

## Data sheet

### CPU 215NET PG (215-2BT16)

#### Technical data

|                                                |                                                                                                                                                                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Order no.                                      | 215-2BT16                                                                                                                                                                                                                                        |
| Type                                           | CPU 215NET PG                                                                                                                                                                                                                                    |
| <b>General information</b>                     |                                                                                                                                                                                                                                                  |
| Note                                           | -                                                                                                                                                                                                                                                |
| Features                                       | Work memory [KB]: 128<br>Integrated Ethernet CP 243<br>Interface [RJ45]: active Ethernet PG/OP communication<br>Interface [RS485]: MPI<br>MMC card slot, up to 32 expansion modules<br>Programmable with WinPLC7, SIMATIC Manager and TIA Portal |
| <b>Technical data power supply</b>             |                                                                                                                                                                                                                                                  |
| Power supply (rated value)                     | DC 24 V                                                                                                                                                                                                                                          |
| Power supply (permitted range)                 | DC 20.4...28.8 V                                                                                                                                                                                                                                 |
| Reverse polarity protection                    | yes                                                                                                                                                                                                                                              |
| Current consumption (no-load operation)        | 140 mA                                                                                                                                                                                                                                           |
| Current consumption (rated value)              | 1.5 A                                                                                                                                                                                                                                            |
| Inrush current                                 | 65 A                                                                                                                                                                                                                                             |
| $I^2t$                                         | 0.75 A²s                                                                                                                                                                                                                                         |
| Max. current drain at backplane bus            | 3 A                                                                                                                                                                                                                                              |
| Max. current drain load supply                 | -                                                                                                                                                                                                                                                |
| Power loss                                     | 6 W                                                                                                                                                                                                                                              |
| <b>Load and working memory</b>                 |                                                                                                                                                                                                                                                  |
| Load memory, integrated                        | 192 KB                                                                                                                                                                                                                                           |
| Load memory, maximum                           | 192 KB                                                                                                                                                                                                                                           |
| Work memory, integrated                        | 128 KB                                                                                                                                                                                                                                           |
| Work memory, maximal                           | 128 KB                                                                                                                                                                                                                                           |
| Memory divided in 50% program / 50% data       | -                                                                                                                                                                                                                                                |
| Memory card slot                               | MMC-Card with max. 512 MB                                                                                                                                                                                                                        |
| <b>Hardware configuration</b>                  |                                                                                                                                                                                                                                                  |
| Racks, max.                                    | 4                                                                                                                                                                                                                                                |
| Modules per rack, max.                         | total max. 32                                                                                                                                                                                                                                    |
| Number of integrated DP master                 | -                                                                                                                                                                                                                                                |
| Number of DP master via CP                     | 8                                                                                                                                                                                                                                                |
| Operable function modules                      | 32                                                                                                                                                                                                                                               |
| Operable communication modules PtP             | 32                                                                                                                                                                                                                                               |
| Operable communication modules LAN             | -                                                                                                                                                                                                                                                |
| <b>Status information, alarms, diagnostics</b> |                                                                                                                                                                                                                                                  |
| Status display                                 | yes                                                                                                                                                                                                                                              |
| Interrupts                                     | no                                                                                                                                                                                                                                               |
| Process alarm                                  | no                                                                                                                                                                                                                                               |
| Diagnostic interrupt                           | no                                                                                                                                                                                                                                               |
| Diagnostic functions                           | no                                                                                                                                                                                                                                               |
| Diagnostics information read-out               | possible                                                                                                                                                                                                                                         |
| Supply voltage display                         | green LED                                                                                                                                                                                                                                        |

|                                                            |                                       |
|------------------------------------------------------------|---------------------------------------|
| Group error display                                        | red SF LED                            |
| Channel error display                                      | none                                  |
| <b>Command processing times</b>                            |                                       |
| Bit instructions, min.                                     | 0.18 µs                               |
| Word instruction, min.                                     | 0.78 µs                               |
| Double integer arithmetic, min.                            | 1.8 µs                                |
| Floating-point arithmetic, min.                            | 40 µs                                 |
| <b>Timers/Counters and their retentive characteristics</b> |                                       |
| Number of S7 counters                                      | 256                                   |
| S7 counter remanence                                       | adjustable 0 up to 255                |
| S7 counter remanence adjustable                            | C0 .. C7                              |
| Number of S7 times                                         | 256                                   |
| S7 times remanence                                         | adjustable 0 up to 255                |
| S7 times remanence adjustable                              | not retentive                         |
| <b>Data range and retentive characteristic</b>             |                                       |
| Number of flags                                            | 8192 Bit                              |
| Bit memories retentive characteristic adjustable           | adjustable 0 up to 1023               |
| Bit memories retentive characteristic preset               | MB0 .. MB15                           |
| Number of data blocks                                      | 2047                                  |
| Max. data blocks size                                      | 16 KB                                 |
| Number range DBs                                           | 1 ... 2047                            |
| Max. local data size per execution level                   | 1024 Byte                             |
| Max. local data size per block                             | 1024 Byte                             |
| <b>Blocks</b>                                              |                                       |
| Number of OBs                                              | 14                                    |
| Maximum OB size                                            | 16 KB                                 |
| Total number DBs, FBs, FCs                                 | -                                     |
| Number of FBs                                              | 1024                                  |
| Maximum FB size                                            | 16 KB                                 |
| Number range FBs                                           | 0 ... 1023                            |
| Number of FCs                                              | 1024                                  |
| Maximum FC size                                            | 16 KB                                 |
| Number range FCs                                           | 0 ... 1023                            |
| Maximum nesting depth per priority class                   | 8                                     |
| Maximum nesting depth additional within an error OB        | 1                                     |
| <b>Time</b>                                                |                                       |
| Real-time clock buffered                                   | yes                                   |
| Clock buffered period (min.)                               | 30 d                                  |
| Type of buffering                                          | Vanadium Rechargeable Lithium Battery |
| Load time for 50% buffering period                         | 20 h                                  |
| Load time for 100% buffering period                        | 48 h                                  |
| Accuracy (max. deviation per day)                          | 10 s                                  |
| Number of operating hours counter                          | 8                                     |
| Clock synchronization                                      | -                                     |
| Synchronization via MPI                                    | -                                     |
| Synchronization via Ethernet (NTP)                         | -                                     |
| <b>Address areas (I/O)</b>                                 |                                       |

