



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS



# SMART MOTOR DEVICES

We design and manufacture  
DC Brush controllers  
DC Brushless controllers  
Stepper motor controllers



BLDC driver BLD-20DIN is a device designed to control 3-phase DC motors with Hall sensors. BLD-20DIN controls motor speed, acceleration and deceleration, direction. The controller has current limiting function to protect a motor.

### Technical parameters

Nominal current in motor phase	20 A
Maximum current in motor phase	80 A
Power supply	24 – 48 VDC

### Inputs for external discrete signals

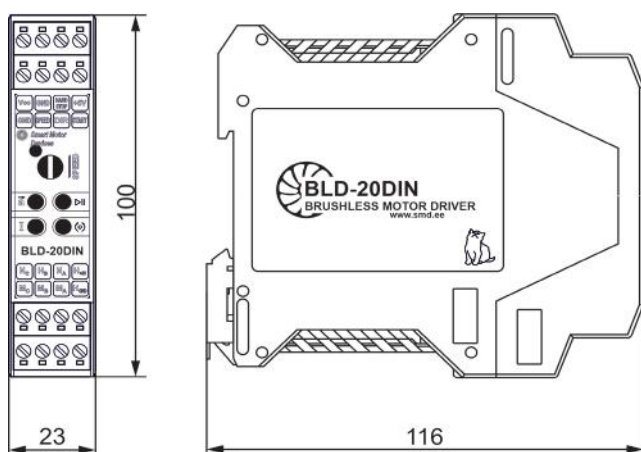
- START/STOP – to start and stop the motor
- DIR – to control the rotation direction
- HARD STOP – emergency stop signal

External signals START/STOP and DIR can be used as per the signal level or per front edge of the signal.

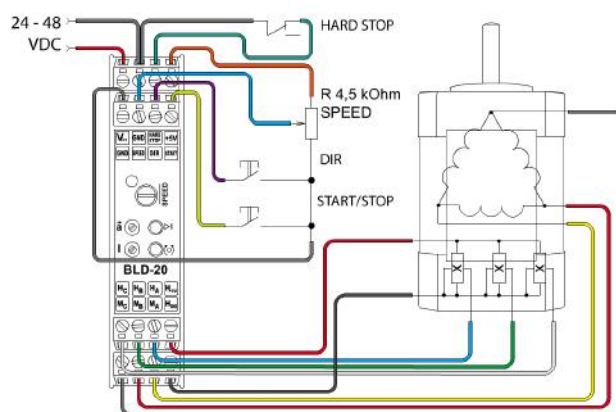
### Speed control

- Internal built-in potentiometer
- Inputs for connection of an external potentiometer
- Analog voltage signal – 0..5VDC
- Acceleration and deceleration rate is adjusted by the internal built-in potentiometer

### Dimensions



### Connection example





BLSD-20Modbus is a brushless dc motor controller for 3-phase brushless motors with Hall sensors. This intelligent controller can be pre-programmed according to the system demands and work as a standalone drive, can operate as a slave in RS-485 network or operate as a simple BLDC speed controller.

BLSD-20Modbus provides a current limiting function.

### Technical parameters

Nominal current in motor phase	20 A
Maximum current in motor phase	80 A
Power supply	24 – 40 VDC
Communication	RS-485 Modbus ASCII/RTU
Operation modes	speed and position control

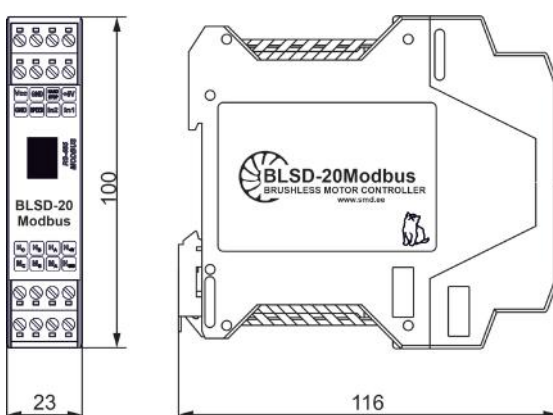
### Inputs for external discrete signals

- IN1, IN2 – programmable inputs, can be used as START/STOP and DIR signals or as discrete inputs in a user program. These inputs can be used as per a signal level or per a front edge of the signal.
- HARD STOP – emergency stop signal

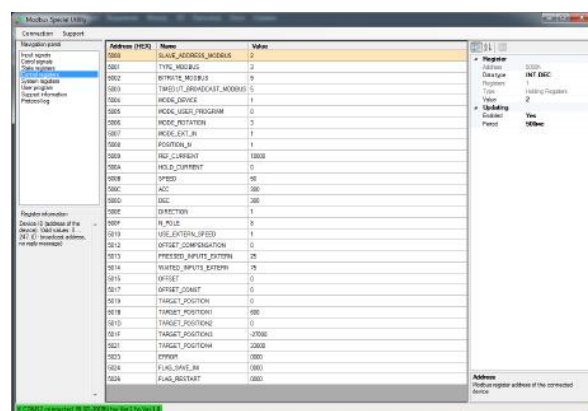
### Speed control

- Digital parameters for speed and acceleration control can be sent via RS-485 Modbus
- Inputs for connection of an external potentiometer
- HARD STOP – emergency stop signal

