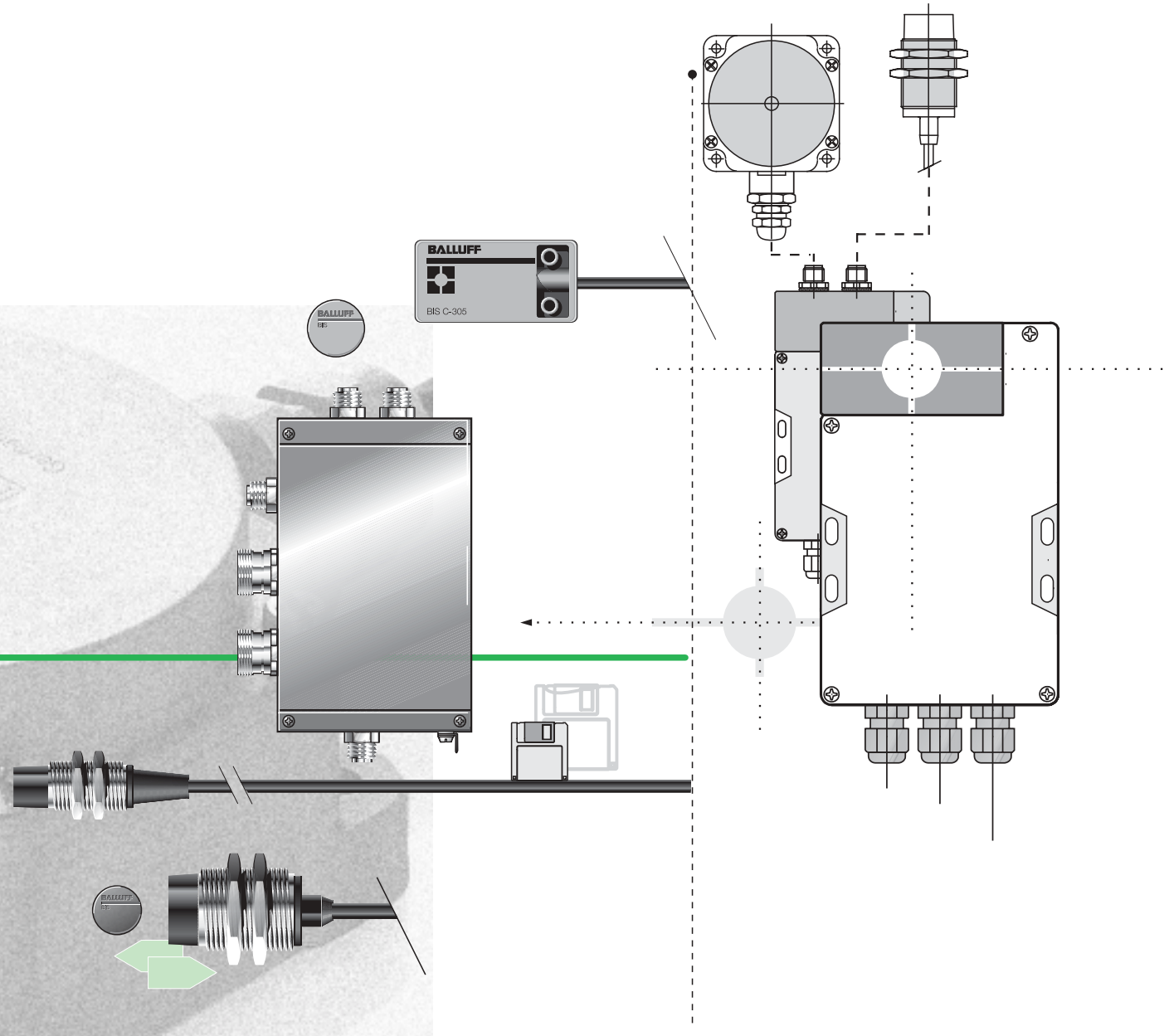
Balluff is a world leader in the field of sensor technology. Our product range includes electronic and electromechanical sensors, transducers and identification systems, as well as bus-compatible sensors.

Balluff products are found wherever precision, reliability, and highest quality are demanded. These indispensible 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.

