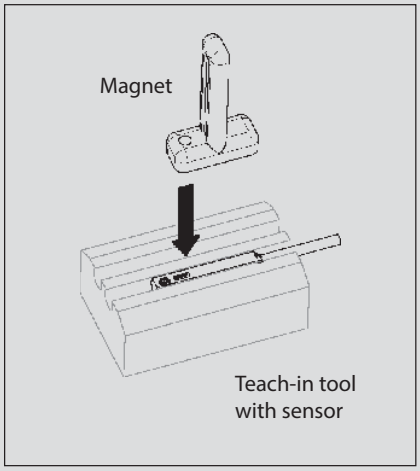
BERNSTEIN

Programmable Miniature Position Sensors with Fully Integrated Electronics

The teachable magnetic sensors are characterised by one or two freely programmable, independent switching points. Despite this high degree of functionality, BERNSTEIN has succeeded in integrating the entire electronics into a compact sensor enclosure with the smallest possible dimensions. This design feature renders additional protection (e.g. for the cable electronics or high-cost safeguards) unnecessary.

The compact design is suitable for installation in all standard T- and C-slots (e.g. FESTO or SMC). In an installed position, the freely programmable switching points can be quickly and easily set with the aid of the easy-to-use teach-in tool.



- The installed sensor assumes programming mode when the teach-in tool is placed over it
- The positions of the magnet are assigned to the respective outputs by correspondingly aligning the tool
- The programmable switching points are stored in the sensor
- The switching points can be changed by repeating the teach-in procedure

This configuration largely avoids unintentional changes to the settings and substantially increases the resistance to environmental influences while retaining the protection class rating.

Manually searching for the switching points has been replaced by rapid electronic balancing with the sensor installed in position. LEDs at the top of the sensor serve as the function indicator, provide information on the programming status and also signal faults. In addition to featuring effective polarity reversal protection as standard, the sensors also have an internal EEPROM that stores the switching points in the event of power failure.

Advantages

- Completely integrated electronic solution
- Permanent protection rating
- No need for additional electronics
- Fully immersed and therefore protected installation in the slot
- Suitable for standard C- and T-slots
- Available as cable or plug version
- Occupies only one slot
- Freely programmable switching points
- Straightforward teach-in procedure
- Reduced installation and wiring requirements
- Can be fitted from above
- High switching accuracy

Technical data

- PNP/NO contact
- Magnetic sensitivity ±1.5 mT to ±13.5 mT
- Sensing distance up to 50 mm (depending on magnet/air gap)
- Repeat accuracy ≤ 0.1 mT
- Hysteresis 1 mT ≤ H ≤ 1.35 mT
- Operating voltage range 10 – 30 V DC
- Output current Ie ≤ 50 mA (one output switched) ≤ 25 mA per output (both outputs switched)
- Ambient temperature –20 °C to +80 °C
- Protection class IP67

Other slot sensors

Sensors with only one output can also be used for applications that require only one switching point. For this purpose BERNSTEIN offers a range of Hall sensors with set sensitivity or reed contact versions that do not require auxiliary energy.

All sensors come with the following accessories:

- 1x setscrew M2 x 3 (E22), M3 x 6 (E30), DIN 913
- 1x Offset screwdriver (E22)
- 1x Teach-in tool
- 1x Operating and installation instructions

