



Miniature magnetic position sensors

Programmable switching points with integrated electronics

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The BERNSTEIN range of teachable electronic magnetic sensors combines two programmable switching points and fully integrated electronics in an enclosure that boasts the smallest dimensions in its class.

This highly compact design allows the intelligent sensor to be fully recessed in standard T and C-slots (e.g. FESTO or SMC), providing maximum protection for the integrated electronics within an IP67 rated enclosure.

When the easy to use teaching tool is placed over the installed sensor, it automatically selects programming mode and the two switching points can then be set at the push of a button. The two LEDs on the sensor then serve as function indicators, providing information on

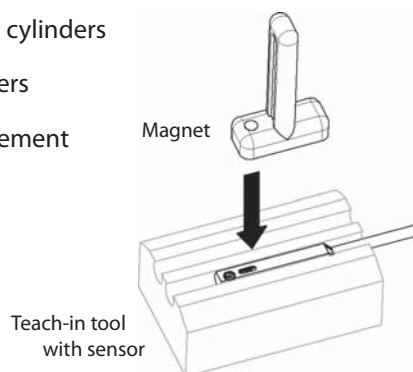
the programming status and displaying signal faults. This helps prevent unintentional changes to the settings whilst retaining the safety class rating.

This switching is quickly programmed by mounting the sensor near the cylinder or gripper, which is then moved to the desired switching position. One push of a button sets the switch-on point and the process is repeated for the second switching position. This method saves installation time and greatly improves accuracy.

The new sensors include protection against short circuits and polarity reversal as standard. An internal EEPROM stores the switching points in the event of power failure. Versions are available with a 4-pin M8 connector or as a cable version with open wires.

Industries and Applications

- Assembly and handling systems
- Short-stroke cylinders
- Block cylinders
- Clamping element
- Robotics
- Grippers



- 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 aligning the tool
- the programmable switching points are stored in the sensor
- the switching points can be changed by repeating the teach-in procedure

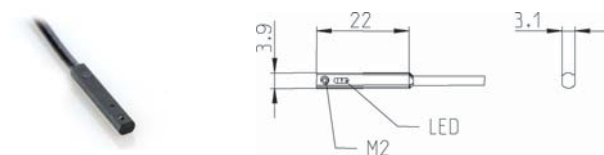
Advantages

- Fully integrated electronic solution
- Permanent protection rating
- No need to mount additional electronics
- Fully immersed and therefore protected installation in the slot
- Suitable for standard C and T-slots
- Available as cable or plug version
- Only takes up one slot
- Two freely programmable switching points
- Straightforward teach-in procedure
- Reduced installation and wiring requirements
- Top-mounted
- High switching accuracy

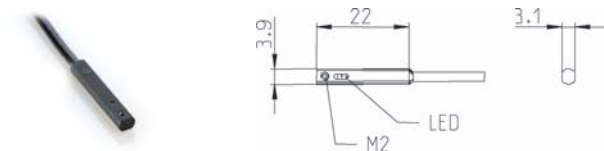
Delivery Range

Intelligent electronic magnetic sensors – two switching points, teachable

Size	Series	Material	Type of connection	Type of installation	Article number	Article designation
22 x 3,9 x 3,1 mm	E22	Plastic	Cable	C-slot – SMC	6370281109	MEK-E22PS/HP-KL2
22 x 3,9 x 3,1 mm	E22	Plastic	M8 plug	C-slot – SMC	6370281110	MEK-E22PS/HP-KL0,3S



Size	Series	Material	Type of connection	Type of installation	Article number	Article designation
22 x 3,9 x 3,1 mm	E22	Plastic	Cable	C-slot – SMC	6370281152*	MEK-E22PS/HP-KL2-EX
22 x 3,9 x 3,1 mm	E22	Plastic	M8 plug	C-slot – SMC	6370281153*	MEK-E22PS/HP-KL0,3S-EX

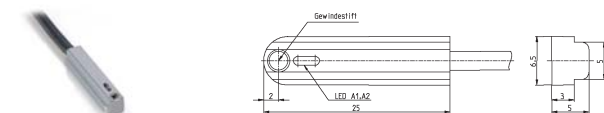


* Version with Ex approval
KEMA 08ATEX0130 X
II 2 G Ex mb II T6
II 2 D Ex tD A21 IP 67 T 85 °C

Size	Series	Material	Type of connection	Type of installation	Article number	Article designation
22 x 3,7 x 3,1 mm	E22	Plastic	Cable	C-slot – Festo	6370281144	MEK-E22PS/HP-KL2
22 x 3,7 x 3,1 mm	E22	Plastic	M8 plug	C-slot – Festo	6370281145	MEK-E22PS/HP-KL0,3S



Size	Series	Material	Type of connection	Type of installation	Article number	Article designation
25 x 6,5 x 5 mm	E30	Aluminium	Cable	T-slot	6370299136	MEA-E30PS/HP-KL2
25 x 6,5 x 5 mm	E30	Aluminium	M8 plug	T-slot	6370299143	MEA-E30PS/HP-KL0,3S



Accessories

Cable coupler (straight version, 2 m cable)	4-pin M8	4139100837	GDK-M08UA/W00-2
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All sensors come with the following accessories:

