


Delivered without miniature WSB markers

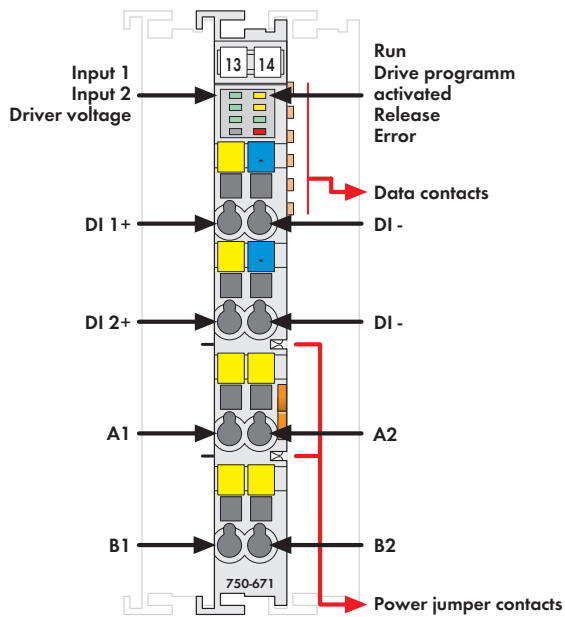
The 750-670 is an intelligent stepper controller designed to control various power drivers with pulse/direction interface or incremental encoder input. Both RS-422 and 24V or 20mA interfaces are available. Due to the high output frequency, stepper output stages with smooth microstepping resolution can be used. In addition, the module can be used as high precision frequency or pulse width modulator. Two configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without any delay. Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics provide for a wide range of applications.

The programmer's interface is the same for all WAGO stepper controller modules. Additional operating modes:

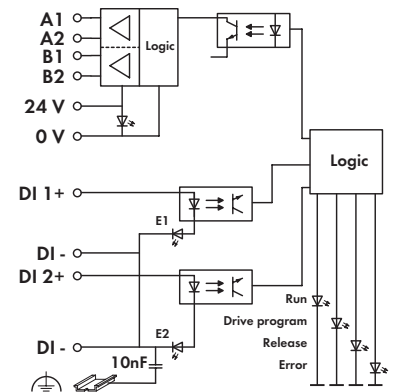
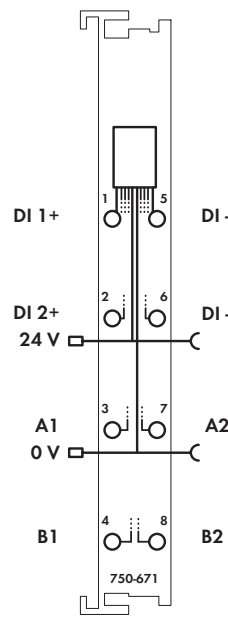
- Pulse width modulation
- Frequency generator
- Single-Shot mode

Description	Item No.	Pack. Unit
Stepper controller RS-422 / 24 V / 20 mA	750-670	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 304 ... 305	
Approvals		
750 Series		
Conformity marking	CE	
UL 508		
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4	
ANSI/ISA 12.12.01	pending	

Technical Data	
Outputs	
No. of outputs	1 channel (2 differential outputs A1, A2, B1, B2)
Signal voltage	5 V DC internal, 5 V ... 24 V DC external
Type of load	RS 422, TTL, optocoupler
Output current (max.)	30 mA short-circuit protected
Output frequency	200 µHz ... 500 kHz
Pulse duty factor	50 % (in stepper motor mode)
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables, PWM
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current consumption typ. (KBUS)	98 mA
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in / 12 mm
Weight	48.2 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)




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The 750-671 is an intelligent stepper controller with on-board power driver designed to control 2-phase stepper motors up to 24V/1.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and spares the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimizing motor power dissipation. Two configurable inputs for start/stop, end-stop, reference, jog/tip, etc., are directly processed by the internal software without any delay. Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics provide for a wide range of applications.

