

BALLUFF

Identification Systems BIS L

... non-contact data communication at 125 kHz



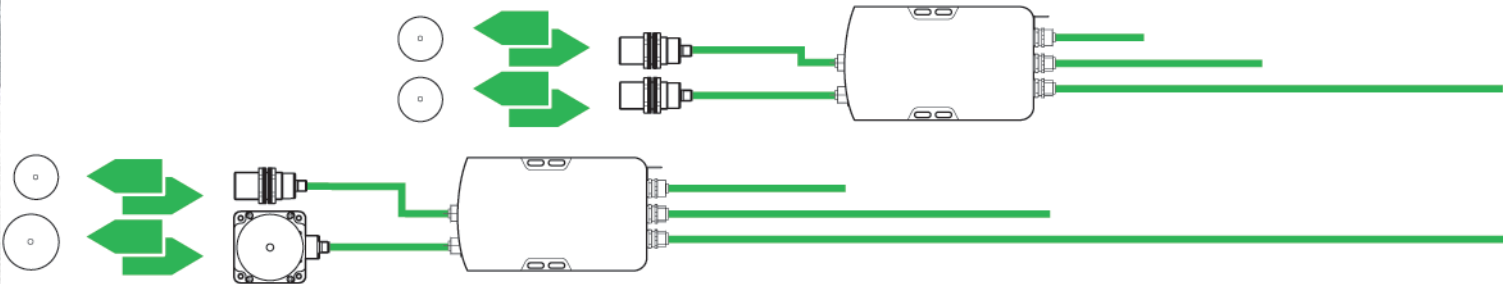
Balluff is a world leader in the field of sensor technology. Our product range includes electronic and electromechanical sensors, transducers and identification systems, as well as bus-compatible sensors.

Balluff products are found wherever precision, reliability, and highest quality are demanded. These indispensable components guarantee a successful installation in virtually any area of automation.



Whether it's automation, object detection, material flow control, linear or rotary motion – Balluff is the right partner.

We are DIN ISO 9001 certified. Statistical process control, the use of process controlled production and assembly equipment are standard at Balluff.



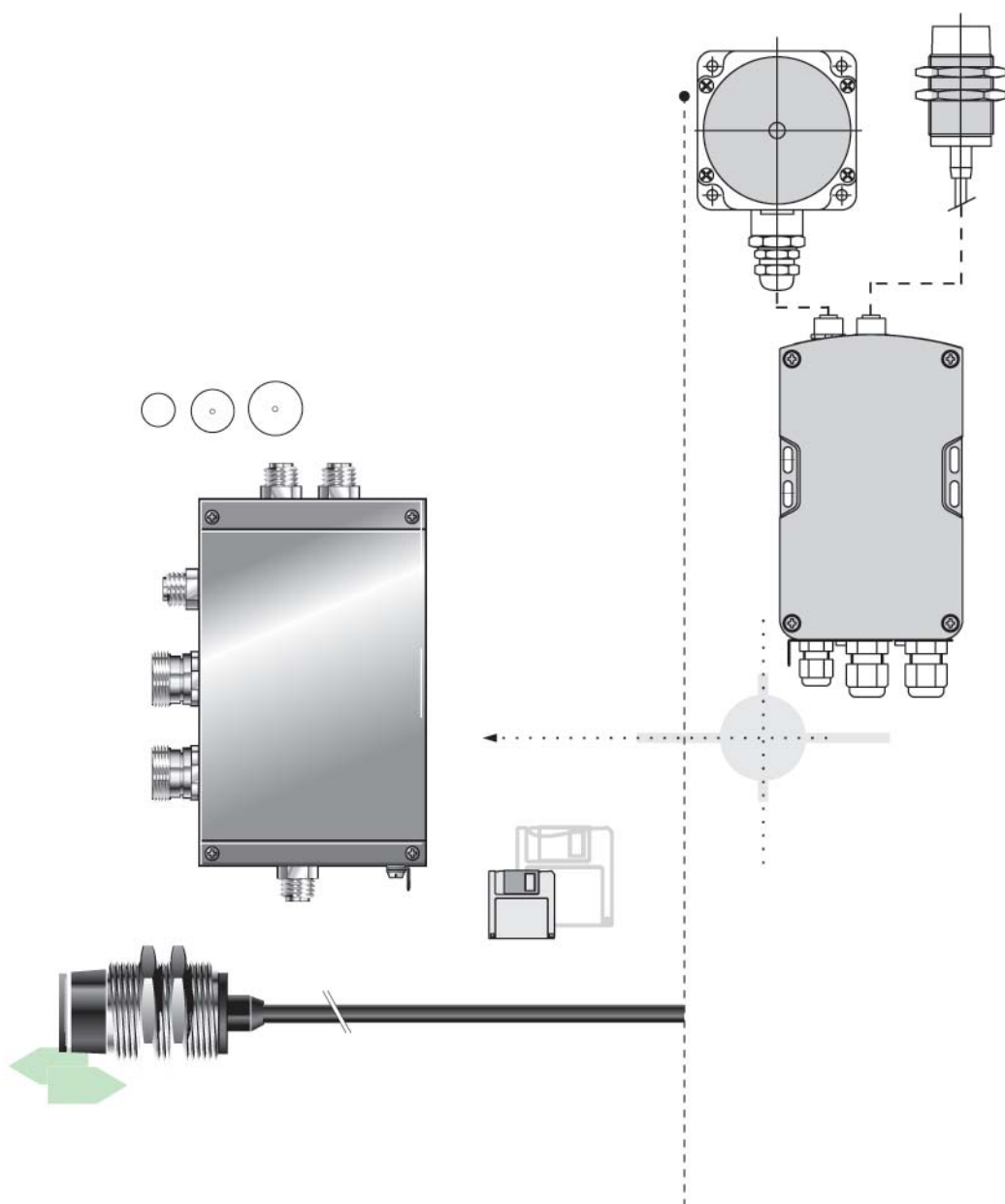
Identification Systems BIS L

Description

i

Read/Write System

BIS L



Modern automation technology without automatic identification has become unthinkable. Several approaches are available, including bar code labels, mechanical coding, transmitter/receiver systems using microwave, or inductive identification systems.

It's not always easy to make the right choice. But practice has shown that inductive identification systems are often the preferred solution, especially in production and assembly technology.

The inductive principle guarantees ruggedness and resistance to ambient effects, and makes these non-contacting systems extremely reliable and function-secure. Use in harsh industrial environments is therefore never a problem.



Gitterbox identification

Material and information flow are inseparable in computer controlled assembly and manufacturing. The consistent coupling of these two flow elements is required today for flexibility and cost effectiveness in automation.

Series BIS Identification Systems ensure a reliable exchange of information between material flow and data processing, including all areas of manufacturing where materials are being moved:

- workpiece transport in conveying systems
- FTS and pallet transport systems
- warehousing
- assembly
- flexible manufacturing cells and many others

The advantage to you is cost reduction through:

- flexibility
- faster access to information
- shorter response times
- stock optimization

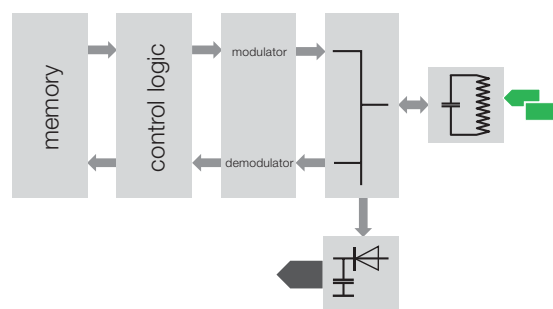
The components of a BIS Identification System are:

The data carrier receives the energy signal and uses it to create the supply voltage. It then sends its data to the read/write head.

The read/write head is the communications partner of the data carrier. It sends a 125 kHz energy signal out and receives the data signal transmitted back from the data carrier. The energy signal, since it is pulsed, is also used for programming the data carrier memory.

The processor supervises the bi-directional data transfer between data carrier and read/write head and serves as buffer storage. It is the link between the host system and the data carrier. To allow for adapting to various computer and controller designs, numerous software packages are available. A sophisticated checking algorithm assures safe and reliable data transmission.

Data Carrier

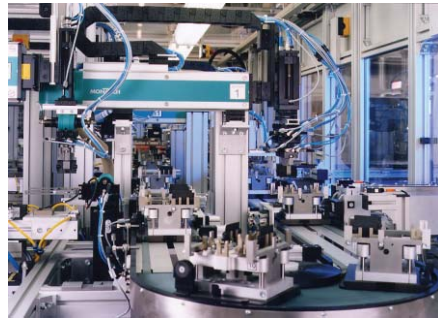


Features

- non-contact and wear-free
- miniature data carriers
- safe data transfer
- immune to dirt and liquids
- adaptable to virtually any existing control
- interface versions for virtually any control
- maintenance-free
- high mechanical strength

