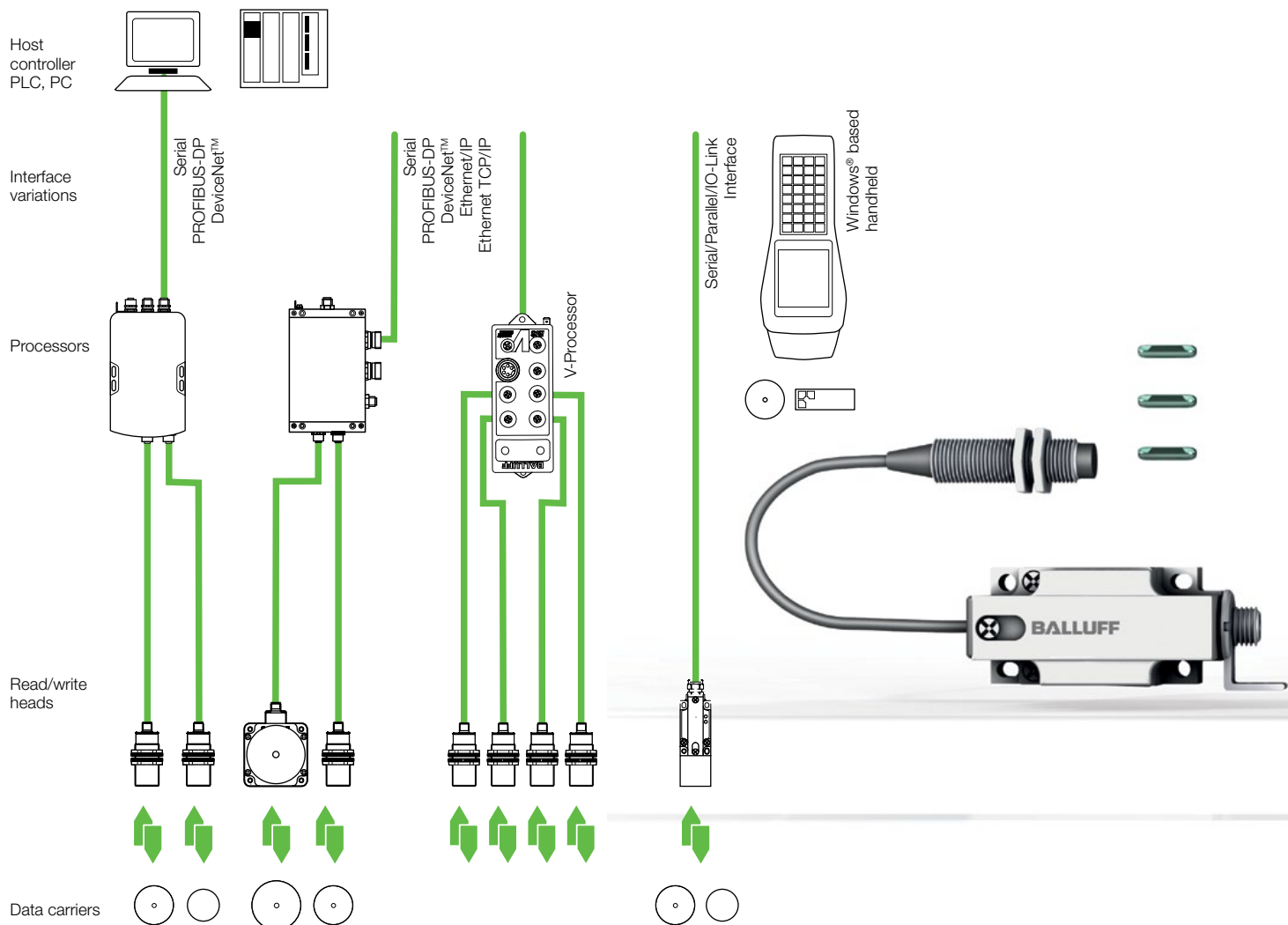


BIS L Industrial RFID System



Inductive Identification

The BIS L system uses a Low Frequency or LF 125KHz inductively coupled technology along with passive tags to provide shorter range RFID solutions up to 100mm for WIP (work in process) or production control such as palletized production and quality traceability applications. The BIS L system is also used for lower cost read-only tracking applications when only an identifier is required. This system can be used on or off metal and provides hardened re-usable tagging options.



BIS L Industrial RFID System

Inductive identification



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Technical information and definitions can be found on **page 354**

BIS L Industrial RFID System

Wide range of applications, many different variants

Select the most suitable BIS L system for your application from the table and benefit from the outstanding performance and quality of economical industrial RFID systems.

How much data do you require?

How dynamic is your application?

In three steps you will have selected your BIS L system:

1. First choose the appropriate form factor for your data carrier and the associated read/write heads.
2. Then determine your read/write distance, which also depends on the speed of your system: the faster the data carrier moves, the closer the distance needs to be.
3. Finally, determine the desired memory capacity.
This will give you the maximum data security.

Questions?

Whatever your need, whether analysis, selection and return on investment, formats, interfaces and software, installation, disassembly and retrofitting – we are here to help you in every way.

Contact us to take advantage of our personal consultation, individual support and worldwide service.

Data carrier		Page	
BIS0033	BIS L-100-01/L	138	
BIS0035	BIS L-100-05/L-RO	141	
BIS0036	BIS L-101-01/L	139	
BIS0038	BIS L-101-05/L-RO	141	
BIS0039	BIS L-102-01/L	139	
BIS003C	BIS L-102-05/L-RO	141	
BIS003E	BIS L-103-05/L	139	
BIS003F	BIS L-103-05/L-RO	141	
BIS00ZY	BIS L-103-05/L-ZC1	179	
BIS003N	BIS L-150-05/A	139	
BIS003R	BIS L-200-03/L	141	
BIS003T	BIS L-201-03/L	141	
BIS003U	BIS L-202-03/L	141	
BIS003W	BIS L-203-03/L	141	

BIS L Industrial RFID System

Typical application

	Production		Intralogistics						Access and object control													
	Tool and die management	Assembly conveying systems	Closed logistics circuits		Storage and retrieval equipment		Driverless vehicles	Object detection	Access and entry control													
	On tool	Dies	Pallets	Retainer/workpiece carrier	Pallets	Retainer/workpiece carrier	Workpiece carrier skid	Guiding, steering	Identification	In component	On component	Reliable access control	Process access	Part ID	Read/write	Installation in metal	Long distances (> 16 mm)	192 Byte	Read/write EEPROM	3 Byte + CRC	Read only	5 Byte



125 kHz LF

Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

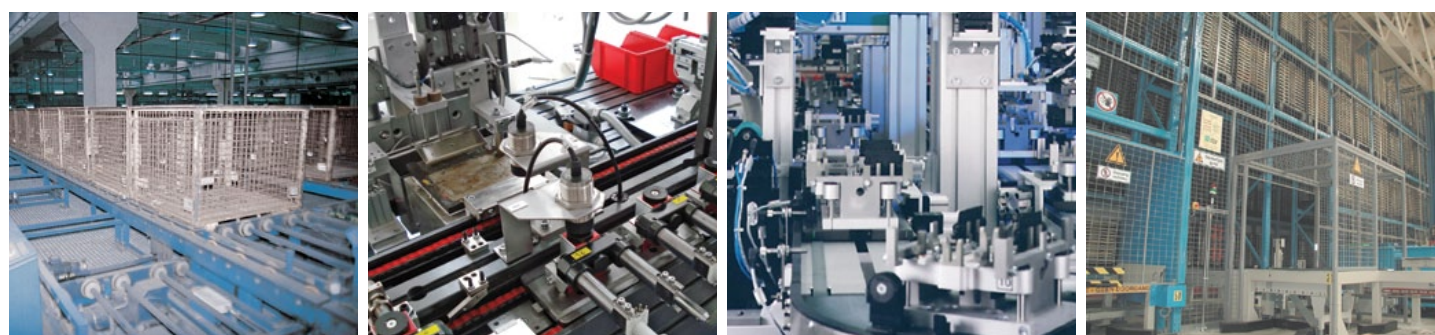
EtherNet TCP/IP

BIS V

Communication module for easy loop®

Handheld

Mechanical accessories



BIS L Industrial RFID System

Selection criteria for read/write distances

How much data do you require?

How dynamic is your application?

In three steps you will have selected your BIS L system:

- First choose the appropriate form factor for your data carrier and the associated read/write heads.

- Then determine your read/write distance, which also depends on the speed of your system: the faster the data carrier moves, the closer the distance needs to be.

- Finally, determine the desired memory capacity. This will give you the maximum data security.

Mounting	Data carrier	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100	mm
BIS L-300-...																					
flush in steel	BIS L-100-01																				0...30
non-flush on steel	BIS L-100-01																				10...20
non-metal	BIS L-101-01																				10...20
flush in steel	BIS L-101-01																				0...40
non-flush on steel	BIS L-102-01																				10...30
non-metal	BIS L-102-01																				10...30
flush in steel	BIS L-102-01																				0...55
non-flush on steel	BIS L-103-05/L																				15...40
non-metal	BIS L-103-05/L																				15...35
flush in steel	BIS L-150-05																				7...40
non-flush on steel	BIS L-150-05																				7...18
non-metal	BIS L-200-03/L*																				8...15
flush in steel	BIS L-200-03/L*																				0...25
non-flush on steel	BIS L-201-03/L*																				0...40
non-metal	BIS L-201-03/L*																				10...25
flush in steel	BIS L-201-03/L*																				10...20
non-flush on steel	BIS L-202-03/L*																				0...50
non-metal	BIS L-202-03/L*																				10...35
flush in steel	BIS L-202-03/L*																				10...30
non-flush on steel	BIS L-203-03/L*																				0...70
non-metal	BIS L-203-03/L*																				15...45
flush in steel	BIS L-203-03/L*																				15...40
non-flush on steel	BIS L-100-05/L-RO*																				0...25
non-metal	BIS L-100-05/L-RO*																				3...12
flush in steel	BIS L-101-05/L-RO*																				3...10
non-flush on steel	BIS L-101-05/L-RO*																				0...40
non-metal	BIS L-102-05/L-RO*																				10...25
flush in steel	BIS L-102-05/L-RO*																				10...20
non-flush on steel	BIS L-102-05/L-RO*																				0...50
non-metal	BIS L-102-05/L-RO*																				10...35
flush in steel	BIS L-103-05/L-RO*																				10...30
non-flush on steel	BIS L-103-05/L-RO*																				0...70
non-metal	BIS L-103-05/L-RO*																				15...45
flush in steel	BIS L-103-05/L-RO*																				15...40
non-flush on steel	BIS L-103-05/L-RO*																				0...25
non-metal	BIS L-103-05/L-RO*																				3...12
flush in steel	BIS L-103-05/L-RO*																				3...10
BIS L-301-...																					
flush in steel	BIS L-100-01/L																				0...40
non-flush on steel	BIS L-100-01/L																				15...30
non-metal	BIS L-101-01/L																				15...25
flush in steel	BIS L-101-01/L																				0...55
non-flush on steel	BIS L-102-01/L																				15...40
non-metal	BIS L-102-01/L																				15...35
flush in steel	BIS L-150-05/A																				0...70
non-flush on steel	BIS L-150-05/A																				20...50
non-metal	BIS L-200-03/L*																				20...50
flush in steel	BIS L-200-03/L*																				0...32
non-flush on steel	BIS L-201-03/L*																				0...70
non-metal	BIS L-201-03/L*																				20...50
flush in steel	BIS L-201-03/L*																				20...50
non-flush on steel	BIS L-202-03/L*																				0...70
non-metal	BIS L-202-03/L*																				20...45
flush in steel	BIS L-202-03/L*																				20...40
non-flush on steel	BIS L-100-05/L-RO*																				0...100
non-metal	BIS L-100-05/L-RO*																				25...60
flush in steel	BIS L-101-05/L-RO*																				25...55
non-flush on steel	BIS L-101-05/L-RO*																				0...70
non-metal	BIS L-102-05/L-RO*																				20...50
flush in steel	BIS L-102-05/L-RO*																				20...50
non-flush on steel	BIS L-102-05/L-RO*																				0...70
non-metal	BIS L-102-05/L-RO*																				20...45
flush in steel	BIS L-102-05/L-RO*																				20...40
non-flush on steel	BIS L-102-05/L-RO*																				0...100
non-metal	BIS L-102-05/L-RO*																				25...60
flush in steel	BIS L-102-05/L-RO*																				25...55

