RFID BASICS

WHY RADIO FREQUENCY IDENTIFICATION?

Today's manufacturing requires timely reporting and reliable material flow to maintain a competitive advantage. Automatic identification simplifies product tracking and data management giving you the competitive edge that modern manufacturers need.

Automatic identification comes in many forms, such as proximity sensors, mechanical flags, bar-codes or optical systems. Limited to reading a few pieces of information, these identification systems can require large centralized data files and are software intensive. Accuracy is irregular and system design is often rigid.

Radio Frequency Identification is a highly flexible solution that overcomes the limits of other Automatic identification systems. In addition to tracking products, RFID can manage information. Data transfer is reliable and safe even under harsh industrial conditions.

HOW DO PASSIVE RFID SYSTEMS WORK?

When a passive tag enters the Transmission Zone, power is transferred to the tag, enabling it to exchange data with the transceiver. (See Transceiver Operation for an explanation of the Transmission Zone.)

WHAT ARE THE ADVANTAGES OF A RFID SYSTEM?

Productivity: RF tags can carry product identification, specific instructions and other data for automated operations. Handling multiple products on the same line takes full advantage of asynchronous and flexible operations. This increases productivity by easing data management and reduces operational failures by providing timely and accurate data.

Profitability: Using RFID to gather information ties individual workstation performance to Quality Control data. Identifying and recording workstation results provides a high quality product with less waste and an improved bottom line.

Decentralization: Local processing of operations occurs at read/write stations. Controllers are free from performing auxiliary tasks and can carry out their main functions. Maintaining the data at the local level allows the Controller to act as a decision maker, not a data processor.

WHERE ARE THESE SYSTEMS APPLIED?

RFID systems provide accurate data for tracking and controlling products in flexible and/or asynchronous automated operations. RFID systems are used for:

Manufacturing	Machining
Warehousing	Material conveying & sorting
Assembly	Quality Control

WHY BALOGH?

Since 1956, BALOGH has offered the industrial market quality products on the leading edge of technology. Today, BALOGH offers you the most complete line of Radio Frequency Identification systems and products available.

Choose BALOGH for...

Flexibility: System design may require many levels of identification and different communication protocols. Only BALOGH RFID systems allow read/write and read-only tags as well as Parallel or Serial Control Boards in the same closed loop system.
Workstation space requirements often vary from station to station. With BALOGH RFID systems, any style of Tag will dialogue with any Transceiver model. Read/write stations with special requirements can be added or subtracted without disrupting RFID data management.

Reliability: Only BALOGH RF tags assure data integrity through a unique duplex communication process. Data integrity is absolute, not a statistical probability.

Service: Our commitment to your satisfaction includes: an 800 number for customer service, training, and personal follow-up by qualified application engineers. Well documented manuals and product data sheets ease installation and system design. BALOGH offers a five year warranty on tags, and a one year warranty on Control Boards—from the date of installation, not the date of sale.

Choose BALOGH for accurate data and a proven product line.

Choose BALOGH—The world leader in Radio Frequency Identification and Control.

1 (800) 252-RFID

QUESTIONS? CALL CUSTOMER SERVICE:
1 (800) 252-RFID

BALOGH

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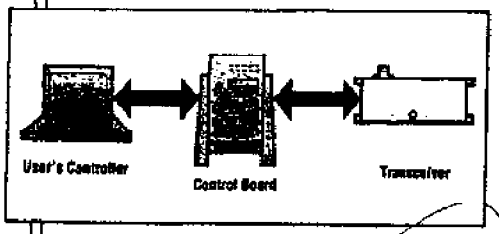
CONTROL BOARD OPERATION

The Control Board provides absolute data security and acts as an interface to the Host Controller. BALOGH offers a variety of Control Boards for Serial, Parallel or Stand-alone control.

The choice of Control Board depends on the following application demands:

- Is it a Read/Write or Read-only application?
- What type of interface is needed? (Serial or Parallel)
- What kind of Controller? (PLC, PC, . . .)
- Does the application need stand-alone control with independent I/O?