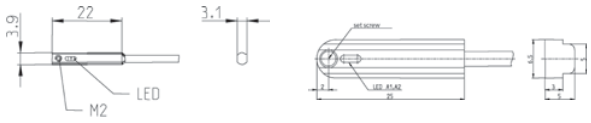
Standards and approvals

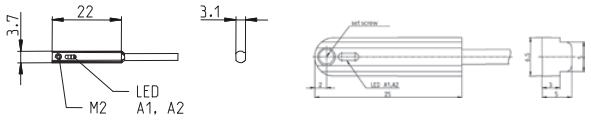
MEK E-22/MEA E30
EN 60947-5-2

CE

Teachable Electronic Slot Sensors

Type	E22		E30		
Operating mode	Hall	Hall	Hall	Hall	
Magnetic sensitivity (mT)	1.5 – 13.5 mT	1.5 – 13.5 mT	1.5 – 13.5 mT	1.5 – 13.5 mT	
Switching function	PNP NO / 0 – 10 V	PNP NO / 0 – 10 V	PNP NO / 0 – 10 V	PNP NO / 0 – 10 V	
Reference magnet (Page)					
Type of connection	Cable 2 m	Connector M8	Cable 2 m	Connector M8	





Type	C-slot SMC	**6370281183**	**6370281184**				
Double-chanel	Type	MEK-E22PS/HP2-KL2	MEK-E22PS/HP2-KL0,3S8				
	C-slot Festo	**6370281185**	**6370281186**				
	Type	MEK-E22PS/HP2-KL2	MEK-E22PS/HP2-KL0,3S8				
	T-slot			**6370299187**	**6370299188**		
	Type			MEA-E30PS/HP2-KL2	MEA-E30PS/HP2-KL0,3S8		
Type	C-slot SMC	**6372281177**	**6372281178**				
Single-chanel	Type	MEK-E22PS/HP1-KL2	MEK-E22PS/HP1-KL0,3S8				
	C-slot Festo	**6372281179**	**6372281180**				
	Type	MEK-E22PS/HP1-KL2	MEK-E22PS/HP1-KL0,3S8				
	T-slot			**6372299181**	**6372299182**		
	Type			MEA-E30PS/HP1-KL2	MEA-E30PS/HP1-KL0,3S8		
Analogue 0 – 10 V	T-slot				**6370099169**		
	Type				MEA-E30A10/H50-KL0,3S8		

Technical data

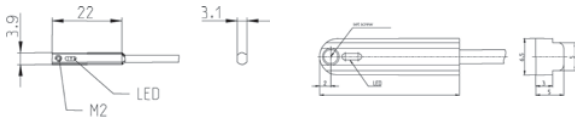
Rated operating voltage	U_B	10–30 VDC	10–30 VDC	10–30 VDC	10–30 VDC	
Rated operating current	I_B	≤ 50 mA	≤ 50 mA	≤ 50 mA	≤ 50 mA	
Max. switching voltage	F					
Function/operating voltage indicator		LED/–	LED/–	LED/–	LED/–	
Sensitivity adjustable		Yes	Yes	Yes	Yes	
Short circuit-protection		Cyclic	Cyclic	Cyclic	Cyclic	
Teachable		Yes	Yes	Yes	Yes	

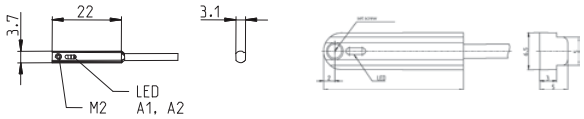
Mechanical data

Ambient temperature (min/max)				
Single-chanel / Double-chanel	–20°C/+80°C	–20°C/+80°C	–20°C/+80°C	–20°C/+80°C
Analogue 1 – 10 V				+5°C/+55°C
Protection class in accordance with IEC 529, EN 60529	IP67	IP67	IP67	IP67
Enclosure material	PA	PA	Aluminium	Aluminium
Connection	4 x 0.05 mm²	M8 x 1	4 x 0.05 mm²	M8 x 1

Please refer to Accessories for magnets, mounting brackets, cable couplers and sensor tester.