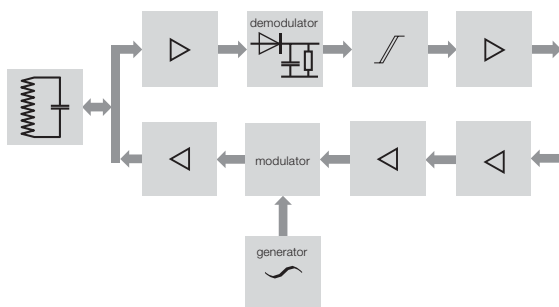


Warehouse identification

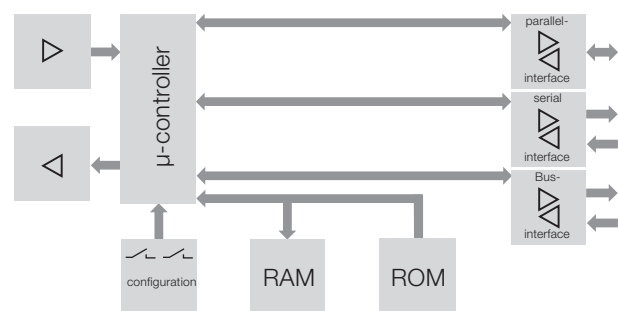


Assembly line identification

Read/Write Head



Processor



Identification-Systems BIS L

The Relationship between Read/Write Heads and Data Carriers

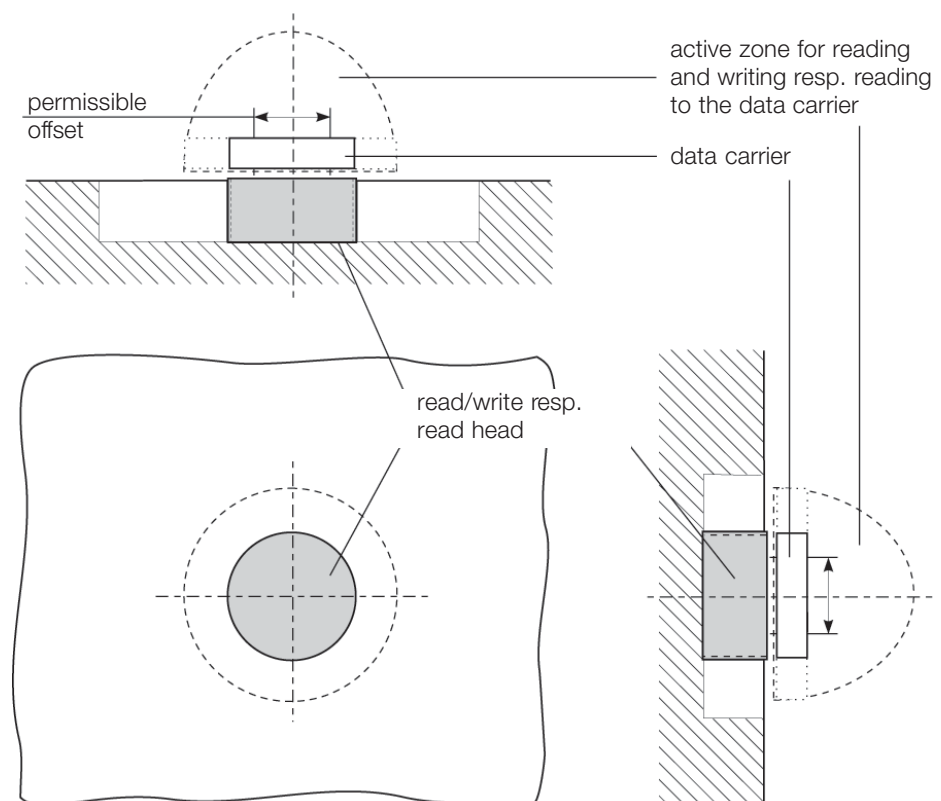
Spatial Arrangement of Read/Write Head resp. Read Head and Data Carrier

The key to reliable data exchange between the read/write head resp. read head and the data carrier is maintaining sufficient dwell time of the data carrier within a specified spatial distance from the read/write head resp. read head. The drawing illustrates this relationship.

For a **static read/write resp. read operation** the data carrier stops completely in front of the read/write resp. read heads; this permits a greater distance between the two.

For **dynamic operation** the data carrier is read or programmed on the fly. The shorter distance is necessary in order to achieve as large a read/write resp. read path as possible.

Each read/write head or read head has certain data carrier which can be used with it (the pairing is based on physical size and antenna field configuration).



Spatial arrangement of read/write head resp. read head and data carrier for directional read/write heads resp. read heads (circular antenna).



BIS L

Data exchange between the data carrier and read/write head is non-contact and therefore wear-free.

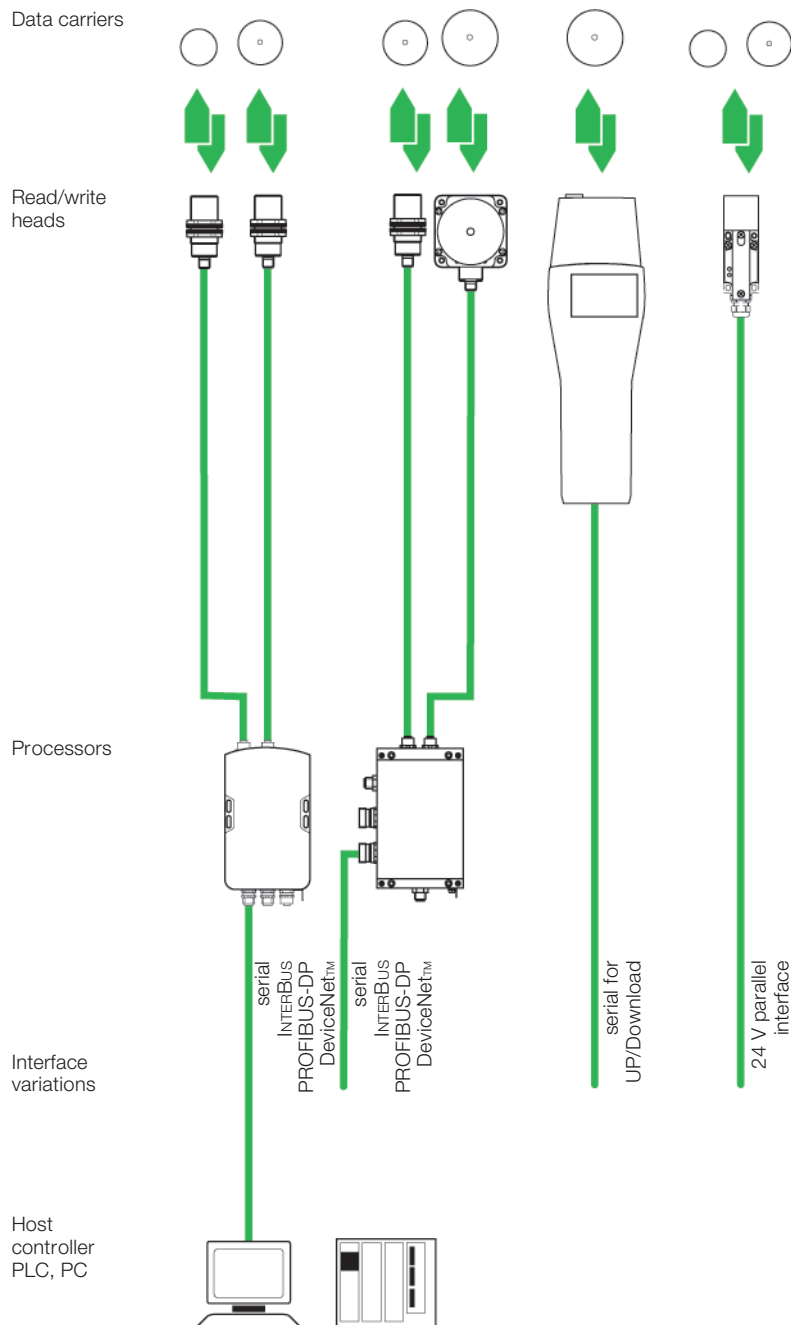
The data and necessary power for the data carrier are inductively coupled by the read/write head. The data carrier requires no battery for operation or data retention. Exact positioning is not necessary.

Data integrity is ensured by means of special checking software. No additional data security measures on the part of the user are required.

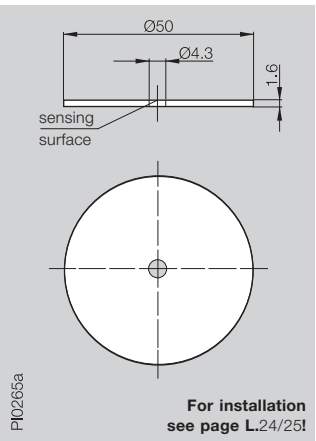
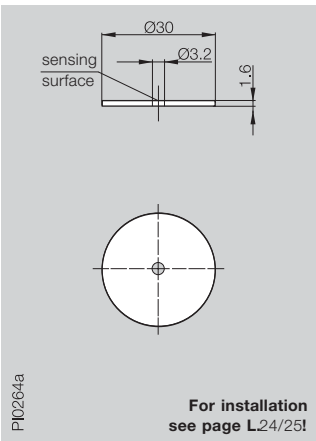
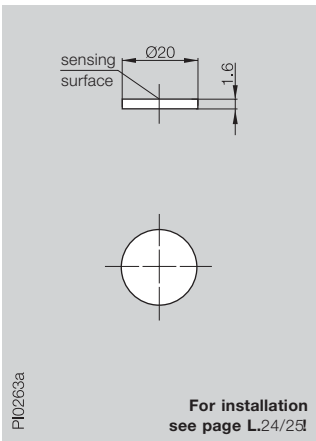
- L.2 Data Carriers
 - L.4 Read/Write Heads
 - L.7 Processor with parallel interface
 - L.8 Compact Processors for Simultaneous Mode
 - L.16 Handy Programmer
 - L.18 Connectors, Termination Resistor
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 - L.26 Read/Write Times
- Software, Service Tools

BIS L

Data Carriers
Read/Write Heads
Processor with parallel interface
Compact Processors for Simultaneous Mode
Handy Programmer
Connectors, Termination Resistor
Installation Notes
Read/Write Times
Software, Service Tools



Dimensions	Ø 20×1,6	Ø 30×1,6	Ø 50×1,6	
Housing material	EP	EP	EP	
Antenna type	round	round	round	



BIS L Programmable

192 bytes	Order code	BIS L-100-01/L	BIS L-101-01/L	BIS L-102-01/L
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BIS L readable

40 bits	Order code			
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Operating temperature	-25...+85 °C	-25...+85 °C	-25...+85 °C
Storage temperature	-40...+95 °C	-40...+95 °C	-40...+95 °C
Protection per IEC 60529	IP 67*	IP 67*	IP 67*

Mounting in steel

appropriate read/write head with max. read/write distance		non-metal	on steel	flush in steel		non-metal	on steel	flush in steel		non-metal	on steel	flush in steel
	BIS L-300	30 mm	20 mm	20 mm	BIS L-300	40 mm	30 mm	30 mm	BIS L-300	55 mm	40 mm	35 mm
	BIS L-301	40 mm	30 mm	25 mm	BIS L-301	55 mm	40 mm	35 mm	BIS L-301	70 mm	50 mm	50 mm
	BIS L-302	20 mm	15 mm	15 mm	BIS L-302	25 mm	20 mm	20 mm	BIS L-302	30 mm	25 mm	20 mm

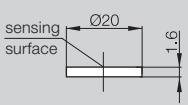
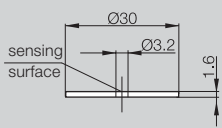
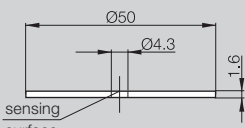
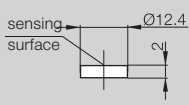
* The hygroscopicity of the data carrier material depends on the ambient temperature.
Saturation in water at +20 °C/6 days = 0.3%
Saturation in water at +70 °C/3 days = 3.0%

Tightening torque max. 1 Nm



Read/Write Cycles

Data carriers	Memory type	Write cycles	Read cycles	Data retention time
192 Byte	EEPROM	100 000	unlimited	10 years

