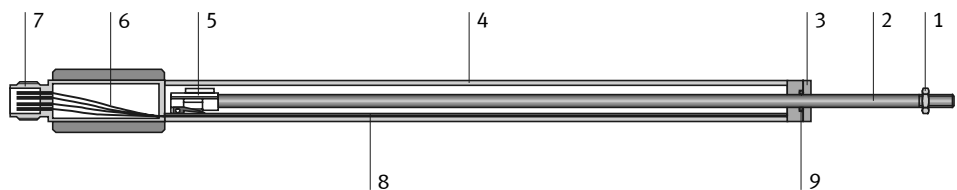
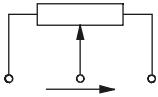


167090, 525953

Linear potentiometer



### Design

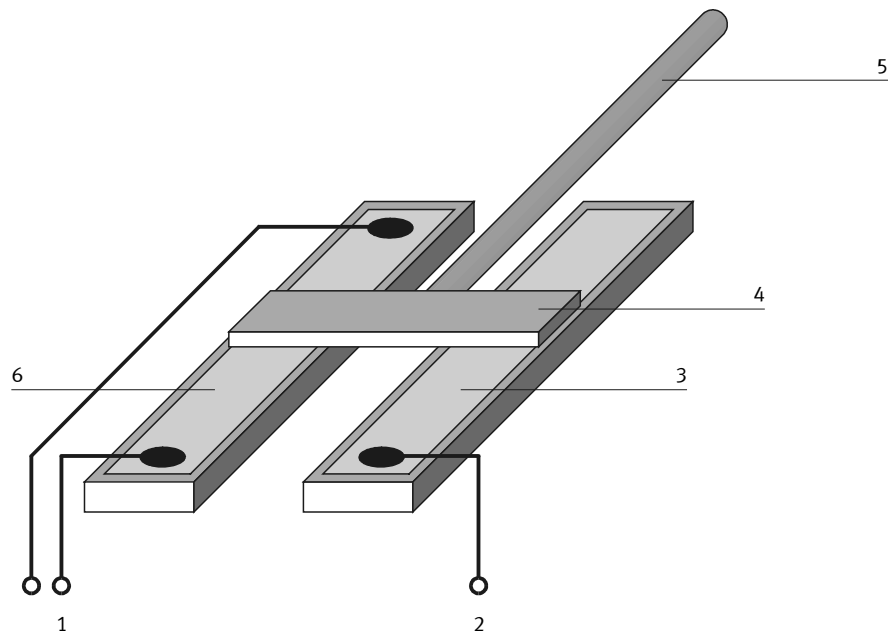
- 1 Attachment lock nut
- 2 Connecting rod
- 3 Cover cap with bearing
- 4 Light metal housing
- 5 Retainer for wiper
- 6 Electrical connection
- 7 Wiring box
- 8 Plastic film wiper track
- 9 Scraper ring

The linear potentiometer is mounted on to the hydraulic cylinder with the mounting kit.

<b>Mounting kit (Order no.)</b>	<b>120 778</b>	<b>525 955</b>	<b>525 952</b>
For cylinder (Order no.)	152 857	184 490	184 489

# 167090, 525953

## Linear potentiometer



### Function

- 1 10 VDC
- 2 Signal output 0 – 10 V DC
- 3 Connecting rod
- 4 Wiper
- 5 Conductive track
- 6 Resistor track

Two plastic film wiper tracks are located along the inside of the light metal housing. One track represents the electrical resistor, the other acts as the conductive track. The wiper bridges the two tracks. The ends of the resistor track are connected electrically via a connection socket. A voltage is applied to these connections and subsequently drops via the resistor track. Depending on the position of the wiper or the connecting rod, a voltage is now tapped, which is proportional to the position.

