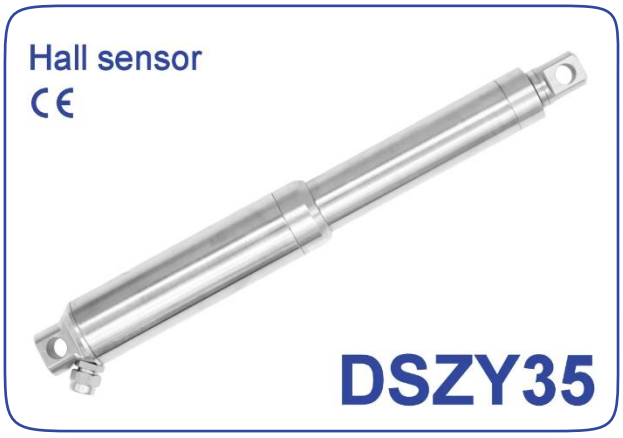
Linear actuator DSZY35 (of stainless steel)

Stainless steel linear actuators are required in a wide variety of applications. The DSZY35 linear actuator is made of stainless steel and has an IP69K rating, the highest possible protection class. It is available in one version:

DSZY35-HS2
(with 2-channel Hall sensor for incremental position feedback)

Equipped with a trapezoidal threaded spindle (ACME screw), it is a small, compact and lightweight DC linear actuator. Its integrated diode circuit enables rapid and simple directional changes by reversing the voltage polarity of the DC motor.

The DSZY35 is not equipped with integrated limit switches. Overloading of the drive can be prevented by separate monitoring and limitation of the current.



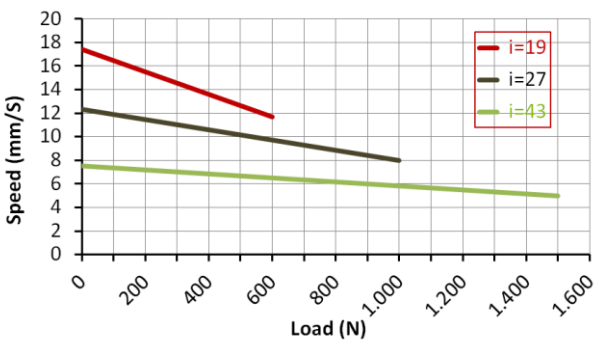
Type code (all options can be combined)

							Optional	
DSZY35 -	12 -	19 -	200 -	HS2 -	IP69K	- C	1	1
Type	**Input voltage** 12 Vdc 24 Vdc	**Gear reduction i** 19 27 43	**Stroke** 50 mm 100 mm 150 mm 200 mm 250 mm 300 mm 350 mm 400 mm	**Version** 2-channel Hall sensor	**IP Code**		**Front connector** (piston rod) 1 = massive **2 = Standard**	**Rear connector** (gear cover) **1 = Standard** **2** = clevis

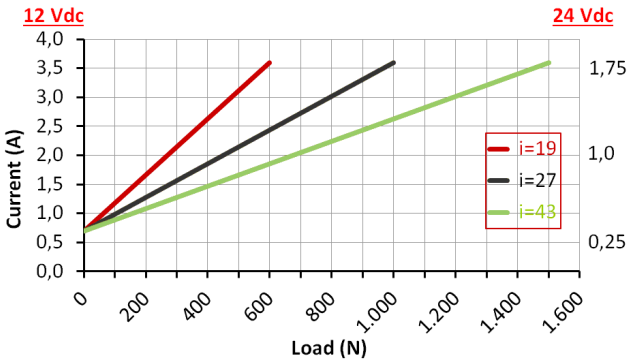
Performance data: Load – Speed – Current

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
19	600	n. d.	17.2	12.1	0.7	0.4	3.6	1.8
27	1,000	n. d.	12.3	8.0	0.7	0.4	3.6	1.8
43	1,500	1,800	7.1	5.0	0.7	0.4	3.6	1.8

