

Item description

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 reduces wear on the mechanical parts.

The controller features vector control that, together with the incremental encoder, contributes to an efficient and dynamic rotation speed characteristic. 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.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses. The programmer's interface is the same for all WAGO stepper controller modules.

Data

Technical Data

Device-specific

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.

Number of digital outputs

2

No. of outputs

1 stepper motor (2 phases)



Counter depth	32 Bit
Sensor connection	A, /A, B, /B, C, /C
Sensor frequency	1 MHz
Sensor supply	5 V DC, 300 mA short-circuit protected
Quadrature decoder	4-fold report
Input filter	100 µs, software filter can be installed
Input current typ.	2.8 mA
Output current per channel	0.5 A
Output current	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
Motor current	2 x 7.5 A temporary; derating starting at 50 °C; 2 x 5.0 A nominal current; derating starting at 50 °C
Output voltage	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
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Signal voltage	Compatible with RS-485/RS-422, common GND with motor voltage and control voltage
Diagnostics	Overcurrent, short circuit or ground fault, overtemperature, supply voltage monitoring, motor wire break, wrong rotational direction incremental encoder - motor
Resolution	15 bits + 16 bit prescaler; 64 microsteps per full step
Resolution Stepper	23 bits + sign bit
Switching frequency max.	5 Hz
Load type of the switching frequency	inductive load to IEC947-5-1, DC13
Schrittfrequenz, Vollschrift max	7812 Hz
Bit width	12 byte inputs/outputs
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
Terminating resistor	internal 120 Ω
Functions	Positioning, sin ² -shaped ramps, setpoint change on the fly, torque control
System supply voltage	DC 5 V; via data contacts
Current consumption, system supply (5 V)	70 mA
System and sensor supply voltage)
Isolation	500 V system/supply

Connection data

Connection technology: In-/Outputs	32 x CAGE CLAMP®
Connection type (1)	Inputs/Outputs
Solid conductor	0.08 ... 1.5 mm ² / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 1.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Anschlussanforderung zulässige Leitungslänge	30 m
Connection requirement (permissible cable type)	Motor connection: shielded
Note (conductor cross-section)	14 AWG: THHN, THWN

Geometrical Data

Width	48 mm / 1.89 inch
Height	69.8 mm / 2.748 inch
Height from upper-edge of DIN-35 rail	62.6 mm / 2.465 inch
Depth	100 mm / 3.937 inch

Mechanical data

Type of mounting	DIN-35 rail
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Material Data

Color	light gray
Housing material	Polycarbonate, polyamide 6.6
Fire load	0 MJ
Weight	183 g
Conformity marking	1

Environmental Requirements

Surrounding air (operating) temperature	0 ... 55 °C
Surrounding air (storage) temperature	-40 ... 85 °C
Protection class	IP20
Degree of pollution (5)	2 per IEC 61131-2
Operating altitude	0 ... 2000 m
Mounting position	horizontal (standing/lying) or vertical
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3


Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible H ₂ S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO ₂ contaminant concentration at a relative humidity 75 %	25 ppm

Commercial data

Product Group	15 (Remote I/O)
Country of origin	DE
GTIN	4045454957193
Customs Tariff No.	85371091990







Approvals / Certificates

Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
	KC National Radio Research Agency	Article 58-2, Clause 3	MSIP- REM-W43- MCM750

Compatible products

shield connection

	Item no.: 790-108 Shield clamping saddle; 11 mm wide; diameter of compatible conductor	790-108
	Item no.: 790-116 Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm	790-116
	Item no.: 790-124 Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm	790-124
	Item no.: 790-140 Shield clamping saddle; diameter of compatible conductor	790-140
	Item no.: 790-208 Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm	790-208
	Item no.: 790-216 Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm	790-216



Item no.: 790-220
Shield clamping saddle; 30 mm wide; 6 ... 20 mm

790-220

tools



Item no.: 210-719
Operating tool with partially insulated shaft; Type 1, blade (2.5 x 0.4) mm

210-719

system box



Item no.: 850-804
IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 4 x M20, 16 x M16, 28 x M12 cable grip

850-804



Item no.: 850-804/000-001
IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 2 x M20, 13 x M16, 32 x M12 cable grip

850-804



Item no.: 850-805
IP65 enclosure; Stainless steel; WxHxD (600x123x200 mm); 4 x M20, 19 x M16, 67 x M12 cable grip