ALPHA

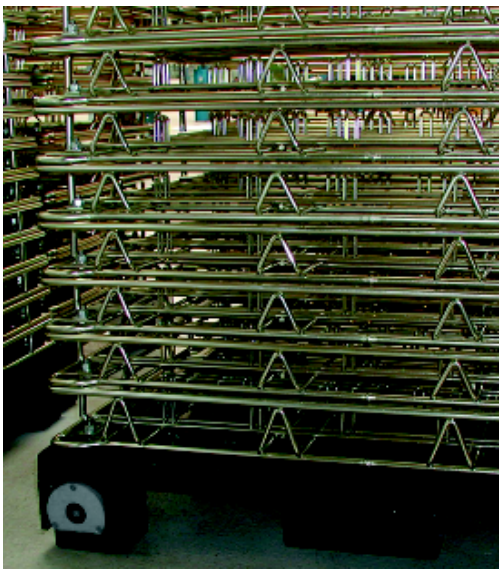

BALLUFF
BIS C-305

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.

Pallet identification for a Cargo Center



Data carrier in pallet

Read/write head in a warehousing system

Read/write head in a machining center

Tool handling in the machining center
tool magazine with BIS C data carriers.
Application at MTU Friedrichshafen.

Identification Systems for Tool and Pallet Coding

Non-contact tool identification and communication with the cell computer.
Inductive reading and writing of tool data. The contents of the data carrier can be displayed on the controller monitor.

Tool coding with the necessary identification data, such as job number, tool type, nominal tool life, tool geometry, collision radius.
The miniature data carrier embedded in the tool is available with 512 bytes of data capacity.
Consistent information flow in production, from work preparation to the machine tool.

Pallet coding is used for information exchange between the individual machining centers in the material flor for the order, the production job or the machining level.
Process-oriented quality control can be implemented right in the process. Memory capacities of up to 8 kB and various form factors are available.

Assembly line for ventilating modules

Assembly line for jalousie modules
at Henkel + Roth GmbH

Pallet identification in plastic tank
manufacturing at Kautex using

Read head in a machining center

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:
- tool coding
- 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 its own supply voltage. Then it sends its data as a pulse-code-modulated signal in the direction of the read/write head.

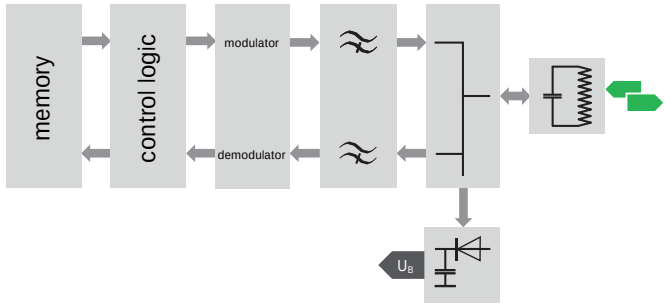
The read/write head is the communications partner of the data carrier. It sends a 70 kHz energy signal out and receives the data signal transmitted back from the data carrier. The energy signal, since it is pulsed, is also used for programming the data carrier memory.

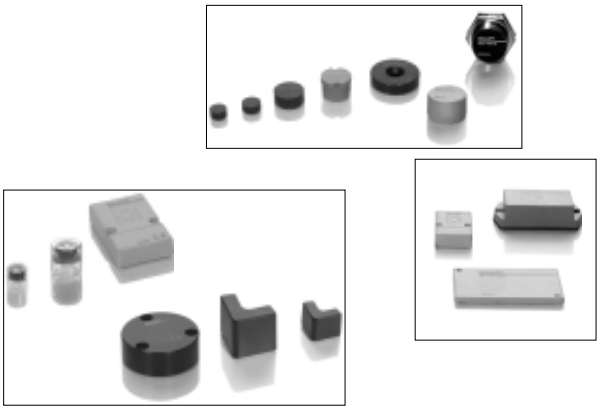
The processor supervises the bi-directional data transfer between data carrier and read/write head and serves as buffer storage. It is the link between the host system and the data carrier.
To allow for adapting to various computer and controller designs, numerous software packages are available. A sophisticated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