### Installation and connection of the displacement encoder

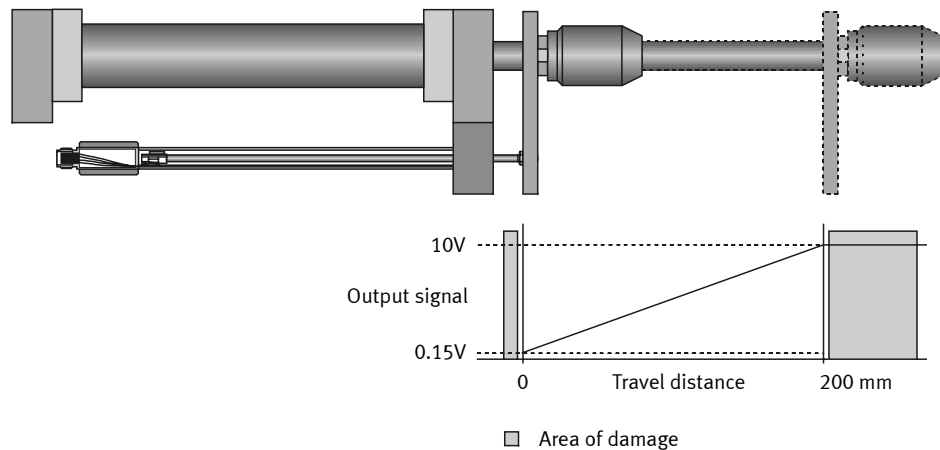
The linear potentiometer is connected by means of a special cable. This cable contains an electronic module, which protects the potentiometer from incorrect connection and from excessive electrical loads.

The displacement encoder is to be installed with the cylinder extended. The connecting rod is screwed into the drive plate of the cylinder and locked. Then, the potentiometer housing is pulled back up until the mechanical end stop has been reached. For the subsequent precision adjustment, it is necessary to connect the potentiometer electrically. The housing is then in the correct position when the output signal displays 9.99 V or just 10.00 V. (There are no output signal values greater than 10 V).

Now lightly clamp the housing. Then check the output voltage and the position of the housing in the retracted status of the cylinder. The position of the housing must not be moved during this and the output signal should not be below 150 mV. Now completely tighten the housing clamp.



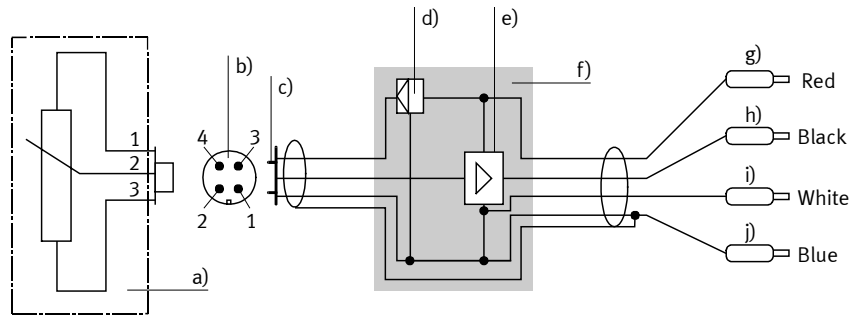
The potentiometer must be installed and secured with the greatest of care, as it may be damaged if the mechanical end stop is overtravelled. Therefore check that the stroke of the potentiometer is sufficient and that movements cannot exceed the mechanical end stop.



# 167090, 525953

## Linear potentiometer

Electrical structure of the displacement encoder



- |    |                          |    |                |
|----|--------------------------|----|----------------|
| a) | Potentiometer            | f) | Housing        |
| b) | Pin assignment           | g) | Supply voltage |
| c) | Plug                     | h) | + Signal       |
| d) | Reference voltage supply | i) | - Signal       |
| e) | Impedance converter      | j) | Supply earth   |

Technical data

Linear potentiometer (Order no.)	167090	525953
<b>Connection cable</b>		
Supply voltage	13 – 30 V DC	
Output voltage	0 – 10 V DC	
<b>Potentiometer</b>		
Measuring stroke	200 mm	300 mm
Mechanical stroke	201 mm	301 mm
Electrical resistance	10 kΩ ±20 %	22 kΩ ±20 %
Load carrying ability	4 W	6 W
Linearity tolerance	0.5 %	
Service life	25,000 000 Wiper cycles	
Max. wiper current	≤ 1 mA	
Max. pick-up speed	1.5 m/s	
Operating temperature range	-40 – +105 °C	
Protection class	IP 64	
Mechanical attachment of connecting rod	M4 thread	