## **SIEMENS**

## **Data sheet**

6ES7312-1AE14-0AB0



SIMATIC S7-300, CPU 312 Central processing unit with MPI, Integr. power supply 24 V DC, Work memory 32 KB, Micro Memory Card required

Figure similar

| General information                                                           |                                                                         |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| HW functional status                                                          | 01                                                                      |
| Firmware version                                                              | V3.3                                                                    |
| Engineering with                                                              | <u> </u>                                                                |
| Programming package                                                           | STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 218 |
| Supply voltage                                                                |                                                                         |
| Rated value (DC)                                                              | 24 V                                                                    |
| permissible range, lower limit (DC)                                           | 19.2 V                                                                  |
| permissible range, upper limit (DC)                                           | 28.8 V                                                                  |
| external protection for power supply lines (recommendation)                   | 2 A min.                                                                |
| Mains buffering                                                               |                                                                         |
| <ul> <li>Mains/voltage failure stored energy time</li> </ul>                  | 5 ms                                                                    |
| <ul> <li>Repeat rate, min.</li> </ul>                                         | 1 s                                                                     |
| Input current                                                                 |                                                                         |
| Current consumption (rated value)                                             | 650 mA                                                                  |
| Current consumption (in no-load operation), typ.                              | 140 mA                                                                  |
| Inrush current, typ.                                                          | 3.5 A                                                                   |
| l²t                                                                           | 1 A <sup>2</sup> ·s                                                     |
| Power loss                                                                    |                                                                         |
| Power loss, typ.                                                              | 4 W                                                                     |
| Memory                                                                        |                                                                         |
| Work memory                                                                   |                                                                         |
| • integrated                                                                  | 32 kbyte                                                                |
| <ul><li>expandable</li></ul>                                                  | No                                                                      |
| Load memory                                                                   |                                                                         |
| <ul><li>Plug-in (MMC)</li></ul>                                               | Yes                                                                     |
| <ul><li>Plug-in (MMC), max.</li></ul>                                         | 8 Mbyte                                                                 |
| <ul> <li>Data management on MMC (after last<br/>programming), min.</li> </ul> | 10 y                                                                    |
| Backup                                                                        |                                                                         |
| • present                                                                     | Yes; Guaranteed by MMC (maintenance-free)                               |
| <ul><li>without battery</li></ul>                                             | Yes; Program and data                                                   |
| CPU processing times                                                          |                                                                         |
| for bit operations, typ.                                                      | 0.1 μs                                                                  |
| for word operations, typ.                                                     | 0.24 μs                                                                 |
| for fixed point arithmetic, typ.                                              | 0.32 μs                                                                 |

| for floating point arithmetic, typ.                          | 1.1 µs                                                            |
|--------------------------------------------------------------|-------------------------------------------------------------------|
| CPU-blocks                                                   | 1.1 μ3                                                            |
| Number of blocks (total)                                     | 1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can |
| Number of blocks (total)                                     | be reduced by the MMC used.                                       |
| DB                                                           |                                                                   |
| <ul><li>Number, max.</li></ul>                               | 1 024; Number range: 1 to 16000                                   |
| • Size, max.                                                 | 32 kbyte                                                          |
| FB                                                           |                                                                   |
| <ul><li>Number, max.</li></ul>                               | 1 024; Number range: 0 to 7999                                    |
| • Size, max.                                                 | 32 kbyte                                                          |
| FC                                                           | 4.004.11                                                          |
| Number, max.      Cina max.                                  | 1 024; Number range: 0 to 7999                                    |
| • Size, max.                                                 | 32 kbyte                                                          |
| OB • Number, max.                                            | see instruction list                                              |
| • Size, max.                                                 | 32 kbyte                                                          |
| Number of free cycle OBs                                     | 1; OB 1                                                           |
| Number of time alarm OBs                                     | 1; OB 10                                                          |
| Number of time diam OBs     Number of delay alarm OBs        | 2; OB 20, 21                                                      |
| Number of delay damin OBs     Number of cyclic interrupt OBs | 4; OB 32, 33, 34, 35                                              |
| Number of process alarm OBs                                  | 1; OB 40                                                          |
| Number of startup OBs                                        | 1; OB 100                                                         |
| Number of asynchronous error OBs                             | 4; OB 80, 82, 85, 87                                              |
| Number of synchronous error OBs                              | 2; OB 121, 122                                                    |
| Nesting depth                                                |                                                                   |
| per priority class                                           | 16                                                                |
| <ul> <li>additional within an error OB</li> </ul>            | 4                                                                 |
| Counters, timers and their retentivity                       |                                                                   |
| S7 counter                                                   |                                                                   |
| <ul><li>Number</li></ul>                                     | 256                                                               |
| Retentivity                                                  |                                                                   |
| — adjustable                                                 | Yes                                                               |
| — lower limit                                                | 0                                                                 |
| — upper limit                                                | 255                                                               |
| — preset                                                     | Z 0 to Z 7                                                        |
| Counting range                                               |                                                                   |
| — lower limit                                                | 0                                                                 |
| — upper limit                                                | 999                                                               |
| IEC counter                                                  | Van                                                               |
| • present                                                    | Yes<br>SFB                                                        |