### Dimensions



### Software for the controller



**Address:** Tallinn Science Park Tehnopol,  
Akadeemia tee 21/6, 12618, Tallinn, Estonia  
**Phone:** +372 6559914  
**E-mail:** sales@smd.ee  
**Web:** www.smd.ee



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS



BMD-20DIN is a driver designed to control speed, direction, acceleration and deceleration of DC brush motors.

The current limiting function protects motors from overloads.

### Technical parameters

Rated current in motor phase	20 A
Phase current limitation	0.2 – 20 A
Short-circuit protection	30 A
Power supply	12 – 24 VDC

### Inputs for external discrete signals

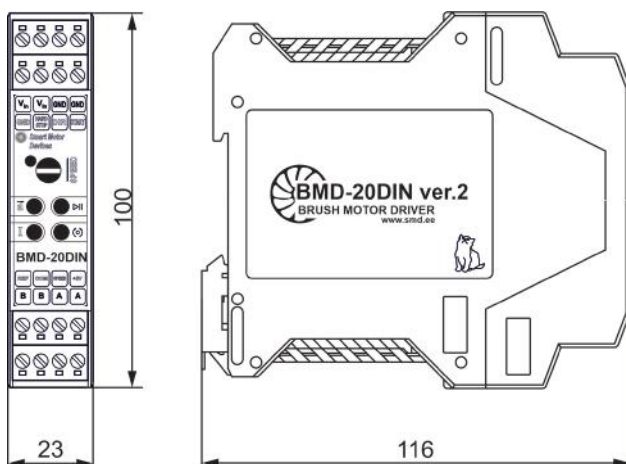
- START/STOP – to start and stop the motor
- DIR – to control the rotation direction
- HARD STOP – emergency stop signal

External signals START/STOP and DIR can be used as per the signal level or per front edge of the signal.

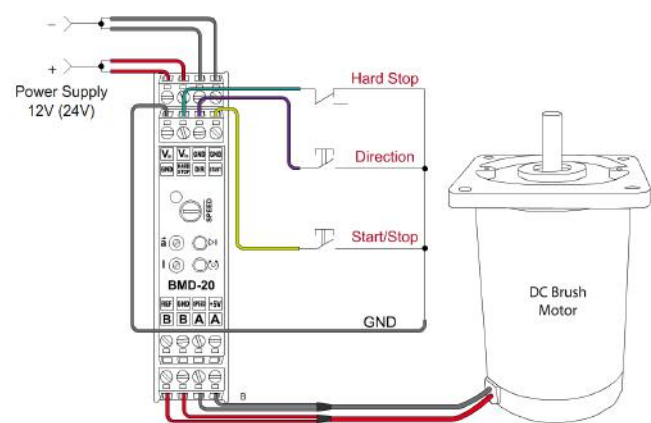
### Speed control

- Internal built-in potentiometer
- Inputs for connection of an external potentiometer
- Analog voltage signal – 0..5VDC
- Acceleration and deceleration rate is adjusted by the internal built-in potentiometer

### Dimensions



### Connection example





BMD-40DIN is a driver designed to control speed, direction, acceleration and deceleration of DC brush motors.

The current limiting function protects motors from overloads.

### Technical parameters

Rated current in motor phase	40 A
Phase current limitation	1 – 40 A
Short-circuit protection	100 A
Power supply:	12 – 24 VDC

### Inputs for external discrete signals

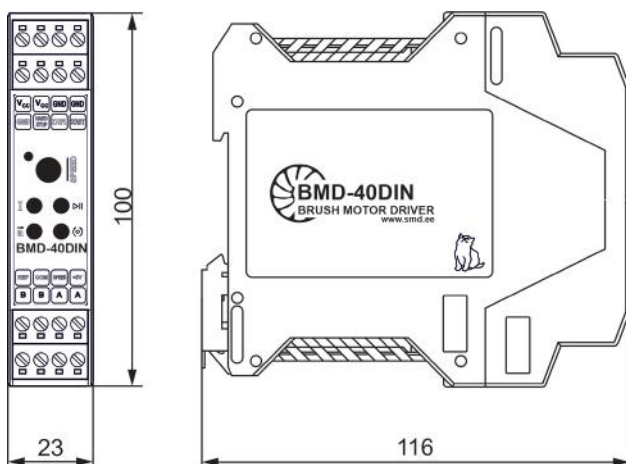
- START/STOP – to start and stop the motor
- DIR – to control the rotation direction
- HARD STOP – emergency stop signal

External signals START/STOP and DIR can be used as per the signal level or per front edge of the signal.

