

# SOMANET Object Parameters

Version: r17.0.3.1[2025-11-17]

| CIA 402  | PROFINET PNU | CIP PARAM                | GROUP                         | NAME                          | UNIT | DATA TYPE     | SIZE | DEFAULT VALUE | ACCESS | CYCLIC DATA |
|----------|--------------|--------------------------|-------------------------------|-------------------------------|------|---------------|------|---------------|--------|-------------|
| 0x1000:0 | 28672        | 0x66 .<br>0x1 .<br>0x0   | Device type                   | Device type                   |      | Unsigned32    | 4    | 2449539584    | ro     |             |
| 0x1001:0 |              |                          | Error register                |                               |      | Unsigned8     | 1    | 0             | ro     |             |
| 0x1005:0 |              |                          | COB-ID SYNC                   |                               |      | Integer32     | 4    | -2147483648   | ro     |             |
| 0x1006:0 |              |                          | Communication cycle period    |                               |      | Integer32     | 4    | 1677721600    | ro     |             |
| 0x1008:0 | 28800        | 0x66 .<br>0x1 .<br>0x200 | Manufacturer device name      | Manufacturer device name      |      | VisibleString | 50   |               | ro     |             |
| 0x100A:0 | 28832        | 0x66 .<br>0x1 .<br>0x280 | Manufacturer software version | Manufacturer software version |      | VisibleString | 50   |               | ro     |             |
| 0x100C:0 |              |                          | Guard time                    |                               |      | Unsigned16    | 2    | 0             | ro     |             |
| 0x100D:0 |              |                          | Life time factor              |                               |      | Unsigned8     | 1    | 0             | ro     |             |
| 0x1010:0 |              |                          | Store parameters              |                               |      | Unsigned8     | 1    | 1             | ro     |             |

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|----------|-----------------|--------------------------|----------------------------|-----------------------------------------------------------|------|------------|------|------------------|--------|----------------|
| 0x1010:1 | 28929           | 0x66 .<br>0x1 .<br>0x401 | Store parameters           | Save all parameters                                       |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x1011:0 |                 |                          | Restore default parameters |                                                           |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x1011:1 | 28945           | 0x66 .<br>0x1 .<br>0x441 | Restore default parameters | Restore all default<br>parameters                         |      | Unsigned32 | 16   | 0                | ro     |                |
| 0x1011:2 | 28946           | 0x66 .<br>0x1 .<br>0x442 | Restore default parameters | Restore communication<br>default parameters<br>(disabled) |      | Unsigned32 | 16   | 0                | ro     |                |
| 0x1011:3 | 28947           | 0x66 .<br>0x1 .<br>0x443 | Restore default parameters | Restore application default<br>parameters (disabled)      |      | Unsigned32 | 16   | 0                | ro     |                |
| 0x1011:4 | 28948           | 0x66 .<br>0x1 .<br>0x444 | Restore default parameters | Restore manufacturer<br>default parameters                |      | Unsigned32 | 16   | 0                | ro     |                |
| 0x1016:0 |                 |                          | Consumer heartbeat time    |                                                           |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1016:1 |                 |                          | Consumer heartbeat time    |                                                           |      | Integer32  | 4    | 1677721600       | ro     |                |
| 0x1017:0 |                 |                          | Producer heartbeat time    |                                                           |      | Unsigned16 | 2    | 59395            | ro     |                |
| 0x1018:0 |                 |                          | Identity object            |                                                           |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x1018:1 |                 |                          | Identity object            |                                                           |      | Unsigned32 | 4    | 3525443584       | ro     |                |

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|----------|-----------------|--------------------------|---------------------------------------|-----------------|------|------------|------|------------------|--------|----------------|
| 0x1018:2 |                 |                          | Identity object                       |                 |      | Unsigned32 | 4    | 17039360         | ro     |                |
| 0x1018:3 |                 |                          | Identity object                       |                 |      | Unsigned32 | 4    | 50331665         | ro     |                |
| 0x1018:4 |                 |                          | Identity object                       |                 |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x1019:0 |                 |                          | Synchronous counter<br>overflow value |                 |      | Unsigned8  | 1    | 100              | ro     |                |
| 0x1023:0 |                 |                          | OS command                            |                 |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x1023:1 | 29233           | 0x66 .<br>0x1 .<br>0x8c1 | OS command                            | Command         |      | Unsigned8  | 8    | 0                | ro     |                |
| 0x1023:2 | 29234           | 0x66 .<br>0x1 .<br>0x8c2 | OS command                            | Status          |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1023:3 | 29235           | 0x66 .<br>0x1 .<br>0x8c3 | OS command                            | Response        |      | Unsigned8  | 8    | 0                | ro     |                |
| 0x1024:0 | 29248           | 0x66 .<br>0x1 .<br>0x900 | OS command mode                       | OS command mode |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1400:0 |                 |                          | Receive PDO1 parameter                |                 |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x1400:1 |                 |                          | Receive PDO1 parameter                |                 |      | Unsigned32 | 4    | 131200           | ro     |                |
| 0x1400:2 |                 |                          | Receive PDO1 parameter                |                 |      | Unsigned8  | 1    | 1                | ro     |                |

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|----------|-----------------|--------------|------------------------|------|------|------------|------|------------------|--------|----------------|
| 0x1400:3 |                 |              | Receive PDO1 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1401:0 |                 |              | Receive PDO2 parameter |      |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x1401:1 |                 |              | Receive PDO2 parameter |      |      | Unsigned32 | 4    | 196736           | ro     |                |
| 0x1401:2 |                 |              | Receive PDO2 parameter |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1401:3 |                 |              | Receive PDO2 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1402:0 |                 |              | Receive PDO3 parameter |      |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x1402:1 |                 |              | Receive PDO3 parameter |      |      | Unsigned32 | 4    | 262272           | ro     |                |
| 0x1402:2 |                 |              | Receive PDO3 parameter |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1402:3 |                 |              | Receive PDO3 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1403:0 |                 |              | Receive PDO4 parameter |      |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x1403:1 |                 |              | Receive PDO4 parameter |      |      | Unsigned32 | 4    | 327808           | ro     |                |
| 0x1403:2 |                 |              | Receive PDO4 parameter |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1403:3 |                 |              | Receive PDO4 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1600:0 |                 |              | Receive PDO1 mapping   |      |      | Unsigned8  | 1    | 7                | ro     |                |
| 0x1600:1 |                 |              | Receive PDO1 mapping   |      |      | Unsigned32 | 4    | 268451936        | ro     |                |
| 0x1600:2 |                 |              | Receive PDO1 mapping   |      |      | Unsigned32 | 4    | 134242400        | ro     |                |

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|----------|-----------------|--------------|-------------------------|------|------|------------|------|------------------|--------|----------------|
| 0x1600:3 |                 |              | Receive PDO1 mapping    |      |      | Unsigned32 | 4    | 268464480        | ro     |                |
| 0x1600:4 |                 |              | Receive PDO1 mapping    |      |      | Unsigned32 | 4    | 536902240        | ro     |                |
| 0x1600:5 |                 |              | Receive PDO1 mapping    |      |      | Unsigned32 | 4    | 536936288        | ro     |                |
| 0x1600:6 |                 |              | Receive PDO1 mapping    |      |      | Unsigned32 | 4    | 268481120        | ro     |                |
| 0x1600:7 |                 |              | Receive PDO1 mapping    |      |      | Unsigned32 | 4    | 536871207        | ro     |                |
| 0x1601:0 |                 |              | Receive PDO2 mapping    |      |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x1601:1 |                 |              | Receive PDO2 mapping    |      |      | Unsigned32 | 4    | 537001568        | ro     |                |
| 0x1601:2 |                 |              | Receive PDO2 mapping    |      |      | Unsigned32 | 4    | 537067104        | ro     |                |
| 0x1602:0 |                 |              | Receive PDO3 mapping    |      |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x1602:1 |                 |              | Receive PDO3 mapping    |      |      | Unsigned32 | 4    | 536871719        | ro     |                |
| 0x1602:2 |                 |              | Receive PDO3 mapping    |      |      | Unsigned32 | 4    | 536916320        | ro     |                |
| 0x1603:0 |                 |              | Receive PDO4 mapping    |      |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1800:0 |                 |              | Transmit PDO1 parameter |      |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x1800:1 |                 |              | Transmit PDO1 parameter |      |      | Unsigned32 | 4    | 2147549312       | ro     |                |
| 0x1800:2 |                 |              | Transmit PDO1 parameter |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1800:3 |                 |              | Transmit PDO1 parameter |      |      | Unsigned16 | 2    | 59395            | ro     |                |

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|----------|-----------------|--------------|-------------------------|------|------|------------|------|------------------|--------|----------------|
| 0x1800:4 |                 |              | Transmit PDO1 parameter |      |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1800:5 |                 |              | Transmit PDO1 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1801:0 |                 |              | Transmit PDO2 parameter |      |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x1801:1 |                 |              | Transmit PDO2 parameter |      |      | Unsigned32 | 4    | 2147614848       | ro     |                |
| 0x1801:2 |                 |              | Transmit PDO2 parameter |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1801:3 |                 |              | Transmit PDO2 parameter |      |      | Unsigned16 | 2    | 59395            | ro     |                |
| 0x1801:4 |                 |              | Transmit PDO2 parameter |      |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1801:5 |                 |              | Transmit PDO2 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1802:0 |                 |              | Transmit PDO3 parameter |      |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x1802:1 |                 |              | Transmit PDO3 parameter |      |      | Unsigned32 | 4    | 2147680384       | ro     |                |
| 0x1802:2 |                 |              | Transmit PDO3 parameter |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1802:3 |                 |              | Transmit PDO3 parameter |      |      | Unsigned16 | 2    | 59395            | ro     |                |
| 0x1802:4 |                 |              | Transmit PDO3 parameter |      |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1802:5 |                 |              | Transmit PDO3 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1803:0 |                 |              | Transmit PDO4 parameter |      |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x1803:1 |                 |              | Transmit PDO4 parameter |      |      | Unsigned32 | 4    | 2147745920       | ro     |                |

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|----------|-----------------|--------------|-------------------------|------|------|------------|------|------------------|--------|----------------|
| 0x1803:2 |                 |              | Transmit PDO4 parameter |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1803:3 |                 |              | Transmit PDO4 parameter |      |      | Unsigned16 | 2    | 59395            | ro     |                |
| 0x1803:4 |                 |              | Transmit PDO4 parameter |      |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1803:5 |                 |              | Transmit PDO4 parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1A00:0 |                 |              | Transmit PDO1 mapping   |      |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x1A00:1 |                 |              | Transmit PDO1 mapping   |      |      | Unsigned32 | 4    | 268452192        | ro     |                |
| 0x1A00:2 |                 |              | Transmit PDO1 mapping   |      |      | Unsigned32 | 4    | 134242656        | ro     |                |
| 0x1A00:3 |                 |              | Transmit PDO1 mapping   |      |      | Unsigned32 | 4    | 536896608        | ro     |                |
| 0x1A00:4 |                 |              | Transmit PDO1 mapping   |      |      | Unsigned32 | 4    | 536898656        | ro     |                |
| 0x1A00:5 |                 |              | Transmit PDO1 mapping   |      |      | Unsigned32 | 4    | 268466016        | ro     |                |
| 0x1A01:0 |                 |              | Transmit PDO2 mapping   |      |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x1A01:1 |                 |              | Transmit PDO2 mapping   |      |      | Unsigned32 | 4    | 268435748        | ro     |                |
| 0x1A01:2 |                 |              | Transmit PDO2 mapping   |      |      | Unsigned32 | 4    | 268436004        | ro     |                |
| 0x1A01:3 |                 |              | Transmit PDO2 mapping   |      |      | Unsigned32 | 4    | 268436260        | ro     |                |
| 0x1A01:4 |                 |              | Transmit PDO2 mapping   |      |      | Unsigned32 | 4    | 268436516        | ro     |                |
| 0x1A01:5 |                 |              | Transmit PDO2 mapping   |      |      | Unsigned32 | 4    | 536871463        | ro     |                |

