

SMSD-4.2 RS-232 and SMSD-4.2 RS-485

Step motor controllers SMSD-4.2RS-232 and SMSD-4.2RS-485 are modified and updated version of standard controllers [SMSD-4.2](#). Communication interfaces have been changed in these new models. Instead of USB, RS-232 or RS-485 are used. A new case makes it possible to fix the controller onto a DIN bar, making it more suitable for a mass production environment.

Programmable controllers SMSD-4.2RS-232 and SMSD-4.2RS-485 are intended for control of step motors with phase current up to 4.2A.

Controllers SMSD-4.2 with RS-232 or RS-485 enable the control of direction, speed and acceleration of a compatible motor. It operates with complex executable programs and records them in a non-volatile memory.

SMSD-4.2RS-series work in standalone mode or when connected to a PLC or computer (with RS-232 or RS-485 interface via COM-port or transducer USB-RS232 or USB-RS485). Controllers also operate on a [HMI-panel](#) using a SMC-program.

It is possible to receive and send signals from and to external devices and sensors.

The main parameters of programmable stepmotor controllers SMSD-4.2RS-232 and SMSD-4.2RS-485

- Max. current per phase: 0.42 - 4.2Amp
- Power supply: 12-48VDC
- Microstepping mode: 1, 1/2, 1/4, 1/16

Main Functions and capabilities

- Step motor control via program, stored in device
- Record, changing and reading programme control into/from internal nonvolatile ROM
- Self-contained operation without PC or external controller
- Computer control using COM-port (RS-232, RS-485)
- Operating on HMI-panel via RS232-interface and RS485-interface
- Manual operation
- Homing function
- Automatic engine stop after receiving signal from critical sensor
- Automatic reversal of motor rotation after receiving signal from reverse sensor
- Timing capability of several SMSD controllers

The control modes of SMSD-4.2RS-232 and SMSD-4.2RS-485

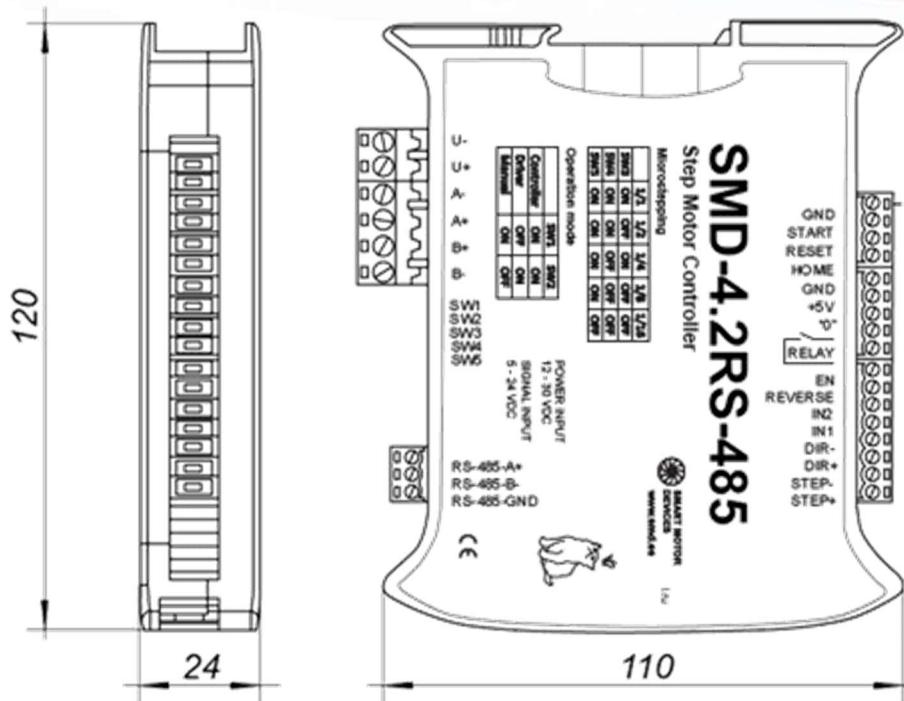
- **Program mode** - this mode is widely used for cycle and repetitive actions. The motion algorithm recorded from a PC or PLC (RS-232 or RS-485 interfaces) to a nonvolatile memory of the controller and afterwards can be executed as per input signal or as per a command from a PC or PLC. Please refer to the user manual for a full list of executing commands. Special software for program assembling and downloading to the controller is provided by our company for free. [HMI](#) with preloaded software is provided by our company as well.
- **Direct control mode** - control stepmotor in real-time mode by commands, set from a computer or PLC. The controller executes every command as it is received from a computer. Temporary memory storage and cycles are also possible in this mode. Refer to the user manual for a full list of executing commands.
- **Analog speed control** - manual mode - it is used for smooth speed regulation without communication interface connection. The motor speed is proportional to analog voltage signal, potentiometer regulation is also possible. Direction and start/stop are controlled by digital inputs.
- **Pulse position control STEP/DIR** - the standard position control mode, motor speed is proportional to a STEP voltage signals frequency, displacement is proportional to a STEP signals quantity. Rotation direction depends on a voltage level at DIR input.
- **Pulse position control A-phase and B-phase 90° different** - position control mode with 2-phase control pulse train, A and B phases difference is 90°. Motor speed is proportional to pulses frequency, displacement is proportional to a pulses quantity. Rotation direction depends on a leading phase - A or B.

