Linear actuator DSZY4-POT (Potentiometer)

The electric linear actuator DSZY4 is suitable for a variety of positioning tasks. It is available in three different models depending on the desired application:

1. DSZY4-STD (Standard)
   (standard for all applications without position feedback)
2. **DSZY4-POT**
   (with potentiometer for absolute position feedback)
3. DSZY4-HS2
   (with 2-channel Hall sensor for incremental position feedback)

Equipped with a trapezoidal screw spindle (ACME screw), these are small, compact and lightweight DC linear drives. By means of an integrated diode circuit, the direction is reversed quickly by simple voltage reversal of the DC motor. As a standard, all DSZY4 types have two integrated, non-adjustable limit switches directly connected to the DC motor. Overloading of the drive can be prevented by separate monitoring and limiting of the current.

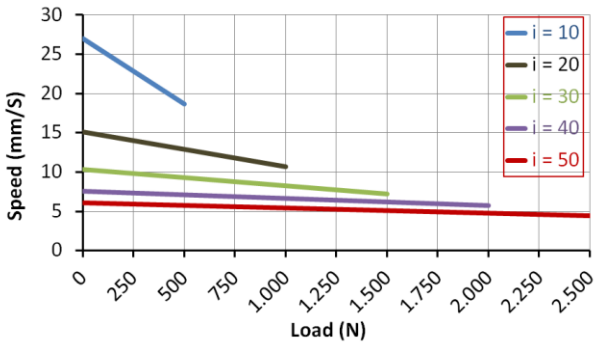
Type code (all options can be combined)

							Optional	
DSZY4	- 12	- 10	- 200	- POT	- IP65	- C	1	1
Type	**Input voltage**	**Gear reduction i**	**Stroke**	**Model**	**IP Code**		**Front connector** (piston rod)	**Rear connector** (gear cover)
	12 Vdc 24 Vdc	10 20 30 40 50	100 mm 150 mm 200 mm 250 mm 300 mm	Potentiometer			**1 = standard** 3 = spherical rod eye 6 = plastic slot	**1 = standard**

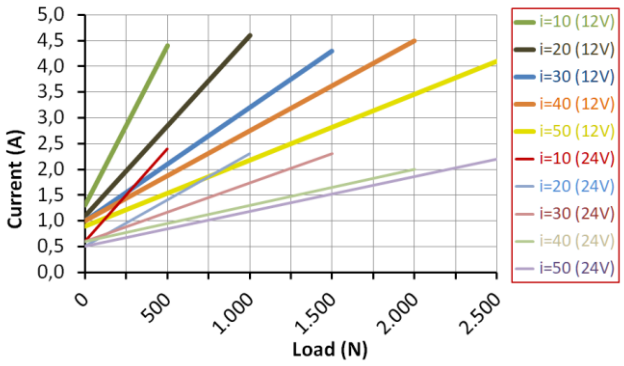
Performance data: Load – Speed – Current

Gear reduction i	Dynamic Load (N)	Static load (N)	Typical speed * (mm/s)		Typical current * (A)			
			minimum load	maximum load	minimum load		maximum load	
					12 Vdc	24 Vdc	12 Vdc	24 Vdc
10	500	1,500	27.0	18.7	1.3	0.6	4.4	2.4
20	1,000	4,500	14.7	10.4	1.1	0.5	4.6	2.3
30	1,500	4,500	9.9	6.8	1.0	0.6	4.3	2.3
40	2,000	4,500	7.4	5.1	1.0	0.6	4.5	2.0
50	2,500	4,500	5.2	4.4	0.9	0.5	4.1	2.2

Load – Speed – Diagram *



Load – Current – Diagram *



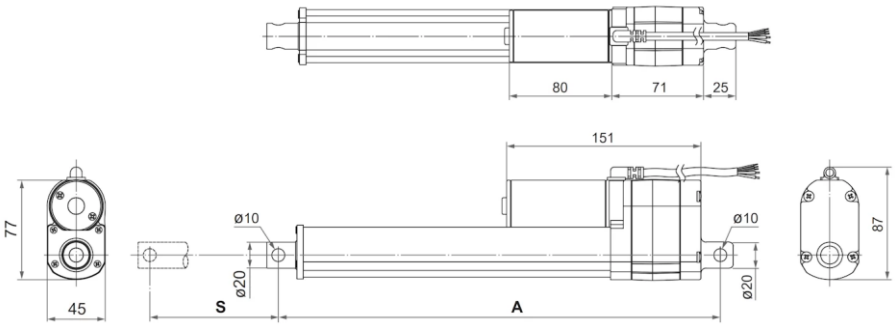
(*) Average values at room temperature with a constant load.

