

Siemens  
EcoTech



SIMATIC S7-1500R, CPU 1515R-2 PN central processing unit with work memory 1 MB for program and 4.5 MB for data, 1st interface: PROFINET RT with 2-port switch, 2nd interface: PROFINET, SIMATIC Memory Card required



| General information                                      |                                                                                                             |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Product type designation                                 | CPU 1515R-2 PN                                                                                              |
| HW functional status                                     | FS05                                                                                                        |
| Firmware version                                         | V4.0                                                                                                        |
| • FW update possible                                     | Yes                                                                                                         |
| Product function                                         |                                                                                                             |
| • I&M data                                               | Yes; I&M0 to I&M3                                                                                           |
| • Isochronous mode                                       | No                                                                                                          |
| • SysLog                                                 | Yes                                                                                                         |
| Engineering with                                         |                                                                                                             |
| • STEP 7 TIA Portal configurable/integrated from version | V20 (FW V4.0) / V18 (FW V3.0) or higher; configurable with older TIA Portal versions as 6ES7 515-2RM00-0AB0 |
| Redundancy                                               |                                                                                                             |
| • stand-alone operation                                  | Yes                                                                                                         |
| Display                                                  |                                                                                                             |
| Screen diagonal [cm]                                     | 6.1 cm                                                                                                      |
| Control elements                                         |                                                                                                             |
| Number of keys                                           | 8                                                                                                           |
| Mode buttons                                             | 2                                                                                                           |
| 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               | 5 ms                                                                                                        |
| • Repeat rate, min.                                      | 1/s                                                                                                         |
| Input current                                            |                                                                                                             |
| Current consumption (rated value)                        | 0.65 A                                                                                                      |
| Current consumption, max.                                | 0.88 A                                                                                                      |
| Inrush current, max.                                     | 1.15 A                                                                                                      |
| $I^2t$                                                   | 0.6 A <sup>2</sup> ·s                                                                                       |
| Power                                                    |                                                                                                             |
| Infeed power to the backplane bus                        | 12 W                                                                                                        |
| Power consumption from the backplane bus (balanced)      | 6.2 W                                                                                                       |
| Power loss                                               |                                                                                                             |
| Power loss, typ.                                         | 3.6 W                                                                                                       |