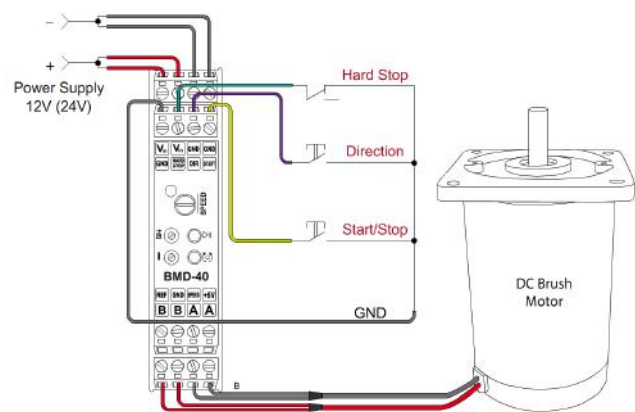
### Speed control

- Internal built-in potentiometer
- Inputs for connection of an external potentiometer
- Analog voltage signal – 0..5VDC
- Acceleration and deceleration rate is adjusted by the internal built-in potentiometer

### Dimensions



### Connection example





BMSD-20Modbus is a programmable DC brush motor controller, which is intended for speed and position control. The programming function makes it possible to compose and upload user programs to the non-volatile memory of the device.

The controllers operate as a standalone device according to a pre-programmed algorithm or as a slave in a RS-485 network.

The current limiting function protects motors from overloads.

### Technical parameters

Rated current in motor phase	20 A
Phase current limitation	1 – 20 A
Short-circuit protection	30 A
Power supply	12 – 24 VDC
Communication	RS-485 Modbus ASCII/RTU

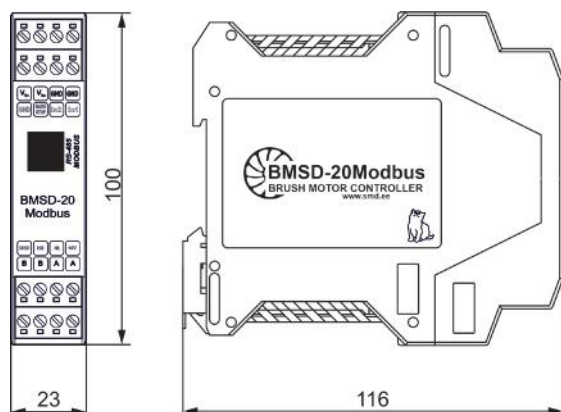
### Inputs for external discrete signals

- IN1, IN2 – programmable inputs, can be used as START/STOP and DIR signals or as discrete inputs in a user program. These inputs can be used as per the signal level or per a front edge of the signal.
- HARD STOP – emergency stop signal
- HA, HB – inputs for encoder signals for positioning and speed stabilization functions

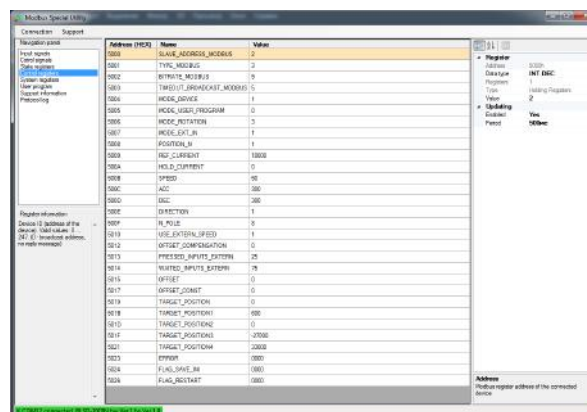
### Operation modes

- Program control – motion according to a user program
- Modbus speed control; speed stabilization is available for motors with encoder
- Position control for motors with encoder

### Dimensions



### Software for the controller





BMSD-40Modbus is a programmable DC brush motor controller, which is intended for speed and position control. The programming function makes it possible to compose and upload user programs to the non-volatile memory of the device.

The controllers operate as a standalone device according to a pre-programmed algorithm or as a slave in a RS-485 network.

The current limiting function protects motors from overloads.

