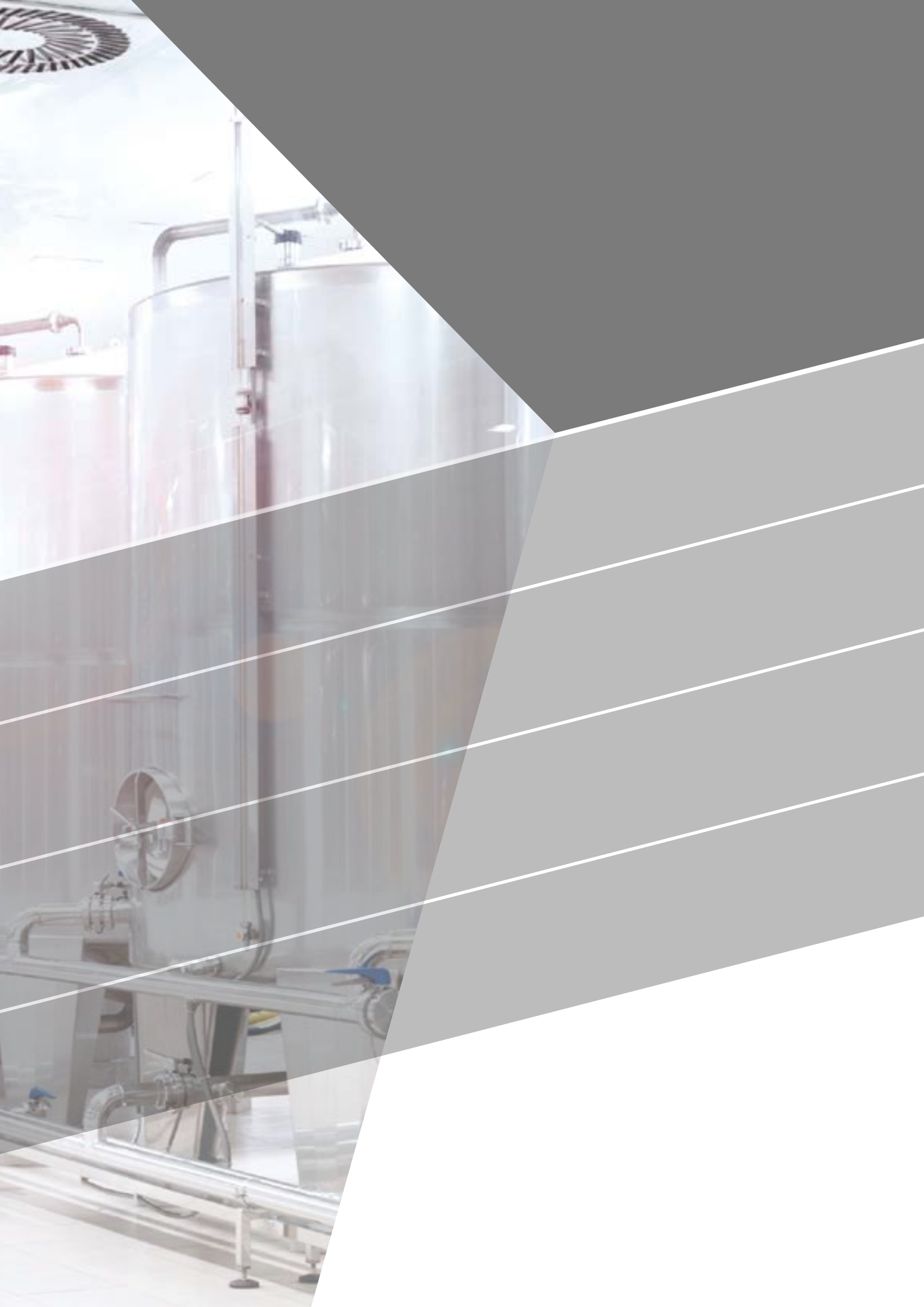




BALLUFF

PACKAGING,
FOOD AND BEVERAGE

 *innovating automation*



INDEX

8 SENSORS



56 RFID



64 CONNECTIVITY

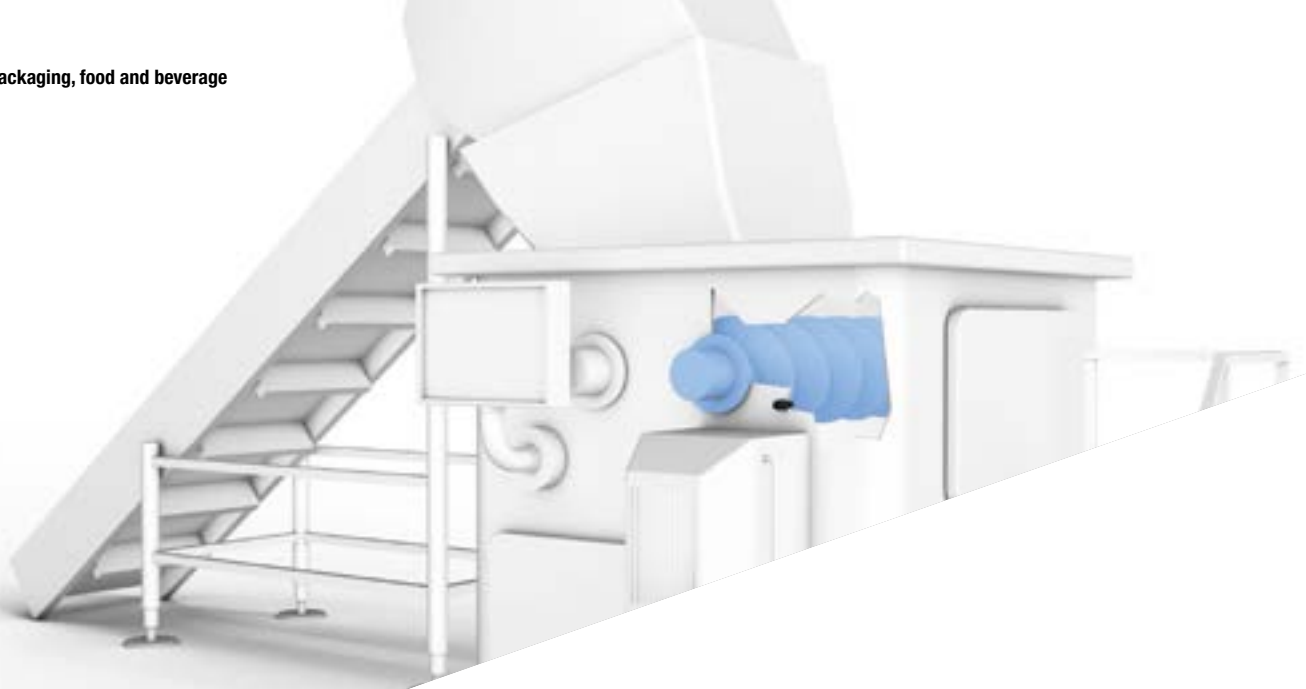


72 ACCESSORIES



ABOUT BALLUFF 74

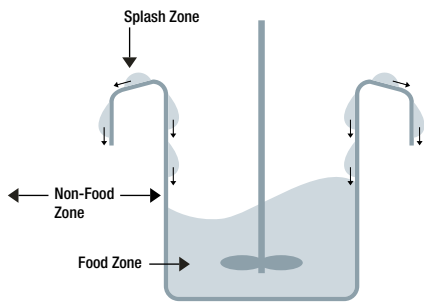
- 8 Inductive sensors
 - 10 Capacitive level sensors with media contact
 - 12 Ultrasonic Sensor
 - 14 Magnetic field Sensors
 - 16 Photoelectric Sensors
 - Diffuse
 - 20 Diffuse sensor with background suppression
 - 22 Photoelectric Sensors
 - Retroreflective
 - 28 Through-beam
 - 38 Photoelectric distance sensors
 - 40 Through-beam fork sensors
 - 42 Contrast sensors
 - 44 Pressure sensors
 - 46 Magnetostrictive linear position sensors for extreme environments
-
- 56 Network blocks for Ethernet/IP and Profinet I/O
 - 58 IO-Link sensors/actuator hubs
 - 60 Guided radar sensors
 - 62 Mounting System
 - 64 RFID
-
- 64 Receptacles
 - 66 Connectivity
-
- 72 Mounting System
 - 192 Universal bracket
 - 193 Background light for vision



Solutions for food safety

Food safety is an extremely important aspect of food and beverage manufacturing and is defined as a set of guidelines and procedures on how to properly handle foodstuffs in order to prevent foodborne illnesses from contamination caused by bacteria, viruses and fungi.

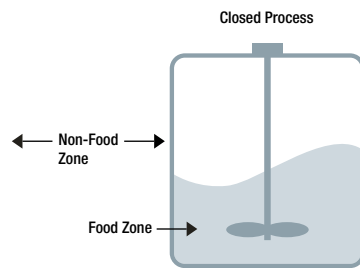
When working in automated food and beverage segments, such as dairy, meat, poultry, frozen foods, filling and bottling, it is important to understand the sanitation and washdown requirements in order to provide the best possible solution.



FOOD CONTACT ZONES

There are three primary food contact zones in the production process. The food contact zones define the level of potential contamination that could occur based on the amount of contact with foodstuffs the production equipment is exposed to. Identifying the proper food contact zone is vital in specifying the proper solution for the application.

- **Food Zone**
This is the surface in direct contact with food or where other substances can flow, drip, distribute, diffuse or be drawn. This also includes surfaces where condensed liquids can drop back into or onto the product as well as surfaces that are in contact with product touching packaging materials.
- **Splash Zone**
This is the surface or machinery that can indirectly come in contact with food and liquid where the product cannot end up back in the main food product production. Contamination of these surfaces can cause indirect contamination of the food and also needs to be addressed.
- **Non-Food Zone**
Any surface of the food production machine that does not come in contact with the food product.

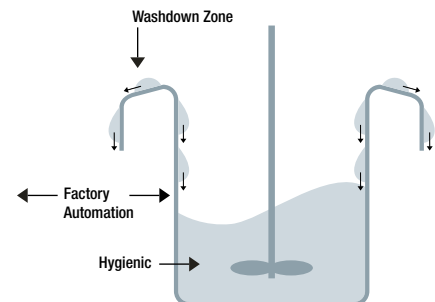


CLOSED AND OPEN PRODUCTION

When discussing food contact zones, it is also important to discuss the open and closed production processes in order to properly access the correct food contact

zone and machine cleaning requirements.

- **Closed Process**
This is probably the easiest to handle in the production since the product does not come in contact with the environment. Food contact zones are the inner surfaces of tanks, pipelines, valves, pumps and sensors. Outside is the non-food zone, which does not come in contact with food. Nothing can unintentionally enter the process from the outside.
- **Open Process**
Food has contact with the environment outside the machine. Hygienic design of the process environment and the surfaces of the apparatus and components is necessary.

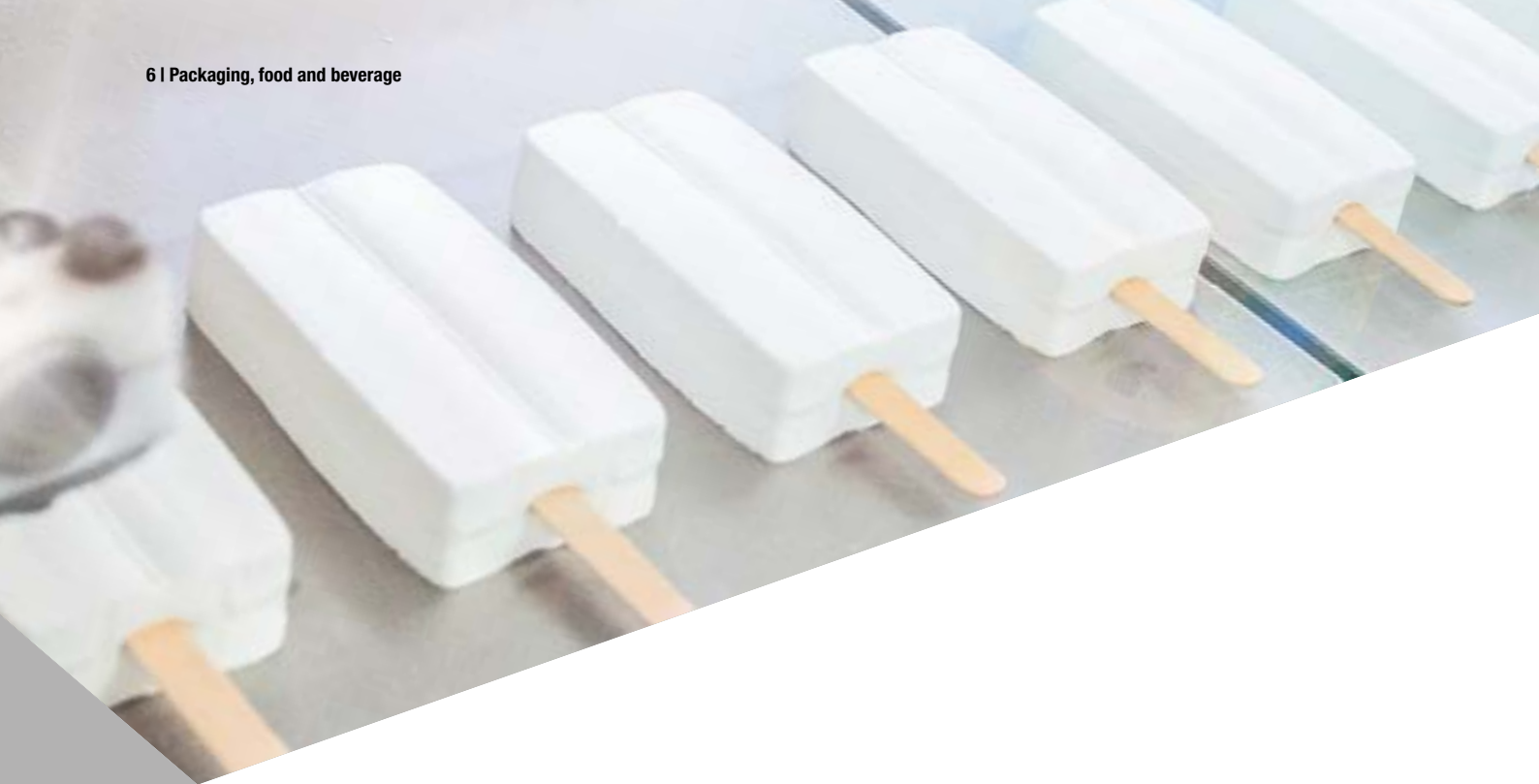


RATINGS, STANDARDS, AND CERTIFICATIONS

Based on the food contact zone and open or closed process, it can be determined which ratings, standards or certi-

fication are required for proper cleaning.

