

**Globalizing operation.  
Facilitating integration.  
Streamlining data flow.**

F190  
RFID UHF read/write head



Your automation, our passion.

**PEPPERL+FUCHS**

# Top Performance for Worldwide Operation

RFID technology is on the leading edge: Reliable identification, seamless data transfer, and continuous system operation – the UHF F190 from Pepperl+Fuchs provides it all in a single device. These features allow global companies to use one UHF read/write head series regardless of location. Such standardization makes system installation and integration convenient, flexible, and user-friendly.

## More flexibility for midrange applications

The F190 is ideal for midrange identification tasks in the automotive industry and intralogistics. Because worldwide operation offers distinct advantages, the F190 series is available in the appropriate frequency ranges for Europe, Asia, and America. This allows for easy integration into production and logistics processes.

## Easy system integration

To make system integration as simple as possible, Pepperl+Fuchs offers ready-made function blocks for easy connection to the most common PLC platforms. Preset country-specific parameters also help make programming and installation easy. Compatibility with the IDENTControl system family allows for easy plant expansion of preexisting RFID systems.

## Robust technology for tough environments

The industrially designed F190 is perfect for a wide range of applications. Its rugged exterior and sealed electronics protect it against the toughest environmental conditions, including high temperatures. The compact housing allows for easy installation in tight spaces. The multicolored LEDs are easy to see from across a room, making it simple to install, maintain, and troubleshoot. The ability to detect many tags at the same time in a single read operation increases productivity and efficiency in production and logistics processes.

## Highlights

- Most flexible midrange UHF read/write head for worldwide use
- Ready-made function blocks designed for quick and easy system integration
- Compact and robust housing for versatile applications and harsh environments
- Switchable antenna polarization guarantees reliable tag detection and enhances process flow
- Multi-tag reading of up to 40 tags ensures increased productivity



# Switchable Antenna Polarization for Reliable Process Flows



The F190 read/write head is an excellent example of how to implement and use complex physical processes. The IUH-F190-V1-FR2\* has an integrated antenna with switchable polarization, so you can adjust the read/write head for a specific application without changing the hardware. Linear vertical/horizontal and circular polarization are possible. This versatility allows for a wide variety of applications while reducing installation costs.

### Linear vertical/horizontal polarization

For applications where you know the orientation of the tag, linear polarization is ideal. You can fine-tune the adjustment of the antenna polarization to the tag and reduce the power level. You can also use polarization to separate tags that are close to each other but with a different orientation. This increases the read rate and reduces the interference of surrounding processes.

### Circular polarization

For applications where the orientation of the tag is unknown or varies, circular polarization is the best choice because reliable detection is independent of tag orientation. An example of this would include applications in which you are identifying unsorted cargo or where the spatial position of the tag can change.

### Selective read range secures plant operation

The read/write head comes with PowerSweep. For every tag access operation, the F190 automatically scans through the predefined power settings until it detects the tag. Therefore, the transmission power can be limited to only what is necessary to find each tag, which reduces possible interference in the system and increases system reliability. The selectable read range made possible by PowerSweep, along with the switchable antenna polarization, guarantee reliable process flow and maximum efficiency.

Model Number	IUH-F190-V1-FR2 (China, Brazil)	IUH-F190-V1-FR2-02 (USA, Canada, Mexico)	IUH-F190-V1-EU (Europe, India)
Operating Frequency	902–928 MHz	902–928 MHz	865–868 MHz
Operating Distance	0.2–1.5 m	0.2–1.5 m	0.2–1.5 m
Dimensions	114 x 112 x 63 mm	114 x 112 x 63 mm	114 x 112 x 50 mm
Degree of Protection	IP67	IP67	IP67
Connection Technology	M12 connector	M12 connector	M12 connector
Antenna Polarization	linear and circular switchable		circular

More countries on request.

\*Valid for IUH-F190-V1-FR2 and for IUH-F190-V1-FR2-02.

