

Drive for decentralised
control systems

FlexiMova® mm

Modbus Fieldbus Manual



Proprietary notice

Modbus Fieldbus Manual - **FlexiMova® mm** - Rev.00

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Table of contents

| | | |
|----------|---|-----------|
| 1 | Introduction..... | 4 |
| 1.1 | Modbus RTU RS485 module connections..... | 4 |
| 2 | Installation of the Modbus module..... | 5 |
| 2.1 | Modbus module connection | 7 |
| 2.2 | Fieldbus terminators..... | 9 |
| 3 | Modbus RTU protocol..... | 10 |

1 Introduction

This manual contains information on how to install, program and use the optional Modbus communication for the **FlexiMova® mm**.

The target audience of this manual is qualified people who are familiar with the operation of a frequency converter and the principal serial bus communications.

In this manual you will find references to the following additional documents:

- **FlexiMova® mm –Design and Installation Manual**

This manual contains all the information you need to install the product and the for the correct sizing of the components.

- **FlexiMova® mm – Programming Manual**

This manual contains the information you need to configure and program the product, several examples of how it operates and troubleshooting information.



INFORMATION

Updated documents are available in the download section of the Manufacturer's website <https://www.reel.it>

1.1 Modbus RTU RS485 module connections

The fieldbus module is a plug-in and is installed as an optional on the **FlexiMova® mm** in Slot 1.

Figure 1: Modbus Module

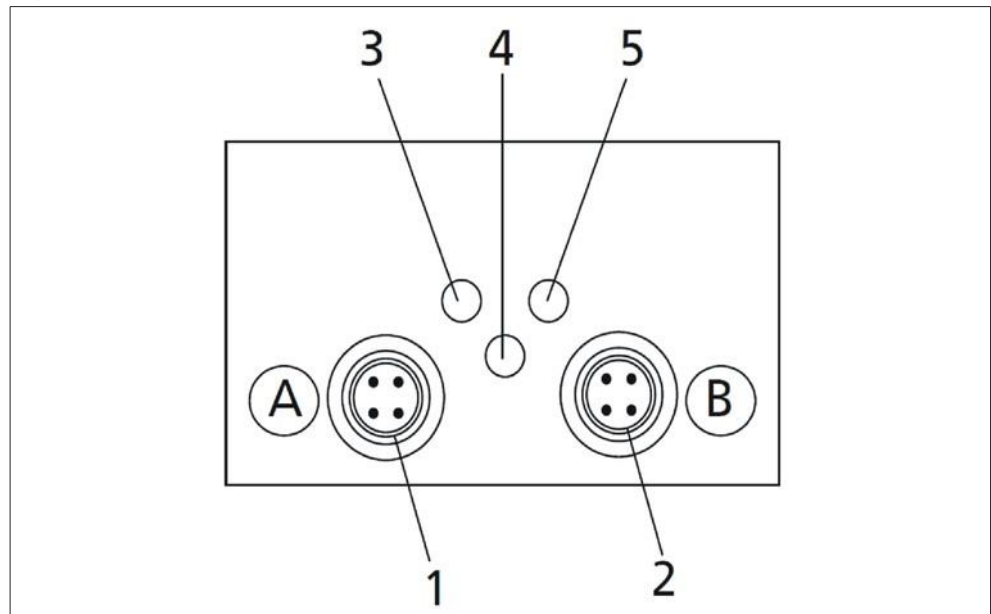


Table 1: Fieldbus module

| Ref. | Component | Description |
|------|--------------|--|
| 1 | M12 male A | B-coded |
| 2 | M12 female B | B-coded |
| 3 | Green LED | Communication from fieldbus active or possible |
| 4 | Yellow LED | Communication module OK (heartbeat present) |
| 5 | Red LED | Initialization/Malfunction |

2 Installation of the Modbus module

The Modbus module can be installed in Slot 1 on the product.

Proceed as follows:

- 1) Undo the screws that secure the cover on Slot 1 (**Figure 2 - Ref. 1**) using a suitable tool.
- 2) Remove the cover from Slot 1.
- 3) Carefully insert the Modbus module in Slot 1 (**Figure 3**) by sliding it along the plastic guides until it hits the end.

Figure 2: Cover



Figure 3: Inserting the fieldbus module



4) Fix the module in place with the 4 cross head screws (**Figure 4**).

**INFORMATION**

IP55 is only guaranteed if the screws are fully tightened.

Figure 4: Fixing the Fieldbus module

**⚠ ATTENTION****Incorrect installation**

IP55 protection could be affected!

Cover the M12 connectors using the caps included in the pack.

2.1 Modbus module connection

For the correct connection of the module proceed as follows:

- Verify that the earth connections have been wired correctly
- Connect the cables with a distance ≥ 0.3 m between the fieldbus cables and other power conductors



| ⚠ ATTENTION |
|---|
| <ol style="list-style-type: none"> 1) Do not power the Modbus Module through the connection terminal: risk of damage to the module 2) Use shielded twisted cables constructed in compliance with ENC requirements, with an impedance of at least 100 [Ohm]. 3) Use the fieldbus cables only for data connection. 4) Do not use fieldbus cables for other types of connection. |

Figure 5: Modbus module connections

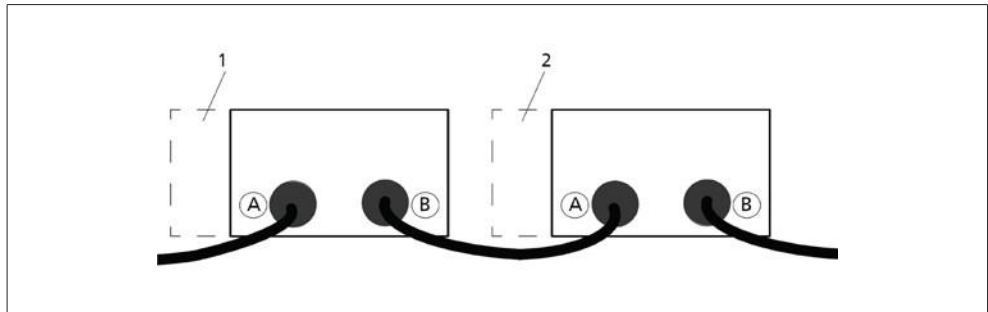


Table 2: Modbus module connections

| Ref. | Component | M12 connector |
|------|------------|--|
| 1 | Inverter 1 | Connector M12 A: Incoming Connector M12 B: Outgoing |
| 2 | Inverter 2 | Connector M12 A: Incoming Connector M12 B: Outgoing |

Configure the reference source from the "Fieldbus" and configure the parameters to control the inverter from the fieldbus.

Configuration is done via the inverter parameters .

| | |
|-------------------------|---------------------------|
| Communication protocol: | Modbus RTU |
| Fieldbus terminators: | External |
| Interface: | EIA-485 (RS485) |
| Transmission speed: | Manual, 9600-115200 bit/s |
| Type of module: | Slave |
| Parity: | Even |

Figure 6: Pin allocation: a) Arrangement of M12 female contacts, b) Arrangement of the M12 male B-coding

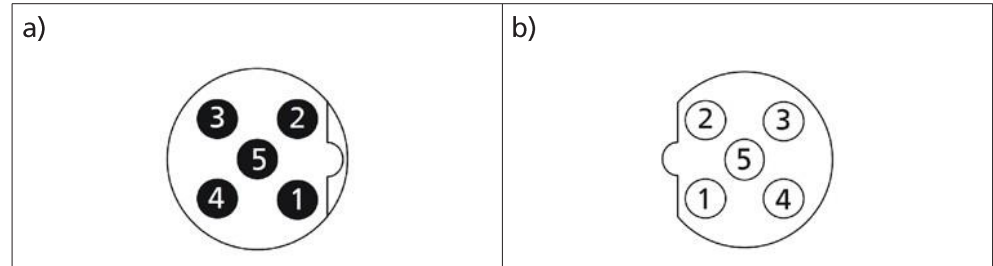


Table 3: Pin allocation

| Pin | Colour code of the Din 47100 cable conductors | M12 male / M12 female (B-coding) allocation | Signal |
|-----|---|---|-----------------|
| 1 | - | VP (+5 V output) | +5V |
| 2 | Brown | D- | RS-485 A/ Data- |
| 3 | Green | GND | GND |
| 4 | White | D+ | RS-485 B/ Data+ |
| 5 | Shield | Shield | Shield |
| Wir | - | Shield | Shield |

