## Angle sensor Measurement of angles up to 88°

Input quantity: φ Output quantity: R

- Potentiometric angular-position sensors with linear characteristic curve.
- Sturdy design for exacting demands.
- Compact size.



### Application

Sensors of this type are used in motor vehicles to record the angle of rotation of the throttle valve. They are exposed to extreme operating conditions, being attached directly to the throttle valve housing by means of an extended throttle valve shaft in the engine compartment. To maintain reliable operation under such conditions, the sensors are resistant to fuels, oils, saline fog and industrial atmospheres.

#### **Design and operation**

The throttle-valve angular-position sensor is a potentiometric angular-position sensor with a linear characteristic curve. It is used with fuel-injection engines to convert the angle of rotation of the throttle valve into a proportional voltage ratio. To do so, the rotor with its special wipers connected to the throttle-valve shaft travels along corresponding resistance tracks, with the position of the throttle valve being converted into the above-mentioned voltage ratio. The throttle-valve angular-position sensors have no return spring. The throttle-valve angular-position sensor 0 280 122 001 has one linear characteristic curve. The throttle-valve angular-position sensor 0 280 122 201 has two linear characteristic curves. This permits a particularly high resolution in the angle range 0° 23°.

# Explanation of characteristic quantities

 $\begin{array}{ll} U_{\rm A} & {\rm Output} \mbox{ voltage } U_{\rm V} {\rm Supply} \mbox{ voltage } \\ \phi {\rm Angle} \mbox{ of rotation } U_{\rm A1} {\rm Output} \\ {\rm voltage} \mbox{ characteristic curve } 2 \mbox{ } U_{\rm A2} \\ {\rm Output} \mbox{ voltage characteristic } \\ {\rm curve} \mbox{ 3} \end{array}$ 

Robert Bosch GmbH Automotive Aftermarket Postfach 410960 76225 Karlsruhe Germany

www.bosch-sensoren.de





## 0 280 122 201

## **Part number**

Technical data		
Useful electrical angle range	degrees	≤ 88
Useful mechanical angle range	degrees	≤ 92
Direction of rotation		Anti-clockwise
Operating voltage $U_{\rm V}$	V	5
Load		Ohmic resistance
Permissible wiper current	μΑ	≤ 20
Voltage ratio in range 088 °C - characteristic curve 2		$0,05 \le U_{\rm A1} \ / \ U_{\rm V} \le 0,985$
Voltage ratio in range 088 °C - characteristic curve 3		$0,05 \le U_{\rm A2} \ / \ U_{\rm V} \le 0,970$
Operating temperature		- 40 °C+ 85 °C
Approximate value for permissible vibration acceleration	m/s <sup>2</sup>	≤ 300
Service life (rotary cycles)	Mill.	1,2

Accessories are not included in the scope of delivery of the sensor and are therefore to be ordered separately as required.

### **Dimensional drawing**



- Н Plug connection
- L Blade terminal
- This installation position is only permissible if throttle-valve shaft is sealed against Κ oil, gasoline etc.
- Ö
- Throtle-valve opening direction Attachment dimensions for throttle-valve potentiometer L







Accessories		Part number
Connector housing Connector housing Protective cap	Quantity required: 4 x; Contents: 5 x Quantity required: 1 x; Contents: 5 x	1 284 485 118 1 284 477 121 1 280 703 023

Accessories are not included in the scope of delivery of the sensor and are therefore to be ordered separately as required.