- **Hygienic – Food Contact Zone**
IP69K
FDA
3-A
EHEDG
- **Washdown – Food Splash Zone**
IP69K
ECOLAB
- **Factory Automation – Non-Food Zone**
IP67
IP65



The Food and Drug Administration (FDA) is a federal agency of the United States Department of Health and Human Services, one of the United States federal executive departments.

The FDA is responsible for protecting and promoting public health through the regulation and supervision of food safety, tobacco products, dietary supplements, prescription and over-the-counter pharmaceutical drugs (medications), vaccines, biopharmaceuticals, blood transfusions, medical devices, electromagnetic radiation emitting devices (ERED), cosmetics, animal foods & feed and veterinary products.

FDA approved means all materials in the product have been approved for contact with food.



Ecolab is a global leader in providing products and services in the area of industrial cleaning and hygiene.

Due to the wide use of cleaning agents worldwide, the ECOLAB certification of components has become a standard.

In an Ecolab certification the components are brought into contact with various cleaning and disinfecting agents according to defined steps and classified based on the effect on the parts according to a specified scheme.

The goal of the test is to verify the suitability of the parts in later practical use and if necessary to preclude destruction of the parts or contamination of the surroundings.

Ecolab resistant means:

Survived 28 days in various cleaning and disinfecting agents without swelling, brittleness, or discoloring.

FOOD SAFE RATINGS- WHAT THEY MEAN



The EHEDG (European Hygienic Equipment and Design Group) is a community of experts from machine and component manufacturers, specialists from the food industry as well as research institutes and health agencies.

The organization was founded in 1989 for the purpose of strengthening hygiene in the processing and packaging of food articles.

The main task of the EHEDG is to contribute to hygienic design and layout in all areas of food production and thereby to ensure safe production of food articles.

The EHEDG also supports the European legislation and its requirement for hygienic handling, processing and packaging of foods using hygienically designed machines and in hygienic premises (EC Directive 2006/42/EC for machines, EN 1672-2 and EN ISO 14159 for hygienic requirements).



3A USA, an independent, not-for-profit corporation dedicated to advancing hygienic equipment design for the food, beverage, and pharmaceutical industries, representing the association of three organizations, the IAFIS (International Association Of Food Industry Suppliers), IAFP (International Association for Food Protection) and MIF (Milk Industry Foundation). 3A approved products are sanitary and hygienic, making them safe for food contact zones.

8 | Packaging, food and beverage



PNP NO	BES0430 BES G12EE1-PSY20B-S04G- L02	BES0431 BES G12EE1-PSY40F-S04G- L0	BES0433 BES M12EE-PSC40B-S04G- L01	BES0435 BES M12EI-PSC40B-S04G- L01	
PNP NC			BES0432 BES M12EE-POC40B-S04G-L01	BES0434 BES M12EI-POC40B-S04G-L01	
PNP NO				BES0436 BES M12EI-NSC40B-S04G-L01	
Dimension	Ø 12 x 50 mm	Ø 12 x 54.5 mm	M12 x 45 mm	M12 x 65 mm	
Range	2 mm	4 mm	4 mm	4 mm	
Switching frequency	800 Hz	400 Hz	2000 Hz	1000 Hz	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PEEK	PEEK	LCP	LCP	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Ambient temperature	-40...105 °C	-40...105 °C	-25...85 °C	-25...85 °C	
Protection degree	IP68	IP68	IP68	IP68	
Approval/Conformity	CE, cULus, Ecolab, FDA konform, EAC, WEEE	CE, cULus, Ecolab, FDA konform, EAC, WEEE	CE, cULus, Ecolab, FDA konform, EAC, WEEE	CE, cULus, Ecolab, FDA konform, EAC, WEEE	



PNP NO	BES02FK BES 515-360-E5-T-S	BES02EK BES 515-325-E5-T-S4	BES02ET BES 515-326-E5-T-S4	BES02FA BES 515-356-E5-T-S4	
Dimension	M12 x 54.5 mm	M12 x 50 mm	M18 x 45 mm	M12 x 54,5 mm	
Range	8 mm	2 mm	5 mm	4 mm	
Switching frequency	200 Hz	800 Hz	500 Hz	400 Hz	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel	Stainless steel (1.4571)	
Material sensing surface	PEEK	PEEK	PA 12	PEEK	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Ambient temperature	-40...105 °C	-40...85 °C	-40...105 °C	-40...85 °C	
Protection degree	IP68	IP68	IP68	IP68	
Approval/Conformity	cULus, CE, EAC, WEEE	CE, cULus	CE, cULus, EAC	CE, cULus	



BES0437 BES M18EI-PSC80B-S04G- L01	BES0441 BES M18EE1-PSY50B-S04G- L01	BES0443 BES M12EE1-PSY40F-S04G- L01	BES0444 BES M12EE1-PSY20B-S04G- L01	
BES0438 BES M18EI-POC80B-S04G-L01				
M18 x 65 mm	M18 x 45 mm	M12 x 54.5 mm	M12 x 50 mm	
8 mm	5 mm	4 mm	2 mm	
700 Hz	500 Hz	400 Hz	800 Hz	
Stainless steel (1.4404)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	
PEEK	PEEK	PEEK	PEEK	
Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
-40...85 °C	-40...105 °C	-40...105 °C	-40...105 °C	
IP68	IP68	IP68	IP68	
CE, cULus, Ecolab, FDA konform, EAC, WEEE	CE, cULus, Ecolab, FDA konform, EAC, WEEE	CE, cULus, Ecolab, FDA konform, EAC, WEEE	CE, cULus, Ecolab, FDA konform, EAC, WEEE	



BES02FM BES 515-360-SA12-S4-T	BES02F0 BES 515-327-E5-T-S4			
M18 x 65 mm	M30 x 45 mm			
8 mm	10 mm			
200 Hz	200 Hz			
Stainless steel	Stainless steel			
PA12	PA 12			
Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin			
10...30 VDC	10...30 VDC			
-40...85 °C	-40...105 °C			
IP68	IP68			
CE, cULus	CE, cULus, EAC			

10 | Packaging, food and beverage



PNP NO	BCS011L BCS S04K501-PICFNG-S04G-T51	BCS011E BCS S04K501-PICFNG-S04G-T500	BCS011F BCS S04K501-PSCFNG-S04G-T50	BCS011M BCS S04K501-PSCFNG-S04G-T51
PNP NC			BCS011H BCS S04K501-POCFNG-S04G-T50	BCS011N BCS S04K501-POCFNG-S04G-T51
NPN NO			BCS011J BCS S04K501-NSCFNG-S04G-T50	BCS011P BCS S04K501-NSCFNG-S04G-T51
NPN NC			BCS011K BCS S04K501-NOCFNG-S04G-T50	BCS011R BCS S04K501-NOCFNG-S04G-T51
Dimension	Ø 30 x 96 mm	Ø 30 x 96 mm	Ø 30 x 96 mm	Ø 30 x 96 mm
Series	S04	S04	S04	S04
Thread (A)	G 1/2"	G 1/2"	G 1/2"	G 1/2"
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin
Switching frequency	5 Hz	5 Hz	5 Hz	5 Hz
Interface	IO-Link 1.1	IO-Link 1.1		
Sensitivity	teachable depending on media	teachable depending on media	teachable depending on media	teachable depending on media
Function	Smart Level 100	Smart Level 100	Smart Level 100	Smart Level 100
Additional features	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation	Electrically conductive media, Foam and residue compensation
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
Material sensing surface	PEEK	PEEK	PEEK	PEEK
Ambient temperature	-10...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
Operating voltage Ub	18...30 VDC	18...30 VDC	12...30 VDC	12...30 VDC
Approval/Conformity	IO-Link, EHEDG conformal, FDA compliant, CE	CE, FDA compliant, EHEDG conformal, IO-Link	CE, FDA compliant, EHEDG conformal	CE, FDA compliant, EHEDG conformal, WEEE
Protection degree	IP68	IP68	IP68	IP68



CAN BE WELDED	BAM0294 BAM AD-CS-013-1G2/D29-WLD-5			
THREAD-IN		BAM0292 BAM AD-CS-013-1G2/3G4-5	BAM0293 BAM AD-CS-013-1G2/1G0-5	
DAIRY COUPLING PER DIN 11851				BAM0293 BAM AD-CS-013-1G2/1G0-5
TRI-CLAMP				
Weight	105 g	70 g	120 g	120 g
Approvals	EHEDG conformal	EHEDG conformal	EHEDG conformal	EHEDG conformal
Housing material	1.4404 (316L) stainless steel	1.4404 (316L) stainless steel	1.4404 (316L) stainless steel	1.4404 (316L) stainless steel
sensor connection	G1/2"	G1/2"	G1/2"	G1/2"
Process connection	Ø 18.5 mm	G3/4"	G1"	G1"



	BAM0295 BAM AD-CS-013-1G2/D44-TRI-5	BAM0296 BAM AD-CS-013-1G2/D58-TRI-5			
			BAM02NT BAM AD-CS-013-1G2/D50-TRI-5	BAM02NU BAM AD-CS-013-1G2/D64-TRI-5	
	105 g	70 g	120 g	120 g	
	EHEDG conformal	EHEDG conformal	EHEDG conformal	EHEDG conformal	
	1.4404 (316L) stainless steel	1.4404 (316L) stainless steel	1.4404 (316L) stainless steel	1.4404 (316L) stainless steel	
	G½"	G½"	G½"	G½"	
	Ø 18.5 mm	G¾"	G1"	G1"	



PNP NO	BUS006N BUS G30E0-XA-15/150-EP02-S			
Dimension	Ø 30 x 106 mm			
Range	150...2000 mm			
Connection	Cable, 2 m, PVC			
Housing material	Stainless steel (1.4404)			
Material sensing surface	Stainless steel (1.4404)			
Ambient temperature	-20...70 °C			
Operating voltage Ub	15...30 VDC			
Approval/Conformity	CE, EHEDG conformal, WEEE			
Protection degree	CE, EHEDG conformal WEEE			



	BAM0349 BAM MC-XA-049-D18,0-5	BAM034A BAM MC-XA-049-D30,0-5
Use	for ultrasonic sensors BUS, for sensors Ø18 mm	for ultrasonic sensors BUS, for sensors Ø30 mm
Material	Stainless steel (1.4404) Silicone SI 70/101	Stainless steel (1.4404) Silicone SI 70/101
Dimension	Ø 30 x 25.5 mm	Ø 50 x 40 mm
Mounting	Screws, terminals	Screws, terminals
Ambient temperature	-20...80 °C	-20...80 °C
Approval/Conformity	EHEDG conformal, WEEE	EHEDG conformal, WEEE



	BAM039H BAM CS-XA-013-U7/8-4	BAM039H BAM CS-XA-014-U7/8-4	BAM02KM BAM CS-XA-001-M12-5	
Short description	Protective cover for 7/8" male connector for fieldbus modules	Protective cover for 7/8" female connector for fieldbus modules	Protective cap for M12 connector	
Material	Stainless steel (1.4404) Neopren Shore A60	Stainless steel (1.4404) Neopren Shore A60	Stainless steel	
Dimension	Ø 26.2 x 15.5 mm	Ø 26.2 x 15.5 mm	Ø 13.5 x 12.5 mm	
Mounting	7/8"-16	7/8"-16	Screws	

14 | Packaging, food and beverage



PNP NO	BMF00M5 BMF 405KF-PS-C-2A-S4-00,3	BMF00M0 BMF 405KF-PS-C-2A-EY-02	BMF00M1 BMF 405KF-PS-C-2A-EY-05	BMF00M2 BMF 405KF-PS-C-2A-EY-10	
PNP NC		BMF00LW BMF 405KF-PO-C-2A-EY-02	BMF00LY BMF 405KF-PO-C-2A-EY-05	BMF00LZ BMF 405KF-PO-C-2A-EY-10	
NPN NO	BMF00M6 BMF 405KF-NS-C-2A-S4-00,3	BMF00LR BMF 405KF-NS-C-2A-EY-02	BMF00LT BMF 405KF-NS-C-2A-EY-05	BMF00LU BMF 405KF-NS-C-2A-EY-10	
NPN NC		BMF00LM BMF 405KF-NO-C-2A-EY-02	BMF00LN BMF 405KF-NO-C-2A-EY-05	BMF00LP BMF 405KF-NO-C-2A-EY-10	
Series	405KF	405KF	405KF	405KF	
Dimension	5 x 5.4 x 27 mm	5 x 5.4 x 27 mm	5 x 5.4 x 27 mm	5 x 5.4 x 27 mm	
Principle of operation	Magnetic field sensor	Magnetic field sensor	Magnetic field sensor	Magnetic field sensor	
Switching frequency	10000 Hz	10000 Hz	10000 Hz	10000 Hz	
Connection	M12x1-Male, 3-pole, A-coded				
Cable	0.3 m, TPE-V	2 m, TPE-V	5 m, TPE-V	10 m, TPE-V	
Housing material	PP	PP	PP	PP	
Ambient temperature	-40...100 °C	-40...100 °C	-40...100 °C	-40...100 °C	
Operating voltage U_b	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, Ecolab, RoHS, EAC, WEEE	cULus, CE, Ecolab, RoHS, EAC, WEEE	cULus, CE, Ecolab, RoHS, EAC, WEEE	cULus, CE, Ecolab, RoHS, EAC, WEEE	
IP rating	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	



