

Distance Measurement: BAW M12 Inductive Analog Sensors

The next stage of function security achieved

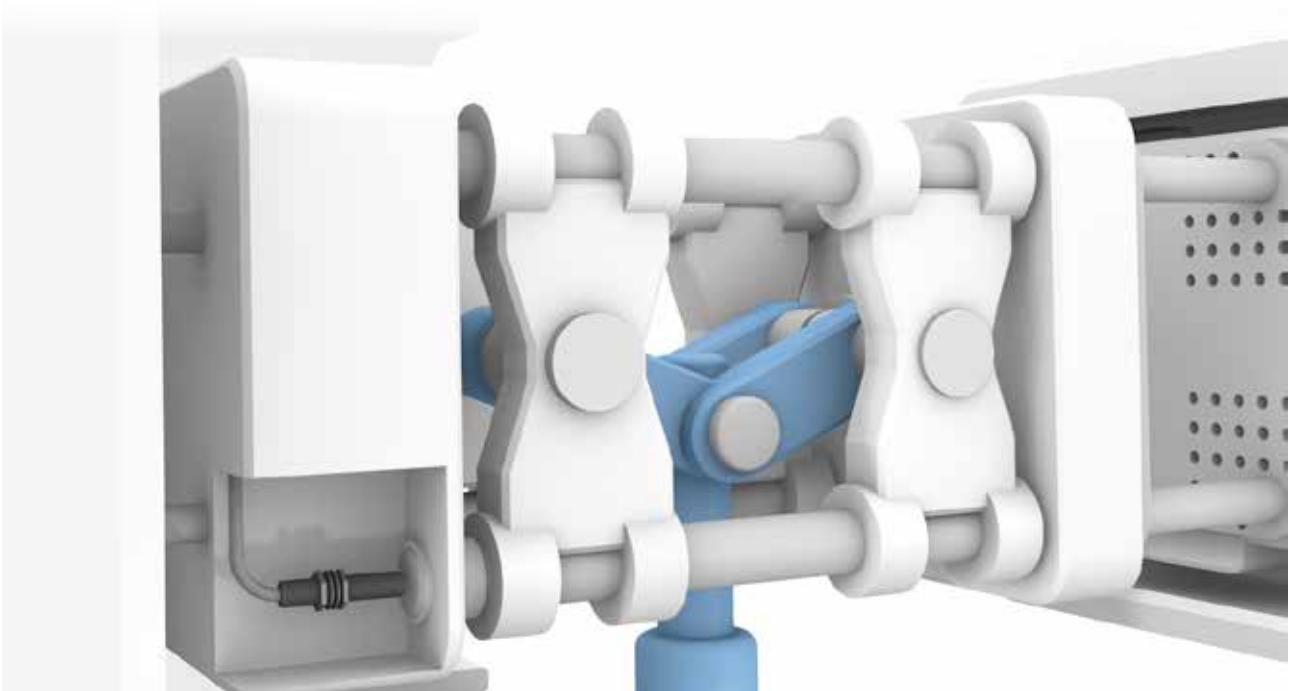
- High linearity
- Long measuring range
- Low temperature drift
- Adjustable linearity area
- Analog (voltage and current) and IO-Link version

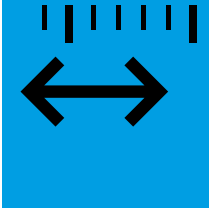


Reliable and wear-free distance measurement is ensured by contact-free sensor technology. The BAW analog sensors allow you to go to the next step. They no longer only check the presence of metallic objects, but rather various target shapes, positions and distances reliably.

Their analog and linear characteristics allow the new BAW to be used for clamping force measurement, measuring imbalances or implementing a soft-stop in the cylinder.

The new sensor family features long service life. The convenient teach function ensures quick programming during initial installation and decreased downtime during sensor replacement due to the adjustable linear range.





Series	M12x1	M12x1	M12x1
Installation type (observe instructions in Basic Information chapter)	Flush	Flush	Non-flush
Output signal	0...10 V	4...20 mA	IO-Link
Linear range s_l	0.2...3.5 mm	0.2...3.5 mm	0.2...7 mm
	BAW004K	BAW0055	BAW0056
Supply voltage U_S	18...30 V DC	18...30 V DC	18...30 V DC
Effective distance s_e	1.85 mm	1.85 mm	3.6 mm
Polarity reversal protected/transposition protected/short-circuit protected	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
Settings (Teach-in)	Measuring range	Measuring range	Measuring range
Adjustment display (LED)	Yes	Yes	Yes
Ambient temperature T_a	-40...+80 °C	-40...+80 °C	-25...+70 °C
Repeat accuracy R_{BWN}	±7 µm	±7 µm	±7 µm
Non-linearity max.	±35 µm	±35 µm	±70 µm
Limit frequency (-3 dB)	1000 Hz	1000 Hz	1000 Hz
Response time	0.2 ms	0.2 ms	2 ms
Degree of protection as per IEC 60529	IP67	IP67	IP67
Approvals	CE, cULus, EAC	CE, cULus, EAC	CE, cULus, EAC
Material	Housing: Brass, coated Sensing surface: LCP	Brass, coated LCP	Brass, coated PBT
Connection	M12 connector, 4-pin	M12 connector, 4-pin	M12 connector, 4-pin



Accessories



Type	Teach adapter For BAW sensors	Teach adapter For BAW sensors	Mounting brackets For sensors and clamps M12	Mounting cuff For sensors Ø 12 mm and M12
	BAE00MN	BAE00MP	BAM00C0	BAM0218
Teach-in	PIN1 to PIN2	PIN1 to PIN4		
Material	PUR	PUR	Aluminium	Aluminium



Connectors



Type	M12 female, 3-pin (straight) with 5 m cable PUR shielded (black)	M12 female, 3-pin (straight) with 5 m cable PUR (black)	M12 female, 3-pin (straight) with 5 m cable PUR shielded (black)	M12 female, 3-pin (right- angle) with 5 m cable PUR shielded (black)
	BCC030U	BCC030L	BCC030Z	BCC031H