

Brief Instruction for Assembly and Operation

ESS3 End position control for 24 VDC-drives



ESS3

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Thank you for purchasing an ESS3.

The ESS3 are microprocessor controlled devices for 24 VDC motors with permanent excitation. The devices can be used as end position controls with adjustable digital rated current disconnection and adjustable holding current for both directions of rotation.

In this brief instruction, you will find information for quick startup of the device. Please read this operating manual carefully prior to commissioning to prevent damage.

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Safety Instructions

This brief instruction is directed at **qualified skilled personnel** and provides support during the intended and safe use of the device.



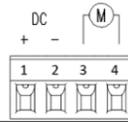
Danger to life from electric shock!

Even after the device is decommissioned by de-energizing it, electrical voltage is still be applied to internal circuit components.

- Only skilled electricians may work at electrical devices!
- Prior to all work, disconnect the device from the supply voltage.
- Prior to opening the device, wait for at least 5 minutes so that the residual voltage is discharged.
- Before starting to any intervention, check for absence of voltage.
- Before startup, make sure that the voltage supply corresponds with the rated value of the device.
- Check the electrical equipment of the machine regularly. Any defects such as loose connections, damaged or worn cables must be eliminated immediately.
- Please observe the accident prevention and safety regulations.
- Please observe the general and local installation and safety regulations for operation on machinery with dangerous voltage (e.g. EN 50178).
- Please also observe regulations concerning proper use of tools and the use of personal protective equipment.
- In all operating modes, Emergency Stop devices must remain fully functioning. The release of the Emergency Stop devices must not cause uncontrolled restart.

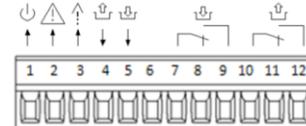
Installation

Supply connection / Load connection

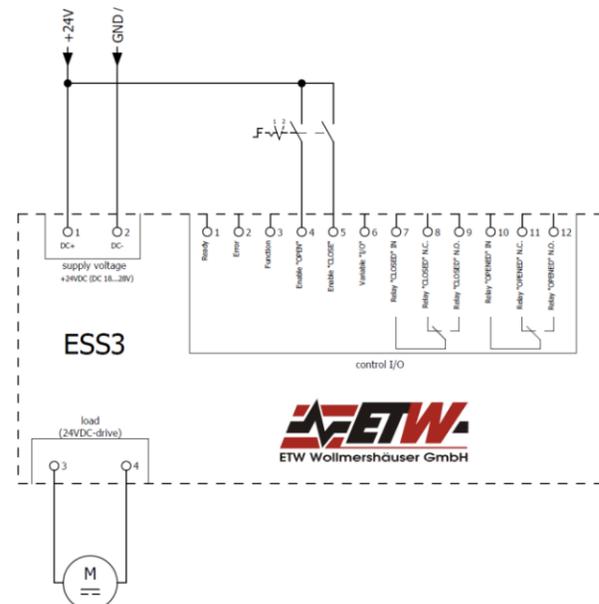


Icon	Clamp No.	Description
DC	1	+24 VDC (DC 18...28 V)
+ -	2	0 V Ground (GND)
M	3	Load
M	4	Load

Signal In-/Output

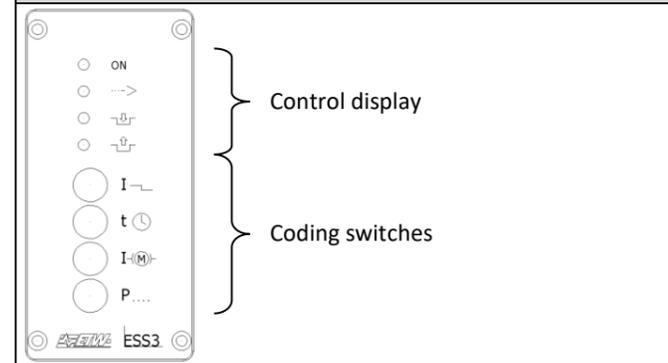


Icon	Clamp No.	Description
Ready	1	Ready
Error	2	Error
Function	3	Function (→ LED)
Enable OPEN	4	Enable „OPEN“
Enable CLOSE	5	Enable „CLOSE“
Variable I/O	6	Variable „I/O“
End position relay contact „CLOSED“ IN	7	End position relay contact „CLOSED“ IN
End position relay contact „CLOSED“ N.C.	8	End position relay contact „CLOSED“ N.C.
End position relay contact „CLOSED“ N.O.	9	End position relay contact „CLOSED“ N.O.
End position relay contact „OPENED“ IN	10	End position relay contact „OPENED“ IN
End position relay contact „OPENED“ N.C.	11	End position relay contact „OPENED“ N.C.
End position relay contact „OPENED“ N.O.	12	End position relay contact „OPENED“ N.O.