 flush in steel
  non-flush on steel
  non-metal
 * read only

BIS L Industrial RFID System

Selection criteria for read/write distances



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet TCP/IP

BIS V

Communication module for easy loop®

Handheld

Mechanical accessories

Mounting	Data carrier	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100	mm
BIS L-303-S115																					
■	BIS L-100-01/L																				0...40
■	BIS L-101-01/L																				0...55
■	BIS L-102-01/L																				0...70
■	BIS L-200-03/L*																				0...50
■	BIS L-201-03/L*																				0...70
■	BIS L-202-03/L*																				0...100
■	BIS L-100-05/L-RO*																				0...50
■	BIS L-101-05/L-RO*																				0...70
■	BIS L-102-05/L-RO*																				0...100
BIS L-302-S115																					
■	BIS L-100-01/L																				0...20
■																					8...15
■																					8...15
■	BIS L-101-01/L																				0...25
■																					10...20
■	BIS L-102-01/L																				10...20
■																					0...30
■																					10...25
■	BIS L-103-05/L																				10...20
■																					10...22
■																					7...8
■	BIS L-150-05/A																				0...12
■	BIS L-200-03/L*																				0...25
■																					8...15
■																					8...15
■	BIS L-201-03/L*																				0...30
■																					10...20
■																					10...20
■	BIS L-202-03/L*																				0...40
■																					10...25
■																					10...20
■	BIS L-203-03/L*																				0...15
■																					4...10
■																					3...8
■	BIS L-100-05/L-RO*																				0...25
■																					8...15
■																					8...15
■	BIS L-101-05/L-RO*																				0...30
■																					10...20
■																					10...20
■	BIS L-102-05/L-RO*																				0...40
■																					10...25
■																					10...20
■	BIS L-103-05/L-RO*																				0...15
■																					4...10
■																					3...8

■ flush in steel ■ non-flush on steel ■ non-metal
* read only

BIS L Industrial RFID System

Selection criteria for read/write distances

Mounting	Data carrier	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100	mm
BIS L-304-...																					
flush in steel	BIS L-100-01/L																				0...20
non-flush on steel	BIS L-100-01/L																				8...15
non-metal	BIS L-100-01/L																				8...15
flush in steel	BIS L-101-01/L																				0...25
non-flush on steel	BIS L-101-01/L																				10...20
non-metal	BIS L-101-01/L																				10...20
flush in steel	BIS L-102-01/L																				0...30
non-flush on steel	BIS L-102-01/L																				10...25
non-metal	BIS L-102-01/L																				10...20
flush in steel	BIS L-103-05/L																				10...22
non-flush on steel	BIS L-103-05/L																				10...15
non-metal	BIS L-103-05/L																				7...8
flush in steel	BIS L-150-05/A																				0...12
non-flush on steel	BIS L-200-03/L*																				0...25
non-metal	BIS L-200-03/L*																				8...15
flush in steel	BIS L-201-03/L*																				8...15
non-flush on steel	BIS L-201-03/L*																				0...30
non-metal	BIS L-201-03/L*																				10...20
flush in steel	BIS L-202-03/L*																				10...20
non-flush on steel	BIS L-202-03/L*																				0...40
non-metal	BIS L-202-03/L*																				10...25
flush in steel	BIS L-203-03/L*																				10...20
non-flush on steel	BIS L-203-03/L*																				0...15
non-metal	BIS L-203-03/L*																				4...10
flush in steel	BIS L-100-05/L-RO*																				3...8
non-flush on steel	BIS L-100-05/L-RO*																				0...25
non-metal	BIS L-100-05/L-RO*																				8...15
flush in steel	BIS L-100-05/L-RO*																				8...15
non-flush on steel	BIS L-100-05/L-RO*																				0...30
non-metal	BIS L-100-05/L-RO*																				10...20
flush in steel	BIS L-102-05/L-RO*																				10...20
non-flush on steel	BIS L-102-05/L-RO*																				0...40
non-metal	BIS L-102-05/L-RO*																				10...25
flush in steel	BIS L-103-05/L-RO*																				10...20
non-flush on steel	BIS L-103-05/L-RO*																				0...15
non-metal	BIS L-103-05/L-RO*																				4...10
flush in steel	BIS L-103-05/L-RO*																				3...8
BIS L-306-...																					
flush in steel	BIS L-103-05/L																				0...7
non-flush on steel	BIS L-100-05/L																				0...15
non-metal	BIS L-203-03/L*																				0...7
flush in steel	BIS L-103-05/L-RO*																				0...7
BIS L-350-...																					
flush in steel	BIS L-150-05/A																				0...17
non-flush on steel	BIS L-150-05/A																				0...24
non-metal	BIS L-150-05/A																				0...24
BIS L-405-03 -001-05-MU																					
flush in steel	BIS L-200-03/L*																				0...30
non-flush on steel	BIS L-100-05/L-RO*																				0...30
non-metal	BIS L-201-03/L*																				0...40
flush in steel	BIS L-101-05/L-RO*																				0...40
non-flush on steel	BIS L-202-03/L*																				0...55
non-metal	BIS L-102-05/L-RO*																				0...55
flush in steel	BIS L-203-03/L*																				0...20
non-flush on steel	BIS L-103-05/L-RO*																				0...20
BIS L-405-03 -003-05-MU																					
flush in steel	BIS L-203-03/L*																				0...23
non-flush on steel	BIS L-103-05/L-RO*																				0...23

 flush in steel
  non-flush on steel
  non-metal
 * read only



125 kHz LF

Mechanical
accessories

137

BIS L Industrial RFID System

Data carriers read/write

For harsh environments

Housing material extremely resistant to chemicals

Compact designs for special applications



Dimensions	Ø 20×1.6	
Housing material	EP	

BIS L Programmable

192 bytes	Ordering code	BIS0033	
	Part number	BIS L-100-01/L	
Operating temperature		-25...+85 °C	
Storage temperature		-40...+95 °C	
Protection per IEC 60529		IP 67	

Appropriate read/write head with max. read/write distance

Mounting				
BIS L-300	30 mm	20 mm	20 mm	
BIS L-301	40 mm	30 mm	25 mm	
BIS L-302	20 mm	15 mm	15 mm	
BIS L-303	50 mm	14 mm		
BIS L-304	20 mm	15 mm	15 mm	
BIS L-306	15 mm			
BIS L-350				

For installation see technical section.

Mounting (see technical section for details):

-  flush in steel
-  non-flush on steel
-  non-metal

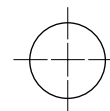
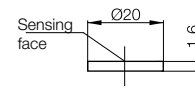
Antenna type:



rod



round



BIS L Industrial RFID System

Data carriers read/write



Ø 30×1.6
EP



Ø 50×1.6
EP



Ø 12.4×2
EP



Ø 3.15×13.3
Glass



BIS0036	BIS0039	BIS003E	BIS003N
BIS L-101-01/L	BIS L-102-01/L	BIS L-103-05/L	BIS L-150-05/A
-25...+85 °C	-25...+85 °C	-25...+85 °C	-40...+85 °C
-40...+95 °C	-40...+95 °C	-40...+130 °C	-40...+90 °C
IP 67	IP 67	IP 68	IP 68

40 mm	30 mm	30 mm	55 mm	40 mm	35 mm	10 mm	18 mm	12 mm	25 mm				
55 mm	40 mm	35 mm	70 mm	50 mm	50 mm				32 mm				
25 mm	20 mm	20 mm	30 mm	25 mm	20 mm	22 mm	15 mm	8 mm	12 mm				
65 mm	25 mm	15 mm	85 mm	30 mm	25 mm								
25 mm	20 mm	20 mm	30 mm	25 mm	20 mm	22 mm	15 mm	8 mm	12 mm				
						7 mm							
									17 mm	24 mm	24 mm		

Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel
Serial
IO-Link
easy loop®

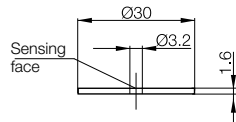
Processors

Serial
PROFIBUS-DP
DeviceNet™
EtherNet/IP™
EtherNet TCP/IP
BIS V

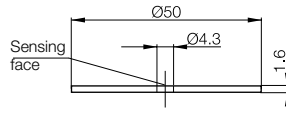
Communication module for easy loop®

Handheld

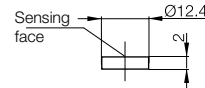
Mechanical accessories



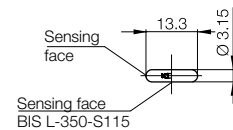
Tightening torque max. 1 Nm



Tightening torque max. 1 Nm



For metal



Glass data carrier – chemically resistant!



Order coding: **BIS003L**

Part number: BIS L-130-05/L-SA1
for radial data retrieval from rotating parts, positioning not required.
Contact us.

BIS L Industrial RFID System

Data carriers read only



For maximum data security

The CRC_16 procedure involves writing a test code to the data carrier to allow you to control data anywhere at any time. The benefit to you: high level of data security even in non-active phase (data carrier outside of R/W head)

The procedure is only possible with data carriers of type BIS L-1__-05/L, which are converted into read-only format.

BIS L-1__-05/L-RO are read-only data carriers that can be programmed according to your requirements. Please ask for the order form or download it from our website. 3 bytes of user data as well as 2 bytes for the CRC are stored. Data consistency is queried by the processor.

The BIS L-2__-03/L uses read-only data carriers with a fixed "unique number" of 5 bytes (40 bits). No repetition of the unique number or delivery of sequential numbers is possible.

Read-only data carriers:
preprogram your individual data and benefit from maximum data security

Dimensions
Housing material

BIS L Read-only

24 bits + CRC

Ordering code

Part number

40 bits

Ordering code

Part number

Operating temperature

Storage temperature

Protection per IEC 60529

Appropriate read/write head with max. read/write distance

Mounting

BIS L-300

BIS L-301

BIS L-302

BIS L-303

BIS L-304

BIS L-306

For installation see technical section.

Mounting (see technical section for details):

flush in steel

non-flush on steel

non-metal

Antenna type:

rod

round

Mazak™ Machine Tool ID

These read-only machine tool tags are specifically designed to work for Mazak tool ID systems. They come premounted in the retention knobs and are available in either Cat 40 or Cat 50 sizes. These tool tags are 100% compatible to existing Mazak systems.

Cat 50



Order code: BIS00KK
Part number: BIS L-245-03/L

Cat 40



Order code: BIS00KJ
Part number: BIS L-244-03/L

Use a **BIS-L-400-047-010-20-S115** processor and **BIS L-306-PU1-05-S49/A** head preprogrammed with the Mazak communication protocol for 100% compatibility to existing Mazak tool ID systems. **BKS-S115-SA4-PU-01** power/communication cable is also available for easy connectivity.



BIS L Industrial RFID System

Data carriers read only



Ø 20×1.6
EP



Ø 30×1.6
EP



Ø 50×1.6
EP



Ø 12.4×2
EP

BIS0035

BIS L-100-05/L-RO

BIS003R

BIS L-200-03/L

-40...+85 °C

-40...+95 °C

IP 67*

BIS0038

BIS L-101-05/L-RO

BIS003T

BIS L-201-03/L

-40...+85 °C

-40...+95 °C

IP 67*

BIS003C

BIS L-102-05/L-RO

BIS003U

BIS L-202-03/L

-40...+85 °C

-40...+95 °C

IP 67*

BIS003F

BIS L-103-05/L-RO

BIS003W

BIS L-203-03/L

-25...+85 °C

-40...+130 °C

IP 68



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

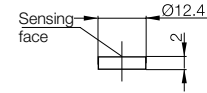
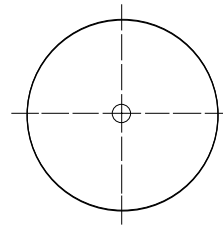
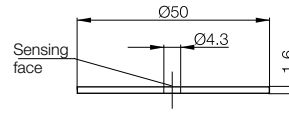
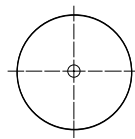
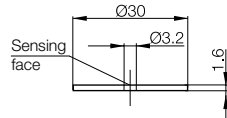
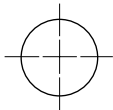
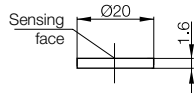
EtherNet TCP/IP

BIS V

Communication module for easy loop®

Handheld

Mechanical accessories



Tightening torque max. 1 Nm

Tightening torque max. 1 Nm

BIS L Industrial RFID System

Read/write heads



Dimensions	M30
Housing material	PA66
For standard processor	Ordering code
	Part number
For BIS V processor	Ordering code
New Generation*	Part number
Mounting	
Operating temperature	0...+70 °C (minus temperatures on request)
Storage temperature	-20...+85 °C
Protection per IEC 60529	IP 67
Connection to	Processor
Connection cable	See Connectivity section for cable options

Appropriate data carrier

	BIS0033	BIS0036	BIS0039	
	BIS L-100-01	BIS L-101-01	BIS L-102-01	
Mounting				
Write distance in mm	0-30	10-20	10-20	0-40
Read distance in mm	0-30	10-20	10-20	0-40
Offset in mm at distance				
	0 mm	±18		±28
	3 mm	±18		±28
	8 mm	±18		±28
	10 mm	±18	±8	±8
	12 mm	±18	±8	±8
	15 mm	±18	±5	±5
	20 mm	±18	±0	±0
	25 mm	±18		±28
	30 mm	±18		±28
	35 mm			±28
	40 mm			±28
	45 mm			
	50 mm			
	55 mm			
	60 mm			
	70 mm			

For installation see technical section.