The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper controller 24 V/1.5 A	750-671	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 304 ... 305	
Approvals		
750 Series		
Conformity marking	CE	
UL 508		
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4	
ANSI/ISA 12.12.01	pending	

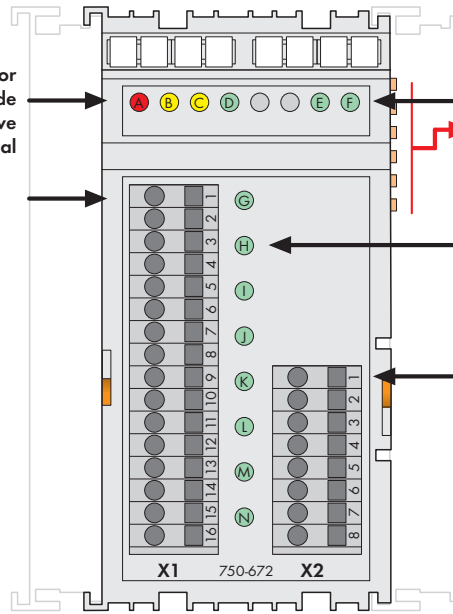
Technical Data	
Outputs	
No. of outputs	1 stepper motor (2 phases/bipolar)
Max. stepper frequency	7812 Hz at 64 microstepping internal
Output current (max.)	up to 2 x 1.5 A peak value; 1 A eff.
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Microstepping	64 steps
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Voltage supply	via system voltage DC/DC
Current consumption typ. (KBUS)	85 mA
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	56 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

Stepper Controller 70 V / 7.5 A 6IN, 2OUT



- A: Error
- B: Operating mode
- C: Drive programm active
- D: Approval

- X1
- 1: Output DO 1+
 - 2: Output DO 0 V
 - 3: Output DO 2+
 - 4: Output DO 0 V
 - 5: Input DI 1+
 - 6: Input DI 1-
 - 7: Input DI 2+
 - 8: Input DI 2-
 - 9: Input DI 3+
 - 10: Input DI 3-
 - 11: Input DI 4+
 - 12: Input DI 4-
 - 13: Input DI 5+
 - 14: Input DI 5-
 - 15: Input DI 6+
 - 16: Input DI 6-



- E: Control voltage
 - F: Motor voltage
- Data contacts

- G: Output 1
- H: Output 2
- I: Input 1
- J: Input 2
- K: Input 3
- L: Input 4
- M: Input 5
- N: Input 6

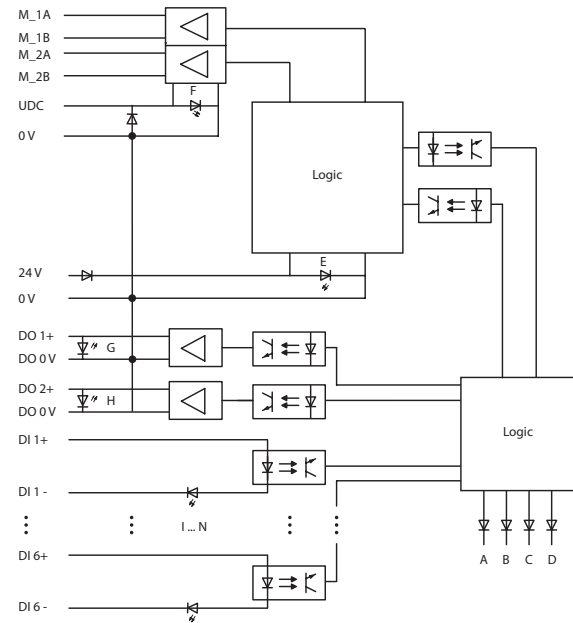
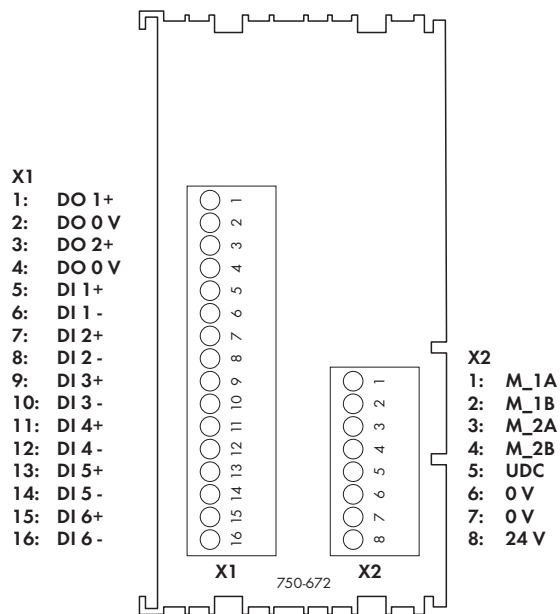
- X2
- 1: Motor winding M_1A
 - 2: Motor winding M_1B
 - 3: Motor winding M_2A
 - 4: Motor winding M_2B
 - 5: Motor voltage UDC
 - 6: Motor voltage 0 V
 - 7: Control voltage 0 V
 - 8: Control voltage +24 V

The 750-672 is an intelligent stepper controller with on-board power driver designed to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and prevents excessive wear on mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Six configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without delay. Two outputs can be linked with internal functions or used freely.

Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics suit a wide range of applications. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper Controller 70 V / 7.5 A 6IN, 2OUT	750-672	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 304 ... 305	

Technical Data	
Voltage supply	Control voltage: 24 V DC (-25 % ... +30 %), Closed current 120 mA + 2 x 0.5 A (DO1, DO2, load-dependent);
Protection	Motor voltage: Nominal value 55 V DC, Absolute upper limit: 71.5 V, Absolute lower limit: 18 V, Closed current typ. = 5 mA, Protection via external fuse 5 A
Isolation	Short circuit monitoring of motor connections: Winding short circuit and short circuit to 0 V and 24 V; 24 V supply: Reverse voltage protection; Motor supply: Reverse voltage protection via external fuse
Voltage supply (internal)	500 V system/supply
Current consumption typ. (internal)	via internal data bus and control voltage
Internal bit width	70 mA
Configuration	12-byte inputs/outputs
	via PLC and WAGO-I/O-CHECK (configuration tool)



Technical Data

Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and from all other voltage potentials on the module
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Switching frequency (max.)	5 Hz,
	inductive load to IEC947-5-1, DC13
Type of load	Resistive load, inductive load (max. 2H), lamps
Function	
	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary; derating starting at 50 °C; 2 x 5.0 A nominal current; derating starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent, overtemperature, supply voltage monitoring, motor wire break
Resolution	64 microsteps per full step
Cable length	30 m shielded cable

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC CC -Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CC -Emission of interference	acc. to EN 61000-6-3 (2007)

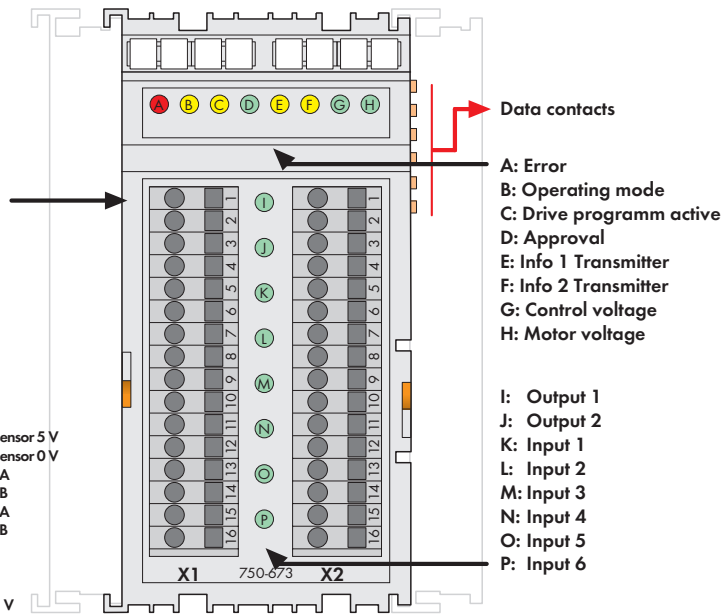


X1

- 1: Output DO 1+
- 2: Output DO 0 V
- 3: Output DO 2+
- 4: Output DO 0 V
- 5: Input DI 1+
- 6: Input DI 1-
- 7: Input DI 2+
- 8: Input DI 2-
- 9: Input DI 3+
- 10: Input DI 3-
- 11: Input DI 4+
- 12: Input DI 4-
- 13: Input DI 5+
- 14: Input DI 5-
- 15: Input DI 6+
- 16: Input DI 6-


X2

- 1: Transmitter A
- 2: Transmitter /A
- 3: Transmitter B
- 4: Transmitter /B
- 5: Transmitter Z
- 6: Transmitter /Z
- 7: Operating voltage of sensor 5 V
- 8: Operating voltage of sensor 0 V
- 9: Motor winding M_1A
- 10: Motor winding M_1B
- 11: Motor winding M_2A
- 12: Motor winding M_2B
- 13: Motor voltage UDC
- 14: Motor voltage 0 V
- 15: Control voltage 0 V
- 16: Control voltage +24 V