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|----------|-----------------|--------------|---------------------------------|------|------|------------|------|------------------|--------|----------------|
| 0x1A02:0 |                 |              | Transmit PDO3 mapping           |      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x1A02:1 |                 |              | Transmit PDO3 mapping           |      |      | Unsigned32 | 4    | 536935776        | ro     |                |
| 0x1A03:0 |                 |              | Transmit PDO4 mapping           |      |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x1A03:1 |                 |              | Transmit PDO4 mapping           |      |      | Unsigned32 | 4    | 536871975        | ro     |                |
| 0x1A03:2 |                 |              | Transmit PDO4 mapping           |      |      | Unsigned32 | 4    | 536932384        | ro     |                |
| 0x1A03:3 |                 |              | Transmit PDO4 mapping           |      |      | Unsigned32 | 4    | 536935520        | ro     |                |
| 0x1A03:4 |                 |              | Transmit PDO4 mapping           |      |      | Unsigned32 | 4    | 536898400        | ro     |                |
| 0x1A03:5 |                 |              | Transmit PDO4 mapping           |      |      | Unsigned32 | 4    | 268465248        | ro     |                |
| 0x1C32:0 |                 |              | Output SyncManager<br>Parameter |      |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x1C32:1 |                 |              | Output SyncManager<br>Parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1C32:2 |                 |              | Output SyncManager<br>Parameter |      |      | Unsigned32 | 4    | 547424000        | ro     |                |
| 0x1C32:3 |                 |              | Output SyncManager<br>Parameter |      |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x1C32:4 |                 |              | Output SyncManager<br>Parameter |      |      | Unsigned16 | 2    | 256              | ro     |                |
| 0x1C33:0 |                 |              | Input SyncManager               |      |      | Unsigned8  | 1    | 4                | ro     |                |

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|----------|-----------------|--------------|--------------------------------|------|------|------------|------|------------------|--------|----------------|
|          |                 |              | Parameter                      |      |      |            |      |                  |        |                |
| 0x1C33:1 |                 |              | Input SyncManager<br>Parameter |      |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x1C33:2 |                 |              | Input SyncManager<br>Parameter |      |      | Unsigned32 | 4    | 547424000        | ro     |                |
| 0x1C33:3 |                 |              | Input SyncManager<br>Parameter |      |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x1C33:4 |                 |              | Input SyncManager<br>Parameter |      |      | Unsigned16 | 2    | 256              | ro     |                |
| 0x1c00:0 |                 |              | Sync manager type              |      |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x1c00:1 |                 |              | Sync manager type              |      |      | Unsigned8  | 4    | 1                | ro     |                |
| 0x1c00:2 |                 |              | Sync manager type              |      |      | Unsigned8  | 4    | 2                | ro     |                |
| 0x1c00:3 |                 |              | Sync manager type              |      |      | Unsigned8  | 4    | 3                | ro     |                |
| 0x1c00:4 |                 |              | Sync manager type              |      |      | Unsigned8  | 4    | 4                | ro     |                |
| 0x1c10:0 |                 |              | SM 0 Assignment                |      |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1c11:0 |                 |              | SM 1 Assignment                |      |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x1c12:0 |                 |              | SM 2 Assignment                |      |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x1c12:1 |                 |              | SM 2 Assignment                |      |      | Unsigned16 | 6    | 22               | ro     |                |

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|----------|-----------------|-------------------------|---------------------------|---------------------------|-----------|------------|------|------------------|--------|----------------|
| 0x1c12:2 |                 |                         | SM 2 Assignment           |                           |           | Unsigned16 | 6    | 278              | ro     |                |
| 0x1c12:3 |                 |                         | SM 2 Assignment           |                           |           | Unsigned16 | 6    | 534              | ro     |                |
| 0x1c13:0 |                 |                         | SM 3 Assignment           |                           |           | Unsigned8  | 1    | 4                | ro     |                |
| 0x1c13:1 |                 |                         | SM 3 Assignment           |                           |           | Unsigned16 | 8    | 26               | ro     |                |
| 0x1c13:2 |                 |                         | SM 3 Assignment           |                           |           | Unsigned16 | 8    | 282              | ro     |                |
| 0x1c13:3 |                 |                         | SM 3 Assignment           |                           |           | Unsigned16 | 8    | 538              | ro     |                |
| 0x1c13:4 |                 |                         | SM 3 Assignment           |                           |           | Unsigned16 | 8    | 794              | ro     |                |
| 0x2000:0 |                 |                         | Command object (disabled) |                           |           | Unsigned16 | 2    | 0                | ro     |                |
| 0x2001:0 | 16400           | 0x68 .<br>0x1 .<br>0x40 | Commutation angle offset  | Commutation angle offset  |           | Integer16  | 2    | 0                | ro     |                |
| 0x2002:0 | 16416           | 0x68 .<br>0x1 .<br>0x80 | Position control strategy | Position control strategy |           | Unsigned16 | 2    | 512              | ro     |                |
| 0x2003:0 |                 |                         | Motor specific settings   |                           |           | Unsigned8  | 1    | 6                | ro     |                |
| 0x2003:1 | 16433           | 0x68 .<br>0x1 .<br>0xc1 | Motor specific settings   | Pole pairs                |           | Unsigned8  | 1    | 1                | ro     |                |
| 0x2003:2 | 16434           | 0x68 .<br>0x1 .         | Motor specific settings   | Torque constant           | uNm/<br>A | Integer32  | 4    | 16777216         | ro     |                |

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|----------|-----------------|--------------------------|-------------------------|------------------------------------|--------|------------|------|------------------|--------|----------------|
|          |                 | 0xc2                     |                         |                                    |        |            |      |                  |        |                |
| 0x2003:3 | 16435           | 0x68 .<br>0x1 .<br>0xc3  | Motor specific settings | Phase resistance                   | uOhm   | Integer32  | 4    | 16777216         | ro     |                |
| 0x2003:4 | 16436           | 0x68 .<br>0x1 .<br>0xc4  | Motor specific settings | Phase inductance                   | uHenry | Integer32  | 4    | 16777216         | ro     |                |
| 0x2003:5 | 16437           | 0x68 .<br>0x1 .<br>0xc5  | Motor specific settings | Motor phases inverted              |        | Bit        | 0    | 00               | ro     |                |
| 0x2003:6 | 16438           | 0x68 .<br>0x1 .<br>0xc6  | Motor specific settings | Difference of Ld and Lq inductance | uHenry | Unsigned32 | 4    | 0                | ro     |                |
| 0x2004:0 |                 |                          | Brake options           |                                    |        | Unsigned8  | 1    | 12               | ro     |                |
| 0x2004:1 | 16449           | 0x68 .<br>0x1 .<br>0x101 | Brake options           | Pull voltage                       | mV     | Unsigned32 | 4    | 0                | ro     |                |
| 0x2004:2 | 16450           | 0x68 .<br>0x1 .<br>0x102 | Brake options           | Hold voltage                       | mV     | Unsigned32 | 4    | 0                | ro     |                |
| 0x2004:3 | 16451           | 0x68 .<br>0x1 .<br>0x103 | Brake options           | Pull time                          | ms     | Unsigned16 | 2    | 0                | ro     |                |
| 0x2004:4 | 16452           | 0x68 .<br>0x1 .          | Brake options           | Release strategy                   |        | Unsigned8  | 1    | 0                | ro     |                |

