

# TSR70

## Step motor drives

- Step motor drive in 5 TE plug-in unit
- Pin assignment compatible with DSR92-70 and other step motor drives
- Silent when stationary, quiet when running
- Only one unregulated supply voltage required
- Choice of positive or negative logic for the input signals
- Protection circuit against short-circuit and earth fault, thermal protection
- The module is set via 3 rotary switches and 2 Plug-in jumpers on the front panel
- Standstill current reduction to 20% to 80% of the running current after an adjustable waiting time of 50 ms to 1 s
- Full-step, half-step and micro-step operation with up to 25600 steps per motor revolution
- motor revolution

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**AHS**  
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Advanced Hybrid Stepper Systems

**Technical data**

<b>Power supply voltage</b>	Operating range 24 - 74VDC
<b>Motor current</b>	Adjustable in 16 steps via rotary switch, max. 6.3 (with boost 8.1) $A_{rms}$ (minimum motor inductance 0.1 mH)
<b>Input</b>	Choice between positive and negative logic for the input signals possible via jumper
- Measure	Max. measure frequency: 500 kHz (duty cycle 50 %)
- Direction	Reversing the direction of motor rotation (with S3 switch position 8 - F)
- Disenergize	When the input is activated, the motor is de-energised
- Boost	When the input is activated, the set motor current is increased by 30%.
- Reset	After activating the input, the output stage is set to the defined output state
- Decimal/Binary	Switching the step size between decimal and binary. Selection of the corresponding table
<b>Output</b>	Open-Collector, aktiv low, max. 0,15 A @ 40 V
- Error	Collective error message: The output can be configured as a normally closed contact or normally open contact by means of jumpers. Delivery state: NC contact
<b>Status indicator</b>	Multi-colour LED Green: ready for operation; green flashing: version display; yellow: motor running; red flashing: fault Flashing: 2x overcurrent, 3x earth fault, 4x overtemperature
<b>Temperature</b>	0 - 40 °C ambient temperature Forced ventilation is recommended from a continuous current value of 5.0 $A_{eff}$ or more.
<b>Humidity</b>	10-90%, non condensing
<b>Front panel</b>	FP/TSR (5 TE); The front panel must be ordered separately
<b>Rear panel board</b>	DSR-MB-KIT; The board has pluggable screw terminals for logic signals and motor
<b>Power supply</b>	In principle, only an unregulated DC voltage is required for the power supply.

**Motor current**

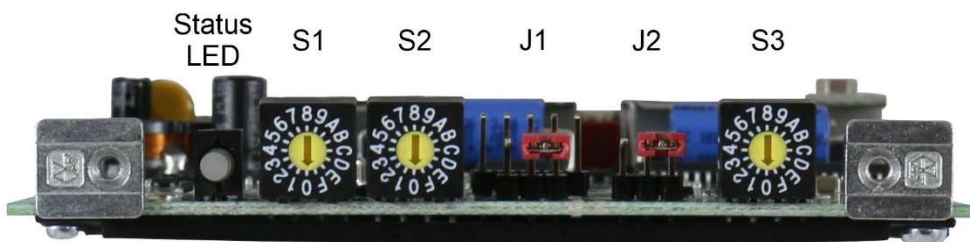
Switch position	S1: Effective current in $A_{rms}$		S2: Standstill current and waiting time in ms	
	TSR70-AA	DSR92-70	50	
0	0,9	0,3	20 %	50
1	1,2	0,6		100
2	1,5	0,9		1000
3	1,9	1,2	40 %	50
4	2,2	1,5		100
5	2,5	1,9		1000
6	2,8	2,2	50 %	50
7	3,1	2,5		100
8	3,4	2,8		1000
9	3,7	3,1	60 %	50
A	4,0	3,4		100
B	4,3	3,7		1000
C	4,7	4,0	80 %	50
D	5,0	4,3		100
E	5,6	4,7		1000
F	6,3	5,0	100 %	-