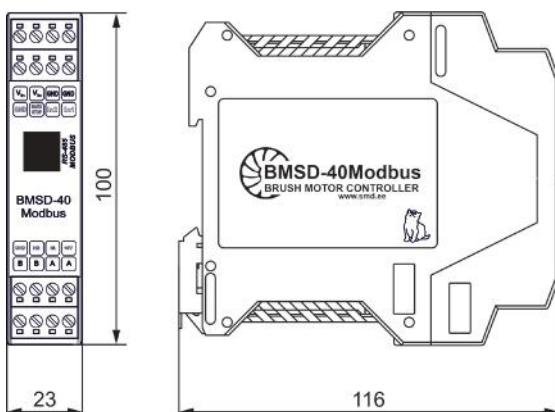
### Technical parameters

Rated current in motor phase	40 A
Phase current limitation	2 – 40 A
Short-circuit protection	100 A
Power supply	12 – 24 VDC
Communication	RS-485 Modbus ASCII/RTU

### Inputs for external discrete signals

- IN1, IN2 – programmable inputs, can be used as START/STOP and DIR signals or as discrete inputs in a user program. These inputs can be used as per a signal level or per a front edge of the signal.
- HARD STOP – emergency stop signal
- HA, HB – inputs for encoder signals for positioning and speed stabilization functions

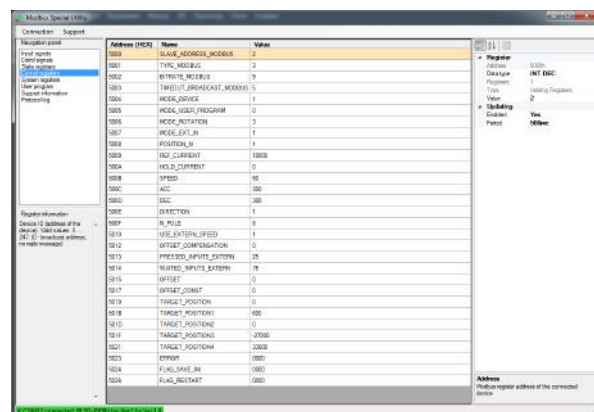
### Dimensions



### Operation modes

- Program control – motion according to a user program
- Modbus speed control; speed stabilization is available for motors with encoder
- Position control for motors with encoder

### Software for the controller



**Address:** Tallinn Science Park Tehnopol,  
Akadeemia tee 21/6, 12618, Tallinn, Estonia  
**Phone:** +372 6559914  
**E-mail:** sales@smd.ee  
**Web:** www.smd.ee



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS



SMD-1.6DIN is a driver for small and medium size stepper motors. The driver provides smooth operation and good speed-torque performance. The driver has the STO (Safe Torque Off) function which provides motor phases deenergizing in case of any alarm situation.

### Technical parameters

Max. current per phase	0.1 – 1.6 A
Supply voltage	12 – 24 VDC
Microstepping	1/1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256

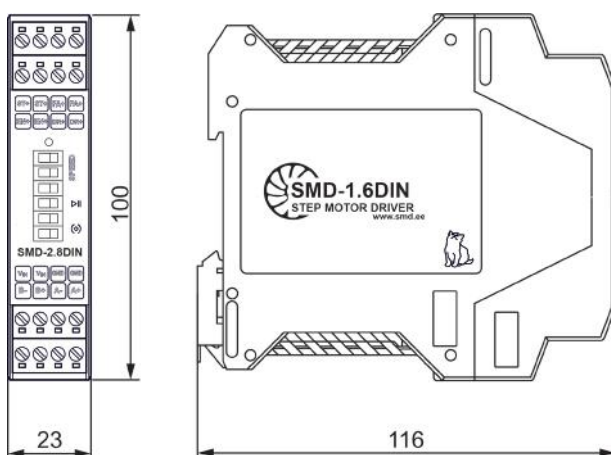
### Control signals

- STEP/DIR – voltage input signals for pulse position control
- ENABLE – voltage level input signal to control energizing of the motor phases
- FAULT – output signal for monitoring emergency situations

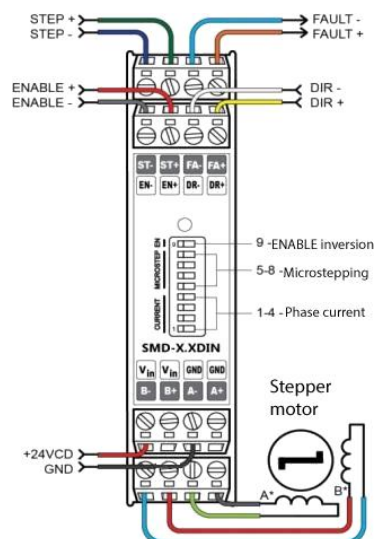
### Speed control

- Internal built-in potentiometer
- Inputs for connection of an external potentiometer
- Analog voltage signal – 0..5VDC
- Acceleration and deceleration rate is adjusted by the internal built-in potentiometer

### Dimensions



### Connection example







SMD-2.8DIN is a driver for small and medium size stepper motors. The driver provides smooth operation and good speed-torque performance. The driver has the STO (Safe Torque Off) function which provides motor phases deenergizing in case of any alarm situation.