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|-----------|-----------------|--------------------------|---------------|--------------------------------------------|------|------------|------|------------------|--------|----------------|
|           |                 | 0x104                    |               |                                            |      |            |      |                  |        |                |
| 0x2004:5  | 16453           | 0x68 .<br>0x1 .<br>0x105 | Brake options | Controller disable delay                   | ms   | Unsigned16 | 2    | 25600            | ro     |                |
| 0x2004:6  | 16454           | 0x68 .<br>0x1 .<br>0x106 | Brake options | DC bus voltage<br>(deprecated)             | V    | Unsigned16 | 2    | 0                | ro     |                |
| 0x2004:7  | 16455           | 0x68 .<br>0x1 .<br>0x107 | Brake options | Brake status                               |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2004:8  | 16456           | 0x68 .<br>0x1 .<br>0x108 | Brake options | Minimum displacement<br>(pin brake)        | Inc  | Unsigned32 | 4    | 0                | ro     |                |
| 0x2004:9  | 16457           | 0x68 .<br>0x1 .<br>0x109 | Brake options | Percentage of Rated<br>Current (pin brake) |      | Unsigned16 | 2    | 25600            | ro     |                |
| 0x2004:10 | 16458           | 0x68 .<br>0x1 .<br>0x10a | Brake options | Output voltage                             | mV   | Unsigned16 | 2    | 0                | ro     | r              |
| 0x2004:11 | 16459           | 0x68 .<br>0x1 .<br>0x10b | Brake options | Switching frequency                        |      | Unsigned8  | 1    | 0                | ro     | r              |
| 0x2004:12 | 16460           | 0x68 .<br>0x1 .<br>0x10c | Brake options | Initial movement direction<br>(pin brake)  |      | Integer8   | 1    | 1                | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP          | NAME                                                   | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|----------------|--------------------------------------------------------|------|------------|------|------------------|--------|----------------|
| 0x2005:0 |                 |                          | Homing Options |                                                        |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x2005:1 | 16465           | 0x68 .<br>0x1 .<br>0x141 | Homing Options | Home Position                                          | Inc  | Integer32  | 4    | 0                | ro     |                |
| 0x2005:2 | 16466           | 0x68 .<br>0x1 .<br>0x142 | Homing Options | Restore Home Position<br>when loading<br>configuration |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2005:3 | 16467           | 0x68 .<br>0x1 .<br>0x143 | Homing Options | Torque Threshold for<br>Homing on end stop             |      | Unsigned16 | 2    | 0                | ro     |                |
| 0x2005:4 | 16468           | 0x68 .<br>0x1 .<br>0x144 | Homing Options | Offset From Endstop                                    | Inc  | Unsigned16 | 2    | 0                | ro     |                |
| 0x2006:0 |                 |                          | Protection     |                                                        |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x2006:1 | 16481           | 0x68 .<br>0x1 .<br>0x181 | Protection     | Undervoltage setpoint                                  | V    | Integer32  | 4    | 0                | ro     |                |
| 0x2006:2 | 16482           | 0x68 .<br>0x1 .<br>0x182 | Protection     | Overvoltage setpoint                                   | V    | Integer32  | 4    | -129             | ro     |                |
| 0x2006:3 | 16483           | 0x68 .<br>0x1 .<br>0x183 | Protection     | Overcurrent setpoint                                   | mA   | Integer32  | 4    | -129             | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP                          | NAME                               | UNIT | DATA TYPE | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|--------------------------------|------------------------------------|------|-----------|------|------------------|--------|----------------|
| 0x2008:0 |                 |                          | Cogging torque<br>compensation |                                    |      | Unsigned8 | 1    | 2                | ro     |                |
| 0x2008:1 | 16513           | 0x68 .<br>0x1 .<br>0x201 | Cogging torque<br>compensation | State                              |      | Integer16 | 2    | 0                | ro     |                |
| 0x2008:2 | 16514           | 0x68 .<br>0x1 .<br>0x202 | Cogging torque<br>compensation | Enabled                            |      | Integer16 | 2    | 0                | ro     |                |
| 0x2009:0 |                 |                          | Commutation offset             |                                    |      | Unsigned8 | 1    | 6                | ro     |                |
| 0x2009:1 | 16529           | 0x68 .<br>0x1 .<br>0x241 | Commutation offset             | State                              |      | Integer16 | 2    | 0                | ro     |                |
| 0x2009:2 | 16530           | 0x68 .<br>0x1 .<br>0x242 | Commutation offset             | Applied percent of rated<br>torque |      | Integer16 | 2    | 25600            | ro     |                |
| 0x2009:3 | 16531           | 0x68 .<br>0x1 .<br>0x243 | Commutation offset             | Measurement method                 |      | Integer8  | 1    | 0                | ro     |                |
| 0x2009:4 | 16532           | 0x68 .<br>0x1 .<br>0x244 | Commutation offset             | Phasing controller Kp              |      | Float32   | 4    | 0.0              | ro     |                |
| 0x2009:5 | 16533           | 0x68 .<br>0x1 .<br>0x245 | Commutation offset             | Phasing controller Ki              |      | Float32   | 4    | 0.0              | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP                      | NAME                       | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|----------------------------|----------------------------|------|------------|------|------------------|--------|----------------|
| 0x2009:6 | 16534           | 0x68 .<br>0x1 .<br>0x246 | Commutation offset         | Phasing controller Kd      |      | Float32    | 4    | 0.0              | ro     |                |
| 0x200A:0 |                 |                          | I2t and Stall protection   |                            |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x200A:1 | 16545           | 0x68 .<br>0x1 .<br>0x281 | I2t and Stall protection   | Enabled                    |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x200A:2 | 16546           | 0x68 .<br>0x1 .<br>0x282 | I2t and Stall protection   | Peak time                  | ms   | Unsigned32 | 4    | 3087728640       | ro     |                |
| 0x200A:3 | 16547           | 0x68 .<br>0x1 .<br>0x283 | I2t and Stall protection   | Motor heat index           |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x200A:4 | 16548           | 0x68 .<br>0x1 .<br>0x284 | I2t and Stall protection   | Protection active          |      | Bit        | 0    | 0                | ro     |                |
| 0x200A:5 | 16549           | 0x68 .<br>0x1 .<br>0x285 | I2t and Stall protection   | Motor winding type         |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x200B:0 | 16560           | 0x68 .<br>0x1 .<br>0x2c0 | Max power                  | Max power                  | W    | Unsigned32 | 4    | 4294967167       | ro     |                |
| 0x200C:0 | 16576           | 0x68 .<br>0x1 .<br>0x300 | Overspeed protection limit | Overspeed protection limit |      | Unsigned8  | 1    | 20               | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP             | NAME                          | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|-------------------|-------------------------------|------|------------|------|------------------|--------|----------------|
| 0x200D:0 | 16592           | 0x68 .<br>0x1 .<br>0x340 | System polarity   | System polarity               |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x200E:0 |                 |                          | Logging           |                               |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x200E:1 | 16609           | 0x68 .<br>0x1 .<br>0x381 | Logging           | State                         |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2010:0 |                 |                          | Torque controller |                               |      | Unsigned8  | 1    | 18               | ro     |                |
| 0x2010:1 | 25089           | 0x68 .<br>0x1 .<br>0x401 | Torque controller | Controller Kp (disabled)      |      | Float32    | 4    | 4201541.0        | ro     |                |
| 0x2010:2 | 25090           | 0x68 .<br>0x1 .<br>0x402 | Torque controller | Controller Ki (disabled)      |      | Float32    | 4    | 4201543.0        | ro     |                |
| 0x2010:3 | 25091           | 0x68 .<br>0x1 .<br>0x403 | Torque controller | Controller Kd (disabled)      |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2010:4 | 25092           | 0x68 .<br>0x1 .<br>0x404 | Torque controller | Field weakening enabled       |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x2010:5 | 25093           | 0x68 .<br>0x1 .<br>0x405 | Torque controller | Field weakening<br>percentage |      | Unsigned32 | 4    | 0                | ro     |                |

| CIA 402   | PROFINET PNU | CIP PARAM                | GROUP             | NAME                                        | UNIT | DATA TYPE  | SIZE | DEFAULT VALUE | ACCESS | CYCLIC DATA |
|-----------|--------------|--------------------------|-------------------|---------------------------------------------|------|------------|------|---------------|--------|-------------|
| 0x2010:6  | 25094        | 0x68 .<br>0x1 .<br>0x406 | Torque controller | Field weakening starting speed (deprecated) | rpm  | Unsigned32 | 4    | 0             | ro     |             |
| 0x2010:7  | 25095        | 0x68 .<br>0x1 .<br>0x407 | Torque controller | Field weakening ending speed (deprecated)   | rpm  | Unsigned32 | 4    | 0             | ro     |             |
| 0x2010:8  | 25096        | 0x68 .<br>0x1 .<br>0x408 | Torque controller | Commutation angle measurement delay         | us   | Unsigned32 | 4    | 0             | ro     |             |
| 0x2010:9  | 25097        | 0x68 .<br>0x1 .<br>0x409 | Torque controller | Switching frequency                         |      | Unsigned8  | 1    | 0             | ro     | r           |
| 0x2010:10 | 25098        | 0x68 .<br>0x1 .<br>0x40a | Torque controller | Settling time                               | us   | Unsigned16 | 2    | 53255         | ro     |             |
| 0x2010:11 | 25099        | 0x68 .<br>0x1 .<br>0x40b | Torque controller | Damping ratio                               |      | Unsigned16 | 2    | 53255         | ro     |             |
| 0x2010:12 | 25100        | 0x68 .<br>0x1 .<br>0x40c | Torque controller | Encoder source                              |      | Unsigned8  | 1    | 0             | ro     |             |
| 0x2010:13 | 25101        | 0x68 .<br>0x1 .<br>0x40d | Torque controller | Virtual Braking Chopper Enabled             |      | Unsigned8  | 1    | 0             | ro     |             |
| 0x2010:14 | 25102        | 0x68 .                   | Torque controller | Virtual Braking Chopper                     |      | Unsigned32 | 4    | 0             | ro     |             |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM             | GROUP               | NAME                                          | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|--------------------------|---------------------|-----------------------------------------------|------|------------|------|------------------|--------|----------------|
|           |                 | 0x1 .<br>0x40e           |                     | Gain                                          |      |            |      |                  |        |                |
| 0x2010:15 | 25103           | 0x68 .<br>0x1 .<br>0x40f | Torque controller   | Virtual Braking Chopper<br>Voltage Level      | mV   | Unsigned32 | 4    | 0                | ro     |                |
| 0x2010:16 | 25104           | 0x68 .<br>0x1 .<br>0x410 | Torque controller   | MTPA Enabled                                  |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2010:17 | 25105           | 0x68 .<br>0x1 .<br>0x411 | Torque controller   | Virtual Braking Chopper<br>Notification Level |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2010:18 | 25106           | 0x68 .<br>0x1 .<br>0x412 | Torque controller   | Active short circuit<br>duration time         | ms   | Unsigned32 | 4    | 3892510720       | ro     |                |
| 0x2011:0  |                 |                          | Velocity controller |                                               |      | Unsigned8  | 1    | 5                | ro     |                |
| 0x2011:1  | 25121           | 0x68 .<br>0x1 .<br>0x441 | Velocity controller | Controller Kp                                 |      | Float32    | 4    | 0.0              | ro     | r              |
| 0x2011:2  | 25122           | 0x68 .<br>0x1 .<br>0x442 | Velocity controller | Controller Ki                                 |      | Float32    | 4    | 0.0              | ro     | r              |
| 0x2011:3  | 25123           | 0x68 .<br>0x1 .<br>0x443 | Velocity controller | Controller Kd                                 |      | Float32    | 4    | 0.0              | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP               | NAME                         | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|---------------------|------------------------------|------|------------|------|------------------|--------|----------------|
| 0x2011:4 | 25124           | 0x68 .<br>0x1 .<br>0x444 | Velocity controller | Controller integral limit    | mNm  | Unsigned32 | 4    | 0                | ro     | r              |
| 0x2011:5 | 25125           | 0x68 .<br>0x1 .<br>0x445 | Velocity controller | Encoder source               |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2012:0 |                 |                          | Position controller |                              |      | Unsigned8  | 1    | 9                | ro     |                |
| 0x2012:1 | 25153           | 0x68 .<br>0x1 .<br>0x481 | Position controller | Position loop Kp             |      | Float32    | 4    | 0.0              | ro     | r              |
| 0x2012:2 | 25154           | 0x68 .<br>0x1 .<br>0x482 | Position controller | Position loop Ki             |      | Float32    | 4    | 0.0              | ro     | r              |
| 0x2012:3 | 25155           | 0x68 .<br>0x1 .<br>0x483 | Position controller | Position loop Kd             |      | Float32    | 4    | 0.0              | ro     | r              |
| 0x2012:4 | 25156           | 0x68 .<br>0x1 .<br>0x484 | Position controller | Position loop integral limit | rpm  | Unsigned32 | 4    | 0                | ro     | r              |
| 0x2012:5 | 25157           | 0x68 .<br>0x1 .<br>0x485 | Position controller | Velocity loop Kp             |      | Float32    | 4    | 0.0              | ro     | r              |
| 0x2012:6 | 25158           | 0x68 .<br>0x1 .<br>0x486 | Position controller | Velocity loop Ki             |      | Float32    | 4    | 0.0              | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP               | NAME                         | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|---------------------|------------------------------|------|------------|------|------------------|--------|----------------|
| 0x2012:7 | 25159           | 0x68 .<br>0x1 .<br>0x487 | Position controller | Velocity loop Kd             |      | Float32    | 4    | 0.0              | ro     | r              |
| 0x2012:8 | 25160           | 0x68 .<br>0x1 .<br>0x488 | Position controller | Velocity loop integral limit | mNm  | Unsigned32 | 4    | 0                | ro     | r              |
| 0x2012:9 | 25161           | 0x68 .<br>0x1 .<br>0x489 | Position controller | Encoder source               |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2013:0 |                 |                          | Gain scheduling     |                              |      | Unsigned8  | 1    | 19               | ro     |                |
| 0x2013:1 | 25185           | 0x68 .<br>0x1 .<br>0x4c1 | Gain scheduling     | Enabled                      |      | Bit        | 0    | 00               | ro     |                |
| 0x2013:2 | 25186           | 0x68 .<br>0x1 .<br>0x4c2 | Gain scheduling     | Threshold velocity 0         | rpm  | Unsigned32 | 4    | 0                | ro     |                |
| 0x2013:3 | 25187           | 0x68 .<br>0x1 .<br>0x4c3 | Gain scheduling     | Position loop Kp 0           |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2013:4 | 25188           | 0x68 .<br>0x1 .<br>0x4c4 | Gain scheduling     | Position loop Ki 0           |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2013:5 | 25189           | 0x68 .<br>0x1 .<br>0x4c5 | Gain scheduling     | Position loop Kd 0           |      | Float32    | 4    | 0.0              | ro     |                |

