

Inductive Position Sensor PO1

RE 95 160/12.04 1/8

Technical data sheet

Inductive sensor for position measurement
Series 2



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Features

- Axially-adjustable button with spring pretension
- Inductive position sensor element according to differential throttle measuring principle
- Integrated electronics with temperature compensation
- Output signal, ratiometric and proportional to position
- Zero point and sensitivity matched
- Housing with M 24x1.5 external thread for fastening and alignment
- Also available on request with 5 VDC supply voltage

Ordering Code

		PO1			10	/	2	0
Type	Mobile position sensor	PO1						
Version	Without bellows		1					
	With bellows		2					
Characteristic	Standard		S					
	Inverted		V					
Supply voltage	8 ... 12 VDC				10			
	5 ± 0.5 VDC (on request)				05			
Series							2	
Index								0

Order Number

Sensors							Order number
PO1	2	S	10	/	2	0	R917001941
PO1	1	S	10	/	2	0	R917001942
PO1	2	V	10	/	2	0	R917001943
PO1	1	V	10	/	2	0	R917001944
PO1	2	S	05	/	2	0	On request
PO1	1	S	05	/	2	0	On request
PO1	2	V	05	/	2	0	On request
PO1	1	V	05	/	2	0	On request

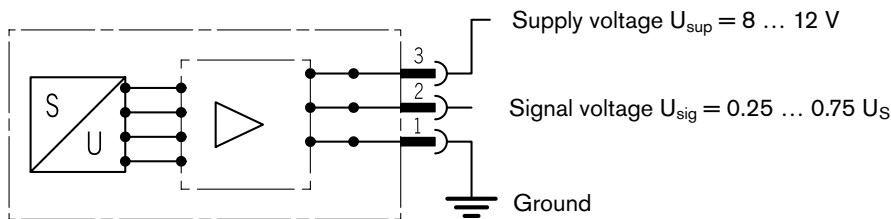
Description

Position sensor PO1 is used to measure position from up to 10 mm. By mounting an eccentric onto a rotating axis the sensor can also be used for axis stabilization of a relative position (see Page 6).

The sensor provides a ratiometric voltage with rising characteristic (U_{sig} rises when pressed in) or inverted characteristic (U_{sig} drops when pressed in). For protection it can also be supplied with bellows.

This sensor is a typical part of an electronic-hydraulic hitch control (EHR).

Block Circuit Diagram / Terminal Connections



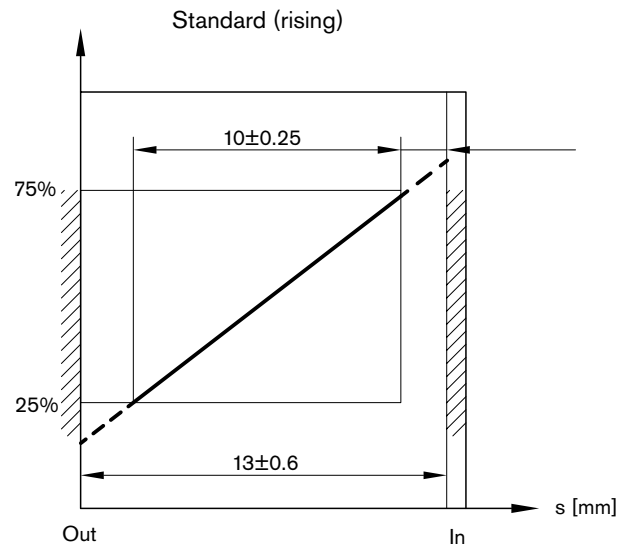
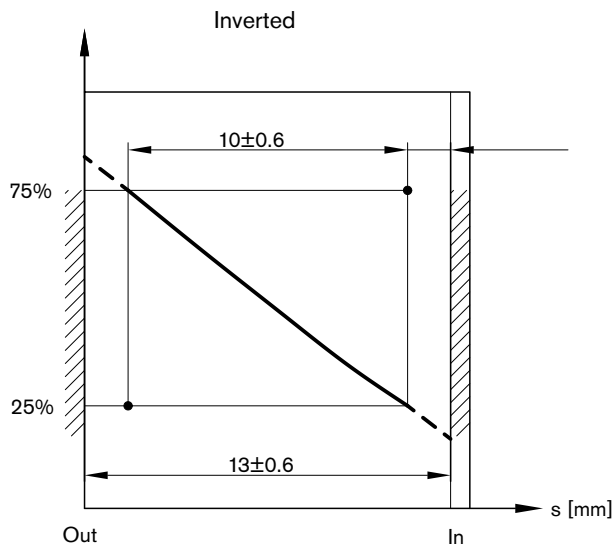
Technical Data