	Ø 20×1,6	Ø 30×1,6	Ø 50×1,6	Ø 12,4×2
	EP	EP	EP	EP
	round	round	round	round
	 PI0263a For installation see page L.24/25!	 PI0264a For installation see page L.24/25!	 PI0265a For installation see page L.24/25!	 PI0262a For installation see page L.24/25!
	BIS L-200-03/L	BIS L-201-03/L	BIS L-202-03/L	BIS L-203-03/L
	-40...+85 °C	-40...+85 °C	-40...+85 °C	-25...+85 °C
	-40...+95 °C	-40...+95 °C	-40...+95 °C	-40...+130 °C
	IP 67*	IP 67*	IP 67*	IP 68
	non-metal on steel flush in steel	non-metal on steel flush in steel	non-metal on steel flush in steel	non-metal on steel flush in steel
	BIS L-300 BIS L-301 BIS L-302	BIS L-300 BIS L-301 BIS L-302	BIS L-300 BIS L-301 BIS L-302	BIS L-300 BIS L-301 BIS L-302
	40 mm 50 mm 25 mm	50 mm 70 mm 30 mm	70 mm 100 mm 40 mm	25 mm 15 mm 10 mm
	25 mm 35 mm 15 mm	35 mm 45 mm 20 mm	45 mm 60 mm 25 mm	12 mm 10 mm 8 mm
	20 mm 30 mm 15 mm	30 mm 40 mm 20 mm	40 mm 55 mm 20 mm	10 mm 8 mm 8 mm
	Tightening torque max. 1 Nm			
	Tightening torque max. 1 Nm			



BIS L

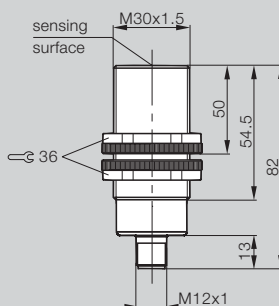
Data Carriers

Read/Write
Heads
Processor
with parallel
interface
Compact
Processors for
Simultaneous
Mode
Handy
Programmer
Connectors,
Termination
Resistor
Installation
Notes
Read/Write
Times
Software,
Service Tools

Read/Write Cycles

Data carriers	Write cycles	Read cycles	Data retention time
40 bits		unlimited	unlimited

Dimensions	M30
Housing material	PVDF
Antenna type	round
Weight	130 g



210266

For installation see page L.24/25!

Order code	BIS L-300-S115
Mounting in steel	non-flush
Operating temperature	0...+70 °C (minus temperatures on request)
Storage temperature	-20...+85 °C
Protection per IEC 60529	IP 67
Connection to with connection cable	processor BIS L-500-PU-__*
	BIS L-501-PU1-25, BIS L-502-PU1-25
possible cable lengths	5 m, 10 m or 25 m

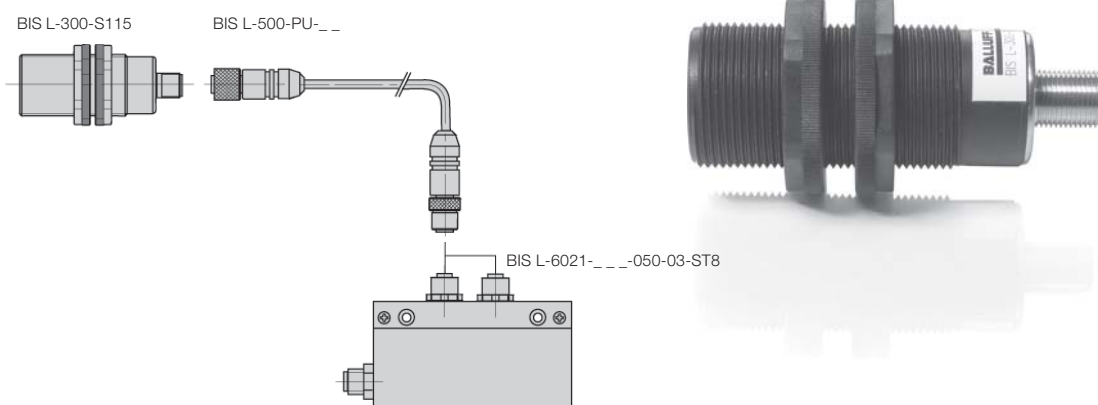
[illegible]

* For pre-assembled read/write head cable, please append cable length to ordering code!

05 = Length 5 m
10 = Length 10 m
25 = Length 25 m

Example:

BIS L-500-PU-



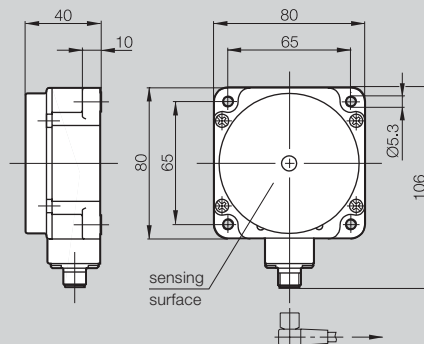
BIS L-6021-__-050-03-ST8

80×80×40

PBT

round

410 g



P10267

For installation see page L.24/251

BIS L-301-S115

non-flush

0...+70 °C (minus temperatures on request)

-20...+85 °C

IP 67

processor

BIS L-500-PU-_*

BIS L-501-PU1-25, BIS L-502-PU1-25

5 m, 10 m or 25 m

Data Carriers

**Read/Write
Heads**

Processor
with parallel
interface

Compact
Processors for
Simultaneous
Mode

Handy
Programmer

Connectors,
Termination
Resistor

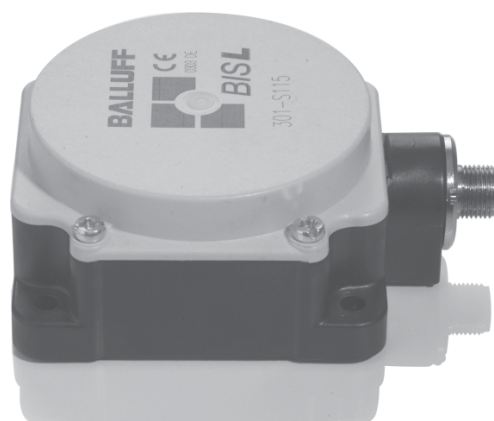
Installation
Notes

Read/Write
Times
Software,
Service Tools

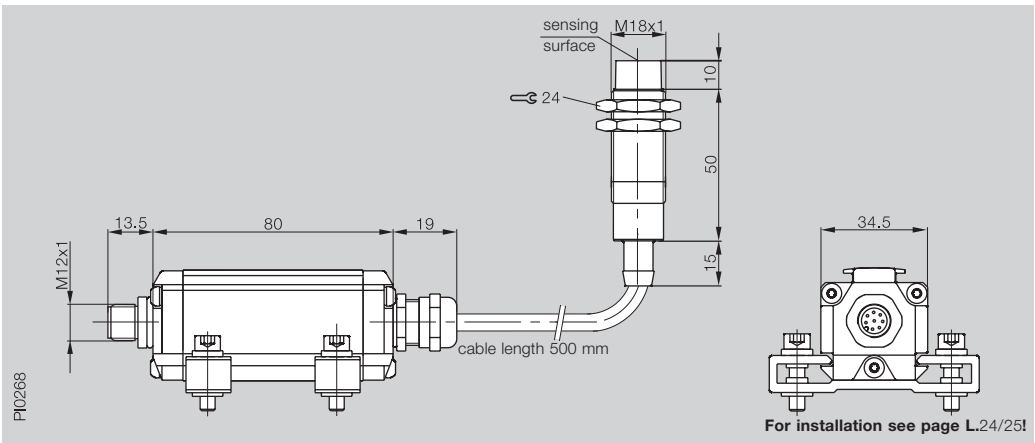
BIS L-100			BIS L-101			BIS L-102			BIS L-200			BIS L-201			BIS L-202		
non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel
0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-50	15-35	15-30	0-70	20-45	20-40	0-100	25-60	25-55
±30			±35			±40			±35			±40			±45		
±30			±35			±40			±35			±40			±45		
±30			±35			±40			±35			±40			±45		
±30			±35			±40			±35			±40			±45		
±30	±20	±15	±35	±20	±20	±40			±35	±20	±20	±40			±45		
±30	±15	±10	±35	±20	±20	±40	±25	±22	±35	±20	±15	±40	±24	±20	±45		
±30	±10	±0	±35	±20	±15	±40	±25	±22	±35	±20	±10	±40	±24	±20	±45	±30	±30
±30	±0		±35	±20	±15	±40	±25	±22	±35	±15	±0	±40	±20	±20	±45	±30	±30
±30			±35	±15	±0	±40	±20	±15	±35	±0		±40	±20	±15	±45	±30	±25
±30			±35	±0		±40	±15	±15	±35			±40	±18	±0	±45	±30	±25
			±35			±40	±15	±10	±35			±40	±0		±45	±25	±20
			±35			±40	±0	±0	±35			±40			±45	±20	±20
			±35			±40						±40			±45	±10	±0
						±40						±40			±45	±0	
						±40						±40			±45		
															±45		



Connector orientation



Dimensions	M30
Housing material	PVDF
Antenna type	round
Weight	130 g

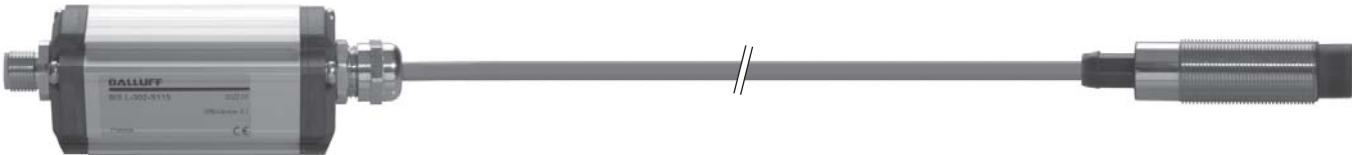


Order code	BIS L-302-S115
Mounting in steel	non-flush
Operating temperature	0...+70 °C (minus temperatures on request)
Storage temperature	-20...+85 °C
Protection per DIN 40050	IP 67
Connection to with connection cable	processor BIS L-500-PU-_-_* BIS L-501-PU1-25, BIS L-502-PU1-25
possible cable lengths	5 m, 10 m or 25 m