| CIA 402   | PROFINET PNU | CIP PARAM                | GROUP           | NAME                           | UNIT | DATA TYPE  | SIZE | DEFAULT VALUE | ACCESS | CYCLIC DATA |
|-----------|--------------|--------------------------|-----------------|--------------------------------|------|------------|------|---------------|--------|-------------|
| 0x2013:6  | 25190        | 0x68 .<br>0x1 .<br>0x4c6 | Gain scheduling | Position loop integral limit 0 | rpm  | Unsigned32 | 4    | 0             | ro     |             |
| 0x2013:7  | 25191        | 0x68 .<br>0x1 .<br>0x4c7 | Gain scheduling | Velocity loop Kp 0             |      | Float32    | 4    | 0.0           | ro     |             |
| 0x2013:8  | 25192        | 0x68 .<br>0x1 .<br>0x4c8 | Gain scheduling | Velocity loop Ki 0             |      | Float32    | 4    | 0.0           | ro     |             |
| 0x2013:9  | 25193        | 0x68 .<br>0x1 .<br>0x4c9 | Gain scheduling | Velocity loop Kd 0             |      | Float32    | 4    | 0.0           | ro     |             |
| 0x2013:10 | 25194        | 0x68 .<br>0x1 .<br>0x4ca | Gain scheduling | Velocity loop integral limit 0 | mNm  | Unsigned32 | 4    | 0             | ro     |             |
| 0x2013:11 | 25195        | 0x68 .<br>0x1 .<br>0x4cb | Gain scheduling | Threshold velocity 1           | rpm  | Unsigned32 | 4    | 0             | ro     |             |
| 0x2013:12 | 25196        | 0x68 .<br>0x1 .<br>0x4cc | Gain scheduling | Position loop Kp 1             |      | Float32    | 4    | 0.0           | ro     |             |
| 0x2013:13 | 25197        | 0x68 .<br>0x1 .<br>0x4cd | Gain scheduling | Position loop Ki 1             |      | Float32    | 4    | 0.0           | ro     |             |
| 0x2013:14 | 25198        | 0x68 .                   | Gain scheduling | Position loop Kd 1             |      | Float32    | 4    | 0.0           | ro     |             |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM             | GROUP           | NAME                              | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|--------------------------|-----------------|-----------------------------------|------|------------|------|------------------|--------|----------------|
|           |                 | 0x1 .<br>0x4ce           |                 |                                   |      |            |      |                  |        |                |
| 0x2013:15 | 25199           | 0x68 .<br>0x1 .<br>0x4cf | Gain scheduling | Position loop integral limit<br>1 | rpm  | Unsigned32 | 4    | 0                | ro     |                |
| 0x2013:16 | 25200           | 0x68 .<br>0x1 .<br>0x4d0 | Gain scheduling | Velocity loop Kp 1                |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2013:17 | 25201           | 0x68 .<br>0x1 .<br>0x4d1 | Gain scheduling | Velocity loop Ki 1                |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2013:18 | 25202           | 0x68 .<br>0x1 .<br>0x4d2 | Gain scheduling | Velocity loop Kd 1                |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2013:19 | 25203           | 0x68 .<br>0x1 .<br>0x4d3 | Gain scheduling | Velocity loop integral limit<br>1 | mNm  | Unsigned32 | 4    | 0                | ro     |                |
| 0x2014:0  |                 |                          | Torque window   |                                   |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2014:1  | 16705           | 0x68 .<br>0x1 .<br>0x501 | Torque window   | Value                             |      | Unsigned16 | 2    | 65535            | ro     |                |
| 0x2014:2  | 16706           | 0x68 .<br>0x1 .<br>0x502 | Torque window   | Time                              | ms   | Unsigned16 | 2    | 0                | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP                           | NAME                                    | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|---------------------------------|-----------------------------------------|------|------------|------|------------------|--------|----------------|
| 0x2015:0 |                 |                          | Velocity feed forward           |                                         |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2015:1 | 16721           | 0x68 .<br>0x1 .<br>0x541 | Velocity feed forward           | Gain                                    |      | Integer16  | 2    | 0                | ro     |                |
| 0x2015:2 | 16722           | 0x68 .<br>0x1 .<br>0x542 | Velocity feed forward           | Cutoff frequency                        | Hz   | Unsigned16 | 2    | 5120             | ro     |                |
| 0x2017:0 |                 |                          | Following error option<br>codes |                                         |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2017:1 | 16753           | 0x68 .<br>0x1 .<br>0x5c1 | Following error option<br>codes | Position following error<br>option code |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2017:2 | 16754           | 0x68 .<br>0x1 .<br>0x5c2 | Following error option<br>codes | Velocity following error<br>option code |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2018:0 |                 |                          | Velocity following error        |                                         |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x2018:1 | 16769           | 0x68 .<br>0x1 .<br>0x601 | Velocity following error        | Window                                  | rpm  | Unsigned16 | 2    | 65535            | ro     |                |
| 0x2018:2 | 16770           | 0x68 .<br>0x1 .<br>0x602 | Velocity following error        | Time out                                | ms   | Unsigned16 | 2    | 25600            | ro     |                |
| 0x2018:3 | 16771           | 0x68 .<br>0x1 .          | Velocity following error        | Actual value                            | rpm  | Integer32  | 4    | 0                | ro     | t              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP                    | NAME                | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|--------------------------|---------------------|------|------------|------|------------------|--------|----------------|
|          |                 | 0x603                    |                          |                     |      |            |      |                  |        |                |
| 0x2019:0 | 16784           | 0x68 .<br>0x1 .<br>0x640 | Total motor current      | Total motor current |      | Integer16  | 2    | 0                | ro     | t              |
| 0x2021:0 |                 |                          | Velocity feedback filter |                     |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2021:1 | 16913           | 0x68 .<br>0x1 .<br>0x841 | Velocity feedback filter | Type                |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2021:2 | 16914           | 0x68 .<br>0x1 .<br>0x842 | Velocity feedback filter | Cutoff frequency    | Hz   | Unsigned32 | 4    | 4093706240       | ro     |                |
| 0x2022:0 |                 |                          | Position feedback filter |                     |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2022:1 | 16929           | 0x68 .<br>0x1 .<br>0x881 | Position feedback filter | Type                |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2022:2 | 16930           | 0x68 .<br>0x1 .<br>0x882 | Position feedback filter | Cutoff frequency    | Hz   | Unsigned32 | 4    | 3892510720       | ro     |                |
| 0x2023:0 |                 |                          | Notch filter             |                     |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x2023:1 | 16945           | 0x68 .<br>0x1 .<br>0x8c1 | Notch filter             | Enabled             |      | Bit        | 0    | 00               | ro     |                |
| 0x2023:2 | 16946           | 0x68 .                   | Notch filter             | Center frequency    | Hz   | Unsigned16 | 2    | 59395            | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP                    | NAME                 | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|--------------------------|----------------------|------|------------|------|------------------|--------|----------------|
|          |                 | 0x1 .<br>0x8c2           |                          |                      |      |            |      |                  |        |                |
| 0x2023:3 | 16947           | 0x68 .<br>0x1 .<br>0x8c3 | Notch filter             | Rejection band       | Hz   | Unsigned16 | 2    | 2560             | ro     |                |
| 0x2023:4 | 16948           | 0x68 .<br>0x1 .<br>0x8c4 | Notch filter             | Depth                |      | Unsigned16 | 2    | 2560             | ro     |                |
| 0x2027:0 |                 |                          | Control input FIR filter |                      |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2027:1 | 17009           | 0x68 .<br>0x1 .<br>0x9c1 | Control input FIR filter | Enabled              |      | Bit        | 0    | 01               | ro     |                |
| 0x2027:2 | 17010           | 0x68 .<br>0x1 .<br>0x9c2 | Control input FIR filter | Order                |      | Unsigned16 | 2    | 7936             | ro     |                |
| 0x2030:0 |                 |                          | Core temperature         |                      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2030:1 | 17153           | 0x68 .<br>0x1 .<br>0xc01 | Core temperature         | Measured temperature | mC   | Integer32  | 4    | 0                | ro     | t              |
| 0x2031:0 |                 |                          | Drive temperature        |                      |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2031:1 | 17169           | 0x68 .<br>0x1 .<br>0xc41 | Drive temperature        | Measured temperature | mC   | Integer32  | 4    | 0                | ro     | t              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM             | GROUP                          | NAME                     | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|--------------------------|--------------------------------|--------------------------|------|------------|------|------------------|--------|----------------|
| 0x2038:0 |                 |                          | External scaled<br>measurement |                          |      | Unsigned8  | 1    | 12               | ro     |                |
| 0x2038:1 | 17281           | 0x68 .<br>0x1 .<br>0xe01 | External scaled<br>measurement | Scaled measurement value | 1    | Float32    | 4    | 0.0              | ro     | t              |
| 0x2038:2 | 17282           | 0x68 .<br>0x1 .<br>0xe02 | External scaled<br>measurement | Analog input             |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2038:3 | 17283           | 0x68 .<br>0x1 .<br>0xe03 | External scaled<br>measurement | Resistance               | Ohm  | Unsigned32 | 4    | 0                | ro     |                |
| 0x2038:4 | 17284           | 0x68 .<br>0x1 .<br>0xe04 | External scaled<br>measurement | Constant a0              |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2038:5 | 17285           | 0x68 .<br>0x1 .<br>0xe05 | External scaled<br>measurement | Constant a1              |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2038:6 | 17286           | 0x68 .<br>0x1 .<br>0xe06 | External scaled<br>measurement | Constant a2              |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2038:7 | 17287           | 0x68 .<br>0x1 .<br>0xe07 | External scaled<br>measurement | Constant a3              |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2038:8 | 17288           | 0x68 .<br>0x1 .          | External scaled<br>measurement | Constant a4              |      | Float32    | 4    | 0.0              | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                          | NAME                  | UNIT | DATA TYPE     | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|--------------------------------|-----------------------|------|---------------|------|------------------|--------|----------------|
|           |                 | 0xe08                     |                                |                       |      |               |      |                  |        |                |
| 0x2038:9  | 17289           | 0x68 .<br>0x1 .<br>0xe09  | External scaled<br>measurement | Constant a5           |      | Float32       | 4    | 0.0              | ro     |                |
| 0x2038:10 | 17290           | 0x68 .<br>0x1 .<br>0xe0a  | External scaled<br>measurement | Cutoff frequency      | Hz   | Unsigned16    | 2    | 62465            | ro     |                |
| 0x2038:11 | 17291           | 0x68 .<br>0x1 .<br>0xe0b  | External scaled<br>measurement | Upper error threshold |      | Float32       | 4    | 16744263.0       | ro     |                |
| 0x2038:12 | 17292           | 0x68 .<br>0x1 .<br>0xe0c  | External scaled<br>measurement | Lower error threshold |      | Float32       | 4    | 0.0              | ro     |                |
| 0x203F:0  |                 |                           | Error report                   |                       |      | Unsigned8     | 1    | 1                | ro     |                |
| 0x203F:1  | 17393           | 0x68 .<br>0x1 .<br>0xfc1  | Error report                   | Description           |      | VisibleString | 8    |                  | ro     | tr             |
| 0x2040:0  | 17408           | 0x68 .<br>0x1 .<br>0x1000 | Input counter                  | Input counter         | Inc  | Unsigned32    | 4    | 0                | ro     | t              |
| 0x2041:0  |                 |                           | Motor current                  |                       |      | Unsigned8     | 1    | 2                | ro     |                |
| 0x2041:1  | 17425           | 0x68 .<br>0x1 .<br>0x1041 | Motor current                  | Vector amplitude      | mA   | Integer32     | 4    | 0                | ro     | t              |