Digital inputs/outputs of stepmotor controllers SMSD-4.2RS-232 and SMSD-4.2RS-485

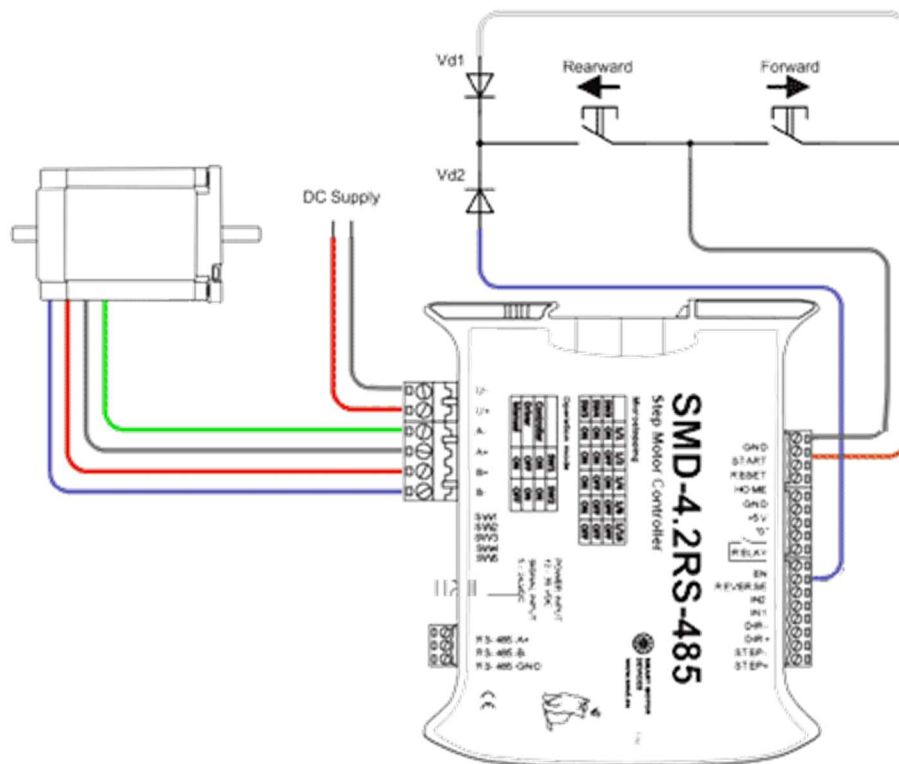
- **Start/Stop** (input, valid for program and analog control modes)
- **Reverse** (input, valid for program and analog control modes)
- **Motion enable** (input, valid for program, direct control, analog speed control and pulse position control modes)
- **Start zero positioning** (input, valid for program control mode)

- **"Home" position** (input, valid for program control mode)
- **Relay** (output, valid for program control mode)
- **Inp1 and Inp2** - (programmable inputs, valid for program control mode)

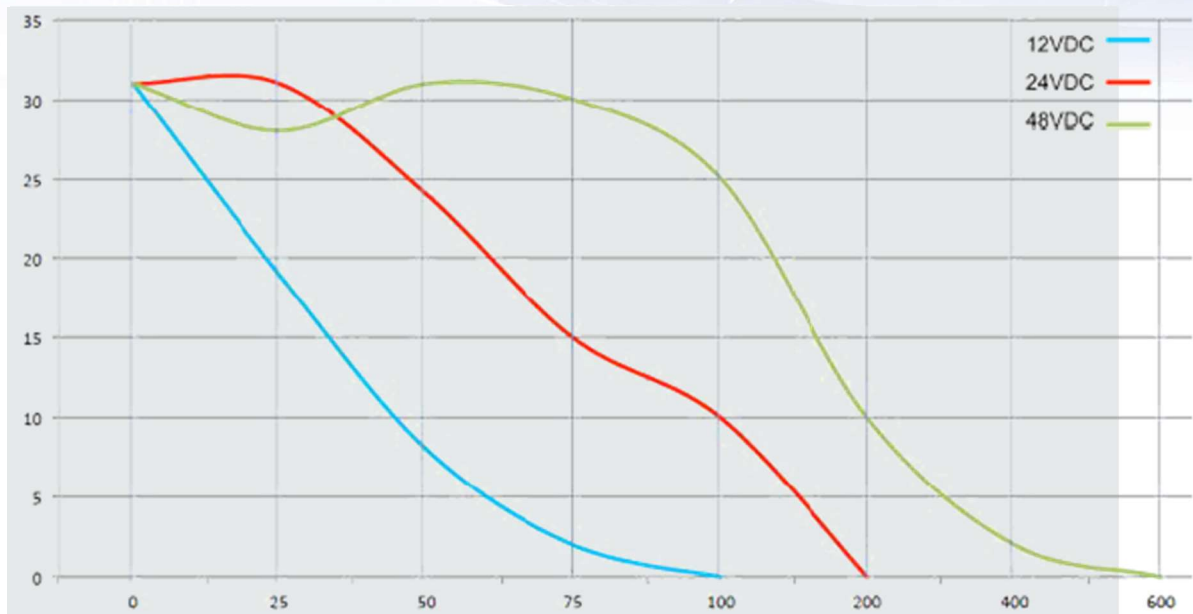
Dimensions of programmable step motor controller SMSD-4.2RS-232 and SMSD-4.2RS-485:



Connection example for reversion motion in manual mode, with diodes (firmware modification required):



Speed-torque curve for SMSD-4.2 with stepper motor SM8680:



X-axis - rotation speed, rpm; Y-axis - torque, kgf*cm
Measurement conditions: microstepping - 1/2, current per phase - 4.2Amp, serial connection