| <ul><li>Type</li><li>Number</li></ul>                        | Unlimited (limited only by RAM capacity)                          |
| S7 times                                                     | Chiminited (infinited only by IVAINI capacity)                    |
| Number                                                       | 256                                                               |
| Retentivity                                                  |                                                                   |
| — adjustable                                                 | Yes                                                               |
| — lower limit                                                | 0                                                                 |
| — upper limit                                                | 255                                                               |
| — preset                                                     | No retentivity                                                    |
| Time range                                                   |                                                                   |
| — lower limit                                                | 10 ms                                                             |
| — upper limit                                                | 9 990 s                                                           |
| IEC timer                                                    |                                                                   |
| • present                                                    | Yes                                                               |
| • Type                                                       | SFB                                                               |
| Number                                                       | Unlimited (limited only by RAM capacity)                          |
| Data areas and their retentivity                             |                                                                   |
| Retentive data area (incl. timers, counters, flags), max.    | 32 kbyte                                                          |
| Flag                                                         |                                                                   |
| • Size, max.                                                 | 256 byte                                                          |
|                                                              | <del></del>                                                       |

| Retentivity available                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes; MB 0 to MB 255                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Retentivity available     Retentivity preset                                                                                                                                                                                                                                                                                                                                                                                                                               | MB 0 to MB 15                                                                                                                                                                                                                                                   |
| Number of clock memories                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8; 1 memory byte                                                                                                                                                                                                                                                |
| Data blocks                                                                                                                                                                                                                                                                                                                                                                                                                                                                | o, i memory byte                                                                                                                                                                                                                                                |
| Retentivity adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes; via non-retain property on DB                                                                                                                                                                                                                              |
| Retentivity preset                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                                                                                                                                                                                                                                                             |
| Local data                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                 |
| per priority class, max.                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 32 kbyte; Max. 2 KB per block                                                                                                                                                                                                                                   |
| Address area                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                 |
| I/O address area                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                 |
| • Inputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1 024 byte                                                                                                                                                                                                                                                      |
| • Outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1 024 byte                                                                                                                                                                                                                                                      |
| Process image                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| • Inputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1 024 byte                                                                                                                                                                                                                                                      |
| Outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1 024 byte                                                                                                                                                                                                                                                      |
| Inputs, adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1 024 byte                                                                                                                                                                                                                                                      |
| Outputs, adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 024 byte                                                                                                                                                                                                                                                      |
| Inputs, default                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 128 byte                                                                                                                                                                                                                                                        |
| Outputs, default                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 128 byte                                                                                                                                                                                                                                                        |
| Digital channels                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                 |
| • Inputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 256                                                                                                                                                                                                                                                             |
| — of which central                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 256                                                                                                                                                                                                                                                             |
| <ul> <li>Outputs</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                | 256                                                                                                                                                                                                                                                             |
| — of which central                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 256                                                                                                                                                                                                                                                             |
| Analog channels                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                 |
| • Inputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 64                                                                                                                                                                                                                                                              |
| — of which central                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 64                                                                                                                                                                                                                                                              |
| Outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 64                                                                                                                                                                                                                                                              |
| — of which central                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 64                                                                                                                                                                                                                                                              |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                 |
| Hardware configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                 |
| Number of expansion units, max.                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0                                                                                                                                                                                                                                                               |
| Number of expansion units, max.                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0                                                                                                                                                                                                                                                               |
| Number of expansion units, max.  Number of DP masters                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                 |
| Number of expansion units, max.  Number of DP masters  • integrated                                                                                                                                                                                                                                                                                                                                                                                                        | 0                                                                                                                                                                                                                                                               |
| Number of expansion units, max.  Number of DP masters  • integrated  • via CP                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                                                                                                                                                                                                                               |
| Number of expansion units, max.  Number of DP masters  • integrated  • via CP  Number of operable FMs and CPs (recommended)                                                                                                                                                                                                                                                                                                                                                | 0 4                                                                                                                                                                                                                                                             |
| Number of expansion units, max.  Number of DP masters  • integrated  • via CP  Number of operable FMs and CPs (recommended)  • FM                                                                                                                                                                                                                                                                                                                                          | 0<br>4<br>8                                                                                                                                                                                                                                                     |
| Number of expansion units, max.  Number of DP masters  integrated  via CP  Number of operable FMs and CPs (recommended)  FM  CP, PtP                                                                                                                                                                                                                                                                                                                                       | 0<br>4<br>8<br>8                                                                                                                                                                                                                                                |
| Number of expansion units, max.  Number of DP masters  integrated  via CP  Number of operable FMs and CPs (recommended)  FM  CP, PtP  CP, LAN                                                                                                                                                                                                                                                                                                                              | 0<br>4<br>8<br>8                                                                                                                                                                                                                                                |
| Number of expansion units, max.  Number of DP masters  integrated  via CP  Number of operable FMs and CPs (recommended)  FM  CP, PtP  CP, LAN  Rack                                                                                                                                                                                                                                                                                                                        | 0<br>4<br>8<br>8<br>8<br>4                                                                                                                                                                                                                                      |
| Number of expansion units, max.  Number of DP masters  • integrated  • via CP  Number of operable FMs and CPs (recommended)  • FM  • CP, PtP  • CP, LAN  Rack  • Racks, max.                                                                                                                                                                                                                                                                                               | 0<br>4<br>8<br>8<br>8<br>4                                                                                                                                                                                                                                      |
| Number of expansion units, max.  Number of DP masters  integrated  via CP  Number of operable FMs and CPs (recommended)  FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.                                                                                                                                                                                                                                                                                   | 0<br>4<br>8<br>8<br>8<br>4                                                                                                                                                                                                                                      |
| Number of expansion units, max.  Number of DP masters  integrated  via CP  Number of operable FMs and CPs (recommended)  FM  CP, PtP  CP, LAN  Rack  Racks, max.  Modules per rack, max.                                                                                                                                                                                                                                                                                   | 0<br>4<br>8<br>8<br>8<br>4                                                                                                                                                                                                                                      |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Time of day  Clock                                                                                                                                                                                                                                                                    | 0<br>4<br>8<br>8<br>8<br>4                                                                                                                                                                                                                                      |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Rack Nack Nodules per rack, max. Modules per rack, max.  Time of day  Clock Software clock                                                                                                                                                                                                                                | 0<br>4<br>8<br>8<br>8<br>4<br>1<br>1<br>8                                                                                                                                                                                                                       |