### Technical parameters

Max. current per phase	1.3 – 2.8 A
Supply voltage	12 – 24 VDC
Microstepping	1/1, 1/2, 1/4, 1/8, 1/16 1/32, 1/64, 1/128, 1/256

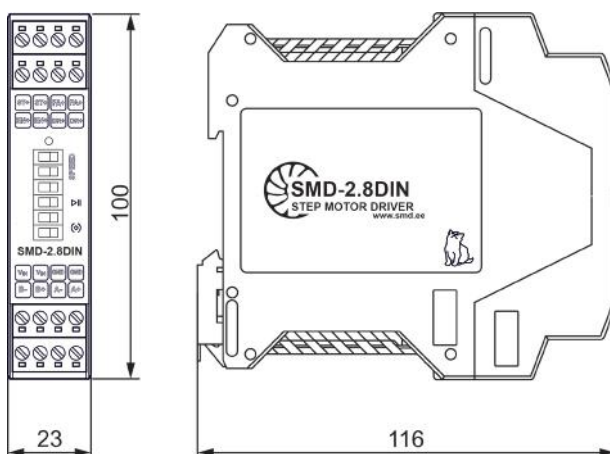
### Control signals

- STEP/DIR – voltage input signals for pulse position control
- ENABLE – voltage level input signal to control energizing of the motor phases
- FAULT – output signal for monitoring emergency situations

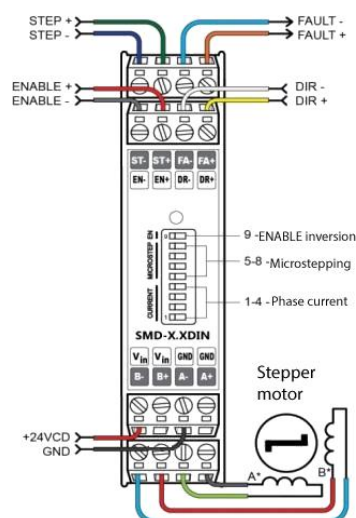
### Speed control

- Internal built-in potentiometer
- Inputs for connection of an external potentiometer
- Analog voltage signal – 0..5VDC
- Acceleration and deceleration rate is adjusted by the internal built-in potentiometer

### Dimensions



### Connection example



**Address:** Tallinn Science Park Tehnopol,  
Akadeemia tee 21/6, 12618, Tallinn, Estonia  
**Phone:** +372 6559914  
**E-mail:** sales@smd.ee  
**Web:** www.smd.ee



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS



SMD-4.2DIN ver.2 is a stepper motor driver with advanced functionality. The driver is designed to control two and four-phase hybrid stepper motors and delivers high dynamics that accelerates the motor to over 1000 rpm in a fraction of a second and easily reaches operating speeds of over 4000 rpm while maintaining enough torque to perform useful work.

The driver has inputs for brake resistor connecting.

### Technical parameters

Max. current per phase	0.1 – 4.2 A
Supply voltage	12 – 24 VDC
Microstepping	1/1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128

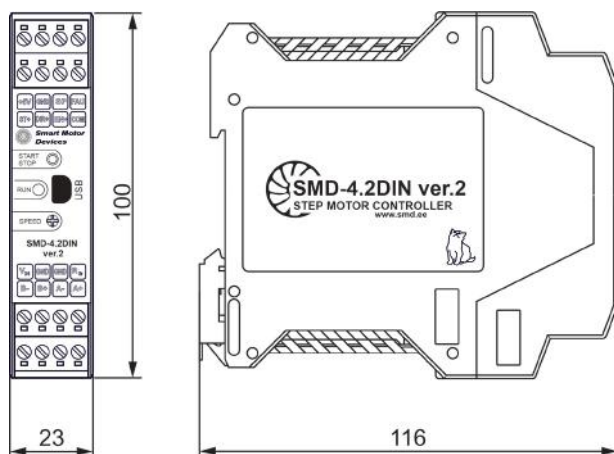
### Operation modes

- STEP/DIR Pulse position control
- Analog speed control – 0...5 VDC or potentiometer
- Analog control of rotation angle – 0...5 VDC or potentiometer
- Constant speed rotation

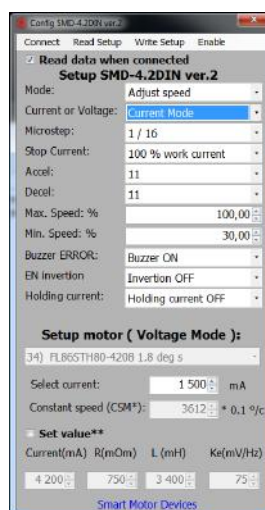
### Phases commutating methods

- Current control – provides higher torque and excellent dynamics
- Voltage control – provides smooth silent motion and microstepping up to 1/128

### Dimensions



### Software for the controller





SMD-8.0DIN ver.2 is a stepper motor driver with advanced functionality. The driver is designed to control two and four-phase hybrid stepper motors and delivers high dynamics that accelerates the motor to over 1000 rpm in a fraction of a second and easily reaches operating speeds of over 4000 rpm while maintaining enough torque to perform useful work.