Figure 7: Self-assembled cable

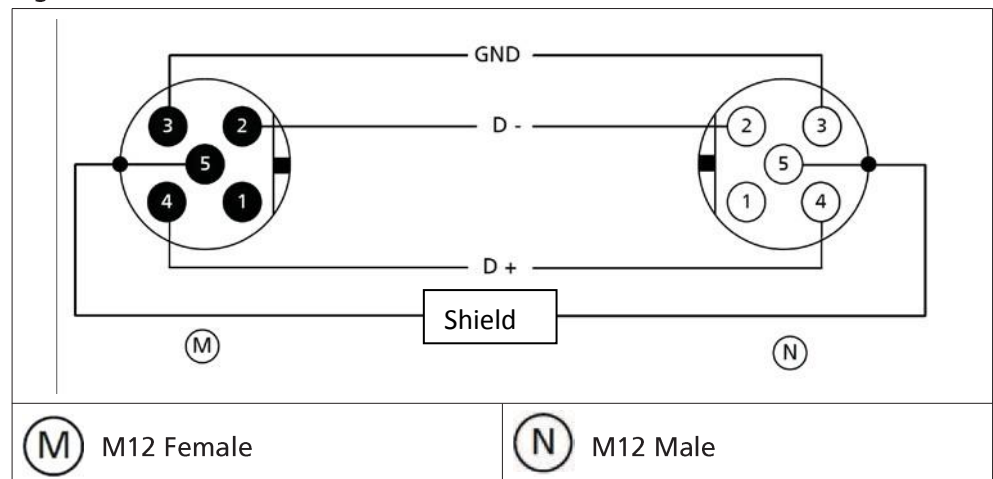
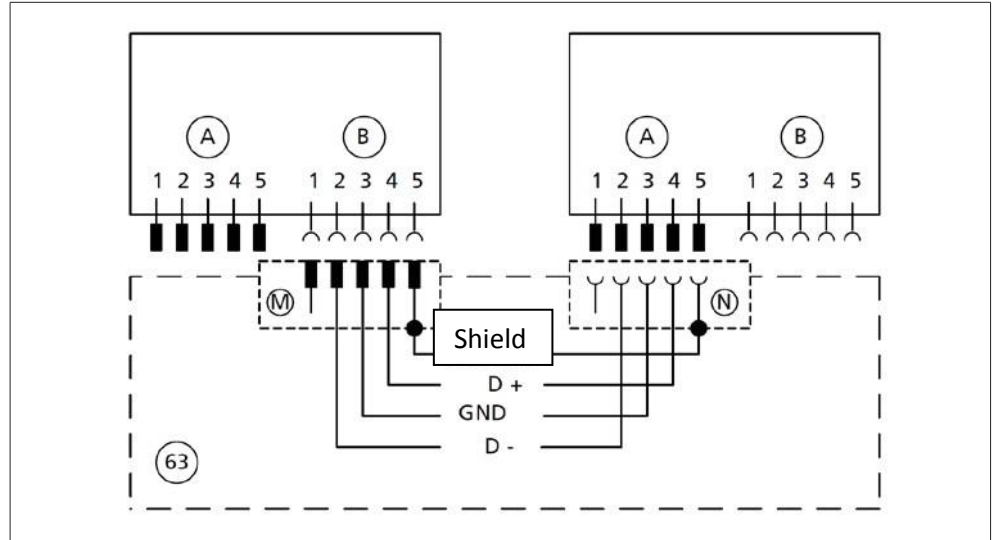


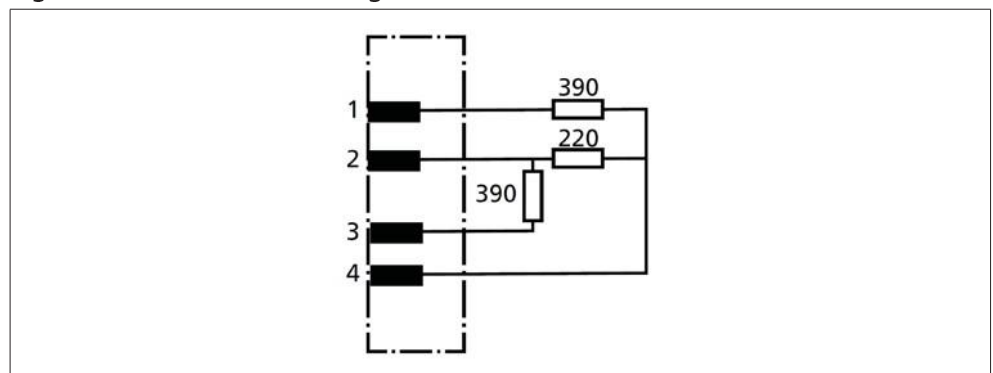
Figure 8: Connections diagram



2.2 Fieldbus terminators

Terminating resistors that comply with Profibus DP standard DIN 19245, part 3, section 6.3 can be used.

Figure 9: Fieldbus terminating resistors on M12 connector



The terminating resistors can be connected directly to the M12 connector. The Bus polarization has no effect if the inverter is switched off.

3 Modbus RTU protocol

RS485 default settings

| | |
|-----------|----------------|
| Bit rate: | 115200 (bit/s) |
| Parity: | Even |
| Stop bit: | 1 |

Table 4: Discrete input table – Function Code 0x02

| Modbus address [Hex] | Reference | Description |
|----------------------|----------------|-----------------------------------|
| 0000 | 1-2-1-17 Bit0 | Line present |
| 0001 | 1-2-1-17 Bit1 | PWM enabled/disabled |
| 0002 | 1-2-1-17 Bit2 | Speed reference enabled/disabled |
| 0003 | 1-2-1-17 Bit3 | Torque control enabled/disabled |
| 0004 | 1-2-1-17 Bit4 | Motor rotation direction (CW/CCW) |
| 0005 | 1-2-1-17 Bit5 | Motor rotating |
| 0006 | 1-2-1-17 Bit6 | Speed setpoint reached |
| 0007 | 1-2-1-17 Bit7 | Alarm status |
| 0008 | 1-2-1-17 Bit8 | Warning status |
| 0009 | 1-2-1-17 Bit9 | AMA procedure in progress |
| 000A | 1-2-1-17 Bit10 | Locked |
| 000B | 1-2-1-17 Bit11 | Process PID enabled |
| 000C | 1-2-1-17 Bit12 | Positioner enabled |
| 000D | 1-2-1-17 Bit13 | Electric shaft enabled |
| 000E | / | / |
| 000F | 1-2-1-17 Bit15 | Fieldbus control active |
| 0020 | 1-2-2-3 Bit0 | Line present |
| 0021 | 1-2-2-3 Bit1 | PWM enabled/disabled |
| 0022 | 1-2-2-3 Bit2 | Profile in progress |
| 0023 | 1-2-2-3 Bit3 | Profile halted |
| 0024 | 1-2-2-3 Bit4 | Motor rotation direction (CW/CCW) |
| 0025 | 1-2-2-3 Bit5 | Motor rotating |
| 0026 | 1-2-2-3 Bit6 | Position setpoint reached |
| 0027 | 1-2-2-3 Bit7 | Alarm status |
| 0028 | 1-2-2-3 Bit8 | Warning status |
| 0029 | 1-2-2-3 Bit9 | AMA procedure in progress |
| 002A | 1-2-2-3 Bit10 | Locked |
| 002B | 1-2-2-3 Bit11 | Homing procedure active |
| 002C | 1-2-2-3 Bit12 | Homing procedure completed |
| 002D | 1-2-2-3 Bit13 | Fixed speed mode active |
| 002E | / | / |
| 002F | 1-2-2-3 Bit15 | Fieldbus control active |
| 0040 | A1 | Short circuit alarm |
| 0041 | A2 | Overcurrent alarm |
| 0042 | A3 | IGBT overtemperature alarm |

