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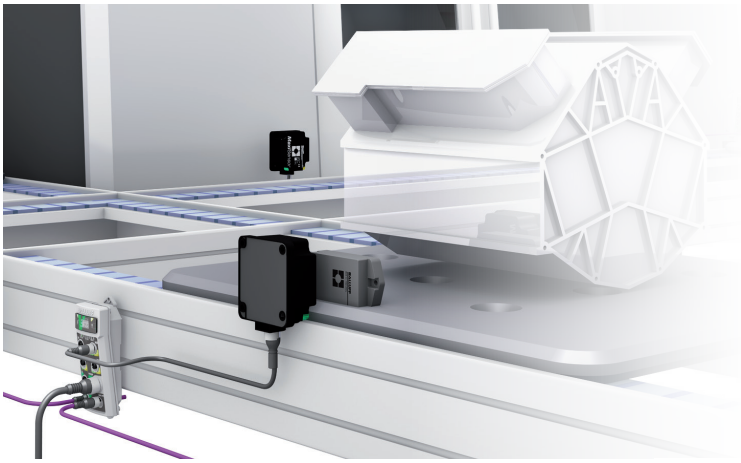
BIS V Processor Unit

Dual frequency, compact and flexible

BIS V



Processor Units BIS V

Communicate on dual frequencies – for optimal control

RFID systems with various frequency ranges are finding increasing use in modern production and assembly plants. Each system is designed for different applications. The low-frequency systems (LF) used mostly in metal environments are especially rugged and reliable. High-frequency systems (HF) are preferred where greater read/write distances and high traverse speed are demanded.

The new BIS V now offers for the first time the ability to enjoy the benefits of both frequencies. Because this new controller allows HF (13.56 MHz) and LF (70...455 kHz) to be operated at the same time. Even with up to four read/write heads per processor unit. The entire system family is designed for UHF antennas in the short- and mid-range spectrum. This means one version of the RFID processes is sufficient to seamlessly and automatically track and control the entire material flow of a company – from delivery of the raw materials to the finished product.

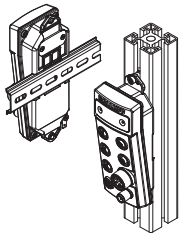
Included standard is an IO-Link master port for connecting IO-Link compatible sensors and actuators. The intelligent combination of RFID and sensors makes it possible to process signals cost-effectively even beyond the actual identification task.

The benefits:

- Intelligently combine RFID and sensors – using the built-in IO-Link master
- Reduce bus nodes and lower hardware costs
- Simplify installation and reduce costs
- Use a frequency-independent controller and simplify inventory maintenance

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		4× BIS VM and BIS VL	4× 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 only possible using adapter BCC0FCK



Mechanical Properties
- All connections are accessible from the front
- Rugged metal housing for perfect EMC
- Developed and qualified according to GAMP® 5 principles (more information on request at rfidpharma@balluff.com)
- 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
- Direct readout of device version
- Call up unique IDs for the data carriers
- Securely lock out buttons via software

IO-Link

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

USB port
- For rapid commissioning without a bus connection
- Update processor units and read/write heads
- Open operating manual as a PDF file
- 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 universal bus systems are available – for use in any industry
- Web server for Ethernet-based interfaces
- Function blocks for many common controller OEMs make setup fast

PROFIBUS PROFINET DeviceNet EtherNet/IP EtherCAT CC-Link

Frequency-independent controllers
These automatically detect LF and HF frequencies and thereby enable mixed operation of BIS M, BIS C and BIS L 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	Engine and transmission 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

Using Highspeed on the conveyor line
BIS M reaches a new level of write speed and memory capacity: selected HF data carriers feature an extra large memory up to 128 Kbytes.
And combined with our Highspeed read/write heads they work up to eight times faster than the ISO 15693 standard. This makes them ideal for track-and-trace applications with high data volume.
Together with the BIS-V processor units they ensure reduced cycle times and increased yield rates.