| Number of expansion units, max.  Number of DP masters  integrated  via CP  Number of operable FMs and CPs (recommended)  FM  CP, PtP  CP, LAN  Rack  Rack  Racks, max.  Modules per rack, max.  Time of day  Clock  Software clock  retentive and synchronizable                                                                                                                                                                                                           | 0 4  8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched                                                                                                           |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON                                                                                                                               | 0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s                                                                                                                                                                                    |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter                                                                                                      | 0 4  8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off                                                                                                       |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Rack Racks, max. Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter Number                                                                                                                  | 0 4  8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1                                                                                                    |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter Number Number/Number range                                                                           | 0 4  8 8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0                                                                                                |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter  Number Number/Number range Range of values                                                          | 0 4  8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0 0 to 2^31 hours (when using SFC 101)                                                             |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter Number Number Range of values Granularity                                                            | 8 8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0 0 to 2^31 hours (when using SFC 101) 1 h                                                            |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter  Number Number Range of values Granularity retentive                                                                    | 0 4  8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0 0 to 2^31 hours (when using SFC 101)                                                             |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter  Number Number Range of values Granularity retentive  Clock synchronization                                             | 9 4 8 8 8 4 4 9 1 1 8 8 9 1 1 8 9 1 1 1 8 9 1 1 1 1 1                                                                                                                                                                                                           |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter Number Number Range of values Granularity retentive  Clock synchronization supported                 | 0 4  8 8 4  1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes             |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter  Number Number Range of values Granularity retentive  Clock synchronization supported to MPI, master | 0 4  8 8 8 4  1 1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes     |
| Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Rack Racks, max. Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter Number Number Range of values Granularity retentive  Clock synchronization supported to MPI, master to MPI, slave                                        | 0 4  8 8 8 4  1 1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes Yes |
| Number of expansion units, max.  Number of DP masters  integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP CP, LAN  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Time of day  Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON  Operating hours counter  Number Number Range of values Granularity retentive  Clock synchronization supported to MPI, master | 0 4  8 8 8 4  1 1 8  Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off  1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes     |

| Digital inputs                                                                                  |                                                                                            |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                                                                                                 | 0                                                                                          |
| Number of digital inputs                                                                        | U                                                                                          |
| Digital outputs                                                                                 |                                                                                            |
| Number of digital outputs                                                                       | 0                                                                                          |
| Analog inputs                                                                                   |                                                                                            |
| Number of analog inputs                                                                         | 0                                                                                          |
| Analog outputs                                                                                  |                                                                                            |
| Number of analog outputs                                                                        | 0                                                                                          |
| Interfaces                                                                                      |                                                                                            |
| Number of industrial Ethernet interfaces                                                        | 0                                                                                          |
| Number of PROFINET interfaces                                                                   | 0                                                                                          |
| Number of RS 485 interfaces                                                                     | 1; MPI                                                                                     |
| Number of RS 422 interfaces                                                                     | 0                                                                                          |
| 1. Interface                                                                                    |                                                                                            |
| Interface type                                                                                  | Integrated RS 485 interface                                                                |
| Isolated                                                                                        | No                                                                                         |
| Interface types                                                                                 |                                                                                            |
| • RS 485                                                                                        | Yes                                                                                        |
| Output current of the interface, max.                                                           | 200 mA                                                                                     |
| Protocols                                                                                       |                                                                                            |
| • MPI                                                                                           | Yes                                                                                        |
| PROFIBUS DP master                                                                              | No                                                                                         |
| <ul> <li>PROFIBUS DP slave</li> </ul>                                                           | No                                                                                         |
| Point-to-point connection                                                                       | No                                                                                         |
| MPI                                                                                             |                                                                                            |
| Transmission rate, max.                                                                         | 187.5 kbit/s                                                                               |
| Services                                                                                        |                                                                                            |
| — PG/OP communication                                                                           | Yes                                                                                        |
| — Routing                                                                                       | No                                                                                         |
| — Global data communication                                                                     | Yes                                                                                        |
| — S7 basic communication                                                                        | Yes                                                                                        |
| — S7 communication                                                                              | Yes; Only server, configured on one side                                                   |
| — S7 communication, as client                                                                   | No                                                                                         |
| — S7 communication, as server                                                                   | Yes                                                                                        |
| Protocols                                                                                       |                                                                                            |
| PROFIsafe                                                                                       | No                                                                                         |
| communication functions / header                                                                |                                                                                            |
