



# RFID

## LOW AND HIGH FREQUENCY

RADIO FREQUENCY IDENTIFICATION  
SYSTEMS (RFID)

 **IO-Link**



A  
Swiss  
Company







# RADIO FREQUENCY IDENTIFICATION SYSTEMS (RFID)

## RFID

### LOW AND HIGH FREQUENCY

#### HIGHLIGHTS

- ✓ Low- and high-frequency (LF and HF) systems networkable on ContriNET or on conventional PC using USB connection
- ✓ Widest fieldbus coverage on market

#### LF system

- ✓ All-metal housings, IP 68 and IP 69K
- ✓ Food safe and saltwater resistant (316L/V4A)
- ✓ All tags embeddable in metal

#### HF system

- ✓ ISO/IEC 15693 compatible
- ✓ Fast data transfer time
- ✓ User-defined password protection features

#### NEW

- ✓ HF Read/Write Modules with  IO-Link
- ✓ HF VHT tags for high temperatures
- ✓ LF and HF Read/Write Modules with USB connection

# INTRODUCTION

## RFID SYSTEMS

RFID (Radio Frequency IDentification) is used in numerous automation and logistics domains. It allows objects to be identified by means of electronic labels (transponders or tags).

Compared to classic systems, such as bar codes or laser marking, RFID technology offers important advantages. Transponder information can be read or written even when there is no direct line of sight between it and the Read/Write Module. In addition, information can be added, modified or replaced. It is a useful technology for automated production, reducing human error while increasing reliability, flexibility and traceability.

**ConIdent®** (also called ConID) is the general name of the Contrinex RFID system, including transponders, Read/Write Modules and interfaces in both low frequency (LF) and high frequency (HF) technology.

**ContriNET** is the product name of the Contrinex RFID network and protocol. The ContriNET protocol uses an RS485 physical layer, which allows LF and/or HF Read/Write Modules to be daisy-chained, reducing the total number of interfaces.

- Up to 10 ContriNET RWMs with one USB interface

- Up to 31 ContriNET RWMs with one industrial bus interface

- Up to 254 ContriNET RWMs on a half-duplex RS485 interface

While the usual interfaces allow connection of a limited number of Read/Write Modules (typically 4), ContriNET RWMs can be used to reduce the number of interfaces, which makes the cost of a ConID system more economic than solutions proposed by the competitors.

In principle, a ContriNET network can extend to a length of 200 m

An RFID system always has the structure illustrated on page 371.

## TECHNOLOGY

### LOW FREQUENCY (LF) RFID (31.25 KHZ)

**Contrinex LF RFID** technology features not only conventional plastic components, but also a range of all-metal Read/Write Modules and transponders in stainless steel. These devices are particularly suitable for difficult operating environments where they will be exposed to cleaning, harsh chemicals, water and frost. They are also highly resistant to mechanical shocks.

- Non-standard technology (proprietary data communication)

- Reads and writes through metal

- Works in a metallic environment (fully embeddable)

- High resistance in harsh environments



## HIGH FREQUENCY (HF) RFID (13.56 MHZ)

**Contrinex HF RFID** technology complies with ISO/IEC 15693 and is therefore open to any components that meet this standard. HF systems allow fast communication between transponders and Read/Write Modules as well as extended functionality for tag data protection.

ISO/IEC 15693

Anti-collision, in case of multiple tag detection

Very high temperature tags (VHT 180C / 356F) embeddable in metal Ultra high temperature tags (UHT 250C / 482F)

## RFID COMPONENTS

### TRANSPONDERS (TAGS)

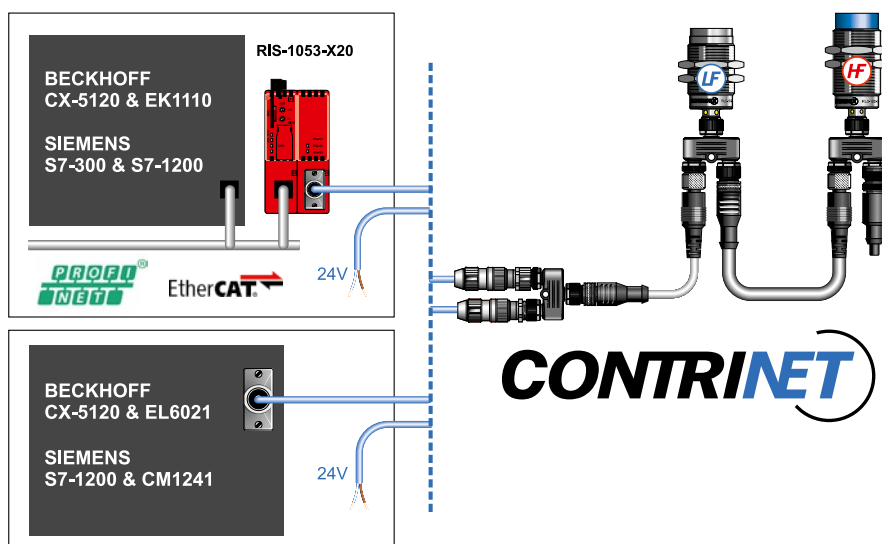
A transponder is an electronic product that stores data. Transponder memory includes a unique preset number as an identifier and a memory area for writing user application data in relation to tagged product information. Writeable data may include, for example, the object's history or the parameters of operations to which it will be subjected.

### READ/WRITE MODULES (RWMS)

A Read/Write Module is a device that allows data to be read from or written to a transponder.

### INTERFACES

An interface connects the Read/Write Modules to an industrial fieldbus. ConID interfaces are available for PROFIBUS, DeviceNet, EtherNet/IP, PROFINET, EtherCAT, POWERLINK, Ethernet TCP/IP and USB.



Communication between the RWM and any tags is provided by the modulation of a carrier frequency.

## PRODUCT FAMILIES

### BASIC

**Contrinex Basic RFID** components are ideal for general identification and monitoring tasks in almost any industry. The family includes low- and high-frequency passive, plastic transponders (tags) and threaded Read/Write Modules (RWMs). All devices are insensitive to dirt. HF components (13.56 MHz) are fully ISO/IEC 15693-compliant, while LF components (31.25 kHz) utilize a proprietary data communication protocol. If the ContriNET protocol is used, LF and HF components can share one network, including the full range of interfaces.

**LF Basic tags** are embeddable and available in diameters of 20 mm, 30 mm and 50 mm. Maximum read/write distances when used with Basic M30 RWMs range from 25 mm to 41 mm. Housings have an IP67 enclosure rating and are temperature resistant from -40 ... +125°C (-40 to +257°F). **LF Basic RWMs** are non-embeddable and, when used with a 50 mm Basic tag, offer maximum read/write distances of 37 mm for the M18 type and 41 mm for the M30 type.

**HF Basic tags** are non-embeddable and available in diameters from 9 mm to 50 mm. Maximum read/write distances when used with Basic M30 RWMs range from 14 mm to 60 mm. Housings have an IP67 enclosure rating and are temperature resistant from -40 ... +125°C (-40 to +257°F). HF Basic RWMs are non-embeddable and, when used with a 50 mm Basic tag, offer maximum read/write distances of 42 mm for the M18 type and 60 mm for the M30 type.

# INTRODUCTION

## EXTREME

The **Extreme** family of metal, low-frequency components is particularly suitable for use in harsh environments, such as the steel industry, agriculture and other outdoor applications. It comprises stainless-steel (V2A / AISI 304) passive tags and threaded RWMs that utilize proprietary LF data communication (31.25 kHz). All components are insensitive to dirt and designed for outstanding performance in metallic environments. If the ContriNET protocol is used, these LF components can share one network with HF types, including the full range of interfaces.

**LF Extreme tags** are readable/writable through metal and available in diameters of 10 mm, 16 mm, 26 mm, M16 and M30. Mounting is fully embeddable, including in metal, and maximum read/write distances when used with Extreme M30 RWMs range from 4 mm to 13 mm. Housings have an IP68 enclosure rating and are temperature resistant from -40 ... +95°C (-40 to +203°F). In addition, a non-embeddable M30 type is also available with a maximum read/write distance of 12 mm and an IP68 & IP69K enclosure rating. LF Extreme RWMs are non-embeddable and, when used with a 26 mm Extreme tag, offer maximum read/write distances of 12 mm for the M18 type and 13 mm for the M30 type. They have an IP68 & IP69K enclosure rating.

## WASHDOWN

The **Washdown** family of full-metal, low-frequency components has been designed for demanding wash-in-place applications within the food, pharmaceutical and other industries. Passive tags from this family offer the highest mechanical and chemical resistance, being fully sealed, laser welded and made of food-grade stainless steel (V4A / AISI 316L). As a result, they are highly corrosion-proof, saltwater resistant and withstand aggressive solvents.

With an enclosure rating of IP68 & IP69K, Washdown components resist high-pressure cleaning and function reliably in water. They have also been optimized for a wide operating temperature range: -40 to +125°C (-40 to +257°F). If the ContriNET protocol is used, LF RWMs can share one network with HF types, including the full range of interfaces.

**LF Washdown tags** are readable/writable through metal, insensitive to dirt and available in diameters of 10 mm, 16 mm, 26 mm, M16 and M30. Mounting is fully embeddable, including in metal, and maximum read/write distances when used with Washdown M30 RWMs range from 4 mm to 13 mm. In addition, a non-embeddable M30 tag is also available with a maximum read/write distance of 12 mm.

**LF Washdown RWMs** are non-embeddable and, when used with a 26 mm Washdown tag, offer maximum read/write distances of 12 mm for the M18 type and 13 mm for the M30 type.