|                                                                    |                                                                                                                   |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Memory</b>                                                      |                                                                                                                   |
| Number of slots for SIMATIC memory card                            | 1                                                                                                                 |
| SIMATIC memory card required                                       | Yes                                                                                                               |
| <b>Work memory</b>                                                 |                                                                                                                   |
| • integrated (for program)                                         | 1 Mbyte                                                                                                           |
| • integrated (for data)                                            | 4.5 Mbyte                                                                                                         |
| <b>Load memory</b>                                                 |                                                                                                                   |
| • Plug-in (SIMATIC Memory Card), max.                              | 32 Gbyte                                                                                                          |
| <b>Backup</b>                                                      |                                                                                                                   |
| • maintenance-free                                                 | Yes                                                                                                               |
| <b>CPU processing times</b>                                        |                                                                                                                   |
| for bit operations, typ.                                           | 20 ns                                                                                                             |
| for word operations, typ.                                          | 24 ns                                                                                                             |
| for fixed point arithmetic, typ.                                   | 32 ns                                                                                                             |
| for floating point arithmetic, typ.                                | 128 ns                                                                                                            |
| <b>CPU-blocks</b>                                                  |                                                                                                                   |
| Number of elements (total)                                         | 8 000; Blocks (OB, FB, FC, DB) and UDTs                                                                           |
| <b>DB</b>                                                          |                                                                                                                   |
| • Number range                                                     | Number range: 1 to 59 999                                                                                         |
| • Size, max.                                                       | 4.5 Mbyte; For non-optimized block accesses, the max. size of the DB is 64 KB                                     |
| <b>FB</b>                                                          |                                                                                                                   |
| • Number range                                                     | 0 ... 65 535                                                                                                      |
| • Size, max.                                                       | 1 Mbyte                                                                                                           |
| <b>FC</b>                                                          |                                                                                                                   |
| • Number range                                                     | 0 ... 65 535                                                                                                      |
| • Size, max.                                                       | 1 Mbyte                                                                                                           |
| <b>OB</b>                                                          |                                                                                                                   |
| • Size, max.                                                       | 1 Mbyte                                                                                                           |
| • 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 10 ms                                                                             |
| • Number of process alarm OBs                                      | 50                                                                                                                |
| • Number of DPV1 alarm OBs                                         | 3                                                                                                                 |
| • Number of startup OBs                                            | 100                                                                                                               |
| • Number of asynchronous error OBs                                 | 4                                                                                                                 |
| • Number of synchronous error OBs                                  | 2                                                                                                                 |
| • Number of diagnostic alarm OBs                                   | 1                                                                                                                 |
| <b>Nesting depth</b>                                               |                                                                                                                   |
| • per priority class                                               | 24                                                                                                                |
| <b>Counters, timers and their retentivity</b>                      |                                                                                                                   |
| <b>S7 counter</b>                                                  |                                                                                                                   |
| • Number                                                           | 2 048                                                                                                             |
| <b>Retentivity</b>                                                 |                                                                                                                   |
| — adjustable                                                       | Yes                                                                                                               |
| <b>IEC counter</b>                                                 |                                                                                                                   |
| • Number                                                           | Any (only limited by the main memory)                                                                             |
| <b>Retentivity</b>                                                 |                                                                                                                   |
| — adjustable                                                       | Yes                                                                                                               |
| <b>S7 times</b>                                                    |                                                                                                                   |
| • Number                                                           | 2 048                                                                                                             |
| <b>Retentivity</b>                                                 |                                                                                                                   |
| — adjustable                                                       | Yes                                                                                                               |
| <b>IEC timer</b>                                                   |                                                                                                                   |
| • Number                                                           | Any (only limited by the main memory)                                                                             |
| <b>Retentivity</b>                                                 |                                                                                                                   |
| — adjustable                                                       | Yes                                                                                                               |
| <b>Data areas and their retentivity</b>                            |                                                                                                                   |
| Retentive data area (incl. timers, counters, flags), max.          | 512 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 472 KB |
| Extended retentive data area (incl. timers, counters, flags), max. | 4.5 Mbyte; When using PS 6 0W 24/48/60 V DC HF                                                                    |