| PG/OP communication                                                                             | Yes                                                                                        |
| Data record routing                                                                             | No                                                                                         |
| Global data communication                                                                       |                                                                                            |
| • supported                                                                                     | Yes                                                                                        |
| Number of GD loops, max.                                                                        | 8                                                                                          |
| Number of GD packets, max.                                                                      | 8                                                                                          |
| Number of GD packets, transmitter, max.                                                         | 8                                                                                          |
| Number of GD packets, receiver, max.                                                            | 8                                                                                          |
| Size of GD packets, max.                                                                        | 22 byte                                                                                    |
| Size of GD packet (of which consistent), max.                                                   | 22 byte                                                                                    |
| S7 basic communication                                                                          | Van                                                                                        |
| supported     User data per job, may                                                            | Yes                                                                                        |
| <ul><li>User data per job, max.</li><li>User data per job (of which consistent), max.</li></ul> | 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) |
| S7 communication                                                                                | <u>/_oct as solver)</u>                                                                    |
| • supported                                                                                     | Yes                                                                                        |
| as server                                                                                       | Yes                                                                                        |
| as client                                                                                       | Yes; Via CP and loadable FB                                                                |
| <ul><li>User data per job, max.</li></ul>                                                       | 180 byte; With PUT/GET                                                                     |
| <ul> <li>User data per job (of which consistent), max.</li> </ul>                               | 240 byte; as server                                                                        |
| S5 compatible communication                                                                     | 2.0.0,00.00.00                                                                             |
| 55 Sompatible Communication                                                                     |                                                                                            |

| Number of connections  • overable for PG communication — reserved for PG communication, min. — adjustable for ST basic communication, min.  Process diagnostic messages  **Number of login stations for message functions, max.  **Stress diagnostic messages  **Yes  **Strusts block  **Test commissioning functions  **Strust block  **Yes, Up to 2 simultaneously  **Strust block  **Yes, Up to 2 simultaneously  **Strustable for Strust statics, max. — of which statics variables, max.  **Of which statics variables, max. — of which statics variables, max. — of which statics variables, max.  **Of which control variables, max.  **Ore of which control variables, max.  **Ore of which powerfail-proof • present  • Number of entries, max.  **Ore of entries, max.  **Ore of entries and the IRUN, max.  **adjustable — of which powerfail-proof • present  • Number of entries and the IRUN, max.  **adjustable — of which powerfail-proof • present  • Number of entries and the IRUN, max.  **adjustable — of which powerfail-proof • present  • Number of entries and the IRUN, max.  **adjustable  **Ore of entries and the IRUN, max.  **adjustable  **Ore of entries and the IRUN, max.  **adjustable  **Present  • Present  • Number of entries, max.  **Ore of entries and the IRUN, max.  **adjustable  **adjustable  **Ore of entries a | • supported                                                     | Yes; via CP and loadable FC                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------|
| • usable for PG communication     — reserved for PG communication, min.     — adjustable for PG communication, min.     — adjustable for PG communication, min.     — adjustable for PC communication     — reserved for PG communication     — adjustable for PC communication, min.     — adjustable for PC communication, min.     — adjustable for PC broad communication, min.     — adjustable for PS basic communication     — adjustable for SP basic communication     Process diagnostic messages     — Process diagnostic messages        |                                                                 |                                                                   |
| • usable for PG communication     — reserved for PG communication, min.     — adjustable for PG communication, min.     — adjustable for PG communication, min.     — adjustable for PC communication     — reserved for PG communication     — adjustable for PC communication, min.     — adjustable for PC communication, min.     — adjustable for PC broad communication, min.     — adjustable for PS basic communication     — adjustable for SP basic communication     Process diagnostic messages     — Process diagnostic messages        |                                                                 | 6                                                                 |
| - adjustable for PG communication, mix adjustable for PG communication, max usable for OP communication, mix adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for SP tassic communication, mix adjustable for SP tassic communication, min Process diagnostic messages - Yes - simultaneously active Alarm S blocks, max Process diagnostic messages - Yes - Yes, Up to 2 simultaneously - Yes - Status block - Yes, Up to 2 simultaneously - Yes - Status-control - Yes - Status-control - Yes - Status-control - Yes - Status-control - Yes - Number of variables, max of which status variables, max of which control variables, max of which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof -                                                                                                                 | <ul> <li>usable for PG communication</li> </ul>                 | 5                                                                 |
| usable for OP communication, max.     usable for OP communication, min.         adjustable for OP communication, max.         usable for SP basic communication, max.         usable for SP basic communication, min.         adjustable for SP basic communication, max.          adjustable for Basic for message functions, max.          adjustable for Basic functions (SP)          adjustable for Basic functions (SP)          adjustable for Basic functions (SPC)          adjus                                                                                                                        | <ul> <li>reserved for PG communication</li> </ul>               | 1                                                                 |
| usable for OP communication, max.     usable for OP communication, min.         adjustable for OP communication, max.         usable for SP basic communication, max.         usable for SP basic communication, min.         adjustable for SP basic communication, max.          adjustable for Basic for message functions, max.          adjustable for Basic functions (SP)          adjustable for Basic functions (SP)          adjustable for Basic functions (SPC)          adjus                                                                                                                        | <ul> <li>adjustable for PG communication, min.</li> </ul>       | 1                                                                 |
| - usable for OP communication - reserved for SP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for SP basic communication - adjustable for SP basic communication, min adjustable for SP basic communication, max.  SP research functions  SI was adjustable for SP basic communication, max.  - Process diagnostic messages functions, max.  - Status block - Yes. Up to 2 simultaneously - Yes Status control variable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                 | 5                                                                 |
| - adjustable for OP communication, min adjustable for S7 basic communication - reserved for S7 basic communication - dijustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  S7 message functions  Number of login stations for message functions, max.  Process diagnostic messages - yes simultaneously active Alarm-S blocks, max.  Frest commissioning functions  Status block Status block Status block Status block Status block Status control - variables - variables - variables - variables, max of which status variables, max of which status variables, max of which control variables, max of which control variables, max of which proverfail-proof - Number of variables, max adjustable - of which proverfail-proof - Number of entries, max adjustable - of which proverfail-proof - Number of entries readable in RUN, max adjustable - present - can be read out - variables - can be read out - variables - configuration of header - configuration of header - configuration florader - Configuration software - Status formula florader - Configuration software - Status formula florader - Command set - Nesting levels - Status formula florader - Command set - Nesting levels - Programming lenguage - LAO - FBD - Yes - Yes - Yes - Programming lenguage - LAO - FBD - Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                 | 5                                                                 |
