LLDP                                                                                                               | Yes                                                                                                                                             |
| • Encryption                                                                                                         | Yes; Optional                                                                                                                                   |
| <b>Web server</b>                                                                                                    |                                                                                                                                                 |
| • HTTP                                                                                                               | Yes; Standard and user pages                                                                                                                    |
| • HTTPS                                                                                                              | Yes; Standard and user pages                                                                                                                    |
| <b>OPC UA</b>                                                                                                        |                                                                                                                                                 |
| • Runtime license required                                                                                           | Yes; "Small" license required                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <ul style="list-style-type: none"> <li>• OPC UA Client <ul style="list-style-type: none"> <li>— Application authentication</li> <li>— Security policies</li> <li>— User authentication</li> <li>— Number of connections, max.</li> <li>— Number of nodes of the client interfaces, recommended max.</li> <li>— Number of elements for one call of OPC-UA_NodeGetHandleList/OPC-UA_ReadList/OPC-UA_WriteList, max.</li> <li>— Number of elements for one call of OPC-UA_NameSpaceGetIndexList, max.</li> <li>— Number of elements for one call of OPC-UA_MethodGetHandleList, max.</li> <li>— Number of simultaneous calls of the client instructions for session management, per connection, max.</li> <li>— Number of simultaneous calls of the client instructions for data access, per connection, max.</li> <li>— Number of registerable nodes, max.</li> <li>— Number of registerable method calls of OPC-UA_MethodCall, max.</li> <li>— Number of inputs/outputs when calling OPC-UA_MethodCall, max.</li> </ul> </li> <li>• OPC UA Server <ul style="list-style-type: none"> <li>— Application authentication</li> <li>— Security policies</li> <li>— User authentication</li> <li>— GDS support (certificate management)</li> <li>— Number of sessions, max.</li> <li>— Number of accessible variables, max.</li> <li>— Number of registerable nodes, max.</li> <li>— Number of subscriptions per session, max.</li> <li>— Sampling interval, min.</li> <li>— Publishing interval, min.</li> <li>— Number of server methods, max.</li> <li>— Number of inputs/outputs per server method, max.</li> <li>— Number of monitored items, recommended max.</li> <li>— Number of server interfaces, max.</li> <li>— Number of nodes for user-defined server interfaces, max.</li> </ul> </li> <li>• Alarms and Conditions <ul style="list-style-type: none"> <li>— Number of program alarms</li> <li>— Number of alarms for system diagnostics</li> </ul> </li> </ul> | <p>Yes; Data Access (registered Read/Write), Method Call</p> <p>Yes</p> <p>Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256</p> <p>"anonymous" or by user name &amp; password</p> <p>4</p> <p>1 000</p> <p>300</p> <p>20</p> <p>100</p> <p>1</p> <p>5</p> <p>5 000</p> <p>100</p> <p>20</p> <p>Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms &amp; Condition (A&amp;C), Custom Address Space</p> <p>Yes</p> <p>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss</p> <p>"anonymous" or by user name &amp; password</p> <p>Yes</p> <p>32</p> <p>50 000</p> <p>10 000</p> <p>50</p> <p>100 ms</p> <p>200 ms</p> <p>20</p> <p>20</p> <p>4 000; for 1 s sampling interval and 1 s send interval</p> <p>10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"</p> <p>15 000</p> <p>Yes</p> <p>100</p> <p>50</p> |
| Further protocols                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| • MODBUS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes; MODBUS TCP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>S7 message functions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Number of login stations for message functions, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Program alarms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Number of configurable program messages, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Number of loadable program messages in RUN, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2 500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Number of simultaneously active program alarms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| • Number of program alarms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| • Number of alarms for system diagnostics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| • Number of alarms for motion technology objects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Test commissioning functions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Joint commission (Team Engineering)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes; Parallel online access possible for up to 5 engineering systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Status block                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes; Up to 8 simultaneously (in total across all ES clients)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Single step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Number of breakpoints                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Status/control</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• Status/control variable</li> <li>• Variables</li> <li>• Number of variables, max. <ul style="list-style-type: none"> <li>— of which status variables, max.