For more information please visit  
[www.pepperl-fuchs.com/F190](http://www.pepperl-fuchs.com/F190)

# Increased Productivity and Reliable Processes

The F190 read/write head makes it possible to read tags simultaneously with a single command, which reduces communication overhead and increases efficiency. What's more, the read range of the F190 can be precisely adjusted so that it doesn't interfere with other operations in the manufacturing process, boosting reliability and uptime.

## Reliable processes in automotive manufacturing

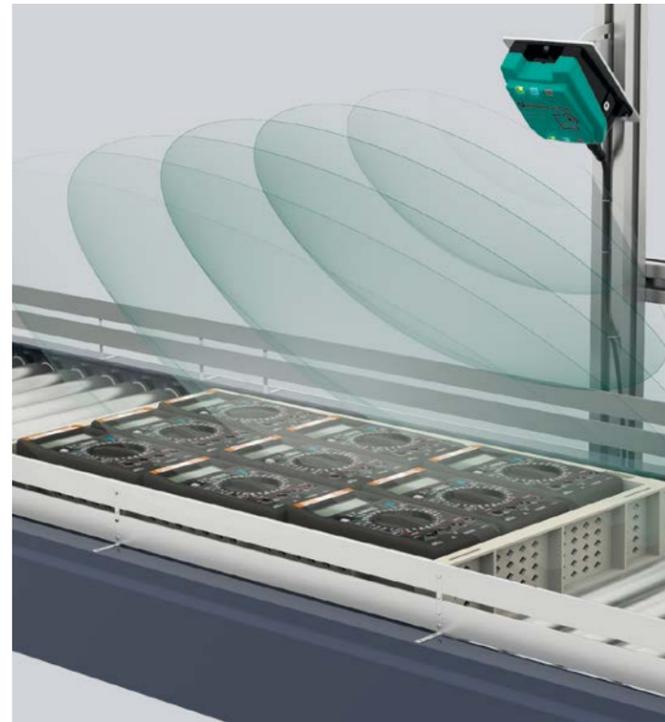
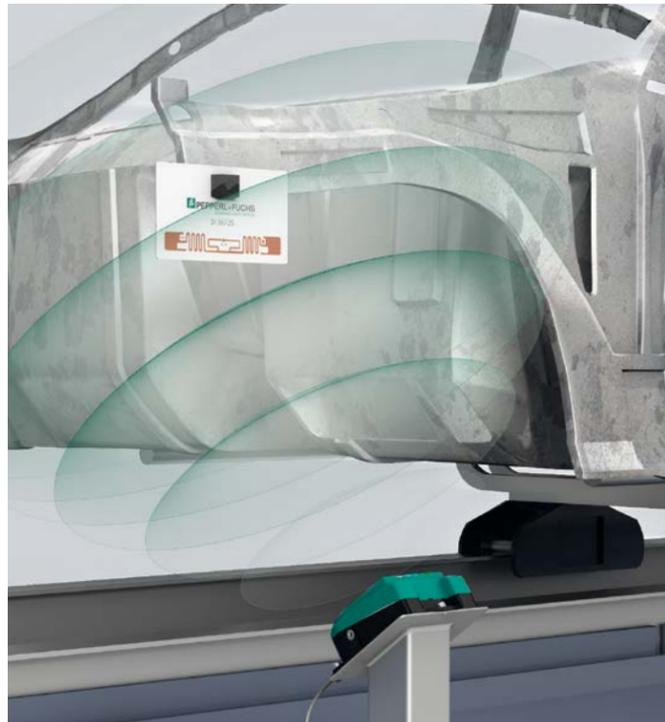
In the automotive industry, productivity and reliability take top priority. Numerous production steps are carried out simultaneously, within the tightest of spaces. The selective read range of the F190 is easily fine-tuned to eliminate any interference from nearby processes.

The write function of the F190 allows you to modify the information on the tags for downstream production steps. The read/write head controls the process for assembling car bodies using the relevant parts intended for the model in question. Multiple tags provide crucial data to the production control system so that the proper parts are used and assembled on each vehicle.