Features

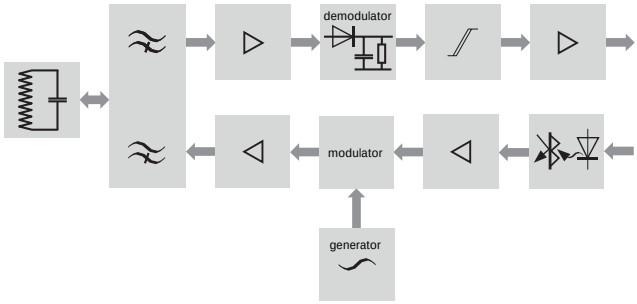
- non-contact and wear-free
- dynamic and static reading and writing
- miniature data carrier
- data capacity up to 8 kBytes
- high noise immunity
- safe data transfer
- immune to dirt and liquids
- adaptable to virtually any existing control
- interface versions for virtually any control
- maintenance-free
- high mechanical strength
- data carrier programmed to user specification

Data Carrier

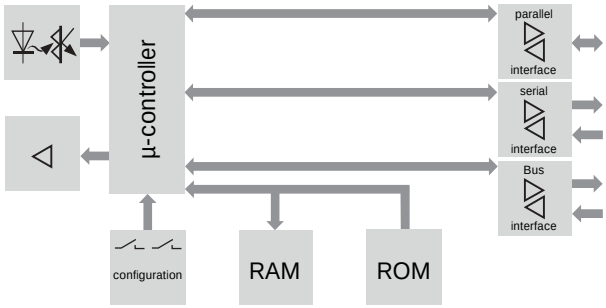