| CIA 402  | PROFINET PNU | CIP PARAM                 | GROUP                     | NAME                      | UNIT | DATA TYPE  | SIZE | DEFAULT VALUE | ACCESS | CYCLIC DATA |
|----------|--------------|---------------------------|---------------------------|---------------------------|------|------------|------|---------------|--------|-------------|
| 0x2041:2 | 17426        | 0x68 .<br>0x1 .<br>0x1042 | Motor current             | Phase advance angle       | mrاد | Integer32  | 4    | 0             | ro     | t           |
| 0x2050:0 |              |                           | Joint torque controller   |                           |      | Unsigned8  | 1    | 4             | ro     |             |
| 0x2050:1 | 17665        | 0x68 .<br>0x1 .<br>0x1401 | Joint torque controller   | Controller Kp             |      | Float32    | 4    | 0.0           | ro     | r           |
| 0x2050:2 | 17666        | 0x68 .<br>0x1 .<br>0x1402 | Joint torque controller   | Controller Ki             |      | Float32    | 4    | 0.0           | ro     | r           |
| 0x2050:3 | 17667        | 0x68 .<br>0x1 .<br>0x1403 | Joint torque controller   | Controller Kd             |      | Float32    | 4    | 0.0           | ro     | r           |
| 0x2050:4 | 17668        | 0x68 .<br>0x1 .<br>0x1404 | Joint torque controller   | Controller integral limit |      | Unsigned32 | 4    | 0             | ro     | r           |
| 0x2051:0 | 17680        | 0x68 .<br>0x1 .<br>0x1440 | Target joint torque       | Target joint torque       | mNm  | Integer32  | 4    | 0             | ro     | r           |
| 0x2052:0 | 17696        | 0x68 .<br>0x1 .<br>0x1480 | Joint torque demand value | Joint torque demand value | mNm  | Integer32  | 4    | 0             | ro     | t           |
| 0x2053:0 | 17712        | 0x68 .<br>0x1 .<br>0x14c0 | Joint torque offset       | Joint torque offset       | mNm  | Integer32  | 4    | 0             | ro     | r           |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                | NAME                                      | UNIT        | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|----------------------|-------------------------------------------|-------------|------------|------|------------------|--------|----------------|
| 0x2054:0 | 17728           | 0x68 .<br>0x1 .<br>0x1500 | Max joint torque     | Max joint torque                          | mNm         | Unsigned32 | 4    | 0                | ro     | r              |
| 0x2060:0 |                 |                           | Impedance controller |                                           |             | Unsigned8  | 1    | 6                | ro     |                |
| 0x2060:1 | 17921           | 0x68 .<br>0x1 .<br>0x1801 | Impedance controller | Stiffness                                 | mNm/<br>rad | Integer32  | 4    | 0                | ro     | r              |
| 0x2060:2 | 17922           | 0x68 .<br>0x1 .<br>0x1802 | Impedance controller | Damping                                   |             | Integer32  | 4    | 0                | ro     | r              |
| 0x2060:3 | 17923           | 0x68 .<br>0x1 .<br>0x1803 | Impedance controller | Joint torque controller Kp                |             | Float32    | 4    | 0.0              | ro     | r              |
| 0x2060:4 | 17924           | 0x68 .<br>0x1 .<br>0x1804 | Impedance controller | Joint torque controller Ki                |             | Float32    | 4    | 0.0              | ro     | r              |
| 0x2060:5 | 17925           | 0x68 .<br>0x1 .<br>0x1805 | Impedance controller | Joint torque controller Kd                |             | Float32    | 4    | 0.0              | ro     | r              |
| 0x2060:6 | 17926           | 0x68 .<br>0x1 .<br>0x1806 | Impedance controller | Joint torque controller<br>integral limit | mNm         | Unsigned32 | 4    | 0                | ro     | r              |
| 0x20E1:0 |                 |                           | High resolution data |                                           |             | Unsigned8  | 1    | 4                | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME          | UNIT | DATA TYPE     | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-------------------------|---------------|------|---------------|------|------------------|--------|----------------|
| 0x20E1:1 | 19985           | 0x68 .<br>0x1 .<br>0x3841 | High resolution data    | Data 1        |      | Unsigned8     | 100  | 0                | ro     | t              |
| 0x20E1:2 | 19986           | 0x68 .<br>0x1 .<br>0x3842 | High resolution data    | Data 2        |      | Unsigned8     | 100  | 0                | ro     | t              |
| 0x20E1:3 | 19987           | 0x68 .<br>0x1 .<br>0x3843 | High resolution data    | Data 3        |      | Unsigned8     | 100  | 0                | ro     | t              |
| 0x20E1:4 | 19988           | 0x68 .<br>0x1 .<br>0x3844 | High resolution data    | Data 4        |      | Unsigned8     | 100  | 0                | ro     | t              |
| 0x20F0:0 | 20224           | 0x68 .<br>0x1 .<br>0x3c00 | Timestamp               | Timestamp     | us   | Unsigned32    | 4    | 0                | ro     | t              |
| 0x20F2:0 | 20256           | 0x68 .<br>0x1 .<br>0x3c80 | Assigned name           | Assigned name |      | VisibleString | 50   |                  | ro     |                |
| 0x2110:0 |                 |                           | Encoder 1 configuration |               |      | Unsigned8     | 1    | 28               | ro     |                |
| 0x2110:1 | 25345           | 0x68 .<br>0x1 .<br>0x4401 | Encoder 1 configuration | Sensor port   |      | Unsigned8     | 1    | 0                | ro     |                |
| 0x2110:2 | 25346           | 0x68 .<br>0x1 .<br>0x4402 | Encoder 1 configuration | Type          |      | Unsigned8     | 1    | 0                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                         | UNIT    | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-------------------------|------------------------------|---------|------------|------|------------------|--------|----------------|
| 0x2110:3  | 25347           | 0x68 .<br>0x1 .<br>0x4403 | Encoder 1 configuration | Resolution                   | Inc/rev | Unsigned32 | 4    | 16777216         | ro     |                |
| 0x2110:4  | 25348           | 0x68 .<br>0x1 .<br>0x4404 | Encoder 1 configuration | Zero velocity threshold      | us      | Unsigned32 | 4    | 2685337600       | ro     |                |
| 0x2110:5  | 25349           | 0x68 .<br>0x1 .<br>0x4405 | Encoder 1 configuration | Polarity                     |         | Bit        | 0    | 00               | ro     |                |
| 0x2110:6  | 25350           | 0x68 .<br>0x1 .<br>0x4406 | Encoder 1 configuration | Singleturn offset            | Inc     | Unsigned32 | 4    | 0                | ro     |                |
| 0x2110:7  | 25351           | 0x68 .<br>0x1 .<br>0x4407 | Encoder 1 configuration | Access signal type           |         | Bit        | 0    | 00               | ro     |                |
| 0x2110:8  | 25352           | 0x68 .<br>0x1 .<br>0x4408 | Encoder 1 configuration | Clock frequency              | kHz     | Unsigned16 | 2    | 59395            | ro     |                |
| 0x2110:9  | 25353           | 0x68 .<br>0x1 .<br>0x4409 | Encoder 1 configuration | Frame size                   |         | Unsigned8  | 1    | 1                | ro     |                |
| 0x2110:10 | 25354           | 0x68 .<br>0x1 .<br>0x440a | Encoder 1 configuration | Multiturn bits               |         | Unsigned8  | 1    | 0                | ro     |                |
| 0x2110:11 | 25355           | 0x68 .                    | Encoder 1 configuration | Multiturn first bit position |         | Unsigned8  | 1    | 0                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                          | UNIT | DATA TYPE | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-------------------------|-------------------------------|------|-----------|------|------------------|--------|----------------|
|           |                 | 0x1 .<br>0x440b           |                         |                               |      |           |      |                  |        |                |
| 0x2110:12 | 25356           | 0x68 .<br>0x1 .<br>0x440c | Encoder 1 configuration | Singleturn bits               |      | Unsigned8 | 1    | 1                | ro     |                |
| 0x2110:13 | 25357           | 0x68 .<br>0x1 .<br>0x440d | Encoder 1 configuration | Singleturn first bit position |      | Unsigned8 | 1    | 0                | ro     |                |
| 0x2110:14 | 25358           | 0x68 .<br>0x1 .<br>0x440e | Encoder 1 configuration | Timeout                       | us   | Unsigned8 | 1    | 36               | ro     |                |
| 0x2110:15 | 25359           | 0x68 .<br>0x1 .<br>0x440f | Encoder 1 configuration | CRC polynomial                |      | Unsigned8 | 1    | 67               | ro     |                |
| 0x2110:16 | 25360           | 0x68 .<br>0x1 .<br>0x4410 | Encoder 1 configuration | Maximum tbusy                 | us   | Unsigned8 | 1    | 20               | ro     |                |
| 0x2110:17 | 25361           | 0x68 .<br>0x1 .<br>0x4411 | Encoder 1 configuration | Status bits active value      |      | Unsigned8 | 1    | 0                | ro     |                |
| 0x2110:18 | 25362           | 0x68 .<br>0x1 .<br>0x4412 | Encoder 1 configuration | Parity type                   |      | Unsigned8 | 1    | 0                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                              | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-------------------------|-----------------------------------|------|------------|------|------------------|--------|----------------|
| 0x2110:19 | 25363           | 0x68 .<br>0x1 .<br>0x4413 | Encoder 1 configuration | First clock delay                 | us   | Unsigned16 | 2    | 0                | ro     |                |
| 0x2110:20 | 25364           | 0x68 .<br>0x1 .<br>0x4414 | Encoder 1 configuration | Data ordering                     |      | Bit        | 0    | 00               | ro     |                |
| 0x2110:21 | 25365           | 0x68 .<br>0x1 .<br>0x4415 | Encoder 1 configuration | Endianness                        |      | Bit        | 0    | 00               | ro     |                |
| 0x2110:22 | 25366           | 0x68 .<br>0x1 .<br>0x4416 | Encoder 1 configuration | Index availability                |      | Bit        | 0    | 01               | ro     |                |
| 0x2110:23 | 25367           | 0x68 .<br>0x1 .<br>0x4417 | Encoder 1 configuration | Hall sensor port                  |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2110:24 | 25368           | 0x68 .<br>0x1 .<br>0x4418 | Encoder 1 configuration | Sinewave cycles per<br>revolution |      | Unsigned16 | 2    | 256              | ro     |                |
| 0x2110:25 | 25369           | 0x68 .<br>0x1 .<br>0x4419 | Encoder 1 configuration | Sinewave resolution               | Inc  | Unsigned8  | 1    | 6                | ro     |                |
| 0x2110:26 | 25370           | 0x68 .<br>0x1 .<br>0x441a | Encoder 1 configuration | Sinusoidal output voltage         |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2110:27 | 25371           | 0x68 .                    | Encoder 1 configuration | Filter (disabled)                 |      | Unsigned8  | 1    | 2                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME               | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-------------------------|--------------------|------|------------|------|------------------|--------|----------------|
|           |                 | 0x1 .<br>0x441b           |                         |                    |      |            |      |                  |        |                |
| 0x2110:28 | 25372           | 0x68 .<br>0x1 .<br>0x441c | Encoder 1 configuration | Sampling frequency |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2111:0  |                 |                           | Encoder 1 feedback      |                    |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x2111:1  | 25377           | 0x68 .<br>0x1 .<br>0x4441 | Encoder 1 feedback      | Raw position       | Inc  | Unsigned32 | 4    | 0                | ro     | t              |
| 0x2111:2  | 25378           | 0x68 .<br>0x1 .<br>0x4442 | Encoder 1 feedback      | Adjusted position  | Inc  | Integer32  | 4    | 0                | ro     | t              |
| 0x2111:3  | 25379           | 0x68 .<br>0x1 .<br>0x4443 | Encoder 1 feedback      | Velocity           | rpm  | Integer32  | 4    | 0                | ro     | t              |
| 0x2111:4  | 25380           | 0x68 .<br>0x1 .<br>0x4444 | Encoder 1 feedback      | Encoder status     |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x2112:0  |                 |                           | Encoder 2 configuration |                    |      | Unsigned8  | 1    | 28               | ro     |                |
| 0x2112:1  | 25409           | 0x68 .<br>0x1 .<br>0x4481 | Encoder 2 configuration | Sensor port        |      | Unsigned8  | 1    | 0                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                    | UNIT    | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-------------------------|-------------------------|---------|------------|------|------------------|--------|----------------|
| 0x2112:2  | 25410           | 0x68 .<br>0x1 .<br>0x4482 | Encoder 2 configuration | Type                    |         | Unsigned8  | 1    | 0                | ro     |                |
| 0x2112:3  | 25411           | 0x68 .<br>0x1 .<br>0x4483 | Encoder 2 configuration | Resolution              | Inc/rev | Unsigned32 | 4    | 16777216         | ro     |                |
| 0x2112:4  | 25412           | 0x68 .<br>0x1 .<br>0x4484 | Encoder 2 configuration | Zero velocity threshold | us      | Unsigned32 | 4    | 2685337600       | ro     |                |
| 0x2112:5  | 25413           | 0x68 .<br>0x1 .<br>0x4485 | Encoder 2 configuration | Polarity                |         | Bit        | 0    | 00               | ro     |                |
| 0x2112:6  | 25414           | 0x68 .<br>0x1 .<br>0x4486 | Encoder 2 configuration | Singleturn offset       | Inc     | Unsigned32 | 4    | 0                | ro     |                |
| 0x2112:7  | 25415           | 0x68 .<br>0x1 .<br>0x4487 | Encoder 2 configuration | Access signal type      |         | Bit        | 0    | 00               | ro     |                |
| 0x2112:8  | 25416           | 0x68 .<br>0x1 .<br>0x4488 | Encoder 2 configuration | Clock frequency         | kHz     | Unsigned16 | 2    | 59395            | ro     |                |
| 0x2112:9  | 25417           | 0x68 .<br>0x1 .<br>0x4489 | Encoder 2 configuration | Frame size              |         | Unsigned8  | 1    | 1                | ro     |                |
| 0x2112:10 | 25418           | 0x68 .                    | Encoder 2 configuration | Multiturn bits          |         | Unsigned8  | 1    | 0                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                          | UNIT | DATA TYPE | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-------------------------|-------------------------------|------|-----------|------|------------------|--------|----------------|
|           |                 | 0x1 .<br>0x448a           |                         |                               |      |           |      |                  |        |                |
| 0x2112:11 | 25419           | 0x68 .<br>0x1 .<br>0x448b | Encoder 2 configuration | Multiturn first bit position  |      | Unsigned8 | 1    | 0                | ro     |                |
| 0x2112:12 | 25420           | 0x68 .<br>0x1 .<br>0x448c | Encoder 2 configuration | Singleturn bits               |      | Unsigned8 | 1    | 1                | ro     |                |
| 0x2112:13 | 25421           | 0x68 .<br>0x1 .<br>0x448d | Encoder 2 configuration | Singleturn first bit position |      | Unsigned8 | 1    | 0                | ro     |                |
| 0x2112:14 | 25422           | 0x68 .<br>0x1 .<br>0x448e | Encoder 2 configuration | Timeout                       | us   | Unsigned8 | 1    | 36               | ro     |                |
| 0x2112:15 | 25423           | 0x68 .<br>0x1 .<br>0x448f | Encoder 2 configuration | CRC polynomial                |      | Unsigned8 | 1    | 67               | ro     |                |
| 0x2112:16 | 25424           | 0x68 .<br>0x1 .<br>0x4490 | Encoder 2 configuration | Maximum tbusy                 | us   | Unsigned8 | 1    | 20               | ro     |                |
| 0x2112:17 | 25425           | 0x68 .<br>0x1 .<br>0x4491 | Encoder 2 configuration | Status bits active value      |      | Unsigned8 | 1    | 0                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                              | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-------------------------|-----------------------------------|------|------------|------|------------------|--------|----------------|
| 0x2112:18 | 25426           | 0x68 .<br>0x1 .<br>0x4492 | Encoder 2 configuration | Parity type                       |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2112:19 | 25427           | 0x68 .<br>0x1 .<br>0x4493 | Encoder 2 configuration | First clock delay                 | us   | Unsigned16 | 2    | 0                | ro     |                |
| 0x2112:20 | 25428           | 0x68 .<br>0x1 .<br>0x4494 | Encoder 2 configuration | Data ordering                     |      | Bit        | 0    | 00               | ro     |                |
| 0x2112:21 | 25429           | 0x68 .<br>0x1 .<br>0x4495 | Encoder 2 configuration | Endianness                        |      | Bit        | 0    | 00               | ro     |                |
| 0x2112:22 | 25430           | 0x68 .<br>0x1 .<br>0x4496 | Encoder 2 configuration | Index availability                |      | Bit        | 0    | 01               | ro     |                |
| 0x2112:23 | 25431           | 0x68 .<br>0x1 .<br>0x4497 | Encoder 2 configuration | Hall sensor port                  |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2112:24 | 25432           | 0x68 .<br>0x1 .<br>0x4498 | Encoder 2 configuration | Sinewave cycles per<br>revolution |      | Unsigned16 | 2    | 256              | ro     |                |
| 0x2112:25 | 25433           | 0x68 .<br>0x1 .<br>0x4499 | Encoder 2 configuration | Sinewave resolution               | Inc  | Unsigned8  | 1    | 6                | ro     |                |
| 0x2112:26 | 25434           | 0x68 .                    | Encoder 2 configuration | Sinusoidal output voltage         |      | Unsigned8  | 1    | 2                | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                       | NAME               | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|-----------------------------|--------------------|------|------------|------|------------------|--------|----------------|
|           |                 | 0x1 .<br>0x449a           |                             |                    |      |            |      |                  |        |                |
| 0x2112:27 | 25435           | 0x68 .<br>0x1 .<br>0x449b | Encoder 2 configuration     | Filter (disabled)  |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2112:28 | 25436           | 0x68 .<br>0x1 .<br>0x449c | Encoder 2 configuration     | Sampling frequency |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2113:0  |                 |                           | Encoder 2 feedback          |                    |      | Unsigned8  | 1    | 4                | ro     |                |
| 0x2113:1  | 25441           | 0x68 .<br>0x1 .<br>0x44c1 | Encoder 2 feedback          | Raw position       | Inc  | Unsigned32 | 4    | 0                | ro     | t              |
| 0x2113:2  | 25442           | 0x68 .<br>0x1 .<br>0x44c2 | Encoder 2 feedback          | Adjusted position  | Inc  | Integer32  | 4    | 0                | ro     | t              |
| 0x2113:3  | 25443           | 0x68 .<br>0x1 .<br>0x44c3 | Encoder 2 feedback          | Velocity           | rpm  | Integer32  | 4    | 0                | ro     | t              |
| 0x2113:4  | 25444           | 0x68 .<br>0x1 .<br>0x44c4 | Encoder 2 feedback          | Encoder status     |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x2150:0  |                 |                           | Torque sensor configuration |                    |      | Unsigned8  | 1    | 10               | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                       | NAME           | UNIT | DATA TYPE | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-----------------------------|----------------|------|-----------|------|------------------|--------|----------------|
| 0x2150:1 | 21761           | 0x68 .<br>0x1 .<br>0x5401 | Torque sensor configuration | Type           |      | Unsigned8 | 1    | 0                | ro     |                |
| 0x2150:2 | 21762           | 0x68 .<br>0x1 .<br>0x5402 | Torque sensor configuration | Polarity       |      | Unsigned8 | 1    | 0                | ro     |                |
| 0x2150:3 | 21763           | 0x68 .<br>0x1 .<br>0x5403 | Torque sensor configuration | Channel        |      | Unsigned8 | 1    | 1                | ro     |                |
| 0x2150:4 | 21764           | 0x68 .<br>0x1 .<br>0x5404 | Torque sensor configuration | Gain           |      | Float32   | 4    | 0.0              | ro     |                |
| 0x2150:5 | 21765           | 0x68 .<br>0x1 .<br>0x5405 | Torque sensor configuration | Offset         | mNm  | Integer32 | 4    | 0                | ro     |                |
| 0x2150:6 | 21766           | 0x68 .<br>0x1 .<br>0x5406 | Torque sensor configuration | Coefficient K1 |      | Float32   | 4    | 0.0              | ro     |                |
| 0x2150:7 | 21767           | 0x68 .<br>0x1 .<br>0x5407 | Torque sensor configuration | Coefficient K2 |      | Float32   | 4    | 0.0              | ro     |                |
| 0x2150:8 | 21768           | 0x68 .<br>0x1 .<br>0x5408 | Torque sensor configuration | Coefficient K3 |      | Float32   | 4    | 0.0              | ro     |                |
| 0x2150:9 | 21769           | 0x68 .                    | Torque sensor configuration | Coefficient K4 |      | Float32   | 4    | 0.0              | ro     |                |