	BMF001F BMF 103K-PS-C-2A-PU-03	BMF001Z BMF 10E-PS-D-2-SA1-S49			
	103K	10E			
	9 x 4.8 x 16 mm	Ø 10 x 32 mm			
	Magnetic field sensor	Magnetic field sensor			
	30000 Hz	10000 Hz			
		M8x1-Male, 3-pole			
	3 m, PUR				
	PBT	Stainless steel (1.4571)			
	-25...85 °C	-40...85 °C			
	10...30 VDC	10...30 VDC			
	cULus, CE	cULus, CE, Ecolab, RoHS, EAC, WEEE			
	IP67, IP68, IP69K	IP69K			

16 | Packaging, food and beverage



PNP NO PNP NC	BOS01KE BOS 18E-PA-RD20-S4	BOS01KF BOS 18E-PA-RD21-S4	BOS023R BOS 18E-PA-RD30-S4	BOS023T BOS 18E-PA-RD31-S4	
Series	18E	18E	18E	18E	
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	
Input function					
Special optical feature					
Beam characteristic	Divergent	Divergent	Divergent	Divergent	
Light type	LED, red light	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 50 mm at 600 mm	Ø 50 mm at 600 mm	Ø 50 mm at 600 mm	Ø 50 mm at 600 mm	
Range	500 mm	250 mm	500 mm	250 mm	
Connection	Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 4-pin	
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	Glass	Glass	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, Ecolab, FDA compliant, EAC	CE, cULus, Ecolab, FDA compliant, EAC	cULus, Ecolab	CE, cULus, Ecolab, WEEE compliant, EAC	



PNP NO PNP NC	BOS01LK BOS 6K-PU-RD10-S49	BOS01LL BOS 6K-PU-RD10-S75	BOS01LN BOS 6K-PU-RD10-02	BOS0175 BOS 23K-PU-LD20-S4	
NPN NO NPN NC		BOS01LM BOS 6K-NU-RD10-S75	BOS01LP BOS 6K-NU-RD10-02		
PNP NO PNP NC IO-LINK					
Series	6K	6K	6K	23K	
Dimension	12 x 41.5 x 21.6 mm	12 x 37,9 x 21,6 mm	12 x 37,9 x 21,6 mm	23 x 51 x 52.4 mm	
Input function	Same function as button, Key disable on/off	Same function as button, Key disable on/off	Same function as button, Key disable on/off	Key disable on/off, Same function as button	
Special optical feature					
Beam characteristic	Divergent	Divergent	Divergent	Collimated	
Light type	LED, red light	LED, red light	LED, red light	Laser red light	
Light spot size	20 x 20 mm at 180 mm	20 x 20 mm at 180 mm	20 x 20 mm at 180 mm	2.2 x 2.2 mm at 800 mm	
Range	0...800 mm	0...800 mm	0...800 mm	5...1200 mm	
Connection	Connector, M8x1 3-pole	Connector, M8x1 4 pole	Cable, 2.00 m, PVC	Connector, M12x1 4-pin	
Housing material	ABS	ABS	ABS	PC ABS	
Material sensing surface	PMMA	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	CE, Ecolab, cULus	



BOS0239 BOS 18E-PA-ID20-S4	BOS01KJ BOS G18E-PA-RD21-S4	BOS01KH BOS G18E-PA-RD20-S4	BOS0240 BOS G18E-PA-RD30-S4	BOS023M BOS G18E-PA-ID20-S4
18E	G18E	G18E	G18E	G18E
Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
Divergent	Divergent	Divergent	Divergent	Divergent
Infrared	LED, red light	LED, red light	LED, red light	infravörös
Ø 50 mm at 600 mm	—	Ø 50 mm at 600 mm	—	—
700 mm	250 mm	500 mm	500 mm	700 mm
Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 4-pin
Stainless steel (1.4571)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
Glass	Glass	Glass	PMMA	PMMA
18...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
CE, cULus, Ecolab, WEEE compliant, EAC	CE, cULus, Ecolab, WEEE compliant, EAC	CE, cULus, Ecolab, FDA compliant, EAC	Ecolab, cULus, CE, EAC	Ecolab, cULus, CE, EAC



BOS0239 BOS 18E-PA-ID20-S4	BOS016Z BOS 23K-PU-RD10-S4	BOS01FM BOS 23K-PA-RD10-S4		BOS0171 BOS 23K-GI-RD10-S4	BOS023E BOS 18E-PI-RD30-S4
	BOS0170 BOS 23K-NU-RD10-S4				
18E	23K	23K		23K	18E
Ø 18 x 75 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm		23 x 51 x 52.4 mm	Ø 18 x 75 mm
	Key disable on/off, Same function as button			Same function as button, Key disable on/off	
Divergent	Focus, typical at 500 mm	Focus, typical at 500 mm		Focus, typical at 600 mm	Divergent
Infrared	LED, red light	LED, red light		LED, red light	LED, red light
Ø 50 mm at 600 mm	15 x 15 mm at focal point	15 x 15 mm at focal point		14 x 14 mm at focal point	Ø 50 mm at 600 mm
700 mm	0...2000 mm	0...2000 mm		0...2000 mm	1...500 mm
Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 4-pin		Connector, M12x1 4-pin	Connector, M12x1 4-pin
Stainless steel (1.4571)	PC ABS	PC ABS		PC ABS	Stainless steel (1.4571)
Glass	PMMA	PMMA		PMMA	Glass
18...30 VDC	10...30 VDC	10...30 VDC		18...30 VDC	18...30 VDC
CE, cULus, Ecolab, WEEE compliant, EAC	Ecolab, CE, cULus, EAC	Ecolab, CE, cULus, EAC		cULus, CE, Ecolab, EAC, WEEE	cULus, CE, EAC, WEEE



PNP NO	BOS021J BOS R01E-PS-KD20- 00,2-S49	BOS021K BOS R01E-PS-KD20-02		
PNP NC	BOS021Y BOS R01E-PO-KD20-00,2- S49	BOS021Z BOS R01E-PO-KD20-02		
NPN NO	BOS0220 BOS R01E-NS-KD20-00,2-S49	BOS0221 BOS R01E-NS-KD20-02		
Series	R01E	R01E		
Dimension	20 x 32 x 9 mm	20 x 32 x 9 mm		
Input function				
Special optical feature				
Beam characteristic	Divergent	Divergent		
Light type	LED, red light	LED, red light		
Light spot size	Ø 3.0 mm Light exit	Ø 3.0 mm Light exit		
Range	1...100 mm	1...100 mm		
Connection	Cable with connector, M8x1 connector, 3- pin, 0.20 m, PUR	Cable, 2.00 m, PUR		
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)		
Material sensing surface	PA	PA		
Operating voltage Ub	10...30 VDC	10...30 VDC		
Approval/Conformity	cULus, CE, Ecolab, EAC	cULus, CE, Ecolab, EAC		

20 | Packaging, food and beverage



PNP NO PNP NC	BOS017C BOS 23K-PU-LH10-S4	BOS01FR BOS 23K-PA-LH10-S4	BOS01FT BOS 23K-PA-LH20-S44	BOS017H BOS 23K-PU-LH20-S4	
NPN NO NPN NC	BOS017E BOS 23K-NU-LH10-S4				
Dimension	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Beam characteristic	Collimated	Collimated	Collimated	Collimated	
Light type	Laser red light	Laser red light	Laser red light	Laser red light	
Light spot size	2.2 x 2.2 mm at 800 mm	2.2 x 2.2 mm at 800 mm	2.5 x 3.5 mm at 800 mm	2.5 x 3.5 mm at 800 mm	
Range	5...800 mm	5...800 mm	5...800 mm	5...800 mm	
Connection	Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 4-pin	Connector, M12x1 c 4-pin	
Housing material	PC ABS	PC ABS	PC ABS	PC ABS	
Material sensing surface	PMMA	PMMA	PMMA	PMMA	
Operating voltage Ub	12...30 VDC	12...30 VDC	12...30 VDC	12...30 VDC	
Approval/Conformity	CE, Ecolab, cULus, EAC	CE, Ecolab, cULus, EAC	CE, Ecolab, cULus, EAC	cULus, CE, Ecolab, EAC, WEEE	



PNP NO PNP NC	BOS011E BOS 6K-PU-LH10-S75	BOS01KW BOS 6K-PU-RH10-S49	BOS01KY BOS 6K-PU-RH10-S75		
NPN NO NPN NC	BOS011F BOS 6K-NU-LH10-S75	BOS01KZ BOS 6K-NU-RH10-S75			
PNP NOPNP NC IO-LINK				BOS017A BOS 23K-GI-RH10-S4	
Dimension	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	23 x 51 x 52.4 mm	
Principle of optical operation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
Beam characteristic	Focused	Focus, typical at 50 mm	Focus, typical at 50 mm	Focus, typical at 500 mm	
Light type	Laser red light	LED, red light	LED, red light	LED, red light	
Light spot size	Ø 1.2 mm at 120 mm	5 x 5 mm at focal point	5 x 5 mm at focal point	15 x 15 mm at focal point	
Range	4...120 mm	1...200 mm	1...200 mm		
Connection	Connector, M8x1 4-pole	Connector, M8x1 3-pole	Connector, M8x1 4-pole	Connector, M12x1 4-pin	
Housing material	ABS	ABS	ABS	PC ABS	
Material sensing surface	PMMA	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	18...30 VDC	
Approval/Conformity	CE, cULus, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	



BOS0178 BOS 23K-PU-RH10-S4	BOS01FL BOS 23K-PA-RH10-S4	BOS01LH BOS 6K-PU-LH10-02	BOS01LO BOS 6K-PU-RH10-02	BOS01L5 BOS 6K-PU-RH11-02
	BOS0179 BOS 23K-NU-RH10-S4	BOS01LJ BOS 6K-NU-LH10-02	BOS01L1 BOS 6K-NU-RH10-02	BOS01L6 BOS 6K-NU-RH11-02
23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	12 x 37.9 x 21.6 mm	12 x 37.9 x 21.6 mm	23 x 51 x 52.4 mm
Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation
23 x 51 x 52.4 mm	Focus, typical at 500 mm	Focus, typical at 50 mm	Focus, typical at 60 mm	Focus, typical at 500 mm
LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
15 x 15 mm at focal point	15 x 15 mm at focal point	5 x 5 mm at focal point	8 x 8 mm at focal point	15 x 15 mm at focal point
3...800 mm	3...800 mm	1...200 mm	3...400 mm	3...800 mm
Connector, M12x1 4-pin	Connector, M12x1 4-pin	Cable, 2.00 m, PVC	Cable, 2.00 m, PVC	Cable, 2.00 m, PVC
PC ABS	PC ABS	ABS	ABS	PC ABS
PMMA	PMMA	PMMA	PMMA	PMMA
10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
CE, Ecolab, cULus, EAC	CE, Ecolab, cULus, EAC	cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	CE, Ecolab, cULus, EAC



BOS01UW BOS 23K-UU-LH11-S92	BOS0263 BOS 6K-PU-LH10-S49	BOS01L2 BOS 6K-PU-RH11-S49	BOS01L3 BOS 6K-PU-RH11-S75	
			BOS01L4 BOS 6K-NU-RH11-S75	
23 x 51 x 52.4 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	
Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	Diffuse sensor, triangulation	
	Focused	Focus, typical at 60 mm	Focus, typical at 60 mm	
Laser red light	Laser red light	LED, red light	LED, red light	
Ø 7 mm at 5 m	Ø 1.2 mm at 120 mm	8 x 8 mm at focal point	8 x 8 mm at focal point	
	4...120 mm	3...400 mm	3...400 mm	
Connector	Connector, M8x1 3-pole	Connector, M8x1 3-pole	Connector, M8x1 4-pole	
PC ABS	ABS	ABS	ABS	
PMMA	PMMA	PMMA	PMMA	
18...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	



PNP NO PNP NC	BOS01KL BOS 18E-PA-PR20-S4	BOS01HJ BOS 23K-PA-LR10-S4	BOS01FN BOS 23K-PA-RR10-S4	BOS016U BOS 23K-PU-LR10-S4	
NPN NO NPN NC				BOS016W BOS 23K-NU-LR10-S4	
PNP NO PNP NC IO-LINK					
Series	18E	23K	23K	23K	
Dimension	Ø 18 x 75 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	
Input function				Same function as button, Key disable on/off	
Special optical feature					
Beam characteristic	Divergent	Divergent	Divergent	Divergent	
Light type	LED, red light	Laser red light	LED, red light	Laser red light	
Light spot size	Ø 300 mm at 7 m	17 x 19 mm at 14 m	300 x 300 mm at 12 m	9 x 9 mm at 12 mm	
Range	5 m	0...14 m	0...14 m	0...14 m	
Connection	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	
Housing material	Stainless steel (1.4404)	PC ABS	PC ABS	PC ABS	
Material sensing surface	Glass	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, Ecolab, FDA, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, WEEE	CE, cULus, Ecolab, EAC, WEEE	