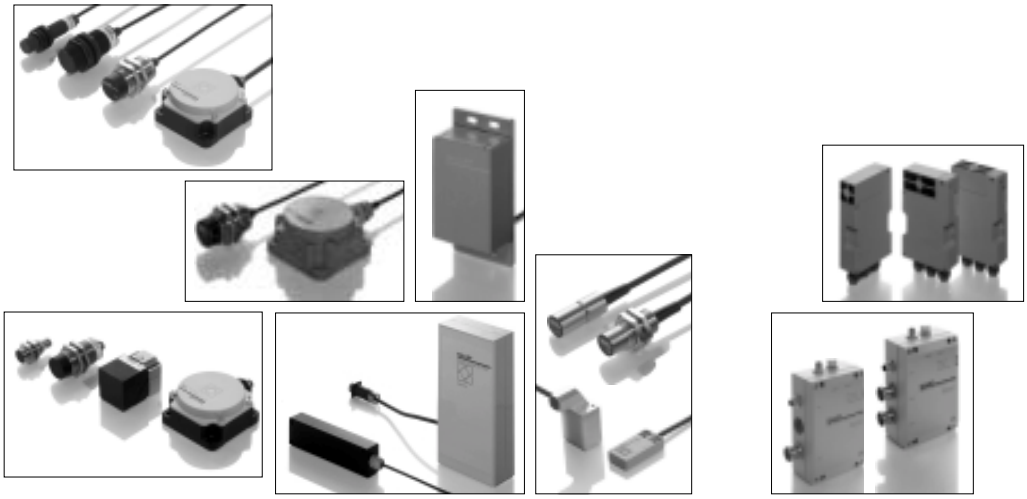


Read/Write Head



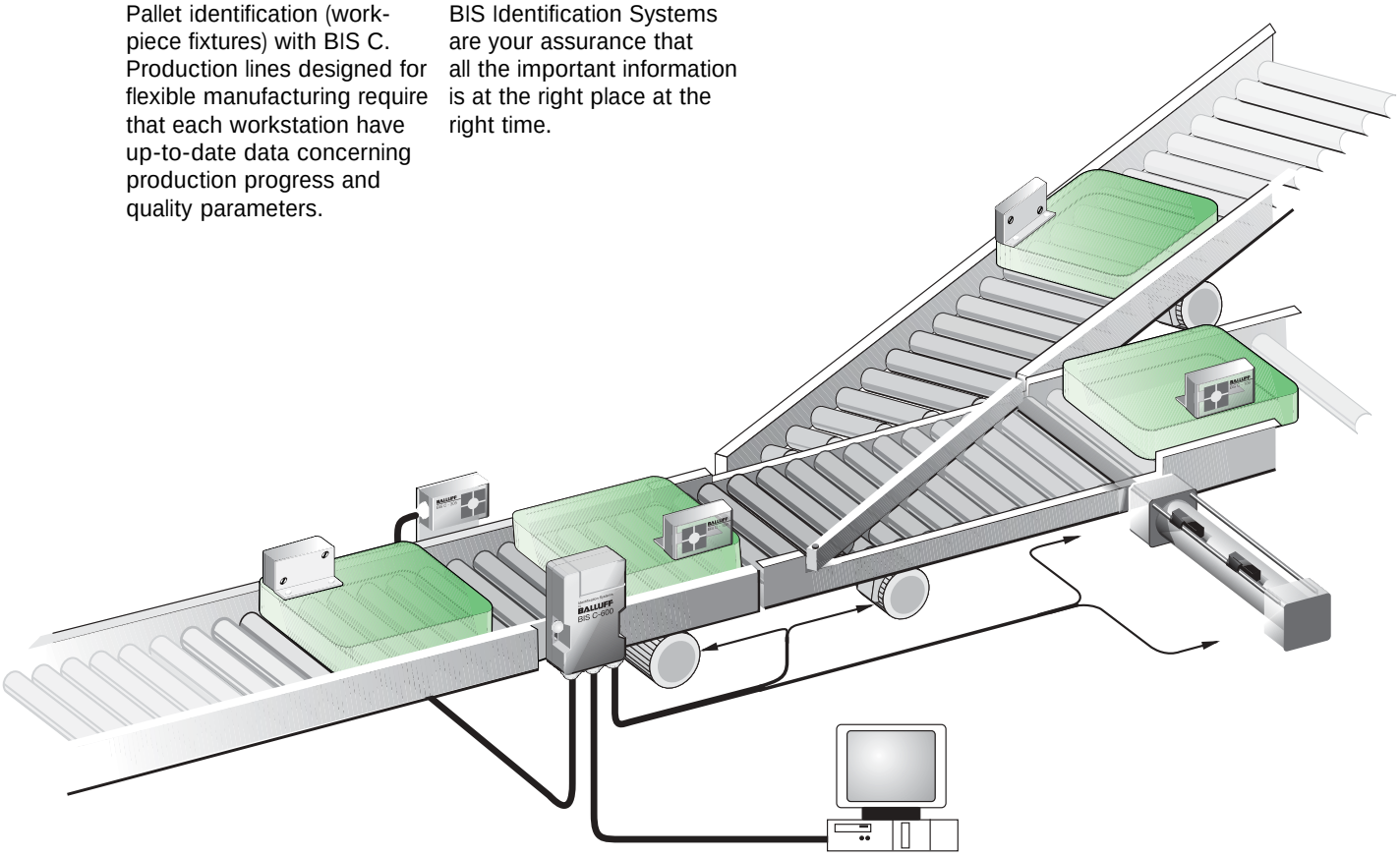
Processor





Pallet identification (work-piece fixtures) with BIS C. Production lines designed for flexible manufacturing require that each workstation have up-to-date data concerning production progress and quality parameters.

BIS Identification Systems are your assurance that all the important information is at the right place at the right time.