| CIA 402   | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                            | NAME                | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|-----------|-----------------|---------------------------|----------------------------------|---------------------|------|------------|------|------------------|--------|----------------|
|           |                 | 0x1 .<br>0x5409           |                                  |                     |      |            |      |                  |        |                |
| 0x2150:10 | 21770           | 0x68 .<br>0x1 .<br>0x540a | Torque sensor configuration      | Coefficient K5      |      | Float32    | 4    | 0.0              | ro     |                |
| 0x2151:0  | 21776           | 0x68 .<br>0x1 .<br>0x5440 | Torque sensor value              | Torque sensor value | mNm  | Integer32  | 4    | 0                | ro     | t              |
| 0x2152:0  |                 |                           | Torque sensor feedback<br>filter |                     |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x2152:1  | 21793           | 0x68 .<br>0x1 .<br>0x5481 | Torque sensor feedback<br>filter | Type                |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2152:2  | 21794           | 0x68 .<br>0x1 .<br>0x5482 | Torque sensor feedback<br>filter | Cutoff frequency    | Hz   | Unsigned32 | 4    | 4093706240       | ro     |                |
| 0x2210:0  |                 |                           | GPIO pin configuration           |                     |      | Unsigned8  | 1    | 7                | ro     |                |
| 0x2210:1  | 24833           | 0x68 .<br>0x1 .<br>0x8401 | GPIO pin configuration           | Digital IO 1        |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2210:2  | 24834           | 0x68 .<br>0x1 .<br>0x8402 | GPIO pin configuration           | Digital IO 2        |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2210:3  | 24835           | 0x68 .<br>0x1 .           | GPIO pin configuration           | Digital IO 3        |      | Unsigned8  | 1    | 0                | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                  | NAME                     | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|------------------------|--------------------------|------|------------|------|------------------|--------|----------------|
|          |                 | 0x8403                    |                        |                          |      |            |      |                  |        |                |
| 0x2210:4 | 24836           | 0x68 .<br>0x1 .<br>0x8404 | GPIO pin configuration | Digital IO 4             |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2210:5 | 24837           | 0x68 .<br>0x1 .<br>0x8405 | GPIO pin configuration | Digital IO 5             |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2210:6 | 24838           | 0x68 .<br>0x1 .<br>0x8406 | GPIO pin configuration | Digital IO 6             |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2210:7 | 24839           | 0x68 .<br>0x1 .<br>0x8407 | GPIO pin configuration | Digital IO 7             |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2211:0 |                 |                           | GPIO output events     |                          |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2211:1 | 24849           | 0x68 .<br>0x1 .<br>0x8441 | GPIO output events     | Timestamp setpoint       |      | Unsigned32 | 4    | 0                | ro     | r              |
| 0x2212:0 |                 |                           | GPIO input actions     |                          |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2212:1 | 24865           | 0x68 .<br>0x1 .<br>0x8481 | GPIO input actions     | Timestamp on rising edge |      | Unsigned32 | 4    | 0                | ro     | t              |
| 0x2213:0 |                 |                           | GPIO position trigger  |                          |      | Unsigned8  | 1    | 3                | ro     |                |
| 0x2213:1 | 24881           | 0x68 .                    | GPIO position trigger  | Position setpoint        | Inc  | Integer32  | 4    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                           | NAME           | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|---------------------------------|----------------|------|------------|------|------------------|--------|----------------|
|          |                 | 0x1 .<br>0x84c1           |                                 |                |      |            |      |                  |        |                |
| 0x2213:2 | 24882           | 0x68 .<br>0x1 .<br>0x84c2 | GPIO position trigger           | Target encoder |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2213:3 | 24883           | 0x68 .<br>0x1 .<br>0x84c3 | GPIO position trigger           | Pulse width    | ms   | Unsigned8  | 1    | 0                | ro     |                |
| 0x2214:0 |                 |                           | GPIO global options             |                |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2214:1 | 24897           | 0x68 .<br>0x1 .<br>0x8501 | GPIO global options             | Voltage level  |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2215:0 |                 |                           | GPIO addressable LED<br>control |                |      | Unsigned8  | 1    | 1                | ro     |                |
| 0x2215:1 | 24913           | 0x68 .<br>0x1 .<br>0x8541 | GPIO addressable LED<br>control | LED color      |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x2401:0 | 25864           | 0x69 .<br>0x1 .<br>0x40   | Analog input 1                  | Analog input 1 |      | Unsigned16 | 2    | 0                | ro     | t              |
| 0x2402:0 | 25872           | 0x69 .<br>0x1 .<br>0x80   | Analog input 2                  | Analog input 2 |      | Unsigned16 | 2    | 0                | ro     | t              |
| 0x2403:0 | 25880           | 0x69 .<br>0x1 .           | Analog input 3                  | Analog input 3 |      | Unsigned16 | 2    | 0                | ro     | t              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                              | NAME                              | UNIT | DATA TYPE     | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|------------------------------------|-----------------------------------|------|---------------|------|------------------|--------|----------------|
|          |                 | 0xc0                      |                                    |                                   |      |               |      |                  |        |                |
| 0x2404:0 | 25888           | 0x69 .<br>0x1 .<br>0x100  | Analog input 4                     | Analog input 4                    |      | Unsigned16    | 2    | 0                | ro     | t              |
| 0x2500:0 | 26112           | 0x69 .<br>0x1 .<br>0x4000 | Cyclic control input<br>frequency  | Cyclic control input<br>frequency |      | Unsigned8     | 1    | 4                | ro     |                |
| 0x2611:0 |                 |                           | Safety Module input<br>diagnostics |                                   |      | Unsigned8     | 1    | 2                | ro     |                |
| 0x2611:1 | 26505           | 0x69 .<br>0x1 .<br>0x8441 | Safety Module input<br>diagnostics | Input 1                           |      | Bit           | 0    | 0                | ro     |                |
| 0x2611:2 | 26506           | 0x69 .<br>0x1 .<br>0x8442 | Safety Module input<br>diagnostics | Input 2                           |      | Bit           | 0    | 0                | ro     |                |
| 0x2700:0 |                 |                           | Firmware                           |                                   |      | Unsigned8     | 1    | 1                | ro     |                |
| 0x2700:1 | 26625           | 0x69 .<br>0x1 .<br>0xc001 | Firmware                           | Core version                      |      | VisibleString | 50   |                  | ro     |                |
| 0x2701:0 | 26632           | 0x69 .<br>0x1 .<br>0xc040 | Tuning command                     | Tuning command                    |      | Unsigned32    | 4    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                  | NAME                   | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|------------------------|------------------------|------|------------|------|------------------|--------|----------------|
| 0x2702:0 | 26640           | 0x69 .<br>0x1 .<br>0xc080 | Tuning status          | Tuning status          |      | Unsigned32 | 4    | 0                | ro     | t              |
| 0x2703:0 | 26648           | 0x69 .<br>0x1 .<br>0xc0c0 | User MOSI              | User MOSI              |      | Unsigned32 | 4    | 0                | ro     | r              |
| 0x2704:0 | 26656           | 0x69 .<br>0x1 .<br>0xc100 | User MISO              | User MISO              |      | Unsigned32 | 4    | 0                | ro     | t              |
| 0x2705:0 | 26664           | 0x69 .<br>0x1 .<br>0xc140 | Setup wizard completed | Setup wizard completed |      | Unsigned8  | 1    | 0                | ro     |                |
| 0x2E00:0 |                 |                           | TCP/IP Configuration   |                        |      | Unsigned8  | 1    | 7                | ro     |                |
| 0x2E00:1 | 26881           | 0x69 .<br>0x2 .<br>0x8001 | TCP/IP Configuration   | IP address             |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x2E00:2 | 26882           | 0x69 .<br>0x2 .<br>0x8002 | TCP/IP Configuration   | Network mask           |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x2E00:3 | 26883           | 0x69 .<br>0x2 .<br>0x8003 | TCP/IP Configuration   | Gateway address        |      | Unsigned32 | 4    | 0                | ro     |                |
| 0x2E00:4 | 26884           | 0x69 .<br>0x2 .<br>0x8004 | TCP/IP Configuration   | Name server            |      | Unsigned32 | 4    | 0                | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                | NAME          | UNIT | DATA TYPE     | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|----------------------|---------------|------|---------------|------|------------------|--------|----------------|
| 0x2E00:5 | 26885           | 0x69 .<br>0x2 .<br>0x8005 | TCP/IP Configuration | Name server 2 |      | Unsigned32    | 4    | 0                | ro     |                |
| 0x2E00:6 | 26886           | 0x69 .<br>0x2 .<br>0x8006 | TCP/IP Configuration | Domain name   |      | VisibleString | 50   |                  | ro     |                |
| 0x2E00:7 | 26887           | 0x69 .<br>0x2 .<br>0x8007 | TCP/IP Configuration | Host name     |      | VisibleString | 50   |                  | ro     |                |
| 0x2FFF:0 |                 |                           | Internal usage only  |               |      | Unsigned8     | 1    | 4                | ro     |                |
| 0x2FFF:1 |                 |                           | Internal usage only  |               |      | Integer16     | 2    | 0                | ro     |                |
| 0x2FFF:2 |                 |                           | Internal usage only  |               |      | Integer16     | 2    | 0                | ro     |                |
| 0x2FFF:3 |                 |                           | Internal usage only  |               |      | Integer16     | 2    | 0                | ro     |                |
| 0x2FFF:4 |                 |                           | Internal usage only  |               |      | Unsigned16    | 2    | 0                | ro     | t              |
| 0x603F:0 | 1008            | 0x70 .<br>0x1 .<br>0xfc0  | Error code           | Error code    |      | Unsigned16    | 2    | 0                | ro     | t              |
| 0x6040:0 | 1024            | 0x70 .<br>0x1 .<br>0x1000 | Controlword          | Controlword   |      | Unsigned16    | 2    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                      | NAME                       | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|----------------------------|----------------------------|------|------------|------|------------------|--------|----------------|
| 0x6041:0 | 1040            | 0x70 .<br>0x1 .<br>0x1040 | Statusword                 | Statusword                 |      | Unsigned16 | 2    | 0                | ro     | t              |
| 0x605A:0 | 1440            | 0x70 .<br>0x1 .<br>0x1680 | Quick stop option code     | Quick stop option code     |      | Integer16  | 2    | 512              | ro     |                |
| 0x6060:0 | 1536            | 0x70 .<br>0x1 .<br>0x1800 | Modes of operation         | Modes of operation         |      | Integer8   | 1    | 0                | ro     | r              |
| 0x6061:0 | 1552            | 0x70 .<br>0x1 .<br>0x1840 | Modes of operation display | Modes of operation display |      | Integer8   | 1    | 0                | ro     | t              |
| 0x6062:0 | 1568            | 0x70 .<br>0x1 .<br>0x1880 | Position demand value      | Position demand value      | Inc  | Integer32  | 4    | 0                | ro     | t              |
| 0x6064:0 | 1600            | 0x70 .<br>0x1 .<br>0x1900 | Position actual value      | Position actual value      | Inc  | Integer32  | 4    | 0                | ro     | t              |
| 0x6065:0 | 1616            | 0x70 .<br>0x1 .<br>0x1940 | Following error window     | Following error window     | Inc  | Unsigned32 | 4    | 4294967295       | ro     | r              |
