

SMARTDRIVE-S3 belongs to the bipolar stepper motor position controllers family. It is a complete ready-to-run unit, comprising a programmable positioning controller, the PWM power output stage, and all the necessary control interfaces. Predefined motion control sequences can be executed autonomously. Additional profiles can be specified via the serial bus whenever required. The output stage features two high performance sinusoidal current control loops. External interfaces comprises opto-isolated control I/Os, limit switch inputs, analog inputs, an incremental encoder interface and a serial communication port.

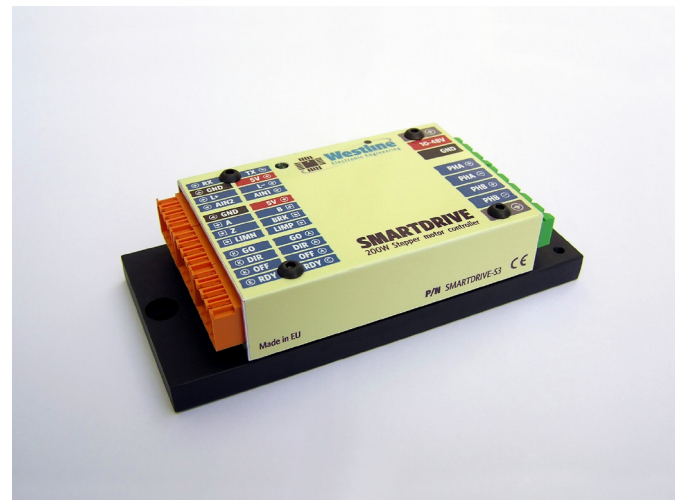
All parameters and controller firmware are accessible over the serial interface using a Windows-based software.

Advantages

- Integrated speed and positioning controller
- Integrated power driver with thermal and short-circuit protection
- Operation in micro-step mode
- Programmable idle, running and acceleration currents
- Programmable acceleration and speed limits
- Limit and home switches handling
- Autonomous operation or externally driven
- Accepts industry-standard step-and-direction control mode
- Small size and quiet operation

Applications

- Special machinery
- Simple positioning systems
- Pneumatic actuator replacement



Technical Specifications

Power supply	10 ÷ 48 V _{DC} [†]
Phase current	0 ÷ 3 A _{RMS}
Analog inputs/outputs	0 ÷ 5 V
Digital inputs/outputs	TTL
Encoder inputs	TTL
Isolated digital inputs	0 ÷ 24 V
Isolated digital outputs	0 ÷ 24 V / 100 mA max.
µStep resolution	1 ÷ 2048 µstep / full step
Position range	-2 ³¹ ÷ 2 ³¹ - 1 µstep
Speed range	0 ÷ 3000 rpm
Acceleration range	0 ÷ 30000 rpm/s
External clock frequency on A/B inputs	0 ÷ 12 MHz
External clock frequency on GO/DIR inputs	0 ÷ 200 kHz
Serial interface	RS232 [‡] and RS485
Weight	175 g

[†] 5V on request

[‡] 2 m maximum distance

Order Code

SMARTDRIVE-S3

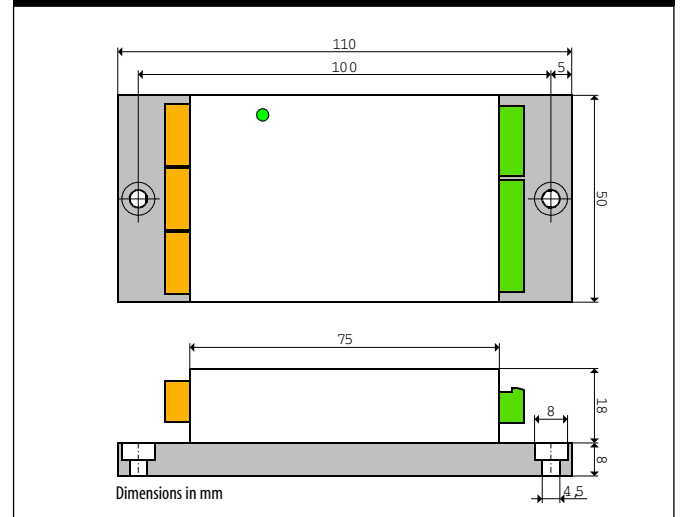
External Connections

RXD (RS232)	• RX	• TX	TXD (RS232)	• SHLD	shield
ground	• GND	• +5V	5V output / 100 mA	• +VS	power supply
L+ (RS485)	• L+	• L-	L- (RS485)	• GND	ground
analog input	• AIN2	• AIN1	analog input (speed)		
ground	• GND	• +5V	5V output / 100 mA	• PHA+	A+ motor phase
phase A encoder input	• A	• B	phase B encoder input	• PHA-	A- motor phase
index encoder input	• Z	• BRK	digital output	• PHB+	B+ motor phase
negative limit switch input	• LIMN	• LIMP	positive limit switch input	• PHB-	B- motor phase
				• SHLD	shield
GO input cathode	• GO _k	• GO _A	GO input anode		
DIR input cathode	• DIR _k	• DIR _A	DIR input anode		
OFF input cathode	• OFF _k	• OFF _A	OFF input anode		
RDY output emitter	• RDY _ε	• RDY _c	RDY output collector		