| Modbus address [Hex] | Reference | Description |
|----------------------|-----------|---|
| 0043 | A4 | Control board overtemperature alarm |
| 0044 | A5 | 12T overload protection alarm |
| 0045 | A6 | PTC motor protection alarm |
| 0046 | A7 | External alert alarm |
| 0047 | A8 | Undervoltage alarm |
| 0048 | A9 | Overvoltage alarm |
| 0049 | A10 | AMA error alarm |
| 004A | A11 | Brake resistor overload alarm |
| 004B | A12 | Motor side phase loss alarm |
| 004C | A13 | Line side phase loss alarm |
| 004D | A14 | Broken signal cable alarm |
| 004E | A15 | Safety STO chain fault alarm |
| 004F | A16 | Lack of adequate motor data alarm |
| 0050 | A17 | No advanced motor configuration alarm |
| 0051 | A18 | Hardware fault alarm |
| 0052 | A19 | 24 V Undervoltage alarm |
| 0053 | A20 | Internal voltage fault alarm |
| 0054 | A21 | Dry run alarm |
| 0055 | A22 | Positioner limit reached alarm |
| 0056 | A23 | Out-of-range position error alarm |
| 0057 | A24 | Fieldbus error alarm |
| 0058 | A25 | Fieldbus communication timeout alarm |
| 0059 | A26 | Flying start error alarm |
| 005A | A27 | STO control time elapsed alarm |
| 005B | A28 | Multi-Drive communication timeout alarm |
| 005C | A29 | Electric shaft tracking error alarm |
| 005D | / | / |
| 005E | / | / |
| 005F | / | / |
| 0080 | W1 | I2T overload protection warning |
| 0081 | W2 | IGBT overtemperature warning |
| 0082 | W3 | Control board overtemperature warning |
| 0083 | W4 | / |
| 0084 | W5 | Deceleration ramp limit warning |
| 0085 | W6 | Active speed reduction warning |
| 0086 | W7 | Undervoltage warning |
| 0087 | W8 | Overvoltage warning |
| 0088 | W9 | STO active warning |
| 0089 | W10 | High current warning |
| 008A | / | / |
| 008B | / | Default settings loaded warning |
| 008C | W13 | Fieldbus communication timeout warning |

| Modbus address [Hex] | Reference | Description |
|----------------------|--------------|--|
| 008D | W14 | Process PID standby warning |
| 008E | W15 | Positioner waiting for homing procedure warning |
| 008F | W16 | LCP 24 V overload warning |
| 0090 | W17 | Fieldbus 24 V overload warning |
| 0091 | W18 | IO-Expander terminal block 24 V overload warning |
| 0092 | W19 | Control board terminal block 24 V overload warning |
| 0093 | W20 | STO control request warning |
| 0094 | W21 | Multi-Drive communication timeout warning |
| 0095 | W22 | Broken signal cable warning |
| 00A0 | 1-2-3-1 Bit0 | Digital input 1 status (0: inactive, 1: active) |
| 00A1 | 1-2-3-1 Bit1 | Digital input 2 status (0: inactive, 1: active) |
| 00A2 | 1-2-3-1 Bit2 | Digital input 3 status (0: inactive, 1: active) |
| 00A3 | 1-2-3-1 Bit3 | Digital input 4 status (0: inactive, 1: active) |
| 00A4 | 1-2-3-1 Bit4 | STO Digital input status (0: inactive, 1: active) |
| 00A5 | 1-2-3-1 Bit5 | STO hardware input status (0: inactive, 1: active) |
| 00A6 | 1-2-3-1 Bit6 | Digital input 6 status (0: inactive, 1: active) |
| 00A7 | 1-2-3-1 Bit7 | Digital input 7 status (0: inactive, 1: active) |
| 00A8 | 1-2-3-1 Bit8 | Digital input 8 status (0: inactive, 1: active) |
| 00C0 | 1-2-3-2 Bit0 | Relay 1 status (0: inactive, 1: active) |
| 00C1 | 1-2-3-2 Bit1 | Relay 2 status (0: inactive, 1: active) |
| 00C2 | 1-2-3-2 Bit2 | Relay 3 status (0: inactive, 1: active) |
| 00C3 | 1-2-3-2 Bit3 | Relay 4 status (0: inactive, 1: active) |
| 00C4 | 1-2-3-2 Bit4 | Relay 5 status (0: inactive, 1: active) |
| 00C5 | 1-2-3-2 Bit5 | Relay 6 status (0: inactive, 1: active) |
| 00C6 | 1-2-3-2 Bit6 | Relay 7 status (0: inactive, 1: active) |
| 00C7 | 1-2-3-2 Bit7 | Relay 8 status (0: inactive, 1: active) |
| 00C8 | 1-2-3-2 Bit8 | Digital output 1 status (0: inactive, 1: active) |
| 00C9 | 1-2-3-2 Bit9 | Digital output 2 status (0: inactive, 1: active) |

Table 5: Coils table – Function Code 0x01 – 0x05 – 0x0F

| Modbus address [Hex] | Description |
|----------------------|-----------------------------------|
| 0000 | Enable PWM |
| 0001 | Enable speed reference |
| 0002 | Enable torque control |
| 0003 | Freeze ramp |
| 0004 | Enable Jog 1 |
| 0005 | Enable Jog 2 |
| 0006 | Enable Jog 3 |
| 0007 | Enable quick stop |
| 0008 | Enable Process PID |
| 0009 | Reset alarms |
| 000A | Change ramp |
| 000B | Start positioner |
| 000C | Step positioner |
| 000D | Next positioner |
| 000E | Halt positioner |
| 000F | Tip + positioner |
| 00010 | Tip - positioner |
| 00011 | Start positioner homing procedure |
| 00012 | Teach in positioner |
| 00013 | Step/halt positioner |
| 00014 | Remote control request |

Table 6: Input registers table – Function code 0x04

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 0000 | 1-2-1-1 | Motor frequency [Hz] | Float | 2 |
| 0002 | 1-2-1-2 | Motor speed [rpm] | Float | 2 |
| 0004 | 1-2-1-3 | Motor current [A] | Float | 2 |
| 0006 | 1-2-1-4 | Motor voltage [V] | Float | 2 |
| 0008 | 1-2-1-5 | Motor electric power [kW] | Float | 2 |
| 000A | 1-2-1-6 | Motor mechanical power [kW] | Float | 2 |
| 000C | 1-2-1-7 | Estimated motor torque [Nm] | Float | 2 |
| 000E | 1-2-1-8 | Motor CosPhi | Float | 2 |
| 0010 | 1-2-1-9 | Motor PTC [Ω] | Float | 2 |
| 0012 | 1-2-1-10 | DC-Link [V] | Float | 2 |
| 0014 | 1-2-1-11 | IGBT temperature [$^{\circ}\text{C}$] | Float | 2 |
| 0016 | 1-2-1-12 | Control board temperature [$^{\circ}\text{C}$] | Float | 2 |
| 0018 | 1-2-1-13 | Inverter efficiency [%] | Float | 2 |
| 001A | 1-2-1-14 | I2T inverter [%] | Float | 2 |
| 001C | 1-2-1-15 | Inverter operating hours [h] | Float | 2 |
| 001E | 1-2-1-16 | Motore operating hours [h] | Float | 2 |
| 0020 | 1-2-6-1 | STO control timeout [h] | Float | 2 |
| 0030 | 4-1-4 | Inverter power size [kW] | Float | 2 |
| 0032 | 4-1-5 | Maximum current for size [A] | Float | 2 |
| 0034 | 4-1-6 | Rated current for size [A] | Float | 2 |
| 0036 | 3-2-3-5 | Rated motor torque [Nm] | Float | 2 |
| 0050 | 1-2-2-1 | Positioner current position setpoint [unit] or [mm] or [deg] | Float | 2 |
| 0052 | 1-2-2-2 | Positioner actual position [unit] or [mm] or [deg] | Float | 2 |
| 0054 | 1-2-2-4 | Positioner selected profile | Float | 2 |
| 0056 | 1-2-2-5 | Positioner current profile | Float | 2 |
| 0070 | 1-2-3-3 | Value of analog input 1 [V] or [mA] | Float | 2 |
| 0072 | 1-2-3-4 | Value of analog input 2 [V] o [mA] | Float | 2 |
| 0074 | 1-2-3-5 | Value of analog input 3 [V] o [mA] | Float | 2 |
| 0076 | 1-2-3-6 | Value of analog output 1 [V] or [mA] or [kHz] | Float | 2 |
| 0078 | 1-2-3-7 | Value of analog output 2 [V] o [mA] | Unit | 2 |
| 0090 | 1-2-4-1 | Process PID setpoint | Float | 2 |
| 0092 | 1-2-4-2 | Process PID feedback | Float | 2 |
| 0094 | 1-2-4-3-1 | Number of slaves connected to the Multi-Drive | Float | 2 |
| 0096 | 1-2-4-3-2 | Number of enabled slaves in the Multi-Drive | Float | 2 |
| 0098 | 1-2-4-3-3 | Address of the Multi-Drive network of the controlled drive: 1 : Slave 1 (Secondary Master) 2 : Slave 2 3 : Slave 3 4 : Slave 4 5 : Slave 5 | Float | 2 |