Table of values

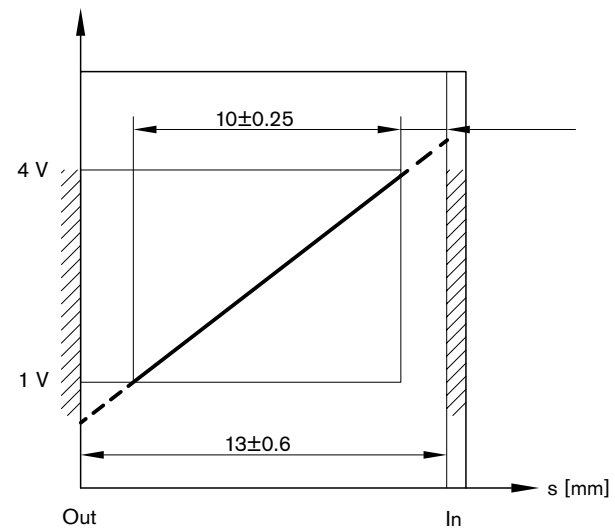
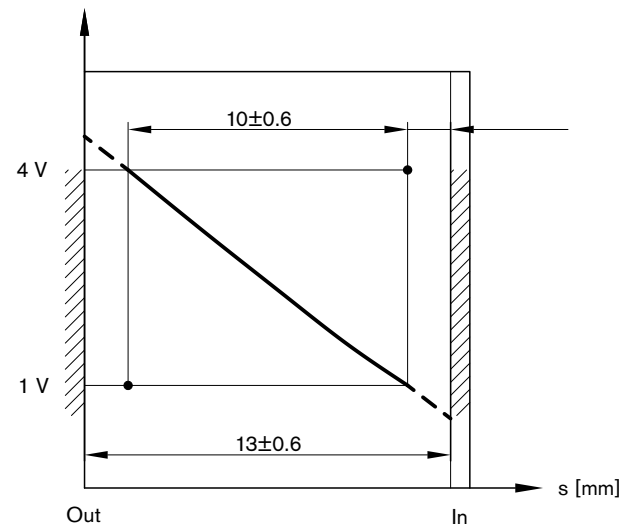
Type	PO1 position sensor	
Nominal stroke	10 mm	
Mechanical stroke	13 mm	
Actuating force	$\leq 16 \text{ N}$	
Linearity	$\leq \pm 2 \%$ (cutoff point setting)	
Leakage (upper cutoff point)	$\leq \pm 1 \%$	
Sensitivity leakage	$\leq \pm 2.5 \%$	
Hysteresis	Not measurable	
Resolution	Infinite	
Temp. coefficient of cutoff point	$\leq \pm 0.15 \%$ / $10 \text{ }^\circ\text{C}$	
Temp. coefficient of sensitivity	$\leq \pm 0.15 \%$ / $10 \text{ }^\circ\text{C}$	
Operating temperature range	$-30 \text{ }^\circ\text{C} \dots +90 \text{ }^\circ\text{C}$	
Storage temperature range	$-35 \text{ }^\circ\text{C} \dots +100 \text{ }^\circ\text{C}$	
Housing material	GD-AI Si 12 (Cu)	
Type of protection	Coil and electronics: IP69K Plug with fitted mating connector: IP69K (see plug table)	
Mating connector	3-pin plug with grommet	
Supply voltage U_{sup}	Standard 8 ... 12 V	On request 5 \pm 0,5 VDC
Supply current	$\leq 30 \text{ mA}$	
Signal voltage U_{sig} ($\times U_{\text{sup}}$)	25 % ... 75 %	10 % ... 90 % (0.5 V ... 4.5 V @ 5 V)
Residual ripple	$< 20 \text{ mV}_{\text{ss}}$	
Load impedance	$> 7 \text{ k}\Omega$	
Insulation to housing	$> 100 \text{ M}\Omega$	
Dielectric strength to housing	$< 200 \text{ V}$	
Electromagnetic compatibility (EMC) as per ISO 11452-5 2002-04 1 MHz ... 1 GHz	$100 \text{ V/m} \leq \pm 1 \%$ U_{sup}	

Characteristics

At 8 ... 12 VDC supply voltage: U_{sig} useful range = 25% ... 75% x U_{sup}



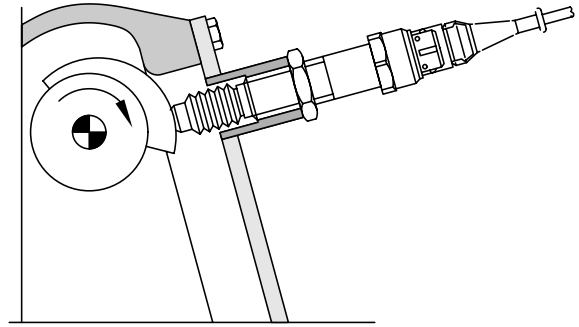
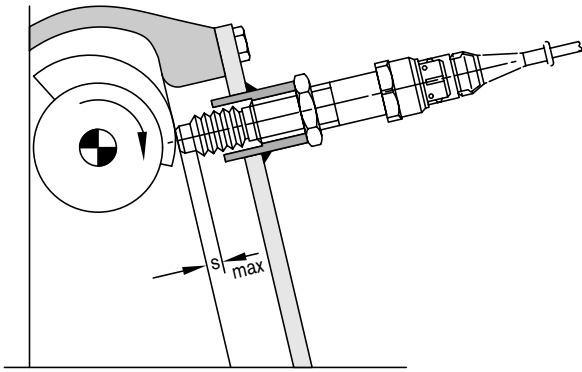
At 5 VDC ± 0.5 V supply voltage: U_{sig} useful range = 1 VDC ... 4 VDC (at 5 VDC)