## Step resolutions

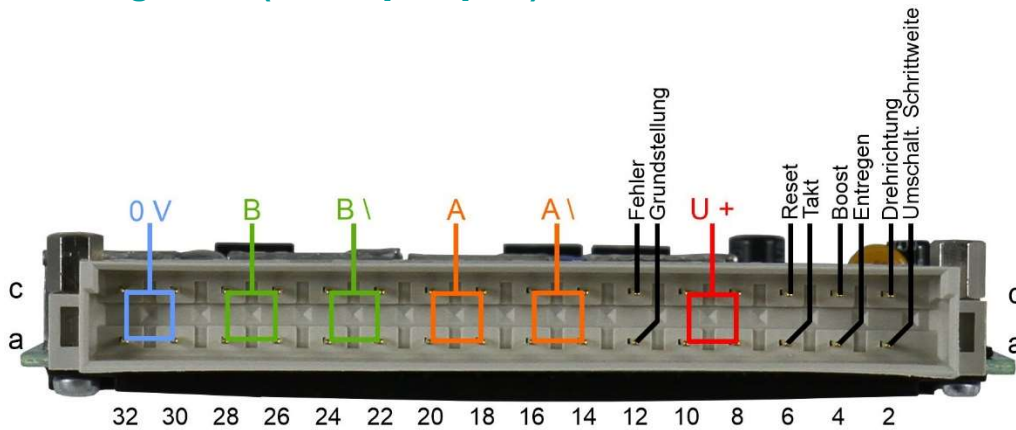
Switch position	Resolution decimal	Resolution binary
0	200	200
1	400	400
2	500	800
3	1000	1600
4	2000	3200
5	5000	6400
6	10000	12800
7	25000	25600

From switch position 8, the values are repeated, but the direction of rotation is inverted.

## Front view (without front panel)



<b>Status LED</b>	Status display
<b>S1</b>	Motor current
<b>S2</b>	Standstill current
<b>J1</b>	Logic of the inputs Left: Positive; Right: Negative
<b>J2</b>	Error output Left: Normally open contact; Right: Normally closed contact
<b>S3</b>	Step resolution

**Pin assignment (VG strip 32-pole)**

**Note:** The pin assignment of the VG strip connector is compatible with the DSR92-70 step motor drives and other step motor drives.

**Order code**

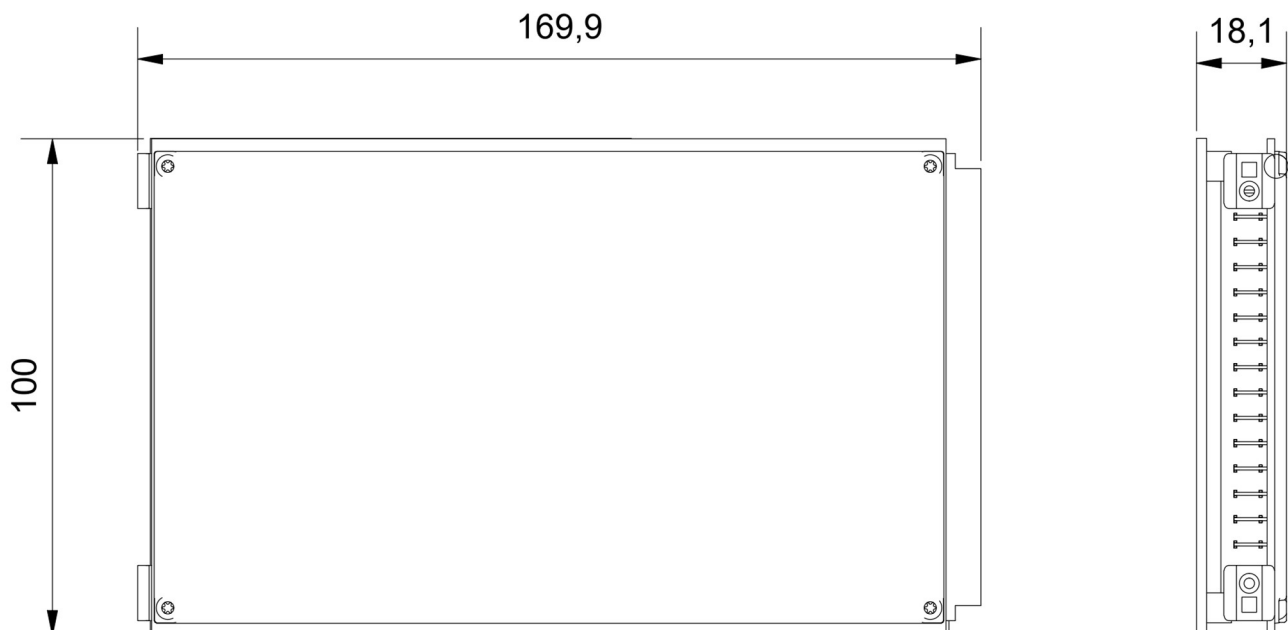
TSR70-AA = Version with cover plate

The cover plate is made of a light-coloured plastic and has a cut-out above the heat sinks.

TSR70-BA = Version without cover plate (as shown on the cover picture)

**Dimensions**

Variant TSR70-AA (with cover plate):



Variant TSR70-BA (without cover plate):

