

BIC Inductive Couplers
Rapid separation of power and signals



more added value

BIC Inductive Couplers

Rapid separation of power and signals

For maximum flexibility –

Non-contact power transmission and reliable data transfer

Whenever modules need to be quickly disconnected and reliably reconnected, you are on the safe side with Balluff BIC inductive couplers. With these quick-disconnect units you not only meet new demands quickly and with extreme flexibility. Also transmit power and signals over an air gap of 5 mm fast, reliably and with high performance.

Retrofitting is simple: BIC is plug-and-play. Your maintenance expenditure is reduced to a minimum. Because cable breaks and mechanical wear are a thing of the past.

Take advantage of additional features

- Simple wiring of rotary index tables, interchangeable stamping heads, etc.
- Plug-in connection for M12
- Drive capacitive loads
- More power in the same size

And profit from the IO-Link interface, which allows up to 16 sensors per system and lets you connect to the bus world.

Choose from a variety of power classes in the compact housing – just the way you need it.

INDUCTIVE COUPLER

Degree of protection
IP 67

Function indicators
visible from all angles



Simple plug-in
connection with Balluff
BCC connectors

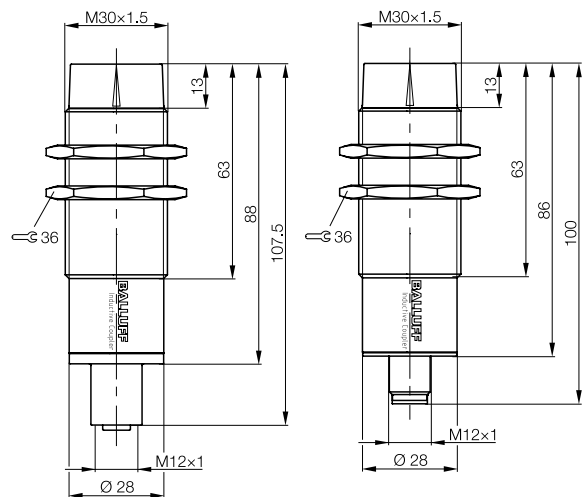
Large
working range
of 0...5 mm

BIC Inductive Couplers

Power-only



	Power-only with 0.5 A power	
Housing size	M30×1.5	M30×1.5
Working range	0...5 mm	0...5 mm
Installation type	not-flush	not-flush
Ordering code	BIC0007	BIC0008
Part number	BIC 1P0-P2A50-M30MI3-SM4A4A	BIC 2P0-P2A50-M30MI3-SM4A5A
Supply voltage U_B incl. ripple	24 V DC $\pm 10\%$	
Rated operating current I_o	max. 1 A	
No-load supply current I_o max.	approx. 100 mA	
Max. current load per output		
Short circuit protected	yes	yes
Output voltage Remote		24 V DC $\pm 5\%$
Power supply, continuous output current		500 mA
Rated insulation voltage U_i	150 V DC/125 V AC	150 V DC/125 V AC
Operational readiness		100 ms
Ambient temperature range T_a	0...+55 °C	0...+55 °C
Storage temperature	-25...+75 °C	-25...+75 °C
Offset		± 4 mm
Switching frequency f	10	10
Function/supply voltage indicator	yes/yes	yes/yes
Tightening torque	70 Nm	70 Nm
Degree of protection per IEC 60529	IP 67	IP 67
Housing material	CuZn coated	CuZn coated
Material of sensing face	PC	PC
Wiring	M12 connector, 4-pin female 	M12 connector, 5-pin male 



more added value



- Simple connection, rapid installation
- Wear-free
- Robust, even in harsh environments