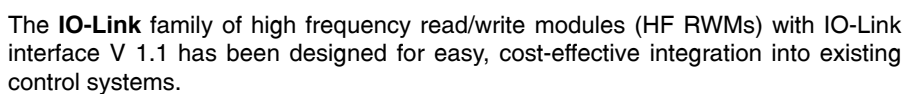
## HIGH TEMPERATURE

With 100 % silicone-free construction and thermal cycling reliability of 1000 hours (or 1000 cycles), passive tags from the High Temperature family are ideal for use in paintshops and other high temperature environments. Tags are insensitive to dirt and their housings have an IP68 & IP69K enclosure rating. HF tags (13.56 MHz) are fully ISO/IEC 15693-compliant, while LF tags (31.25 kHz) utilize proprietary data communication.





For temperatures in the range -25 ... +180°C (-13 to +356°F), a PPS type is also available. With a diameter of 26 mm, this HF tag is suitable for embeddable mounting in metal. The maximum read/write distance with a Basic M30 RWM is 31 mm.



With two operating modes and simplified plug-and-play installation, these HF RWMs reduce installation costs, typically in the logistics, mechanical engineering and automotive industries.

The USB family of low- and high-frequency read/write modules (RWMs) is ideal for user access control stations and tag programming by PC. USB RWMs are robust, economical and easy to mount thanks to standard threaded housings. Available in four sizes (M18/M30 x 35 mm and M18/M30 x 50 mm), they offer read/write distances up to 60 mm with a tag diameter of 50 mm. HF RWMs (13.56 MHz) are fully ISO/IEC 15693-compliant, while LF RWMs (31.25 kHz) utilize proprietary data communication. Host communication relies on the hexadecimal-based ContriNET protocol, which allows LF and HF RWMs to use the same demo software as standard (Basic) ContriNET RWMs. Drivers are available for Windows XP, 7, 10, CE4 & CE5 operating systems.



For each product, a dedicated package of all the necessary support tools (software, firmware, drivers, DLL files, 3D-CAD models, etc.) can be downloaded from the relevant product-finder page on the Contrinex website.

# APPLICATIONS

## WASHING STATIONS

In the harsh environment of a washing station, RFID transponders and Read/Write Modules (RWMs) are exposed to hot water, mechanical shocks, corrosive chemicals and high-pressure jetting. Despite these challenges, identification systems must operate continuously with high reliability.

Typically, RFID tags are mounted on the part carriers. On arrival at the washing station, information from the tag is used to select the correct washing cycle for the part type and process.

### LF Washdown advantages

ConIdent® Washdown passive tags require no power source, minimal maintenance and function reliably in water. Designed to withstand high pressure cleaning and aggressive solvents, their rugged, full-metal, laser welded housings are fully sealed against water penetration (IP 68 or IP 69K) and withstand temperatures up to 125C (+257F). Their extended sensing range reduces the risk of mechanical damage. RWMs that withstand pressure washing are also available.



## MACHINE TOOLS

The presence under pressure of lubricating and cooling fluids, combined with metal particles, makes the machine tool environment particularly difficult. Identification components must resist fluid penetration to prevent machine downtime and ensure the RFID system reliability.

An industrial network of Read/Write Modules (RWMs), interfaces and tags forms a complete RFID system to control the path of each workpiece through all machining cycles, programming and logging every step.

### LF Extreme advantages

Components from the ConIdent® Extreme family offer outstanding performance in metallic environments. All-metal tags and RWMs are insensitive to dirt and resistant to corrosion, impact and abrasion. When embedded in metal, they are impervious with an IP68 & IP69K enclosure rating. Tags are optimized for operating temperatures from -40 to +95C (-40 to +203F) and RWMs, which utilize proprietary data communication (31.25 kHz), are not influenced by the presence of metal particles.





## TESTING LINES

Product testing lines may comprise several test stations, each performing a fixed sequence of tests. For efficient real-time monitoring, identification systems must integrate well into the overall control system.

In a typical RFID system, part carriers are equipped with tags and every test station has a Read/Write Module (RWM). To program the testing machine, the RWM reads from each tag the type of test required for an individual part. After each test, the RWM writes the results back into the appropriate tag memory address/location. Test reports are automatically forwarded to the controller for product acceptance or rejection and fault correction.

### HF Basic advantages

ConIdent® HF Basic tags and RWMs are fully compatible with ISO/IEC 15693, with fast data transfer times and a comprehensive range of interfaces for the widest fieldbus coverage on the market. Thanks to user-defined password protection features, data security is also excellent.

HF Basic RWMs use the powerful ContriNET protocol, which allows LF and HF RWMs to be daisy-chained on the same network. The HF RFID system also includes IO-Link and USB families. IO-Link RWMs allow easy system integration and USB RWMs enable direct connection to a PC.



## PAINT SHOPS

Identification components in paint shops are exposed to a variety of rinsing, coating and burning operations, including electrophoresis. Since soiling makes visual identification difficult or impossible, rugged RFID systems are an excellent solution.

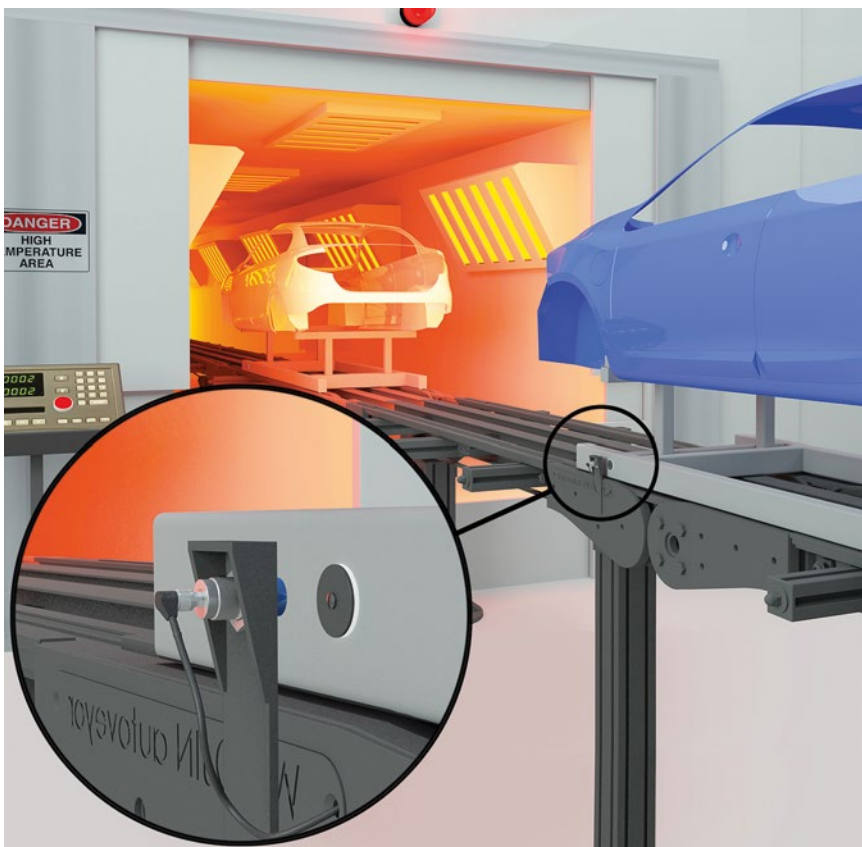
The RFID tag accompanies each product throughout all painting processes. It can store individual data, including customer requirements, directly on the product or carrier. This allows highly automated customized processes, with smaller batches and central data storage.