Recommended connectors

- Weidmüller B2L 3.5/8, 8 way socket block, RS 382-9602
- Phoenix Contact COMBICON MSTB 2.5/3-ST-5.08, 3 way straight plug, RS 189-6026
- Phoenix Contact COMBICON MSTB 2.5/5-ST-5.08, 5 way straight plug, RS 189-6048

Dimensions



SMARTDRIVE-S10 belongs to the bipolar stepper motor position controllers family. It is a complete ready-to-run unit, comprising a programmable positioning controller, the PWM power output stage, and all the necessary control interfaces. Predefined motion control sequences can be executed autonomously. Additional profiles can be specified via the serial bus whenever required. The output stage features two high performance sinusoidal current control loops. External interfaces comprises opto-isolated control I/Os, limit switch inputs, analog inputs, an incremental encoder interface and a serial communication port.

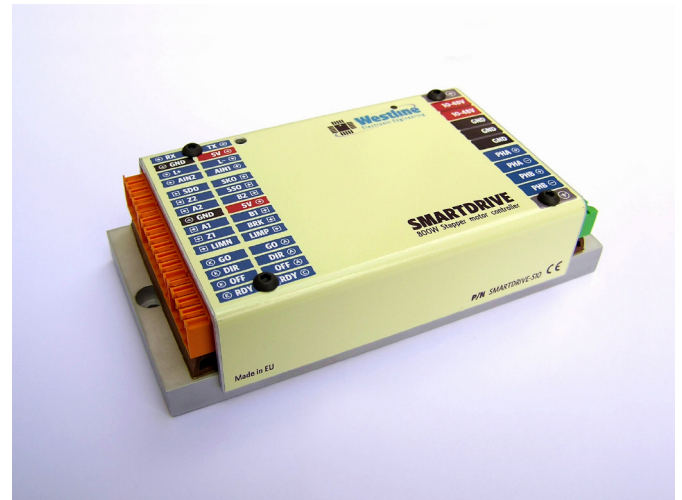
All parameters and controller firmware are accessible over the serial interface using a Windows-based software.

Advantages

- Integrated speed and positioning controller
- Integrated power driver with thermal and short-circuit protection
- Operation in micro-step mode
- Programmable idle, running and acceleration currents
- Programmable acceleration and speed limits
- Limit and home switches handling
- Autonomous operation or externally driven
- Accepts industry-standard step-and-direction control mode
- Small size and quiet operation

Applications

- Special machinery
- Simple positioning systems
- Pneumatic actuator replacement



Technical Specifications

Power supply	10 ÷ 48 V _{DC} ¹
Phase current	0 ÷ 10 A _{RMS} ²
Analog inputs/outputs	0 ÷ 5 V
Digital inputs/outputs	TTL
Encoder inputs	TTL
Isolated digital inputs	0 ÷ 24 V
Isolated digital outputs	0 ÷ 24 V / 100 mA max.
µStep resolution	1 ÷ 2048 µstep / full step
Position range	-2 ³¹ ÷ 2 ³¹ - 1 µstep
Speed range	0 ÷ 3000 rpm
Acceleration range	0 ÷ 30000 rpm/s
External clock frequency on A/B inputs	0 ÷ 12 MHz
External clock frequency on GO/DIR inputs	0 ÷ 200 kHz
Serial interface	RS232 ³ and RS485
Weight	340 g

1. 5V on request
2. 12 A_{RMS} on request
3. 2 m maximum distance

Order Code

SMARTDRIVE-S10

External Connections

RXD (RS232)	• RX	TX	• TXD (RS232)	• SHLD	• shield
ground	• GND	+5V	• SV output / 100 mA	• +VS	} power supply
L+ (RS485)	• L+	L-	• L- (RS485)	• +VS	
analog input	• AIN2	AIN1	• analog input (speed)	• GND	} ground
reserved output	• SDO	SKO	• reserved output	• GND	
encoder 2 index input	• Z2	SSO	• reserved output	• GND	
encoder 2 phase A input	• A2	B2	• encoder 2 phase B input	• PHA+	• A+ motor phase
ground	• GND	+5V	• SV output / 100 mA	• PHA-	• A- motor phase
encoder 1 phase A input	• A1	B1	• encoder 1 phase B input	• PHB+	• B+ motor phase
encoder 1 index input	• Z1	BRK	• digital output	• PHB-	• B- motor phase
negative limit switch input	• LIMN	LIMP	• positive limit switch input	• SHLD	• shield
GO input cathode	• GO _K	GO _A	• GO input anode		
DIR input cathode	• DIR _K	DIR _A	• DIR input anode		
OFF input cathode	• OFF _K	OFF _A	• OFF input anode		
RDY output emitter	• RDY _E	RDY _C	• RDY output collector		

Recommended connectors

- Weidmüller B2L 3.5/8, 8 way socket block, RS 382-9602
- Weidmüller B2L 3.5/14, 14 way socket block, RS 382-9624
- Phoenix Contact COMBICON MSTB 2.5/3-ST-5.08, 3 way straight plug, RS 189-6026
- Phoenix Contact COMBICON MSTB 2.5/5-ST-5.08, 5 way straight plug, RS 189-6048

Dimensions