BIC Inductive Couplers



Uni-Standard and IO-Link

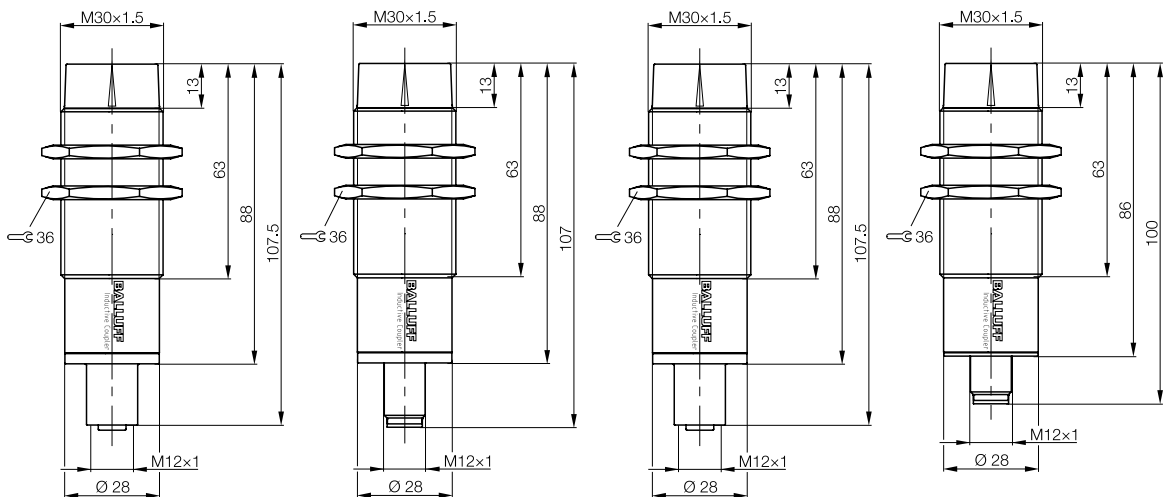


Uni-Standard with 0.5 A power and 8 signals

M30x1.5 0...5 mm not-flush BIC0009 BIC 113-P2A50-M30MI3-SM4ACA	M30x1.5 0...5 mm not-flush BIC000A BIC 213-P2A50-M30MI3-SM4ACA
24 V DC ±10 %	
max. 1 A	
100 mA	
50 mA	
yes	yes
	24 V DC ±5 %
	500 mA
150 V DC/125 V AC	150 V DC/125 V AC
	100 ms
0...+55 °C	0...+55 °C
-25...+75 °C	-25...+75 °C
	±4 mm
40	40
yes/yes	yes/yes
70 Nm	70 Nm
IP 67	IP 67
CuZn coated	CuZn coated
PC	PC
M12 connector, 12-pin female	M12 connector, 12-pin male
	

IO-Link connection

M30x1.5 0...5 mm not-flush BIC000C BIC 110-I2A50-M30MI3-SM4A4A	M30x1.5 0...5 mm not-flush BIC000E BIC 210-I2A50-M30MI3-SM4A5A
24 V DC ±10 %	
max. 1 A	
yes	yes
	24 V DC ±5 %
150 V DC/125 V AC	150 V DC/125 V AC
0...+55 °C	0...+55 °C
-25...+75 °C	-25...+75 °C
	±4 mm
IO-Link*	IO-Link*
yes/yes	yes/yes
70 Nm	70 Nm
IP 67	IP 67
CuZn coated	CuZn coated
PC	PC
M12 connector, 4-pin female	M12 connector, 5-pin male
	



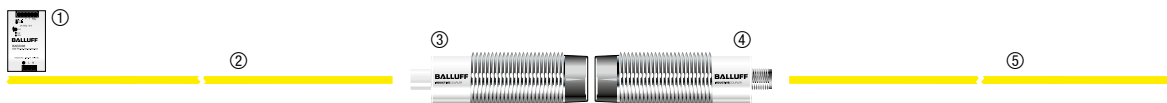
*IO-Link

Baud rate	38.4 Kbaud	38.4 Kbaud
Process data cycle	3 ms at minimum cycle time	3 ms at minimum cycle time
Frame type	2.2	2.2