### HF High Temperature advantages

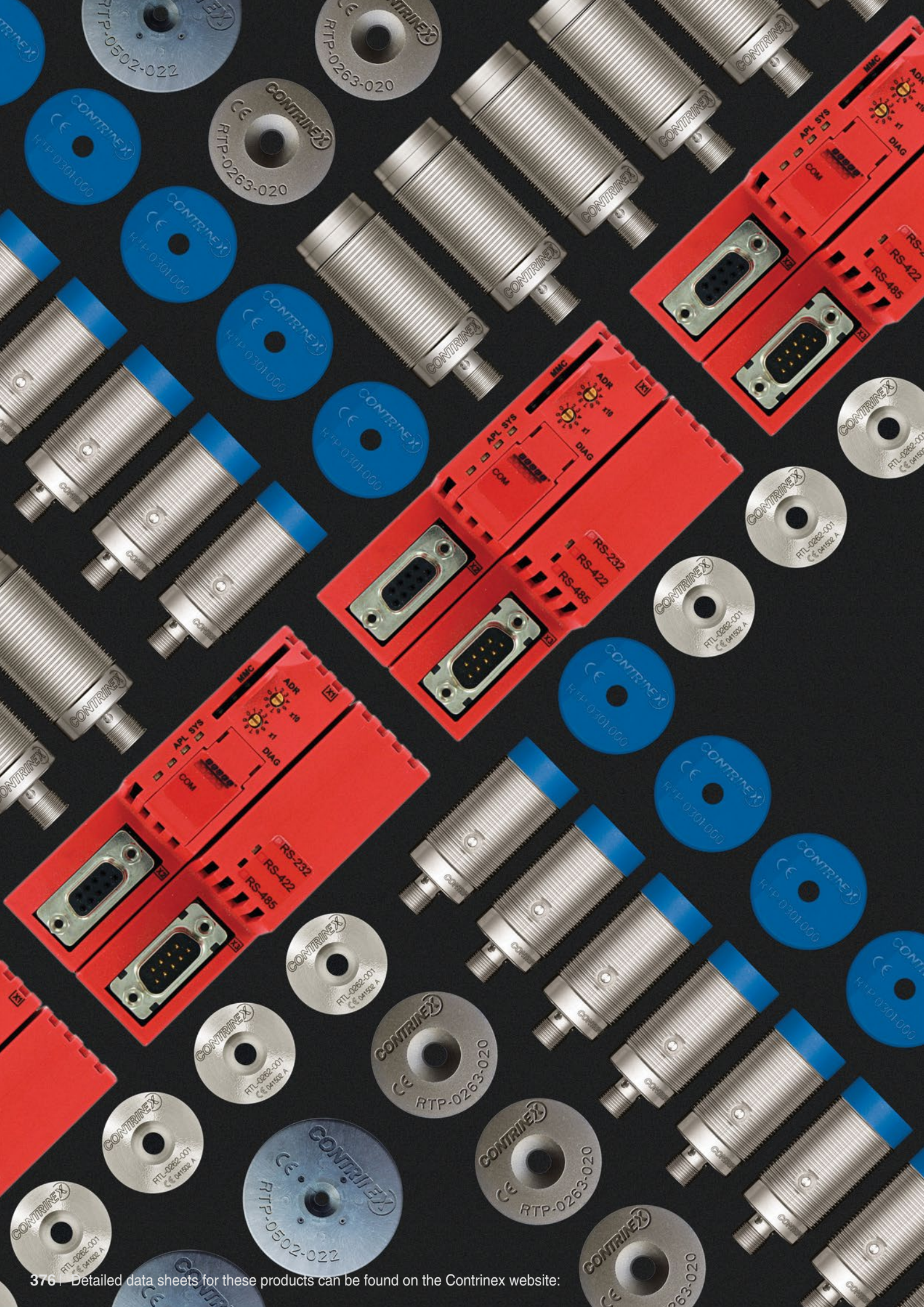
The ConIdent® High Temperature family includes 100 % silicone-free tags that are ideal for paint-shop applications. Life expectancy is exceptionally long, even under intense read/write and temperature cycling.

Tag RTP-0263-020, for embedded or non-embedded mounting in metal; Ø 26 mm (1.02"), temperature resistant up to 180C (356F)

Tag RTP-0502-022, RTP-0502-062, RTP-0502-082, non-embeddable; Ø 50 mm (1.97"), temperature resistant up to 250C (482F) and 100 % silicone-free



















# RFID

|   |   |                          |         |
|---|---|--------------------------|---------|
|    |    | TRANSPONDERS             | 391-401 |
|   |   | READ/WRITE MODULES (RWM) | 402-417 |
|  |  | INTERFACES               | 418-429 |
|  |  | ACCESSORIES              | 430-439 |

# PROGRAM OVERVIEW



## LOW FREQUENCY

| FAMILY      | HOUSING SIZE | READ/<br>WRITE<br>DISTANCE | BASIC  | EXTREME | WASHDOWN |
|-------------|--------------|----------------------------|--------|---------|----------|
| TRANSPONDER | Ø 10         | 0 ... 13 mm                |        | p. 394  | p. 396   |
|             | Ø 16         | 0 ... 19 mm                |        | p. 394  | p. 396   |
|             | M16          | 0 ... 13 mm                |        | p. 395  | p. 397   |
|             | Ø 20         | 0 ... 28 mm                | p. 393 |         |          |
|             | Ø 26         | 0 ... 26 mm                |        | p. 394  | p. 396   |
|             | Ø 30         | 0 ... 29 mm                | p. 393 |         |          |
|             | M30          | 0 ... 23 mm                |        | p. 395  | p. 397   |
|             | Ø 50         | 0 ... 41 mm                | p. 393 |         |          |

| FAMILY | HOUSING SIZE | READ/<br>WRITE<br>DISTANCE | BASIC  | EXTREME | WASHDOWN | USB    |
|--------|--------------|----------------------------|--------|---------|----------|--------|
| RWM    | M18          | 0 ... 36 mm                | p. 404 | p. 404  | p. 405   | p. 414 |
|        | M30          | 0 ... 41 mm                | p. 404 | p. 405  | p. 405   | p. 414 |

| FAMILY    | HOUSING SIZE         | TCP / IP | PROFIBUS | DEVICENET | PROFINET<br>ETHERNET-IP<br>ETHERCAT<br>POWERLINK | USB    |
|-----------|----------------------|----------|----------|-----------|--|--------|
| INTERFACE | 100 x 52             |          | p. 420   | p. 421    | p. 421   |        |
|           | 120 x 80<br>155 x 96 | p. 423   |          |           |  |        |
|           | 67 x 66              |          |          |           |  | p. 428 |





# HIGH FREQUENCY

| FAMILY      | HOUSING SIZE | READ/<br>WRITE<br>DISTANCE | BASIC  | HIGH TEMPERATURE |
|-------------|--------------|----------------------------|--------|------------------|
| TRANSPONDER | Ø 9          | 0 ... 14 mm                | p. 400 |                  |
|             | Ø 16         | 0 ... 31 mm                | p. 400 |                  |
|             | Ø 20         | 0 ... 25 mm                | p. 399 |                  |
|             | Ø 26         | 0 ... 31 mm                |        | p. 400           |
|             | Ø 30         | 0 ... 45 mm                | p. 399 |                  |
|             | Ø 50         | 0 ... 50 mm                | p. 399 | p. 401           |

Inductive

Photoelectric

Safety

RFID

| FAMILY | HOUSING SIZE | READ/<br>WRITE<br>DISTANCE | BASIC  | IO-LINK | USB    |
|--------|--------------|----------------------------|--------|---------|--------|
| RWM    | M18          | 0 ... 42 mm                | p. 406 | p. 411  | p. 415 |
|        | M30          | 0 ... 60 mm                | p. 406 | p. 411  | p. 415 |

Connectivity

Accessories










| FAMILY    | HOUSING SIZE         | TCP / IP | PROFIBUS | DEVICENET | PROFINET<br>ETHERNET-IP<br>ETHERCAT<br>POWERLINK | USB    |
|-----------|----------------------|----------|----------|-----------|--|--------|
| INTERFACE | 100 x 52             |          | p. 420   | p. 421    | p. 421   |        |
|           | 120 x 80<br>155 x 96 | p. 423   |          |           |  |        |
|           | 67 x 66              |          |          |           |  | p. 428 |

Glossary

Index



# LOW FREQUENCY

| TRANSPONDER   | TYPE             | PART NO.     | IC     | USER DATA (BYTE) | MOUNTING       |
|---|------------------|--------------|--------|------------------|----------------|
|    | Full metal - V2A | RTF-1300-000 | EM4056 | 240              | Non-embeddable |
|    | Full metal - V4A | RTL-0102-001 | EM4056 | 240              | Embeddable     |
|    | Full metal - V4A | RTL-0162-001 | EM4056 | 240              | Embeddable     |
|    | Full metal - V4A | RTL-0262-001 | EM4056 | 240              | Embeddable     |
|  | Full metal - V4A | RTL-1302-001 | EM4056 | 240              | Non-embeddable |
|  | Full metal - V4A | RTL-2162-001 | EM4056 | 240              | Embeddable     |
|  | Full metal - V4A | RTL-2302-001 | EM4056 | 240              | Embeddable     |
|  | Metal - V2A      | RTM-0100-000 | EM4056 | 240              | Embeddable     |
|  | Metal - V2A      | RTM-0160-000 | EM4056 | 240              | Embeddable     |
|  | Metal - V2A      | RTM-0260-000 | EM4056 | 240              | Embeddable     |