## More efficiency for material handling

When UHF labels move into the read field of the F190, the information contained on these labels is transmitted to the read head and then to the *IDENTControl* interface. Where previously the data was transmitted for each tag individually, the F190 transmits data in bundles. This enables information from several tags to be transmitted to the read head in a single step.

Using the F190, you can streamline data flow considerably and see where your products are located in the production process.



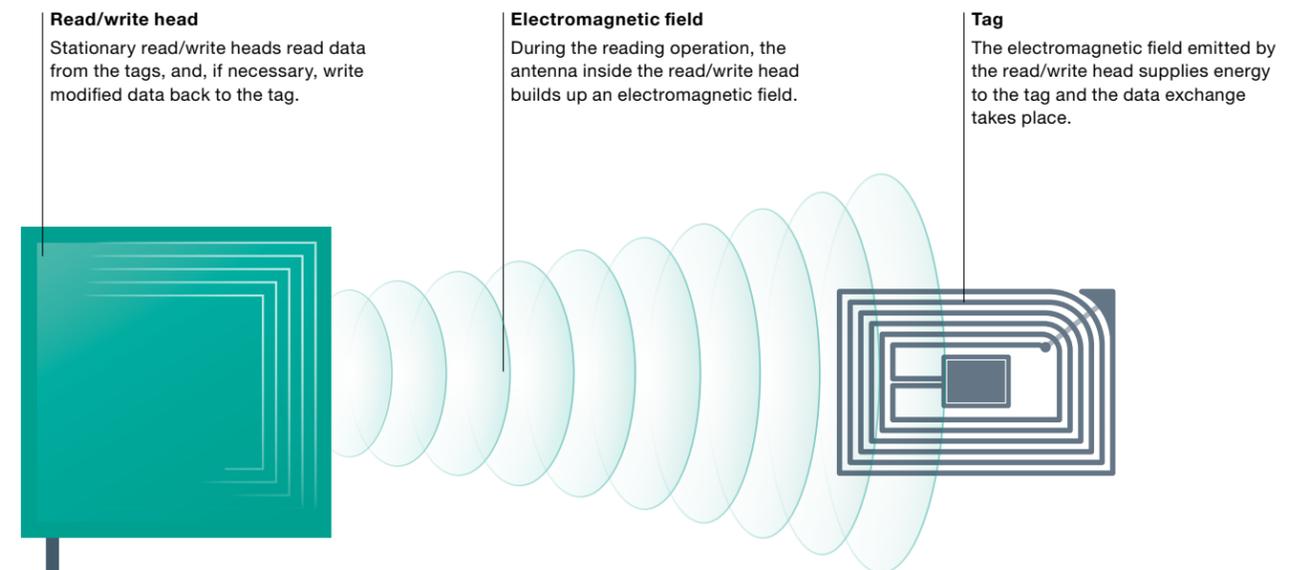
# One RFID System Family Solution for All Frequencies – LF, HF, UHF

Integration made easy: *IDENTControl* is designed for maximum compatibility. Utilizing one of the many *IDENTControl* interfaces, the F190 read/write head becomes an integral part of any of the commonly used industrial fieldbus solutions.

## Discover how RFID technology works

RFID stands for "radio frequency identification," a wireless, noncontact technology that transfers information from a tag to a read/write head and all the way through to the PLC. The tags serve as data storage units. They provide information about products, goods, and even people, and assure a link between data and material flow. This enables more transparent and rapid processes.

For more information about RFID technology and the *IDENTControl* system, please visit [www.pepperl-fuchs.com/rfid](http://www.pepperl-fuchs.com/rfid)



In general, an RFID system consists of a control interface with a connection to a fieldbus, read/write heads, and tags.

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## Process Interfaces

- Intrinsically Safe Barriers
- Signal Conditioners
- Fieldbus Infrastructure
- Remote I/O Systems
- HART Interface Solutions
- Wireless Solutions
- Level Measurement
- Purge and Pressurization Systems
- Industrial Monitors and HMI Solutions
- Explosion Protection Equipment
- Solutions with Process Interfaces

## Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- AS-Interface
- Identification Systems
- Logic Control Units
- Cordsets