| Modbus address [HeX] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 00A0 | 1-2-7 | Electric shaft position setpoint [deg] | Float | 2 |
| 00A2 | 1-2-8 | Electric shaft current position [deg] | Float | 2 |
| 00B0 | 1-2-5-1-1 | Profibus module transmission speed | String | 17 |
| 00C1 | 1-2-5-1-2 | Profibus module information | String | 17 |
| 00D2 | 1-2-5-1-3 | ASIC Profibus communication information | Unit | 2 |
| 00D4 | 1-2-5-1-4 | ASIC profibus communication status | Unit | 2 |
| 00D6 | 1-2-5-1-5 | ASIC profibus communication error | Unit | 2 |
| 00D8 | 1-2-5-2-1 | Profinet IP address | Unit | 2 |
| 00DA | 1-2-5-2-2 | Subnet Mask profinet | Unit | 2 |
| 00DC | 1-2-5-2-3 | Gateway profinet | Unit | 2 |
| 00DE | 1-2-5-2-4 | Profinet device name | String | 17 |
| 00EF | 1-2-5-2-5 | Profinet module information | String | 17 |
| 0100 | 1-2-5-2-6 | ASIC Profinet communication information | Unit | 2 |
| 0102 | 1-2-5-2-7 | ASIC profinet communication status | Unit | 2 |
| 0104 | 1-2-5-2-8 | ASIC profinet communication error | Unit | 2 |
| 0120 | / | Drive status Bit: 0 : Line present (1: true, 0: false) 1 : PWM (1: active, 0: inactive) 2 : Speed ref. (1: active, 0: inactive) 3 : Torque control (1: active, 0: inactive) 4 : Motor rotation direction (1: CCW, 0: CW) 5 : Motor rotating (1: true, 0: false) 6 : Setpoint reached (1: true, 0: false) 7 : Alarm status(1: true, 0: false) 8 : Warning status(1: true, 0: false) 9 : AMA procedure in progress (1: true, 0: false) 10 : Locked (1: true, 0: false) 11 : Process PID enabled (1: true, 0: false) 12 : Positioner enabled (1: true, 0: false) 13 : / 14 : / 15 : Fieldbus control active | Unit | 2 |

| Modbus address [HeX] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 0122 | / | Positioner status Bit: 0 : Line present 1 : PWM active 2 : Profile in progress 3 : Profile halted 4 : Direction (0: CW, 1: CCW) 5 : Motor rotating 6 : Setpoint reached 7 : Alarm status 8 : Warning status 9 : AMA procedure in progress 10 : Locked 11 : Homing procedure active 12 : Homing procedure inactive 13 : Fixed speed mode active 14 : / 15 : Fieldbus control active | Unit | 2 |
| 0124 | / | Alarms Bit: 0 : A1 [Short circuit] 1 : A2 [Overcurrent] 2 : A3 [IGBT Overtemperature] 3 : A4 [Control board overtemperature] 4 : A5 [Protection against I2T overload] 5 : A6 [Motor PTC protection] 6 : A7 [External alert] 7 : A8 [Undervoltage] 8 : A9 [Overvoltage] 9 : A10 [AMA error] 10 : A11 [Brake resistor overload] 11 : A12 [Motor side phase loss] 12 : A13 [Line side phase loss] 13 : A14 [Broken signal cable] 14 : A15 [Safety STO chain fault] 15 : A16 [Lack of adequate motor data] 16 : A17 [No advanced motor configuration] 17 : A18 [Hardware fault] 18 : A19 [24V undervoltage] 19 : A20 [Internal voltage fault] 20 : A21 [Dry run] 21 : A22 [Positioner limit reached] 22 : A23 [Out-of-range position error] 23 : A24 [Fieldbus error] 24 : A25 [Fieldbus communication timeout] 25 : A26 [Flying start error] 26 : A27 [STO control time elapsed] 27 : A28 [Multi-Drive communication timeout] 28 : A29 [Electric shaft tracking error] | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 0126 | / | Warning Bit: 0 : W1 [I2T overload protection] 1 : W2 [IGBT Overtemperature] 2 : W3 [Control board overtemperature] 3 : / 4 : W5 [Deceleration ramp limit] 5 : W6 [Active speed reduction] 6 : W7 [Undervoltage] 7 : W8 [Overvoltage] 8 : W9 [STO active] 9 : W10 [High current] 10 : / 11 : W12 [Default settings loaded] 12 : W13 [Fieldbus communication timeout] 13 : W14 [Process PID standby] 14 : W15 [Waiting for homing procedure] 15 : W16 [LCP 24 V overload] 16 : W17 [Fieldbus 24 V overload] 17 : W18 [IO-Expander terminal block 24 V overload] 18 : W19 [Control board terminal block 24 V overload] 19 : W20 [STO control request] 20 : W21 [Multi-Drive communication timeout] 21 : W22 [Broken signal cable] | Unit | 2 |
| 0140 | 4-1-1 | Control board serial number | String | 17 |
| 0151 | 4-1-2 | Firmware version | String | 6 |
| 0157 | 4-1-3 | Firmware revision | String | 4 |
| 015B | 4-1-7 | MotionControl firmware version | String | 6 |
| 0161 | 4-1-8 | MotionControl firmware revision | String | 4 |
| 0165 | 4-2-1 | LCP module serial number | String | 17 |
| 0176 | 4-2-2 | LCP module firmware version | String | 6 |
| 017C | 4-2-3 | LCP module firmware revision | String | 4 |
| 0180 | 4-3-3-1 | Modbus Module firmware version | String | 6 |
| 0186 | 4-3-3-2 | Modbus Module firmware revision | String | 4 |
| 018A | 4-3-4-1 | Profibus module firmware version | String | 6 |
| 0190 | 4-3-4-2 | Profibus module firmware revision | String | 4 |
| 0194 | 4-3-5-1 | Profinet module firmware version | String | 6 |
| 019A | 4-3-5-2 | Profinet module firmware revision | String | 4 |

