

BALLUFF

sensors worldwide

BIS V RFID Processor

Multiple frequencies, compact and flexible



BIS





BIS V RFID Processor

Multiple frequencies, one device – A world of options

Each RFID frequency has its own set of benefits. While low frequency (LF) performs better in and around metal, high frequency (HF) yields the benefits of longer read ranges and a higher memory capacity on the tags. The BIS V is the best of both worlds. In addition to multiple frequencies, the BIS V contains an IO-Link master port that will allow the connection of sensors, actuators, and SmartLights. Combining multiple frequencies on one processor, maximizing data throughput, and allowing for expanded sensor connections, Balluff is continuing to help customers innovate the way they automate.

On top of being able to address a myriad of applications with one processor, the BIS V can communicate through all major control networks.

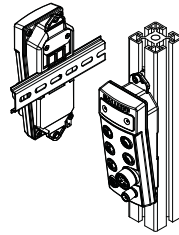
Benefits at a glance:

- Reduce the number of network nodes and lower hardware costs
- Simplify deployment
- Gain real-time access to actionable data



Application for	BIS M (13.56 MHz) ■	■
	BIS L (125 kHz) ■	■
	BIS C (70/455 kHz) ■	■
Profibus	BIS00T3	BIS012E
EtherCAT	BIS00U9	BIS0147
CC-Link	BIS010P	BIS014E
Ethernet/IP (Power 5-pin)	BIS012F	BIS014C
Ethernet/IP (Power 4-pin)	BIS0122	BIS0146
Profinet	BIS013U	BIS013W
Read/write head ports	4x BIS VM and BIS VL	4x BIS C ¹ (BIS VM and BIS VL can also be connected)
Power supply	24 V DC ±10% LPS Class 2	24 V DC ±10% LPS Class 2
Power supply	≤ 2 A	≤ 2 A
Operating/storage temperature	0...+60 °C	0...+60 °C
Degree of protection as per IEC 60529	IP 65	IP 65
IO-Link master	V 1.1, max. 0.5 A	V 1.1, max. 0.5 A
Max. cable length (read/write heads)	50 m	10 m for BIS C, 50 m for BIS M/BIS L

¹ BIS C possible using adapter BCC0FCK



Mechanical Properties

- Rugged metal housing
- Developed and qualified according to GAMP® 5 principles
- Can be used in the control cabinet or in the field:
easy mounting on DIN rails or extrusions

Status LEDs indicate the bus state

- Bright LEDs simplify diagnostics

LCD display and pushbuttons

- Easy commissioning and fast diagnostics
- Display and change network settings
- Call up unique IDs for the data carriers



Utilize the IO-Link master port for another RFID head or:

- SmartLight: an intelligent light for indicating machine status
- Sensors and actuators: use IO-Link to quickly and simply integrate them into the system
- Sensor hubs: collect and process signals from standard sensors

USB port

- For rapid commissioning
- Update processor units and read/write heads
- Configure read/write heads regardless of interface using PC-based software tool

Power connection via 7/8" connector

- Rugged standard connection for harsh industrial environments

All major control networks supported

- Web server for Ethernet-based interfaces
- Function blocks available upon request



Frequency-independent controllers

Capable of processing data from BIS M, L, or C Systems

Technologies	HF		LF	
Systems	BIS M ISO-Standard	BIS M High-Speed	BIS L	BIS C
Frequencies	13.56 MHz	13.56 MHz	125 kHz	70/455 kHz
Special features	Global standard frequency range, high-temperature data carriers, applications in and on metal	Super-fast data transmission, extra large memories	Cost-effective data carriers, read only	Data carriers and read/write heads for applications in and on metal
Areas of application	Assembly, handling, access control, counterfeit protection, parts tracking	High-speed assembly, production control, parts tracking	Intralogistics, palletizing	Tool identification, production control
Max. memory	8 Kbyte	128 Kbyte	192 bytes	8 Kbyte
Max. read/write distances	400 mm	60 mm	100 mm	100 mm
Read/write times ²	130/60 ms	34/15 ms	695/405 ms	860/220 ms

² for 64 bytes

Operate up to four read/write heads simultaneously

Each connected read/write head indicates its status and operating state via two LEDs. The following combinations of data carriers and read/write heads are possible (examples):



Read/write heads BIS M (13.56 MHz)					
	BIS013H	BIS0140	BIS0132	BIS0131	BIS012Z
Data carriers BIS M					
	BIS004A	7	5.5		
	BIS00PT		7.5	22	
	BIS0043			28	
	BIS00NZ				25 57
	BIS00P3				60 100

Read/write distances in mm



Read/write heads BIS C (70/455 kHz)				
	BIS005Z	BIS006F	BIS00PH	BIS0067
Data carriers BIS C				
	BIS0011	2.5	2.5	2.5
	BIS0009	3.5	3.5	5
	BIS0019			8 3.5
	BIS002P	3.5	3.5	10

Read/write distances in mm

Maximum throughput

- Read more data faster using the latest in Balluff RFID technology
- Read and write large amounts of data (up to 128 Kbyte) on the fly to increase yield rates and reduce cycle time



Read/write heads BIS L (125 kHz)				
	BIS000L	BIS0006	BIS000F	BIS000H
Data carriers BIS L				
	BIS003E	32		18 22
	BIS0033	30	40	20 30
	BIS0036	40	55	25 65
	BIS0039	55	70	30 85

Read/write distances in mm

Tool ID and Work in Process

Two Applications – One Device

Tool identification using RFID eliminates false matching or missing tools. All the tool-relevant data such as wear, dimensions or tool life are saved to a data carrier affixed to the tool. Automatic loading into the system memory means all the data is always correct and up-to-date. This ensures maximum tool utilization and high machine availability.