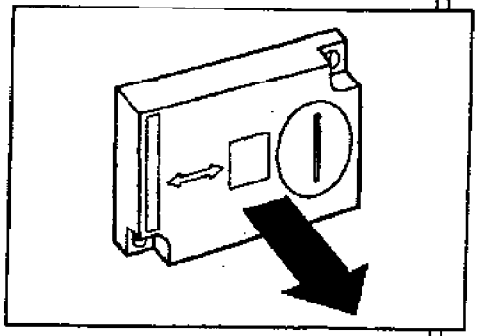


ELECTRONIC TAG OPERATION

There are two families of BALOGH tags:

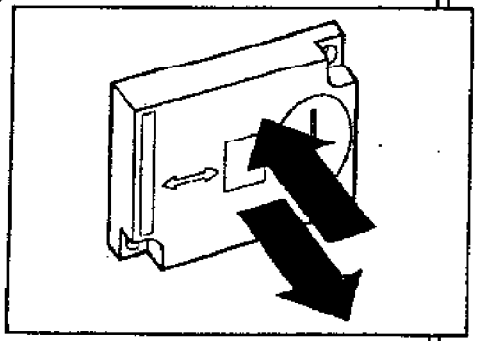
1. Fixed code tags

The "Read-only" tags contain codes that can be programmed in the field or at the factory. Fixed code tags are available with 1 byte, 2 byte or 7 byte memory capacities.



2. Read/Write tags

The Read/Write tags are remotely read or written to when the tag is in the transmission zone. Read/Write tags are available with 64 byte, 2 Kilo-byte or 8 Kilo-byte memory capacities.



The choice of tag depends on the following characteristics:

- Model, shape and mounting configurations of the tags;
- Read/write distance;
- Memory capacity.

Contact Customer Service for information about:

- Proximity Sensors
- Wireless Communications
- Access Control for Dangerous Machines
-

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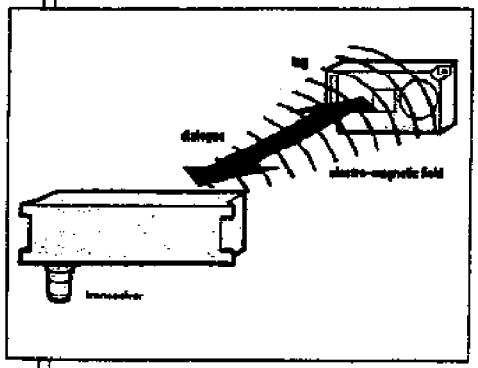
OPERATION OF THE CODING SYSTEM

As a **BALOGH** Tag enters the transmission zone, data transfers without contact through an inductive field established by the transceiver. This transmission is independent of the direction and speed of the tag.

BALOGH Fixed Code and Read/Write Tags are passive. Power for reading or writing comes from the transceiver's electromagnetic field.



Dialogue between the electronic tag and the transceiver through the electro-magnetic field.

TRANSCEIVER OPERATION

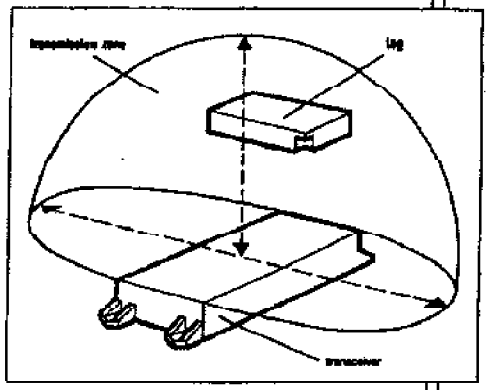
BALOGH Transceivers are modular components; each one is compatible with:

- All Read-only tags;
- All Read/Write tags;
- All Control Boards.

It is the Transceiver that provides the energy for data transmission and reception between the Tag and Transceiver. An electromagnetic field generated by the transceiver determines the dimensions of the transmission zone. As a tag enters the transmission zone, data transfer takes place without contact.

The choice of transceiver depends on the following characteristics:

- Model, shape and mounting requirements of the transceiver;
- Transmission zone dimensions;
- The proximity of the next transceiver.



Transmission zone between the electronic tag and the transceiver.