BOS016P BOS 23K-PU-RR10-S4	BOS01MJ BOS 6K-PU-PR10-S75	BOS01ML BOS 6K-PU-PR10-02	BOS01MH BOS 6K-PU-PR10-S49	BOS01LA BOS 6K-PU-PT10-02
	BOS01MK BOS 6K-NU-PR10-S75	BOS01MM BOS 6K-NU-PR10-02		BOS01LC BOS 6K-NU-PT10-02
23K	6K	6K	6K	6K
23 x 51 x 52.4 mm	12 x 41.5 x 21.6 mm	12 x 37.9 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm
Same function as button, Key disable on/off	Same function as button, Key disable on/off	Same function as button, Key disable on/off	Same function as button, Key disable on/off	Same function as button, Key disable on/off
				Coaxial optics, Transparency detection
Divergent	Divergent	Divergent	Divergent	Divergent
LED, red light	LED, red light	LED, red light	LED, red light	LED, red light
300 x 300 mm at 12 m	600 x 600 mm at 7 m	600 x 600 mm at 7 m	600 x 600 mm at 7 m	50 x 50 mm at 2 m
0...14 m	0...6 m	0...6 m	0...6 m	0...2 m
Connector, M12x1 4-pole	Connector, M8x1 4-pole	Cable, 2.00 m, PVC	Connector, M8x1 3-pole	Cable, 2.00 m, PVC
PC ABS	ABS	ABS	ABS	ABS
PMMA	PMMA	PMMA	PMMA	PMMA
10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
CE, cULus, Ecolab, WEEE	cULus, CE, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE



PNP NO PNP NC	BOS01L8 BOS 6K-PU-PT10-S75	BOS01NC BOS 23K-PA-LK10-S4	BOS01M6 BOS 6K-PU-LK10-02	BOS01MN BOS 6K-PU-LK10-S49	
NPN NO NPN NC	BOS01L9 BOS 6K-NU-PT10-S75		BOS01M7 BOS 6K-NU-LK10-02		
PNP NO PNP NC IO-LINK					
Series	6K	23K	6K	6K	
Dimension	12 x 41.5 x 21.6 mm	23 x 51 x 52.4 mm	12 x 37.9 x 21.6 mm	12 x 41.5 x 21.6 mm	
Input function	Same function as button, Key disable on/off		Same function as button, Key disable on/off	Same function as button, Key disable on/off	
Special optical feature	Coaxial optics, Transparency detection		Coaxial optics	Coaxial optics	
Beam characteristic	Divergent	Divergent	Collimated	Collimated	
Light type	LED, red light	Laser red light	Laser red light	Laser red light	
Light spot size	50 x 50 mm at 2 m	Ø 22 mm at 20 m	Ø 1 mm at focal point	Ø 2 mm at 2.5 m	
Range	0...2 m	0...20 m	0...4 m	0...4 m	
Connection	Connector, M8x1 4-pole	Connector, M12x1 4-pole	Cable, 2.00 m, PVC	Connector, M8x1 3-pole	
Housing material	ABS	PC ABS	ABS	ABS	
Material sensing surface	PMMA	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	CE, cULus, EAC, WEEE	



BOS01M4 BOS 6K-PU-LK10-S75	BOS01L7 BOS 6K-PU-PT10-S49	BOS01FW BOS 23K-PA-RR10-SA1-S4S	BOS01KK BOS G18E-PA-PR20-S4	BOS021L BOS R01E-PS-KR20-00,2-S49
BOS01M5 BOS 6K-NU-LK10-S75				BOS0224 BOS R01E-NS-KR20-00,2-S49
6K	6K	23K	G18E	R01E
12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	23 x 51 x 52.4 mm	Ø 18 x 75 mm	20 x 32 x 9 mm
Same function as button, Key disable on/off	Same function as button, Key disable on/off			
Coaxial optics	Coaxial optics, Transparency detection			
Collimated	Divergent	Divergent	Divergent	Divergent
Laser red light	LED, red light	LED, red light	LED, red light	LED, red light
Ø 2 mm at 2.5 m	50 x 50 mm at 2 m	300 x 300 mm at 12 m	Ø 300 mm at 7 m	Ø 3.0 mm Light exit
0...4 m	0...2 m	0...14 m	5 m	1 m
Connector, M8x1 4-pole	Connector, M8x1 3-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Cable with connector, M8x1 3-pole, 0.20 m, PUR
ABS	ABS	PC ABS	Stainless steel (1.4404)	Stainless steel (1.4404)
PMMA	PMMA	PMMA	Glass	PA
10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
CE, cULus, EAC, WEEE	cULus, CE, EAC, WEEE	CE, cULus, Ecolab, WEEE	FDA compliant, cULus, CE, Ecolab, EAC, WEEE	CE, cULus, Ecolab, WEEE



PNP NO PNP NC	BOS0223 BOS R01E-PO-KR20-02	BOS023Y BOS 18E-PA-PR30-S4		
NPN NO NPN NC	BOS0225 BOS R01E-NS-KR20-02			BOS016R BOS 23K-NU-RR10-S4
PNP NOPNP NC IO-LINK			BOS016T BOS 23K-GI-RR10-S4	
Series	R01E	18E	23K	23K
Dimension	20 x 32 x 9 mm	Ø 18 x 75 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm
Input function			Same function as button, Key disable on/off	Same function as button, Key disable on/off
Special optical feature				
Beam characteristic	Divergent	Divergent	Divergent	Divergent
Light type	LED, red light	LED, red light	LED, red light	LED, red light
Light spot size	Ø 3.0 mm Light exit	Ø 300 mm at 7 m	300 x 300 mm at 12 m	300 x 300 mm at 12 m
Range	1 m	5 m	0...12 m	0...14 m
Connection	Cable, 2.00 m, PUR	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	PC ABS	PC ABS
Material sensing surface	PA	PMMA	PMMA	PMMA
Operating voltage Ub	10...30 VDC	10...30 VDC	18...30 VDC	10...30 VDC
Approval/Conformity	CE, cULus, Ecolab, WEEE	CE, cULus, Ecolab, FDA, EAC, WEEE	CE, cULus, Ecolab, WEEE	CE, cULus, Ecolab, WEEE



	BAM023T BOS R-55	BAM01HE BOS R-44
Version	Cube corner 1.1 mm	Cube corner 4 mm
Style	Square, 2 mounting holes	Square, 2 mounting holes
Dimension	20 x 32 x 3 mm	40 x 60 x 7.5 mm
Sensing surface	2.7 cm ²	19.9 cm ²
Ambient temperature	-20...140 °C	-20...140 °C
Material sensing surface	Solidchem	Solidchem
Material	Solidchem	Solidchem
Light type	non-polarized light, also for polarized light	non-polarized light, also for polarized light
Mounting	Screw M3	Adhesive, Screw M3
Use	for photoelectric retroreflective sensors, for photoelectric laser retroreflective sensors	for photoelectric retroreflective sensors
Approval/Conformity	Solidchem, TÜV Rheinland, Ecolab, WEEE	Solidchem, TÜV Rheinland, Ecolab, WEEE



BOS021M BOS R01E-PS-KR20-02	BOS0245 BOS G18E-PA-PR30-S4			
R01E	G18E			
20 x 32 x 9 mm	Ø 18 x 75 mm			
Divergent	Divergent			
LED, red light	LED, red light			
Ø 3.0 mm Light exit	Ø 300 mm at 7 m			
1 m	5 m			
Cable, 2.00 m, PUR	Connector, M12x1 4-pole			
Stainless steel (1.4404)	Stainless steel (1.4404)			
PA	PMMA			
10...30 VDC	10...30 VDC			
CE, cULus, Ecolab, WEEE	cULus, CE, Ecolab, EAC, WEEE, FDA compliant			



PNP NO PNP NC	BOS023A BOS 18E-PA-IE20-S4			BOS01FP BOS 23K-PA-RE10-S4	
NPN NO NPN NC					
EMITTER		BOS0236 BOS 18E-X-IS20-S4	BOS023U BOS 18E-X-RS30-S4		
Series	18E	18E	18E	23K	
Dimension	Ø 18 x 75 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	23 x 51 x 52.4 mm	
Interface					
Input function					
Beam characteristic		Divergent	Divergent		
Light type	Infrared	Infrared	LED, red light	LED, red light	
Light spot size					
Range	0...50 m	0...50 m	0...20 m	0...25 m	
Connection	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	PC ABS	
Material sensing surface	Glass	Glass	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, Ecolab, FDA compliant, EAC, WEEE	CE, cULus, Ecolab, FDA compliant, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	



BOS016F BOS 23K-PU-RE10-S4			BOS01LW BOS 6K-PU-LE10-S75	BOS01M8 BOS 6K-PU-RE10-S49
			BOS01LY BOS 6K-NU-LE10-S75	
	BOS01UT BOS 23K-XI-RS11-S4	BOS016K BOS 23K-XT-LS11-S4		
23K	23K	23K	6K	6K
23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm
	IO-Link			
Same function as button, Key disable on/off	Test (Emitter off)	Test (Emitter off)	Same function as button, Key disable on/off	
	Divergent	Divergent		
LED, red light	LED, red light	Laser red light	Laser red light	LED, red light
	600 x 600 mm at 20 m	30 x 30 mm at 25 m		
0...25 m	0...20 m	0...30 m	0...18 m	0...13 m
Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M8x1 4-pole	Connector, M8x1 3-pole
PC ABS	PC ABS	PC ABS	ABS	ABS
PMMA	PMMA	PMMA	PMMA	PMMA
10...30 VDC	18...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, WEEE	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE



PNP NO PNP NC	BOS01M9 BOS 6K-PU-RE10-S75		BOS021N BOS R01E-PS-KE20-00,2-S49	BOS01KM BOS 18E-PA-RE20-S4	
NPN NO NPN NC	BOS01MA BOS 6K-NU-RE10-S75				
EMITTER		BOS01LR BOS 6K-XT-RS10-S75			
Series	6K	6K	R01E	18E	
Dimension	12 x 41.5 x 21.6 mm	12 x 41 x 21.6 mm	20 x 32 x 9 mm	Ø 18 x 75 mm	
Interface					
Input function	Same function as button, Key disable on/off				
Beam characteristic		Divergent			
Light type	LED, red light	LED, red light	LED, red light	LED, red light	
Light spot size		1.2 x 1.2 mm at 15 m			
Range	0...13 m	0...13 m	0...2.2 m	0...20 m	
Connection	Connector, M8x1 4-pole	Connector, M8x1 4-pole	Cable with connector, M8x1, 3-pin, 0.20 m, PUR	Connector, M12x1 4-pole	
Housing material	ABS	ABS	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PMMA	PMMA	PA	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, Ecolab, CE, WEEE	FDA compliant, Ecolab, CE, cULus, EAC, WEEE	



BOS023W BOS 18E-PA-RE30-S4				BOS01LU BOS 6K-PU-LE10-S49	BOS01MC BOS 6K-PU-RE10-02
					BOS01ME BOS 6K-NU-RE10-02
	BOS01KT BOS 18E-X-RS20-S4	BOS016E BOS 23K-XT-RS11-S4			
18E	18E	23K	6K	6K	
Ø 18 x 75 mm	Ø 18 x 75 mm	23 x 51 x 52.4 mm	12 x 41.5 x 21.6 mm	12 x 37.9 x 21.6 mm	
		Test (Emitter off)		Key disable on/off, Same function as button	
	Divergent	Divergent			
LED, red light	LED, red light	LED, red light	Laser red light	LED, red light	
		600 x 600 mm at 20 m			
0...20 m	0...20 m	0...25 m	0...18 m	0...13 m	
Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M8x1 3-pole	Cable, 2.00 m, PVC	
Stainless steel (1.4404)	Stainless steel (1.4404)	PC ABS	ABS	ABS	
PMMA	Glass	PMMA	PMMA	PMMA	
10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
CE, cULus, Ecolab, EAC, WEEE	FDA compliant, cULus, CE, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	



PNP NO PNP NC			BOS021R BOS R01E-X-KS20-00,2-S49	BOS023J BOS 18E-XI-RS30-S4	
NPN NO NPN NC					
EMITTER	BOS01M1 BOS 6K-XT-LS10-S49	BOS01MF BOS 6K-XT-RS10-S49			
Series	6K	6K	R01E	18E	
Dimension	12 x 41.5 x 21.6 mm	12 x 41 x 21.6 mm	20 x 32 x 9 mm	Ø 18 x 75 mm	
Interface				IO-Link 1.1	
Input function					
Beam characteristic	Divergent	Divergent	Divergent		
Light type	Laser red light	LED, red light	LED, red light	LED, red light	
Light spot size	14 x 14 mm at 20 m	1.2 x 1.2 mm at 15 m	Ø 3.0 mm Light exit		
Range	0...18 m	0...13 m	0...2.2 m	0...20 m	
Connection	Connector, M8x1 3-pole	Connector, M8x1 3-pole	Cable with connector, M8x1, 3-pin, 0.20 m, PUR	Connector, M12x1 4-pole	
Housing material	ABS	ABS	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PMMA	PMMA	PA	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	18...30 VDC	
Approval/Conformity	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, Ecolab, CE, WEEE	cULus, CE, EAC, WEEE	