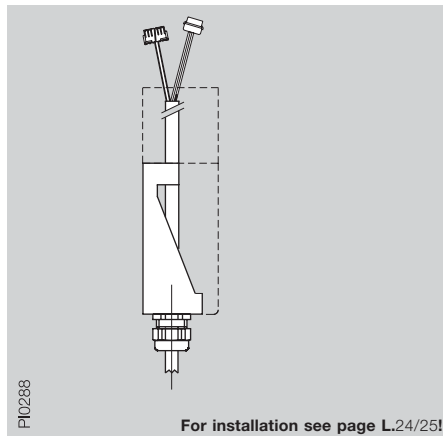
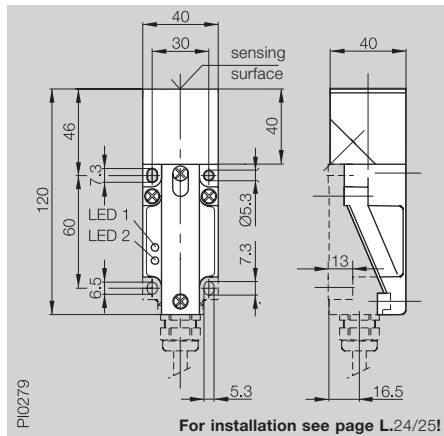
appropriate data carriers Installation types	BIS L-100			BIS L-101			BIS L-102			BIS L-200			BIS L-201			BIS L-202			BIS L-203		
	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel	non-metal	on steel	flush in steel
Write distance in mm	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20	0-25	8-15	8-15	0-30	10-20	10-20	0-40	10-25	10-20	0-15	4-10	3-8
Read distance in mm	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20	0-25	8-15	8-15	0-30	10-20	10-20	0-40	10-25	10-20	0-15	4-10	3-8
Offset in mm	±10			±12			±15			±13			±15			±20			±8		
at distance	±10			±12			±15			±13			±15			±20			±8	±7	±5
0 mm	±10	±6	±6	±12			±15			±13	±8	±6	±15			±20			±8	±6	±3
3 mm	±10	±5	±5	±12	±10	±8	±15	±15	±10	±13	±8	±6	±15	±10	±10	±20	±15	±8	±8	±5	
8 mm	±10	±0	±0	±12	±5	±5	±15	±15	±5	±13	±0	±0	±15	±10	±8	±20	±15	±6	±6		
10 mm	±10			±12	±0	±0	±15	±10	±0	±13			±15	±0	±0	±20	±10	±0			
15 mm				±12			±15	±0		±13			±15			±20	±0				
20 mm							±15						±15			±20					
25 mm							±15						±15			±20					
30 mm													±15			±20					
35 mm																±20					
40 mm																±20					
45 mm																					
50 mm																					
55 mm																					
60 mm																					
70 mm																					
100 mm																					

* For pre-assembled read/write head cable, please append cable length to ordering code!

05 = Length 5 m
10 = Length 10 m
25 = Length 25 m



Description/Dimensions	Module 40x40x120	Mounting base
Housing material	PBTP	PBTP
Antenna type	round	
Weight	170 g	70 g excl. cable



Order code	BIS L-405-033-001-05-MU	BIS L-503-PU1-__*
Supply voltage	24 V DC $\pm 10\%$ / -20 %	
Ripple	$\leq 10\%$	
Current draw	≤ 50 mA no-load	
Output current per output	max. 50 mA	
ambient temperature range	0...+60 °C	0...+60 °C
Protection per IEC 60529	IP 67 when assembled	IP 67 when assembled
Mounting in steel	non-flush	
LED function indicator	yes	
Connection type		PUR cable, drag-chain compatible
No. of wires $\times$ conductor cross section		14 $\times$ 0,15 mm ² /2 $\times$ 0,34 mm ²
Version		for BIS L-405-033-001-05-MU

appropriate data carriers		BIS L-200	BIS L-201	BIS L-202
Installation types		non-metal	non-metal	non-metal
Write distance in mm				
Read distance in mm		0-30	0-40	0-55
Offset in mm at distance	0 mm	±18	±25	±30
	3 mm	±18	±25	±30
	8 mm	±18	±25	±30
	10 mm	±18	±25	±30
	15 mm	±18	±25	±30
	20 mm	±18	±25	±30
	25 mm	±18	±25	±30
	30 mm		±25	±30
	35 mm		±25	±30
	40 mm			±30
	45 mm			±30
max. speed	m/s	0,51	0,71	0,86
	m/min	31	43	52

* Please indicate cable length in ordering code!

05 = Length 5 m

10 = Length 10 m

15 = Length 15 m

20 = Length 20 m



Cost-effective
identification –
2 selectable Read/Write
Heads

- Simultaneous reading of the data carrier ID number on both read/write heads
- Service friendly, all parameter data are stored in an exchangeable memory
- Accepts all read/write heads
- Interface-compatible with BIS C and BIS S identification systems

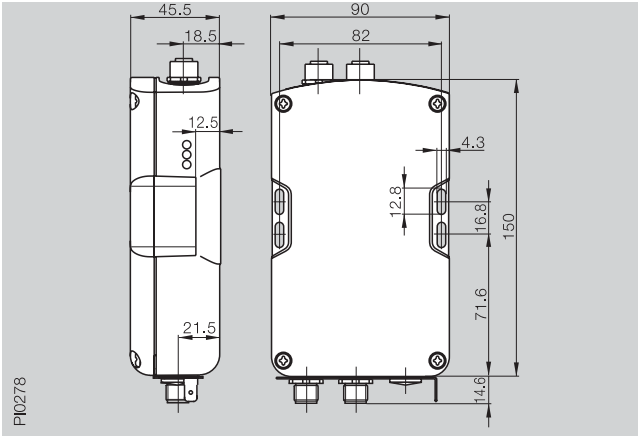
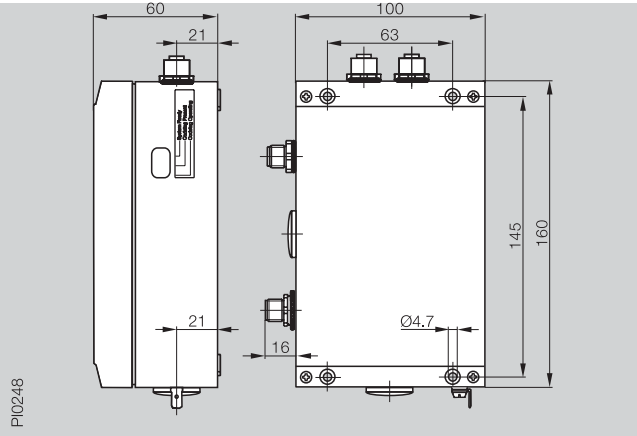
Description	
Function	
Housing material	



Supply voltage	
Ripple	
Current draw	
Operating temperature	
Storage temperature	
Protection per IEC 60529	
Read/Write Head ports	
Connection type	
Connection for	
Description Interface/Software:	
RS232/Balluff Dialog	
Accessories (please order separately)	

The **compact class BIS L-600_** with its reduced dimensions and various interface options can be used wherever ambient conditions do not require higher protection. If IP 65 is sufficient and no media aggressive to PS plastic are present, this device family is the ideal solution. Small, compact, flexible and economical: these are the characteristics of this series.



	BIS L-6000-007-050-00-ST15	BIS L-6020-007-050-00-ST15
	read/write	read/write
	ABS	AlSi 12
		
	24 V DC ±20 %	
	≤ 10 %	
	≤ 400 mA	
	0...+60 °C	
	0...+60 °C	
	IP 65/NEMA 12	
	2 external	
	2 connector round 5-pin	2 connector round 5-pin
	2 read/write heads BIS L-3_ _	2 read/write heads BIS L-3_ _
	BIS L-6000-007-050-00-ST15	BIS L-6020-007-050-00-ST15
	connector page L.19	connector page L.19



Data Carriers
Read/Write
Heads
Processor
with parallel
interface
**Compact
Processors
for
Simultaneous
Mode**
Handy
Programmer
Connectors,
Termination
Resistor
Installation
Notes
Read/Write
Times
Software,
Service Tools

The **ruggedized version BIS L-602_** is in spite of the mechanically rugged die-cast aluminum housing a small, flexible processor which is available with various interface options.

This version is ideal where increased demands on mechanical stability or chemical resistance are made.



Cost-effective
identification – operate
2 Read/Write Heads
simultaneously

- Data width on the bus,
16 bytes
- Service friendly, all
parameter data are stored
in an exchangeable
memory
- Accepts all read/write
heads
- Interface-compatible with
BIS C and BIS S
identification systems

Description	
Function	
Housing material	



Supply voltage	
Ripple	
Current draw	
Operating temperature	
Storage temperature	
Protection per IEC 60529	
Read/Write Head ports	
Service interface RS232	
Connection type	
Connection for	
Description Interface/Software:	
INTERBUS Remote bus station	
INTERBUS Remote bus station with 2M Baud	
INTERBUS Installation bus	
INTERBUS Installation bus with 2M Baud	
Accessories (please order separately)	

The **compact class**
BIS L-600_ with its reduced
dimensions and various
interface options can be
used wherever ambient
conditions do not require
higher protection. If IP 65 is
sufficient and no media
aggressive to PS plastic are
present, this device family is
the ideal solution.
Small, compact, flexible and
economical: these are the
characteristics of this series.