### Technical parameters

Max. current per phase	1.0 - 8.0 A
Supply voltage	24 - 48 VDC
Microstepping	1/1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128

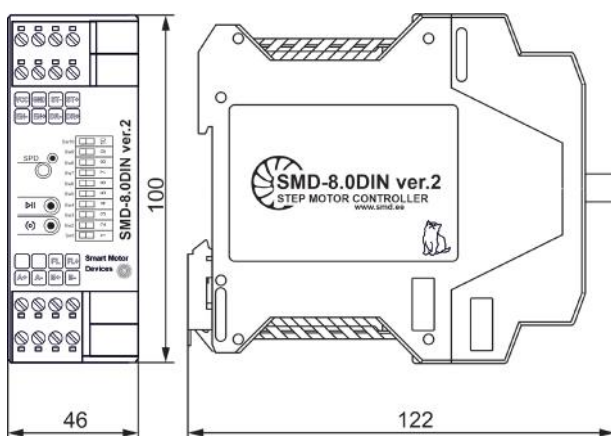
### Operation modes

- STEP/DIR Pulse position control
- Analog speed control – 0...5 VDC or potentiometer
- Analog control of rotation angle – 0...5 VDC or potentiometer
- Constant speed rotation

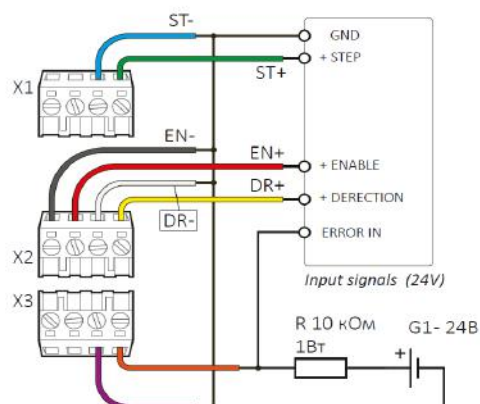
### Phases commutating methods

- Current control – provides higher torque and excellent dynamics
- Voltage control – provides smooth silent motion and microstepping up to 1/128

### Dimensions



### Connection example



**Address:** Tallinn Science Park Tehnopol,  
Akadeemia tee 21/6, 12618, Tallinn, Estonia  
**Phone:** +372 6559914  
**E-mail:** sales@smd.ee  
**Web:** www.smd.ee



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS

# SMSD-4.2CAN

## STEP MOTOR CONTROLLER



SMSD-4.2CAN is a step motor controller with CANopen communication protocol. It is designed by our engineers for medium size stepper motors. The CANopen protocol has a wide range of features for synchronization and synchronous operation of few controllers.

### Technical parameters

Max. current per phase	1.0 – 4.2 A
Supply voltage	12 – 48 VDC
Microstepping	1/1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128
Communication interfaces	CAN, USB

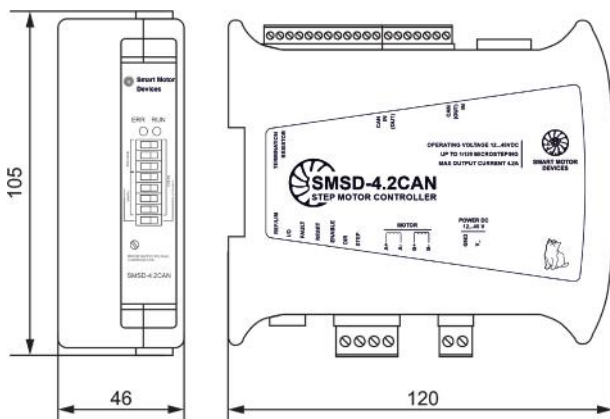
### Operation modes

- CANopen velocity control
- CANopen position control
- CANopen homing function
- STEP/DIR pulse position control

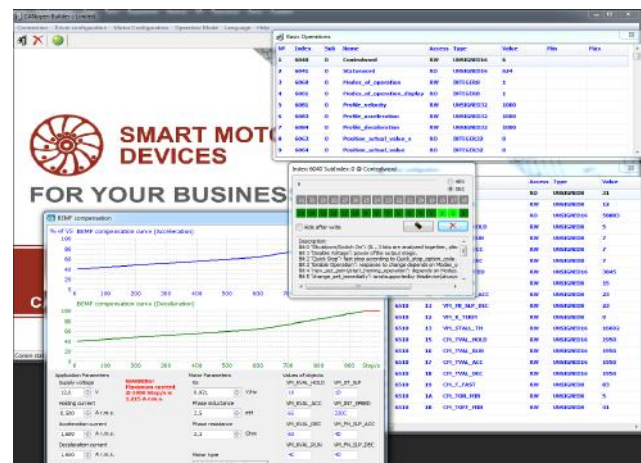
### Additional features

- Using of custom measurement units
- Taking into account reduction ratios in case of gearhead is used
- The position control can be implemented as a relative or absolute displacement

### Dimensions



### Software for the controller



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS



SMSD-4.2LAN is a step motor controller with advanced functionality. It is designed by our engineers for medium size stepper motors. The controller is designed for an Ethernet connection and can be remotely controlled using a local network. USB connection is also provided. The controller operates as a standalone device according to a pre-programmed algorithm or as a slave with an external master device. The controller has inputs for a brake resistor connecting.