BOS0237 BOS 18E-XT-IS20-S4	BOS016J BOS 23K-GI-RE10-S4	BOS01FU BOS 23K-PA-LE10-S4	BOS016L BOS 23K-PU-LE10-S4	BOS01LZ BOS 6K-PU-LE10-02
		BOS016M BOS 23K-NU-LE10-S4		BOS01M0 BOS 6K-NU-LE10-02
18E	23K	23K	23K	6K
Ø 18 x 75 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	23 x 51 x 52.4 mm	12 x 37.9 x 21.6 mm
	IO-Link 1.1			
Test (Emitter off)	Key disable on/off, Same function as button	Key disable on/off, Same function as button	Key disable on/off, Same function as button	Key disable on/off, Same function as button
Divergent				
Infrared	LED, red light	Laser red light	Laser red light	Laser red light
0...50 m	0...20 m	0...30 m	0...30 m	0...18 m
Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Cable, 2.00 m, PVC
Stainless steel (1.4404)	PC ABS	PC ABS	PC ABS	ABS
Glass	PMMA	PMMA	PMMA	PMMA
10...30 VDC	18...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
CE, cULus, Ecolab, FDA compliant, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, WEEE	CE, cULus, Ecolab, WEEE	cULus, CE, EAC, Ecolab, WEEE



PNP NO PNP NC		BOS01KR BOS G18E-PA-RE20-S4			
NPN NO NPN NC				BOS0228 BOS R01E-NS-KE20-00,2-S49	
EMITTER	BOS01M3 BOS 6K-XT-LS10-02		BOS023L BOS G18E-XT-IS20-S4		
Series	6K	G18E	G18E	R01E	
Dimension	12 x 41.5 x 21.6 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	20 x 32 x 9 mm	
Interface					
Input function			Test (Emitter off)		
Beam characteristic	Divergent		Divergent		
Light type	Laser red light	LED, red light	Infrared	LED, red light	
Light spot size	14 x 14 mm at 20 m				
Range	0...18 m	0...20 m	0...50 m	0...2.2 m	
Connection	Cable, 2.00 m, PVC	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Cable with connector, M8x1, 3-pin, 0.20 m, PUR	
Housing material	ABS	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PMMA	Glass	Glass	PA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	cULus, CE, EAC, Ecolab, WEEE	CE, FDA compliant, cULus, EAC, Ecolab, WEEE	FDA compliant, cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, WEEE	



BOS0227 BOS R01E-PO-KE20-02	BOS021T BOS R01E-X-KS20-02	BOS023H BOS 18E-PI-RE30-S4		
				BOS016H BOS 23K-NU-RE10-S4
			BOS0235 BOS 18E-XT-RS20-S4	
R01E	R01E	18E	18E	23K
20 x 32 x 9 mm	20 x 32 x 9 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	23 x 51 x 52.4 mm
		IO-Link 1.1		IO-Link 1.1
			Test (Emitter off)	Key disable on/off, Same function as button
	Divergent			
LED, red light	LED, red light	LED, red light	Laser red light	LED, red light
	Ø 3.0 mm Light exit			
0...2.2 m	0...2.2 m	0...20 m	0...30 m	0...25 m
Cable, 2.00 m, PUR	Cable, 2.00 m, PUR	Connector, M12x1 4-pole	Connector, M12x1 4-pole	Connector, M12x1 4-pole
Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4571)	PC ABS	PC ABS
PA	PA	Glass	PMMA	PMMA
10...30 VDC	10...30 VDC	18...30 VDC	10...30 VDC	10...30 VDC
cULus, CE, Ecolab, WEEE	cULus, CE, Ecolab, WEEE	cULus, CE, EAC, WEEE, FDA compliant	CE, cULus, Ecolab, WEEE	CE, cULus, Ecolab, EAC, WEEE



PNP NO PNP NC	BOS01FY BOS 23K-PA-RE10-SA1-S4S		BOS023N BOS G18E-PA-IE20-S4		
NPN NO NPN NC					
EMITTER		BOS01LT BOS 6K-XT-RS10-02	BOS023K BOS G18E-X-IS20-S4	BOS01KU BOS G18E-X-RS20-S4	
Series	23K	6K	G18E	G18E	
Dimension	23 x 51 x 52.4 mm	12 x 37.4 x 21.6 mm	Ø 18 x 75 mm	Ø 18 x 75 mm	
Interface					
Input function					
Beam characteristic		Divergent			
Light type	LED, red light	LED, red light	Infrared	LED, red light	
Light spot size		1.2 x 1.2 mm at 15 m			
Range	0...25 m	0...13 m	0...50 m	0...20 m	
Connection	Connector, M12x1 4-pole	Cable, 2.00 m, PVC	Connector, M12x1 4-pole	Connector, M12x1 4-pole	
Housing material	PC ABS	ABS	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PMMA	PMMA	Glass	Glass	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	CE, cULus, Ecolab, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE	FDA compliant, cULus, CE, Ecolab, EAC, WEEE	CE, cULus, FDA compliant, Ecolab, EAC, WEEE	



	BOS021P BOS R01E-PS-KE20-02	BOS0226 BOS R01E-PO-KE20-00,2-S49		BOS0243 BOS G18E-PA-RE30-S4
	BOS022F BOS R01E-NS-KE20-02			
BOS023P BOS G18E-XR-RS20-S4			BOS0242 BOS G18E-X-RS30-S4	
G18E	R01E	R01E	G18E	G18E
Ø 18 x 75 mm	20 x 32 x 9 mm	20 x 32 x 9 mm	Ø 18 x 75 mm	Ø 18 x 75 mm
Test (Emitter off)				
Divergent			Divergent	
Red light	LED, red light	LED, red light	LED, red light	LED, red light
0...50 m	0...2.2 m	0...2.2 m	0...20 m	0...20 m
Connector, M12x1 4-pole	Cable, 2.00 m, PUR	Cable with connector, M8x1, 3-pin, 0.20 m, PUR	Connector, M12x1 4-pole	Connector, M12x1 4-pole
Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4571)	Stainless steel (1.4404)	Stainless steel (1.4404)
Glass	PA	PA	PMMA	PMMA
10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
FDA compliant, cULus, CE, Ecolab, EAC, WEEE	cULus, CE, Ecolab, WEEE	cULus, CE, Ecolab, WEEE	CE, cULus, EAC, Ecolab, WEEE	cULus, CE, EAC, Ecolab, WEEE, FDA compliant



PNP NO PNP NC	BOD001N BOD 23K-LB01-S92	BOD001P BOD 23K-LB01-S92	BOD0020 BOD 23K-LI01-S4	BOD001L BOD 6K-RA02-S75	
Dimension	51 x 23 x 52.4 mm	51 x 23 x 52.4 mm	51 x 23 x 52.4 mm	12 x 41.5 x 21.6 mm	
Interface	Analog, voltage 0...10 V linear rising/falling PNP/NPN/Auto-Detect NO/NC	Analog, current 4...20 mA linear rising/falling PNP/NPN/Auto-Detect NO/NC	IO-Link 1.1 PNP/NPN/Auto-Detect NO/NC	Analog, voltage 1...10 V linear rising/falling PNP NO/NC	
Beam characteristic	Collimated	Collimated	Collimated	Divergent	
Light type	Laser red light	Laser red light	Laser red light	LED, red light	
Light spot size	5.5 x 7 mm at 5 m	5.5 x 7 mm at 5 m	5.5 x 7 mm at 5 m	Ø 5 mm at 50 mm	
Range	100...5000 mm	100...5000 mm	100...5000 mm	20...80 mm	
Repeat accuracy	0.024 %FS	0.024 %FS	0.024 %FS	0.5 %FS	
Resolution	≤ 5.0 mm	≤ 5.0 mm	≤ 5 mm	≤ 120 µm	
Connection	Connector, M12x1 5-pin	Connector, M12x1 5-pin	Connector, M12x1 4-pin	Connector, M8x1 4-pin	
Housing material	ABS	ABS	ABS	ABS	
Operating voltage U_b	18...30 VDC	18...30 VDC	18...30 VDC	13...30 VDC	
Approval/Conformity	CE, cULus, EAC, Ecolab	CE, cULus, EAC, Ecolab	CE, cULus, EAC, Ecolab	CE, cULus, EAC, Ecolab	



BOD001R BOD 6K-RA03-S75	BOD001Z BOD 6K-RA04-S75	BOD001M BOD 6K-RA02-02	BOD001T BOD 6K-RA03-02	
12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 37,9 x 21,6 mm	12 x 37,9 x 21,6 mm	
Analog, voltage 1...10 V linear rising/falling PNP NO/NC	Analog, voltage 1...10 V linear rising/falling PNP NO/NC	Analog, voltage 1...10 V linear rising/falling PNP NO/NC	Analog, voltage 1...10 V linear rising/falling PNP NO/NC	
Divergent	Divergent	Divergent	Divergent	
LED, red light	LED, red light	LED, red light	LED, red light	
Ø 9.5 mm at 100 mm	Ø 5 mm at 50 mm	Ø 5 mm at 50 mm	Ø 9,5 mm at 100 mm	
30...200 mm	10...85 mm	20...80 mm	30...200 mm	
0.5 %FS	0.59 %FS	0.5 %FS	0,5% FS	
≤ 0.68 mm	≤ 0.15 mm	≤ 120 µm	≤0,68 mm	
Connector, M8x1 4-pin	Connector, M8x1 4-pin	Cable, 2.00 m, PVC	Cable, 2.00 m, PVC	
ABS	ABS	ABS	ABS	
13...30 VDC	13...30 VDC	13...30 VDC	13...30 VDC	
CE, cULus, EAC, Ecolab	CE, cULus, EAC, Ecolab	CE, cULus, EAC, Ecolab	CE, cULus, EAC, Ecolab	



PNP NO PNP NC	BGL004L BGL 50F-001-00,2-S4	BGL004M BGL 50F-007-00,2-S4	BGL004N BGL 80F-001-00,2-S4	BGL004P BGL 80F-007-00,2-S4	
Dimension	12 x 85 x 86 mm	12 x 85 x 86 mm	12 x 115 x 86 mm	12 x 115 x 86 mm	
Fork opening / depth	50 mm	50 mm	80 mm	80 mm	
Interface	2x PNP NO/NC	2x PNP NO/NC	2x PNP NO/NC	2x PNP NO/NC	
Beam characteristic	Divergent	Divergent	Divergent	Divergent	
Light type	LED, red light	Infrared	LED, red light	Infrared	
Light spot size	Ø 1.25 mm Light exit	Ø 2.0 mm Light exit	Ø 1.75 mm Light exit	Ø 2.5 mm Light exit	
Connection	Cable with connector, M12x1 4-pin, 0.25 m, PUR	Cable with connector, M12x1 4-pin, 0.25 m, PUR	Cable with connector, M12x1 4-pin, 0.25 m, PUR	Cable with connector, M12x1 4-pin, 0.25 m, PUR	
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Material sensing surface	PMMA	PMMA	PMMA	PMMA	
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Approval/Conformity	Ecolab, CE, WEEE	Ecolab, CE, WEEE	Ecolab, CE, WEEE	Ecolab, CE, WEEE	



PNP NO PNP NC	BKT000Z BKT 6K-002-P-S49	BKT0010 BKT 6K-002-P-S75	BKT0012 BKT 6K-002-P-02		
NPN NO NPN NC		BKT0011 BKT 6K-002-N-S75	BKT0013 BKT 6K-002-N-02		
Series	6K	6K	6K		
Dimension	12 x 41.5 x 21.6 mm	12 x 41.5 x 21.6 mm	12 x 37.9 x 21.6 mm		
Interface	Key disable on/off, Same function as button	Key disable on/off, Same function as button	Key disable on/off, Same function as button		
Beam characteristic	Focused	Focused	Focused		
Light type	Laser red light	Laser red light	Laser red light		
Light spot size	0.7 x 0.7 mm at 250 mm	0.7 x 0.7 mm at 250 mm	0.7 x 0.7 mm at 250 mm		
Range	1...250 mm	1...250 mm	1...250 mm		
Connection	Connector, M8x1 3-pin	Connector, M8x1 4-pin	Cable, 2.00 m, PVC		
Housing material	ABS	ABS	ABS		
Material sensing surface	PMMA	PMMA	PMMA		
Operating voltage Ub	10...30 VDC	10...30 VDC	10...30 VDC		
Approval/Conformity	cULus, CE, EAC, WEEE	cULus, CE, EAC, WEEE	cULus, CE, Ecolab, EAC, WEEE		



PNP NO PNP NC	BSP00W2 BSP B001-ZT004-A06A1A-S4- 006	BSP00W3 BSP B002-ZT004-A06A1A-S4- 006	BSP00W4 BSP M100-ZT004-A06A1A-S4- 006	BSP00W5 BSP M250-ZT004-A06A1A-S4- 006	
Measuring range	0...1 bar	0...2 bar	0 bar...100 mbar	0 bar...250 mbar	
Accuracy	±0.18 % FSO BFSL	±0.18 % FSO BFSL	±0.18 % FSO BFSL	±0.18 % FSO BFSL	
Overload pressure	5 bar	10 bar	0.5 bar	1 bar	
Burst pressure	7.50 bar	15.00 bar	1.50 bar	1.50 bar	
Operating voltage U _b	8...32 VDC	8...32 VDC	8...32 VDC	8...32 VDC	
Analog output	Analog, current 4...20 mA	Analog, current 4...20 mA	Analog, current 4...20 mA	Analog, current 4...20 mA	
Connection	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin	
Process connection	1 1/2" Clamp	1 1/2" Clamp	1 1/2" Clamp	1 1/2" Clamp	
Process connection material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Gasket, material	without, welded	without, welded	without, welded	without, welded	
Housing material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Media temperature	-10...125 °C	-10...125 °C	-10...125 °C	-10...125 °C	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	
Protection degree	IP69K	IP69K	IP69K	IP69K	
Approval/Conformity	CE	CE	CE	CE	