	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

	Read/write heads BIS L (125 kHz)				
		BIS00UL	BIS00U6	BIS00UF	BIS00UH
	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

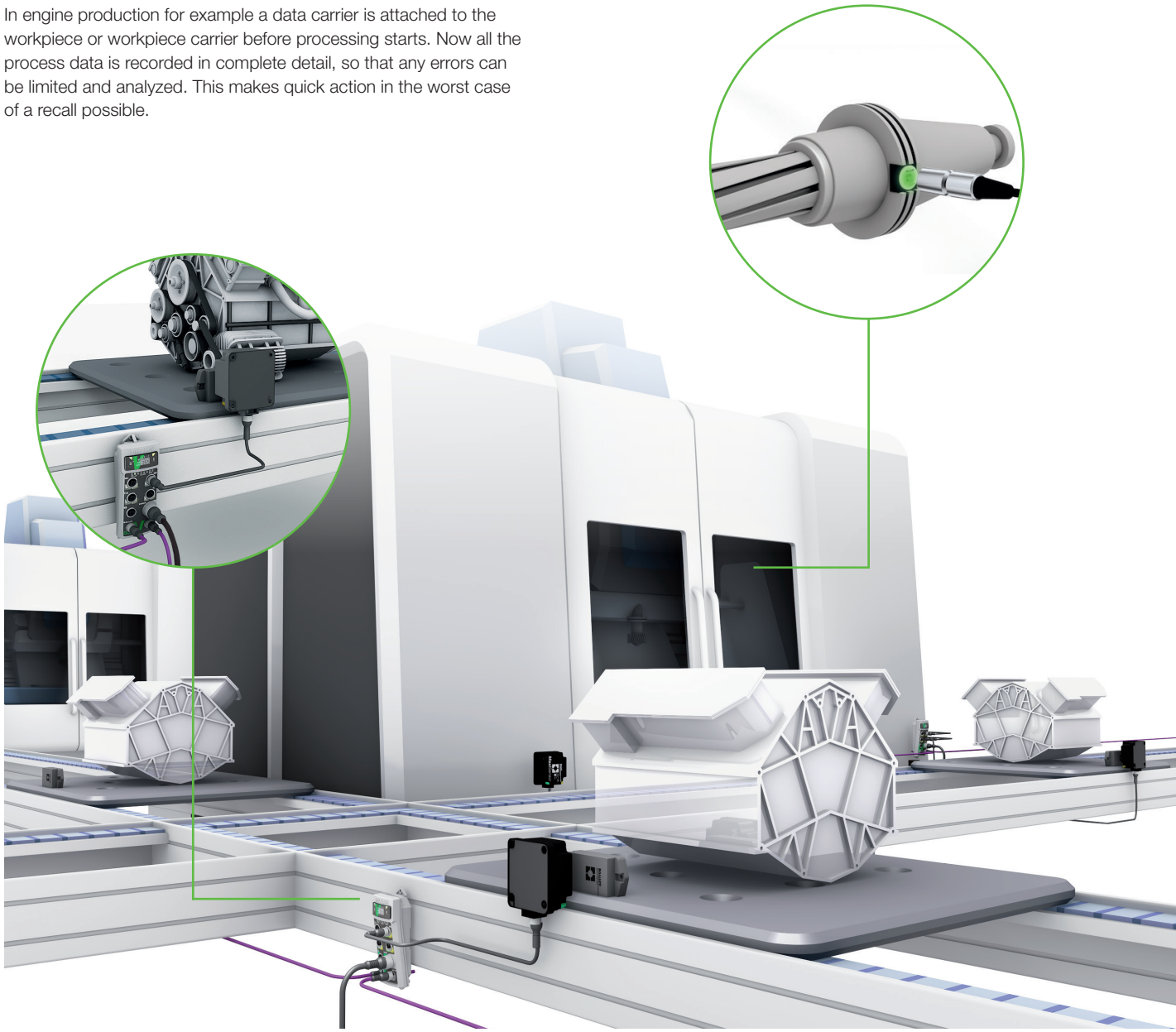
Flexible for Universal Application

BIS V identifies tools and controls the production process

Too identification using RFID eliminates false matching or missing tools. All the tool-relevant data such as numbers, dimensions or tool life are saved non-contact 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 that all the parts can be simply tracked. Process reliability and quality are then ensured.

In engine production for example a data carrier is attached to the workpiece or workpiece carrier before processing starts. Now all the process data is recorded in complete detail, so that any errors can be limited and analyzed. This makes quick action in the worst case of a recall possible.



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.

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Accessories

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