BIC Inductive Couplers

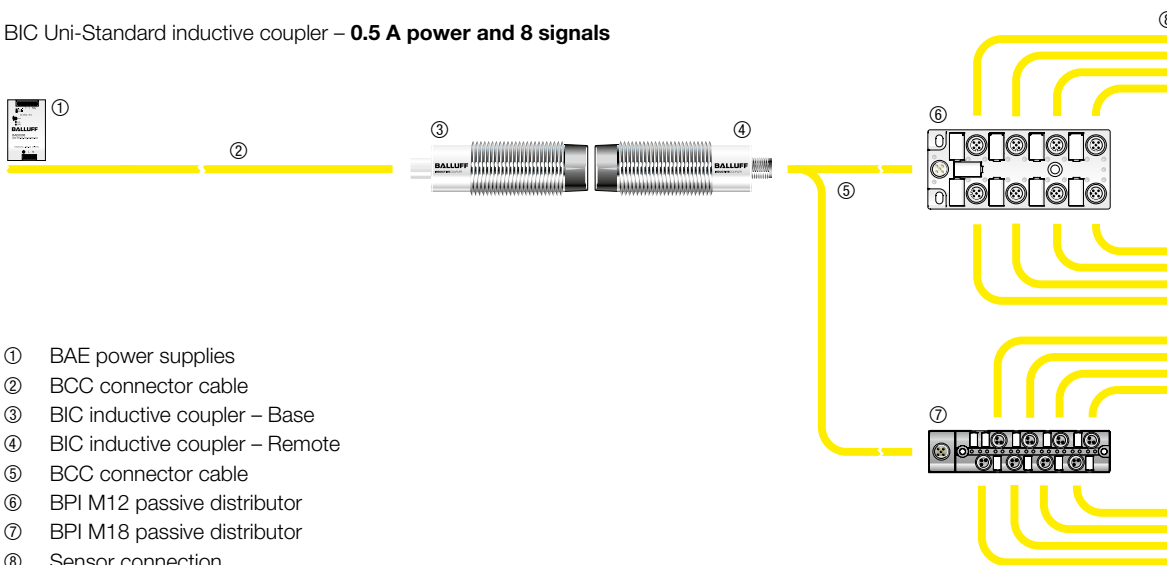
Topology

BIC Power-only inductive coupler – 0.5 A power



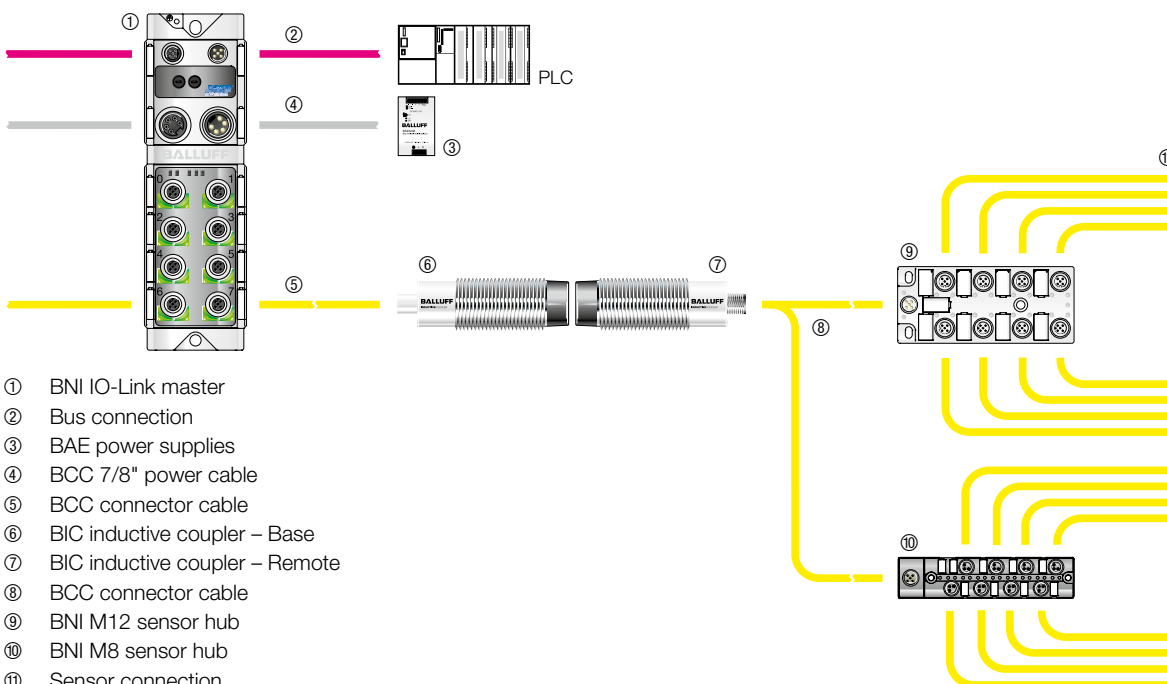
- ① BAE power supplies
- ② BCC connector cable
- ③ BIC inductive coupler – Base
- ④ BIC inductive coupler – Remote
- ⑤ BCC connector cable

BIC Uni-Standard inductive coupler – 0.5 A power and 8 signals



- ① BAE power supplies
- ② BCC connector cable
- ③ BIC inductive coupler – Base
- ④ BIC inductive coupler – Remote
- ⑤ BCC connector cable
- ⑥ BPI M12 passive distributor
- ⑦ BPI M18 passive distributor
- ⑧ Sensor connection

BIC inductive coupler – IO-Link connection

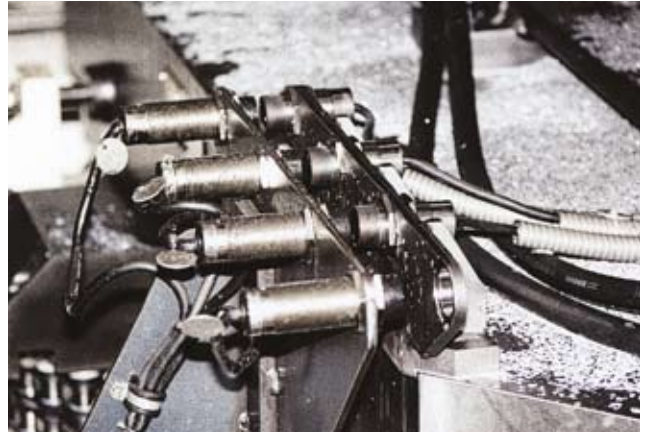


- ① BNI IO-Link master
- ② Bus connection
- ③ BAE power supplies
- ④ BCC 7/8" power cable
- ⑤ BCC connector cable
- ⑥ BIC inductive coupler – Base
- ⑦ BIC inductive coupler – Remote
- ⑧ BCC connector cable
- ⑨ BNI M12 sensor hub
- ⑩ BNI M8 sensor hub
- ⑪ Sensor connection



Monitoring clamping jaws in the working area of a 2-spindle machining center.