*See page 172.

Mounting (see technical section for details):

- flush in steel
- non-flush on steel
- non-metal

Antenna type:

- rod
- round

BIS L Industrial RFID System

Read/write heads



125 kHz LF

Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet TCP/IP

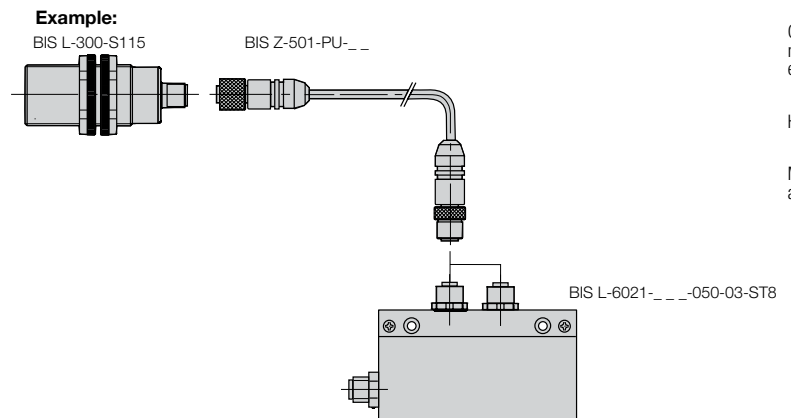
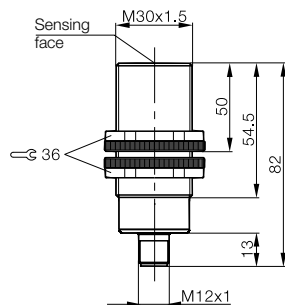
BIS V

Communication module for easy loop®

Handheld

Mechanical accessories

	BIS003E			BIS003N			BIS003R			BIS003T			BIS003U			BIS003W					
	BIS L-103-05/L			BIS L-150-05			BIS L-200-03/L			BIS L-201-03/L			BIS L-202-03/L			BIS L-203-03/L					
							BIS0035			BIS0038			BIS003C			BIS003F					
							BIS L-100-05/L-RO			BIS L-101-05/L-RO			BIS L-102-05/L-RO			BIS L-103-05/L-RO					
	7-40	7-18	8-15	0-25			0-40	10-25	10-20	0-50	10-35	10-30	0-70	15-45	15-40	0-25	3-12	3-10			
				±18			±20			±28			±35			±15					
				±18			±20			±28			±35			±15	±12	±9			
	±15	±10	±5	±18			±20			±28			±35			±15	±12	±8			
	±15	±10	±5	±18			±20	±15	±10	±28	±20	±17	±35			±15	±9	±7			
	±15	±10	±5	±17			±20	±15	±10	±28	±20	±17	±35			±15					
	±15	±10	±3	±17			±20	±10	±10	±28	±20	±17	±35	±25	±20	±15					
	±15			±17			±20	±10	±0	±28	±20	±17	±35	±25	±20	±15					
	±15			±14			±20	±0		±28	±20	±15	±35	±20	±20	±13					
	±15						±20			±28	±15	±0	±35	±20	±20						
	±5						±20			±28	±0		±35	±15	±15						
							±20			±28			±35	±12	±0						
										±28			±35	±0							
										±28			±35								
													±35								
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													±35								



BIS L Industrial RFID System

Read/write heads



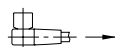
Dimensions		
Housing material		
For standard processor	Ordering code	
	Part number	
For BIS V processor	Ordering code	
New Generation*	Part number	
Mounting		
Operating temperature		
Storage temperature		
Protection per IEC 60529		
Connection to		
Connection cable		

Appropriate data carrier

Mounting	
Write distance in mm	
Read distance in mm	
Offset in mm at distance	0 mm
	3 mm
	8 mm
	10 mm
	15 mm
	20 mm
	25 mm
	30 mm
	35 mm
	40 mm
	45 mm
	50 mm
	55 mm
	60 mm
	70 mm
	100 mm

For installation see technical section.

*See page 172.



Connector orientation

Mounting (see technical section for details):

— flush in steel

— non-flush on steel

— non-metal

Antenna type:



rod



round

BIS L Industrial RFID System

Read/write heads



80×80×40 mm
PBT
BIS004T
BIS L-301-S115
BIS00U6
BIS VL-301-001-S4
0...+70 °C (minus temperatures on request)
-20...+85 °C
IP 67
Processor
See Connectivity section for cable options



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel
Serial
IO-Link
easy loop®

Processors

Serial
PROFIBUS-DP
DeviceNet™
EtherNet/IP™
EtherNet TCP/IP
BIS V

Communication module for easy loop®

Handheld

Mechanical accessories

BIS0033			BIS0036			BIS0039			BIS003N			BIS003R			BIS003T			BIS003U		
BIS L-100-01/L			BIS L-101-01/L			BIS L-102-01/L			BIS L-150-05/A			BIS L-200-03/L			BIS L-201-03/L			BIS L-202-03/L		
												BIS0035			BIS0038			BIS003C		
												BIS L-100-05/L-R0			BIS L-101-05/L-R0			BIS L-102-05/L-R0		
0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32			0-70	20-50	20-50	0-70	20-45	20-40	0-100	25-60	25-55
0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32			0-70	20-50	20-50	0-70	20-45	20-40	0-100	25-60	25-55
±30			±35			±40			±24			±40			±40			±45		
±30			±35			±40			±24			±40			±40			±45		
±30			±35			±40			±24			±40			±40			±45		
±30			±35			±40			±24			±40			±40			±45		
±30	±20	±15	±35	±20	±20	±40			±24			±40			±40			±45		
±30	±15	±10	±35	±20	±20	±40	±25	±22	±24			±40	±25	±22	±40	±24	±20	±45		
±30	±10	±0	±35	±20	±15	±40	±25	±22	±24			±40	±25	±22	±40	±24	±20	±45	±30	±30
±30	±0		±35	±20	±15	±40	±25	±22	±24			±40	±25	±22	±40	±20	±20	±45	±30	±30
±30			±35	±15	±0	±40	±20	±15				±40	±20	±15	±40	±20	±15	±45	±30	±25
±30			±35	±0		±40	±15	±15				±40	±15	±15	±40	±18	±0	±45	±30	±25
			±35			±40	±15	±10				±40	±15	±10	±40	±0		±45	±25	±20
			±35			±40	±0	±0				±40	±0	±0	±40			±45	±20	±20
			±35			±40						±40			±40			±45	±10	±0
						±40						±40			±40			±45	±0	
						±40						±40			±40			±45		
						±40						±40			±40			±45		
						±40						±40			±40			±45		
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						±40						±40			±40			±45		
						±40						±40			±40			±45		
						±40						±40			±40			±45		
						±40						±40			±40			±45		
						±40						±40			±40			±45		
						±40						±40			±40			±45		
						±40														

BIS L Industrial RFID System

Read/write heads



Suitable for roller conveyors/internal company logistics

Dimensions	
Housing material	
For standard processor	Ordering code
	Part number
Mounting	
Operating temperature	
Storage temperature	
Protection per IEC 60529	
Connection to	
Connection cable	

Appropriate data carrier

Mounting	
Write distance in mm	
Read distance in mm	
Offset in mm at distance	0 mm
	3 mm
	8 mm
	10 mm
	15 mm
	20 mm
	25 mm
	30 mm
	35 mm
	40 mm
	45 mm
	50 mm
	55 mm
	60 mm
	70 mm
	100 mm

For installation see technical section.

Mounting (see technical section for details):

-  flush in steel
-  non-flush on steel
-  non-metal

Antenna type:

-  rod
-  round



125 kHz LF

Mechanical accessories

Use small read heads with processor electronics if the available width is limited



Dimensions	M18	
Housing material	CuZn	
For standard processor	Ordering code	BIS004U
	Part number	BIS L-302-S115
For BIS V processor	Ordering code	BIS00UF
New Generation*	Part number	BIS VL-302-001-S4
Mounting		
Operating temperature	0...+70 °C (minus temperatures on request)	
Storage temperature	-20...+85 °C	
Protection per IEC 60529	IP 67	
Connection to	Processor	
Connection cable	See Connectivity section for cable options	

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			
	BIS L-100-01/L			BIS L-101-01/L			BIS L-102-01/L			
Mounting										
Write distance in mm	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20	
Read distance in mm	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20	
Offset in mm at distance										
	0 mm	±10		±12			±15			
	3 mm	±10		±12			±15			
	4 mm	±10		±12			±15			
	7 mm	±10		±12			±15			
	8 mm	±10	±6	±6	±12		±15			
	10 mm	±10	±5	±5	±12	±10	±8	±15	±15	±10
	12 mm	±10	±4	±4	±12	±10	±8	±15	±15	±10
	15 mm	±10	±0	±0	±12	±5	±5	±15	±15	±5
	20 mm	±10			±12	±0	±0	±15	±10	±0
	25 mm				±12			±15	±0	
	30 mm							±15		
	35 mm									
	40 mm									

For installation see technical section.

*See page 172.

Mounting (see technical section for details):

flush in steel

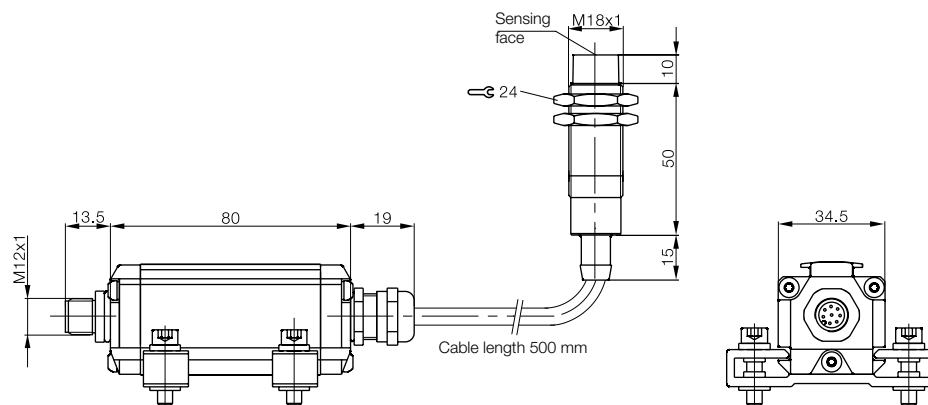
non-flush on steel

non-metal

Antenna type:

rod

round



Select a flat design
if the available
height is limited



Dimensions	25x50x10 mm
Housing material	ABS
For standard processor	Ordering code BIS004Z
	Part number BIS L-304-S115
For BIS V processor	Ordering code BIS00UH
New Generation*	Part number BIS VL-304-001-S4
Mounting	
Operating temperature	0...+70 °C (minus temperatures on request)
Storage temperature	-20...+85 °C
Protection per IEC 60529	IP 67
Connection to	Processor
Connection cable	See Connectivity section for cable options

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003E			BIS003N			
	BIS L-100-01/L			BIS L-101-01/L			BIS L-102-01/L			BIS L-103-05/L			BIS L-150-05/A			
Mounting																
Write distance in mm	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20	10-22	10-15	7-8	0-12			
Read distance in mm	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20	10-22	10-15	7-8	0-12			
Offset in mm at distance																
	0 mm	±10		±12			±15						±8			
	3 mm	±10		±12			±15						±8			
	4 mm	±10		±12			±15						±8			
	7 mm	±10		±12			±15					±3	±8			
	8 mm	±10	±6	±6	±12		±15					±2	±8			
	10 mm	±10	±5	±5	±12	±10	±8	±15	±15	±10	±10	±6	±8			
	12 mm	±10	±3	±3	±12	±10	±8	±15	±15	±10	±10	±6	±8			
	15 mm	±10	±0	±0	±12	±5	±5	±15	±15	±5	±10	±2				
	20 mm	±10			±12	±0	±0	±15	±10	±0	±5					
	25 mm				±12			±15	±0							
	30 mm							±15								
	35 mm															
	40 mm															

For installation see technical section.