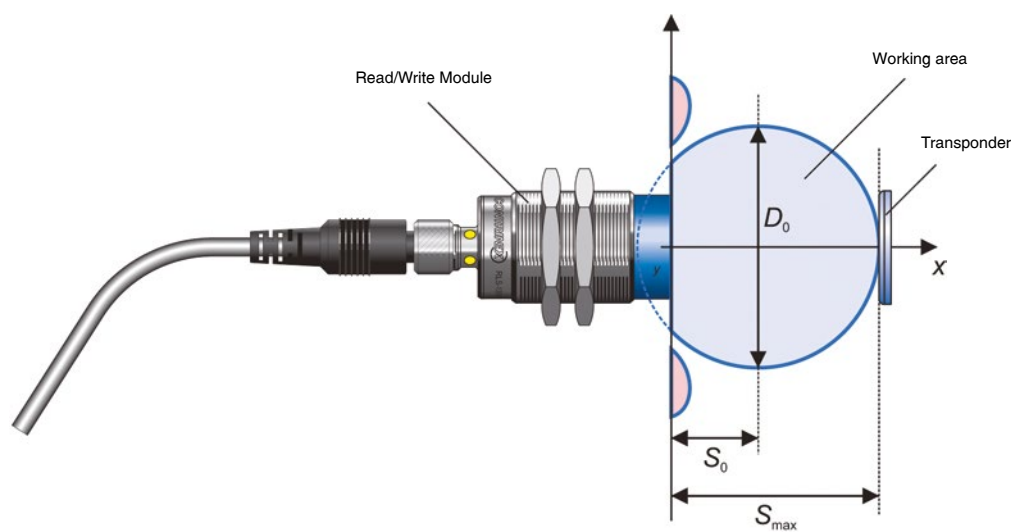
# TRANSPONDER OVERVIEW

| MAX. READING DISTANCE (MM)<br>S MAX MEASURED IN FREE AIR |              | TEMPERATURE RANGE |             |           |        | Inductive |               |
|--|--------------|-------------------|-------------|-----------|--------|-----------|---------------|
|  |              | MIN<br>(°C)       | MAX<br>(°C) | TESTED    |        |           |               |
|  |              |                   |             | DURATION  | CYCLES |           |               |
| 21   | RLS-1181-030 | -40               | +80         | Operating | -      | -         | Photoelectric |
| 23   | RLS-1301-030 | -40               | +95         | Storage   |        |           |               |
| 13   | RLS-1181-030 | -40               | +125        | Operating | -      | -         |               |
| 14   | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 17   | RLS-1181-030 | -40               | +125        | Operating | -      | -         | Safety        |
| 19   | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 23   | RLS-1181-030 | -40               | +125        | Operating | -      | -         |               |
| 26   | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 16   | RLS-1181-030 | -40               | +125        | Operating | -      | -         | RFID          |
| 18   | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 13   | RLS-1181-030 | -40               | +125        | Operating | -      | -         | Connectivity  |
| 13   | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 16   | RLS-1181-030 | -40               | +125        | Operating | -      | -         |               |
| 18   | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 13   | RLS-1181-030 | -40               | +80         | Operating | -      | -         | Accessories   |
| 14   | RLS-1301-030 | -40               | +95         | Storage   |        |           |               |
| 17   | RLS-1181-030 | -40               | +80         | Operating | -      | -         |               |
| 19   | RLS-1301-030 | -40               | +95         | Storage   |        |           |               |
| 23   | RLS-1181-030 | -40               | +80         | Operating | -      | -         | Glossary      |
| 26   | RLS-1301-030 | -40               | +95         | Storage   |        |           |               |
|  |              |                   |             |           |        |           | Index         |



# LOW FREQUENCY

| TRANSPONDER   | TYPE        | PART NO.     | IC     | USER DATA (BYTE) | MOUNTING   |
|---|-------------|--------------|--------|------------------|------------|
| <br><br><br><br> | Metal - V2A | RTM-2160-000 | EM4056 | 240              | Embeddable |
|   | Metal - V2A | RTM-2300-000 | EM4056 | 240              | Embeddable |
|   | Plastic STD | RTP-0201-000 | EM4056 | 240              | Embeddable |
|   | Plastic STD | RTP-0301-000 | EM4056 | 240              | Embeddable |
|   | Plastic STD | RTP-0501-000 | EM4056 | 240              | Embeddable |



RFID performance, operating zone



# TRANSPONDER OVERVIEW

| MAX. READING DISTANCE (MM)<br>S <sub>MAX</sub> MEASURED IN FREE AIR |              | TEMPERATURE RANGE |             |           |        | Inductive |               |
|---|--------------|-------------------|-------------|-----------|--------|-----------|---------------|
|   |              | MIN<br>(°C)       | MAX<br>(°C) | TESTED    |        |           |               |
|   |              |                   |             | DURATION  | CYCLES |           |               |
| 13  | RLS-1181-030 | -40               | +80         | Operating | -      | -         | Photoelectric |
| 13  | RLS-1301-030 | -40               | +95         | Storage   |        |           |               |
| 16  | RLS-1181-030 | -40               | +80         | Operating | -      | -         | Photoelectric |
| 18  | RLS-1301-030 | -40               | +95         | Storage   |        |           |               |
| 25  | RLS-1181-030 | -40               | +125        | Operating | 100 h  | 100       | Safety        |
| 28  | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 26  | RLS-1181-030 | -40               | +125        | Operating | 100 h  | 100       | Safety        |
| 29  | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |
| 36  | RLS-1181-030 | -40               | +125        | Operating | -      | -         | RFID          |
| 41  | RLS-1301-030 | -40               | +125        | Storage   |        |           |               |

$$D_0 = 2 \cdot (S_{max} - S_0)$$










$$V_{R_{max}} = \frac{D_0}{T_R} = \frac{2 \cdot (S_{max} - S_0)}{T_0 + N \cdot T_{R0}}$$

$$V_{W_{max}} = \frac{D_0}{T_W} = \frac{2 \cdot (S_{max} - S_0)}{T_0 + N \cdot T_{W0}}$$

RFID performance, calculation of maximum read  
and write speed



# HIGH FREQUENCY

| TRANSPONDER   | TYPE        | PART NO.     | IC           | USER DATA (BYTE) | MOUNTING       |
|---|-------------|--------------|--------------|------------------|----------------|
|    | Plastic STD | RTP-0201-020 | I-Code SLI-S | 160              | Non-embeddable |
|    | Plastic VHT | RTP-0263-020 | I-Code SLI-S | 160              | Embeddable     |
|    | Plastic STD | RTP-0301-020 | I-Code SLI-S | 160              | Non-embeddable |
|    | Plastic STD | RTP-0501-020 | I-Code SLI-S | 160              | Non-embeddable |
|  | Plastic STD | RTP-0090-020 | I-Code SLI-S | 160              | Non-embeddable |
|  | Plastic STD | RTP-0160-020 | I-Code SLI-S | 160              | Non-embeddable |
|  | Plastic UHT | RTP-0502-022 | I-Code SLI-S | 160              | Non-embeddable |
|  | Plastic UHT | RTP-0502-062 | MB89R118C    | 2000             | Non-embeddable |
|  | Plastic UHT | RTP-0502-082 | I-Code SLI   | 112              | Non-embeddable |



# TRANSPONDER OVERVIEW

| MAX. READING DISTANCE (MM)<br>S <sub>MAX</sub> MEASURED IN FREE AIR |  | TEMPERATURE RANGE |                |          |        | Inductive     |
|---|--|-------------------|----------------|----------|--------|---------------|
|   |  | MIN<br>(°C)       | MAX<br>(°C)    | TESTED   |        |               |
|   |  |                   |                | DURATION | CYCLES |               |
| 14 RLS-1183-020   |  | -25               | +85 Operating  | -        | -      | Photoelectric |
| 25 RLS-1303-020   |  | -40               | +125 Storage   |          |        |               |
| 21 RLS-1183-020   |  | -25               | +180 Operating | 1000 h   | 1000   | Photoelectric |
| 31 RLS-1303-020   |  | -40               | +180 Storage   |          |        |               |
| 26 RLS-1183-020   |  | -25               | +85 Operating  | -        | -      | Safety        |
| 45 RLS-1303-020   |  | -40               | +125 Storage   |          |        |               |
| 31 RLS-1183-020   |  | -25               | +85 Operating  | -        | -      | RFID          |
| 47 RLS-1303-020   |  | -40               | +125 Storage   |          |        |               |
| 14 RLS-1183-020   |  | -20               | +85 Operating  | 500 h    | 500    | RFID          |
| 14 RLS-1303-020   |  | -20               | +110 Storage   |          |        |               |
| 19 RLS-1183-020   |  | -20               | +85 Operating  | 500 h    | 500    | Connectivity  |
| 31 RLS-1303-020   |  | -20               | +110 Storage   |          |        |               |
| 38 RLS-1183-020   |  | -25               | +150 Operating | 1000 h   | 1000   | Connectivity  |
| 50 RLS-1303-020   |  | -25               | +250 Storage   |          |        |               |
| 21.5 RLS-1183-020   |  | -25               | +150 Operating | 1000 h   | 1000   | Accessories   |
| 44.5 RLS-1303-020   |  | -25               | +250 Storage   |          |        |               |
| 33 RLS-1183-020   |  | -25               | +150 Operating | 1000 h   | 1000   | Accessories   |
| 42.5 RLS-1303-020   |  | -25               | +250 Storage   |          |        |               |
|   |  |                   |                |          |        | Glossary      |
|   |  |                   |                |          |        | Index         |

# READ/WRITE MODULES


















| RWM  | TYPE                   | PART NO.         | STANDARD      | ENCLOSURE RATING | MOUNTING       |
|--|------------------------|------------------|---------------|------------------|----------------|
|  | Full metal - V2A       | RLS-1180-030     | Proprietary   | IP 68 / IP 69K   | Non-embeddable |
|  | Plastic head           | RLS-1181-030     | Proprietary   | IP 67            | Non-embeddable |
|  | USB - Plastic head     | RLS-1181-230     | Proprietary   | IP 67            | Non-embeddable |
|  | Full metal - V2A       | RLS-1300-030     | Proprietary   | IP 68 / IP 69K   | Non-embeddable |
|  | Plastic head           | RLS-1301-030     | Proprietary   | IP 67            | Non-embeddable |
|  | USB - Plastic head     | RLS-1301-230     | Proprietary   | IP 67            | Non-embeddable |
|  | USB - Plastic head     | RLS-1181-220     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  | USB - Plastic head     | RLS-1181-220-120 | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  | IO-Link - Plastic head | RLS-1181-320     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  | Plastic head           | RLS-1183-020     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  | USB - Plastic head     | RLS-1301-220     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  | USB - Plastic head     | RLS-1301-220-120 | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  | IO-Link - Plastic head | RLS-1301-320     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  | Plastic head           | RLS-1303-020     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |                        |                  |               |                  |                |
|  |                        |                  |               |                  |                |