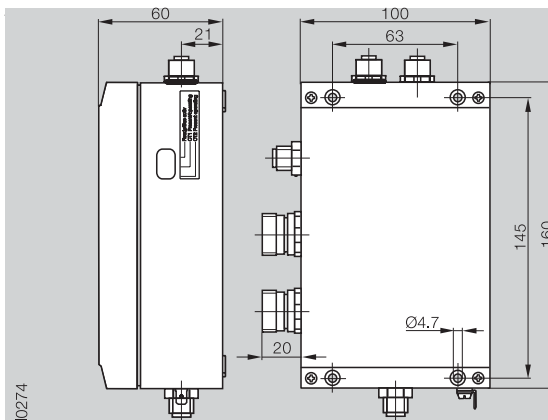
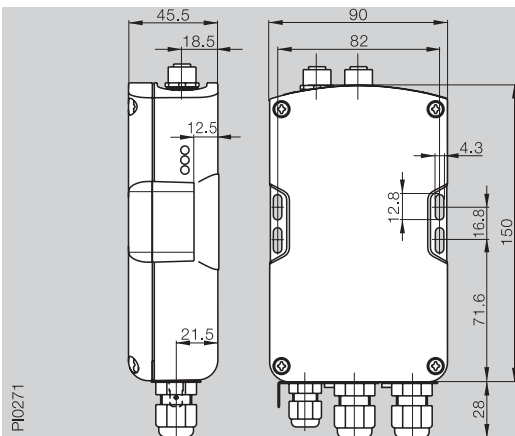


BIS L-6001-_-_-050-03-KL2

read/write
ABS

BIS L-6021-_-_-050-03-ST8

read/write
AISI 12



24 V DC $\pm 20\%$

$\leq 10\%$

≤ 400 mA

0...+60 °C

0...+60 °C

IP 65/NEMA 12

2 external

yes

terminals 1 $\times$ Pg 9

terminals 2 $\times$ Pg 11

2 read/write heads BIS L-3_ _

2 connector round 9-pin

2 connector round 5-pin

2 read/write heads BIS L-3_ _

BIS L-6001-023-050-03-KL2

BIS L-6021-023-050-03-ST9
BIS L-6021-023-050-03-ST9M
BIS L-6021-023-050-03-ST8
BIS L-6021-023-050-03-ST8M

BKS 23-CS-00

connector page **L.19**

BIS L

Data Carriers

Read/Write
Heads

Processor
with parallel
interface

**Compact
Processors
for
Simultaneous
Mode**

Handy
Programmer

Connectors,
Termination
Resistor

Installation
Notes

Read/Write
Times

Software,
Service Tools

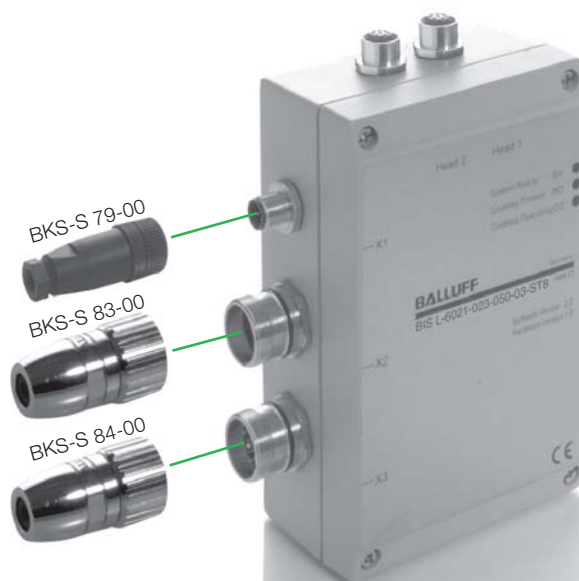
The **ruggedized version** **BIS L-602_** is in spite of the mechanically rugged die-cast aluminum housing a small, flexible processor which is available with various interface options.

This version is ideal where increased demands on mechanical stability or chemical resistance are made.



Threaded cover BKS 23-CS-00

for M23 plug connection
IP 65 protective cover for
unused connectors!



Cost-effective
identification – operate
2 Read/Write Heads
simultaneously

- Selectable division of the data width on the PROFIBUS-DP, 4 to 128 bytes
- Free assigning of the data width for each read/write head
- Optimum data speed, internal cycle time is shorter than the BUS activation time
- Service friendly, all parameter data are stored in an exchangeable memory
- BUS address selectable with switches
- Accepts all read/write heads
- Interface-compatible with BIS C and BIS S identification systems

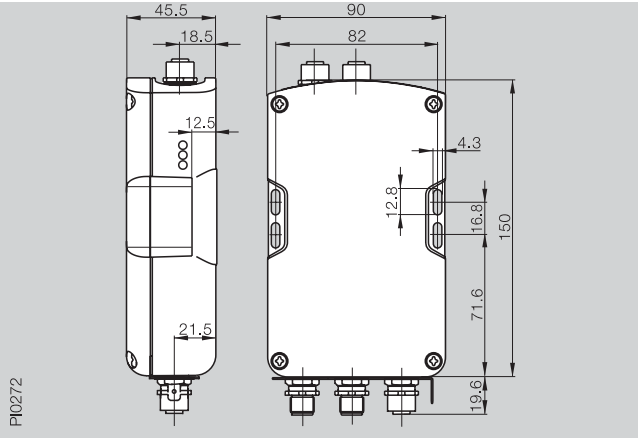
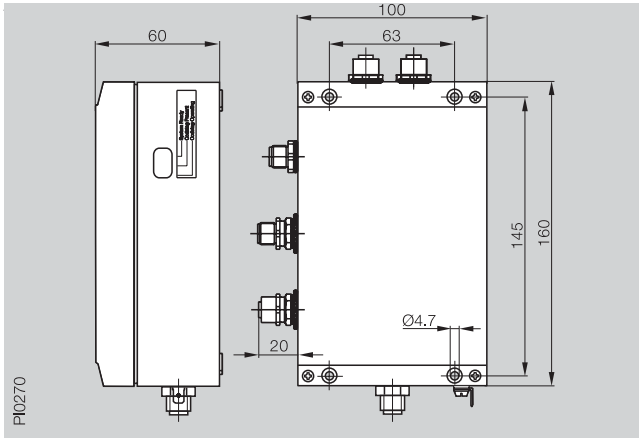
The **compact class BIS L-600_** with its reduced dimensions and various interface options can be used wherever ambient conditions do not require higher protection. If IP 65 is sufficient and no media aggressive to PS plastic are present, this device family is the ideal solution. Small, compact, flexible and economical: these are the characteristics of this series.

Description	
Function	
Housing material	



Supply voltage	
Ripple	
Current draw	
Operating temperature	
Storage temperature	
Protection per IEC 60529	
Read/Write Head ports	
Service interface RS232	
Connection type	
Connection for	
Description Interface/Software:	
PROFIBUS-DP	
Accessories included	
Accessories (please order separately)	



	BIS L-6002-019-050-03-ST11	BIS L-6022-019-050-03-ST14
	read/write	read/write
	ABS	AlSi 12
		
	24 V DC ±20 %	
	≤ 10 %	
	≤ 400 mA	
	0...+60 °C	
	0...+60 °C	
	IP 65/NEMA 12	
	2 external	
	yes	
	2 connector round 5-pin, B-coded	2 connector round 5-pin, B-coded,
	1 connector round 5-pin	2 connector round 5-pin
	2 read/write heads BIS L-3_ _	2 read/write heads BIS L-3_ _
	BIS L-6002-019-050-03-ST11	BIS L-6022-019-050-03-ST14
	software GSD-file	software GSD-file
	BKS 12-CS-01	BKS 12-CS-01
	connector page L.19-21	connector page L.19-21

BIS L

Data Carriers
Read/Write
Heads
Processor
with parallel
interface

Compact
Processors
for
Simultaneous
Mode

Handy
Programmer
Connectors,
Termination
Resistor

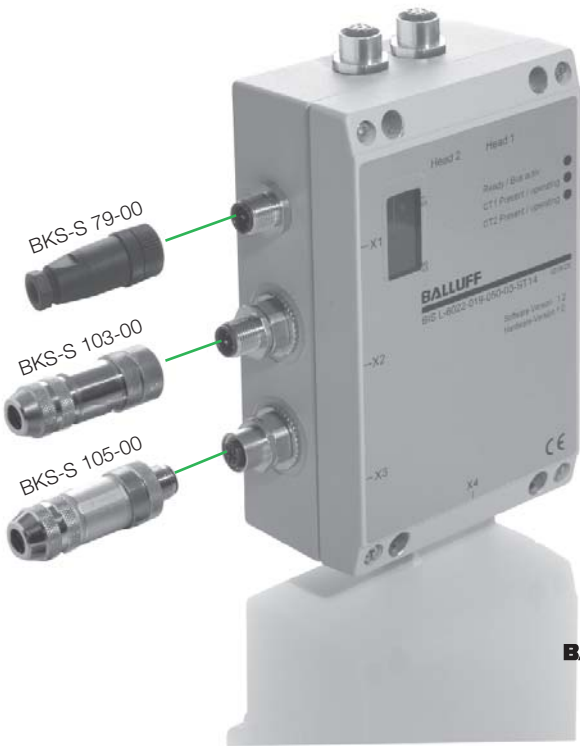
Installation
Notes
Read/Write
Times
Software,
Service Tools

The **ruggedized version** **BIS L-602_** is in spite of the mechanically rugged die-cast aluminum housing a small, flexible processor which is available with various interface options.

This version is ideal where increased demands on mechanical stability or chemical resistance are made.



Threaded cover
BKS 12-CS-01
coded for M12 B
Connector type



Cost-effective
identification – operate
2 Read/Write Heads
simultaneously

- Freely selectable buffer size between 0 and 256 bytes
- Service friendly, all parameter data are stored in an exchangeable memory
- Accepts all read/write heads
- Interface-compatible with BIS C and BIS S identification systems

Description	
Function	
Housing material	



Supply voltage	
Ripple	
Current draw	
Operating temperature	
Storage temperature	
Protection per IEC 60529	
Read/Write Head ports	
Service interface RS232	
Connection type	
Connection for	
Description Interface/Software:	
DeviceNet	
Accessories included	
Accessories (please order separately)	

The **compact class BIS L-600_** with its reduced dimensions and various interface options can be used wherever ambient conditions do not require higher protection. If IP 65 is sufficient and no media aggressive to PS plastic are present, this device family is the ideal solution. Small, compact, flexible and economical: these are the characteristics of this series.