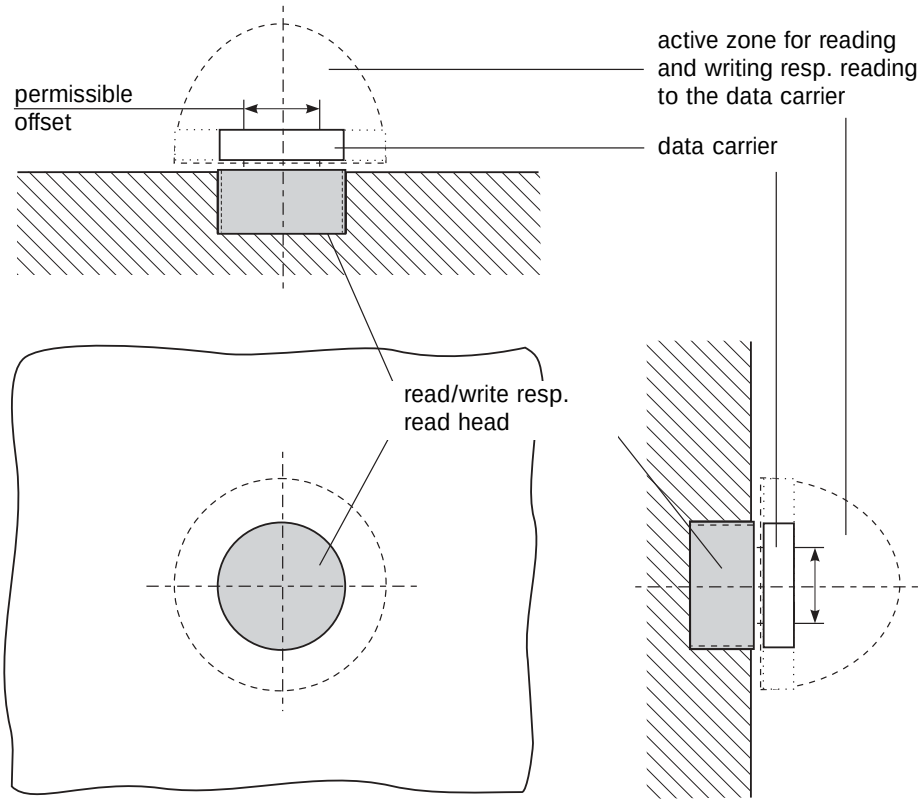


Spatial Arrangement of Read/Write Head resp. Read Head and Data Carrier

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

The sketches on the two following pages are intended to clarify this requirement, in the first sketch for read/write heads resp. read heads with non-directional operation, in the second for read/write heads resp. read heads in cases where the data carrier have to pass by from a certain direction or at a certain orientation.

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.

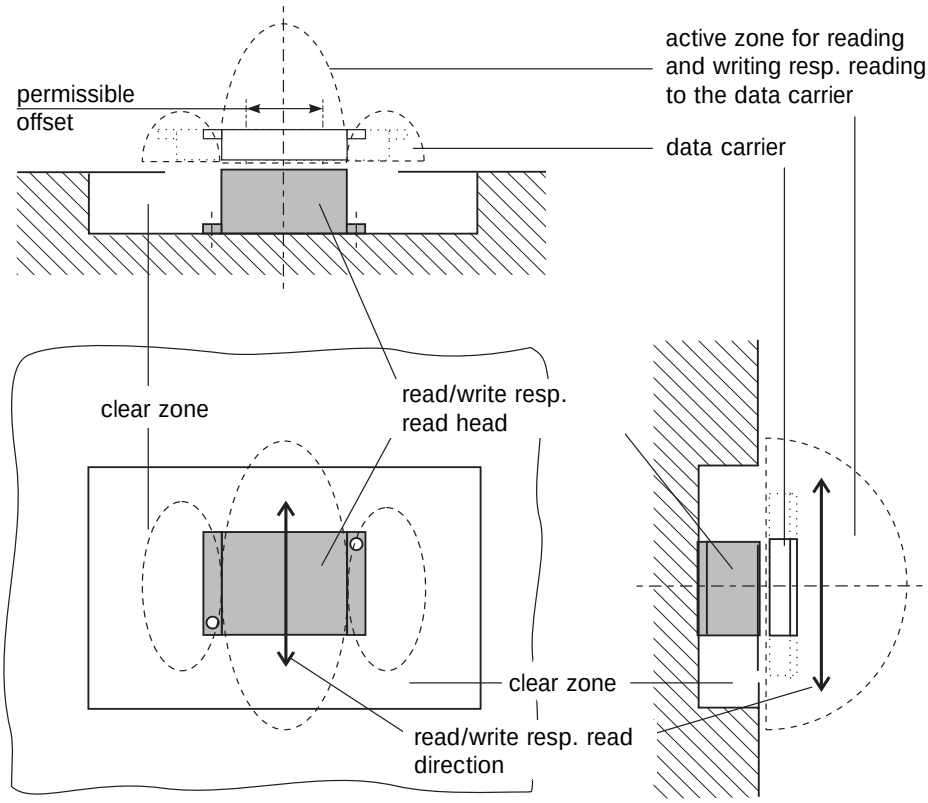


Spatial arrangement of read/write head resp. read head and data carrier for non-directional read/write heads resp. read heads and **flush mounting** (circular antenna).

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).

The associated specifications for distance and permissible offset are indicated as well as the distance and relative speed between the read/write head or read head and the data carrier.



Spatial arrangement of read/write head resp. read head and data carrier for directional read/write heads

resp. read heads and **non-flush mount** (barshaped antenna field).