USP 4.0 250

Ultrasonic linear stroke control





Current or voltage signal depending on the steady rest clamping range



The linear stroke control sensor generates an analog current or voltage signal between a minimum of 4 mA and a maximum of 20 mA (0-10 V) depending on the steady rest clamping range.

This allows to detect any position of the steady rest and thus of the steady rest arms safely.

- Time and energy saving due to only partial opening of the steady rest during the workpiece loading (with appropriate machine hydraulics).
- Collision protection through evaluation of the output signal signal by the machine control.

Valve body for steady rests with USP 4.0 250



Valve body with Air purge and coolant drain valve. Use of airpurge is mandatory!

Cable 200 mm • with plug M12x1 and protection hose

Valve body with integrated drain valve

measuring system for steady rests



TIME AND ENERGY SAVING:

By only partially opening of the steady rest.



without USP 4.0 250



with USP 4.0 250

COLLISION PROTECTION:

Evaluation of the output signal.



protected area



protected area

10

USP 4.0 250

Measuring range 25 - 250 mm



Linear stroke control unit for Steady Rests

■ Completely sealed, protection class IP 67 ■ Output signal 4 - 20 mA or 0 - 10 V

Application/customer benefits

- For SMW-AUTOBLOK steady rests
 Non-contact distance measurement using ultrasonic technology
- Non-contact distance measureme
 Industry 4.0 compatible
- Linear stroke measuring of the entire clamping stroke avoids collision with the tools, which is an added safety feature
- Time and energy saving due to only partial opening of the steady rest (with corresponding machine hydraulics)

Technical features

- Ultrasonic measuring system
- No interference from magnetic fields
- Measuring range = 25 250 mm
- Compact design / easy installation
- Output signal analog 0 10 V / 4 20 mA
- Protection class IP 67
- Reverse polarity protection
- Use of airpurge is mandatory

Accessories

Sensor connection cable see USP 4.0 250 (Plug M12 x 1) and protection hose

Ordering Example

USP 4.0 250 with 200 mm cable with plug M12 x 1 and protection hose

Measuring principle

In **steady rests**, the levers with their rollers move linear and concentric to the center of rotation. With conventional end position measurement via non-contact limit switches, the two end positions **fully open** and **fully closed** without work piece are detected.

With linear stroke measuring via USP 4.0 250, the clamping stroke is measured lineary. This means that a corresponding

analog signal is always available for each individual position. Only partial opening of the steady rest is possible with the appropriate hydraulics, and in addition to easier loading it also saves time and energy. Due to the linear stroke measuring, the integration of a collision protection software is also possible.

Partial opening of the steady rest for loading and unloading. Time and energy saving.
 Partial opening of the steady rest for loading and unloading. Time and energy saving.
 Image: Steady rest for loading and unloading. Time and energy saving.
 Image: Steady rest for loading and unloading. Time and energy saving.
 Image: Steady rest for loading and unloading.
 Image: Steady res

Linear stroke control unit for Steady Rests

USP 4.0 250

■ Completely sealed, protection class IP 67 ■ Output signal 4 - 20 mA or 0 - 10 V

Measuring range 25 - 250 mm

USP 4.0 250 for RX







Technical features

SMW-AUTOBLOK Typ		USP 4.0 250 for RX		USP 4.0 250 for SR/ SLU-X/K	
		0-10 V /	4-20 mA	0-10 V /	4-20 mA
Measuring range		25 - 2	50 mm	25 - 2	50 mm
Output signal		0 -	10 V	0 -	10 V
-		4 - 2	0 mA	4 - 2	0 mA
Power supply		18 30 V DC		18 30 V DC	
Repeat accuracy		< ± 0.1%		< ± 0.1%	
Linearity		< ± 1.0 %		< ± 1.0 %	
Operating range		-25 - 60°		-25 - 60°	
Protection class		IP 67		IP 67	
Displays/controls					
LED green	permanently on flashing	Pow Standby-Operation / I	er on O-Link Communication	Power on Standby-Operation / IO-Link Communication	
LED yellow	permanently on flashing	Object in the measuring range, Programming the limits, object detected		Object in the measuring range, Programming the limits, object detected	
LED red	permanently on flashing	Malfunction Malfunction Programming the limits, object not recognized Programming the limits, object not recognized		inction s, object not recognized	
Pin assignment					
Pin 1	brown BN	24 V DC		24 V DC	
Pin 2	white WH			-	
Pin 3	blue BU	GND		GND	
Pin 4	black BK	0 -10 V	4 - 20 mA	0 - 10 V	4 - 20 mA

Order overview

SMW-AUTOBLOK Typ	ldNr.		
USP 4.0 250			
Complete set for RX steady rests	0 - 10 V	228761	
	4 - 20 mA	228670	
Complete set for SR /SLU-X/K steady rests	0 - 10 V	228762	
	4 - 20 mA	228740	
USP 4.0 250 ultrasonic sensor single	0 - 10 V	211501	
USP 4.0 250 ultrasonic sensor single	4 - 20 mA	211500	

N