Load – Speed – Diagram *



Load – Current – Diagram *



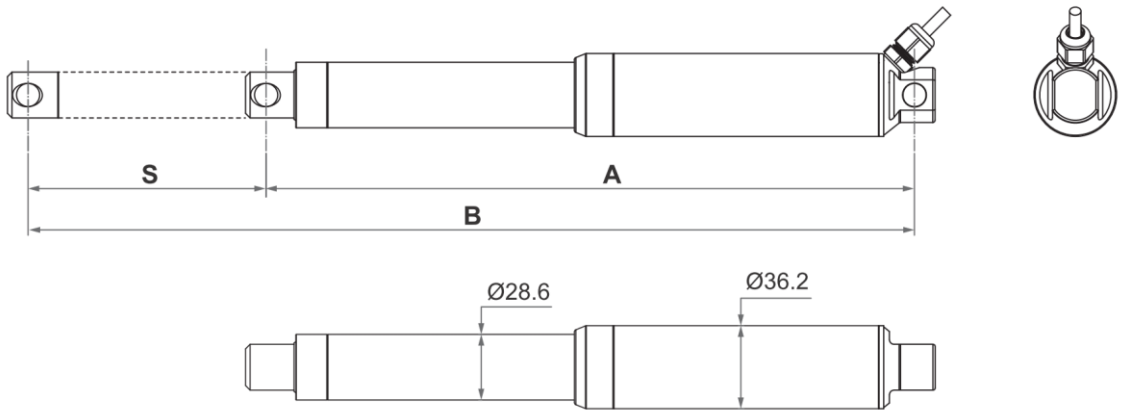
(*) Average values at room temperature with a constant load.

Additional technical specifications

- push/pull load: up to 1,500 N
- static load: 1,800 N (at i=43)
- Operating temperature: -20 C°- 70 C°
- Duty cycle 10 % (e.g. 2 min continuous operation – 18 min pause)
- Voltage: 12 Vdc und 24 Vdc
- Housing is made of SUS304 stainless steel
- Outer tube and push rod made of stainless steel SUS304
- IP Code IP69K for all models (**in idle state**)
- CE, EMC 2014/30/EU
- EN 61000-6-1:2007
- EC 61000-4-2:2008
- IEC 61000-4-:2006+A1:2007+A2:2010
- IEC 61000-4-8:2009
- EN 61000-6-:2007+A1:2011+AC:2012

Dimensions

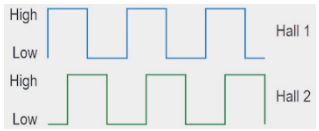
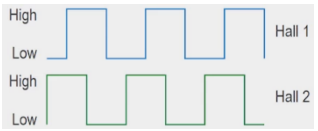
Dimensions (length) in mm									
Front- / Rear-connector	Stroke (S) ± 3mm	50	100	150	200	250	300	350	400
Standard (…-C21)	**(A)** retracted	237	287	337	387	437	487	537	587
	(B) extended	287	387	487	587	687	787	887	987
…-C11	**(A)** retracted	233	283	333	383	433	483	533	583
	(B) extended	283	383	483	583	683	783	883	983
…-C12	**(A)** retracted	248	298	348	398	448	498	548	598
	(B) extended	298	398	498	598	698	798	898	998
…-C22	**(A)** retracted	252	302	352	402	452	502	552	602
	(B) extended	302	402	502	602	702	802	902	1002



Weight

Stoke in mm	50	100	150	200	250	300	350	400
Weight in kg	1.000	1.130	1.200	1.410		1.700		1.860

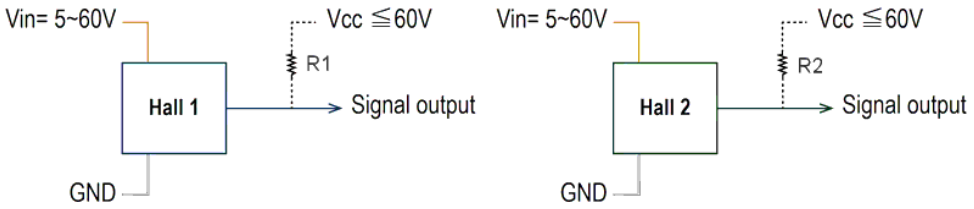
2-channel Hall sensor

Power		2-channel Hall sensor			
Red	**Black**	**White**	**Yellow**	**Blue**	**Green**
M+	M-	GND	Vcc (5 – 60 Vdc)	Data1	Data2
red cable to "+" and black cable to "-": Linear actuator extends black cable to "+" and red cable to "-": Linear actuator retracts Cable length: 1,000 mm		 Actuator extends  Actuator retracts		
		Hall sensor signal type A High = Vcc - 1.2V (±0.6V) Low = GND			