# OVERVIEW

| MAX. READING DISTANCE (MM)<br>S <sub>MAX</sub> MEASURED IN FREE AIR |     | TEMPERATURE RANGE |             |          |        | Inductive     |
|---|-----|-------------------|-------------|----------|--------|---------------|
|   |     | MIN<br>(°C)       | MAX<br>(°C) | TESTED   |        |               |
|   |     |                   |             | DURATION | CYCLES |               |
| <div>12</div> RTP-0301-000  | -25 | <div>+80</div>    | Operating   | -        | -      |               |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |
| <div>36</div> RTP-0501-000  | -25 | <div>+80</div>    | Operating   | -        | -      | Photoelectric |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |
| <div>36</div> RTP-0501-000  | -25 | <div>+70</div>    | Operating   | -        | -      |               |
|   | -25 | <div>+70</div>    | Storage     |          |        |               |
| <div>12</div> RTP-0301-000  | -25 | <div>+80</div>    | Operating   | -        | -      | Safety        |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |
| <div>41</div> RTP-0501-000  | -25 | <div>+80</div>    | Operating   | -        | -      |               |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |
| <div>41</div> RTP-0501-000  | -25 | <div>+70</div>    | Operating   | -        | -      | RFID          |
|   | -25 | <div>+70</div>    | Storage     |          |        |               |
| <div>31</div> RTP-0501-020  | -25 | <div>+70</div>    | Operating   | -        | -      |               |
|   | -25 | <div>+70</div>    | Storage     |          |        |               |
| <div>31</div> RTP-0501-020  | -25 | <div>+70</div>    | Operating   | -        | -      | Connectivity  |
|   | -25 | <div>+70</div>    | Storage     |          |        |               |
| <div>40.5</div> RTP-0502-082  | -25 | <div>+80</div>    | Operating   | -        | -      |               |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |
| <div>31</div> RTP-0501-020  | -25 | <div>+80</div>    | Operating   | -        | -      | Accessories   |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |
| <div>60</div> RTP-0501-020  | -25 | <div>+70</div>    | Operating   | -        | -      |               |
|   | -25 | <div>+70</div>    | Storage     |          |        |               |
| <div>60</div> RTP-0501-020  | -25 | <div>+70</div>    | Operating   | -        | -      | Glossary      |
|   | -25 | <div>+70</div>    | Storage     |          |        |               |
| <div>62.5</div> RTP-0502-022  | -25 | <div>+80</div>    | Operating   | -        | -      |               |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |
| <div>50</div> RTP-0502-022  | -25 | <div>+80</div>    | Operating   | -        | -      | Index         |
|   | -25 | <div>+80</div>    | Storage     |          |        |               |

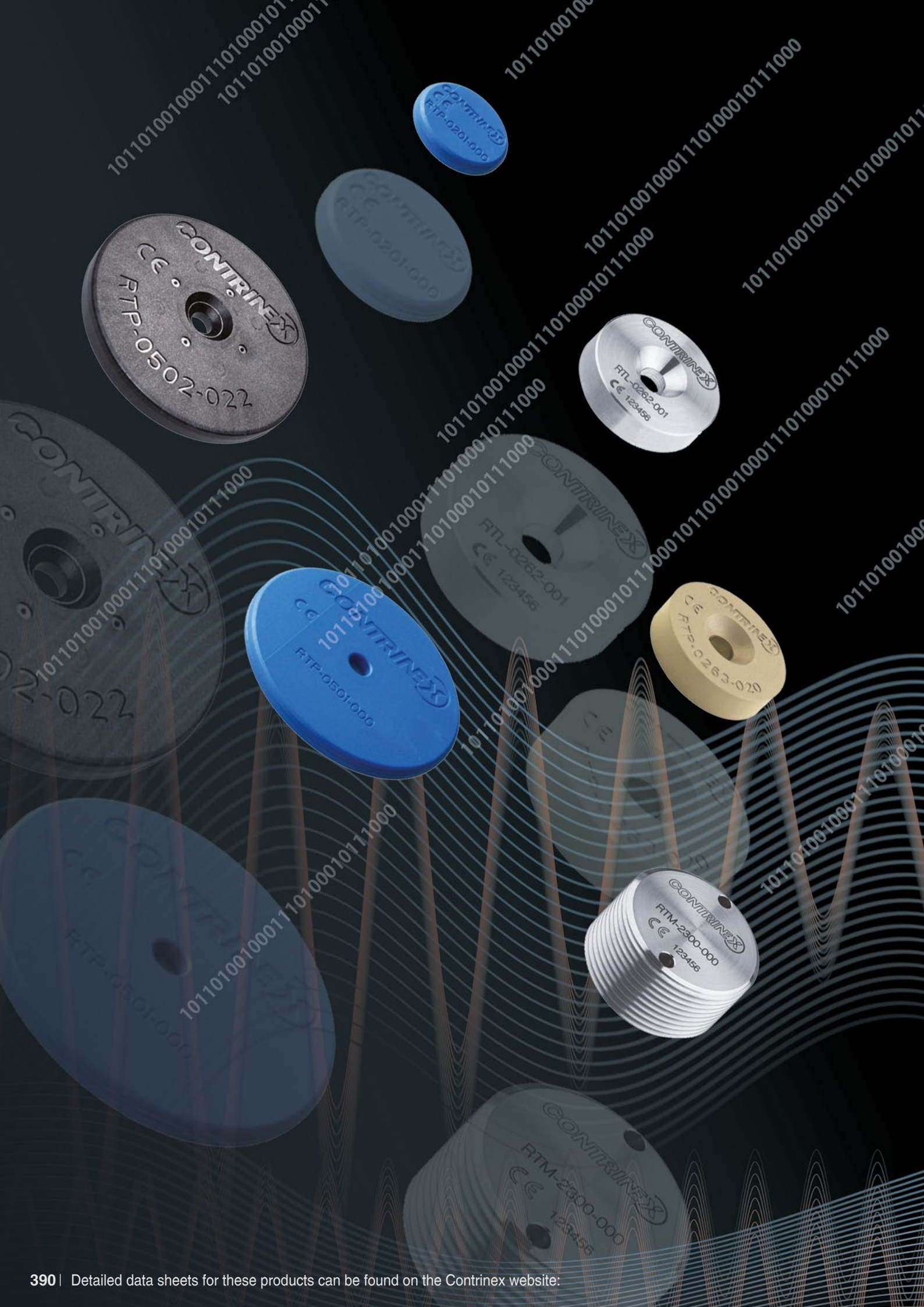
# MAX. CONVEYOR SPEED

| RWM  | TYPE  | PART NO.         | STANDARD      | ENCLOSURE RATING | MOUNTING       |
|--|---|------------------|---------------|------------------|----------------|
|    |    | RLS-1180-030     | Proprietary   | IP 68 / IP 69K   | Non-embeddable |
|  |    | RLS-1181-030     | Proprietary   | IP 67            | Non-embeddable |
|  |    | RLS-1181-230     | Proprietary   | IP 67            | Non-embeddable |
|  |    | RLS-1300-030     | Proprietary   | IP 68 / IP 69K   | Non-embeddable |
|  |    | RLS-1301-030     | Proprietary   | IP 67            | Non-embeddable |
|  |   | RLS-1301-230     | Proprietary   | IP 67            | Non-embeddable |
|  |  | RLS-1181-220     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  | RLS-1181-220-120 | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  | RLS-1181-320     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  | RLS-1183-020     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  | RLS-1301-220     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  | RLS-1301-220-120 | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  | RLS-1301-320     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  | RLS-1303-020     | ISO/IEC 15693 | IP 67            | Non-embeddable |
|  |  |                  |               |                  |                |
|  |   |                  |               |                  |                |
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|  |   |                  |               |                  |                |



# FOR READ/WRITE OPERATIONS

| $S_{MAX}$ (MM) | $S_0$ (MM) | $D_0$ (MM) | N | $V_{RMAX}$ 32 BITS<br>DATA(CM/S) | $V_{WMAX}$ 32 BITS<br>DATA(CM/S) | TARGET       |               |
|----------------|------------|------------|---|----------------------------------|----------------------------------|--------------|---------------|
| 12             | 0          | 24         | 2 | 8.3                              | 5.6                              | RTP-0301-000 | Inductive     |
| 36             | 12         | 48         | 2 | 16.6                             | 11.2                             | RTP-0501-000 | Photoelectric |
| 36             | 12         | 48         | 2 | 16.6                             | 11.2                             | RTP-0501-000 | Photoelectric |
| 12             | 0          | 24         | 2 | 8.3                              | 5.6                              | RTP-0301-000 | Safety        |
| 41             | 15         | 52         | 2 | 17.9                             | 12.1                             | RTP-0501-000 | Safety        |
| 41             | 15         | 52         | 2 | 17.9                             | 12.1                             | RTP-0501-000 | RFID          |
| 31             | 8          | 46         | 1 | 230                              | 191.7                            | RTP-0501-020 | RFID          |
| 31             | 8          | 46         | 1 | 230                              | 191.7                            | RTP-0501-020 | Connectivity  |
| 40.5           | 15.5       | 50         | 1 | 250                              | 208.3                            | RTP-0502-082 | Connectivity  |
| 31             | 8          | 46         | 1 | 230                              | 191.7                            | RTP-0501-020 | Accessories   |
| 60             | 27         | 66         | 1 | 330                              | 275                              | RTP-0501-020 | Accessories   |
| 60             | 27         | 66         | 1 | 330                              | 275                              | RTP-0501-020 | Glossary      |
| 62.5           | 29.5       | 66         | 1 | 330                              | 275.0                            | RTP-0502-022 | Glossary      |
| 50             | 27         | 66         | 1 | 330                              | 275                              | RTP-0502-022 | Index         |





TRANSPONDERS FOR ALL ENVIRONMENTS

# TRANSPONDERS



LOW FREQUENCY



HIGH FREQUENCY

## KEY ADVANTAGES

- ✓ Passive (no battery)