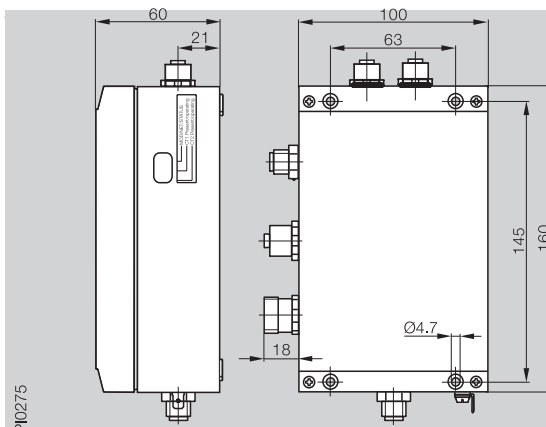
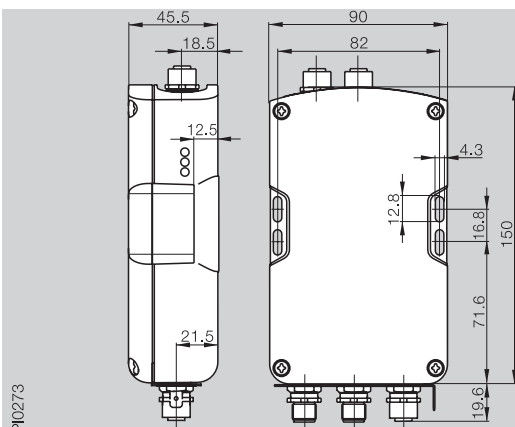


BIS L-6003-_-_-650-03-ST12

read/write
ABS

BIS L-6023-_-_-050-03-ST13

read/write
AISI 12



24 V DC $\pm 20\%$

$\leq 10\%$

≤ 400 mA

0...+50 °C

0...+50 °C

IP 65/NEMA 12

2 external

yes

3 connector round 5-pin

2 read/write heads BIS L-3_ _

4 connector round 5-pin

2 read/write heads BIS L-3_ _

BIS L-6003-025-050-03-ST12

software EDS-file

BIS L-6023-025-050-03-ST13

software EDS-file

BKS 12-CS-01

connector page L.19/22/23

connector page L.19-21

BIS L

Data Carriers

Read/Write
Heads

Processor
with parallel
interface

**Compact
Processors
for
Simultaneous
Mode**

Handy
Programmer

Connectors,
Termination
Resistor

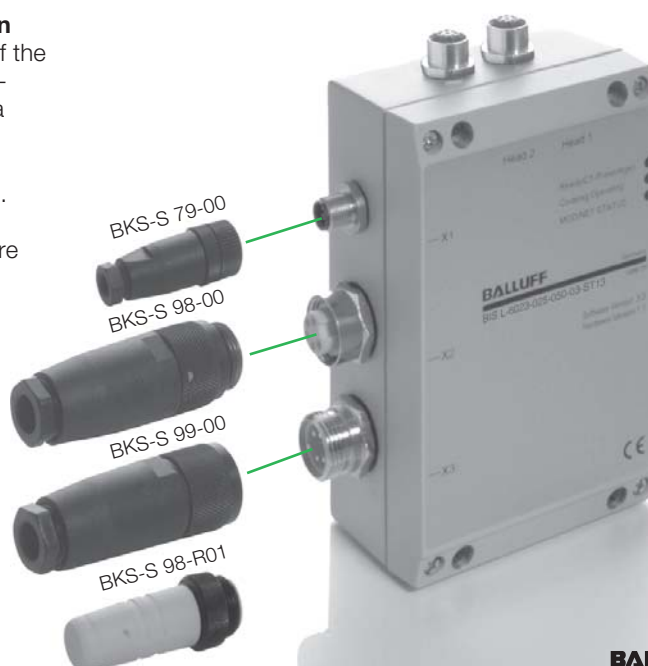
Installation
Notes

Read/Write
Times

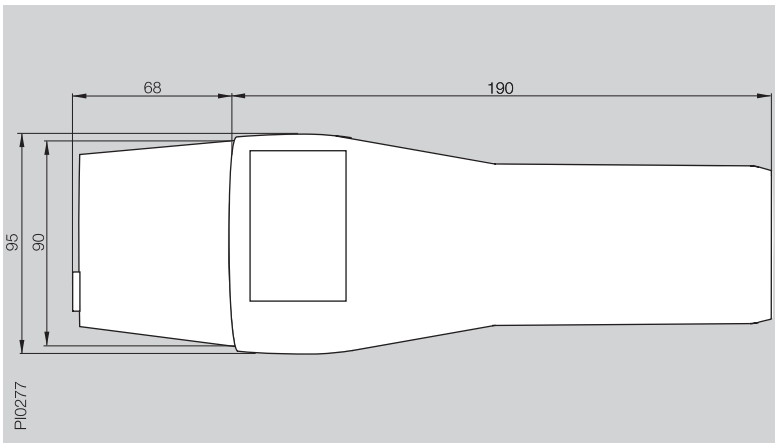
Software,
Service Tools

The **ruggedized version**
BIS L-60_ _ is in spite of the
mechanically rugged housing a
small, flexible processor
which is available with
various interface options.

This version is ideal where
increased demands on
mechanical stability or
chemical resistance are
made.



Function	read/write



Order code	BIS L-830-0-005-X-1
Keyboard	57 buttons, alphanumeric
Display	Graphical LCD-display with 240 × 100 pixels, 12 lines with 39 characters, background illumination selectable
Supply voltage	NiCd rechargeable battery pack Typ AA
Operating temperature	-20...+60 °C
Storage temperature	-25...+70 °C
Protection per IEC 60529	IP 40

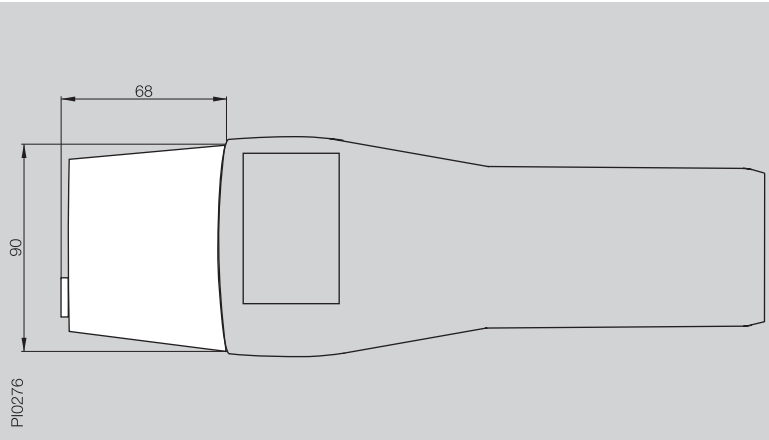
The BIS L-830 Handy Programmer consists of a PSION Workabout MX base unit and a plug-in BIS L-860 read/write head. Software is supplied for reading series BIS L-2-__ data carriers, and series BIS L-1-__ data carriers can be read and written. Communication between the PSION Workabout MX and the read/write head is over a serial interface with TTL levels. The protocol allows optional development packets from PSION to be used for self-programming your own menu. In addition, PSION offers a comprehensive range of accessories for the Workabout MX. For additional information, visit www.pSIONteklogix.com.



Charging cradle
with charging power
supply
130443

Charger
130442
(not shown)

Function	read/write



Order code	BIS L-860-0-005-X
Operating temperature	-20...+60 °C
Storage temperature	-25...+70 °C
Protection per IEC 60529	IP 40
Connection to appropriate data carriers	PSION Workabout MX BIS L-100-01/L, BIS L-101-01/L, BIS L-102-01/L BIS L-200-03/L, BIS L-201-03/L, BIS L-202-03/L



BIS L

Data Carriers
Read/Write
Heads
Processor
with parallel
interface

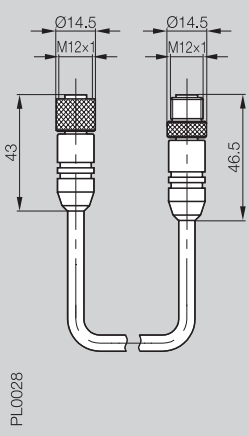
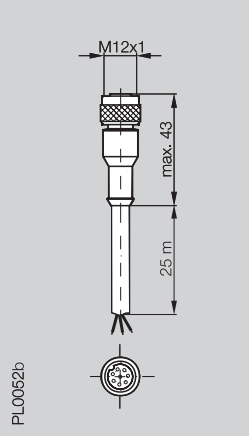
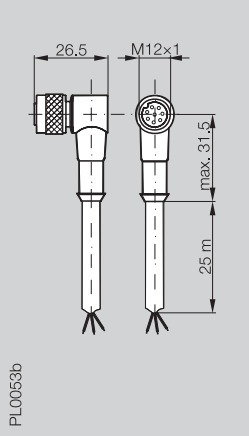
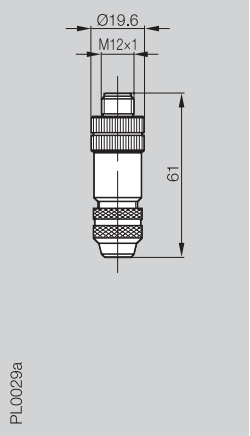
Compact
Processors for
Simultaneous
Mode

**Handy
Programmer**

Connectors,
Termination
Resistor

Installation
Notes

Read/Write
Times
Software,
Service Tools

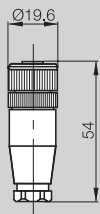
Order code	BIS L-500-PU-__	BIS L-501-PU1-25	BIS L-502-PU1-25	BKS-S117-00	
Version	for read/write head	for read/write head with fixed cable length 25 m	for read/write head with fixed cable length 25 m	for connecting read/write head to processor	
					
Connector type	2 connectors M12	M12	M12	M12	
Version	8-pin, male, female	8-pin, female	8-pin, female	8-pin, male	
recommended cable					
Conductor cross section		8x0,25 mm ²	8x0,25 mm ²		
Protection per IEC 60529	IP 67	IP 67	IP 67	IP 67	
ambient temperature range				-40...+85 °C	
Accessories included		BKS-S117-00	BKS-S117-00		
Cable	molded-in	one end molded-in, other end pigtailed	one end molded-in, other end pigtailed		
Please indicate cable length in ordering code! 05 = Length 5 m 10 = Length 10 m Cable can be trailed and may also be shortened to the required length. For fixed routing the minimum bending radius is 16 mm at an ambient temperature of -40...+85 °C. When cable is trailed the min. bending radius is 80 mm at an ambient temperature of -25...+85 °C.					

Connectors
Read/Write Head



BKS-S 79-00

for connection to
processors
BIS L-6_ _



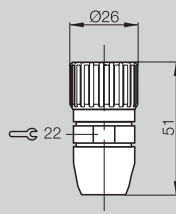
PI0221



round-connector
5-pin, female
LiYCY-0
0,34 mm²
IP 67
-40...+85 °C

BKS-S 83-00

for connection to
processors
BIS L-6021 output



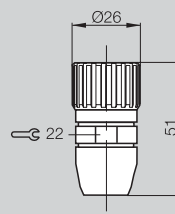
PI0222



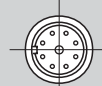
round-connector
9-pin, male
LiYCY-0
0,5 mm²
IP 67
-40...+85 °C

BKS-S 84-00

for connection to
processors
BIS L-6021 input



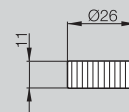
PI0223



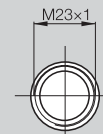
round-connector
9-pin, female
LiYCY-0
0,5 mm²
IP 67
-40...+85 °C

BKS 23-CS-00

IP 65 threaded cover for
unused terminals!