</li> <li>— of which control variables, max.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>Yes; without fail-safe<br/>inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters</p> <p>200; per job<br/>200; per job</p>                                                               |
| <b>Forcing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• Forcing</li> <li>• Forcing, variables</li> <li>• Number of variables, max.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>Yes; without fail-safe<br/>peripheral inputs/outputs (without fail-safe)</p> <p>200</p>                                                                                                                                   |
| <b>Diagnostic buffer</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• present</li> <li>• Number of entries, max. <ul style="list-style-type: none"> <li>— of which powerfail-proof</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Yes</p> <p>1 000<br/>500</p>                                                                                                                                                                                              |
| <b>Traces</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• Number of configurable Traces</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4; Up to 512 KB of data per trace are possible                                                                                                                                                                               |
| <b>Interrupts/diagnostics/status information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                              |
| <b>Diagnostics indication LED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• RUN/STOP 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>                                                                                                                                                                       |
| <b>Supported technology objects</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                              |
| <p>Motion Control</p> <ul style="list-style-type: none"> <li>• Number of available Motion Control resources for technology objects</li> <li>• Required Motion Control resources <ul style="list-style-type: none"> <li>— per speed-controlled axis</li> <li>— per positioning axis</li> <li>— per synchronous axis</li> <li>— per external encoder</li> <li>— per output cam</li> <li>— per cam track</li> <li>— per probe</li> </ul> </li> <li>• Positioning axis <ul style="list-style-type: none"> <li>— Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>— Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> </ul> | <p>Yes; Note: The number of technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool</p> <p>1 120</p> <p>40<br/>80<br/>160<br/>80<br/>20<br/>160<br/>40</p> <p>11<br/>14</p> |
| <p>Controller</p> <ul style="list-style-type: none"> <li>• PID_Compact</li> <li>• PID_3Step</li> <li>• PID-Temp</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>Yes; Universal PID controller with integrated optimization</p> <p>Yes; PID controller with integrated optimization for valves</p> <p>Yes; PID controller with integrated optimization for temperature</p>                 |
| <p>Counting and measuring</p> <ul style="list-style-type: none"> <li>• High-speed counter</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                          |
| <b>Isolation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                              |
| Isolation tested with                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 750 V DC (type test) and according to EN 50155 (routine test); internal voltage limitation between internal chassis and ground to $\pm 300$ V (varistor)                                                                     |
| <b>Standards, approvals, certificates</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                              |
| <b>Highest safety class achievable in safety mode</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• Performance level according to ISO 13849-1</li> <li>• SIL acc. to IEC 61508</li> <li>• SIL in accordance with EN 50126, 50128, 50129</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>PLe</p> <p>SIL 3</p> <p>SIL 2; a higher safety integrity level is possible if tested and approved for the specific application under consideration of all local regulations.</p>                                          |
| <b>Probability of failure (for service life of 20 years and repair time of 100 hours)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>— Low demand mode: PFDavg in accordance with SIL3</li> <li>— High demand/continuous mode: PFH in accordance with SIL3</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>&lt; 2.00E-05</p> <p>&lt; 1.00E-09</p>                                                                                                                                                                                    |
| <b>Railway application</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                              |