BSP00W6 BSP M500-ZT004-A06A1A-S4- 006	BSP00W7 BSP M750-ZT004-A06A1A-S4- 006			
0 bar...500 mbar	0 bar...750 mbar			
±0.18 % FSO BFSL	±0.18 % FSO BFSL			
5 bar	5 bar			
7.50 bar	7.50 bar			
8...32 VDC	8...32 VDC			
Analog, current 4...20 mA	Analog, current 4...20 mA			
Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 4-pin			
1 1/2" Clamp	1 1/2" Clamp			
Stainless steel (1.4404)	Stainless steel (1.4404)			
without, welded	without, welded			
Stainless steel (1.4404)	Stainless steel (1.4404)			
-10...125 °C	-10...125 °C			
-40...85 °C	-40...85 °C			
IP69K	IP69K			
CE	CE			

BTL7-abcd-Mnnnn-f-lm



BTL7 -HB- SERIES - ANALOG CURRENT	
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	n n n n = 0050...0500: ± 50 µm, n n n n = 0501...5500: ± 0.01% FS, n n n n > 5500: ± 0.02% FS
Operating voltage U _b	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC I = F, FA: CE + EAC

BTL7-abcd-Mnnnn-f-lm



BTL7 -HB- SERIES - ANALOG VOLTAGE	
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	n n n n = 0050...0500: ± 50 µm, n n n n = 0501...5500: ± 0.01% FS, n n n n > 5500: ± 0.02% FS
Operating voltage U _b	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC I = F, FA: CE + EAC

BTL7

Magnetostrictive linear position sensor Generation 7

a

interface

- A = Voltage output 0 ... 10 V
- G = voltage output -10 .. 10 V
- C = Current output 0 ... 20 mA
- E = Current output 4 ... 20 mA

b

Operating voltage

- 5 = 10 ... 30 V

c + d

Interface characteristic 1 + 2

- 00 = 1 output, rising
- 70 = 1 output, falling
- 10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)

- M0500 = metric in mm (M0025...M1016: for rod diameter 8 mm)
- (M0025...M7620: for rod diameter 10.2 mm)

f

Style

HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

l

Connection type

- K = Cable out radial (PUR)
- KA = Cable out axial (PUR)
- F = Cable out radial (PTFE)
- FA = Cable out axial (PTFE)

m

Connection type characteristic 1

(length in meters)
Analog voltage: 02, 05, 10, 15, 20, 30
Analog current: 02, 05, 10, 15, 20, 50,

MAGNETOSTRICTIVE LINEAR POSITION SENSORS
 FOR EXTREME ENVIRONMENTS

BTL7-abcd-Mnnnn-f-lm


	BTL7 -WB- SERIES - ANALOG CURRENT
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	n n n n = 0050...0500: ± 50 µm, n n n n = 0501...5500: ± 0.01% FS, n n n n > 5500: ± 0.02% FS
Operating voltage U _b	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC I = F, FA: CE + EAC

BTL7-abcd-Mnnnn-f-lm


	BTL7 -WB- SERIES - ANALOG VOLTAGE
Interface	Analog, current
Measuring length	25...7620 mm
Repeat accuracy	± 10 µm
Linearity deviation	n n n n = 0050...0500: ± 50 µm, n n n n = 0501...5500: ± 0.01% FS, n n n n > 5500: ± 0.02% FS
Operating voltage U _b	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	I = K, KA: CE + cULus + EAC I = F, FA: CE + EAC

BTL7

Magnetostrictive linear position sensor Generation 7

a interface

A = Voltage output 0 ... 10 V
 G = voltage output -10 .. 10 V
 C = Current output 0 ... 20 mA
 E = Current output 4 ... 20 mA

b Operating voltage

5 = 10 ... 30 V

c + d Interface characteristic 1 + 2

00 = 1 output, rising
 70 = 1 output, falling
 10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)

M0500 = metric in mm
 (M0025...M1016: for rod diameter 8 mm)
 (M0025...M7620: for rod diameter 10.2 mm)

f Style

HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

l Connection type

K = Cable out radial (PUR)
 KA = Cable out axial (PUR)
 F = Cable out radial (PTFE)
 FA = Cable out axial (PTFE)

m Connection type characteristic 1

(length in meters)
 Analog voltage: 02, 05, 10, 15, 20, 30
 Analog current: 02, 05, 10, 15, 20, 50, 100

BTL5-ab-Mnnnn-f-lm



BTL5 -HB- SERIES - DIGITAL	
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	n n n n = 0025...0500: ± 100 µm, n n n n > 0500: ± 0.02% FS
Operating voltage U _b	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	CE, cULus, EAC

BTL5

Magnetostrictive linear position sensor Generation 7

- a interface**
 P = Digital pulse interface (falling edge stabilized)
 M = Digital pulse interface (rising edge stabilized)

- b Operating voltage**
 1 = 20 ... 28 V
- Mnnnn Nominal length (4-position)**
 M0500 = metric in mm (M0050...M4000)
- f Style**
 HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

- l Connection type**
 K = Cable out radial (PUR)
 KA = Cable out axial (PUR)
 F = Cable out radial (PTFE)
 FA = Cable out axial (PTFE)
- m Connection type characteristic 1**
 (length in meters)
 02, 05, 10, 15, 200

BTL5-abcde-Mnnnn-f-lm


BTL5 -HB- SERIES - SSI	
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25...4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25...4000: ± 2 LSB
Operating voltage U_b	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening M18 threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	CE, cULus, EAC

BTL5

Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
1 = 20 ... 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2

1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3

B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)

M0500 = metric in mm
(M0050...M4000)

f Style
HB = Pro Compact, Mounting threads
M18x1.5, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20

BTL5-ab-Mnnnn-f-lm



BTL5 -WB- SERIES - DIGITAL	
Interface	Start/Stop
Measuring length	25...4000 mm
Repeat accuracy	2 µm
Linearity deviation	n n n n = 0025...0500: ± 100 µm, n n n n > 0500: ± 0.02% FS
Operating voltage U _b	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	CE, cULus, EAC

BTL5

Magnetostrictive linear position sensor Generation 7

- a interface**
 P = Digital pulse interface (falling edge stabilized)
 M = Digital pulse interface (rising edge stabilized)

- b Operating voltage**
 1 = 20 ... 28 V

- Mnnnn Nominal length (4-position)**
 M0500 = metric in mm (M0050...M4000)

- f Style**
 HB = Pro Compact, Mounting threads M18x1.5, for O-Ring

- l Connection type**
 K = Cable out radial (PUR)
 KA = Cable out axial (PUR)
 F = Cable out radial (PTFE)
 FA = Cable out axial (PTFE)

- m Connection type characteristic 1**
 (length in meters)
 02, 05, 10, 15, 200

BTL5-abcde-Mnnnn-f-lm


BTL5 -WB- SERIES - SSI	
Interface	SSI
Measuring length	25...4000 mm
Repeat accuracy	± 1 LSB
Linearity deviation	d = 1, 2, 3, 7: nnnn = 25...4000: ± 30µm d = 4, 5, 6, 8 nnnn = 25...4000: ± 2 LSB
Operating voltage U_b	20...28 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 3/4" threads
Housing material	Stainless steel (1.4305)
Protection degree	IP68/IP69K
Approval/Conformity	CE, cULus, EAC

BTL5

Magnetostrictive linear position sensor Generation 7

a interface
S = SSI

b Operating voltage
1 = 20 ... 28 V

c Interface characteristic 1
0 = 24 bits, binary, rising
1 = 24 bits, gray, rising
2 = 24 bits, binary, falling
3 = 24 bits, gray, falling
6 = 25 bits, binary, rising
7 = 25 bits, gray, rising
8 = 25 bits, binary, falling
9 = 25 bits, gray, falling

d Interface characteristic 2

1 = 1 µm
2 = 5 µm
3 = 10 µm
4 = 20 µm
5 = 40 µm
6 = 100 µm
7 = 2 µm
8 = 50 µm

e Interface characteristic 3

B = Synchronous mode
- = Asynchronous mode

Mnnnn Nominal length (4-position)

M0500 = metric in mm
(M0050...M4000)

f Style
HB = Pro Compact, Mounting threads
M18x1.5, for O-Ring

l Connection type
K = Cable out radial (PUR)
KA = Cable out axial (PUR)
F = Cable out radial (PTFE)
FA = Cable out axial (PTFE)

m Connection type characteristic 1
(length in meters)
02, 05, 10, 15, 20

BTL7-abcd-Mnnnn-f-lm



BTL7 -SF- SERIES - ANALOG CURRENT	
Interface	Analog, current
Measuring length	50...2500 mm
Repeat accuracy	± 10 µm
Linearity deviation	n n n n = 0050...0500: ± 50 µm, n n n n = 0501...2500: ± 0.01% FS
Operating voltage U _b	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 1 1/2" Tri Clamp
Housing material	Stainless steel (1.4305)
Protection degree	IP67
Approval/Conformity	CE 3A EAC

BTL7

Magnetostrictive linear position sensor Generation 7

a

interface

C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA
A = Voltage output 0 ... 10 V

b

Operating voltage

5 = 10 ... 30 V

c + d Interface characteristic 1 + 2

00 = 1 output, rising
70 = 1 output, falling
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)

M0500 = metric in mm
(M0025...M2500: for rod diameter 10.2 mm)

f

Style

SF = Level transducer, 1.5" Tri-Clamp

l

Connection type

F = Cable out radial (PTFE)

m

Connection type characteristic 1

(length in meters)
Analog current: 02, 05, 10, 15, 20, 50, 100
Analog voltage: 02, 05, 10, 15, 20, 30

BTL7-abcd-Mnnnn-f-lm


BTL7 -SF- SERIES - ANALOG VOLTAGE	
Interface	Analog, current
Measuring length	50...2500 mm
Repeat accuracy	± 10 µm
Linearity deviation	n n n n = 0050...0500: ± 50 µm, n n n n = 0501...2500: ± 0.01% FS
Operating voltage U_b	10...30 VDC
Ambient temperature	-40...85 °C
Mechanical configuration	Fastening 1 1/2" Tri Clamp
Housing material	Stainless steel (1.4305)
Protection degree	IP67
Approval/Conformity	CE 3A EAC

BTL7

Magnetostrictive linear position sensor Generation 7

a interface

C = Current output 0 ... 20 mA
E = Current output 4 ... 20 mA
A = Voltage output 0 ... 10 V

b Operating voltage

5 = 10 ... 30 V

c + d Interface characteristic 1 + 2

00 = 1 output, rising
70 = 1 output, falling
10 = 2 outputs, each 1 x rising/falling

Mnnnn Nominal length (4-position)

M0500 = metric in mm
(M0025...M2500: for rod diameter 10.2 mm)

f Style

SF = Level transducer, 1.5" Tri-Clamp

l Connection type

F = Cable out radial (PTFE)

m Connection type characteristic 1

(length in meters)
Analog current: 02, 05, 10, 15, 20, 50, 100
Analog voltage: 02, 05, 10, 15, 20, 30



	BAM01A2 BTL-S-3112-4Z	BAM01KA BTL-S-3112-4Z-SA10	BAM024J BTL2-S-3212-4Z	BAM0146 BTL2-S-4414-4Z	
Principle of operation	BTL magnet, float	BTL magnet, float	BTL magnet, float	BTL magnet, float	
Material	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	
Dimension	Ø 31 x 69 mm	Ø 31 x 69 mm	Ø 32 x 53 mm	Ø 44 x 49 mm	
Inside diameter	11.7 mm	11.7 mm	11.7 mm	13.0 mm	
Ambient temperature	-20...130 °C	-20...130 °C	-20...120 °C	-20...120 °C	



	BAM014E BTL2-S-6216-8P-EX	BAM013H BTL-P-0814-GR-PAF	BAM013J BTL-P-1012-4R	BAM013K BTL-P-1012-4R-PA	
Principle of operation	BTL magnet, float	BTL magnet, rod	BTL magnet, rod	BTL magnet, rod	
Material	Stainless steel (1.4404)	PA 6	Aluminum	PA	
Dimension	Ø 62 x 80 mm	Ø 17.2 x 5 mm	Ø 25 x 8 mm	Ø 25 x 8 mm	
Inside diameter	16.0 mm	14.0 mm	12.0 mm	12.0 mm	
Ambient temperature	-20...120 °C	-40...60 °C	-40...100 °C	-40...100 °C	



BAM0149 BTL2-S-5113-4K	BAM014C BTL2-S-6216-8P	BAM0147 BTL2-S-4414-4Z-EX	BAM0148 BTL2-S-4414-4Z01-EX	BAM014A BTL2-S-5113-4K-EX
BTL magnet, float	BTL magnet, float	BTL magnet, float	BTL magnet, float	BTL magnet, float
Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
Ø 50,9 x 52 mm	Ø 62 x 80 mm	Ø 44 x 49 mm	Ø 44 x 49 mm	Ø 50.9 x 52 mm
13.0 mm	16.0 mm	13.0 mm	13.0 mm	13.0 mm
-20...120 °C	-20...120 °C	-20...120 °C	-20...120 °C	-20...120 °C



BAM013M BTL-P-1013-4R-PA	BAM013P BTL-P-1013-4S	BAM013R BTL-P-1014-2R	BAM013Y BTL-P-1028-15R	
BTL magnet, rod	BTL magnet, rod	BTL magnet, rod	BTL magnet, rod	
PA	Aluminum	Aluminum	Aluminum	
Ø 32 x 8 mm	Ø 32 x 8 mm	Ø 21.9 x 8 mm	Ø 65 x 8 mm	
13.0 mm	13.0 mm	13.5 mm	28.0 mm	
-40...100 °C	-40...100 °C	-40...100 °C	-40...85 °C	