*See page 172.

Mounting (see technical section for details):

flush in steel

non-flush on steel

non-metal

Antenna type:

rod

round

BIS L Industrial RFID System

Read/write heads



M12x1

CuZn

BIS00RN

BIS L-306-S115

BIS00UJ

BIS VL-306-001-S4

0...+70 °C

-20...+85 °C

IP 67

Processor

See Connectivity section for cable options



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet TCP/IP

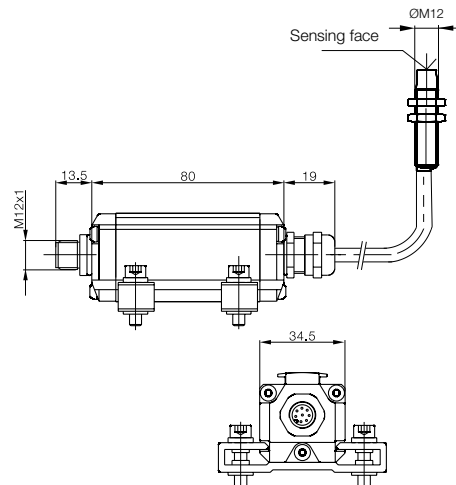
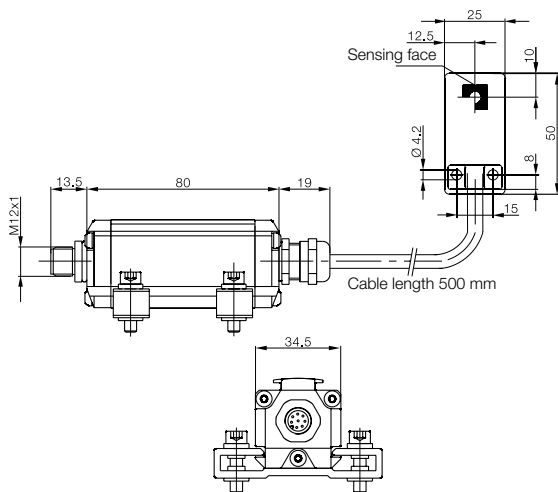
BIS V

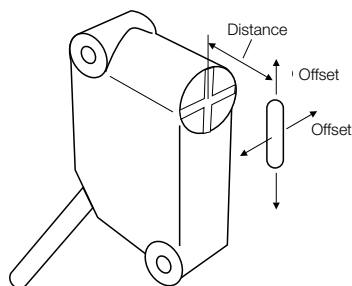
Communication module for easy loop®

Handheld

Mechanical accessories

	BIS003R			BIS003T			BIS003U			BIS003W			BIS003W			BIS003E			BIS0033		
	BIS L-200-03/L			BIS L-201-03/L			BIS L-202-03/L			BIS L-203-03/L			BIS L-203-03/L			BIS L-103-05/L			BIS L-100-05/L		
	BIS0035			BIS0035			BIS003C			BIS003F			BIS003F								
	BIS L-100-05/L-R0			BIS L-100-05/L-R0			BIS L-102-05/L-R0			BIS L-103-05/L-R0			BIS L-103-05/L-R0								
	0-25	8-15	8-15	0-30	10-20	10-20	0-40	10-25	10-20	0-15	4-10	3-8	0-7			0-7			0-15		
	±13			±15			±20			±6			±4			±4			±7		
	±13			±15			±20			±6	±7	±5	±4			±4			±7		
	±13			±15			±20			±6	±7	±5	±4			±4			±7		
	±13			±15			±20			±6	±6	±3	±2			±4			±7		
	±13	±8	±6	±15			±20			±6	±6	±3							±7		
	±13	±8	±6	±15	±10	±10	±20	±15	±8	±6	±5								±7		
	±13	±8	±6	±15	±10	±10	±20	±15	±8	±6									±7		
	±13	±0	±0	±15	±10	±8	±20	±15	±6	±6									±7		
	±13			±15	±0	±0	±20	±10	±0												
	±13			±15			±20	±0													
				±15			±20														
							±20														
							±20														
							±20														
							±20														





Dimensions		
Housing material		
For standard processor	Ordering code	
	Part number	
For BIS V processor	Ordering code	
New Generation*	Part number	
Mounting		
Operating temperature		
Storage temperature		
Protection per IEC 60529		
Connection to		
Connection cable		

[illegible]

*See page 172.

 flush in steel
 non-flush on steel
 non-metal

 rod

**For maximum flexibility
from pallet to pallet
– with 2-way air interface**



Dimensions		M30x1.5x57.5	
Housing material		CuZn	
Base coupler for r/w head	Ordering code	BIS00K1	
	Part number	BIS L-380-ST/10	
Data coupler for data carrier	Ordering code		
	Part number		
Data coupler for data carrier	Ordering code		
	Part number		
Mounting			
Operating temperature		0...+70 °C	
Storage temperature		-20...+85 °C	
Protection per IEC 60529		IP 67	
Connection type		4-pin round connector	
For use with		BIS L-300-S115	

Appropriate data carrier

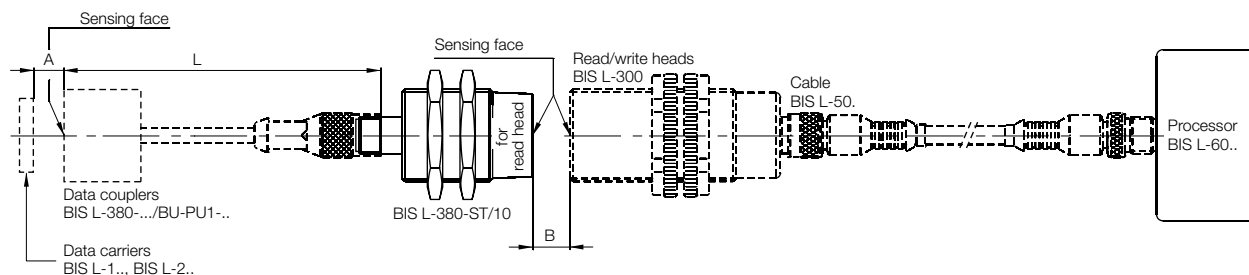
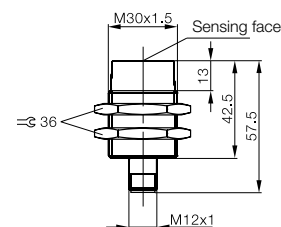
For installation see technical section.

Mounting (see technical section for details):

-  flush in steel
-  non-flush on steel
-  non-metal

Antenna type:

-  rod
-  round



BIS L Industrial RFID System

Data couplers



M18x1x45.5 CuZn	25x50x10 mm ABS	M30x1,5x48,5 mm CuZn
BIS00JT BIS L-380-02/BU-PU1-00,15	BIS00JW BIS L-380-05/BU-PU1-00,15	BIS00JZ BIS L-380-10/BU-PU1-00,5
BIS00JU BIS L-380-02/BU-PU1-00,5	BIS00JY BIS L-380-05/BU-PU1-00,5	
0...+70 °C -20...+85 °C IP 67 4-pin, female BIS L-380-ST/10	0...+70 °C -20...+85 °C IP 67 4-pin, female BIS L-380-ST/10	0...+70 °C -20...+85 °C IP 67 4-pin, female BIS L-380-ST/10
BISL003E BIS L-103-05/L	BISL003E BIS L-103-05/L	BISL0036 BIS L-101-01/L



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel
Serial
IO-Link
easy loop®

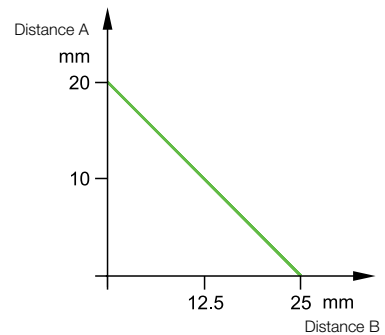
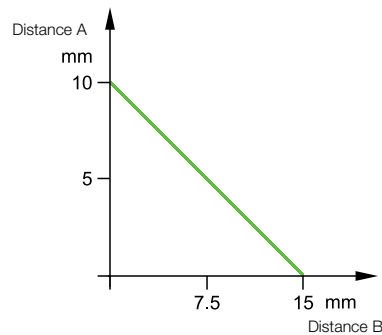
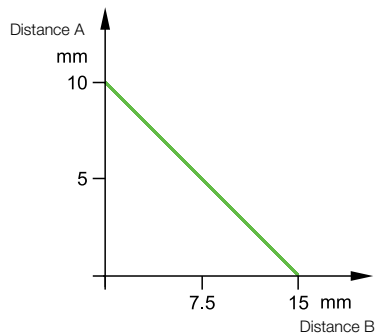
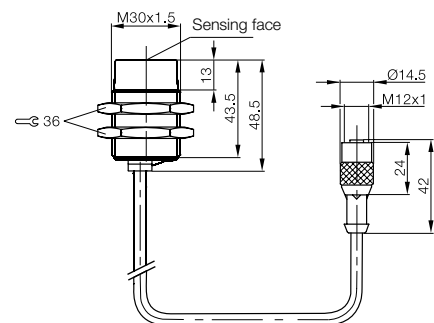
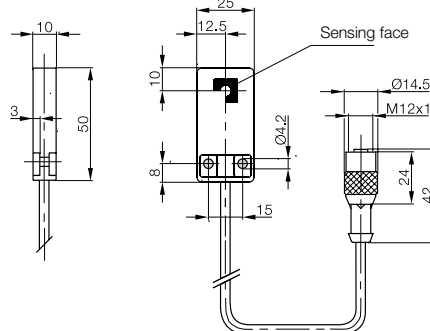
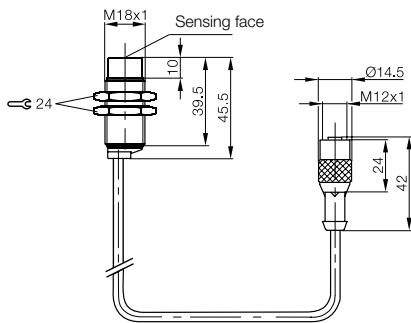
Processors

Serial
PROFIBUS-DP
DeviceNet™
EtherNet/IP™
EtherNet TCP/IP
BIS V

Communication module for easy loop®

Handheld

Mechanical accessories



For applications with no controller:

for direct activation of actuators, switches, etc.

Parallel signals for easier integration. The processors are compact, handy and very easy to install and the recessed antennas, which are available in different designs, make them ideal for a wide variety of different applications.

These simple processors can also be used in dynamic processes: the data from the data carrier last accessed is stored in the cache until retrieved again. The data is available for longer and programming is simplified as a result.

Different antenna characteristics and data carriers are used depending on application requirements.

The selection does not depend on the interface being used – only the design is a decisive factor.

The BIS L-**2**__-03/L are read-only data carriers with a fixed 5-byte (40 bits) "unique number".

No repetition of the unique number or delivery of sequential numbers is possible – other options are available here. These data carrier types are used with BIS L-405-**033**-... processors.

Secure is secure: CRC test

The CRC 16 check sum can be used for applications with higher demands for data integrity. A check sum that allows the validity of data to be checked anywhere and at any time is stored on the data carrier. Discrepancies are diagnosed immediately.

The BIS L-405-**037**-... processor checks the correctness of the read data using a CRC-16 check sum. The CRC value is calculated automatically using the data in bytes 0, 1 and 2 of the data carrier.

Stored in bytes 3 and 4 of the data carrier, this CRC 16 check sum guarantees an extremely high degree of data integrity without requiring additional programming work.