### LF

- ✓ Stainless steel tags (transponders) for harsh environments
- ✓ Insensitive to dirt
- ✓ All tags embeddable in metal
- ✓ Tags readable/writeable through metal
- ✓ Food safe and saltwater resistant tags, IP68 & IP69K

### HF

- ✓ Compatible with ISO/IEC 15693
- ✓ Insensitive to dirt
- ✓ Tags for temperatures up to 250C (482F)
- ✓ PPS tags that can be embedded in metal, IP68 & IP69K





# LOW FREQUENCY

## STRUCTURE OF MEMORY

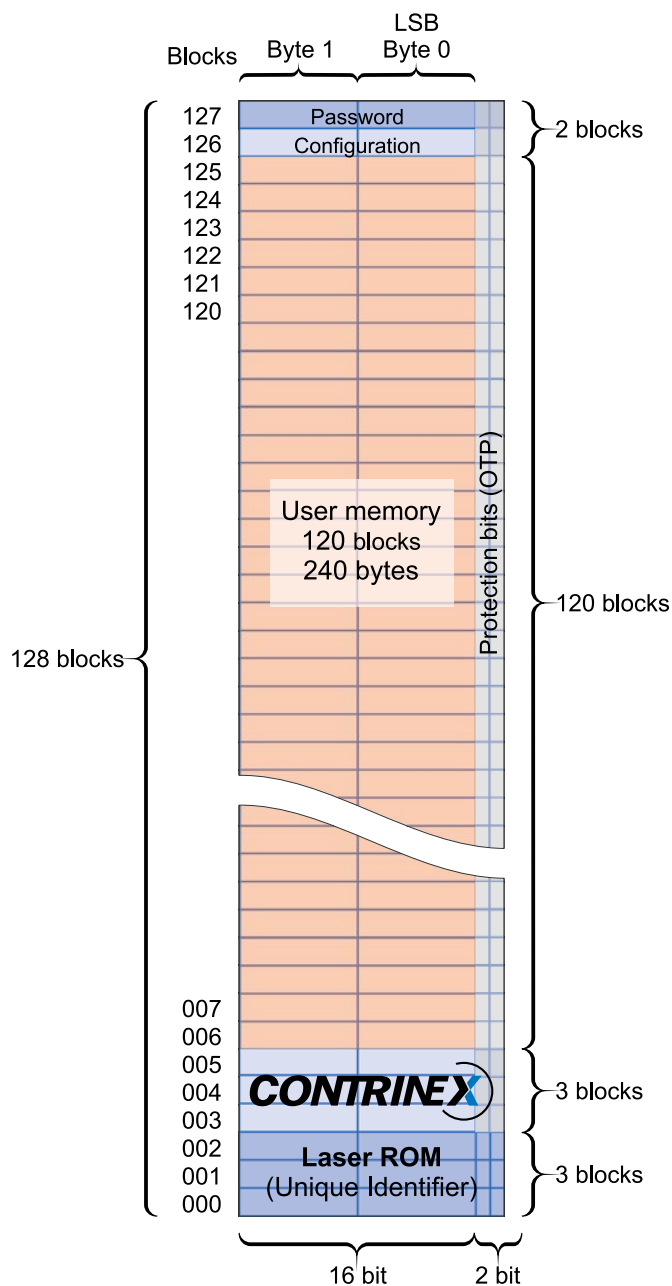
## FAMILY

## HOUSING SIZE MM

## MAX. READ/WRITE DISTANCE MM

## TECHNICAL DATA

|                          |             |
|--------------------------|-------------|
| Compatible IC type       | EM4056      |
| Read/write memory        | 240 bytes   |
| Read only memory         | 12 bytes    |
| Number of bits per block | 16 bits     |
| Standard                 | Proprietary |



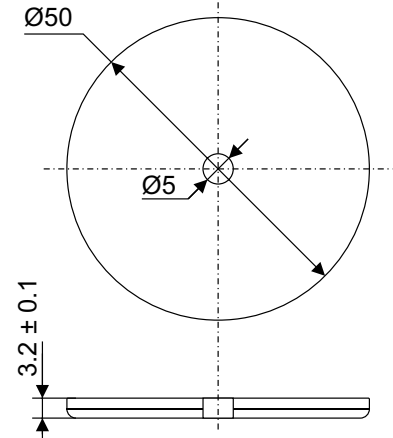
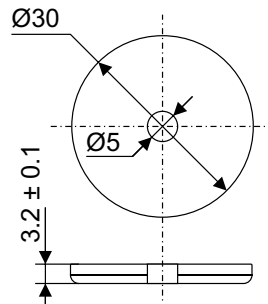
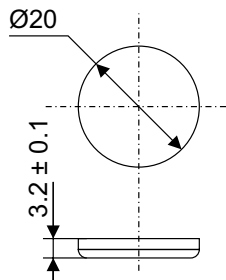
## DATA

|                           |
|---------------------------|
| Housing material          |
| Mounting                  |
| Ambient temperature range |
| Storage temperature range |
| Weight                    |
| Part reference            |

Various tag memory protection possibilities are provided, including password protection and OTP read and write protection of data blocks.

# TRANSPONDERS

| BASIC | BASIC | BASIC |
|-------|-------|-------|
| Ø 20  | Ø 30  | Ø 50  |
| 28    | 29    | 41    |



| PBTP glass-fiber reinforced     | PBTP glass-fiber reinforced     | PBTP glass-fiber reinforced     |
|---------------------------------|---------------------------------|---------------------------------|
| Embeddable                      | Embeddable                      | Embeddable                      |
| -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F |
| -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F |
| 1.3 g                           | 2.3 g                           | 5.7 g                           |
| RTP-0201-000                    | RTP-0301-000                    | RTP-0501-000                    |

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

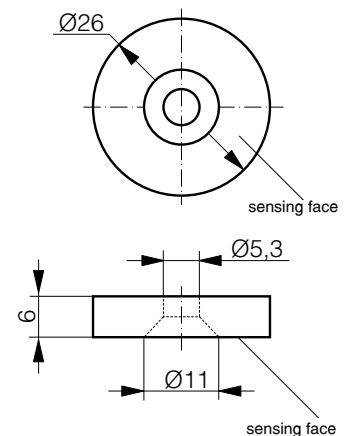
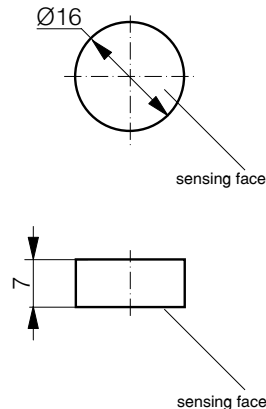
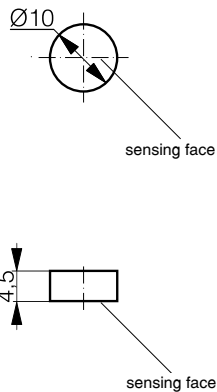
Glossary

Index



# LOW FREQUENCY

| FAMILY                      | EXTREME | EXTREME | EXTREME |
|-----------------------------|---------|---------|---------|
| HOUSING SIZE MM             | Ø 10    | Ø 16    | Ø 26    |
| MAX. READ/WRITE DISTANCE MM | 13      | 19      | 26      |

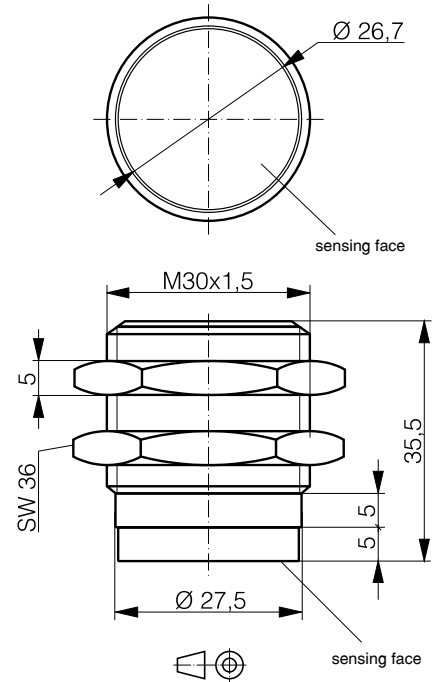
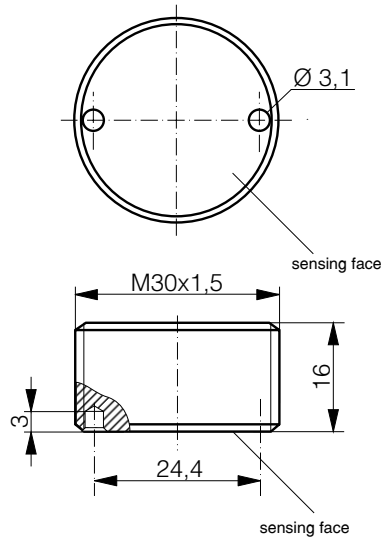
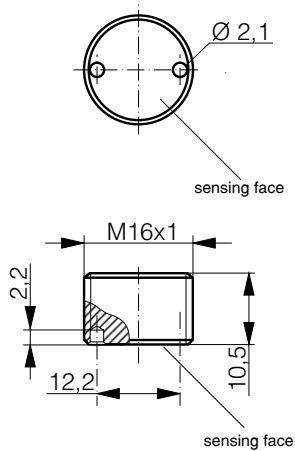


| DATA                      |                                |                                |                                |
|---------------------------|--------------------------------|--------------------------------|--------------------------------|
| Housing material          | Stainless steel V2A            | Stainless steel V2A            | Stainless steel V2A            |
| Mounting                  | Embeddable                     | Embeddable                     | Embeddable                     |
| Ambient temperature range | -40 ... +80°C / -40 ... +176°F | -40 ... +80°C / -40 ... +176°F | -40 ... +80°C / -40 ... +176°F |
| Storage temperature range | -40 ... +95°C / -40 ... +203°F | -40 ... +95°C / -40 ... +203°F | -40 ... +95°C / -40 ... +203°F |
| Weight                    | 1.1 g                          | 2.7 g                          | 7.0 g                          |
| Part reference            | RTM-0100-000                   | RTM-0160-000                   | RTM-0260-000                   |



