



TSC Drive

Open chain control of 3 Stepper motors with encoder



Hardware features

Power Supply

+ 24VDC \pm 20% logic section

+ 48VDC \pm 20% motor section

Self-resetting overcurrent protection

Power section protected against overcurrent with internal fuse (7A)



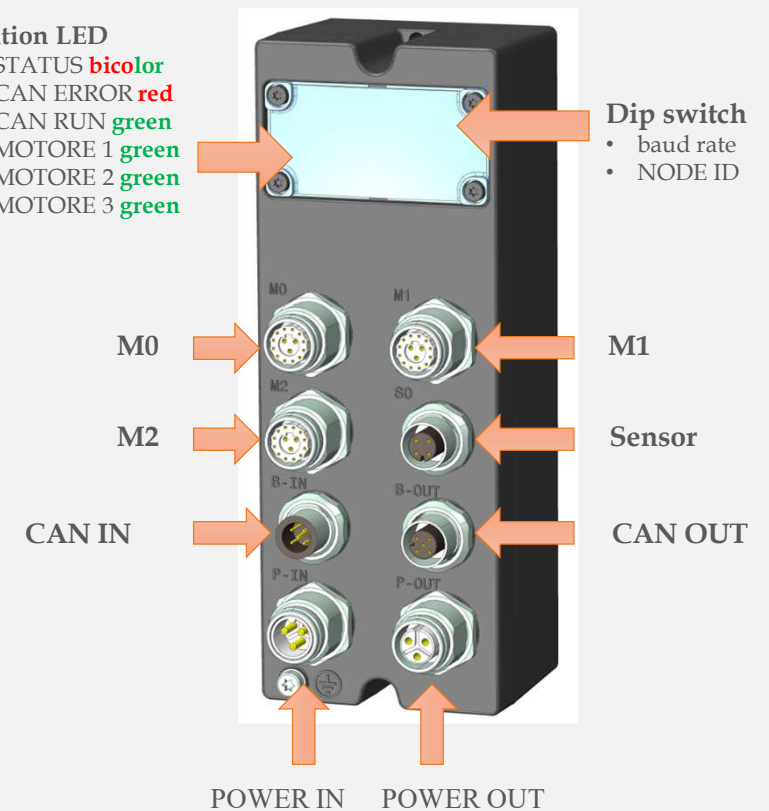
Hardware features

Connectors

- POWER IN power connector type M16 3P M
- POWER OUT power connector type M16 3P F
- CANopen IN communication connector M12 M
- CANopen OUT communication connector M12 F
- Stepper motor 0 M16 F connection connector (motor phases and position sensor) M0
- Stepper motor 1 M16 F connection connector (motor phases and position sensor) M1
- Stepper motor 2 M16 F connection connector (motor phases and position sensor) M2
- NPN digital input M8 connector

Signalation LED

- LED STATUS **bicolor**
- LED CAN ERROR **red**
- LED CAN RUN **green**
- LED MOTORE 1 **green**
- LED MOTORE 2 **green**
- LED MOTORE 3 **green**



Hardware features

Weather conditions:

- Ambient temperature: $- 5 \div 40 \text{ } ^\circ \text{C}$
- Degree of protection IP65
- Relative humidity: $10 \div 90\%$
- Maximum installation altitude: 2000 m above sea level

Installation:

- Wall mounting by means of two fixing holes
- Ideal for mounting on the machine (IP65)



Stepper Motors

Power section

- Stepper motor control with micro-steps programmable by software
- Phase current 3A RMS
- Stall torque 1.65 - 3.1 Nm
- Electronic short circuit protection
- Thermal protection with three warning levels and automatic shutdown
- Maximum motor cable length 5m



Stepper Motors

Sensor

- Acquisition of single turn absolute encoder integrated in the motor
- Encoder protection with self-resetting fuse 100mA
- Acquisition of NPN sensor for scanning functions



Software features

Communication interfaces

- CANopen communication
- DS301 device profile
- The card can be easily integrated in the most common software development environments through EDS files (for example CODESYS 3.5)

Motion profiles:

- Zero search on mechanical stop
- Speed command
- Position command

Other Features

- Position control at the end of positioning
- On-site share presets
- Torque limit setting



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Software features

Bus diagnostics function:

- Monitor RX / TX error frames on the network
- State of the leds
- Setting the dip switches

Bus monitoring function:

- Board temperature
- Current and voltage on the single motor
- Tracking error on the single engine
- Other sizes available: PowerFailCount, WarningFlag, ErrorFlag, serial number, firmware / boot version,...