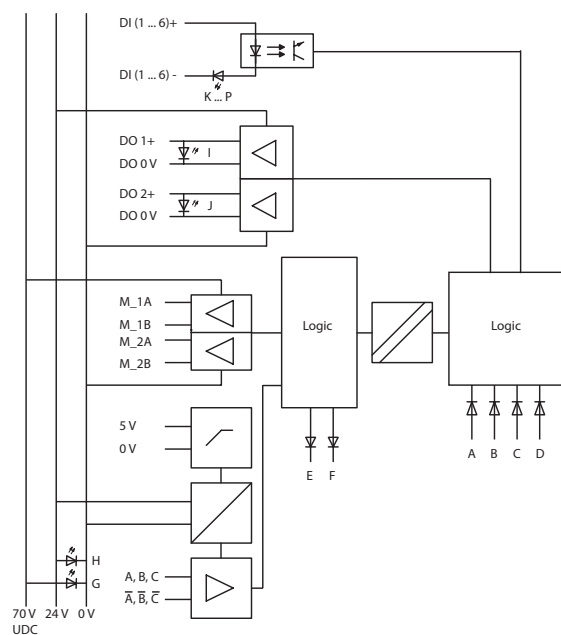
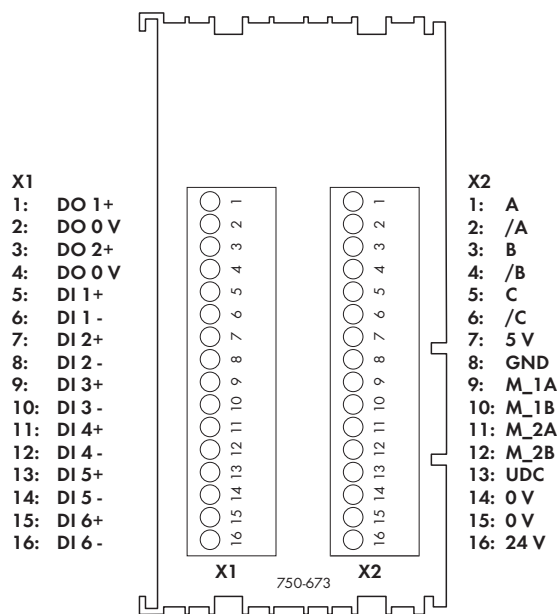


The 750-673 is an intelligent servo stepper controller with on-board power driver and incremental encoder evaluation to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and prevents excessive wear on mechanical parts. The controller features vector control that, together with the incremental encoder, contributes to a dynamic rotational speed characteristic with high efficiency. Six configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without delay. Two outputs can be linked with internal functions or used freely.

Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics suit a wide range of applications. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Servo Stepper Controller 55 V / 7.5 A 6IN, 2OUT	750-673	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 304 ... 305	

Technical Data	
Voltage supply	Control voltage: 24 V DC (-25 % ... +30 %), Closed current 120 mA + 2 x 0.5 A (DO1, DO2, load-dependent) + approx. 100 mA (encoder); Motor voltage: Nominal value 55 V DC, Absolute upper limit: 71.5 V, Absolute lower limit: 18 V, Closed current typ. = 5 mA, Protection via external fuse 5 A
Protection	Short circuit monitoring of motor connections: Winding short circuit and short circuit to 0 V and 24 V; 24 V supply: Reverse voltage protection; Motor supply: Reverse voltage protection via external fuse
Isolation	500 V system/supply
Voltage supply (internal)	via internal data bus and control voltage
Current consumption typ. (internal)	70 mA
Internal bit width	12-byte inputs/outputs
Configuration	via PLC and WAGO-I/O-CHECK (configuration tool)



Technical Data

Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and from all other voltage potentials on the module
Input filter	100 μ s, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Switching frequency (max.)	5 Hz,
Type of load	inductive load to IEC947-5-1, DC13 Resistive load, inductive load (max. 2H), lamps
Function	
	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary; derating starting at 50 °C; 2 x 5.0 A nominal current; derating starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent, overtemperature, supply voltage monitoring, motor wire break, wrong rotational direction incremental encoder - motor
Resolution	64 microsteps per full step

Technical Data

Cable length	30 m shielded cable
Incremental encoder	
Sensor connection	A, /A, B, /B, C, /C
Signal voltage	Compatible with RS-485/RS-422, common GND with motor voltage and control voltage
Sensor frequency	1 MHz
Terminating resistor	internal 120 Ω
Sensor supply	5 V DC, 300 mA short-circuit protected
Quadrature decoder	4-fold report
Counter	32 bits binary
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 14 AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100 Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC $\text{C}\epsilon$ -Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC $\text{C}\epsilon$ -Emission of interference	acc. to EN 61000-6-3 (2007)