In order to use the CRC-16 check sum, the type BIS L-10_-05/L data

LED function indicators included

Description/Dimensions		Module 40x41x120 mm	
Housing material		PBT	
Parallel	Ordering code	BIS00CM	
	Part number	BIS L-405-033-001-05-MU	
CRC check	Ordering code	BIS00CT	
	Part number	BIS L-405-037-001-05-MU	
Sensor base 5 m cable	Ordering code		
	Part number		
10 m cable	Ordering code		
	Part number		
15 m cable	Ordering code		
	Part number		
20 m cable	Ordering code		
	Part number		
Mounting			
Supply voltage, Ripple		24 V DC $\pm$ 10 %/-20 %, $\leq$ 10 %	
Current		$\leq$ 50 mA no load	
Operating temperature		0...+70 °C	
Protection per IEC 60529		IP 67 when assembled	
Connection type		requires mounting base	
Control I/O			
Connection base (please order separately)		BIS L-503-PU/___	

Appropriate data carrier

Mounting				
Read distance in mm	0-30	0-40	0-55	0-20
Offset in mm at distance	0 mm	$\pm$ 15	$\pm$ 20	$\pm$ 30
	5 mm	$\pm$ 15	$\pm$ 20	$\pm$ 30
	8 mm	$\pm$ 15	$\pm$ 20	$\pm$ 30
	10 mm	$\pm$ 15	$\pm$ 20	$\pm$ 30
	15 mm	$\pm$ 15	$\pm$ 20	$\pm$ 30
	20 mm	$\pm$ 15	$\pm$ 20	$\pm$ 30
	25 mm	$\pm$ 15	$\pm$ 20	$\pm$ 30
	30 mm		$\pm$ 20	$\pm$ 30
	35 mm		$\pm$ 20	$\pm$ 30
	40 mm		$\pm$ 30	
	45 mm		$\pm$ 30	

carriers must first be initialized using a BIS L-60__ processor and BISCOMRW.EXE software. 3 bytes are available for the user data.

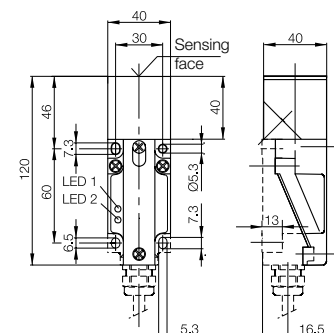
The BIS L-405-037-... processor can only be operated using initialized type BIS L-10_-05/L data carriers.

Mounting (see technical section for details):

-  flush in steel
-  non-flush on steel
-  non-metal

Antenna type:

-  rod
-  round





125 kHz LF

Mechanical accessories

Mechanical accessories

Easy ID solutions are not only available with a parallel interface, but also with a serial interface, which is why they are suitable for smart, single-celled production platforms. Balluff offers different point-to-point connections specific to each device.

The range extends from interfaces such as RS232, RS422 to IO-Link. A "daisy chain" configuration with RS232 or Ethernet TCP/IP is also possible. Systems with or without recessed antennas are available to allow a flexible response to different installation situations such as cramped spaces, for example. These simple processors can also be used in dynamic processes: the data from the data carrier last accessed is stored in the cache until retrieved again. The data is available for longer and programming is simplified as a result.

A distinction is made between use of the type BIS L-2_-03/L data carrier and the programmed data carrier with type BIS L-10_-05/L CRC check. The processors must be parameterized accordingly using the relevant configuration software. Different antenna characteristics and data carriers are used depending on application requirements.

The selection does not depend on the interface being used – only the design is a decisive factor.

BIS L at a glance

- Tough
- Compact
- Read only
- Simple to integrate

For simple connection to the controller: readable data carriers only

LED function indicators included

Description/Dimensions	40×41×120 mm	
Housing material	PBT	
Serial	RS232	Ordering code
		Part number
	RS422	Ordering code
		Part number
Mounting	—	
Supply voltage, Ripple	24 V DC +10 %/–20 %, ≤ 10 %	
Current	≤ 50 mA	
Operating temperature	0...+70 °C	
Protection per IEC 60529	IP 67	
Connection type	8-pin M12 male	
Connection cable	See Connectivity section for cable options	

Appropriate data carrier

Mounting	BIS003R BIS L-200-03/L		BIS0035 BIS L-100-05/L-RO		BIS003T BIS L-201-03/L		BIS0038 BIS L-101-05/L-RO		BIS003U BIS L-202-03/L		BIS003C BIS L-102-05/L-RO		BIS003W BIS L-203-03/L		BIS003F BIS L-103-05/L-RO	
Read distance in mm	0-30		0-40		0-55		0-20									
Offset in mm at distance	0 mm		±15		±20		±30		±10							
	5 mm		±15		±20		±30		±10							
	8 mm		±15		±20		±30		±10							
	10 mm		±15		±20		±30		±10							
	15 mm		±15		±20		±30		±10							
	20 mm		±15		±20		±30									
	25 mm		±15		±20		±30									
	30 mm		±4		±20		±30									
	35 mm				±20		±30									
	40 mm						±30									
	45 mm						±30									
	50 mm						±6									

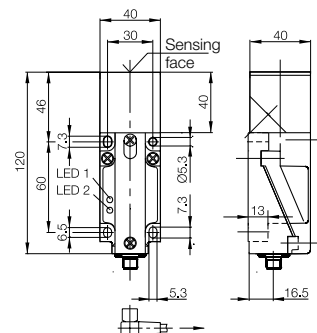
For installation see technical section.

Mounting (see technical section for details):

- flush in steel
- non-flush on steel
- non-metal

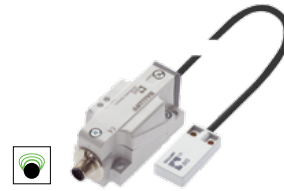
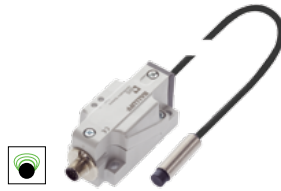
Antenna type:

- rod
- round



BIS L Industrial RFID System

Read/write heads with integrated processors



M18 CuZn	M12 CuZn	25x50x10 mm ABS
BIS00C7	BIS00C9	BIS00CC
BIS L-400-035-002-00-S115	BIS L-400-035-003-00-S115	BIS L-400-035-004-00-S115
BIS00C8	BIS00CA	
BIS L-400-035-002-02-S115	BIS L-400-035-003-02-S115	
24 V DC $\pm 10\%$ / -20% , $\leq 10\%$	24 V DC $\pm 10\%$ / -20% , $\leq 10\%$	24 V DC $\pm 10\%$ / -20% , $\leq 10\%$
≤ 50 mA no load	≤ 50 mA no load	≤ 50 mA no load
0...+70 °C	0...+70 °C	0...+70 °C
IP 67	IP 67	IP 67
8-pin M12 male	8-pin M12 male	8-pin M12 male
See Connectivity section for cable options	See Connectivity section for cable options	See Connectivity section for cable options



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link
easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet TCP/IP

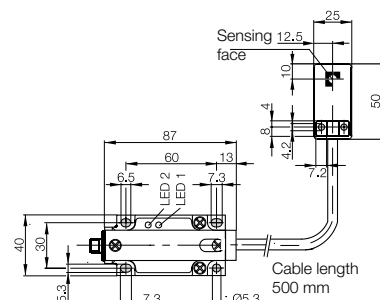
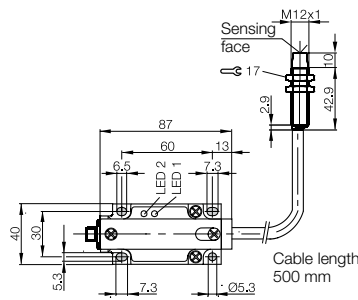
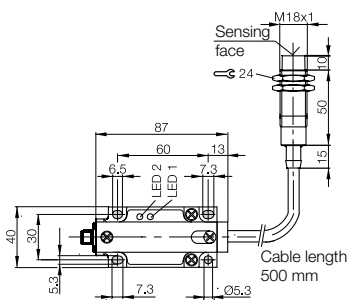
BIS V

Communication module for easy loop®

Handheld

Mechanical accessories

BIS003R	BIS0035	BIS003T	BIS0038	BIS003W	BIS003F	BIS003W	BIS003F	BIS003R	BIS0035	BIS003T	BIS0038	BIS003W	BIS003F
BIS L-200-03/L	BIS L-100-05/L-RO	BIS L-201-03/L	BIS L-101-05/L-RO	BIS L-203-03/L	BIS L-103-05/L-RO	BIS L-203-03/L	BIS L-103-05/L-RO	BIS L-200-03/L	BIS L-100-05/L-RO	BIS L-201-03/L	BIS L-101-05/L-RO	BIS L-203-03/L	BIS L-103-05/L-RO
0-23	0-27	0-16		0-11		0-23	0-27	0-23	0-27	0-16			
± 12	± 15	± 8		± 6		± 12	± 15	± 12	± 15	± 8			
± 12	± 15	± 8		± 6		± 12	± 15	± 12	± 15	± 8			
± 12	± 15	± 8		± 8		± 12	± 15	± 12	± 15	± 8			
± 12	± 15	± 8		± 2		± 12	± 15	± 12	± 15	± 8			
± 12	± 15	± 4				± 12	± 15	± 12	± 15	± 8			
± 12	± 15	± 6				± 12	± 15	± 12	± 15	± 4			
								± 8	± 15	± 6			



BIS L Industrial RFID System

Read/write heads with integrated processors

IO-Link
Read Only

IO-Link

Easy ID solutions are not only available with a parallel interface, but also with a serial interface, which is why they are suitable for smart, single-celled production platforms. Balluff offers different point-to-point connections specific to each device.

The range extends from interfaces such as RS232, RS422 to IO-Link. A "daisy chain" configuration with RS232 or Ethernet TCP/IP is also possible. Systems with or without recessed antennas are available to allow a flexible response to different installation situations such as cramped spaces, for example.

These simple processors can also be used in dynamic processes: the data from the data carrier last accessed is stored in the cache until retrieved again. The data is available for longer and programming is simplified as a result.

A distinction is made between use of the type BIS L-2_-03/L data carrier and the programmed data carrier with type BIS L-10_-05/L CRC check. The processors must be parameterized accordingly using the relevant configuration software. Different antenna characteristics and data carriers are used depending on application requirements.

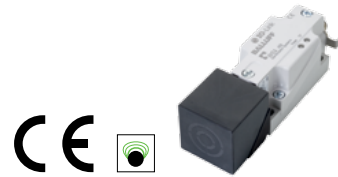
The selection does not depend on the interface being used – only the design is a decisive factor.

BIS L at a glance

- Tough
- Compact
- Read only
- Simple to integrate



For information on other IO-Link and networking products, refer to our "Industrial Networking and Connectivity" catalog or visit us online at www.balluff.com



LED function indicators included

Description/Dimensions	40×41×120 mm
Housing material	PBT
IO-Link 8 byte	Ordering code BIS00CZ
	Part number BIS L-409-045-001-07-S4
Mounting	—
Supply voltage, Ripple	24 V DC +10 %/-20 %, ≤ 10 %
Current	≤ 150 mA
Operating temperature	0...+70 °C
Protection per IEC 60529	IP 67
Connection type	4-pin M12 male
Connection cable	See Connectivity section for cable options

Appropriate data carrier

	BIS003R BIS L-200-03/L	BIS0035 BIS L-100-05/L-RO	BIS003T BIS L-201-03/L	BIS0038 BIS L-101-05/L-RO	BIS003U BIS L-202-03/L	BIS003C BIS L-102-05/L-RO	BIS003W BIS L-203-03/L	BIS003F BIS L-103-05/L-RO
Mounting	—	—	—	—	—	—	—	—
Read distance in mm	0-25	0-35	0-48	0-16				
Offset in mm at distance								
0 mm	±15	±20	±25	±10				
3 mm	±15	±20	±25	±10				
4 mm	±15	±20	±25	±10				
5 mm	±15	±20	±25	±10				
7 mm	±15	±20	±25	±10				
8 mm	±15	±20	±25	±10				
10 mm	±15	±20	±25	±10				
12 mm	±15	±20	±25	±10				
15 mm	±15	±20	±25	±10				
20 mm	±15	±20	±25					
25 mm	±8	±20	±25					
30 mm		±20	±25					
35 mm		±20	±25					
40 mm			±25					
45 mm			±25					

IO-Link

Mode	COM 2
Transfer rate	38.4 baud

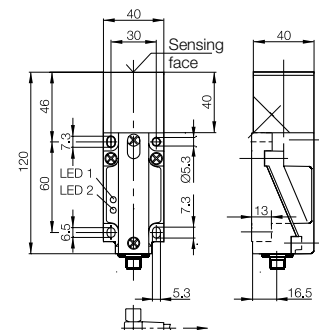
For installation see technical section.