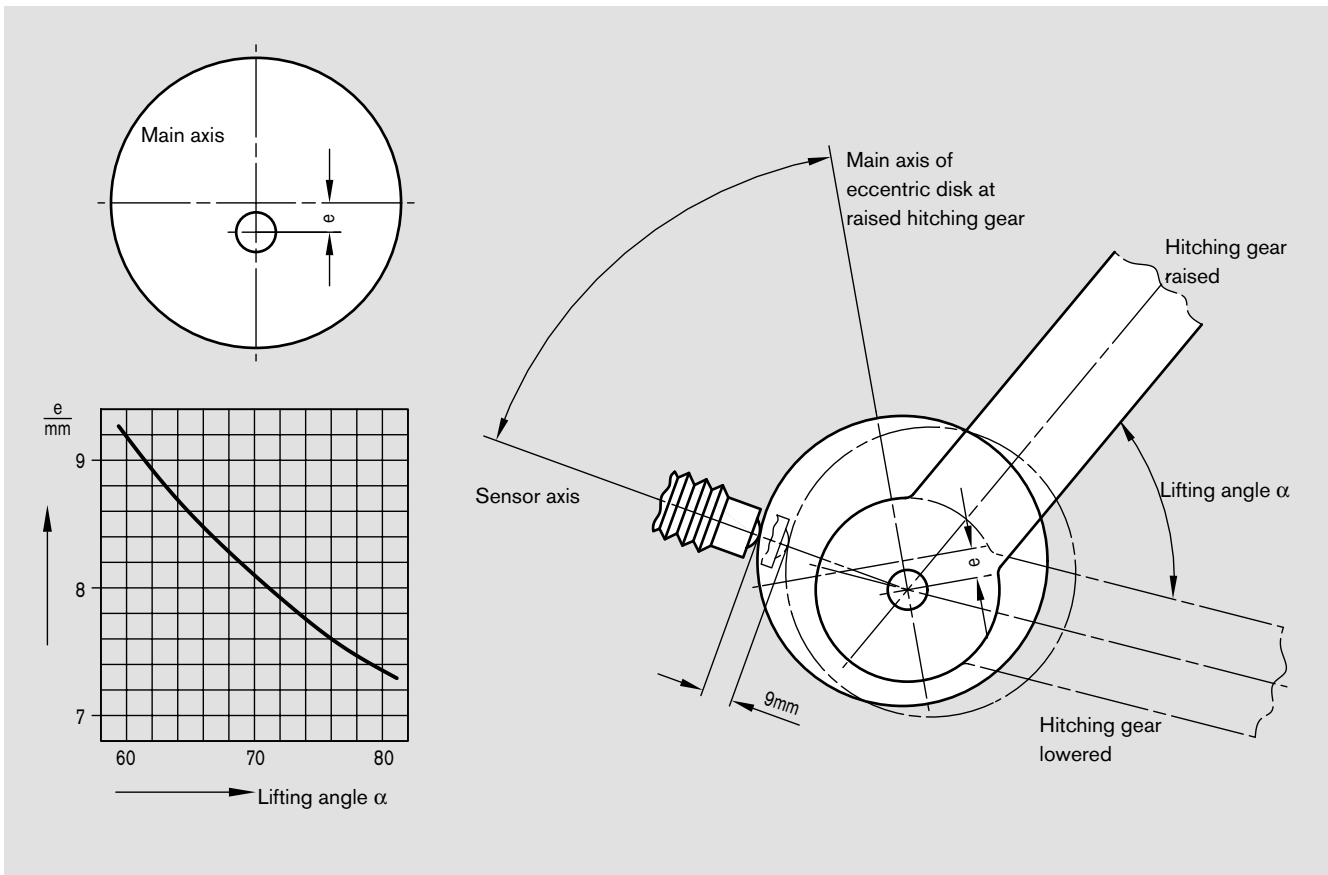
Installation Position

Variant 1: Inverted characteristic

Variant 2: Standard (rising characteristic)



Dimensions: Eccentric for Position Control



Safety Instructions

- The suggested circuits do not imply any technical liability for the system on the part of Rexroth.
- The safety instructions contained in RDE 90 301-01 must be observed.
- Leads to the sensors must be shielded. The shielding is to be connected on one side to the electronic circuit or with a low-impedance to the device or vehicle ground.
- Lines to the electronics must not be routed in the vicinity of other power-conducting cables in the device or vehicle.
- A sufficient distance to radio systems must be maintained.
- All connectors must be unplugged from the electronics during electrical welding operations.

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Subject to change.