Table 7: Holding registers table – Function code 0x03 – 0x10 – 0x17

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 0000 | 3-1-1 | Selection of unit of measurement for speed: 0 : Hz 1 : rpm | Unit | 2 |
| 0002 | 3-2-1-1 | Motor type: 0 : Asynchronous [V/f] 1 : Asynchronous [Vector] 2 : Synchronous reluctance [SSP] | Unit | 2 |
| 0004 | 3-2-1-3 | Rated motor power [kW] | Float | 2 |
| 0006 | 3-2-1-4 | Rated motor voltage [V] | Float | 2 |
| 0008 | 3-2-1-5 | Rated motor frequency [Hz] | Float | 2 |
| 000A | 3-2-1-6 | Rated motor current [A] | Float | 2 |
| 000C | 3-2-1-7 | Rated motor speed [rpm] | Float | 2 |
| 000E | 3-2-1-8 | Rated cosPhi value | Float | 2 |
| 0020 | 3-2-2-1 | Enable PTC protection 0 : Off 1 : On | Unit | 2 |
| 0022 | 3-2-2-2 | PTC alarm threshold [Ω] | Float | 2 |
| 0024 | 3-2-2-3 | Type of I2T protection: 0 : Alarm 1 : Speed reduction | Unit | 2 |
| 0026 | 3-2-2-4 | I2T time [sec] | Float | 2 |
| 0028 | 3-2-2-5 | I2T stop speed [rpm] | Float | 2 |
| 0040 | 3-2-3-1 | Permitted motor rotation direction: 0 : CW 1 : CCW 2 : Both directions | Unit | 2 |
| 0042 | 3-2-3-2 | Maximum motor current [A] | Float | 2 |
| 0044 | 3-2-3-3 | Minimum motor speed [Hz] or [rpm] | Float | 2 |
| 0046 | 3-2-3-4 | Maximum motor speed [Hz] o [rpm] | Float | 2 |
| 00C0 | 3-3-1-1 | PWM frequency: 0 : 2000 [Hz] 1 : 4000 [Hz] 2 : 6000 [Hz] 3 : 8000 [Hz] | Unit | 2 |
| 00C2 | 3-3-1-2 | Random mode 0 : Off 1 : On | Unit | 2 |
| 00E0 | 3-3-2-1 | Ramp type: 0 : Linear ramp 1 : S ramp | Unit | 2 |
| 00E2 | 3-3-2-2 | Acceleration time [sec] | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 00E4 | 3-3-2-3 | Deceleration time [sec] | Float | 2 |
| 00E6 | 3-3-2-4 | Secondary acceleration time [sec] | Float | 2 |
| 00E8 | 3-3-2-5 | Secondary deceleration time [sec] | Float | 2 |
| 00EA | 3-3-2-6 | JOG ramp time [sec] | Float | 2 |
| 00EC | 3-3-2-7 | Quick stop deceleration time [sec] | Float | 2 |
| 00EE | 3-3-2-8 | S ramp acceleration percentage [%] | Float | 2 |
| 00F0 | 3-3-2-9 | S ramp deceleration percentage [%] | Float | 2 |
| 00F2 | 3-3-2-10 | Ramp change value [Hz] or [rpm] | Float | 2 |
| 0110 | 3-3-3-1 | Reference skip 1 [Hz] or [rpm] | Float | 2 |
| 0112 | 3-3-3-2 | Reference skip 2 [Hz] or [rpm] | Float | 2 |
| 0114 | 3-3-3-3 | Reference skip 3 [Hz] or [rpm] | Float | 2 |
| 0116 | 3-3-3-4 | Reference skip 4 [Hz] or [rpm] | Float | 2 |
| 0118 | 3-3-3-5 | Delta skip [Hz] or [rpm] | Float | 2 |
| 0130 | 3-3-4-1 | V/f Boost V0 [%] | Float | 2 |
| 0132 | 3-3-4-2 | V/f V1 [%] | Float | 2 |
| 0134 | 3-3-4-3 | V/f F1 [%] | Float | 2 |
| 0136 | 3-3-4-4 | V/f V2 [%] | Float | 2 |
| 0138 | 3-3-4-5 | V/f F2 [%] | Float | 2 |
| 013A | 3-3-4-6 | V/f V3 [%] | Float | 2 |
| 013C | 3-3-4-7 | V/f F3 [%] | Float | 2 |
| 013E | 3-3-4-8 | V/f V4 [%] | Float | 2 |
| 0140 | 3-3-4-9 | V/f F4 [%] | Float | 2 |
| 0150 | 3-3-7-9 | Enabling of noise reduction: 0 : Off 1 : On | Unit | 2 |
| 0152 | 3-3-7-10 | Enabling of MaxKT 0 : Off 1 : On | Unit | 2 |
| 0154 | 3-3-7-12 | MaxKT percentage [%] | Float | 2 |
| 0170 | 3-3-8-1 | Enabling of torque control 0 : Off 1 : On | Unit | 2 |
| 0172 | 3-3-8-5-1 | Kp of the current PI | Float | 2 |
| 0174 | 3-3-8-5-2 | Ki of the current PI | Float | 2 |
| 0176 | 3-3-8-5-3 | Kp of the flux PI | Float | 2 |
| 0178 | 3-3-8-5-4 | Ki of the flux PI | Float | 2 |
| 017A | 3-3-8-5-5 | Kp of the speed PI | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 017C | 3-3-8-5-6 | Ki of the speed PI | Float | 2 |
| 017E | 3-3-8-5-7 | Kdw of the speed PI | Float | 2 |
| 0180 | 3-3-8-5-8 | Kp of the torque PI | Float | 2 |
| 0182 | 3-3-8-5-9 | Ki of the torque PI | Float | 2 |
| 0240 | 3-3-10-1 | Enable flying start 0 : Off 1 : On | Unit | 2 |
| 0242 | 3-3-10-2 | Flying start time [sec] | Float | 2 |
| 0244 | 3-3-10-3 | Flying start current [%] | Float | 2 |
| 0260 | 3-3-11-4 | Brake resistor activation time [ms] | Float | 2 |
| 0262 | 3-3-11-5 | Lock time [sec] | Float | 2 |
| 0280 | 3-4-1-1 | Type of AN1: 0 : 0 ÷ 10 V 1 : 4 ÷ 20 mA 2 : 0 ÷ 20 mA 3 : -10 ÷ +10 V | Unit | 2 |
| 0282 | 3-4-1-4 | Tipologia AN2: 0 : 0 ÷ 10 V 1 : 4 ÷ 20 mA 2 : 0 ÷ 20 mA 3 : -10 ÷ +10 V | Unit | 2 |
| 0284 | 3-4-1-7 | Tipologia AN3: 0 : 0 ÷ 10 V 1 : 4 ÷ 20 mA 2 : 0 ÷ 20 mA 3 : -10 ÷ +10 V | Unit | 2 |
| 0286 | 3-4-1-10 | Maximum speed reference [Hz] or [rpm] | Float | 2 |
| 0288 | 3-4-1-11 | Minimum speed reference [Hz] or [rpm] | Float | 2 |
| 028A | 3-4-1-12 | Maximum torque reference [Nm] | Float | 2 |
| 028C | 3-4-1-13 | Minimum torque reference [Nm] | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 02A0 | 3-4-2-1-1 | DIN1 function: 0 : Disabled 1 : Start system 2 : Change rotation direction 3 : Digital Pot. + 4 : Digital Pot. - 5 : JOG1 6 : JOG2 7 : JOG3 8 : MultiReference Bit0 9 : MultiReference Bit1 10 : MultiReference Bit2 11 : Speed/torque 12 : Reset alarms 13 : Bypass ramps 14 : External alert 15 : Frequency input 16 : Sel AN output Bit0 17 : Sel AN output Bit1 18 : Enable PWM 19 : Enable speed ref. 21 : Enable PID 22 : Change ramp 23 : Enable ramps 24 : Freeze ramp 25 : Quick stop 26 : Command posi start 27 : Command posi step 28 : Command posi next 29 : Command posi halt 30 : Command posi tip + 31 : Command posi tip - 32 : Command posi step/halt 33 : Posi start homing 34 : Posi teach in 35 : Posi + limit 36 : Posi - limit 37 : Posi home switch 38 : Posi continuous reference switch 39 : Posi profile selection bit 0 40 : Posi profile selection bit 1 41 : Posi profile selection bit 2 42 : Gearbox JOG + 43 : Gearbox JOG - | Unit | 2 |
| 02A2 | 3-4-2-1-2 | DIN2 function: (See parameter 3-4-2-1-1, Modbus address 02A0) | Unit | 2 |
| 02A4 | 3-4-2-1-3 | DIN3 function: (See parameter 3-4-2-1-1, Modbus address 02A0) | Unit | 2 |
| 02A6 | 3-4-2-1-4 | DIN4 function: (See parameter 3-4-2-1-1, Modbus address 02A0) | Unit | 2 |
| 02A8 | 3-4-2-1-7 | DIN6 function: (See parameter 3-4-2-1-1, Modbus address 02A0) | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 02AA | 3-4-2-1-8 | DIN7 function: (See parameter 3-4-2-1-1, Modbus address 02A0) | Unit | 2 |
| 02AC | 3-4-2-1-9 | DIN8 function: (See parameter 3-4-2-1-1, Modbus address 02A0) | Unit | 2 |
| 02C0 | 3-4-2-2-1 | DIN1 polarity: 0 : Positive 1 : Negative | Unit | 2 |
| 02C2 | 3-4-2-2-2 | DIN2 polarity: 0 : Positive 1 : Negative | Unit | 2 |
| 02C4 | 3-4-2-2-3 | DIN3 polarity: 0 : Positive 1 : Negative | Unit | 2 |
| 02C6 | 3-4-2-2-4 | DIN4 polarity: 0 : Positive 1 : Negative | Unit | 2 |
| 02C8 | 3-4-2-2-5 | DIN6 polarity: 0 : Positive 1 : Negative | Unit | 2 |
| 02CA | 3-4-2-2-6 | DIN7 polarity: 0 : Positive 1 : Negative | Unit | 2 |
| 02CC | 3-4-2-2-7 | DIN8 polarity: 0 : Positive 1 : Negative | Unit | 2 |
| 02E0 | 3-4-3-1 | Relay 1 function: 0 : Disabled 1 : Motor rotating 2 : Mechanical brake 3 : Speed setpoint reached 4 : Motor rotation direction (0: CW, 1: CCW) 5 : Alarm 6 : Warning 7 : Inverter thermal warning 8 : Motor thermal warning 9 : Drive ok 10 : STO active 11 : Speed setpoint reached | Unit | 2 |
| 02E2 | 3-4-3-2 | Relay 2 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 02E4 | 3-4-3-3 | Relay 3 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 02E6 | 3-4-3-4 | Relay 4 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 02E8 | 3-4-3-5 | Relay 5 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 02EA | 3-4-3-6 | Relay 6 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 02EC | 3-4-3-7 | Relay 7 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 02EE | 3-4-3-8 | Relay 8 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 02F0 | 3-4-3-9 | Delay for relay activation [sec] | Float | 2 |
| 02F2 | 3-4-3-10 | Delay for relay deactivation [sec] | Float | 2 |