|                                          |                                                                                                                                                                        |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                                                                                                                                     |
| Local data                               |                                                                                                                                                                        |
| • per priority class, max.               | 64 kbyte; max. 16 KB per block                                                                                                                                         |
| Address area                             |                                                                                                                                                                        |
| Number of IO modules                     | 4 096; max. number of modules / submodules                                                                                                                             |
| I/O address area                         |                                                                                                                                                                        |
| • Inputs                                 | 32 kbyte; All inputs are in the process image                                                                                                                          |
| • Outputs                                | 32 kbyte; All outputs are in the process image                                                                                                                         |
| per integrated IO subsystem              |                                                                                                                                                                        |
| — Inputs (volume)                        | 8 kbyte                                                                                                                                                                |
| — Outputs (volume)                       | 8 kbyte                                                                                                                                                                |
| Subprocess images                        |                                                                                                                                                                        |
| • Number of subprocess images, max.      | 31                                                                                                                                                                     |
| Hardware configuration                   |                                                                                                                                                                        |
| Number of distributed IO systems         | 16; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET, but also by the connection of I/O via IE/PB-Links.          |
| Number of IO Controllers                 |                                                                                                                                                                        |
| • integrated                             | 1                                                                                                                                                                      |
| Rack                                     |                                                                                                                                                                        |
| • Modules per rack, max.                 | 5; CPU + 2 PS + 2 CP                                                                                                                                                   |
| Time of day                              |                                                                                                                                                                        |
| Clock                                    |                                                                                                                                                                        |
| • Type                                   | Hardware clock                                                                                                                                                         |
| • Backup time                            | 6 wk; At 40 °C ambient temperature, typically                                                                                                                          |
| • Deviation per day, max.                | 10 s; Typ.: 2 s                                                                                                                                                        |
| Operating hours counter                  |                                                                                                                                                                        |
| • Number                                 | 16                                                                                                                                                                     |
| Clock synchronization                    |                                                                                                                                                                        |
| • supported                              | Yes                                                                                                                                                                    |
| • on Ethernet via NTP                    | Yes                                                                                                                                                                    |
| Interfaces                               |                                                                                                                                                                        |
| Number of PROFINET interfaces            | 2                                                                                                                                                                      |
| 1. Interface                             |                                                                                                                                                                        |
| Interface types                          |                                                                                                                                                                        |
| • RJ 45 (Ethernet)                       | Yes; X1                                                                                                                                                                |
| • Number of ports                        | 2                                                                                                                                                                      |
| • integrated switch                      | Yes                                                                                                                                                                    |
| Protocols                                |                                                                                                                                                                        |
| • IP protocol                            | Yes; IPv4                                                                                                                                                              |
| • PROFINET IO Controller                 | Yes                                                                                                                                                                    |
| • PROFINET IO Device                     | No                                                                                                                                                                     |
| • SIMATIC communication                  | Yes; Only Server                                                                                                                                                       |
| • Open IE communication                  | Yes; Optionally also encrypted                                                                                                                                         |
| • Web server                             | Yes                                                                                                                                                                    |
| • Media redundancy                       | Yes                                                                                                                                                                    |
| PROFINET IO Controller                   |                                                                                                                                                                        |
| Services                                 |                                                                                                                                                                        |
| — Isochronous mode                       | No                                                                                                                                                                     |
| — IRT                                    | No                                                                                                                                                                     |
| — PROFINergy                             | Yes; per user program                                                                                                                                                  |
| — Number of connectable IO Devices, max. | 64                                                                                                                                                                     |
| — 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 |
| — PROFINET Security Class                | 1                                                                                                                                                                      |
| Update time for RT                       |                                                                                                                                                                        |