Type	E22		E30		
Operating mode	Hall	Hall	Hall	Hall	
Magnetic sensitivity (mT)	3 mT	3 mT	3 mT	3 mT	
Switching function	PNP NO	PNP NO	PNP NO	PNP NO	
Reference magnet (Page)					
Type of connection	Cable 2 m	Connector M8	Cable 2 m	Connector M8	





Type							
Type	C-slot SMC	**6372281171**	**6372281172**				
	Type	MEK-E22PS/H03-KL2	MEK-E22PS/H03-KL0,3S8				
	C-slot Festo	**6372281173**	**6372281174**				
	Type	MEK-E22PS/H03-KL2	MEK-E22PS/H03-KL0,3S8				
	T-slot			**6372299175**	**6372299176**		
	Type			MEA-E30PS/H03-KL2	MEA-E30PS/H03-KL0,3S8		

Technical data

Rated operating voltage	U_B	10–30 VDC	10–30 VDC	10–30 VDC	10–30 VDC	
Rated operating current	I_B	≤ 50 mA	≤ 50 mA	≤ 50 mA	≤ 50 mA	
Max. switching voltage	F					
Function/operating voltage indicator		LED/–	LED/–	LED/–	LED/–	
Sensitivity adjustable		Yes	Yes	Yes	Yes	
Short circuit-protection		Cyclic	Cyclic	Cyclic	Cyclic	
Teachable		–	–	–	–	

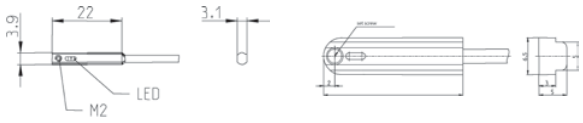
Mechanical data

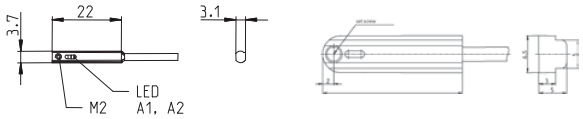
Ambient temperature (min/max)	–20°C/+80°C	–20°C/+80°C	–20°C/+80°C	–20°C/+80°C	
Protection class in accordance with IEC 529, EN 60529	IP67	IP67	IP67	IP67	
Enclosure material	PA	PA	Aluminium	Aluminium	
Connection	3 x 0.05 mm²	M8 x 1	3 x 0.05 mm²	M8 x 1	

Please refer to Accessories for magnets, mounting brackets, cable couplers and sensor tester.

Slot Sensors with Reed Contact

Type	E22		E30		
Operating mode	Reed	Reed	Reed	Reed	
Magnetic sensitivity (mT)	3 mT	3 mT	3 mT	3 mT	
Switching function	NO	NO	NO	NO	
Switching power	10 VA	10 VA	10 VA	10 VA	
Type of connection	Cable 2 m	Connector M8	Cable 2 m	Connector M8	





Type							
Type	C-slot SMC	**6310281741**	**6310281742**				
	Type	MAK-E22S/R20-2	MAK-E22S/R20-0,3S8				
	C-slot Festo	**6310281743**	**6310281744**				
	Type	MAK-E22S/R20-2	MAK-E22S/R20-0,3S8				
	T-slot			**6310299745**	**6310299746**		
	Type			MAA-E30S/R20-2	MAA-E30S/R20-0,3S8		

Technical data

Rated operating voltage	U_B	120 V	120 V	120 V	120 V
Performance class (diagram No.)		10 VA	10 VA	10 VA	10 VA
Shock resistance		30 g (11 ms)	30 g (11 ms)	30 g (11 ms)	30 g (11 ms)
Reproducibility		+/– 1 mm	+/– 1 mm	+/– 1 mm	+/– 1 mm
Mechanical service life (switching operations)		3 x 10^8	3 x 10^8	3 x 10^8	3 x 10^8

Mechanical data

Ambient temperature (min/max)	–25°C/+80°C	–25°C/+80°C	–25°C/+80°C	–25°C/+80°C
Protection class in accordance with IEC 529, EN 60529	IP67	IP67	IP67	IP67
Enclosure material	PA	PA	Aluminium	Aluminium
Connection	3 x 0.05 mm²	M8 x 1	3 x 0.05 mm²	M8 x 1

You will find detailed data sheets to the products under www.bernstein.eu