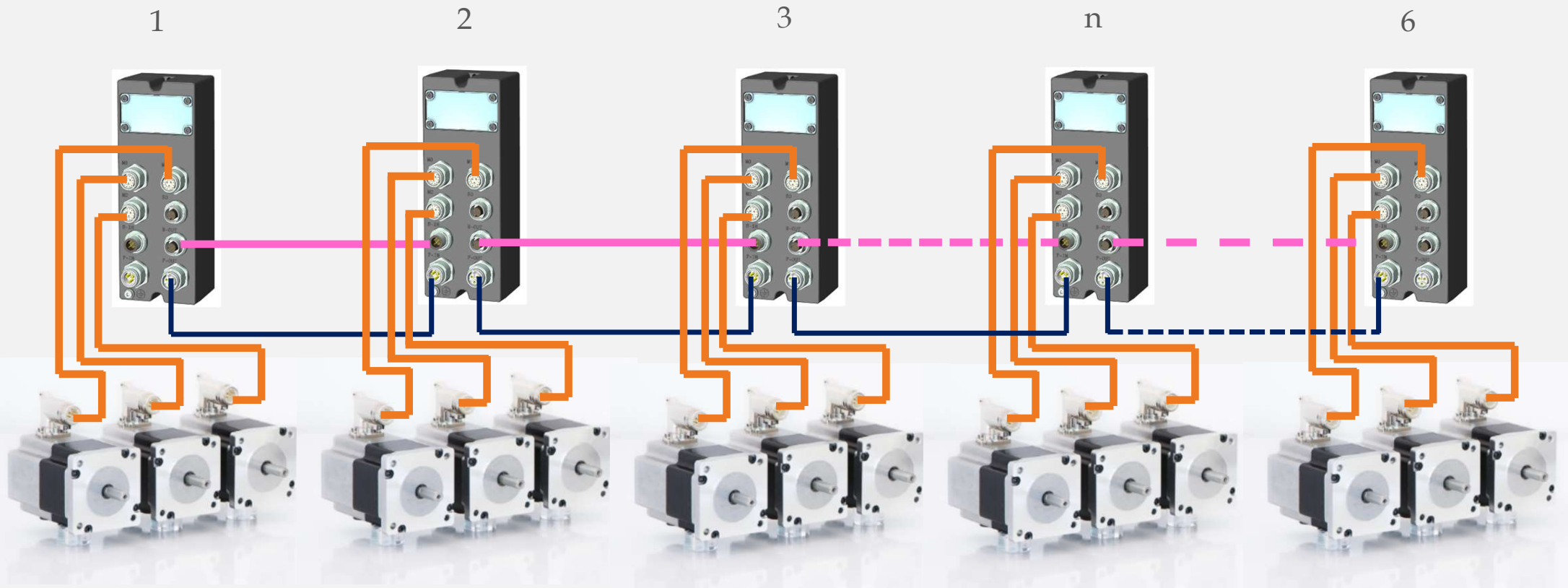
CANopen®

General features

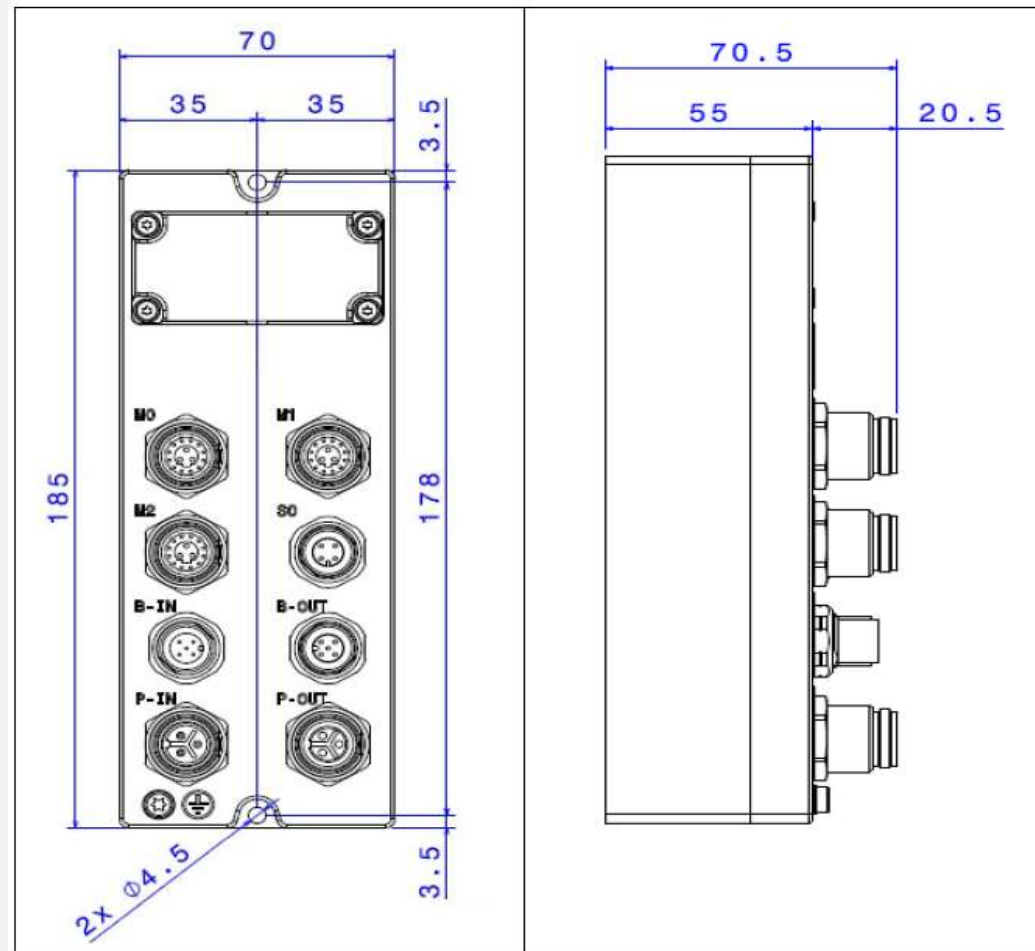
- ✓ Power supply and chain data connection
- ✓ Absolute encoder management for position verification
- ✓ Single cable for motor and absolute encoder
- ✓ IP65 protection
- ✓ Possibility to use third party motors and without encoder
- ✓ Ideal for applications where format change is required
- ✓ In applications where it is necessary to perform a motion profile with position control at the end of the profile
- x It is not suitable for applications where synchronized cam / interpolation profiles are required
- x It is not suitable for applications where high motion dynamics profiles are foreseen.