Mounting (see technical section for details):

- flush in steel
- non-flush on steel
- non-metal

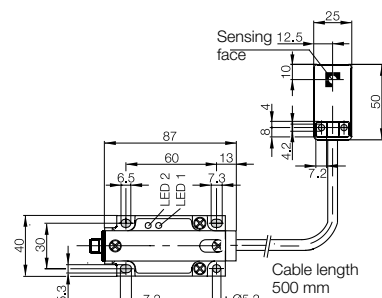
Antenna type:

- rod
- round





125 kHz LF

Mechanical accessories

BIS L Industrial RFID System

Read/write heads with integrated processors

easy loop®
Read Only



Easy ID solutions are not only available with a parallel interface, but also with a serial interface, which is why they are suitable for smart, single-celled production platforms. Balluff offers different point-to-point connections specific to each device.

The range extends from interfaces such as RS232, RS422 to IO-Link. A "daisy chain" configuration with RS232 or Ethernet TCP/IP is also possible. Systems with or without recessed antennas are available to allow a flexible response to different installation situations such as cramped spaces, for example.

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The selection does not depend on the interface being used – only the design is a decisive factor.

BIS L at a glance

- Tough
- Compact
- Read only
- Simple to integrate

LED function indicators included



Description/Dimensions	40×41×120 mm
Housing material	PBT
RS422/easy loop®	Ordering code BIS00CH
Part number	BIS L-400-043-001-02-S115
Mounting	—
Supply voltage, Ripple	24 V DC +10 %/-20 %, ≤ 10 %
Current	≤ 50 mA
Operating temperature	0...+70 °C
Protection per IEC 60529	IP 67
Connection type	8-pin M12 male
Connection cable	See Connectivity section for cable options

Appropriate data carrier

	BIS003R BIS L-200-03/L	BIS0035 BIS L-100-05/L-RO	BIS003T BIS L-201-03/L	BIS0038 BIS L-101-05/L-RO	BIS003U BIS L-202-03/L	BIS003C BIS L-102-05/L-RO	BIS003W BIS L-203-03/L	BIS003F BIS L-103-05/L-RO
Mounting	—	—	—	—	—	—	—	—
Read distance in mm	0-30	0-40	0-55	0-20				
Offset in mm at distance								
0 mm	±15	±20	±30	±10				
3 mm	±15	±20	±30	±10				
4 mm	±15	±20	±30	±10				
5 mm	±15	±20	±30	±10				
7 mm	±15	±20	±30	±10				
8 mm	±15	±20	±30	±10				
10 mm	±15	±20	±30	±10				
12 mm	±15	±20	±30	±10				
15 mm	±15	±20	±30	±10				
20 mm	±15	±20	±30					
25 mm	±15	±20	±30					
30 mm		±20	±30					
35 mm		±20	±30					
40 mm			±30					
45 mm			±30					
50 mm			±6					

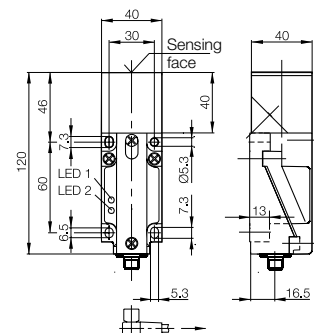
For installation see technical section.

Mounting (see technical section for details):

- flush in steel
- non-flush on steel
- non-metal

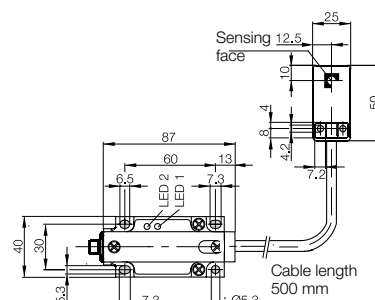
Antenna type:

- rod
- round





125 kHz LF

Mechanical
accessories



Cost-effective identification – operate 2 read/write heads simultaneously

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

Easy integration in all controllers

The **compact class BIS L-600_** with its reduced dimensions and various interface options can be used wherever ambient conditions require higher protection.

The devices are ideal for IP 65 and applications involving media that is not aggressive to PS plastic.

Small, compact, flexible and economical

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.

Suitable for all applications with demanding requirements for mechanical rigidity and chemical resistance.

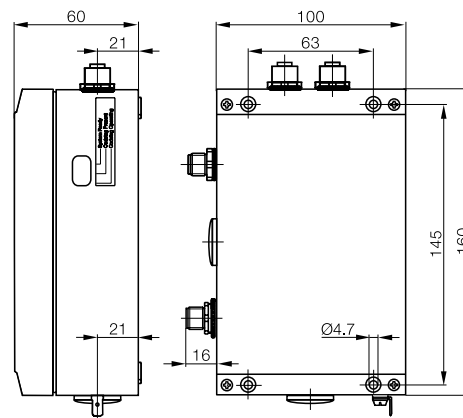
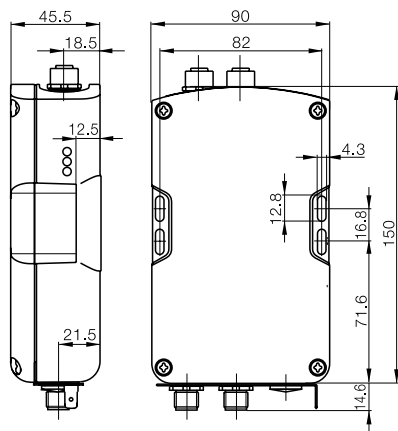
Description		Ordering code	
RS232/Balluff Dialog		Part number	
Supply voltage, Ripple			
Current			
Operating temperature			
Storage temperature			
Protection per IEC 60529			
Read/write head ports			
Connection for			
Connection type			
Accessories included			
Connection cable			

BIS L Industrial RFID System

Processors



Processor	Processor
BIS00E3	BIS00E8
BIS L-6000-007-050-00-ST15	BIS L-6020-007-050-00-ST15
24 V DC $\pm 20\%$, $\leq 10\%$	24 V DC $\pm 20\%$, $\leq 10\%$
≤ 400 mA	≤ 400 mA
0...+60 °C	0...+60 °C
0...+60 °C	0...+60 °C
IP 65	IP 65
2 external	2 external
2 read/write heads BIS L-3_ _	2 read/write heads BIS L-3_ _
2 connector round 5-pin	2 connector round 5-pin
Configuration software	Configuration software
See Connectivity section for cable options	See Connectivity section for cable options



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet TCP/IP

BIS V

Communication module for easy loop®

Handheld

Mechanical accessories



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 interchangeable memory
- BUS address selectable with switches
- Accepts all read/write heads
- Interface-compatible with BIS C and BIS M identification systems

Description		
PROFIBUS-DP	Ordering code	
	Part number	
Supply voltage, Ripple		
Current		
Operating temperature		
Storage temperature		
Protection per IEC 60529		
Read/write head ports		
Service interface		
Connection for		
Connection type		
Accessories included		
Connection cable		



The **compact class BIS L-600_** with its reduced dimensions and various interface options can be used wherever ambient conditions require higher protection.

The devices are ideal for IP 65 and applications involving media that is not aggressive to PS plastic.

Small, compact, flexible
and economical

BIS L Industrial RFID System

Processors

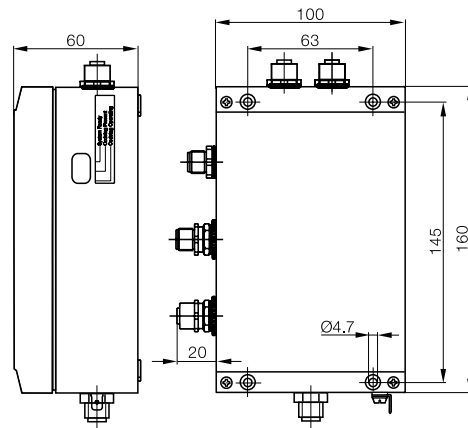
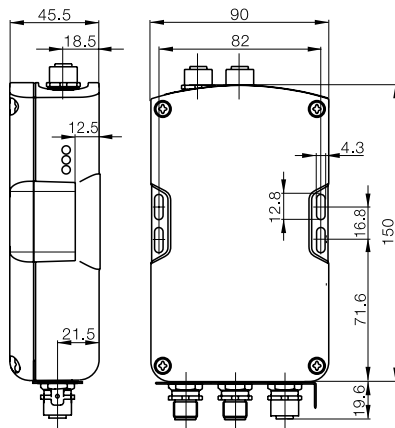


Processor	Processor
BIS00E6	BIS00EC
BIS L-6002-019-050-03-ST11	BIS L-6022-019-050-03-ST14
24 V DC $\pm 20\%$, $\leq 10\%$	24 V DC $\pm 20\%$, $\leq 10\%$
≤ 400 mA	≤ 400 mA
0...+60 °C	0...+60 °C
0...+60 °C	0...+60 °C
IP 65	IP 65
2 external	2 external
RS232	RS232
2 read/write heads BIS L-3_ _	2 read/write heads BIS L-3_ _
2 connector round 5-pin, B-coded	2 connector round 5-pin, B-coded
1 connector round 5-pin	2 connector round 4-pin
Software GSD-file	Software GSD-file
See Connectivity section for cable options	See Connectivity section for cable options



Range of applications

Selection criteria



Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel
Serial
IO-Link
easy loop®

Processors

Serial
PROFIBUS-DP
DeviceNet™
EtherNet/IP™
EtherNet TCP/IP
BIS V

Communication module for easy loop®

Handheld

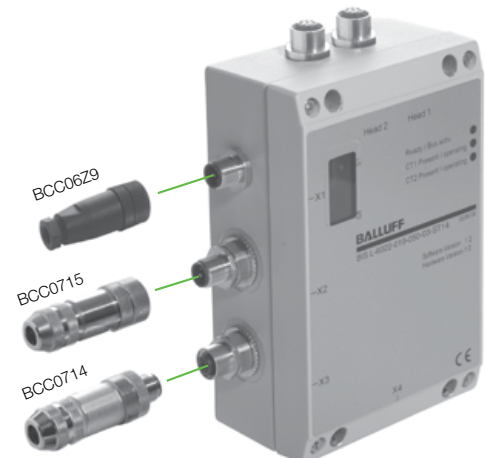
Mechanical accessories

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.

Suitable for all applications with demanding requirements for mechanical rigidity and chemical resistance.



Threaded cover
Ordering code: BAM0114
Part number: 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 interchangeable memory
- Accepts all read/write heads
- Interface-compatible with BIS C and
BIS M identification systems

Description		
DeviceNet	Ordering code	
	Part number	
Supply voltage, Ripple		
Current		
Operating temperature		
Storage temperature		
Protection per IEC 60529		
Read/write head ports		
Service interface		
Connection for		
Connection type		
Accessories included		
Connection cable		



The **compact class BIS L-600_** with its reduced dimensions and various interface options can be used wherever ambient conditions require higher protection.

The devices are ideal for IP 65 and applications involving media that is not aggressive to PS plastic.