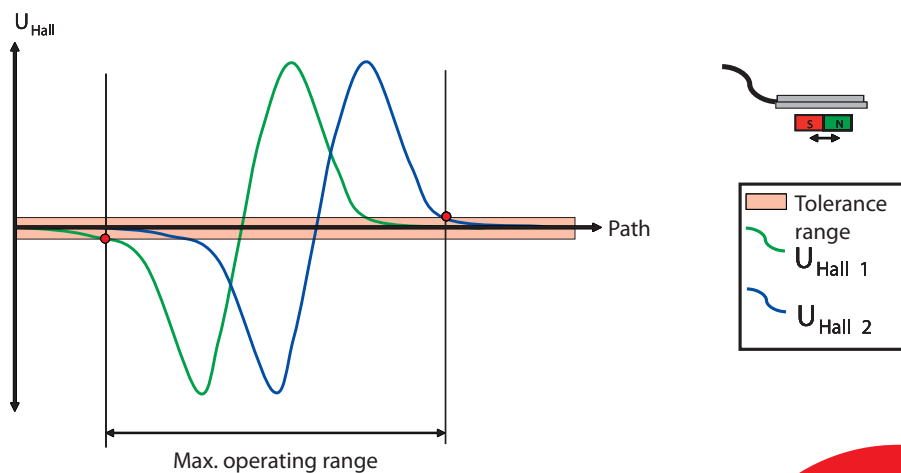
- 1 x setscrew M2x3 (E22), M3x6 (E30), DIN 913
- 1 x offset screwdriver (E22)
- 1 x teach-in tool
- 1 x operating and installation instructions

Other slot sensors:

Sensors with only one output can also be used for applications that require only one switching point. For these applications, BERNSTEIN AG offers Hall sensors with set sensitivity or reed contact versions that require no auxiliary energy (see "Delivery Range – Other Slot Sensors").

The illustration shows the maximum sensing range of both sensor elements over the traverse range of the magnet. A curve must be outside the tolerance range in order to achieve clear assignment of the switching points. The sensor immediately detects the moment at which both curves are within the tolerance range of low magnetic sensitivity due to the magnet and air gap constellation and signals a fault.

Magnetic field parallel to sensor



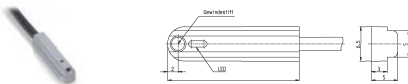
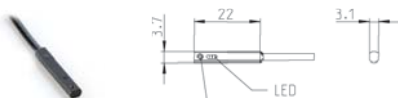
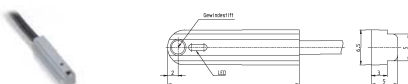
**Other products
in our complete range**

Technical Data

- Magnetic sensitivity $\pm 1.5 \text{ mT}$ to $\pm 13.5 \text{ mT}$ / switching range up to 50 mm (depending on magnet / air gap)
- Repeatability $\leq 0.1 \text{ mT}$
- Hysteresis $1 \text{ mT} \leq H \leq 1.35 \text{ mT}$
- Operating voltage range UB 10-30 V DC
- PNP / make contact NO
- Output current $I_e \leq 50 \text{ mA}$ (one output switched)
 $\leq 25 \text{ mA}$ per output (both outputs switched)
- Ambient temperature -20°C to $+80^\circ\text{C}$
- Type of protection IP 67

Delivery Range

Other slot sensors – one switching point, non-teachable

Technology	Series	Material	Type of connection	Type of installation	Article number	Article designation
Reed 2-conductor 10 VA Make contact NO $\leq 3 \text{ mT}$ $\leq 40 \text{ AW}$	E22	Plastic	Cable	C-slot – SMC	6310281656	MAK-8112-2
	E22	Plastic	M8 plug	C-slot – SMC	6310281657	MAK-8112-0,3/S
						
	Series	Material	Type of connection	Type of installation	Article number	Article designation
	E22	Plastic	Cable	C-slot – Festo	6310281658	MAK-8112-2
	E22	Plastic	M8 plug	C-slot – Festo	6310281659	MAK-8112-0,3/S
						
	Series	Material	Type of connection	Type of installation	Article number	Article designation
	E30	Aluminium	Cable	T-slot	6310299660	MAA-9912-2
	E30	Aluminium	M8 plug	T-slot	6310299661	MAA-9912-0,3/S
						
Technology	Series	Material	Type of connection	Type of installation	Article number	Article designation
Hall 10-30 V DC Typ. 3mT 50mA PNP/make contact NO South-switching	E22	Plastic	Cable	C-slot – SMC	6372281146	MEK-E22PS/H03-KL2
	E22	Plastic	M8 plug	C-slot – SMC	6372281147	MEK-E22PS/H03-KL0,3S
						
	Series	Material	Type of connection	Type of installation	Article number	Article designation
	E22	Plastic	Cable	C-slot – Festo	6372281148	MEK-E22PS/H03-KL2
	E22	Plastic	M8 plug	C-slot – Festo	6372281149	MEK-E22PS/H03-KL0,3S
						
	Series	Material	Type of connection	Type of installation	Article number	Article designation
	E30	Aluminium	Cable	T-slot	6372299150	MEA-E30PS/H03-KL2
	E30	Aluminium	M8 plug	T-slot	6372299151	MEA-E30PS/H03-KL0,3S
						



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**Enclosure technology –
Function and design**

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