— for send cycle of 1 ms

1 ms to 512 ms

## 2. Interface

| Interface types                                   |                                                             |
|---------------------------------------------------|-------------------------------------------------------------|
| • RJ 45 (Ethernet)                                | Yes; X2                                                     |
| • Number of ports                                 | 1                                                           |
| • integrated switch                               | No                                                          |
| Protocols                                         |                                                             |
| • IP protocol                                     | Yes; IPv4                                                   |
| • PROFINET IO Controller                          | No                                                          |
| • PROFINET IO Device                              | No                                                          |
| • SIMATIC communication                           | Yes; Only Server                                            |
| • Open IE communication                           | Yes; Optionally also encrypted                              |
| • Web server                                      | Yes                                                         |
| • Media redundancy                                | No                                                          |
| Interface types                                   |                                                             |
| RJ 45 (Ethernet)                                  |                                                             |
| • 100 Mbps                                        | Yes                                                         |
| • Autonegotiation                                 | Yes                                                         |
| • Autocrossing                                    | Yes                                                         |
| • Industrial Ethernet status LED                  | Yes                                                         |
| Protocols                                         |                                                             |
| PROFIsafe                                         | No                                                          |
| Number of connections                             |                                                             |
| • Number of connections, max.                     | 256; via integrated interfaces of the CPU and connected CPs |
| • Number of connections reserved for ES/HMI/web   | 10                                                          |
| • Number of connections via integrated interfaces | 128                                                         |
| • Number of S7 routing paths                      | 16                                                          |
| Redundancy mode                                   |                                                             |
| • PROFINET system redundancy (S2)                 | Yes                                                         |
| • PROFINET system redundancy (R1)                 | No                                                          |
| Media redundancy                                  |                                                             |
| — Media redundancy                                | Yes; only via 1st interface (X1)                            |
| — MRP                                             | Yes; MRP Automanager according to IEC 62439-2 Edition 2.0   |
| — MRP interconnection, supported                  | Yes; as MRP ring node according to IEC 62439-2 Edition 3.0  |
| — MRPD                                            | No                                                          |
| — Switchover time on line break, typ.             | 200 ms; PROFINET MRP                                        |
| — Number of stations in the ring, max.            | 50; Only 16 are recommended, however                        |
| SIMATIC communication                             |                                                             |
| • PG/OP communication                             | Yes; encryption with TLS V1.3 pre-selected                  |
| • S7 routing                                      | Yes                                                         |
| • S7 communication, as server                     | Yes                                                         |
| • S7 communication, as client                     | No                                                          |
| Open IE communication                             |                                                             |
| • 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. 118 multicast circuits                            |
| • DHCP                                            | No                                                          |
| • DNS                                             | Yes                                                         |
| • SNMP                                            | Yes                                                         |
| • DCP                                             | Yes                                                         |
| • LLDP                                            | Yes                                                         |
| • Encryption                                      | Yes; Optional                                               |
| Web server                                        |                                                             |
| • HTTP                                            | No                                                          |
| • HTTPS                                           | Yes; only via Web API                                       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• web API <ul style="list-style-type: none"> <li>— Number of sessions, max.</li> <li>— number of simultaneous HTTP calls, max.</li> <li>— HTTP request body, max.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes<br>100<br>4<br>131 072 byte                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>OPC UA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Runtime license required</li> <li>• OPC UA Client</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 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</li> </ul> | Yes; "Medium" license required per CPU<br>No<br>Yes; data access (read, write, subscribe), method call, custom address space, role-based access control<br>Yes<br>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss<br>"anonymous" or by user name & password<br>No<br>24<br>25<br>250 ms<br>250 ms<br>50; max. 20 concurrently running jobs each for asynchronous instructions OPC-UA_ServerMethodPre (V1.1) and OPC-UA_ServerMethodPost (V1.1)<br>20<br>2 000; for 1 s sampling interval and 1 s send interval<br>10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"<br>30 000<br>No |
| <b>Further protocols</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• MODBUS</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes; MODBUS TCP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>S7 message functions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Number of login stations for message functions, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| number of subscriptions, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| number of tags/attributes for subscriptions, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8 000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Program alarms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Number of configurable program messages, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Number of loadable program messages in RUN, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Number of simultaneously active program alarms <ul style="list-style-type: none"> <li>• Number of program alarms</li> <li>• Number of alarms for system diagnostics</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1 000<br>200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Test commissioning functions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Joint commission (Team Engineering)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Status block                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes; up to 8 simultaneously                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Single step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Number of breakpoints                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 8; Breakpoints are only supported in RUN-Solo status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Profiling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes<br>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters<br>200; per job<br>200; per job                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Forcing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Forcing</li> <li>• Forcing, variables</li> <li>• Number of variables, max.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes<br>Peripheral inputs/outputs<br>200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes<br>3 200<br>500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Traces</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Number of configurable Traces</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                                                |                                                                                                    |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| • Memory size per trace, max.                                  | 512 kbyte                                                                                          |
| <b>Interrupts/diagnostics/status information</b>               |                                                                                                    |
| Diagnostics indication LED                                     |                                                                                                    |
| • RUN/STOP LED                                                 | Yes                                                                                                |
| • ERROR LED                                                    | Yes                                                                                                |
| • MAINT LED                                                    | Yes                                                                                                |
| • STOP ACTIVE LED                                              | Yes                                                                                                |
| • Connection display LINK TX/RX                                | Yes                                                                                                |
| <b>Supported technology objects</b>                            |                                                                                                    |
| Motion Control                                                 | No                                                                                                 |
| Controller                                                     |                                                                                                    |
| • PID_Compact                                                  | Yes; Universal PID controller with integrated optimization                                         |
| • PID_3Step                                                    | Yes; PID controller with integrated optimization for valves                                        |
| • PID-Temp                                                     | Yes; PID controller with integrated optimization for temperature                                   |
| Counting and measuring                                         | Yes                                                                                                |
| <b>Standards, approvals, certificates</b>                      |                                                                                                    |
| Siemens Eco Profile (SEP)                                      | Siemens EcoTech                                                                                    |
| Recycler Guide available                                       | Yes                                                                                                |
| Ecological footprint                                           |                                                                                                    |
| • environmental product declaration                            | Yes                                                                                                |
| Global warming potential                                       |                                                                                                    |
| — global warming potential, (total) [CO2 eq]                   | 100 kg                                                                                             |
| — global warming potential, (during production) [CO2 eq]       | 25.8 kg                                                                                            |
| — global warming potential, (during operation) [CO2 eq]        | 75.2 kg                                                                                            |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.83 kg                                                                                           |
| <b>product functions / security / header</b>                   |                                                                                                    |
| PROFINET Security Class                                        | 1                                                                                                  |
| signed firmware update                                         | Yes                                                                                                |
| Secure Boot                                                    | Yes                                                                                                |
| safely removing data                                           | Yes                                                                                                |
| <b>Ambient conditions</b>                                      |                                                                                                    |
| Ambient temperature during operation                           |                                                                                                    |
| • horizontal installation, min.                                | -30 °C; No condensation                                                                            |
| • horizontal installation, max.                                | 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off |
| • vertical installation, min.                                  | -30 °C; No condensation                                                                            |
| • vertical installation, max.                                  | 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off |
| Ambient temperature during storage/transportation              |                                                                                                    |
| • min.                                                         | -40 °C                                                                                             |
| • max.                                                         | 70 °C                                                                                              |
| Altitude during operation relating to sea level                |                                                                                                    |
| • Installation altitude above sea level, max.                  | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual                             |
| <b>configuration / header</b>                                  |                                                                                                    |
| configuration / programming / header                           |                                                                                                    |
| Programming language                                           |                                                                                                    |
| — LAD                                                          | Yes                                                                                                |
| — FBD                                                          | Yes                                                                                                |
| — STL                                                          | Yes                                                                                                |
| — SCL                                                          | Yes                                                                                                |
| — CFC                                                          | Yes                                                                                                |
| — GRAPH                                                        | Yes                                                                                                |
| Know-how protection                                            |                                                                                                    |
| • User program protection/password protection                  | Yes                                                                                                |
| • Copy protection                                              | No                                                                                                 |
| • Block protection                                             | Yes                                                                                                |
| Access protection                                              |                                                                                                    |
| • protection of confidential configuration data                | Yes                                                                                                |
| • Password for display                                         | Yes                                                                                                |