|                              |           |
|------------------------------|-----------|
| Input I/O address area       | 1024 Byte |
| Output I/O address area      | 1024 Byte |
| Process image adjustable     | -         |
| Input process image preset   | 128 Byte  |
| Output process image preset  | 128 Byte  |
| Input process image maximal  | 128 Byte  |
| Output process image maximal | 128 Byte  |
| Digital inputs               | 8192      |
| Digital outputs              | 8192      |
| Digital inputs central       | 512       |
| Digital outputs central      | 512       |
| Integrated digital inputs    | -         |
| Integrated digital outputs   | -         |
| Analog inputs                | 512       |
| Analog outputs               | 512       |
| Analog inputs, central       | 128       |
| Analog outputs, central      | 128       |
| Integrated analog inputs     | -         |
| Integrated analog outputs    | -         |

## Communication functions

|                                           |          |
|-------------------------------------------|----------|
| PG/OP channel                             | yes      |
| Global data communication                 | yes      |
| Number of GD circuits, max.               | 4        |
| Size of GD packets, max.                  | 22 Byte  |
| S7 basic communication                    | yes      |
| S7 basic communication, user data per job | 76 Byte  |
| S7 communication                          | yes      |
| S7 communication as server                | yes      |
| S7 communication as client                | -        |
| S7 communication, user data per job       | 160 Byte |
| Number of connections, max.               | 16       |

## Functionality Sub-D interfaces

|                          |                          |
|--------------------------|--------------------------|
| Type                     | MP2I                     |
| Type of interface        | RS485                    |
| Connector                | Sub-D, 9-pin, female     |
| Electrically isolated    | -                        |
| MPI                      | yes                      |
| MP2I (MPI/RS232)         | yes                      |
| Point-to-point interface | -                        |
| 5V DC Power supply       | max. 90mA, non-isolated  |
| 24V DC Power supply      | max. 100mA, non-isolated |

## Functionality MPI

|                             |     |
|-----------------------------|-----|
| Number of connections, max. | 16  |
| PG/OP channel               | yes |
| Routing                     | -   |
| Global data communication   | yes |
| S7 basic communication      | yes |
| S7 communication            | yes |

|                            |              |
|----------------------------|--------------|
| S7 communication as server | yes          |
| S7 communication as client | -            |
| Transmission speed, min.   | 19.2 kbit/s  |
| Transmission speed, max.   | 187.5 kbit/s |

## Functionality RJ45 interfaces

|                             |                      |
|-----------------------------|----------------------|
| Type                        | TP                   |
| Type of interface           | Ethernet 10/100 MBit |
| Connector                   | RJ45                 |
| Electrically isolated       | yes                  |
| PG/OP channel               | yes                  |
| Number of connections, max. | 8                    |
| Productive connections      | yes                  |

## Ethernet communication CP

|                                                          |                                                                                              |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Number of configurable connections, max.                 | 16                                                                                           |
| Number of productive connections by Siemens NetPro, max. | 16                                                                                           |
| S7 connections                                           | -                                                                                            |
| User data per S7 connection, max.                        | -                                                                                            |
| TCP-connections                                          | SEND, RECEIVE, FETCH PASSIV, WRITE PASSIV,<br>Connection of active and passive data handling |
| User data per TCP connection, max.                       | 64 KB                                                                                        |
| ISO-connections                                          | SEND and RECEIVE                                                                             |
| User data per ISO connection, max.                       | 8 KB                                                                                         |
| ISO on TCP connections (RFC 1006)                        | SEND, RECEIVE, FETCH PASSIV, WRITE PASSIV,<br>Connection of active and passive data handling |
| User data per ISO on TCP connection, max.                | 32 KB                                                                                        |
| UDP-connections                                          | SEND and RECEIVE                                                                             |
| User data per UDP connection, max.                       | 2 KB                                                                                         |
| UDP-multicast-connections                                | SEND and RECEIVE (max. 16 Multicast groups)                                                  |
| UDP-broadcast-connections                                | SEND                                                                                         |

## Datasizes

|                  |   |
|------------------|---|
| Input bytes      | 0 |
| Output bytes     | 0 |
| Parameter bytes  | 3 |
| Diagnostic bytes | 0 |

## Housing

|          |                    |
|----------|--------------------|
| Material | PPE / PA 6.6       |
| Mounting | Profile rail 35 mm |

## Mechanical data

|                              |                         |
|------------------------------|-------------------------|
| Dimensions (WxHxD)           | 50.8 mm x 76 mm x 80 mm |
| Net weight                   | 150 g                   |
| Weight including accessories | -                       |
| Gross weight                 | -                       |

## Environmental conditions

|                       |                 |
|-----------------------|-----------------|
| Operating temperature | 0 °C to 60 °C   |
| Storage temperature   | -25 °C to 70 °C |

## Certifications

|                  |                |
|------------------|----------------|
| UL certification | in preparation |
| KC certification | -              |