Operating

Front panel



Control display		
Front panel	LED	Description
ON	Red, Green	Fault indicator
	Green constant	Ready for operation
→	Yellow flashing	Drive is running
	Yellow constant	Overcurrent has been activated. (Locking active)
↓	Green constant	End position "CLOSED" is reached
↑	Green constant	End position "OPENED" is reached

Coding switch			
Front panel	Position	Rated current (program 0,1)	Rated current (program 2,3)
I	1	1 A	0,5 A
	2	2 A	1 A
	3	3 A	1,5 A
	4	4 A	2 A
	5	5 A	2,5 A
	6	6 A	3 A
	7	7 A	3,5 A
	8	8 A	4 A
	9	9 A	4,5 A
	0	10 A	5 A

Front panel	Position	Delay time
t	1	0,1 s
	2	0,2 s
	3	0,3 s
	4	0,4 s
	5	0,5 s
	6	0,6 s
	7	0,7 s
	8	0,8 s
	9	0,9 s
	0	1 s

Front panel	Position	Holding current
I-M	0	0 mA
	1	100 mA
	2	150 mA
	3	200 mA
	4	250 mA
	5	300 mA
	6	350 mA
	7	400 mA
	8	450 mA
	9	500 mA

Front panel	Position	Value
P....	0	Program 0: standard function (1-10 A)
	1	Program 1: impulse function (1-10 A) If the input „Enable OPEN“ receives a pulse, load is activated for 20 s. In case the rated current is exceeded, it will be switched off.
	2	Program 2: standard function (0,5-5 A)
	3	Program 3: impulse function (0,5-5 A) see program 1
	4	Program 4: not used (on request)
	5	Program 5: not used (on request)
	6	Program 6: not used (on request)
	7	Program 7: not used (on request)
	8	Program 8: not used (on request)
	9	Program 9: not used (on request)

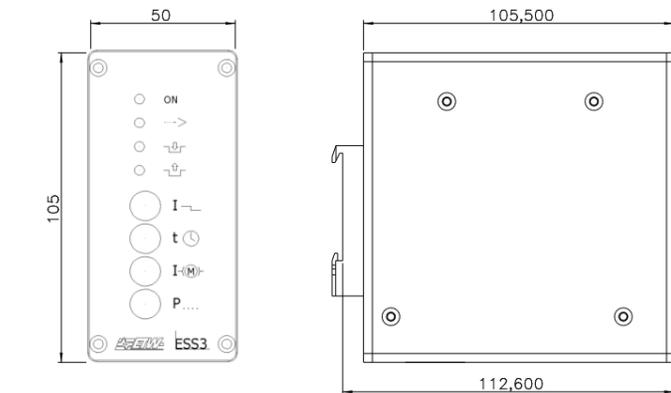
Operating

Fault indicator

„ON LED“	Status output	Description
Red constant	Error	Supply voltage too high/low
Green - - -	Error	No load connected
1xGreen / 1x Red - - -	Error	Load exceeds the rated current
1xGreen / 2x Red - - -	Error	Overcurrent or short circuit at the status outputs
1xGreen / 3x Rot - - -	Error	Check the supply voltage
1xGreen / 4x Red - - -	Error	Internal error soft start

Technical data

Dimension



Electrical data

Power supply:	+24 VDC (18-28 VDC) (other power supply possible on request)
Current rating load:	1 A – 10 A, 0,5 A – 5 A
Current rating status outputs:	max 500 mA per Output, total 1,5 A
Current rating relay contact:	250 V 1 A
Logic level:	High: 24 VDC Low: 0 V
Handling:	Coding switches
Display:	LED
Enclosure:	IP40
Operation temp. Range:	5°C up to 45°C
Permissible relative humidity:	max 95% not condensing
Dimensions:	approx. (H)105 mm x (B)50 mm x (T)105 mm
Mounting:	top-hat rail mounting
Weight:	0,5 kg
EEPROM	Saving the end positions "OPENED" / "CLOSED" in EEPROM
EMV	Emission and noise immunity according to EN 61000-6-4:2007 EN 55011:2009 Class A noise immunity to EN 61000-6-2:2005