- EN 50121-3-2
- EN 50121-4
- EN 50121-5
- EN 50124-1

- EN 50125-1
- EN 50125-2
- EN 50125-3

- EN 50155

- EN 61373

- Fire protection acc. to EN 45545-2

Yes; EMC for rail vehicles

Yes; EMC for signal and telecommunications systems

Yes; EMC for fixed installations and railway power supply equipment

Yes; Railway applications - overvoltage category OV2; pollution degree PD2; rated surge voltage UNi = 0.5 kV; UNm = 24 V DC

Yes; Rail vehicles - see ambient conditions

Yes; Stationary electrical equipment - see ambient conditions

Yes; Signal and telecommunications systems - see ambient conditions; vibrations and shocks: Application point outside of tracks (1 m to 3 m away from track)

Yes; Rail vehicles - temperature class OT4, ST1/ST2, horizontal mounting position

Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B

Yes; For proof of conformity, see Service & Support

## Ambient conditions

|                                                                                                                         |                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient temperature during operation                                                                                    |                                                                                                                                                                                     |
| • horizontal installation, min.                                                                                         | -40 °C; = Tmin (incl. condensation/frost)                                                                                                                                           |
| • horizontal installation, max.                                                                                         | 70 °C; = Tmax; +85 °C for 10 min (OT4, ST1/ST2 acc. to EN 50155)                                                                                                                    |
| • vertical installation, min.                                                                                           | -40 °C; = Tmin                                                                                                                                                                      |
| • vertical installation, max.                                                                                           | 50 °C; = Tmax                                                                                                                                                                       |
| Altitude during operation relating to sea level                                                                         |                                                                                                                                                                                     |
| • Installation altitude above sea level, max.                                                                           | 2 000 m                                                                                                                                                                             |
| • Ambient air temperature-barometric pressure-altitude                                                                  | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)                                                                                                                      |
| Relative humidity                                                                                                       |                                                                                                                                                                                     |
| • With condensation, tested in accordance with IEC 60068-2-38, max.                                                     | 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, *                                                                                                                                                  |
| Use on land craft, rail vehicles and special-purpose vehicles                                                           |                                                                                                                                                                                     |
| — to biologically active substances according to EN 60721-3-5                                                           | Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request                                                                                  |
| — to chemically active substances according to EN 60721-3-5                                                             | Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *                                                                                            |
| — to mechanically active substances according to EN 60721-3-5                                                           | Yes; Class 5S3 incl. sand, dust; *                                                                                                                                                  |
| 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                                                                                                       |                                                                                                                                                                                     |
| • Coatings for printed circuit board assemblies acc. to EN 61086                                                        | Yes; Class 2 for high reliability                                                                                                                                                   |
| • Protection against fouling acc. to EN 60664-3                                                                         | Yes; Type 1 protection                                                                                                                                                              |
| • Electronic equipment on rolling stock acc. to EN 50155                                                                | Yes; class PC2 protective coating acc. to EN 50155                                                                                                                                  |
| • Military testing according to MIL-I-46058C, Amendment 7                                                               | Yes; Discoloration of coating possible during service life                                                                                                                          |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A                                                                                                                                                     |
| configuration / header                                                                                                  |                                                                                                                                                                                     |
| configuration / programming / header                                                                                    |                                                                                                                                                                                     |
| Programming language                                                                                                    |                                                                                                                                                                                     |
| — LAD                                                                                                                   | Yes; incl. failsafe                                                                                                                                                                 |



|                                                   |                                                                                                                                            |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| — FBD                                             | Yes; incl. failsafe                                                                                                                        |
| — STL                                             | Yes                                                                                                                                        |
| — SCL                                             | Yes                                                                                                                                        |
| — GRAPH                                           | Yes                                                                                                                                        |
| Know-how protection                               |                                                                                                                                            |
| • User program protection/password protection     | Yes                                                                                                                                        |
| • Copy protection                                 | Yes                                                                                                                                        |
| • Block protection                                | Yes                                                                                                                                        |
| Access protection                                 |                                                                                                                                            |
| • protection of confidential configuration data   | Yes                                                                                                                                        |
| • Protection level: Write protection              | Yes                                                                                                                                        |
| • Protection level: Read/write protection         | Yes                                                                                                                                        |
| • Protection level: Write protection for Failsafe | Yes                                                                                                                                        |
| • Protection level: Complete protection           | Yes                                                                                                                                        |
| programming / cycle time monitoring / header      |                                                                                                                                            |
| • lower limit                                     | adjustable minimum cycle time                                                                                                              |
| • upper limit                                     | adjustable maximum cycle time                                                                                                              |
| Dimensions                                        |                                                                                                                                            |
| Width                                             | 100 mm                                                                                                                                     |
| Height                                            | 117 mm                                                                                                                                     |
| Depth                                             | 75 mm                                                                                                                                      |
| Weights                                           |                                                                                                                                            |
| Weight, approx.                                   | 415 g                                                                                                                                      |
| Other                                             |                                                                                                                                            |
| Note:                                             | for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776 |
| Classifications                                   |                                                                                                                                            |

|        | Version | Classification |
|--------|---------|----------------|
| eClass | 14      | 27-24-26-07    |
| eClass | 12      | 27-24-26-07    |
| eClass | 9.1     | 27-24-26-07    |
| eClass | 9       | 27-24-26-07    |
| eClass | 8       | 27-24-26-07    |
| eClass | 7.1     | 27-24-26-07    |
| eClass | 6       | 27-24-26-07    |
| ETIM   | 9       | EC001603       |
| ETIM   | 8       | EC001603       |
| ETIM   | 7       | EC001603       |
| IDEA   | 4       | 3565           |
| UNSPSC | 15      | 32-15-17-05    |

|                          |                   |
|--------------------------|-------------------|
| Approvals / Certificates |                   |
| General Product Approval | Functional Safety |

[Miscellaneous](#)

[Manufacturer Declaration](#)



## Railway

[Confirmation](#)

last modified:

12/8/2024