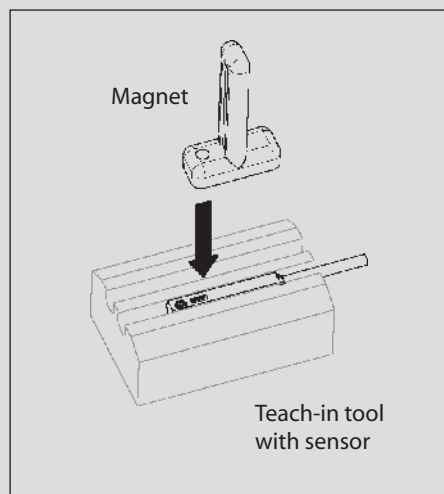


## Programmable Miniature Position Sensors with Fully Integrated Electronics

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.



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Manually searching for the switching points has been replaced by rapid electronic balancing with the sensor installed in position.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

- ⌘ 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

### Technical data

- ⌘ PNP/NO contact
- ⌘ Magnetic sensitivity  $\pm 1.5 \text{ mT}$  to  $\pm 13.5 \text{ mT}$
- ⌘ 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 le 50 mA (one output switched) 25 mA per output (both outputs switched)
- ⌘ Ambient temperature  $-20 \text{ }^\circ\text{C}$  to  $+80 \text{ }^\circ\text{C}$
- ⌘ 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

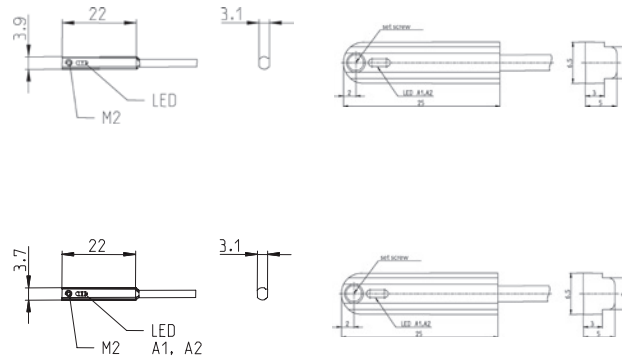
### Standards and approvals

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



# 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-channel	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-channel	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

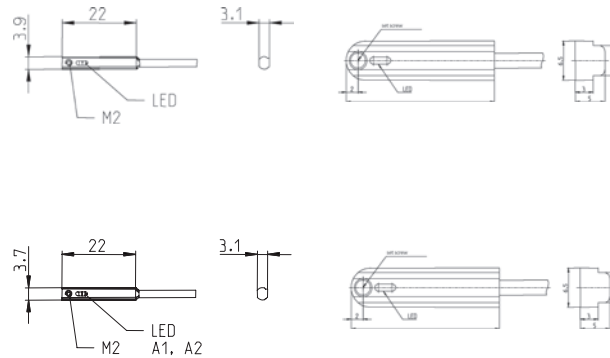
## Mechanical data

Ambient temperature (min/max)					
Single-channel / Double-channel		–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 mm <sup>2</sup>	M8 x 1	4 x 0.05 mm <sup>2</sup>	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	C-slot SMC Type C-slot Festo Type T-slot Type	6372281171 MEK-E22PS/H03-KL2	6372281172 MEK-E22PS/H03-KL0,3S8	6372281173 MEK-E22PS/H03-KL2	6372281174 MEK-E22PS/H03-KL0,3S8	6372299175 MEA-E30PS/H03-KL2	6372299176 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

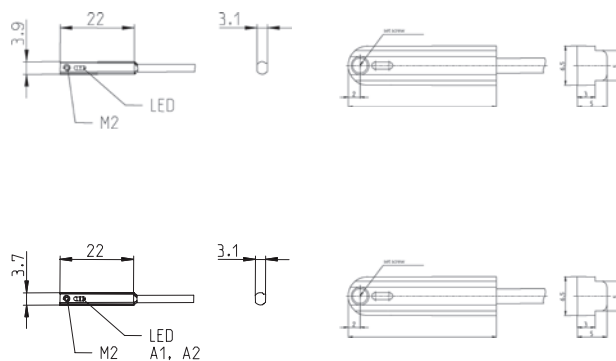
Ambient temperature (min/max)	-20°C/+80°C	-20°C/+80°C	-20°C/+80°C	-20°C/+80°C
Protection class in accordance with IEC 529, EN 60529	IP67	IP67	IP67	IP67
Enclosure material	PA	PA	Aluminium	Aluminium
Connection	3 x 0.05 mm <sup>2</sup>	M8 x 1	3 x 0.05 mm <sup>2</sup>	M8 x 1

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	C-slot SMC Type C-slot Festo Type T-slot Type	6310281741 MAK-E22S/R20-2 6310281743 MAK-E22S/R20-2	6310281742 MAK-E22S/R20-0,3S8 6310281744 MAK-E22S/R20-0,3S8	6310299745 MAA-E30S/R20-2	6310299746 MAA-E30S/R20-0,3S8
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### 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)	$3 \times 10^8$	$3 \times 10^8$	$3 \times 10^8$	$3 \times 10^8$

### 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	$3 \times 0.05 \text{ mm}^2$	M8 x 1	$3 \times 0.05 \text{ mm}^2$	M8 x 1

You will find detailed data sheets to the products under [www.bernstein.eu](http://www.bernstein.eu)