850-805



Item no.: 850-814/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate

850-814



Item no.: 850-815/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate

850-815



Item no.: 850-816/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate

850-816



Item no.: 850-817/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate

850-817



Item no.: 850-825
IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20

850-825



Item no.: 850-826
IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

850-826



Item no.: 850-826/002-000
IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

850-826



Item no.: 850-827
IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

850-827



Item no.: 850-827/002-000
IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

850-827



Item no.: 850-828
IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip

850-828



Item no.: 850-828/002-000
IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip

850-828

**Item no.: 850-834**

IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20

850-834

**Item no.: 850-835**

IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

850-835

**Item no.: 850-836**

IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

850-836

Marking accessories**Item no.: 2009-145**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

**Item no.: 2009-145/000-002**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-002

**Item no.: 2009-145/000-005**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-005

**Item no.: 2009-145/000-006**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-006

**Item no.: 2009-145/000-007**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-007

**Item no.: 2009-145/000-012**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-012

**Item no.: 2009-145/000-023**

Mini-WSB Inline; for smartPRINTER; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-023

**Item no.: 2009-145/000-024**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-024

**Item no.: 248-501**

Miniature WSB Quick marking system; plain; Marker width 5 mm; 10 strips with 10 markers per card

248-501

**Item no.: 248-501/000-002**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-002

**Item no.: 248-501/000-005**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501



















/000-005

**Item no.: 248-501/000-006**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-006

	Item no.: 248-501/000-007 Mini-WSB marking card; as card; not stretchable; plain; snap-on type	248-501 /000-007
	Item no.: 248-501/000-012 Mini-WSB marking card; as card; not stretchable; plain; snap-on type	248-501 /000-012
	Item no.: 248-501/000-017 Mini-WSB marking card; as card; not stretchable; plain; snap-on type	248-501 /000-017
	Item no.: 248-501/000-023 Mini-WSB marking card; as card; not stretchable; plain; snap-on type	248-501 /000-023
	Item no.: 248-501/000-024 Mini-WSB marking card; as card; not stretchable; plain; snap-on type	248-501 /000-024
	Item no.: 750-103 Group marker carrier	750-103
	Item no.: 750-106 Group marker carrier	750-106
Carrier rail		
	Item no.: 210-112 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm	210-112
	Item no.: 210-113 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715	210-113
	Item no.: 210-114 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715	210-114
	Item no.: 210-115 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm	210-115
	Item no.: 210-118 Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715	210-118
	Item no.: 210-196 Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715	210-196
	Item no.: 210-197 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715	210-197
	Item no.: 210-198 Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715	210-198
	Item no.: 210-504 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715	210-504
	Item no.: 210-505 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715	210-505
	Item no.: 210-506 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715	210-506



Item no.: 210-508

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715

210-508

Downloads

Documentation

Manual

Servo stepper controller 70 V / 7.5 A 6IN, 2OUT	V 1.0.3	pdf 3.0 MB	Download
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Bid Text

750-673		doc 34.8 kB	Download
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Additional Information

Disposal; Electrical and electronic equipment, Packaging	V 1.0.0	pdf 265.8 kB	Download
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System Description

Use in Hazardous Environments Term definition, marking and installation regulations	V 1.0.0	pdf 1.0 MB	Download
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Design Notes Basic conditions and recommendations for higher operational safety	V 2.0.0	pdf 1.5 MB	Download
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750/753 Series I/O-System – General Product Information		pdf 1.7 MB	Download
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Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 780.2 kB	Download
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Application Notes

Application Note CoDeSys 2.3

How to use Matlab code in a CODESYS project (a500710) An example showing how to use matlab code in a CODESYS program for controlling an inverted pendulum.	V1.0.0	zip 2.6 MB	Download
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Application note SIEMENS

Stepper modules 750-670, -671, -672 and -673 with Siemens Step 7 (a114903) Function blocks for the stepper modules 750-670, 750-671, 750-672 and 750-673 with a Siemens plc using Simatic Step 7.	V1.1.0	zip 8.9 MB	Download
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Libraries

Library

Function blocks for the stepper modules 750-670,750-671,750-672,750-673	V1.0.5	zip	Download
Function blocks for the stepper modules 750-670,750-671,750-672,750-673.		601.7 kB	

CAD/CAE - Smart Data

CAD data

3D Download 750-673		URL	Download
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Device Files

Device Driver

WAGO USB Service Cable Driver / 750 and 857 Series	6.5.3.0	zip	Download
759-923	Sep 10, 2014	4.8 MB	

Product family

750/753 Series I/O-System
[Learn more about the product family.](#)

[Show all products from the family](#)

Subject to changes.