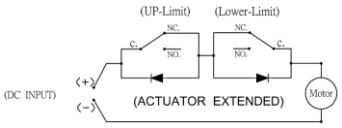
Additional technical specifications

- Operating voltage 12 Vdc and 24 Vdc
- Thrust and tensile load up to 2,500 N
- Static load 4,500 N
- Duty cycle 25 % (e.g. 1 min continuous operation – 3 min pause)
- Zinc alloy casing
- Aluminum outer tube and push rod
- Working temperature -25 °C – 65 °C
- Protection type IP65 for all models (in idle state)
- Noise level: ≤ 70 dB
- Piston rod secured against rotation – see installation instructions
- CE - EMC 2014/30/EU
- EN 60601 (for 24 Vdc motor without Hall sensor)

Dimensions

Front-Konnektor	Dimensions (length) in mm					
	Stroke (S) ± 3 mm	100	150	200	250	300
C1... (Standard)	**(A)** retracted	242	292	342	392	442
	(A+S) extended	342	442	542	642	742
C3... (Kugelkopf)	**(A)** retracted	283	333	383	433	483
	(A+S) extended	383	483	583	683	783
C6... (Gabelkopf)	**(A)** retracted	258.5	308.5	358.5	408.5	458.5
	(A+S) extended	358.5	458.5	558.5	658.5	758.5





Red wire on “+” and
black wire on “-”: Actuator extends.

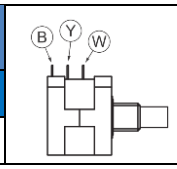
Black wire on “+” and
red wire on “-”: Actuator retracts.

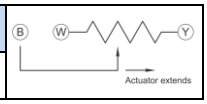
Cable length: 900 mm

Weight

Stroke in mm	100	150	200	250	300
Weight in kg					

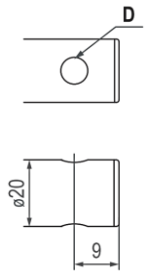
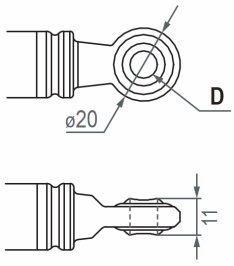
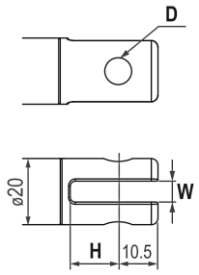
Potentiometer

Power		Potentiometer			
Red	**Black**	**White**	**Yellow**	**Blue**	
M+	M-	GND	Vcc	Data	

Stroke (mm)	100	150	200	250	300	
Resistor value (kOhm)	0.3 - 8.8	0.3 - 9.6	0.3 - 8.9	0.3 - 9.5	0.3 - 9.5	

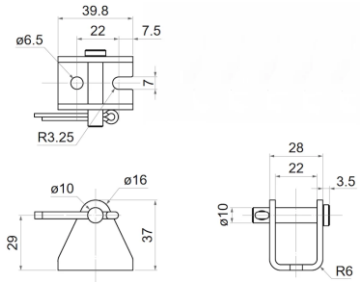
Voltage input range: Vcc to 70Vdc - Output voltage of signal: Data = Vcc - Total resistance tolerance: ±5 %
The resistor increases during extension and decreases during retraction.

Front connector

Front connector (piston rod)		
1 = standard (metal)	3 = spherical rod eye	6 = plastic slot
		
D=10 mm	D=8 mm	D=10 mm - W=6 mm H= 15 mm

CAUTION:
C11 is standard and will not be specified in the type code.
If at least one connector is changed, option C must be attached to the type key (e.g. DSZY4…-IP65-C61)

Mounting material

Mounting bracket DSZY4-H02	
	

Installation instructions

It must be ensured that the load is not greater than shown in the diagram. To protect against overload, the voltage must be switched off when the maximum rated current is reached. This can be read in the load-current diagram depending on the selected reduction ratio. Please note the correct supply voltage, which is indicated on the electric linear actuator.

The piston rod extends when the red wire is connected to positive and the black wire to negative. For the retraction of the piston rod, positive must be reversed with negative. The movement always stops automatically when the built-in limit switches are reached or when the voltage is interrupted. The limit switches cannot be changed by the customer.

The load must always be centered in the direction of movement. Transverse forces must be avoided. They shorten the service life and can impede the function or lead to irreparable damage in extreme cases.

The piston rod tube is screwed onto the spindle nut via a thread. It is therefore possible, if necessary, to rotate the piston rod and thus the fastening eye by max. 180° into the desired position.
If no rotational forces act on the piston rod, the latter retains its orientation and does not rotate.

CAUTION: The limit switches have no on/off function for the linear actuator. Therefore, the voltage must be immediately disconnected after the limit switches have been triggered, or the piston must be moved out of the end position in a timely manner.

NOTE on inrush current: An increased inrush current is generated for a period of approx. 0.2 seconds when the linear actuator starts up. Under the maximum possible load, the inrush current can reach around three to four times the typical rated current. It is important to take this into account when selecting a power supply unit, plug connector, relay etc. or control unit.

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