| 02F4 | 3-4-3-11 | Digital output 1 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 02F6 | 3-4-3-12 | Digital output 2 function: (See parameter 3-4-3-1, Modbus address 02E0) | Unit | 2 |
| 0310 | 3-4-4-1 | Function 1 analog output 1: 0 : Disabled 1 : Speed 2 : Current 3 : DC-Link voltage 4 : Estimated torque 5 : Mechanical power | Unit | 2 |
| 0312 | 3-4-4-2 | Function 2 analog output 1: (See parameter 3-4-4-1, Modbus address 0310) | Unit | 2 |
| 0314 | 3-4-4-3 | Function 3 analog output 1: (See parameter 3-4-4-1, Modbus address 0310) | Unit | 2 |
| 0316 | 3-4-4-4 | Function 4 analog output 1: (See parameter 3-4-4-1, Modbus address 0310) | Unit | 2 |
| 0318 | 3-4-4-5 | Analog output 1 type: 1 : 0-10 V 1 : 4-20 mA 2 : 0-20 mA 3 : 0-100 kHz | Unit | 2 |
| 031A | 3-4-4-8 | Function 1 analog output 2: (See parameter 3-4-4-1, Modbus address 0310) | Unit | 2 |
| 031C | 3-4-4-9 | Function 2 analog output 2: (See parameter 3-4-4-1, Modbus address 0310) | Unit | 2 |
| 031E | 3-4-4-10 | Function 3 analog output 2: (See parameter 3-4-4-1, Modbus address 0310) | Unit | 2 |
| 0320 | 3-4-4-11 | Function 4 analog output 2: (See parameter 3-4-4-1, Modbus address 0310) | Unit | 2 |
| 0322 | 3-4-4-12 | Analog output 2 type: 1 : 0-10 V 1 : 4-20 mA 2 : 0-20 mA | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 0340 | 3-4-5-1 | Mechanical brake application: 0 : Off 1 : Static brake | Unit | 2 |
| 0342 | 3-4-5-2 | Mechanical brake engage time [sec] | Float | 2 |
| 0344 | 3-4-5-3 | Brake activation speed [Hz] or [rpm] | Float | 2 |
| 0380 | 3-5-1 | Speed reference source: 0 : Primary reference 1 : Fieldbus | Unit | 2 |
| 0382 | 3-5-2 | Source 1 primary reference: 0 : No function 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input 5 : Digital potentiometer | Unit | 2 |
| 0384 | 3-5-3 | Source 2 primary reference: 0 : No function 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input 5 : Digital potentiometer | Unit | 2 |
| 0386 | 3-5-4 | Source 3 primary reference: 0 : No function 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input 5 : Digital potentiometer | Unit | 2 |
| 0388 | 3-5-5 | Torque reference source: 0 : Secondary reference 1 : Fieldbus | Unit | 2 |
| 038A | 3-5-6 | Source 3 secondary reference: 0 : No function 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input | Unit | 2 |
| 038C | 3-5-7 | Source 3 secondary reference: 0 : No function 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 038E | 3-5-8 | Source 3 secondary reference: 0 : No function 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input | Unit | 2 |
| 0390 | 3-5-9 | Reference combination mode: 0 : Sum 1 : Exclusive | Unit | 2 |
| 0392 | 3-5-10-1 | Jog1 [Hz] or [rpm] | Float | 2 |
| 0394 | 3-5-10-2 | Jog2 [Hz] or [rpm] | Float | 2 |
| 0396 | 3-5-10-3 | Jog3 [Hz] or [rpm] | Float | 2 |
| 03B0 | 3-5-11-1 | MultiReference 1 [Hz] or [rpm] | Float | 2 |
| 03B2 | 3-5-11-2 | MultiReference 2 [Hz] or [rpm] | Float | 2 |
| 03B4 | 3-5-11-3 | MultiReference 3 [Hz] or [rpm] | Float | 2 |
| 03B6 | 3-5-11-4 | MultiReference 4 [Hz] or [rpm] | Float | 2 |
| 03B8 | 3-5-11-5 | MultiReference 5 [Hz] or [rpm] | Float | 2 |
| 03BA | 3-5-11-6 | MultiReference 6 [Hz] or [rpm] | Float | 2 |
| 03BC | 3-5-11-7 | MultiReference 7 [Hz] or [rpm] | Float | 2 |
| 03D0 | 3-5-12-1 | Digital pot. increment [%] | Float | 2 |
| 03D2 | 3-5-12-2 | Digital pot. increment time [sec] | Float | 2 |
| 03D4 | 3-5-12-3 | Reset digital pot. reference: 0 : Off 1 : On | Unit | 2 |
| 03F0 | 3-5-13-1 | Enable reference scaling: 0 : Off 1 : On | Unit | 2 |
| 03F2 | 3-5-13-2 | Source for scaling: 0 : No function 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input | Unit | 2 |
| 03F4 | 3-5-13-3 | Main reference scaling gain | Float | 2 |
| 0430 | 3-6-1 | Process PID operating mode: 0 : Off 1 : Positive correction 2 : Negative correction | Unit | 2 |
| 0432 | 3-6-2 | Physical quantity for process PID parameters : 0 : Percentage 1 : Pressure 2 : Flow 3 : Temperature | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 0434 | 3-6-3 | Unit of measurement for process PID pressure : 0 : bar 1 : psi 2 : kPa | Unit | 2 |
| 0436 | 3-6-4 | Unit of measurement for process PID flow rate: 0 : m ³ /h 1 : l/min 2 : gal/min | Unit | 2 |
| 0438 | 3-6-5 | Unit of measurement for process PID temperature: 0 : °C 1 : F 2 : K | Unit | 2 |
| 043A | 3-6-6 | Process PID setpoint source: 0 : Manual 1 : Analog input 1 2 : Analog input 2 3 : Analog input 3 4 : Frequency input 5 : Remote | Unit | 2 |
| 043C | 3-6-7 | Process PID remote reference [%] | Float | 2 |
| 043E | 3-6-8 | Process PID maximum setpoint value [unità selezionata] | Float | 2 |
| 0440 | 3-6-9 | Process PID minimum setpoint value [selected unit] | Float | 2 |
| 0442 | 3-6-10 | Process PID feedback source: 0 : Analog input 1 1 : Analog input 2 2 : Analog input 3 3 : Frequency input | Unit | 2 |
| 0444 | 3-6-11 | Process PID maximum feedback value [selected unit] | Float | 2 |
| 0446 | 3-6-12 | Process PID minimum feedback value [selected unit] | Float | 2 |
| 0448 | 3-6-13 | Process PID feedback scaling factor | Float | Float |
| 044A | 3-6-14 | Process PID proportional gain | Float | 2 |
| 044C | 3-6-15 | Process PID integral action time | Float | 2 |
| 044E | 3-6-16 | Process PID derivative action time | Float | 2 |
| 0450 | 3-6-17 | Process PID maximum output time [Hz] or [rpm] | Float | 2 |
| 0452 | 3-6-18 | Process PID minimum output time [Hz] or [rpm] | Float | 2 |
| 0470 | 3-6-19-1 | Dry run time [sec] | Float | 2 |
| 0472 | 3-6-19-2 | Minimum feedback threshold [selected unit] | Float | 2 |
| 0490 | 3-6-20-1 | Standby time [sec] | Float | 2 |
| 0492 | 3-6-20-2 | Standby hysteresis [selected unit] | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 04B0 | 3-6-21-1 | Multi-Drive:mode 0 : Off 1 : Master control 2 : Cascade control | Unit | 2 |
| 04B2 | 3-6-21-2 | Drive address in the Multi-Drive network: 1 : Slave 1 (Master secundario) 2 : Slave 2 3 : Slave 3 4 : Slave 4 5 : Slave 5 9 : Master | Unit | 2 |
| 04B4 | 3-6-21-3 | Number of drives connected in Cascade control mode | Unit | 2 |
| 04B6 | 3-6-21-4 | Enable drive alternation | Unit | 2 |
| 04B8 | 3-6-21-5 | Start error threshold [selected unit] | Float | 2 |
| 04BA | 3-6-21-6 | Start delay [sec] | Float | 2 |
| 04BC | 3-6-21-7 | Immediate start error threshold [selected unit] | Float | 2 |
| 04BE | 3-6-21-8 | Switch off delay [sec] | Float | 2 |
| 04D0 | 3-7-1 | Positioning mode: 0 : Off 1 : Sensorless | Unit | 2 |
| 04D2 | 3-7-2-1 | Positioning range: 0 : Limited 1 : Unlimited | Unit | 2 |
| 04D4 | 3-7-2-2 | Motion direction: 0 : Both 1 : Positive 2 : Negative | Unit | 2 |
| 04D6 | 3-7-2-3 | Unit of measurement: 0 : Unit chosen by the user [units] 1 : millimetres [mm] 2 : degrees [deg] | Unit | 2 |
| 04D8 | 3-7-2-4 | Numerator revolution unit [unit/rev] or [mm/rev] or [°/rev] | Float | 2 |
| 04DA | 3-7-2-5 | Denominator revolution unit | Float | 2 |
| 04DC | 3-7-2-6 | Maximum limit [units] or [mm] or [deg] | Float | 2 |
| 04DE | 3-7-2-7 | Minimum limit [units] or [mm] or [deg] | Float | 2 |
| 04E0 | 3-7-2-9 | Circular length [units] or [mm] or [deg] | Float | 2 |
| 04E2 | 3-7-2-10 | Target window [units] or [mm] or [deg] | Float | 2 |
| 04E4 | 3-7-2-11 | Slow positioning K [%] | Float | 2 |
| 04E6 | 3-7-2-12 | Fixed speed [Hz] or [rpm] | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 04E8 | 3-7-2-13 | Initial profile selection: 0 : From digital inputs 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 04EA | 3-7-3-1 | Power-On Homing: 0 : Disabled 1 : After start command 2 : After enabling | Unit | 2 |