PI0215

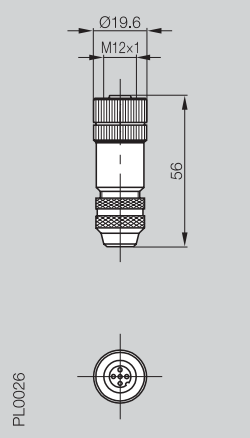
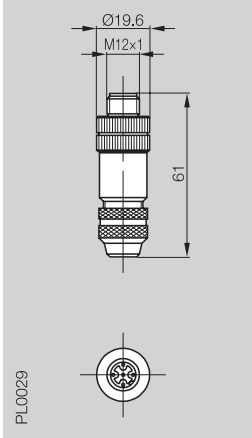
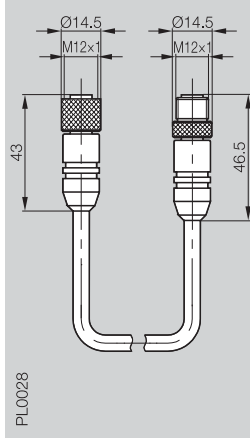
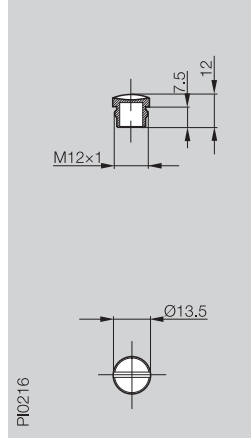


BIS L

Data Carriers
Read/Write
Heads
Processor
with parallel
interface
Compact
Processors for
Simultaneous
Mode
Handy
Programmer
**Connectors,
Termination
Resistor**
Installation
Notes
Read/Write
Times
Software,
Service Tools

Supply voltage
for all BIS L-6_ _

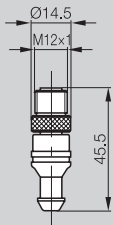


Order code	BKS-S103-00	BKS-S105-00	BKS-S103/GS103-CP-__	BKS 12-CS-01	
Version	for connection PROFIBUS-DP	for connection PROFIBUS-DP	PROFIBUS-DP extension cable	IP 65 protective cap for unused terminals	
					
Connector type	M12 B-coded	M12 B-coded	M12 B-coded	M12 B-coded	
Version	5-pin, female	5-pin, male	5-pin, male, female		
recommended cable					
Conductor cross section			2x0,64 mm ²		
Protection* per IEC 60529	IP 67	IP 67	IP 67		
ambient temperature range	-40...+85 °C	-40...+85 °C	-40...+85 °C	-40...+85 °C	
*only when connected					

Please indicate cable
length in ordering code!
00,3 = Length 0,3 m
02 = Length 2 m
05 = Length 5 m
10 = Length 10 m



BKS-S105-R01
PROFIBUS-DP
termination resistor

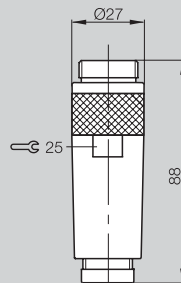


PL0030

M12 B-coded
5-pin, male

IP 67
-40...+85 °C

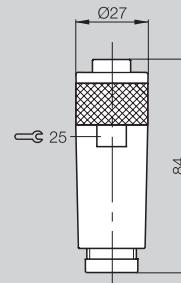
BKS-S 98-00
for connection to
processors
BIS L-6023 DeviceNet



PI0225

round-connector
5-pin, male
LiYCY-0
0,5 mm²
IP 67
-40...+90 °C

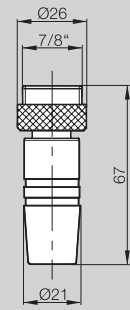
BKS-S 99-00
for connection to
processors
BIS L-6023 DeviceNet



PI0226

round-connector
5-pin, female
LiYCY-0
0,5 mm²
IP 67
-40...+90 °C

BKS-S 98-R01
termination resistor for
processors
BIS L-6023 DeviceNet



PI0227

round-connector
5-pin, male
IP 67
-40...+85 °C

BIS L

Data Carriers
Read/Write
Heads
Processor
with parallel
interface

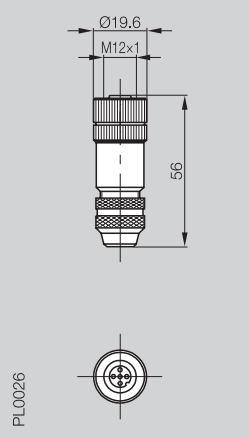
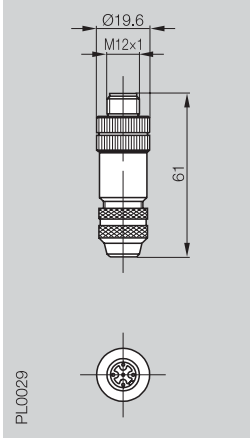
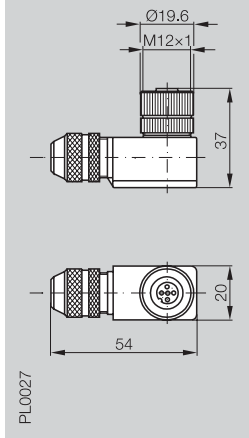
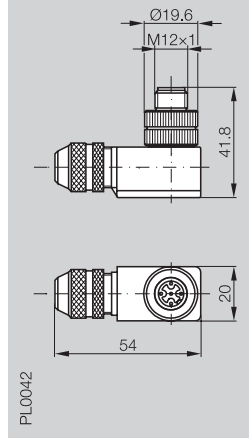
Compact
Processors for
Simultaneous
Mode
Handy
Programmer

**Connectors,
Termination
Resistor**

Installation
Notes
Read/Write
Times
Software,
Service Tools

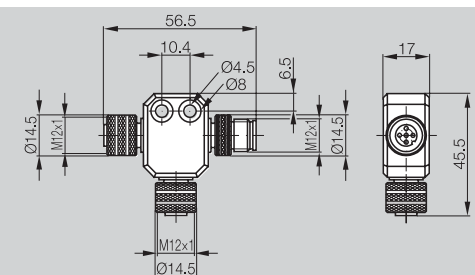
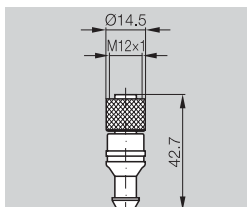
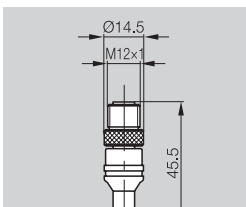
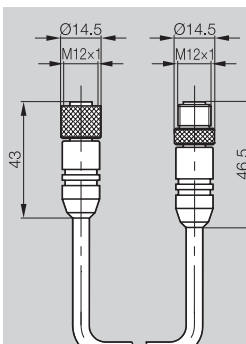


DeviceNet
COMFORMANCE TESTED

Order code	BKS-S 92-00	BKS-S 94-00	BKS-S 93-00	BKS-S 95-00	
Version	BIS L-6003-...	BIS L-6003-...	BIS L-6003-...	BIS L-6003-...	
					
Connector type	round-connector	round-connector	round-connector	round-connector	
Version	5-pin, female	5-pin, male	5-pin, right angle, female	5-pin, right angle, male	
Cable diameter	6...8 mm	6...8 mm	6...8 mm	6...8 mm	
No. of wires x conductor cross section					
Protection per IEC 60529	IP 67 (when attached)	IP 67 (when attached)	IP 67 (when attached)	IP 67 (when attached)	
Resistor					

Pin assignments	BKS-S 92-00/-S 93-00/ -S 94-00/-S 95-00		BKS-S 92-R01/ -S 94-R01	
	Pin	Signal	Pin	Signal
 View of female coupling side	1	Drain	1	—
	2	V+	2	—
	3	V-	3	—
	4	CAN_H	4	121 Ohm
	5	CAN_L	5	



	BKS-S 92-TA1 BIS L-6003-...	BKS-S 92-R01 BIS L-6003-... termination resistor	BKS-S 94-R01 BIS L-6003-... termination resistor	BKS-S 92-16/GS92-... BIS L-6003-... extension
PL0025				
	round-connector T-splitter, 2 × female, 1 × male	round-connector 5-pin, female	round-connector 5-pin, male	round-connector 5-pin, male, female
	IP 65	IP 68 121 Ohm	IP 68 121 Ohm	5x0,34 mm ² IP 67

Please indicate cable
length in ordering code!
02 = Length 2 m
05 = Length 5 m
10 = Length 10 m

BIS L

Data Carriers
Read/Write
Heads
Processor
with parallel
interface
Compact
Processors for
Simultaneous
Mode
Handy
Programmer
**Connectors,
Termination
Resistor**
Installation
Notes
Read/Write
Times
Software,
Service Tools



Minimum distance
between two data
carriers

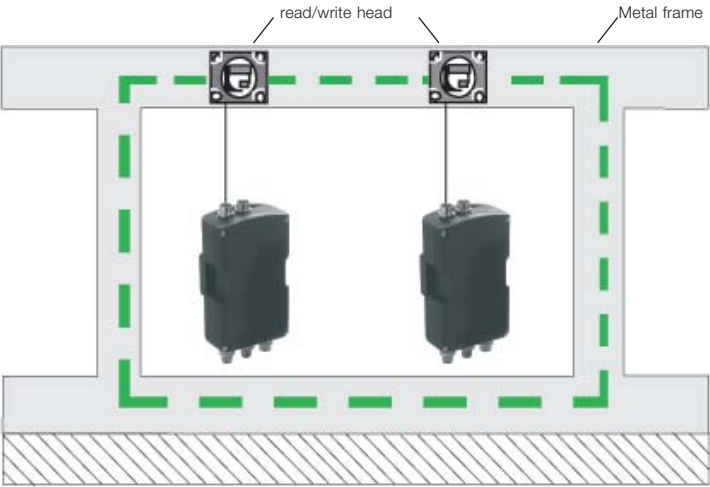
	BIS L-100-01/L	BIS L-101-01/L	BIS L-102-01/L	BIS L-200-03/L	BIS L-201-03/L	BIS L-202-03/L	BIS L-203-03/L
BIS L-300	250 mm	300 mm	400 mm	250 mm	300 mm	400 mm	200 mm
BIS L-301	300 mm	400 mm	500 mm	350 mm	400 mm	500 mm	300 mm
BIS L-302	150 mm	200 mm	200 mm	180 mm	200 mm	250 mm	170 mm

Minimum distance
between two read/
write heads

BIS L-300	800 mm
BIS L-301	800 mm
BIS L-302	200 mm

Mounting the read/
write heads on metal
frames

If the read/write heads are mounted so that they are joined through an enclosed metal frame, mutual interference may result (conductor loop). This may reduce the read/write distances. The smaller the read/write head, the less the interference. With the BIS L-301 this may result in a reduction of the maximum distance by 20 %. In such a case you should test the actual effective read distance.