| - adjustable for OP communication, max.  • usable for S7 basic communication — reserved for S7 basic communication, min. — adjustable for S7 basic communication, max.  27 message functions  Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm's blocks, max.  Sinultaneously active Alarm's blocks, max.  Status block Single step  Number of breakpoints  Status block  Ves; Up to 2 simultaneously  Ves Number of breakpoints  Status block  Status scontrol  Status | <ul> <li>reserved for OP communication</li> </ul>               | 1                                                                 |
| - adjustable for OP communication, max.  • usable for S7 basic communication — reserved for S7 basic communication, min. — adjustable for S7 basic communication, max.  27 message functions  Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm's blocks, max.  Sinultaneously active Alarm's blocks, max.  Status block Single step  Number of breakpoints  Status block  Ves; Up to 2 simultaneously  Ves Number of breakpoints  Status block  Status scontrol  Status |                                                                 | 1                                                                 |
| - usable for S7 basic communication - reserved for S7 basic communication - adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  S7 message functions  Number of login stations for messages functions, max.  Process diagnostic messages - yes simultaneously active Alarm-S blocks, max.  Process diagnostic messages - Yes simultaneously active Alarm-S blocks, max.  Process diagnostic messages - Yes simultaneously active Alarm-S blocks, max.  Prot to ommissioning functions  Status block - Yes; Up to 2 simultaneously  Single step - Yes - Variables - Variables - Variables - Variables - Number of variables, max of which status variables, max of which control variables, max of which powerfall-proof - Forcing - Forcing, variables - Number of variables, max adjustable - of which powerfall-proof - Number of entries, max adjustable - of which powerfall-proof - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max entries re                                                                                                     |                                                                 | 5                                                                 |
| - adjustable for S7 basic communication, min adjustable for S7 basic communication, max.  S7 message functions  Number of login stations for messages  Process diagnostic messages  simultaneously active Alarm-S blocks, max.  Fost commissioning functions  Status block  Status block  Status block  Status control variables  • Status/control variables, max.  - of which status variables, max.  - of which ontrol variables, max.  - of which powerfall-proof  • Porcing, variables  • Number of variables, max.  - adjustable  - of which powerfall-proof  • Number of entries, max.  - adjustable  - of which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable  - or which powerfall-proof  • Number of entries readable in RUN, max.  - degree the readable    | •                                                               | 2                                                                 |
| - adjustable for S7 basic communication, max.  S7 message functions Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously Single step Yes Number of breakpoints  • Status/control variable • Variables • Number of variables, max. — of which control variables, max. — of which control variables, max.  Horicing • Forcing • Forcing, variables • Number of variables, max.  • Number of variables, max.  • Number of variables, max.  — adjustable • present • Number of variables, max.  — adjustable — of which powerfall-proof • Number of entries, max. — adjustable — preset • Number of entries readable in RUN, max. — adjustable — preset • Present • Number of entries readable in RUN, max.  — adjustable — preset • Number of or entries readable in RUN, max. — adjustable — preset • Ves  Service data • can be read out  Ambient conditions  Ambient conditi | <ul> <li>reserved for S7 basic communication</li> </ul>         | 0                                                                 |
| - adjustable for S7 basic communication, max.  S7 message functions Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  300  Test commissioning functions  Status block  Yes; Up to 2 simultaneously Single step Yes Number of breakpoints  • Status/control variable • Variables • Number of variables, max. — of which control variables, max. — of which control variables, max.  Horicing • Forcing • Forcing, variables • Number of variables, max.  • Number of variables, max.  • Number of variables, max.  — adjustable • present • Number of variables, max.  — adjustable — of which powerfall-proof • Number of entries, max. — adjustable — preset • Number of entries readable in RUN, max. — adjustable — preset • Present • Number of entries readable in RUN, max.  — adjustable — preset • Number of or entries readable in RUN, max. — adjustable — preset • Ves  Service data • can be read out  Ambient conditions  Ambient conditi | <ul> <li>adjustable for S7 basic communication, min.</li> </ul> | 0                                                                 |
| Number of login stations for message functions, max.  Process diagnostic messages Status block Single step Number of breakpoints Status block Status/control variable Variables Number of variables, max.  - of which status variables, max.  - Forcing Forcing, variables Number of variables, max.  - of which status variables, max.  - of which ontrol variables, max.  - of which powerfail-prof  • Prorcing, variables • Number of variables, max.  - adjustable  - or which powerfail-prof • Number of entries, max.  - adjustable  - or which powerfail-prof • Number of entries readable in RUN, max.  - adjustable  - preset  • Number of entries readable in RUN, max.  - adjustable  - preset  • Number of entries readable in RUN, max.  - adjustable  - preset  • Number of entries readable in RUN, max.  - adjustable  - preset  • Number of entries readable in RUN, max.  - adjustable  - preset  • Number of entries readable in RUN, max.  - adjustable  - preset  • Ves  - Yes  - Y |                                                                 | 2                                                                 |
| Number of login stations for message functions, max.  Process diagnostic messages simultaneously active Alarm-S blocks, max.  Prost commissioning functions  Status block Single step Number of breakpoints  • Status/control • Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which status variables, max. — of which status variables, max. — of which control variables, max. — of which function because of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. — of which provinces of variables, max. — of which status variables, max. — of which provinces of variables, max. — of which provinces of variables, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — present • Present • Number of entries readable in RUN, max. — adjustable — preset  Sarvice data • can be read out  Ambient conditions  Ambient conditions  Ambient temperature during operation • min. • or C configuration / header  • STEP 7  Yes: V5.2 SP1 or higher with HW update  of Configuration software • STEP 7  Yes: V5.2 SP1 or higher with HW update  of System function blocks (SFB)  Programming language  — LAD — FBD  Yes  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                               |                                                                   |
| process diagnostic messages simultaneously active Alarm-S blocks, max.  Test commissioning functions Status block Single step Yes Number of breakpoints 4 Status/control variable • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which status variables, max. — of which control variables • Number of variables, max. — of which control variables, max. — of which control variables, max. — 10 Forcing • Forcing, variables • Number of variables, max. — 10 Diagnostic buffer • present • present • Number of entries, max. — adjustable — of which powerfali-proof • Number of entries readable in RUN, max. — adjustable — preset  • can be read out  Service data • can be read out  Ambient conditions  Ambient conditions  Ambient conditions  Ambient conditions of programming / header • STEP 7  Ves: V5.2 SP1 or higher with HW update  configuration / programming / header • Command set • Nesting levels • System function bocks (SFB)  Programming language — LAD — FBD  Ves  Ves  Ves  Ves  Ves  Ves  Ves  Ve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                 | 6; Depending on the configured connections for PG/OP and S7 basic |
| simultaneously active Alarm-S blocks, max.  Test commissioning functions  Status block  Single step  Number of breakpoints  • Status/scontrol  • Status/scontrol variable  • Variables  • Number of variables, max.  — of which status variables, max.  — of which control variables, max.  — of which control variables, max.  • Forcing  • Forcing, variables  • Number of variables, max.  • Number of variables, max.  — of which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — of which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — of which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — or which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — or which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — or which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — or which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — or which powerfail-proof  • Number of entries readable in RUN, max.  — adjustable  — or which powerfail-proof  • No  O or or hich powerfail-proof  • Comfiguration of ware  • SEEP 7  Ves: V5.2 SP1 or higher with HW update  configuration / programming / header  • Command set  • Nesting levels  • System function blocks (SFE)  System function blocks (SFB)  Programming language  — LAD  — FBD  Ves                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                 | communication                                                     |
| Status block Yes, Up to 2 simultaneously  Single step Yes  Number of breakpoints 4  Status/control variable Yes  • Variables Inputs, outputs, memory bits, DB, times, counters  • Number of variables, max. 30  • Of which status variables, max. 14  Forcing  • Forcing Yes  • Number of variables, max. 10  Diagnostic buffer  • Present Yes  • Number of entries, max. 500  • Aumber of entries readable in RUN, max. 499  • Parest 10  • Number of entries readable in RUN, max. 499  • preset 10  • Number of entries readable in RUN, max. 499  - adjustable Yes; From 10 to 499  - preset 10  * Ambient conditions  Ambient temperature during operation  • min. 0 °C  configuration / hoader  Configuration / programming / header  • Orommand set see instruction list  • Nesting levels 8  • System function blocks (SFB) see instruction list  Programming language  - LAD  - FBD  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                 |                                                                   |