| 04EC | 3-7-3-2 | Homing automatic request mode: 0 : Off 1 : After disabling | Unit | 2 |
| 04EE | 3-7-3-3 | Homing mode: 0 : Home switch 1 : Limit switch 2 : Mechanical stop 3 : Define home | Unit | 2 |
| 04F0 | 3-7-3-4 | Mechanical stop current [A] | Float | 2 |
| 04F2 | 3-7-3-5 | Home position [units] or [mm] or [deg] | Float | 2 |
| 04F4 | 3-7-3-6 | First Homing speed [Hz] or [rpm] | Float | 2 |
| 04F6 | 3-7-3-7 | Second Homing speed [Hz] or [rpm] | Float | 2 |
| 04F8 | 3-7-3-8 | Homing start direction: 0 : Positive 1 : Negative | Unit | 2 |
| 04FA | 3-7-3-9 | Home profile: 0 : Disabled 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 04FC | 3-7-3-10-1 | Enable continuous reference: 0 : Off 1 : On | Unit | 2 |
| 04FE | 3-7-3-10-2 | Switch acceptance range [units] or [mm] or [deg] | Float | 2 |
| 0500 | 3-7-3-10-3 | Continuous reference direction: 0 : Positive 1 : Negative | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 0502 | 3-7-3-10-4 | Switch position [units] or [mm] or [deg] | Float | 2 |
| 0504 | 3-7-4-1-1 | Profile 1 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 0506 | 3-7-4-1-2 | Profile 1 position setpoint [units] or [mm] or [deg] | Float | 2 |
| 0508 | 3-7-4-1-3 | Profile 1 steady state speed [Hz] or [rpm] | Float | 2 |
| 050A | 3-7-4-1-4 | Profile 1 acceleration time [sec] | Float | 2 |
| 050C | 3-7-4-1-5 | Profile 1 deceleration time [sec] | Float | 2 |
| 050E | 3-7-4-1-6 | Profile 1 number of repeats | Float | 2 |
| 0510 | 3-7-4-1-7 | Next profile after profile 1: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 0512 | 3-7-4-1-8 | Profile 1 activation mode: 0 : Step command 1 : Delay 2 : Next command | Uin | 2 |
| 0514 | 3-7-4-1-9 | Delay next profile after profile 1 [sec] | Float | 2 |
| 0516 | 3-7-4-2-1 | Profile 2 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 0518 | 3-7-4-2-2 | Profile 2 position setpoint [units] or [mm] or [deg] | Float | 2 |
| 051A | 3-7-4-2-3 | Profile 2 steady state speed [Hz] or [rpm] | Float | 2 |
| 051C | 3-7-4-2-4 | Profile 2 acceleration time [sec] | Float | 2 |
| 051E | 3-7-4-2-5 | Profile 2 deceleration time [sec] | Float | 2 |
| 0520 | 3-7-4-2-6 | Profile 2 number of repeats | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 0522 | 3-7-4-2-7 | Next profile after profile 2: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 0524 | 3-7-4-2-8 | Profile 2 activation mode: 0 : Step command 1 : Delay 2 : Next command | Unit | 2 |
| 0526 | 3-7-4-2-9 | Delay next profile after profile 2 [sec] | Float | 2 |
| 0528 | 3-7-4-3-1 | Profile 3 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 052A | 3-7-4-3-2 | Profile 3 position setpoint [units] or [mm] or [deg] | Float | 2 |
| 052C | 3-7-4-3-3 | Profile 3 steady state speed [Hz] or [rpm] | Float | 2 |
| 052E | 3-7-4-3-4 | Profile 3 acceleration time [sec] | Float | 2 |
| 0530 | 3-7-4-3-5 | Profile 3 deceleration time [sec] | Float | 2 |
| 0532 | 3-7-4-3-6 | Profile 3 number of repeats | Float | 2 |
| 0534 | 3-7-4-3-7 | Next profile after profile 3: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 0536 | 3-7-4-3-8 | Profile 3 activation mode: 0 : Step command 1 : Delay 2 : Next command | Unit | Float |
| 0538 | 3-7-4-3-9 | Delay next profile after profile 3 [sec] | Float | 2 |
| 053A | 3-7-4-4-1 | Profile 4 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 053C | 3-7-4-4-2 | Profile 4 position setpoint [units] or [mm] or [deg] | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 053E | 3-7-4-4-3 | Profile 4 steady state speed [Hz] or [rpm] | Float | 2 |
| 0540 | 3-7-4-4-4 | Profile 4 acceleration time [sec] | Float | 2 |
| 0542 | 3-7-4-4-5 | Profile 4 deceleration time [sec] | Float | 2 |
| 0544 | 3-7-4-4-6 | Profile 4 number of repeats | Float | 2 |
| 0546 | 3-7-4-4-7 | Next profile after profile 4: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 0548 | 3-7-4-4-8 | Profile 4 activation mode: 0 : Step command 1 : Delay 2 : Next command | Unit | 2 |
| 054A | 3-7-4-4-9 | Delay next profile after profile 4 [sec] | Float | 2 |
| 054C | 3-7-4-5-1 | Profile 5 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 054E | 3-7-4-5-2 | Profile 5 position setpoint [units] or [mm] or [deg] | Float | 2 |
| 0550 | 3-7-4-5-3 | Profile 5 steady state speed [Hz] or [rpm] | Float | 2 |
| 0552 | 3-7-4-5-4 | Profile 5 acceleration time [sec] | Float | 2 |
| 0554 | 3-7-4-5-5 | Profile 5 deceleration time [sec] | Float | 2 |
| 0556 | 3-7-4-5-6 | Profile 5 number of repeats | Float | 2 |
| 0558 | 3-7-4-5-7 | Next profile after profile 5: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 055A | 3-7-4-5-8 | Profile 5 activation mode: 0 : Step command 1 : Delay 2 : Next command | Unit | 2 |
| 055C | 3-7-4-5-9 | Delay next profile after profile 5 [sec] | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 055E | 3-7-4-6-1 | Profile 6 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 0560 | 3-7-4-6-2 | Profile 6 position setpoint [units] or [mm] or [deg] | Float | 2 |
| 0562 | 3-7-4-6-3 | Profile 6 steady state speed [Hz] or [rpm] | Float | 2 |
| 0564 | 3-7-4-6-4 | Profile 6 acceleration time [sec] | Float | 2 |
| 0566 | 3-7-4-6-5 | Profile 6 deceleration time [sec] | Float | 2 |
| 0568 | 3-7-4-6-6 | Profile 6 number of repeats | Float | 2 |
| 056A | 3-7-4-6-7 | Next profile after profile 6: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 056C | 3-7-4-6-8 | Profile 6 activation mode: 0 : Step command 1 : Delay 2 : Next command | Unit | 2 |
| 056E | 3-7-4-6-9 | Delay next profile after profile 6 [sec] | Float | 2 |
| 0570 | 3-7-4-7-1 | Profile 7 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 0572 | 3-7-4-7-2 | Profile 7 position setpoint [units] or [mm] or [deg] | Float | 2 |
| 0574 | 3-7-4-7-3 | Profile 7 steady state speed [Hz] or [rpm] | Float | 2 |
| 0576 | 3-7-4-7-4 | Profile 7 acceleration time [sec] | Float | 2 |
| 0578 | 3-7-4-7-5 | Profile 7 deceleration time [sec] | Float | 2 |
| 057A | 3-7-4-7-6 | Profile 7 number of repeats | Float | 2 |
| 057C | 3-7-4-7-7 | Next profile after profile 7: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|---|---------------|-------------|
| 057E | 3-7-4-7-8 | Profile 7 activation mode: 0 : Step command 1 : Delay 2 : Next command | Unit | 2 |
| 0580 | 3-7-4-7-9 | Delay next profile after profile 7 [sec] | Float | 2 |
| 0582 | 3-7-4-8-1 | Profile 8 positioning mode: 0 : Relative 1 : Absolute 2 : Positive continuous 3 : Negative continuous | Unit | 2 |
| 0584 | 3-7-4-8-2 | Profile 8 position setpoint [units] or [mm] or [deg] | Float | 2 |
| 0586 | 3-7-4-8-3 | Profile 8 steady state speed [Hz] or [rpm] | Float | 2 |
| 0588 | 3-7-4-8-4 | Profile 8 acceleration time [sec] | Float | 2 |
| 058A | 3-7-4-8-5 | Profile 8 deceleration time [sec] | Float | 2 |
| 058C | 3-7-4-8-6 | Profile 8 number of repeats | Float | 2 |
| 058E | 3-7-4-8-7 | Next profile after profile 8: 0 : None 1 : Profile 1 2 : Profile 2 3 : Profile 3 4 : Profile 4 5 : Profile 5 6 : Profile 6 7 : Profile 7 8 : Profile 8 | Unit | 2 |
| 0590 | 3-7-4-8-8 | Profile 8 activation mode: 0 : Step command 1 : Delay 2 : Next command | Unit | 2 |
| 0592 | 3-7-4-8-9 | Delay next profile after profile 8 [sec] | Float | 2 |
| 0610 | 3-8-1-1 | Modbus slave address | Unit | 2 |
| 0612 | 3-8-1-2 | Transmission speed: 0 : 9600 bit/s 1 : 19200 bit/s 2 : 38400 bit/s 3 : 57600 bit/s 4 : 115200 bit/s | Unit | 2 |
| 0614 | 3-8-1-3 | Enable timeout alarm: 0 : Off 1 : On | Unit | 2 |
| 0616 | 3-8-1-4 | Communication timeout [sec] | Float | 2 |
| 0630 | 3-9-1-1 | STO control request: 0 : Off 1 : On | Unit | 2 |
| 0632 | 3-9-1-2 | STO control time [h] | Float | 2 |