Small, compact, flexible
and economical

BIS L Industrial RFID System

Processors



125 kHz LF

Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet TCP/IP

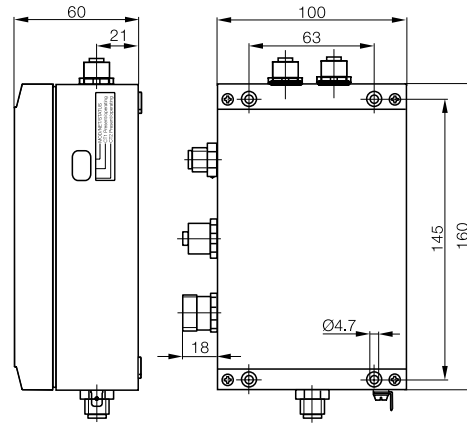
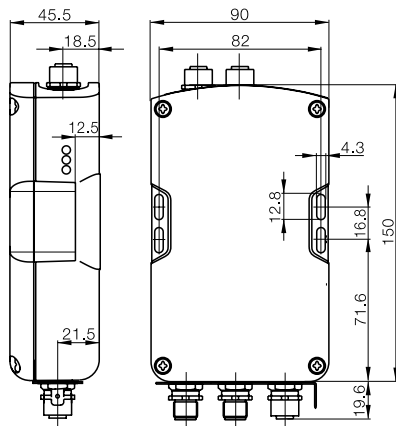
BIS V

Communication module for easy loop®

Handheld

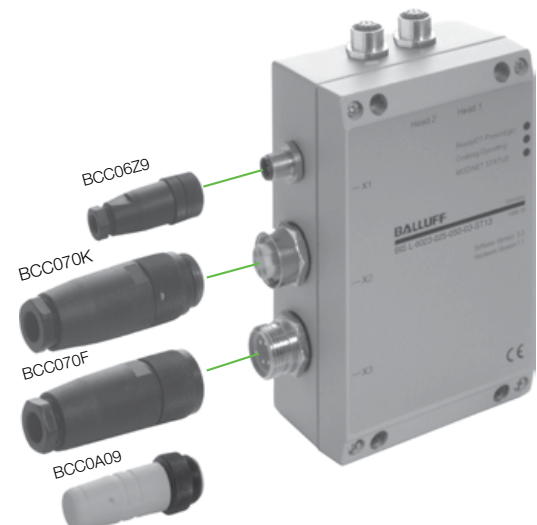
Mechanical accessories

Processor	Processor
BIS00E7	BIS00EE
BIS L-6003-025-050-03-ST12	BIS L-6023-025-050-03-ST13
24 V DC $\pm 20\%$, $\leq 10\%$	24 V DC $\pm 20\%$, $\leq 10\%$
≤ 600 mA	≤ 600 mA
0...+60 °C	0...+60 °C
0...+60 °C	0...+60 °C
IP 65	IP 65
2 external	2 external
RS232	RS232
2 read/write heads BIS L-3_ _	2 read/write heads BIS L-3_ _
3 round, 5-pin connectors	4 round, 5-pin connectors
Software EDS-file	Software EDS-file
See Connectivity section for cable options	See Connectivity section for cable options



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

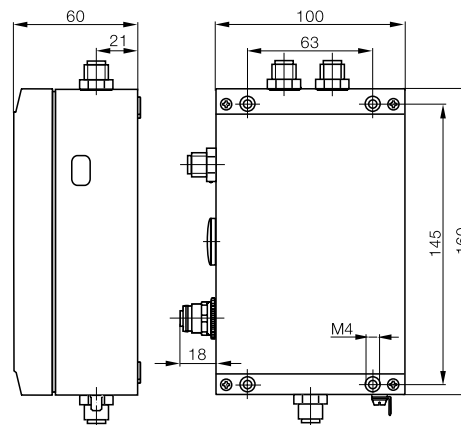
Suitable for all applications with demanding requirements for mechanical rigidity and chemical resistance.



Cost-effective identification
– operate 2 read/write heads
simultaneously.



Description		Processor
EtherNet/IP	Ordering code	BIS00EF
	Part number	BIS L-6026-034-050-06-ST19
Supply voltage, Ripple		24 V DC $\pm 20\%$, $\leq 10\%$
Current		≤ 400 mA
Operating temperature		0...+60 °C
Storage temperature		0...+60 °C
Protection per IEC 60529		IP 65
Read/write head ports		2 external
Service interface		RS232
Connection for		Read/write heads BIS L-3_ _
Connection type		Connector round 4-pin, D-coded 1 connector 5-pin 1 connector 4-pin
Accessories included		Configuration software
Connection cable		See Connectivity section for cable options



Operate 2 read/write
heads sequentially.



Description	Processor
EtherNet TCP/IP	BIS00EH
Ordering code	
Part number	BIS L-6027-039-050-06-ST19
Supply voltage, Ripple	24 V DC $\pm 20\%$, $\leq 10\%$
Current	≤ 400 mA
Operating temperature	0...+60 °C
Storage temperature	0...+60 °C
Protection per IEC 60529	IP 65
Read/write head ports	2 external
Service interface	RS232
Connection for	Read/write heads BIS L-3_ _
Connection type	Connector round 4-pin, D-coded 1 connector 5-pin 1 connector 4-pin
Accessories included	Configuration software
Connection cable	See Connectivity section for cable options



Range of
applications

Selection
criteria

Data carriers
read/write

Data carriers
read only

Read/write
heads

Data
couplers

**Read/write
heads with
integrated
processors**

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet

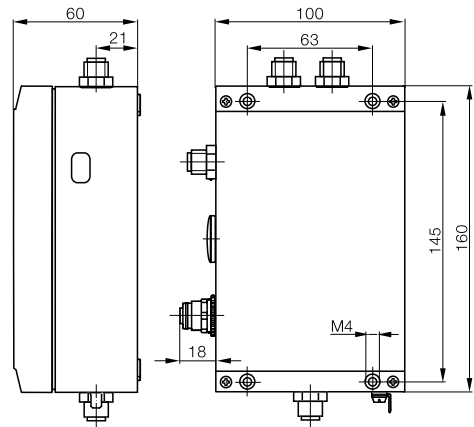
TCP/IP

BIS V

Communication
module for
easy loop®

Handheld

Mechanical
accessories

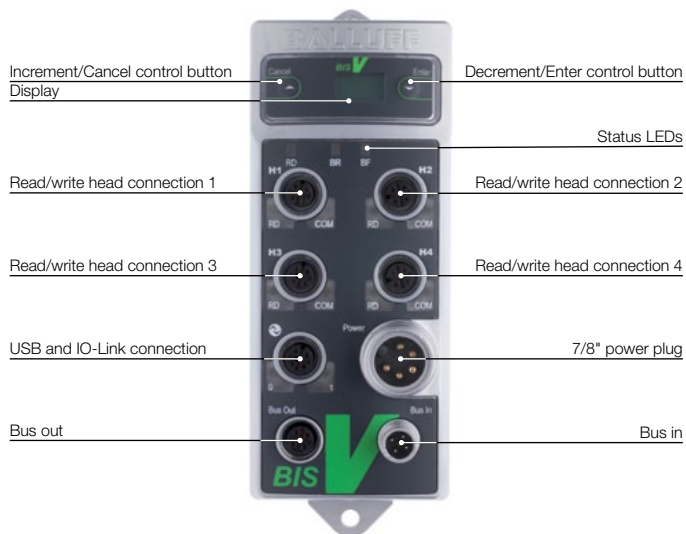


A new generation system for more flexible RFID: Combine up to four low and high frequency read/write heads with I/O in one device.

The BIS V Radio Frequency Identification (RFID) system is founded on a new generation of RFID processors that maximize your flexibility by providing a single device for both low frequency 125Khz and high frequency 13.56Mhz read/write heads with an IO-Link master port. Combining up to four heads on either frequency with local analog, valve manifold or I/O access/control provides a solution you can apply to many types of RFID applications. This can save cost and time using a single processor platform across your application installation base. The BIS V system also allows you to draw on a single processor family with a wide array of read/write head and RFID tag options for both manufacturing and logistics solutions.

The BIS V RFID system offers a higher level of performance than other systems to solve today's industrial applications. Designed to maximize performance while improving usability out on the line, the BIS V processor provides a functional display and LED's making status and setup easier. And a USB service interface makes connection for setup to today's PC's simple. The BIS V offers these additional functions:

- Four asynchronous 125Khz and 13.56Mhz read/write antenna channels.
- LCD display with control buttons for setting and displaying the Profibus address and data carrier/tags UID.
- An integrated IO-Link master port for connecting discrete or analog I/O, or valve manifolds.
- Intelligent power plug option for saving parameters on the device.
- Industrial IP rated metal housing for any application environment.
- Flexible mounting options for hard-point or DIN rail.



Description		
PROFIBUS-DP	Ordering code	
	Part number	
EtherCAT	Ordering code	
	Part number	
CC-Link	Ordering code	
	Part number	
Ethernet/IP	Ordering code	
	Part number	
Supply voltage, Ripple		
Current		
Operating temperature		
Storage temperature		
Protection per IEC 60529		
Read/write head ports		
Service interface		
Control inputs / outputs		
Connection for		
Connection type		
Accessories included		
Connection cable		



See pages 142, 144, 148, 150, 152 for read/write heads.

The following communication options will become available in 2013/2014:

Ethernet/IP, CC-Link, ProfiNet, and TCP/IP



BIS L Industrial RFID System

Processors



BIS V RFID Unit	BIS V RFID Unit	BIS V RFID Unit
BIS00T3		
BIS V-6102-019-C001		
		BIS00U9
		BIS V-6110-063-C002
BIS010P		
BIS V-6111-073-C003		
	BIS0122	
	BIS V-6106-034-C004	
24V DC $\pm 10\%$ LPS Class 2, $\leq 10\%$	24V DC $\pm 10\%$ LPS Class 2, $\leq 10\%$	24V DC $\pm 10\%$ LPS Class 2, $\leq 10\%$
≤ 2 A	≤ 2 A	≤ 2 A
0...+60 °C	0...+60 °C	0...+60 °C
0...+60 °C	0...+60 °C	0...+60 °C
IP 65	IP 65	IP 65
4 - M12 5-pin A-coded	4 - M12 5-pin A-coded	4 - M12 5-pin A-coded
IO-Link 1.1, USB 2.0	IO-Link 1.1, USB 2.0	IO-Link 1.1, USB 2.0
IO-Link based	IO-Link based	IO-Link based
4 Read/write head BIS VM-3_ _ _	4 Read/write head BIS VM-3_ _ _	4 Read/write head BIS VM-3_ _ _
7/8" plug, 5-pin power	7/8" plug, 4-pin power	7/8" plug, 5-pin power
Configuration software	Configuration software	Configuration software
See Connectivity section for cable options	See Connectivity section for cable options	See Connectivity section for cable options



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link

easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

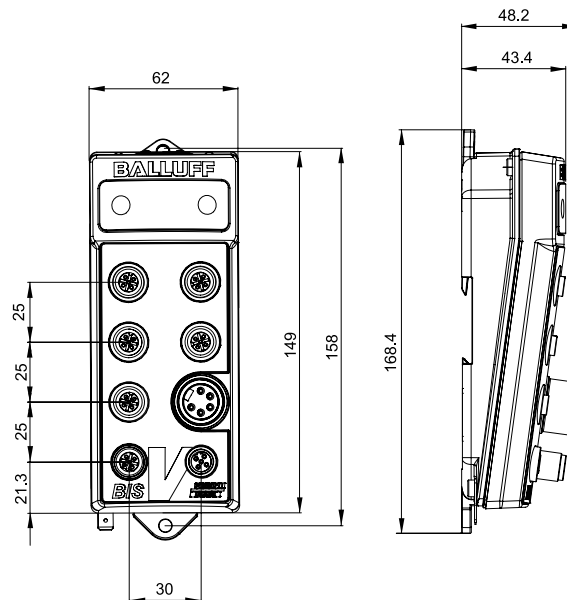
EtherNet TCP/IP

BIS V

Communication module for easy loop®

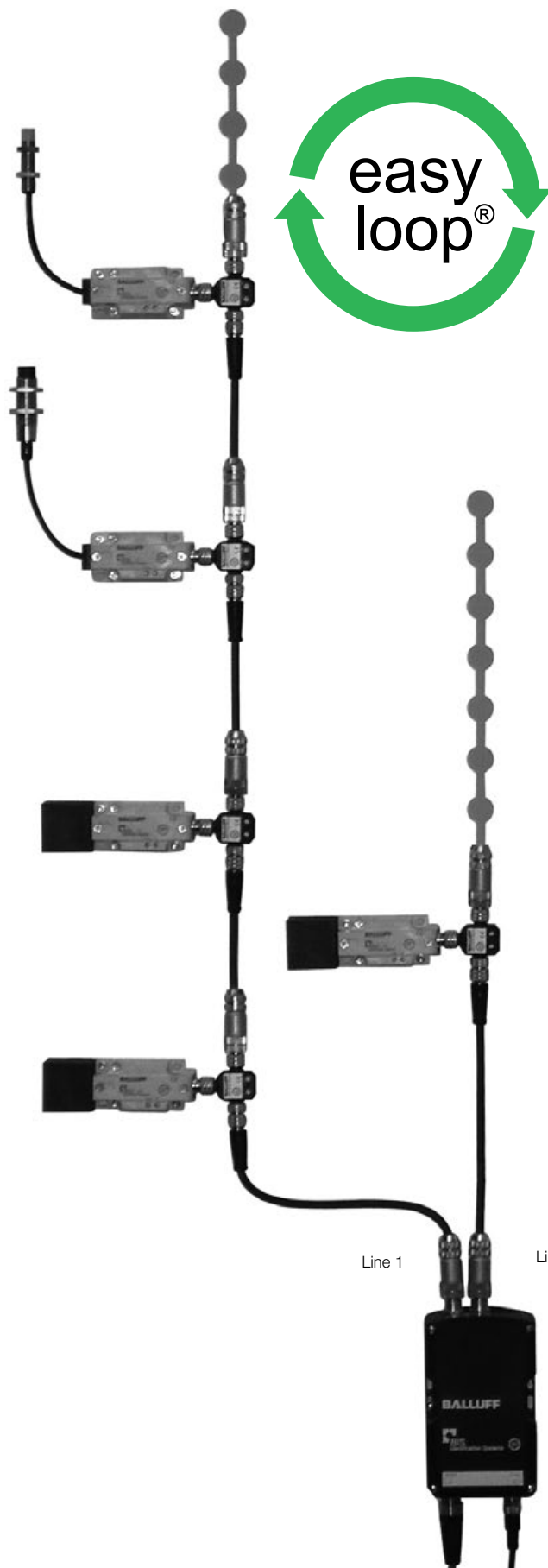
Handheld

Mechanical accessories



BIS L Industrial RFID System

Communication module for easy loop®



For simple installation

Use easy loop® to extend the BIS L system at minimal cost: compact read heads and the communication module for simple connection to the controller. Prefabricated cable and connectors for rapid, correct wiring. No address settings.