### Technical parameters

Max. current per phase	0.1 – 4.2 Amp
Supply voltage	24 – 48 VDC
Microstepping	1/1, 1/2, 1/4, 1/8, 1/16 (1/32, 1/64, 1/128 – for some motor models)
Communication interfaces	Ethernet, USB

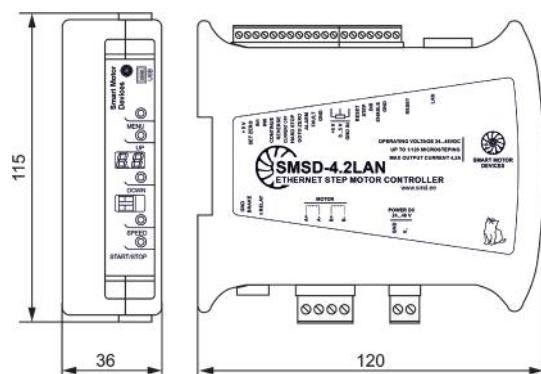
### Inputs for external discrete signals

- IN1, IN0 – programmable inputs
- HARD STOP – emergency stop signal
- SET\_ZERO and GOTO ZERO – inputs for homing procedure
- CURRENT OFF, CONTINUE, REVERSE – additional inputs for advanced functions

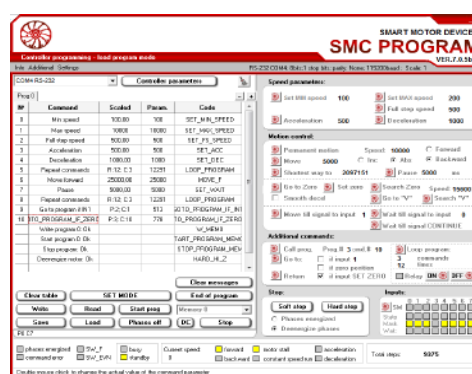
### Operation modes

- Program control – motion according to a user program
- Direct control mode – real-time executing of commands from a master device
- Analog speed control – 0...5 V, external or built-in potentiometer
- Analog angle control – 0...5 V, external or built-in potentiometer
- STEP/DIR pulse position control

### Dimensions



### Software for the controller



**Address:** Tallinn Science Park Tehnopol, Akadeemia tee 21/6, 12618, Tallinn, Estonia  
**Phone:** +372 6559914  
**E-mail:** sales@smd.ee  
**Web:** www.smd.ee



**SMART MOTOR DEVICES**  
 DRIVERS AND CONTROLLERS FOR ELECTROMOTORS



SMSD-4.2RS is a programmable step motor controller with RS-232 and RS-485 communication interfaces.

The controller operates as a standalone device according to a pre-programmed algorithm or as a slave with an external master device.

### Technical parameters

Max. current per phase	0.4 – 4.2 A
Supply voltage	12 – 48 VDC
Microstepping	1/1, 1/2, 1/4, 1/16
Communication interfaces	RS-232, RS-485

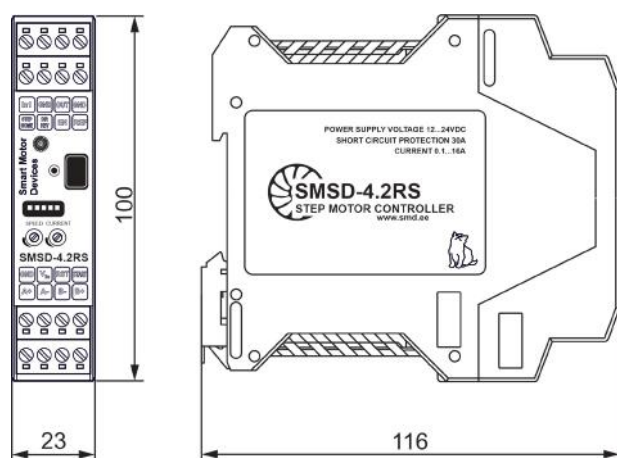
### External discrete signals

- IN1 and IN2 – programmable inputs
- START/STOP – input to start and stop a motor
- REVERSE – input signal for changing rotation direction
- START ZERO POSITIONING and HOME – inputs for a homing procedure
- RELAY – programmable output