| 0x6066:0 | 1632            | 0x70 .<br>0x1 .<br>0x1980 | Following error time out   | Following error time out   | ms   | Unsigned16 | 2    | 25600            | ro     | r              |
| 0x6067:0 | 1648            | 0x70 .                    | Position window            | Position window            | Inc  | Unsigned32 | 4    | 4294967295       | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                    | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-------------------------|-------------------------|------|------------|------|------------------|--------|----------------|
|          |                 | 0x1 .<br>0x19c0           |                         |                         |      |            |      |                  |        |                |
| 0x6068:0 | 1664            | 0x70 .<br>0x1 .<br>0x1a00 | Position window time    | Position window time    | ms   | Unsigned16 | 2    | 0                | ro     | r              |
| 0x606B:0 | 1712            | 0x70 .<br>0x1 .<br>0x1ac0 | Velocity demand value   | Velocity demand value   | rpm  | Integer32  | 4    | 0                | ro     | t              |
| 0x606C:0 | 1728            | 0x70 .<br>0x1 .<br>0x1b00 | Velocity actual value   | Velocity actual value   | rpm  | Integer32  | 4    | 0                | ro     | t              |
| 0x606D:0 | 1744            | 0x70 .<br>0x1 .<br>0x1b40 | Velocity window         | Velocity window         | rpm  | Unsigned16 | 2    | 65535            | ro     | r              |
| 0x606E:0 | 1760            | 0x70 .<br>0x1 .<br>0x1b80 | Velocity window time    | Velocity window time    | ms   | Unsigned16 | 2    | 0                | ro     | r              |
| 0x606F:0 | 1776            | 0x70 .<br>0x1 .<br>0x1bc0 | Velocity threshold      | Velocity threshold      | rpm  | Unsigned16 | 2    | 0                | ro     | r              |
| 0x6070:0 | 1792            | 0x70 .<br>0x1 .<br>0x1c00 | Velocity threshold time | Velocity threshold time | ms   | Unsigned16 | 2    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                    | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-------------------------|-------------------------|------|------------|------|------------------|--------|----------------|
| 0x6071:0 | 1808            | 0x70 .<br>0x1 .<br>0x1c40 | Target Torque           | Target Torque           |      | Integer16  | 2    | 0                | ro     | r              |
| 0x6072:0 | 1824            | 0x70 .<br>0x1 .<br>0x1c80 | Max torque              | Max torque              |      | Unsigned16 | 2    | 47115            | ro     | r              |
| 0x6073:0 | 1840            | 0x70 .<br>0x1 .<br>0x1cc0 | Max current             | Max current             |      | Unsigned16 | 2    | 47115            | ro     | r              |
| 0x6074:0 | 1856            | 0x70 .<br>0x1 .<br>0x1d00 | Torque demand           | Torque demand           |      | Integer16  | 2    | 0                | ro     | t              |
| 0x6075:0 | 1872            | 0x70 .<br>0x1 .<br>0x1d40 | Motor rated current     | Motor rated current     | mA   | Unsigned32 | 4    | 16777216         | ro     |                |
| 0x6076:0 | 1888            | 0x70 .<br>0x1 .<br>0x1d80 | Motor rated torque      | Motor rated torque      | mNm  | Unsigned32 | 4    | 16777216         | ro     |                |
| 0x6077:0 | 1904            | 0x70 .<br>0x1 .<br>0x1dc0 | Torque actual value     | Torque actual value     |      | Integer16  | 2    | 0                | ro     | t              |
| 0x6079:0 | 1936            | 0x70 .<br>0x1 .<br>0x1e40 | DC link circuit voltage | DC link circuit voltage | mV   | Unsigned32 | 4    | 0                | ro     | t              |
| 0x607A:0 | 1952            | 0x70 .                    | Target position         | Target position         | Inc  | Integer32  | 4    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                     | UNIT | DATA TYPE | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-------------------------|--------------------------|------|-----------|------|------------------|--------|----------------|
|          |                 | 0x1 .<br>0x1e80           |                         |                          |      |           |      |                  |        |                |
| 0x607B:0 |                 |                           | Position range limit    |                          |      | Unsigned8 | 1    | 2                | ro     |                |
| 0x607B:1 | 1969            | 0x70 .<br>0x1 .<br>0x1ec1 | Position range limit    | Min position range limit | Inc  | Integer32 | 8    | 128              | ro     | r              |
| 0x607B:2 | 1970            | 0x70 .<br>0x1 .<br>0x1ec2 | Position range limit    | Max position range limit | Inc  | Integer32 | 8    | -129             | ro     | r              |
| 0x607C:0 | 1984            | 0x70 .<br>0x1 .<br>0x1f00 | Home offset             | Home offset              | Inc  | Integer32 | 4    | 0                | ro     | r              |
| 0x607D:0 |                 |                           | Software position limit |                          |      | Unsigned8 | 1    | 2                | ro     |                |
| 0x607D:1 | 2001            | 0x70 .<br>0x1 .<br>0x1f41 | Software position limit | Min position limit       | Inc  | Integer32 | 8    | 128              | ro     | r              |
| 0x607D:2 | 2002            | 0x70 .<br>0x1 .<br>0x1f42 | Software position limit | Max position limit       | Inc  | Integer32 | 8    | -129             | ro     | r              |
| 0x607E:0 | 2016            | 0x70 .<br>0x1 .<br>0x1f80 | Polarity                | Polarity                 |      | Unsigned8 | 1    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                   | NAME                    | UNIT  | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-------------------------|-------------------------|-------|------------|------|------------------|--------|----------------|
| 0x6080:0 | 2048            | 0x70 .<br>0x1 .<br>0x2000 | Max motor speed         | Max motor speed         | rpm   | Unsigned32 | 4    | 3892510720       | ro     | r              |
| 0x6081:0 | 2064            | 0x70 .<br>0x1 .<br>0x2040 | Profile velocity        | Profile velocity        | rpm   | Unsigned32 | 4    | 0                | ro     | r              |
| 0x6083:0 | 2096            | 0x70 .<br>0x1 .<br>0x20c0 | Profile acceleration    | Profile acceleration    | rpm/s | Unsigned32 | 4    | 0                | ro     | r              |
| 0x6084:0 | 2112            | 0x70 .<br>0x1 .<br>0x2100 | Profile deceleration    | Profile deceleration    | rpm/s | Unsigned32 | 4    | 0                | ro     | r              |
| 0x6085:0 | 2128            | 0x70 .<br>0x1 .<br>0x2140 | Quick stop deceleration | Quick stop deceleration | rpm/s | Unsigned32 | 4    | 270991360        | ro     | r              |
| 0x6086:0 | 2144            | 0x70 .<br>0x1 .<br>0x2180 | Motion profile type     | Motion profile type     |       | Integer16  | 2    | 0                | ro     | r              |
| 0x6087:0 | 2160            | 0x70 .<br>0x1 .<br>0x21c0 | Torque slope            | Torque slope            |       | Unsigned32 | 4    | 0                | ro     | r              |
| 0x6088:0 | 2176            | 0x70 .<br>0x1 .<br>0x2200 | Torque profile type     | Torque profile type     |       | Integer16  | 2    | 0                | ro     | r              |
| 0x6091:0 |                 |                           | Gear ratio              |                         |       | Unsigned8  | 1    | 2                | ro     |                |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP         | NAME                              | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|---------------|-----------------------------------|------|------------|------|------------------|--------|----------------|
| 0x6091:1 | 2321            | 0x70 .<br>0x1 .<br>0x2441 | Gear ratio    | Motor revolutions                 |      | Unsigned32 | 8    | 16777216         | ro     | r              |
| 0x6091:2 | 2322            | 0x70 .<br>0x1 .<br>0x2442 | Gear ratio    | Shaft revolutions                 |      | Unsigned32 | 8    | 16777216         | ro     | r              |
| 0x6092:0 |                 |                           | Feed constant |                                   |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x6092:1 | 2337            | 0x70 .<br>0x1 .<br>0x2481 | Feed constant | Feed                              |      | Unsigned32 | 8    | 4294967295       | ro     | r              |
| 0x6092:2 | 2338            | 0x70 .<br>0x1 .<br>0x2482 | Feed constant | Shaft revolutions                 |      | Unsigned32 | 8    | 16777216         | ro     | r              |
| 0x6098:0 | 2432            | 0x70 .<br>0x1 .<br>0x2600 | Homing method | Homing method                     |      | Integer8   | 1    | 0                | ro     | r              |
| 0x6099:0 |                 |                           | Homing speeds |                                   |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x6099:1 | 2449            | 0x70 .<br>0x1 .<br>0x2641 | Homing speeds | Speed during search for<br>switch | rpm  | Unsigned32 | 8    | 0                | ro     | r              |
| 0x6099:2 | 2450            | 0x70 .<br>0x1 .<br>0x2642 | Homing speeds | Speed during search for<br>zero   | rpm  | Unsigned32 | 8    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                       | NAME                        | UNIT  | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-----------------------------|-----------------------------|-------|------------|------|------------------|--------|----------------|
| 0x609A:0 | 2464            | 0x70 .<br>0x1 .<br>0x2680 | Homing acceleration         | Homing acceleration         | rpm/s | Unsigned32 | 4    | 0                | ro     | r              |
| 0x60A9:0 | 2704            | 0x70 .<br>0x1 .<br>0x2a40 | SI unit velocity            | SI unit velocity            |       | Unsigned32 | 4    | 4699136          | ro     |                |
| 0x60B1:0 | 2832            | 0x70 .<br>0x1 .<br>0x2c40 | Velocity offset             | Velocity offset             | rpm   | Integer32  | 4    | 0                | ro     | r              |
| 0x60B2:0 | 2848            | 0x70 .<br>0x1 .<br>0x2c80 | Torque offset               | Torque offset               |       | Integer16  | 2    | 0                | ro     | r              |
| 0x60B8:0 | 2944            | 0x70 .<br>0x1 .<br>0x2e00 | Touch probe function        | Touch probe function        |       | Unsigned16 | 2    | 0                | ro     | r              |
| 0x60B9:0 | 2960            | 0x70 .<br>0x1 .<br>0x2e40 | Touch probe status          | Touch probe status          |       | Unsigned16 | 2    | 0                | ro     | t              |
| 0x60BA:0 | 2976            | 0x70 .<br>0x1 .<br>0x2e80 | Touch probe 1 positive edge | Touch probe 1 positive edge |       | Integer32  | 4    | 0                | ro     | t              |
| 0x60BB:0 | 2992            | 0x70 .<br>0x1 .<br>0x2ec0 | Touch probe 1 negative edge | Touch probe 1 negative edge |       | Integer32  | 4    | 0                | ro     | t              |
| 0x60D1:0 | 3344            | 0x70 .                    | Touch probe time stamp 1    | Touch probe time stamp 1    |       | Unsigned32 | 4    | 0                | ro     | t              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                                      | NAME                                       | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|--------------------------------------------|--------------------------------------------|------|------------|------|------------------|--------|----------------|
|          |                 | 0x1 .<br>0x3440           | positive value                             | positive value                             |      |            |      |                  |        |                |
| 0x60D2:0 | 3360            | 0x70 .<br>0x1 .<br>0x3480 | Touch probe time stamp 1<br>negative value | Touch probe time stamp 1<br>negative value |      | Unsigned32 | 4    | 0                | ro     | t              |
| 0x60F2:0 | 3872            | 0x70 .<br>0x1 .<br>0x3c80 | Positioning option code                    | Positioning option code                    |      | Unsigned16 | 2    | 0                | ro     | tr             |
| 0x60F4:0 | 3904            | 0x70 .<br>0x1 .<br>0x3d00 | Following error actual value               | Following error actual<br>value            | Inc  | Integer32  | 4    | 0                | ro     | t              |
| 0x60FA:0 | 4000            | 0x70 .<br>0x1 .<br>0x3e80 | Control effort                             | Control effort                             |      | Integer32  | 4    | 0                | ro     | t              |
| 0x60FC:0 | 4032            | 0x70 .<br>0x1 .<br>0x3f00 | Position demand internal<br>value          | Position demand internal<br>value          | Inc  | Integer32  | 4    | 0                | ro     | t              |
| 0x60FD:0 | 4048            | 0x70 .<br>0x1 .<br>0x3f40 | Digital inputs                             | Digital inputs                             |      | Unsigned32 | 4    | 0                | ro     | t              |
| 0x60FE:0 |                 |                           | Digital outputs                            |                                            |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x60FE:1 | 4065            | 0x70 .<br>0x1 .<br>0x3f81 | Digital outputs                            | Physical outputs                           |      | Unsigned32 | 8    | 0                | ro     | r              |