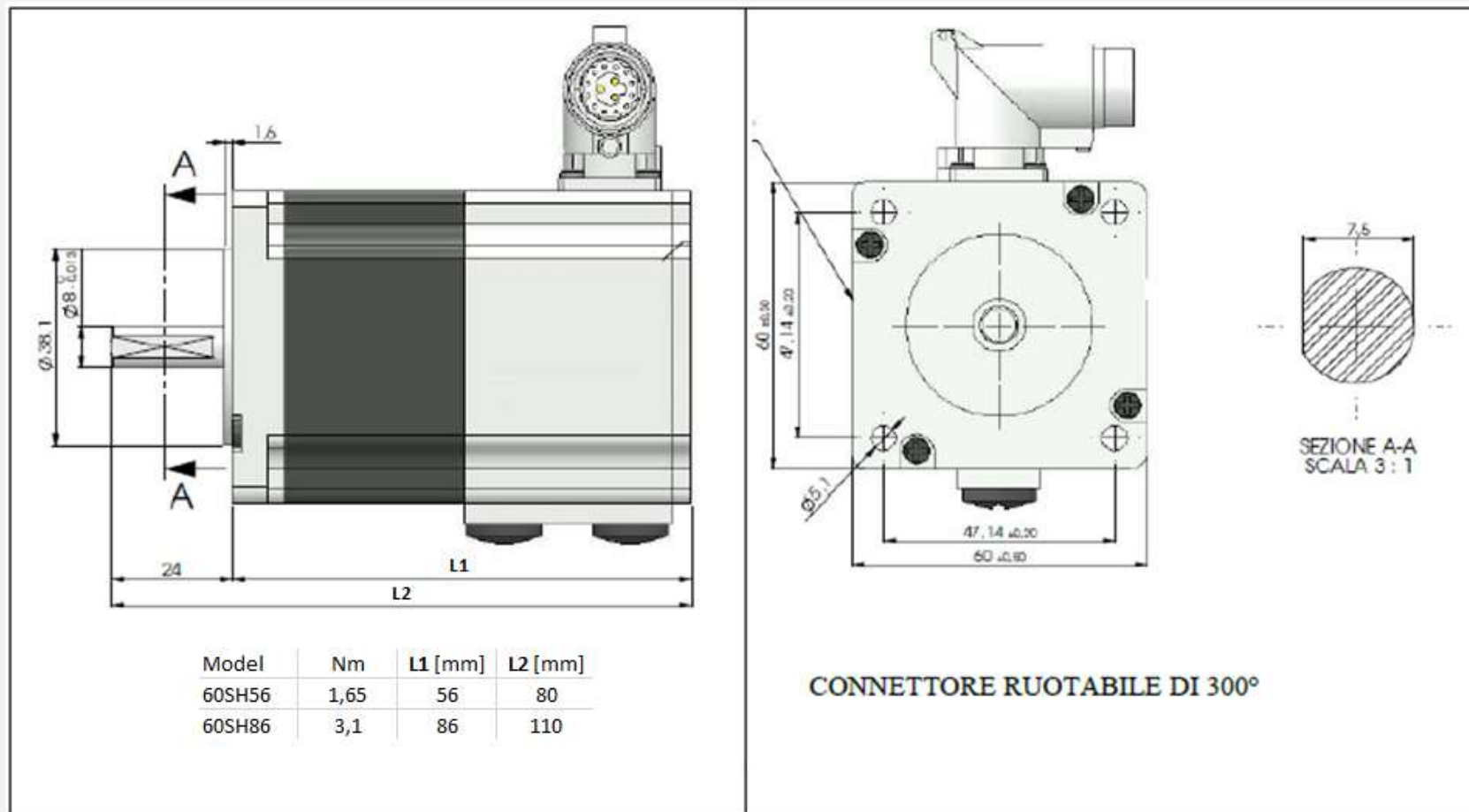
Application 18 motors - 6 drives



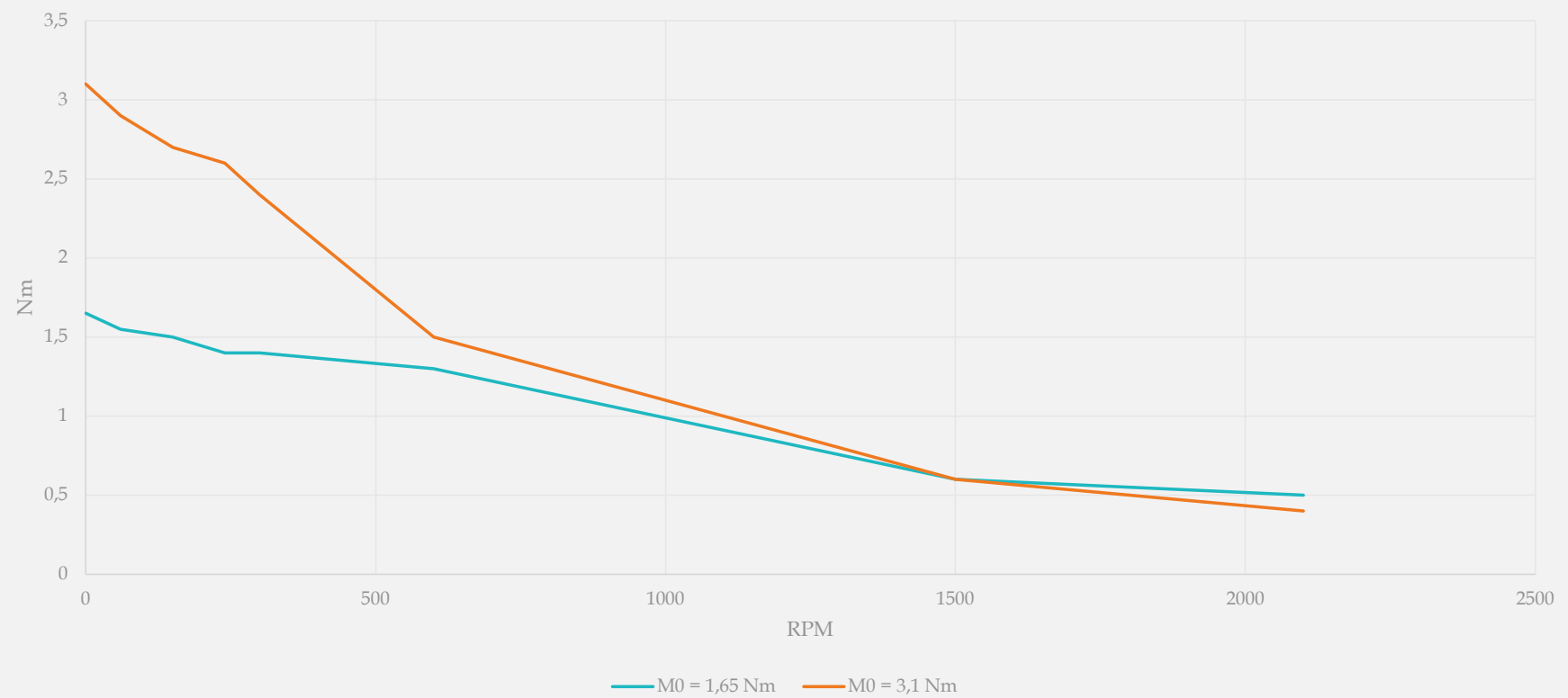
Drive - Mechanical dimensions



STEPPER MOTORS - Mechanical dimensions



Torque curves





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