Clamping jaws can also be monitored during machining using BIC inductive couplers. Information from 8 sensors on each of two rotary tables on the swing table is sent to the control. Power for the sensor function is also provided inductively. The separable inductive coupling of power and signals enables high flexibility in the machining centers as well.



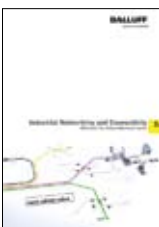
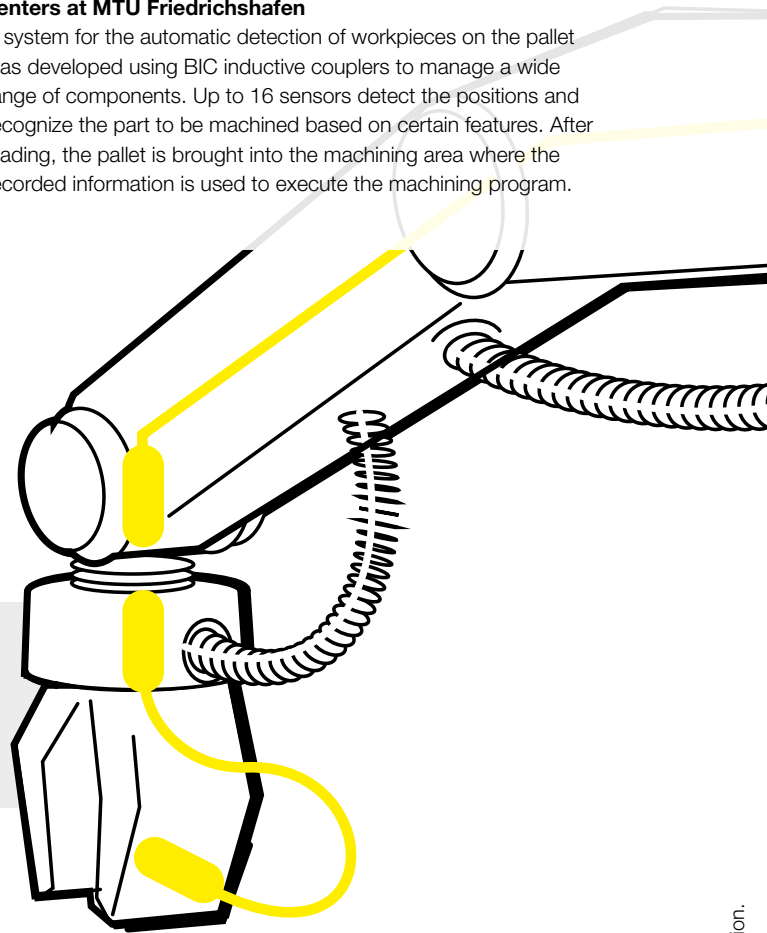
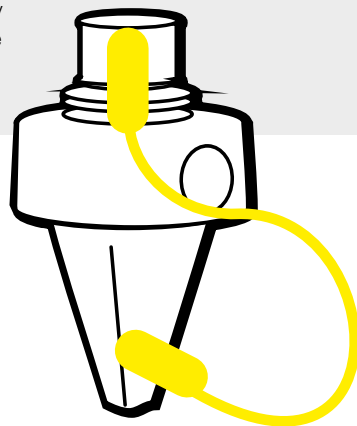
Workpiece position detection in machining centers at MTU Friedrichshafen

A system for the automatic detection of workpieces on the pallet was developed using BIC inductive couplers to manage a wide range of components. Up to 16 sensors detect the positions and recognize the part to be machined based on certain features. After loading, the pallet is brought into the machining area where the recorded information is used to execute the machining program.



Robot gripper

The sensor determines whether the workpiece was captured by the gripper. The switching state of the sensors is transmitted without contact.



Refer to our industrial networking catalog or our website for more information on active and passive distributors, connectors, connector cables and electrical devices!

Balluff GmbH
Schurwaldstrasse 9
73765 Neuhausen a.d.F.
Germany
Phone +49 7158 173-0
Fax +49 7158 5010
balluff@balluff.com
www.balluff.com