# TRANSPONDERS

| EXTREME | EXTREME | EXTREME |
|---------|---------|---------|
| M16     | M30     | M30     |
| 13      | 18      | 23      |



| Stainless steel V2A            | Stainless steel V2A            | Stainless steel V2A            |
|--------------------------------|--------------------------------|--------------------------------|
| Embeddable                     | Embeddable                     | Non-embeddable                 |
| -40 ... +80°C / -40 ... +176°F | -40 ... +80°C / -40 ... +176°F | -40 ... +80°C / -40 ... +176°F |
| -40 ... +95°C / -40 ... +203°F | -40 ... +95°C / -40 ... +203°F | -40 ... +95°C / -40 ... +203°F |
| 6.9 g                          | 31.4 g                         | 98.7 g                         |
| RTM-2160-000                   | RTM-2300-000                   | RTF-1300-000                   |

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

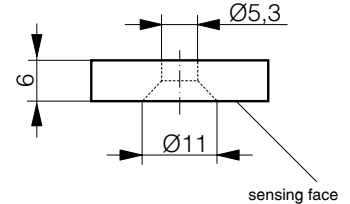
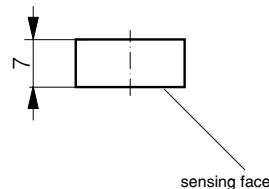
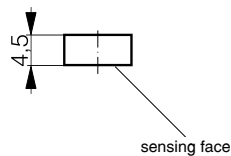
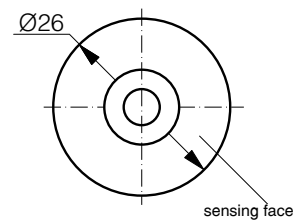
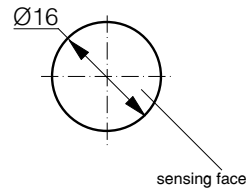
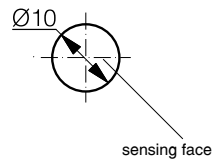
Glossary

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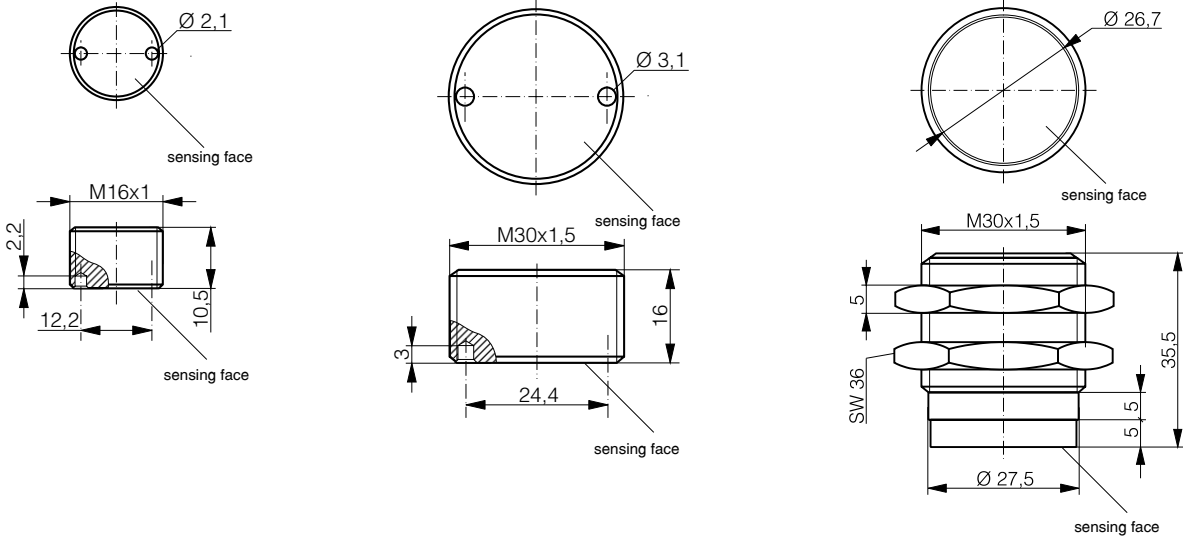

# LOW FREQUENCY

| FAMILY                      | WASHDOWN | WASHDOWN | WASHDOWN |
|-----------------------------|----------|----------|----------|
| HOUSING SIZE MM             | Ø 10     | Ø 16     | Ø 26     |
| MAX. READ/WRITE DISTANCE MM | 13       | 19       | 26       |



| DATA                      |                                 |                                 |                                 |
|---------------------------|---------------------------------|---------------------------------|---------------------------------|
| Housing material          | Stainless steel V4A             | Stainless steel V4A             | Stainless steel V4A             |
| Mounting                  | Embeddable                      | Embeddable                      | Embeddable                      |
| Ambient temperature range | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F |
| Storage temperature range | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F |
| Weight                    | 1.5 g                           | 3.3 g                           | 12.5 g                          |
| Part reference            | RTL-0102-001                    | RTL-0162-001                    | RTL-0262-001                    |

# TRANSPONDERS

| WASHDOWN   | WASHDOWN                        | WASHDOWN                        | Inductive     |
|--|---------------------------------|---------------------------------|---------------|
| M16  | M30                             | M30                             |               |
| 13   | 18                              | 23                              |               |
|    |                                 |                                 | Photoelectric |
|  |                                 |                                 | Safety        |
|  |                                 |                                 | RFID          |
|  |                                 |                                 | Connectivity  |
|  |                                 |                                 | Accessories   |
|  |                                 |                                 | Glossary      |
| Stainless steel V4A  | Stainless steel V4A             | Stainless steel V4A             | Index         |
| Embeddable   | Embeddable                      | Non-embeddable                  |               |
| -40 ... +125°C / -40 ... +257°F  | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F |               |
| -40 ... +125°C / -40 ... +257°F  | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F |               |
| 7.9 g  | 33.1 g                          | 44.1 g                          |               |
| RTL-2162-001   | RTL-2302-001                    | RTL-1302-001                    |               |





# HIGH FREQUENCY

## STRUCTURE OF MEMORY

## FAMILY

## HOUSING SIZE MM

## MAX. READ/WRITE DISTANCE MM

### TECHNICAL DATA

### -020 OR -022

|                          |                  |
|--------------------------|------------------|
| Compatible IC type       | NXP I-Code SLI-S |
| Read/write memory        | 160 bytes        |
| Read only memory         | 96 bytes         |
| Number of bits per block | 32 bits          |
| Standard                 | ISO/IEC 15693    |

### TECHNICAL DATA

### -062

|                          |                   |
|--------------------------|-------------------|
| Compatible IC type       | FUJITSU MB89R118C |
| Read/write memory        | 2000 bytes        |
| Read only memory         | 48 bytes          |
| Number of bits per block | 64 bits           |
| Standard                 | ISO/IEC 15693     |

### TECHNICAL DATA

### -082

|                          |                |
|--------------------------|----------------|
| Compatible IC type       | NXP I-Code SLI |
| Read/write memory        | 112 bytes      |
| Read only memory         | 16 bytes       |
| Number of bits per block | 32 bits        |
| Standard                 | ISO/IEC 15693  |

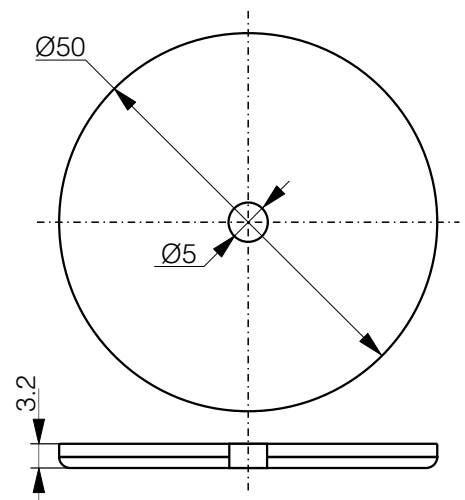
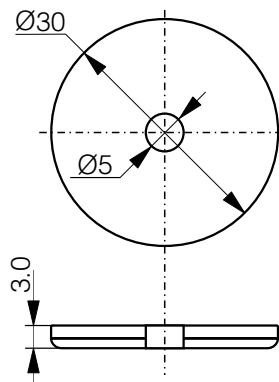
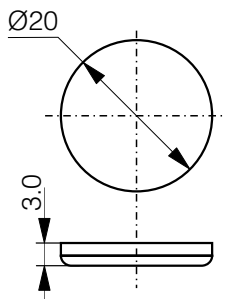
Various tag memory protection possibilities are provided, including password protection and OTP write protection of data blocks.