Gear reduction i	19	27	43
Resolution (pulse/mm)	9.62	12.89	22.91

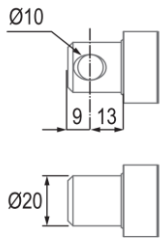
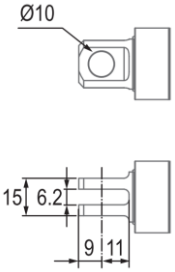
Circuit diagram - 2-channel Hall sensor

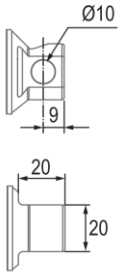
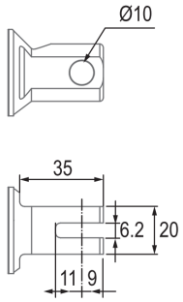
The R1 and R2 pull-up resistors must be defined and fitted depending on the input electronics of the control unit. They should be sufficiently sized to stop the signal output current from falling below 20 mA. Pull-up resistors of approx. 10 kOhm are recommended.



ATTENTION: It is also advisable to use 2 separate power sources for the motor and Hall sensor.
If the Hall sensor Vcc shares a voltage input with the power supply of the motor, make sure that separate cables are used – one from the power source to the motor and one from the power source to the Hall sensor. The inrush current of the motor will otherwise cause the Hall IC circuit to malfunction.

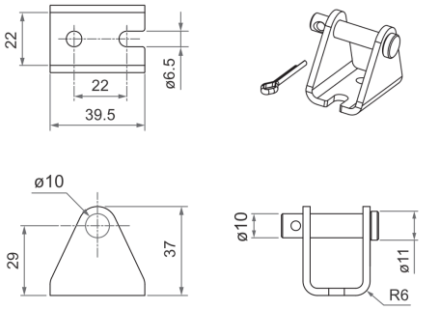
Front and rear connector

Front connector (piston rod)	
1	2 = Standard
	

Rear connector (gear cover)	
1 = Standard	2
	

ATTENTION:
C21 is standard and not stated in the type code.
Option C must be added to the type code if there is at least one modified connector (e.g. DSZY35...-IP69K-C11)

Mounting material

Mounting bracket DSZY4-H02	
 **ATTENTION** with rear attachment: Swivelling of the linear actuator is limited due to the cable routing.	

Installation instructions

ATTENTION: The DSZY35 does **not** have integrated limit switches. Care must be taken to prevent travel to its mechanical end positions, as this would shorten the service life. To prevent this, we strongly recommend using external limit switches and an overcurrent protection device rated at 1.5 times the typical full load current.

The DSZY35 is equipped with 2-channel Hall sensors as standard features for position feedback.

Care must be taken to ensure that the load does not exceed the values shown in the diagram. To protect against overload, the voltage must be switched off when the maximum rated current is reached. This is shown in the force-current diagram, depending on the selected reduction. Please observe the correct connection voltage stated on the linear actuator.

The piston rod extends when the red wire is connected to positive and the black wire to negative. The wires are connected to the opposite poles to retract the piston rod. Movement stops as soon as the voltage is interrupted.

The piston rod will rotate when extended or retracted, unless it is fixed in place.

The load must always be centred in the direction of travel. Lateral forces must be prevented. They shorten the service life and, in extreme cases, may impair functionality or cause irreparable damage.

NOTE concerning the inrush current: An elevated inrush current is generated for a period of approx. 0.2 seconds when the linear actuator starts up. The inrush current can reach around three to four times the typical rated current under the maximum possible load. This must be taken into account when selecting a power supply unit, plug connector, relay etc. or control unit.

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