- Protection level: Write protection
- Protection level: Read/write protection
- Protection level: Write protection for Failsafe
- Protection level: Complete protection
- User administration
- Number of users
- Number of groups
- Number of roles

Yes  
Yes  
No  
Yes  
Yes; device-wide and centralized  
100  
100  
50

#### programming / cycle time monitoring / header

- lower limit
- upper limit

adjustable minimum cycle time  
adjustable maximum cycle time

#### Dimensions

|        |        |
|--------|--------|
| Width  | 70 mm  |
| Height | 147 mm |
| Depth  | 129 mm |

#### Weights

|                 |       |
|-----------------|-------|
| Weight, approx. | 456 g |
|-----------------|-------|

#### Classifications

|        | Version | Classification |
|--------|---------|----------------|
| eClass | 14      | 27-24-22-07    |
| eClass | 12      | 27-24-22-07    |
| eClass | 9.1     | 27-24-22-07    |
| eClass | 9       | 27-24-22-07    |
| eClass | 8       | 27-24-22-07    |
| eClass | 7.1     | 27-24-22-07    |
| eClass | 6       | 27-24-22-07    |
| ETIM   | 9       | EC000236       |
| ETIM   | 8       | EC000236       |
| ETIM   | 7       | EC000236       |
| IDEA   | 4       | 3565           |
| UNSPSC | 15      | 32-15-17-05    |

#### Approvals / Certificates

##### General Product Approval



[Miscellaneous](#)

[Manufacturer Declaration](#)



[Miscellaneous](#)

##### General Product Approval

##### EMV

##### For use in hazardous locations



[KC](#)



[EM](#)



##### For use in hazardous locations

##### Test Certificates

[FM](#)



[Type Examination Certificate](#)

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

##### Maritime application



[NK / Nippon Kaiji Kyokai](#)



| Maritime application                               | other                    | Environment                                                                                                                                                               |
|----------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">CCS (China Classification Society)</a> | <a href="#">PROFINET</a> | <br> |

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