| Status block Single step Yes Number of breakpoints 4 Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which status variables, max. — of which status variables, max.  - of which status variables, max.  - of which control variables, max.  - of which powerfail-proof • Forcing, • Number of variables, max.  - adjustable — of which powerfail-proof • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset  Service data • can be read out  Ambient conditions  Ambient temperature during operation • min. • on "C configuration / header  Configuration / header  Configuration software  • STEP 7  Yes; V5.2 SP1 or higher with HW update  configuration fyrogramming / header  • Command set • Nesting levels • System function blocks (SFB)  Programming language — LAD — FBD  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                 | 300                                                               |
| Single step Number of breakpoints 4 Status/control • Status/control variables • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which postrol variables, max. — 10 Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset — of which powerfail-proof • Number of entries readable in RUN, wax. — adjustable — preset — of which powerfail-proof • Number of entries readable in RUN, wax. — adjustable — preset — of which powerfail-proof • Number of entries readable in RUN, wax. — adjustable — preset — of which powerfail-proof • Non • Non • Non • On't of the power | Test commissioning functions                                    |                                                                   |
| Number of breakpoints                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Status block                                                    | Yes; Up to 2 simultaneously                                       |
| Status/control variable  Status/control variables  Variables  Number of variables, max.  of which status variables, max.  Forcing  Forcing  Forcing, variables  Number of variables, max.  10  Diagnostic buffer  vesent  Number of entries, max.  - adjustable  of which powerfall-proof  Number of entries readable in RUN, max.  - adjustable  preset  10  Service data  a an be read out  Ambient temperature during operation  max.  STEP 7  configuration / header  Configuration software  Stystem functions (SFC)  System function blocks (SFB)  Programming language  — LAD  PSD Which is data in 30  Inputs, outputs, memory bits, DB, times, counters  30  Inputs, outputs, memory bits, DB, times, counters  30  14  Yes  10  Yes  Yes  10  Ves  Yes  From 10 to 499  Yes  From 10 to 499  Yes  From 10 to 499  O °C  Configuration / header  Configuration software  STEP 7  Yes: V5.2 SP1 or higher with HW update  o can be read out  See instruction list  System function blocks (SFB)  Programming language  — LAD — FBD  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Single step                                                     | Yes                                                               |
| • Status/control variable • Variables • Variables • Number of variables, max. — of which status variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max.  14  Forcing • Forcing • Forcing, variables • Number of variables, max.  10  Diagnostic buffer • present • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset • preset • ves; From 10 to 499 — preset • can be read out  Ambient conditions  Ambient conditions  Ambient temperature during operation • min. • max. • 60 °C  configuration / header  Configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                 | 4                                                                 |
| Variables     Number of variables, max.     — of which status variables, max.     — of which control variables, max.  Forcing     Forcing     Forcing, variables     • Number of variables, max.     10  Diagnostic buffer      • present     • Number of entries, max.     — adjustable     — of which powerfail-proof     • Number of entries readable in RUN, max.     — adjustable     — of which powerfail-proof     • Number of entries readable in RUN, max.     —— adjustable     — preset     10  Service data     • can be read out     Yes  Ambient conditions  Ambient temperature during operation     • min.     • max.     60 °C  configuration / header  Configuration / programming / header      • Command set     • System functions (SFC)     see instruction list     • System function blocks (SFB)     Programming language     —— LAD     —— FBD     Yes       10  Yes  Inputs, outputs, memory bits, DB, times, counters  30  30  30  30  44  44  Yes  Yes  Yes  Ves  Ves  Inputs, outputs, memory bits, DB, times, counters  14  20  30  30  30  49  Yes  Yes  Inputs, outputs  14  14  14  14  14  15  16  16  17  18  18  18  18  18  18  18  18  18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Status/control                                                  |                                                                   |
| Number of variables, max.     — of which status variables, max.     — of which control variables, max.     — of which control variables, max.  Forcing     ● Forcing, variables     ● Forcing, variables     ● Number of variables, max.  Diagnostic buffer  ● present     ● present     ● present     ● volumber of entries, max.     — adjustable     — of which powerfail-proof     ● Number of entries readable in RUN, max.     — adjustable     — preset     ● preset     ● Number of entries readable in RUN, max.     — adjustable     — preset     ● Number of entries readable in RUN, max.     — adjustable     — preset     ● Number of entries readable in RUN, wax.     — adjustable     — west in the present     ● Service data     ● can be read out  Ambient conditions  Ambient temperature during operation     ● min.     ● of °C  configuration / header  Configuration software     ● STEP 7     Yes; V5.2 SP1 or higher with HW update  configuration of programming / header     ● Command set     ● Nesting levels     ● System functions (SFC)     see instruction list     ● System function blocks (SFB)     Programming language     — LAD     — FBD     Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <ul> <li>Status/control variable</li> </ul>                     | Yes                                                               |
| of which status variables, max of which control variables, max. 14  Forcing  • Forcing • Forcing Yes • Forcing, variables • Number of variables, max. 10  Diagnostic buffer • present • Number of entries, max adjustable of which powerfail-proof • Number of entries readable in RUN, max adjustable preset preset yes; From 10 to 499 preset yes Ambient conditions  Ambient conditions  Ambient temperature during operation • min. • max of 0° C configuration / header  Configuration of header  Configuration of programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB)  Programming language LAD FBD Yes  Yes Number of entries are retained Yes PSD FBD Yes Yes STEP 7 Yes; V5.2 SP1 or higher with HW update System function list System function list System function list see instruction list Programming language LAD FBD Yes Yes Yes Yes Yes Yes Yes FBD Yes Yes FBD Yes Yes Yes Yes Yes Yes Yes FBD Yes FBD Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <ul><li>Variables</li></ul>                                     | Inputs, outputs, memory bits, DB, times, counters                 |
| Forcing Forcing Forcing Forcing, variables Forcing, | <ul> <li>Number of variables, max.</li> </ul>                   | 30                                                                |
| Forcing  Forcing Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max.  - adjustable - of which powerfail-proof Number of entries readable in RUN, max.  - adjustable - of which powerfail-proof Number of entries readable in RUN, max.  - adjustable - preset 10  Service data - can be read out Ambient conditions  Ambient conditions  Ambient temperature during operation - max 60 °C  configuration / header Configuration of programming / header - Configuration of programming / header - Nesting levels - Nesting levels - System function blocks (SFB) - Programming language - LAD - FBD  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul><li>of which status variables, max.</li></ul>               | 30                                                                |
| Forcing Forcing, variables Forcing, variables Inputs, outputs Inputs, outputs, outputs Inputs, outputs, outputs Inputs, outputs, outputs, outputs Inputs, outputs, outputs, outputs Inputs, outputs, ou  | — of which control variables, max.                              | 14                                                                |
| Forcing, variables Number of variables, max.  Diagnostic buffer  present Number of entries, max. Sou Adjustable Of which powerfail-proof Number of entries readable in RUN, max. Adjustable Preset Of an be read out  Service data Can be read out  Ambient conditions  Ambient temperature during operation  min. Of and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Forcing                                                         |                                                                   |
| Number of variables, max.  Diagnostic buffer  present Number of entries, max.  adjustable No  of which powerfail-proof Number of entries readable in RUN, max.  adjustable present  No  nadjustable yes; From 10 to 499 present  can be read out  Pes  Ambient conditions  Ambient temperature during operation  max.  of 0°C  configuration / header  Configuration software  STEP 7 Yes; V5.2 SP1 or higher with HW update  configuration / programming / header  Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language  — LAD — FBD  Yes  Yes  S00  No  100; Only the last 100 entries are retained  100; Only the last 1  | •                                                               | Yes                                                               |
| Diagnostic buffer  • present • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset — preset — preset — to an be read out  Ambient conditions  Ambient temperature during operation • min. • min. • max. 60 °C  configuration / header  Configuration / programming / header • Command set • Nesting levels • Nesting levels • System function blocks (SFB) Programming language — LAD — FBD  Yes  Vo Only Uny the last 100 entries are retained 100; Only the last 100 entries are retained 499  499  499  499  499  499  499  49                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                 | Inputs, outputs                                                   |