Install the BIS L simply by connecting a maximum of eight read heads with easy loop® interface to two lines. A single cable will suffice and a separate power supply is no longer necessary.

All processor units function independently to allow dynamic operation: Data is transferred reliably when the data carrier passes by.

Maximum of 8 processor units on each line
All lines can be extended up to 80 m!

Terminator
BCC00TM
BKS-S117-RO1

Tee
BCC00TK
BKS-S115-TW2-03

Connection cables
BIS Z-501-PU-_-

Line 1

Line 2

Communication module
RS232 or Ethernet

BIS L Industrial RFID System

Communication module for easy loop®



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel

Serial

IO-Link
easy loop®

Processors

Serial

PROFIBUS-DP

DeviceNet™

EtherNet/IP™

EtherNet TCP/IP

BIS V

Communication module for easy loop®

Handheld

Mechanical accessories

Description		Communication interface
RS232	Ordering code	BAE003W
	Part number	BIS Z-EL-002-RS232
Ethernet TCP/IP	Ordering code	BAE003U
	Part number	BIS Z-EL-001-Ethernet
Supply voltage, Ripple		24 V DC $\pm 20\%$, $\leq 10\%$
Current		≤ 500 mA +50 mA for each connected read head
Operating temperature		0...+60 °C
Storage temperature		0...+60 °C
Protection per IEC 60529		IP 65
Read/write head ports		2 external
Connection for		read/write heads/Line 1 and 2, 2 connectors round 8-pin
Connection type		1 connector round 4-pin (power) 1 connector round 5-pin (bus)
Connection cable		See Connectivity section for cable options

Please order accessories separately



Tee
BCC00TK
BKS-S115-TW2-03



Terminator
BCC00TM
BKS-S117-RO1

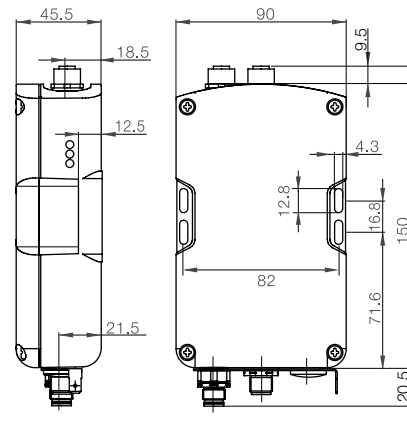


Operating voltage
BCC00T8
BKS-S 79-00



Ethernet connector
BCC00WZ
BCC M474-0000-2D-000-51X475-000

RS-232 connector
BCC00PM
BIS C-522-PVC-02



RS232 version shown

BIS L Industrial RFID System

Handheld



For enhanced operating convenience

Allows portable writing and reading of BIS L data carriers.

Easy operation thanks to

- Touchscreen with large color Windows CE® display and
- Pre-installed Balluff software and keyboard or stylus.

Ideal for poor light conditions and challenging environments. Data transfer via optional WLAN, Bluetooth or wired USB. The Handheld is also modular for expandability.

Additional convenience

A pistol grip is provided for ergonomic comfort.

Antenna type		
Function		
Housing material		
Standard base	Ordering code	
	Part number	
Standard + WLAN module	Ordering code	
	Part number	
Standard + 1D code reader	Ordering code	
	Part number	
Standard + 2D code reader	Ordering code	
	Part number	
Standard + ID code reader + WLAN	Ordering code	
	Part number	
Standard + 2D code reader + WLAN	Ordering code	
	Part number	
Keyboard		
Display		
Supply voltage		
Capacity		
Interface		
Working temperature		
Degree of protection in accordance with IEC 60529		
Read/write head option		
Accessories included		
Appropriate data carrier		
Please order additional accessories separately		

Antenna type:



rod



round

Handheld Standard **BIS L-87_-1-008-x-000_**
Includes charger and stylus



Recommended accessories

(please order separately)



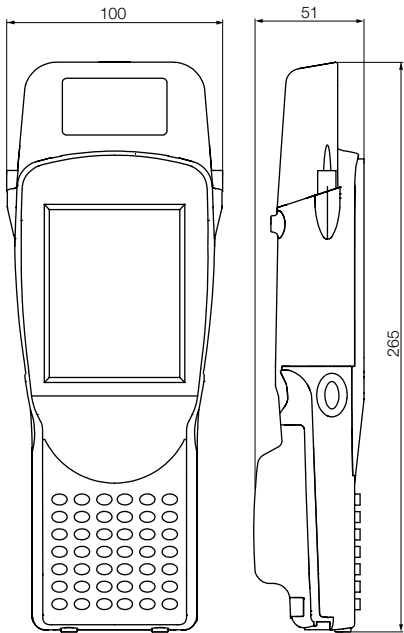
Description	Pistol grip option	Optional docking station with power supply	Replacement battery 4000mAh rechargeable battery
Part code	FHW0004	FHW0003	WA3010
Part number	11023836	11023834	162936

BIS L Industrial RFID System

Handheld



General purpose
Read/write
ABS
BAE00J1
BIS L-870-1-008-X-000-3000
BIS L-870-1-008-X-001-3000
BIS L-870-1-008-X-002-3000
BIS L-870-1-008-X-003-3000
BIS L-870-1-008-X-004-3000
BIS L-870-1-008-X-005-3000
52 buttons, alphanumeric
TFT Touchscreen display
3.7 V rechargeable battery pack
4000 mA/h
RS232/Balluff Dialog
-10...+50 °C
IP 65
Integrated
Charging power supply and stylus
for BIS L-Data carrier with round coil Ø ≥ 35 mm
Docking Station and Pistol Grip



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors
Parallel
Serial
IO-Link
easy loop®

Processors
Serial
PROFIBUS-DP
DeviceNet™
EtherNet/IP™
EtherNet TCP/IP
BIS V

Communication module for easy loop®

Handheld

Mechanical accessories

BIS L Industrial RFID System

Mechanical accessories



Access protection

And here's how it works

Individual access codes are allocated via programmable data keys, which can then be disabled to prevent further programming.

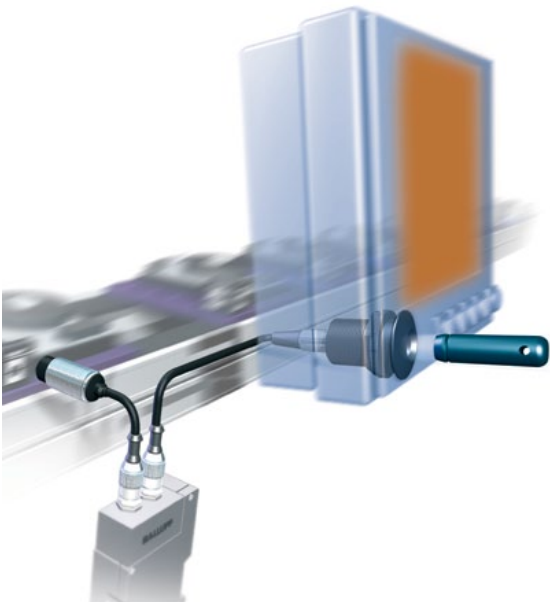
Unauthorized personnel cannot manipulate the data key as a result. The data key is read via an antenna fitted to a special bracket. The processor unit then issues the data.

Different interfaces such as serial, PROFIBUS, DeviceNet™, Ethernet/IP or parallel interfaces enable simple connection to the monitored system. Available for systems BIS C, BIS L and BIS M.

The benefits to you

Simple upgrade and rapid replacement without modifying the system software. End users are independent of system providers. The access system is easy to integrate in read/write stations that already use an identification system. Simply connect the access monitoring antenna to the second channel on the existing processor unit. Hardware expenses are reduced to a minimum and software only requires slight modification in order to process both channels.

Description	
Version	
Use	
Ordering code	
Part number	
Operating temperature	
Storage temperature	
Protection per IEC 60529	

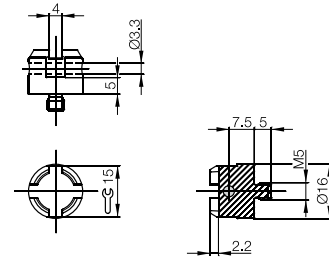
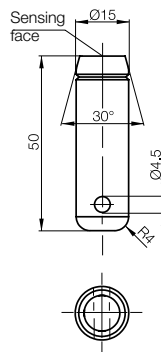
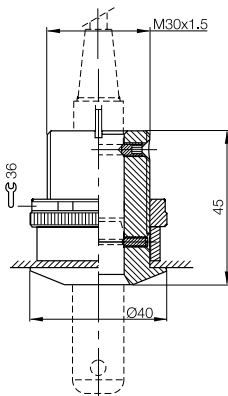


BIS L Industrial RFID System

Mechanical accessories



Tag Receptacle	Access Key	Tag Holder
Access protection	Data carrier + Bracket	POM
Attachment for read/write head	Used with BIS Z-ZA-001	
BIS M-304		
BAM012N	BIS00ZY	BAM012H
BIS Z-ZA-001	BIS L-103-05/L-ZC1	BIS L-203-ZH1
0...+70 °C	-25...+70 °C	-25...+85 °C
-20...+85 °C	-25...+85 °C	
	IP 67	IP 67



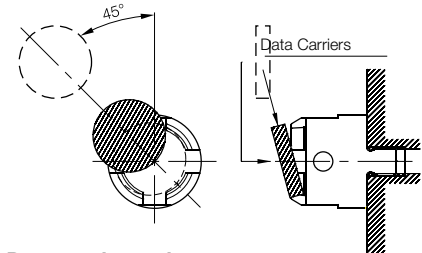
Interchangeable with data carriers BIS L-103 and BIS L-203, easy to mount – even on metal

The mount and prism clamp secure the data carrier and prevent it from falling out.

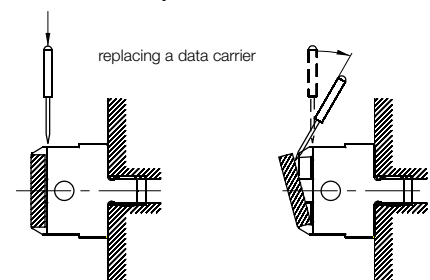


Electronic key for access control. Easy to implement using the "RFID key".

Mounting a data carrier



Data carrier replacement



Range of applications

Selection criteria

Data carriers read/write

Data carriers read only

Read/write heads

Data couplers

Read/write heads with integrated processors

Parallel
Serial
IO-Link
easy loop®

Processors

Serial
PROFIBUS-DP
DeviceNet™
EtherNet/IP™
EtherNet TCP/IP
BIS V

Communication module for easy loop®

Handheld

Mechanical accessories