RFID also offers seamless documentation and automation of the entire manufacturing process. Each step in the process is recorded on the data carrier, so all the parts can be simply tracked. Process reliability and quality are ensured.

Work in process/Production control

- Enable flexible manufacturing
- Track the rework process
- Effectively handle product recalls
- Maintain regulatory compliance

Maximize tool utilization

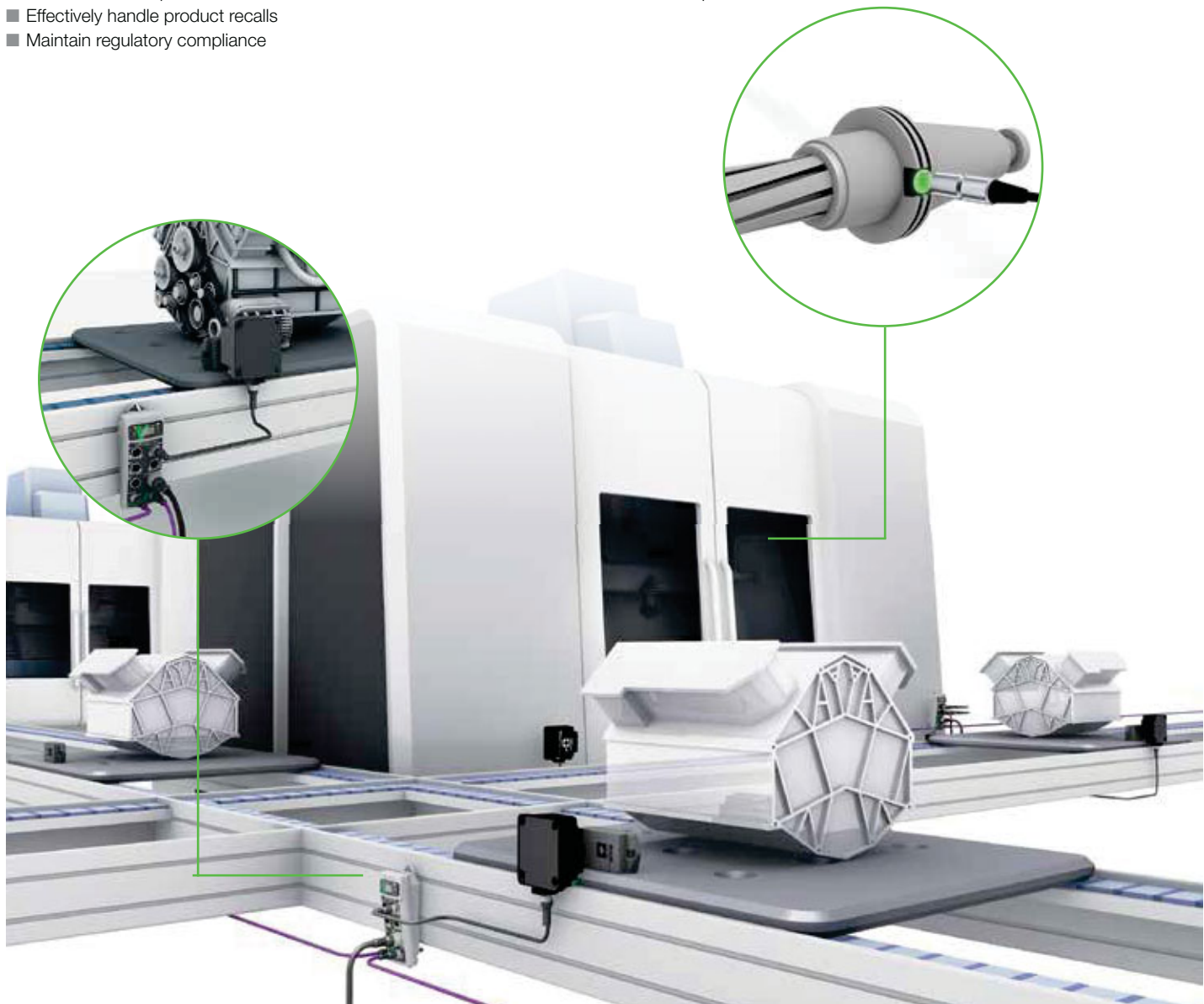
RFID based Tool ID maximizes tool utilization by ensuring:

- Precise, up-to-date tool life information
- Accurate transfer of tool offset data
- Accurate reporting of tool data back to statistical databases
- Continuous tool tracking to maximize quality and reduce tool inventory requirements


Minimize human error

Paperless tool data transfer ensures absolutely reliable data:

- Eliminates human data entry errors
- Accurately carries data with each tool regardless of its location
- Automates transfer of data from presetter to machine
- Can recall tool data from the tool any time without the need for database look-ups



Parts tracking during production is handled by the HF system, with LF used for the tool identification. BIS V processor units accomplish both identification tasks at the same time.

 Systems and Service

 Industrial Networking and Connectivity

 Industrial Identification

 Object Detection

 Linear Position Sensing

 Fluid Sensors

 Accessories

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