| Present     Number of entries, max.     - adjustable     - of which powerfail-proof     Number of entries readable in RUN, max.     - adjustable     - preset     - prese      |                                                                 | 10                                                                |
| Number of entries, max.  — adjustable — of which powerfail-proof Number of entries readable in RUN, max.  — adjustable — preset — preset — preset — preset — can be read out  Ambient conditions  Ambient temperature during operation  • min. • max. 60 °C  configuration / header  Configuration / programming / header  • Command set • Nesting levels • System function s(SFC) • System function blocks (SFB) Programming language — LAD — FBD  Yes  100, Only the last 100 entries are retained 100, Only the last 1  | Diagnostic buffer                                               |                                                                   |
| adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | • present                                                       | Yes                                                               |
| - of which powerfail-proof  Number of entries readable in RUN, max.  - adjustable - preset  10  Service data  • can be read out  Ambient conditions  Ambient temperature during operation • min. • max. 60 °C  configuration / header  Configuration / programming / header  • STEP 7  Yes; V5.2 SP1 or higher with HW update  configuration / programming / header  • Source instruction list • Nesting levels • System functions (SFC) • System function blocks (SFB)  Programming language  - LAD - FBD  Yes  Yes; V5.2 SP1  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul> <li>Number of entries, max.</li> </ul>                     | 500                                                               |
| Number of entries readable in RUN, max.  — adjustable — preset  10  Service data  • can be read out  Ambient conditions  Ambient temperature during operation • min. • max. 60 °C  configuration / header  Configuration software • STEP 7  Yes; V5.2 SP1 or higher with HW update  configuration / programming / header  • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB)  Programming language — LAD — FBD  Yes  Yes; From 10 to 499  Yes  Yes  From 10 to 499  Yes  See instruction to 499  Yes  From 10 to 499  Yes  See instruction to 499  Yes  From 10 to 499  Yes  Yes  From 10 to 499  Yes  Yes  Yes  Yes  Yes  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | — adjustable                                                    | No                                                                |
| - adjustable Yes; From 10 to 499 preset 10  Service data  • can be read out Yes  Ambient conditions  Ambient temperature during operation • min. 0 °C • max. 60 °C  configuration / header  Configuration software • STEP 7 Yes; V5.2 SP1 or higher with HW update  configuration / programming / header  • Command set see instruction list • Nesting levels 8 • System functions (SFC) see instruction list • System function blocks (SFB) see instruction list  Programming language LAD FBD FBD Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul><li>— of which powerfail-proof</li></ul>                    | 100; Only the last 100 entries are retained                       |
| — preset 10  Service data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <ul> <li>Number of entries readable in RUN, max.</li> </ul>     | 499                                                               |
| Service data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | — adjustable                                                    | Yes; From 10 to 499                                               |
| can be read out  Ambient conditions  Ambient temperature during operation      min.     min.     max.     60 °C  configuration / header  Configuration software     STEP 7     Yes; V5.2 SP1 or higher with HW update  configuration / programming / header      Command set     Nesting levels     Nesting levels     System functions (SFC)     System function blocks (SFB)     Programming language     — LAD     — FBD     Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | — preset                                                        | 10                                                                |
| Ambient conditions  Ambient temperature during operation  • min. • max. 60 °C  configuration / header  Configuration software • STEP 7 Yes; V5.2 SP1 or higher with HW update  configuration / programming / header  • Command set • Nesting levels • Nesting levels • System functions (SFC) • System function blocks (SFB)  Programming language  — LAD — FBD  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                 |                                                                   |
| Ambient temperature during operation  • min. • max. 60 °C  configuration / header  Configuration software • STEP 7 Yes; V5.2 SP1 or higher with HW update  configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language  — LAD — FBD  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                 | Yes                                                               |
| <ul> <li>min.</li> <li>max.</li> <li>60 °C</li> </ul> Configuration / header Configuration software <ul> <li>STEP 7</li> <li>Yes; V5.2 SP1 or higher with HW update</li> </ul> Configuration / programming / header <ul> <li>Command set</li> <li>Nesting levels</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>LAD</li> <li>FBD</li> </ul> Yes Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                 |                                                                   |
| <ul> <li>max.</li> <li>configuration / header</li> <li>Configuration software</li> <li>STEP 7</li> <li>Yes; V5.2 SP1 or higher with HW update</li> <li>configuration / programming / header</li> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>LAD</li> <li>FBD</li> <li>Yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                 |                                                                   |
| Configuration / header  Onfiguration software  STEP 7  Yes; V5.2 SP1 or higher with HW update  configuration / programming / header  Command set  Nesting levels  System functions (SFC)  System function blocks (SFB)  Programming language  — LAD — FBD  Yes  Yes  Yes; V5.2 SP1 or higher with HW update  see instruction list  see instruction list  8  See instruction list  Yes  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                 |                                                                   |
| Configuration software  STEP 7  Yes; V5.2 SP1 or higher with HW update  configuration / programming / header  Command set  Nesting levels  System functions (SFC)  System function blocks (SFB)  Programming language  — LAD — FBD  Yes  Yes; V5.2 SP1 or higher with HW update  see instruction list  see instruction list  yes  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                 | 60 °C                                                             |
| <ul> <li>STEP 7</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                 |                                                                   |
| configuration / programming / header  • Command set  • Nesting levels  • System functions (SFC)  • System function blocks (SFB)  Programming language  — LAD — FBD  Yes  Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | _                                                               |                                                                   |
| <ul> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>LAD</li> <li>FBD</li> <li>Yes</li> <li>Yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                 | Yes; V5.2 SP1 or higher with HW update                            |
| <ul> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>LAD</li> <li>FBD</li> <li>Yes</li> <li>Yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                 |                                                                   |
| <ul> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>LAD</li> <li>FBD</li> <li>Yes</li> <li>Yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                 |                                                                   |
| <ul> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>— LAD</li> <li>— FBD</li> <li>Yes</li> <li>Yes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | _                                                               |                                                                   |
| Programming language  — LAD Yes  — FBD Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                 |                                                                   |
| <ul><li>LAD</li><li>FBD</li><li>Yes</li><li>Yes</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                 | see instruction list                                              |
| — FBD Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                 |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                 |                                                                   |
| — STL Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                 | Yes                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | — STL                                                           | Yes                                                               |

| — SCL                                                           | Yes                        |
|-----------------------------------------------------------------|----------------------------|
| — GRAPH                                                         | Yes                        |
| — HiGraph®                                                      | Yes                        |
| Know-how protection                                             |                            |
| <ul> <li>User program protection/password protection</li> </ul> | Yes                        |
| <ul> <li>Block encryption</li> </ul>                            | Yes; With S7 block Privacy |
| Dimensions                                                      |                            |
| Width                                                           | 40 mm                      |
| Height                                                          | 125 mm                     |
| Depth                                                           | 130 mm                     |
| Weights                                                         |                            |
| Weight, approx.                                                 | 270 g                      |

last modified: 7/28/2021 🖸