

SA-LPxxx-000

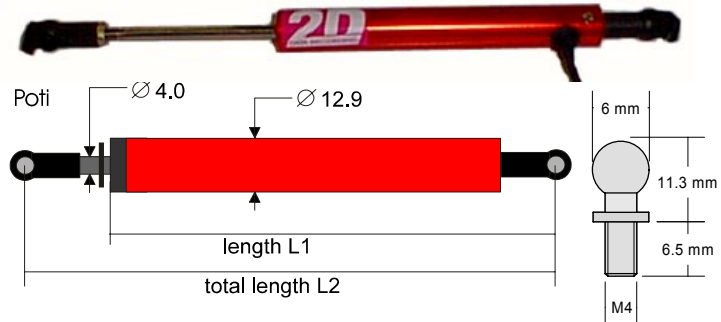
Linear potentiometer

Function

- Linear potentiometer's are designed to convert linear movement into a proportional voltage output using a simple 3-wire, low current operating circuit.

Usage

- To measure linear motions e.g. front fork, steering, or damper movement



electrical stroke	length L1	length L2 (in)	length L2 (out)
50	123	149	199
75	149	175	250
100	179	205	305
125	204	230	355
150	234	260	410

all values in [mm]; Tolerance ± 1 mm

Technical specifications SA-LP050 SA-LP075 SA-LP100 SA-LP125 SA-LP150

Electrical characteristics

Mechanical stroke ± 1 mm.....	50	75	100	125	150	mm
Retracted mounting distance..	149	175	205	230	260	mm
Impedance.....	2	3	4	5	6	k Ω
Linearity.....	0.25	0.15	0.15	0.15	0.15	%
Supply voltage (2D System)...	5	5	5	5	5	V dc
Maximum supply voltage.....	45	65	90	110	130	V dc

Mechanical characteristics

Cable & connector (standard) type.....	special options on customer request – see 2 nd page for details					
wire cross section.....	PUR					
connector.....	3 x 0.14 mm ²					
Resolution.....	<0.01	<0.01	<0.01	<0.01	<0.01	mm
Maximum moving speed.....	10	10	10	10	10	m / sec
Operation life.....	> 50	> 50	> 50	> 50	> 50	Mio cycles
Weight.....	50	60	70	80	95	g

Environmental

Operating temperature range.	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	°C
Shock.....	40	40	40	40	40	G
during a time period of..	10	10	10	10	10	m sec
Vibration tested at.....	12	12	12	12	12	G
with.....	1000	1000	1000	1000	1000	Hz

Calibration

- 💡 Use the formulas on 2nd page to calculate the physical values

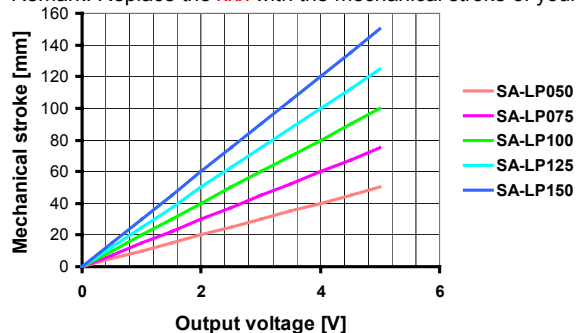
SA-LPxxx-000

Linear potentiometer

Formulas

SA-LPxxx-000		Multiplier					Offset	
12 Bit A/D	Stroke [mm]	=	xxx / 4095	*	Digits	-	0	
16 Bit A/D	Stroke [mm]	=	xxx / 65535	*	Digits	-	0	
Voltage*)	Stroke [mm]	=	10	15	20	25	30	
			SA-LP050	SA-LP075	SA-LP100	SA-LP125	SA-LP150	

Remark: Replace the xxx with the mechanical stroke of your sensor



*) You can use the "voltage formula" only, if the voltage supply of the sensor is +5V
 In the case of other sensor supplying, you must use the following general formula to calculate the physical value:

$$\text{Stroke[mm]} = \text{xxx} / \text{voltage supply} * \text{Volt} - 0$$

xxx = mechanical stroke 50,75,100,125 or 150

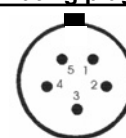
Installation advice

- Metal heads with thread Mx4 are fixed to. E.g. diving tube and fork bridge. The potentiometer is simply plugged onto the metal heads.
- Make sure that the potentiometer moves easily.
- Do not stress the potentiometer over its end position
- To avoid water entering the housing, mount the grinder bar facing downwards.

Connector layout

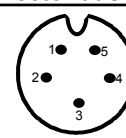
Pin	Name	Description	Color (standard)
1	AGND	Analog Ground	black
2	Power	Power supply	red
3	n.c.	Not connected	-
4	n.c.	Not connected	-
5	Signal	Analog signal	white

Mating plug



Binder 719, 5 PF (front side)

Connector at sensor



Binder 719, 5 PM (front side)

Sensor with open wires (optional on request)

Name	Color	Color
AGND	Analog Ground	Black
+5V	Power supply	Red
Signal	Analog signal	white



Possible options concerning plug and cable on customer request:

For the first order of special customer options please use the following order code: SA-LPxxx-000. Replace the xxx with the range of your sensor. After the first order you will get from 2D a uniquely order code for your next orders.

Ordering information

50	mm	/ SA-LP050-000	
75	mm	/ SA-LP075-000	standard (on stock)
100	mm	/ SA-LP100-000	
125	mm	/ SA-LP125-000	
150	mm	/ SA-LP150-000	standard (on stock)



SA-LP250-000 and SA-LP350-000 are supplied in black housing

250	mm	/ SA-LP250-000
350	mm	/ SA-LP350-000