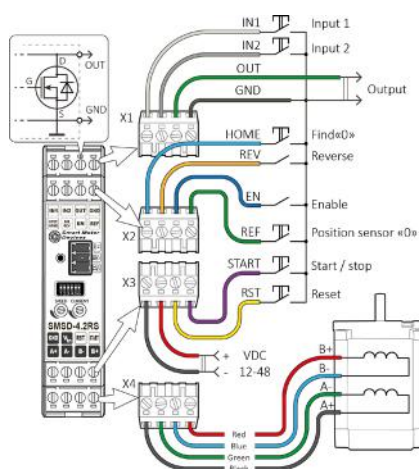
### Operation modes

- Program control – motion according to a user program
- Direct control mode – real-time executing of commands from a master device
- Analog speed control – built-in potentiometer
- STEP/DIR pulse position control

### Dimensions



### Connection example



# SMSD-8.0LAN

## STEP MOTOR CONTROLLER



SMSD-8.0LAN is a step motor controller with advanced functionality. It is designed by our engineers for medium size stepper motors. The controller is designed for an Ethernet connection and can be remotely controlled using a local network. USB connection is also provided.

The controller operates as a standalone device according to a pre-programmed algorithm or as a slave with an external master device.

The controller has inputs for a brake resistor connecting.

### Technical parameters

Max. current per phase	1.0 – 8.0 A
Supply voltage	24 – 48 VDC
Microstepping	1/1, 1/2, 1/4, 1/8, 1/16 (1/32, 1/64, 1/128 – for some motor models)
Communication interfaces	Ethernet, USB

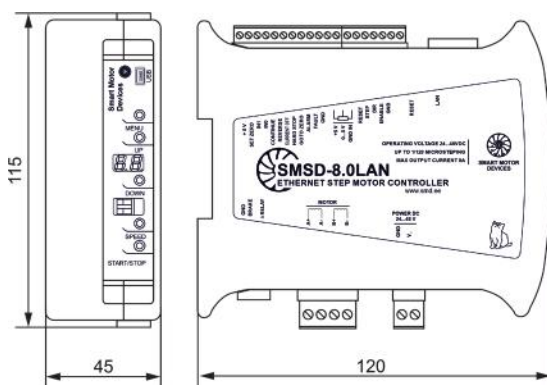
### Inputs for external discrete signals

- IN1 and IN2 – programmable inputs
- HARD STOP – emergency stop signal
- SET\_ZERO and GOTO ZERO – inputs for homing procedure
- CURRENT OFF, CONTINUE, REVERSE – additional inputs for advanced functions

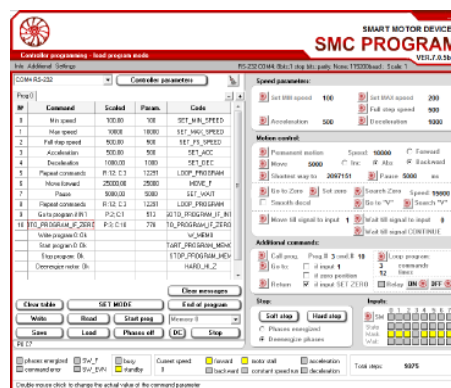
### Operation modes

- Program control – motion according to a user program
- Direct control mode – real-time executing of commands from a master device
- Analog speed control – 0...5 V built-in potentiometer
- Analog angle control – 0...5 V, external or built-in potentiometer
- STEP/DIR pulse position control

### Dimensions



### Software for the controller



**Address:** Tallinn Science Park Tehnopol,  
Akadeemia tee 21/6, 12618, Tallinn, Estonia  
**Phone:** +372 6559914  
**E-mail:** sales@smd.ee  
**Web:** www.smd.ee



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS



## **ABOUT US**

Smart Motor Devices Ltd. is an Estonian privately owned company founded in Tallinn in 2010.

We are a professional motor driver and controller manufacturer from Europe. We sell thousands of smart devices for various areas of different industries worldwide annually.

Our controller product line consists of 5 major types of drivers and controllers: drivers and controllers for stepping motors, integrated drivers for stepping motors, brush motor controllers, brushless motor controllers, and integrated drivers for brushless motors.

We provide our smart products to a wide range of companies for the following applications: packing machines, CNC machines, robotics, vending machines, textile machines, metalworking and wood machines, health care equipment, household appliance products, etc.

Our engineering team has many years of experience in designing and implicating new engineering solutions into the modern world of advanced technologies. We produce products of the finest quality and providing our clients with after-sale service and support on the highest level is our number one priority.

Besides our production line in Estonia, where we base, we have a factory in China, that allows us to provide European quality and to keep the prices on the competitive level with Asian producers. One of our goals is to customize your industrial applications for maximum performance. Our engineering team will develop hardware, firmware and software solutions directly for the needs of the specific project. We can also provide OEM customers with exclusive solutions and products.

Our main goal is to provide our clients with high-end engineering solutions for their needs and projects on a professional level in order to establish a client-friendly environment for our present and future customers.



**SMART MOTOR DEVICES**  
DRIVERS AND CONTROLLERS FOR ELECTROMOTORS