| Modbus address [Hex] | Parameter reference | Description | Variable type | Size [Word] |
|----------------------|---------------------|--|---------------|-------------|
| 06B0 | 3-10-1 | Electric shaft operating mode: 0 : Off 2 : Virtual master | Unit | 2 |
| 06C2 | 3-10-2-2 | Speed ratio numerator | Float | 2 |
| 06C4 | 3-10-2-3 | Speed ratio denominator | Float | 2 |
| 06C6 | 3-10-2-4 | Tracking direction: 0 : Concordant 1 : Contrary | Unit | 2 |
| 06C8 | 3-10-2-5 | Maximum position error [deg] | Float | 2 |
| 06CA | 3-10-2-6 | Reaction to tracking error: 0 : None 1 : Alarm | Unit | 2 |
| 06CC | 3-10-2-6 | JOG contribution [deg/s] | Float | 2 |
| 06E0 | 3-10-3-1 | Kp | Float | 2 |
| 06E2 | 3-10-3-2 | Ki | Float | 2 |
| 06E4 | 3-10-3-3 | Kff | Float | 2 |
| 06E6 | 3-10-3-4 | fTff | Float | 2 |
| 4000 | 1-3-1 | Drive mode: 0 : Off 1 : Manual 2 : Automatic | Unit | 2 |
| 4002 | / | Remote speed reference [Hz] or [rpm] | Float | 2 |
| 4004 | / | Remote torque reference [Nm] | Float | 2 |
| 4006 | / | Positioner MDI positioning mode: 0 : Relative 1 : Absolute | Unit | 2 |
| 4008 | / | Positioner MDI position setpoint [units] or [mm] o [deg] | Float | 2 |
| 400A | / | Positioner MDI steady state speed [Hz] or [rpm] | Float | 2 |
| 400C | / | Positioner MDI acceleration time [sec] | Float | 2 |
| 400E | / | Positioner MDI deceleration time [sec] | Float | 2 |



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