	BNI0096 BNI EIP-508-005-E002	BNI009K BNI EIP-302-005-E002	BNI009L BNI EIP-104-005-E002	BNI009M BNI PNT-508-005-E002	
Principle of operation	Active splitter	Active splitter	Active splitter	Active splitter	
Interface	Ethernet/IP	Ethernet/IP	Ethernet/IP	Profinet I/O	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (COM 2)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (supply voltage IN)	7/8"-Male, 4-pole	7/8"-Male, 4-pole	7/8"-Male, 4-pole	7/8"-Male, 5-pole	
Connection (supply voltage OUT)	7/8"-Female, 4-pole	7/8"-Female, 4-pole	7/8"-Female, 4-pole	7/8"-Female, 5-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	
Digital outputs	16x PNP	16x PNP		16x PNP	
Configurable inputs/outputs	yes	yes	no	yes	
Output current max.	2 A	2 A	—	2 A	
Current sum US, sensor	9.0 A	9.0 A	9.0 A	9.0 A	
Current sum UA, actuator		9.0 A		9.0 A	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Dimension	70 x 44.1 x 228 mm	70 x 44.1 x 228 mm	70 x 44.1 x 228 mm	70 x 44.1 x 228 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP69	IP69	IP69	IP69	
Auxiliary interfaces	8x IO-Link			8x IO-Link	
IO-Link version	1.1			1.1	
Port-class	Type A			Type A	



BNI009N BNI PNT-302-005-E002				
Active splitter				
Profinet I/O				
18. 30.2 VDC				
M12x1-Female, 4-pole, D-coded				
M12x1-Female, 4-pole, D-coded				
7/8"-Male, 5-pole				
7/8"-Female, 5-pole				
8x M12x1-Female, 5-pole, A-coded				
16x PNP, Type3				
16x PNP				
yes				
2 A				
9.0 A				
9.0 A				
Stainless steel (1.4571)				
70 x 44.1 x 228 mm				
-5...70 °C				
IP69				



	BNIO0AR BNI IOL-302-002-E012	BNIO0AP BNI IOL-104-002-E012	BNIO0AT BNI IOL-302-002-E013	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (supply voltage IN)			7/8"-Male, 5-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	
Digital outputs	16x PNP		16x PNP	
Analog inputs				
Configurable inputs/ outputs	yes	no	yes	
Additional function	Extension port	Extension port	Extension port	
Output current max.	2 A		2 A	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	
Dimension	70 x 37.9 x 185.6 mm	70 x 37.9 x 185.6 mm	70 x 38.5 x 185.6 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP69 when threaded in	IP69 when threaded in	IP69 when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	4.0 ms	3.5 ms	4.0 ms	
Process data in	2 bytes	2 bytes	2 bytes	
Process data out	2 bytes		2 bytes	



	BN100AR BN IOL-302-002-E012
Version	Universal cable I/O interface
Interface	IO-Link 1.1
Operating voltage U_b	18...30.2 VDC
Connection (COM 1)	M12x1-Male, 4-pole, A-coded
Connection for sensor	Leads
Cable length L	0.5 m
Digital inputs / output	16x PNP, Type3 16x PNP
Configurable in / out	yes
Output current max.	400 mA
Additional function	Diagnostics (under-current, coil wire break), Output voltage on Pin 2
Housing material	Aluminum
Dimension	31.8 x 31.8 x 193.2 mm
Ambient temperature	-5...55 °C
Protection degree	IP67 when threaded in
Transfer rate	COM2 (38.4 kBaud)
Process data cycle min.	4 ms
Process data in / out	2 bytes /2 bytes



	BIS0121 BIS L-404-035-001-00-S115	BIS0157 BIS M-406-045-001-07-S4
Description	LF read/write heads (125 kHz)	HF read/write heads (13.56 MHz)
Dimension	50 x 20 x 40 mm	Ø 30 x 83 mm
Installation	metal-free (clear zone)	metal-free (clear zone)
Antenna type	round	round
Ambient temperature	0...70 °C	0...70 °C
Connection	Connector, M12x1, 8-pin, 0.32 m, PU	Connector, M12x1, 4-pin
Housing material	ABS, interface PBT	Stainless steel (1.4404), Adapter PA 6
Interface	RS232	IO-Link 1.1
Operating voltage Ub	19.2...6.4 VDC	18...30 VDC Supports only LPS/Class 2
Protection degree	IP67	IP68
Approval/Conformity	CE, cULus, WEEE	CE, Ecolab, cULus, FCC, IC, WEEE



	BIS00YE BIS M-132-03/L-HT	BIS00YA BIS M-132-10/L-HT	BIS00Y7 BIS M-134-10/L-HT	BIS00Y4 BIS M-135-03/L-HT	
Description	HF data carriers (13.56 MHz)	HF data carriers (13.56 MHz)	HF data carriers (13.56 MHz)	HF data carriers (13.56 MHz)	
Dimension	Ø 24.9 x 4.8 mm	Ø 24.9 x 4.8 mm	Ø 49.8 x 5.3 mm	51.5 x 6.4 x 51.5 mm	
Antenna type	round	round	round	round	
UID serial number, read-only	8 Byte	4 Byte	4 Byte	8 Byte	
Memory type	EEPROM	EEPROM	EEPROM	EEPROM	
User data, read/write	112 Byte	736 Byte	736 Byte	112 Byte	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	
Housing material	PPS	PPS	PPS	PPS	
Protection degree	IP68	IP68	IP68	IP68	
Installation	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab, WEEE	CE, Ecolab, WEEE	CE, Ecolab, WEEE	CE, Ecolab, WEEE	



	BIS0128 BIS L-204-03/L-BK	BIS0129 BIS L-204-03/L-BU	BIS012A BIS L-204-03/L-GN	BIS012C BIS L-204-03/L-RD
Description	LF data carriers (125 kHz)	LF data carriers (125 kHz)	LF data carriers (125 kHz)	LF data carriers (125 kHz)
Dimension	Ø 31 x 40 mm	Ø 31 x 40 mm	Ø 31 x 40 mm	Ø 31 x 40 mm
Antenna type	round	round	round	round
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
Housing material	ABS, black	ABS, blue	ABS, green	ABS, red
Protection degree	IP67	IP67	IP67	IP67
Approval/Conformity	CE, WEEE	CE, WEEE	CE, WEEE	CE, WEEE



	BIS00Y2 BIS M-135-07/L-HT	BIS00LC BIS M-107-03/L-H200	BIS00Y1 BIS M-136-03/L-HT		
	HF data carriers (13.56 MHz)	HF data carriers (13.56 MHz)	HF data carriers (13.56 MHz)		
	51.5 x 6.4 x 51.5 mm	22 x 6.5 x 40 mm	52 x 11.5 x 128 mm		
	round	round	round		
	8 Byte	8 Byte	8 Byte		
	EEPROM	EEPROM	EEPROM		
	992 Byte	112 Byte	112 Byte		
	-40...85 °C	-25...70 °C	-40...85 °C		
	PPS	PPS, GF40, with EP potting	PPS		
	IP68	IP67	IP68		
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)		
	CE, Ecolab, WEEE	CE, WEEE	CE, WEEE		



	BMD001L BMD 1HLA-1000/41C- AE520A-KM20K	BMD001M BMD 1HLA-2000/41C- AE520A-KM20K	BMD001N BMD 1HLF-1000/41C- AE520A-KM20K	BMD001P BMD 1HLF-2000/41C- AE520A-KM20K	
Analog output	Analog, current 4...20 mA	Analog, current 4...20 mA	Analog, current 4...20 mA	Analog, current 4...20 mA	
Interface	HART	HART	HART	HART	
Reproducibility	≤ ±1 mm	≤ ±1 mm	≤ ±1 mm	≤ ±1 mm	
Non-linearity max.	±2 mm	±2 mm	±2 mm	±2 mm	
Cycle time min.	500 ms	500 ms	500 ms	500 ms	
Operating voltage Ub	16...35 VDC	16...35 VDC	16...35 VDC	16...35 VDC	
Ambient temperature	-40...80 °C	-40...80 °C	-40...80 °C	-40...80 °C	
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	
Protection degree	IP66, IP68 IP68 (0.2 bar)	IP66, IP68 IP68 (0.2 bar)	IP66, IP68 IP68 (0.2 bar)	IP66, IP68 IP68 (0.2 bar)	
Connection	Terminal, M20x1.5- Introduction	Terminal, M20x1.5- Introduction	Terminal, M20x1.5- Introduction	Terminal, M20x1.5- Introduction	
Approval/Conformity	CE, EAC, FDA compliant	CE, EAC, FDA compliant	CE, EAC, FDA compliant	CE, EAC, FDA compliant	



5-wire	BCC097P BCC S435-0000-1A-000-41X575-000	BCC097R BCC S435-0000-1A-000-51X575-000	BCC097T BCC S445-0000-1A-000-41X575-000	BCC097U BCC S445-0000-1A-000-51X575-000	
Type	M12 Female	M12 Female	M12 Female	M12 Female	
Configuration	Straight	Straight	Right Angle	Right Angle	
Nut material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	
Connection	Screw Terminals	Screw Terminals	Screw Terminals	Screw Terminals	
Conductor Range	0.14...0.75 mm ² (26...18 AWG)	0.14...0.75 mm ² (26...18 AWG)	0.14...0.75 mm ² (26...18 AWG)	0.14...0.75 mm ² (26...18 AWG)	
Allowable Cable Ø	4...6 mm	4...6 mm	6...8 mm	6...8 mm	



4-wire	BCC0CUE BCC S454-0000-1A-RN053-006	BCC0CUF	BCC0CUH BCC S454-0000-1A-RN060-006	BCC0CUJ BCC S454-0000-1A-RN060-020	
Type	M12 Female	M12 Female	M12 Female	M12 Female	
Configuration	Straight	Straight	Straight	Straight	
Wire Gauge	22 AWG	22 AWG	22 AWG	22 AWG	
Housing material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	
Length	0.6 meters	2 meters	0.6 meters	2 meters	
Conductors Mounting	1/4"-18 NPT	1/4"-18 NPT	1/2"-18 NPT	1/2"-18 NPT	



BCC097K BCC S435-0000-2A-000-41X575-000	BCC097L BCC S435-0000-2A-000-51X575-000	BCC097M BCC S445-0000-2A-000-41X575-000	BCC097N BCC S445-0000-2A-000-51X575-000	
M12 Male	M12 Male	M12 Male	M12 Male	
Straight	Straight	Right Angle	Right Angle	
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	
Screw Terminals	Screw Terminals	Screw Terminals	Screw Terminals	
0.14...0.75 mm ² (26...18 AWG)	0.14...0.75 mm ² (26...18 AWG)	0.14...0.75 mm ² (26...18 AWG)	0.14...0.75 mm ² (26...18 AWG)	
4...6 mm	4...6 mm	6...8 mm	6...8 mm	



BCC0C0UK BCC S454-0000-2A-RN053-006	BCC0C0UL	BCC0C0UM BCC S454-0000-2A-RN060-006	BCC0C0UN BCC S454-0000-2A-RN060-020	
M12 Male	M12 Male	M12 Male	M12 Male	
Straight	Straight	Straight	Straight	
22 AWG	22 AWG	22 AWG	22 AWG	
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	
0.6 meters	2 meters	0.6 meters	2 meters	
1/4"-18 NPT	1/4"-18 NPT	1/2"-18 NPT	1/2"-18 NPT	



	BCC08CZ BCC S323-0000-10-004-PX0334-020	BCC08E0 BCC S323-0000-10-004-PX0334-050	BCC0A2H BCC S323-0000-10-004-PX0334-100	BCC08CM BCC S425-0000-1A-004-PX0334-020	
Connection	M8x1 female, right-angle, 3-pin, A-coded	M8x1 female, right-angle, 3-pin, A-coded	M8x1 female, right-angle, 3-pin, A-coded	M12x1 female, right-angle, 5-pin, A-coded	
Function indicator (Pin 4)	LED yellow	LED yellow	LED yellow	LED yellow	
Cable	PUR black, 2.00 m, Drag chain compatible	PUR black, 5.00 m, Drag chain compatible	PUR black, 10.00 m, Drag chain compatible	PUR black, 2.00 m, Drag chain compatible	
Number of conductors	3	3	3	3	
Cable temperature, fixed routing	-50...90 °C	-50...90 °C	-50...90 °C	-50...90 °C	
Cable temperature, flexible routing	-25...90 °C	-25...90 °C	-25...90 °C	-25...90 °C	
Operating voltage Ub	30 VDC	30 VDC	30 VDC	30 VDC	
Protection degree	IP67, IP69K	IP67, IP69K	IP67, IP69K	IP67, IP68, IP69K	
Approval/Conformity	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	



	BCC0EZE BCC S425-0000-1A-003-PX0434-100	BCC08CU BCC S425-0000-1A-008-PX0434-050	BCC0A2K BCC S425-0000-1A-008-PX0434-100	BCC0JRJ BCC S4B5-0000-1A-003-YX8434-020-C009	
Connection	M12x1 female, right-angle, 5-pin, A-coded	M12x1 female, right-angle, 5-pin, A-coded	M12x1 female, right-angle, 5-pin, A-coded	M12x1 female, straight, 5-pin, A-coded	
Connection 2					
Function indicator (Pin 4)		LED yellow	LED yellow		
Cable	PUR black, 10.00 m, Drag chain compatible	PUR black, 5.00 m, Drag chain compatible	PUR black, 10.00 m, Drag chain compatible	TPE-V gray, 2.00 m	
Number of conductors	4	4	4	4	
Cable temperature, fixed routing	-50...90 °C	-50...90 °C	-50...90 °C	-50...105 °C	
Cable temperature, flexible routing	-25...90 °C	-25...90 °C	-25...90 °C	-25...105 °C	
Operating voltage Ub	250 VDC / 250 VAC	30 VDC	30 VDC	250 VDC / 250 VAC	
Protection degree	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP69K	
Approval/Conformity	cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	