| CIA 402  | PROFINET<br>PNU | CIP<br>PARAM              | GROUP                 | NAME                  | UNIT | DATA TYPE  | SIZE | DEFAULT<br>VALUE | ACCESS | CYCLIC<br>DATA |
|----------|-----------------|---------------------------|-----------------------|-----------------------|------|------------|------|------------------|--------|----------------|
| 0x60FE:2 | 4066            | 0x70 .<br>0x1 .<br>0x3f82 | Digital outputs       | Bit mask              |      | Unsigned32 | 8    | 0                | ro     | r              |
| 0x60FF:0 | 4080            | 0x70 .<br>0x1 .<br>0x3fc0 | Target velocity       | Target velocity       | rpm  | Integer32  | 4    | 0                | ro     | r              |
| 0x6502:0 | 12320           | 0x71 .<br>0x1 .<br>0x4080 | Supported drive modes | Supported drive modes |      | Unsigned32 | 4    | 2902655744       | ro     | t              |
| 0x6621:0 |                 |                           | Safety statusword     |                       |      | Unsigned8  | 1    | 2                | ro     |                |
| 0x6621:1 | 13329           | 0x71 .<br>0x1 .<br>0x8841 | Safety statusword     | Byte 1                |      | Unsigned8  | 2    | 0                | ro     | t              |
| 0x6621:2 | 13330           | 0x71 .<br>0x1 .<br>0x8842 | Safety statusword     | Byte 2                |      | Unsigned8  | 2    | 0                | ro     | t              |