Installation in metal

Clear zone dimensions for components with rod antenna or air coil.

Data carriers	Fig.	Dimensions (in mm)	
		A	D
BIS L-100-01/L	1	100	50
BIS L-101-01/L	1	100	50
BIS L-102-01/L	1	100	50
BIS L-200-03/L	1	100	50
BIS L-201-03/L	1	100	50
BIS L-202-03/L	1	100	50
BIS L-203-03/L	1	100	50

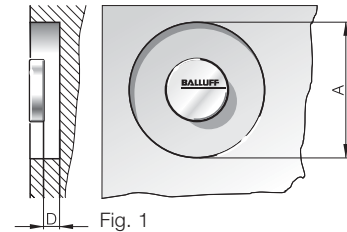


Fig. 1

Read/write heads	Fig.	Dimensions (in mm)		
		A	C	D
BIS L-300-__	2	100	50	
BIS L-301-__	1	240		0
BIS L-302-__	2	100	10	
BIS L-405-__	2	100	40	

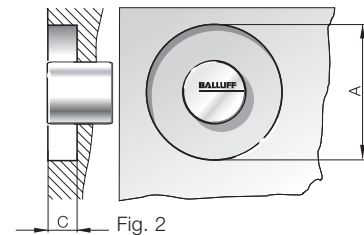


Fig. 2

Note

Depending on the combination of read/write head and data carrier, clear zone dimension A and B should always be selected for the larger of the components.
If the clear zones cannot be maintained, the read/write distance will be reduced.

Mechanical Strength

Data carriers and read/write heads

Order code	BIS L-1 __, BIS L-3 __
Shock load	100 g/6 ms per EN 60068-2-27 and 100 g/2 ms per EN 60068-2-29
Vibration	20 g, 10...2000 Hz per EN 60068-2-6

Processors

Order code	BIS L-6 __
Shock load	15 g/11 ms per EN 60068-2-27 and 15 g/6 ms per EN 60068-2-29
Vibration	5 g, 10...150 Hz per EN 60068-2-6

Read Times
BIS L-1_ _

Data carrier recognition = read data carrier =	
typ. 270 ms	
Data carrier with 4 byte blocks	
Byte	read time [ms]
from 0 to 3	180
for each additional	
4 bytes started add	
an additional	90

Read Times
BIS L-2_ _

Data carrier recognition = read data carrier = typ. 270 ms

Write Times
BIS L-1_ _

Data carrier with 4 byte blocks	
Byte	write time [ms]
from 0 to 3	305
for each additional	
4 bytes started add	
an additional	215

All specifications are typical values. Deviations are possible depending on the application and the read/write head/data carrier combination!

BISMASK/BISEDIT

The BISMASK/BISEDIT software package makes it possible to create a manual work station for the Balluff Identification System using a standard PC.

Requirements:
PC with a serial port,
Windows 95, Windows 98
or Windows NT, floppy drive,
hard drive.

The workstation consists of
a PC, a BIS C processor
with Balluff Dialog-Protocol
(-007), and a read/write
head.

The program package
consists of two program
sections:

BISEDIT

makes use of the mask file
created in BISMASK and
outputs the data carrier data
with the assigned fixed texts
to the monitor screen or
a printer. There is also the
option of storing the data
carrier data on diskette or
hard disk, or downloading it
from those sources.

It is also possible to modify
the data carrier data.

A password can be assigned
to prevent data from being
changed.

BISMASK

enables the user to assign
certain fixed texts to the
various data on the data
carrier.

At the same time, the user
can define how the data
is represented and create
system settings for later use
with BISEDIT.

This organization is stored
in a mask which is used by
BISEDIT.



Software Coupling BIS C-60_2 for Siemens Simatic S7

Function modules for linking
a Processor with INTERBUS
or PROFIBUS-DP option to
a Simatic S7 controller.

The function modules offer
the full functionality of the
Balluff Processors. Data are
exchanged through the I/O
section of the controller.

Features:

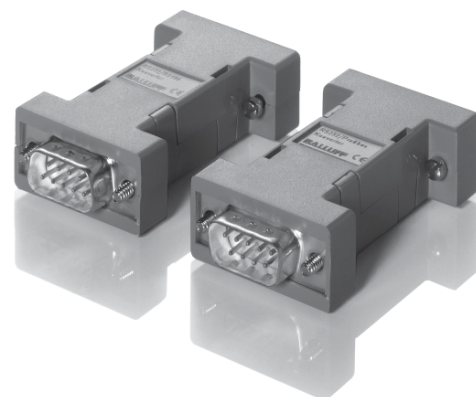
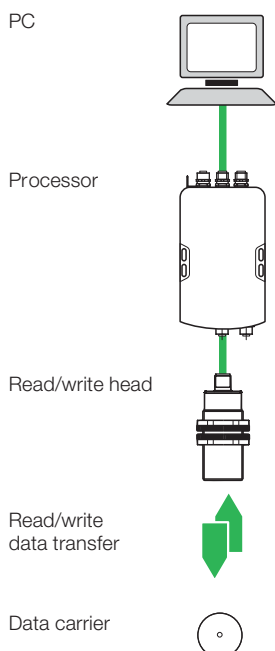
- short startup times
- easy system operation
- full command set

PROFIBUS-DP Master Simulator

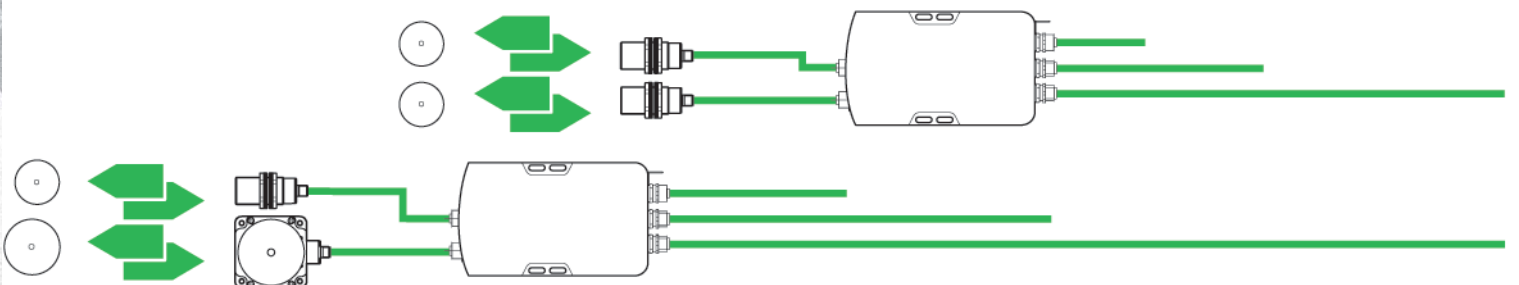
The PROFIBUS-DP Master
Simulator is a simple, univer-
sal program for data
exchange with PROFIBUS
slaves from virtually any
manufacturer over PROFI-
BUS-DP.

Included with delivery are:

- Software
- PROFIBUS-DP master
simulator
- PROFIBUS-DP converter
- D-Sub data cable



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Inductive Sensors

Inductive Sensors BES
Inductive Position Switches BES
Analog Sensors BAW



Optoelectronic Sensors

Optoelectronic Sensors BOS
Fiber Optics BFO
Laser Distance Sensors BOD
Contrast Sensors BKT
Luminescence Sensors BLT
Slot Sensors BGL/Optical Windows BOWA
Color Sensors BFS



Magnetic Field,

Capacitive and Remote Sensors

Magnetic Field Sensors BMF
Capacitive Sensors BCS
Inductive Transmission Systems Remote



Electromechanical and Inductive Sensors

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Inductive multiple and single position switches BNS/BES
Electromechanical and inductive switch elements BSE/BES
Cam trays BNL and cams BNN/BEN
Precision Rotary Cam Switches BSW



Micropulse Transducers,

Absolute and Incremental Encoders

Micropulse Transducers BTL
Incremental Encoders BDG
Absolute Encoders BRG



Identification Systems

Non-contact data communication – BIS C
Non-contact data communication at 125 kHz – BIS L
Non-contact data communication with high speed – BIS S



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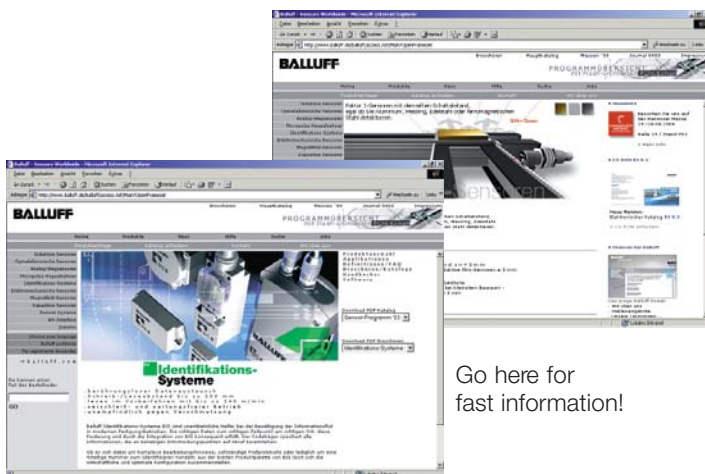
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Department

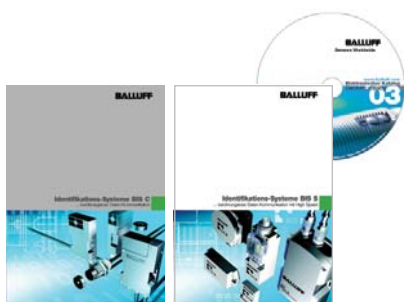
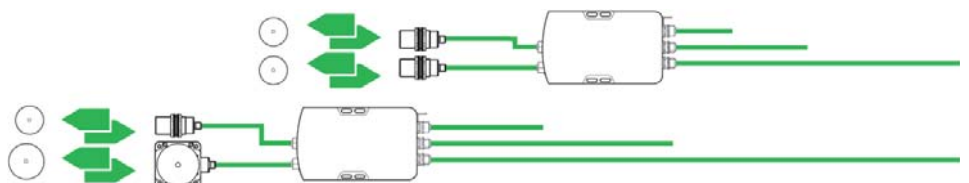
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fast information!



For more Identification Systems
refer to catalogs for BIS C and BIS S,
on CD-ROM or online!

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