	BCC08CP BCC S425-0000-1A-004-PX0334-050	BCC08CR BCC S425-0000-1A-004-PX0334-100	BCC0EZ9 BCC S415-0000-1A-003-PX0434-050	BCC0EZA BCC S415-0000-1A-003-PX0434-100	BCC0EZA BCC S425-0000-1A-003-PX0434-050
	M12x1 female, right-angle, 5-pin, A-coded	M12x1 female, right-angle, 5-pin, A-coded	M12x1 female, straight, 5-pin, A-coded	M12x1 female, straight, 5-pin, A-coded	M12x1 female, right-angle, 5-pin, A-coded
	LED yellow	LED yellow			
	PUR black, 5.00 m, Drag chain compatible	PUR black, 10.00 m, Drag chain compatible	PUR black, 5.00 m, Drag chain compatible	PUR black, 10.00 m, Drag chain compatible	PUR black, 5.00 m, Drag chain compatible
	3	3	4	4	4
	-50...90 °C	-50...90 °C	-50...90 °C	-50...90 °C	-50...90 °C
	-25...90 °C	-25...90 °C	-25...90 °C	-25...90 °C	-25...90 °C
	30 VDC	30 VDC	250 VDC / 250 VAC	250 VDC / 250 VAC	250 VDC / 250 VAC
	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
	CE, cULus, Ecolab, EAC, WEEE	CE, cULus, Ecolab, EAC, WEEE	cULus, Ecolab, EAC, WEEE	cULus, Ecolab, EAC, WEEE	cULus, Ecolab, EAC, WEEE



	BCC0JRK BCC S4B5-0000-1A-003-YX8434-050-C009	BCC0JRL BCC S4B5-0000-1A-003-YX8434-100-C009	BCC0JRY BCC S4B5-S4B4-3A-304-YX8434-006-C009	BCC0JRZ BCC S4B5-S4B4-3A-304-YX8434-020-C009	BCC0JTO BCC S4B5-S4B4-3A-304-YX8434-050-C009
	M12x1 female, straight, 5-pin, A-coded	M12x1 female, straight, 5-pin, A-coded	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded
			M12x1-Male, straight, 4-pole, A-coded	M12x1-Male, straight, 4-pole, A-coded	M12x1-Male, straight, 4-pole, A-coded
	TPE-V gray, 5.00 m	TPE-V gray, 10.00 m	TPE-V gray, 0.60 m	TPE-V gray, 2.00 m	TPE-V gray, 5.00 m
	4	4	4	4	4
	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C
	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C
	250 VDC / 250 VAC	250 VDC / 250 VAC	250 VDC / 250 VAC	250 VDC / 250 VAC	250 VDC / 250 VAC
	IP67, IP69K	IP67, IP69K	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K
	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE



	BCC0JT1 BCC S4B5-S4B4-3A-304-YX8434-100-C009	BCC0JTW BCC C3B4-C3B4-30-304-YX84A5-150-C009	BCC0JU0 BCC C3B5-C3B5-30-335-YX85A5-020-C009	BCC0JT4 BCC S4B5-S4B5-3A-313-YX8534-006-C009	
Connection	M12x1-Female, straight, 5-pole, A-coded	7/8"-Female, straight, 4-pole	7/8"-Female, straight, 5-pole	M12x1-Female, straight, 5-pole, A-coded	
Connection 2	M12x1-Male, straight, 4-pole, A-coded	7/8"-Male, Straight, 4-pole	7/8"-Male, straight, 5-pole	M12x1-Male, straight, 5-pole, A-coded	
Function indicator (Pin 4)					
Cable	TPE-V gray, 10.00 m	TPE-V gray, 15.00 m	TPE-V gray, 2.00 m	TPE-V gray, 0.60 m	
Number of conductors	4	4	5	5	
Cable temperature, fixed routing	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C	
Cable temperature, flexible routing	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C	
Operating voltage Ub	250 VDC / 250 VAC	300 VDC / 300 VAC	300 VDC / 300 VAC	60 VDC / 60 VAC	
Protection degree	IP67, IP69K/IP67, IP69K	IP69K/IP69K	IP69K/IP69K	IP67, IP69K/IP67, IP69K	
Approval/Conformity	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE	



	BCC0JT6 BCC S4B5-S4B5-3A-313-YX8534-050-C009	BCC0JT7 BCC S4B5-S4B5-3A-313-YX8534-100-C009	BCC0JT8 BCC S4B5-S4B5-3A-313-YX8534-150-C009	BCC0JW6 BCC S4B8-S4B8-3A-321-YX8825-100-C009	
Connection	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 8-pole, A-coded	
Connection 2	M12x1-Male, straight, 5-pole, A-coded	M12x1-Male, straight, 5-pole, A-coded	M12x1-Male, straight, 5-pole, A-coded	M12x1-Male, straight, 8-pole, A-coded	
Function indicator (Pin 4)					
Cable	TPE-V gray, 5.00 m	TPE-V gray, 10.00 m	TPE-V gray, 15.00 m	TPE-V gray, 10.00 m	
Number of conductors	5	5	5	8	
Cable temperature, fixed routing	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C	
Cable temperature, flexible routing	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C	
Operating voltage Ub	60 VDC / 60 VAC	60 VDC / 60 VAC	60 VDC / 60 VAC	30 VDC / 30 VAC	
Protection degree	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K	
Approval/Conformity	FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE	



BCC0JT5 BCC S4B5-S4B5-3A-313-YX8534-020-C009	BCC0JT9 BCC S4B5-S4B5-3A-313-YX8534-200-C009	BCC0JU2 BCC C3B5-C3B5-30-335-YX85A5-100-C009	BCC0JU3 BCC C3B5-C3B5-30-335-YX85A5-150-C009	BCC0JT3 BCC S4B5-S4B4-3A-304-YX8434-200-C009
M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 5-pole, A-coded	7/8"-Female, straight, 5-pole	7/8"-Female, straight, 5-pole	M12x1-Female, straight, 5-pole, A-coded
M12x1-Male, straight, 5-pole, A-coded	M12x1-Male, straight, 5-pole, A-coded	7/8"-Male, straight, 5-pole	7/8"-Male, straight, 5-pole	M12x1-Male, straight, 4-pole, A-coded
TPE-V gray, 2.00 m	TPE-V gray, 20.00 m	TPE-V gray, 10.00 m	TPE-V gray, 15.00 m	TPE-V gray, 20.00 m
5	5	5	5	4
-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C
-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C
60 VDC / 60 VAC	60 VDC / 60 VAC	300 VDC / 300 VAC	300 VDC / 300 VAC	250 VDC / 250 VAC
IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K	IP69K/IP69K	IP69K/IP69K	IP67, IP69K/IP67, IP69K
FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE



BCC0JTZ BCC C3B5-C3B5-30-335-YX85A5-006-C009	BCC0JU1 BCC C3B5-C3B5-30-335-YX85A5-050-C009	BCC0JU4 BCC C3B5-C3B5-30-335-YX85A5-200-C009	BCC0JT2 BCC S4B5-S4B4-3A-304-YX8434-150-C009	BCC0JW3 BCC S4B8-S4B8-3A-321-YX8825-006-C009
7/8"-Female, straight, 5-pole	7/8"-Female, straight, 5-pole	7/8"-Female, straight, 5-pole	M12x1-Female, straight, 5-pole, A-coded	M12x1-Female, straight, 8-pole, A-coded
7/8"-Male, straight, 5-pole	7/8"-Male, straight, 5-pole	7/8"-Male, straight, 5-pole	M12x1-Male, straight, 4-pole, A-coded	M12x1-Male, straight, 8-pole, A-coded
TPE-V gray, 0.60 m	TPE-V gray, 5.00 m	TPE-V gray, 20.00 m	TPE-V gray, 15.00 m	TPE-V gray, 0.60 m
5	5	5	4	8
-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C
-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C
300 VDC / 300 VAC	300 VDC / 300 VAC	300 VDC / 300 VAC	250 VDC / 250 VAC	30 VDC / 30 VAC
IP69K/IP69K	IP69K/IP69K	IP69K/IP69K	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K
FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE

70 | Packaging, food and beverage



	BCC0JW4 BCC S4B8-S4B8-3A-321-YX8825-020-C009	BCC0JW5 BCC S4B8-S4B8-3A-321-YX8825-050-C009	BCC0JW7 BCC S4B8-S4B8-3A-321-YX8825-150-C009	BCC0JTP BCC S4B5-S4B5-3A-313-YX8534-006-C009	
Connection	M12x1-Female, straight, 8-pole, A-coded	M12x1-Female, straight, 8-pole, A-coded	M12x1-Female, straight, 8-pole, A-coded	7/8"-Female, straight, 4-pole	
Connection 2	M12x1-Male, straight, 8-pole, A-coded	M12x1-Male, straight, 8-pole, A-coded	M12x1-Male, straight, 8-pole, A-coded	7/8"-Male, Straight, 4-pole	
Function indicator (Pin 4)					
Cable	TPE-V gray, 2.00 m	TPE-V gray, 5.00 m	TPE-V gray, 15.00 m	TPE-V gray, 0.60 m	
Number of conductors	8	8	8	4	
Cable temperature, fixed routing	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C	
Cable temperature, flexible routing	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C	
Operating voltage Ub	30 VDC / 30 VAC	30 VDC / 30 VAC	30 VDC / 30 VAC	300 VDC / 300 VAC	
Protection degree	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K	IP67, IP69K/IP67, IP69K	IP69K/IP69K	
Approval/Conformity	FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, CE, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	



	BCC0KT3 BCC S4B5-S4B4-3A-304-YX8434-010-C009				
Connection	M12x1-Female, straight, 5-pole, A-coded				
Connection 2	M12x1-Male, straight, 4-pole, A-coded				
Function indicator (Pin 4)					
Cable	TPE-V gray, 1.00 m				
Number of conductors	4				
Cable temperature, fixed routing	-50...105 °C				
Cable temperature, flexible routing	-25...105 °C				
Operating voltage Ub	250 VDC / 250 VAC				
Protection degree	IP67, IP69K/IP67, IP69K				
Approval/Conformity	FDA compliant, Ecolab, EAC, WEEE				



BCC0JTT BCC C3B4-C3B4-30-304-YX84A5-050-C009	BCC0JTU BCC C3B4-C3B4-30-304-YX84A5-100-C009	BCC0JTY BCC C3B4-C3B4-30-304-YX84A5-200-C009	BCC0JTR BCC C3B4-C3B4-30-304-YX84A5-020-C009	BCC0KRM BCC S4B5-S4B4-3A-304-YX8434-030-C009
7/8"-Female, straight, 4-pole	7/8"-Female, straight, 4-pole	7/8"-Female, straight, 4-pole	7/8"-Female, straight, 4-pole	M12x1-Female, straight, 5-pole, A-coded
7/8"-Male, Straight, 4-pole	7/8"-Male, Straight, 4-pole	7/8"-Male, Straight, 4-pole	7/8"-Male, Straight, 4-pole	M12x1-Male, straight, 4-pole, A-coded
TPE-V gray, 5.00 m	TPE-V gray, 10.00 m	TPE-V gray, 20.00 m	TPE-V gray, 2.00 m	TPE-V gray, 3.00 m
4	4	4	4	4
-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C	-50...105 °C
-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C	-25...105 °C
300 VDC / 300 VAC	300 VDC / 300 VAC	300 VDC / 300 VAC	300 VDC / 300 VAC	250 VDC / 250 VAC
IP69K/IP69K	IP69K/IP69K	IP69K/IP69K	IP69K/IP69K	IP67, IP69K/IP67, IP69K
FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE	FDA compliant, Ecolab, EAC, WEEE



	BAM0036	BAM0037	BAM003K	BAM0032	
Description	M8 sensor holder	M12 sensor holder	M16 sensor holder	M18 sensor holder	
Version	For clamping cylinders	For clamping cylinders	For clamping cylinders	For clamping cylinders	
Use	For sensors and clamps M8	For sensors and clamps M12	For sensors and clamps M16	For sensors and clamps M18	
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	



	BAM01CH	BAM0044	BAM003Y	BAM0045	
Description	Base holder	Base holder	Clamping cylinder	Mounting rod Ø 12 mm	
Version	For clamping cylinders	For clamping cylinders	For 1 mounting rod Ø 12 mm	Smooth, can be cut to required size	
Use	For mounting on base plates or profiles with M6	For mounting on base plates or profiles with M8	For holding all sensor and reflector mounts		
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	
Length				150 mm	




BAM003L	BAM0033			
M24 sensor holder	M30 sensor holder			
For clamping cylinders	For clamping cylinders			
For sensors and clamps M24	For sensors and clamps M30			
Stainless steel	Stainless steel			



BAM0046				
Mounting rod Ø 12 mm				
Smooth, can be cut to required size				
Stainless steel				
200 mm				



 *innovating automation*

Balluff

OPENING UP NEW PERSPECTIVES

Balluff is one of the leading suppliers of high-quality sensor, identification and network solutions and of software for your automation requirements. Family-owned for more than 90 years, around 4000 employees worldwide in 38 wholly-owned subsidiaries for sales, production and development are dedicated to the highest quality.

We give our all to provide top services for innovative solutions that increase your competitive edge. Through years of experience we bring the competence of a manufacturer and high personal engagement.

We follow our motto "Innovating Automation" as pacemakers of automation, refiners and new developers, and technological trailblazers. In open exchange with associations, universities and research institutes, as well as in close contact with our customers, we create new industrial sector solutions for automation. With innovative Balluff solutions, you are well equipped for a successful future.

You can always count on us, our products and our scheduling and delivery reliability. In the spirit of a good partnership.

Headquarters
Balluff GmbH
Schurwaldstraße 9
73765 Neuhausen a. d. F.
Germany
Phone +49 7158 173-0
Fax +49 7158 5010
balluff@balluff.de



HOW TO
REACH
US