## DATA

|                           |
|---------------------------|
| Housing material          |
| Mounting                  |
| Ambient temperature range |
| Storage temperature range |
| Weight                    |
| Part reference            |

# TRANSPONDERS

| BASIC | BASIC | BASIC |
|-------|-------|-------|
| Ø 20  | Ø 30  | Ø 50  |
| 25    | 45    | 47    |



| PBTP glass-fiber reinforced     | PBTP glass-fiber reinforced     | PBTP glass-fiber reinforced     |
|---------------------------------|---------------------------------|---------------------------------|
| Non-embeddable                  | Non-embeddable                  | Non-embeddable                  |
| -25 ... +85°C / -13 ... +185°F  | -25 ... +85°C / -13 ... +185°F  | -25 ... +85°C / -13 ... +185°F  |
| -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F | -40 ... +125°C / -40 ... +257°F |
| 1.3 g                           | 2.7 g                           | 6.6 g                           |
| RTP-0201-020                    | RTP-0301-020                    | RTP-0501-020                    |

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

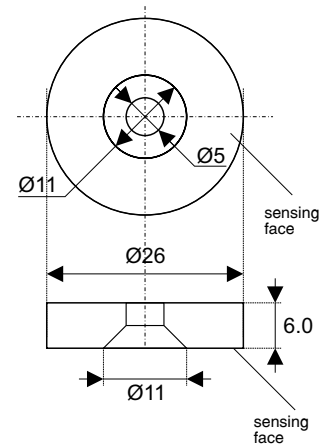
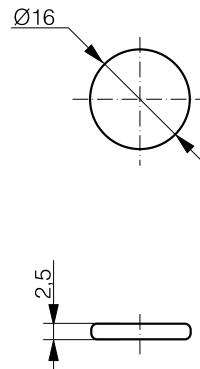
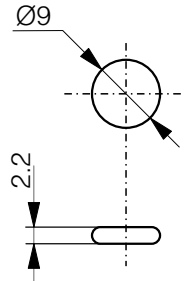
Glossary

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# HIGH FREQUENCY

| FAMILY                      | BASIC | BASIC | HIGH TEMPERATURE |
|-----------------------------|-------|-------|------------------|
| HOUSING SIZE MM             | Ø 9   | Ø 16  | Ø 26             |
| MAX. READ/WRITE DISTANCE MM | 14    | 31    | 31               |

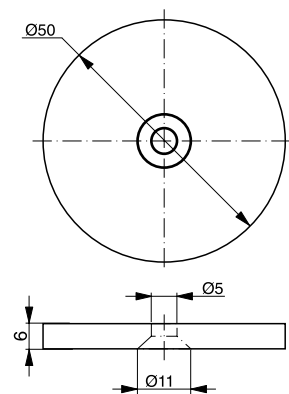
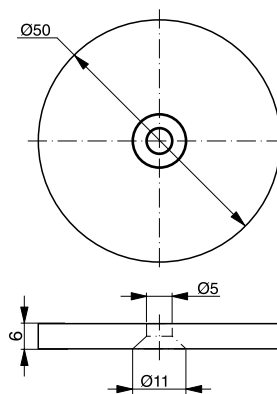
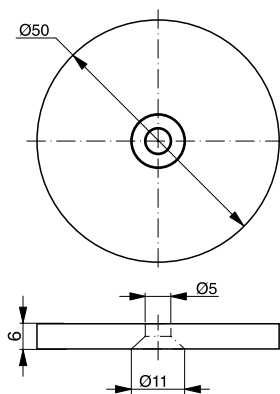


| DATA                      |                                |                                |                                 |
|---------------------------|--------------------------------|--------------------------------|---------------------------------|
| Housing material          | PPS + Epoxy                    | PPS + Epoxy                    | PPS, silicone free              |
| Mounting                  | Non-embeddable                 | Non-embeddable                 | Embeddable                      |
| Ambient temperature range | -20 ... +85°C / -4 ... +185°F  | -20 ... +85°C / -4 ... +185°F  | -25 ... +180°C / -13 ... +356°F |
| Storage temperature range | -20 ... +110°C / -4 ... +230°F | -20 ... +110°C / -4 ... +230°F | -40 ... +180°C / -40 ... +356°F |
| Weight                    | 0.25 g                         | 0.75 g                         | 3.3 g                           |
| Part reference            | RTP-0090-020                   | RTP-0160-020                   | RTP-0263-020                    |



# TRANSPONDERS

| HIGH TEMPERATURE | HIGH TEMPERATURE | HIGH TEMPERATURE |
|------------------|------------------|------------------|
| Ø 50             | Ø 50             | Ø 50             |
| 50               | 44               | 42               |



| LCP, silicone free              | LCP, silicone free              | LCP, silicone free              |
|---------------------------------|---------------------------------|---------------------------------|
| Non-embeddable                  | Non-embeddable                  | Non-embeddable                  |
| -25 ... +150°C / -13 ... +302°F | -25 ... +150°C / -13 ... +302°F | -25 ... +150°C / -13 ... +302°F |
| -40 ... +250°C / -40 ... +482°F | -40 ... +250°C / -40 ... +482°F | -40 ... +250°C / -40 ... +482°F |
| 16.9 g                          | 16.9 g                          | 16.9 g                          |
| RTP-0502-022                    | RTP-0502-062                    | RTP-0502-082                    |

Inductive

Photoelectric

Safety

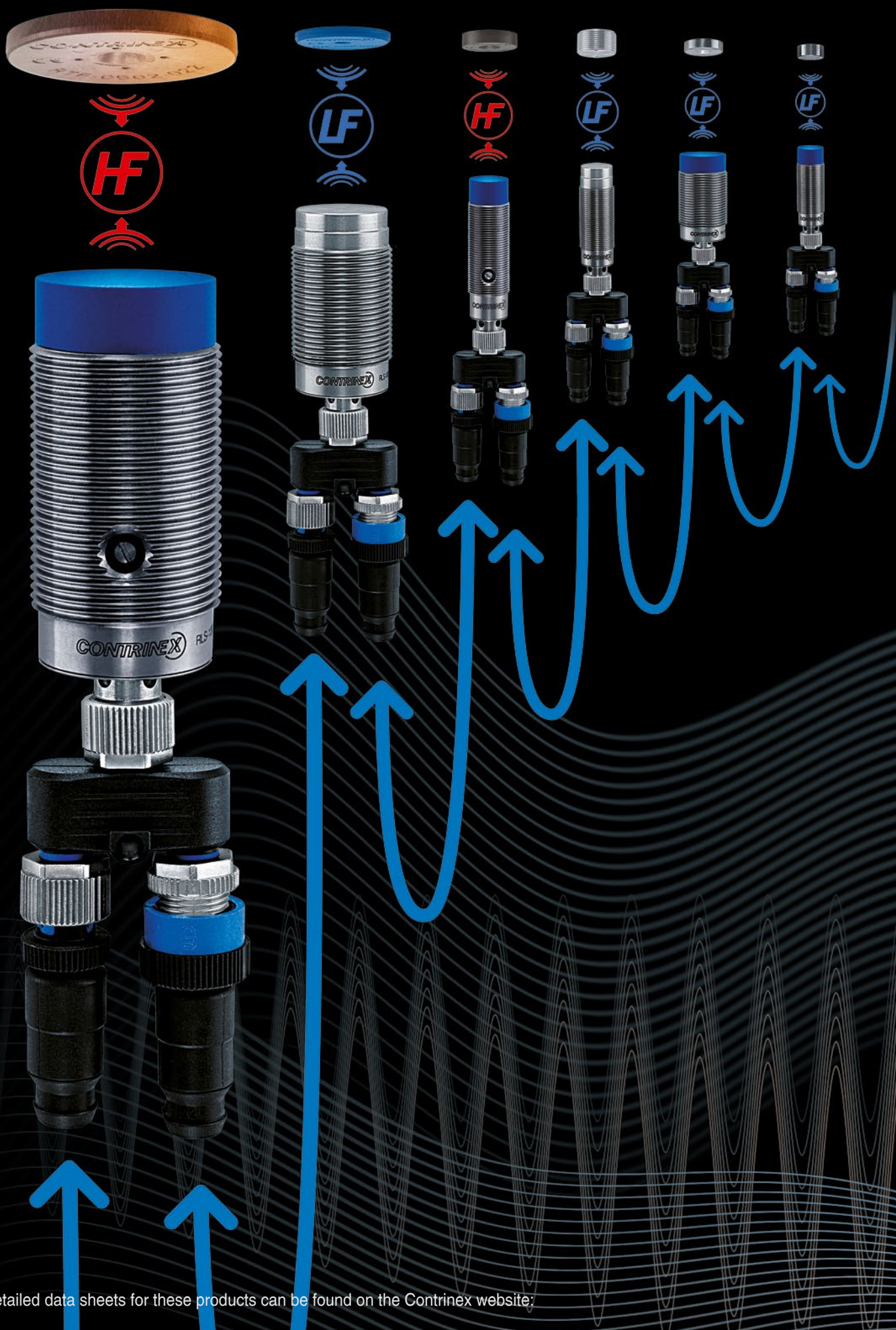
RFID

Connectivity

Accessories

Glossary

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## CONTRINET READ/ WRITE MODULES



LOW FREQUENCY



HIGH FREQUENCY

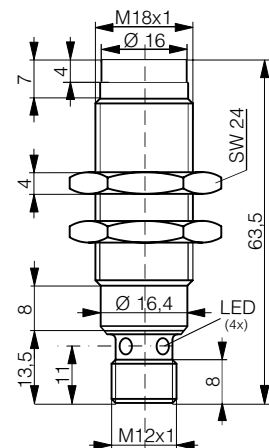
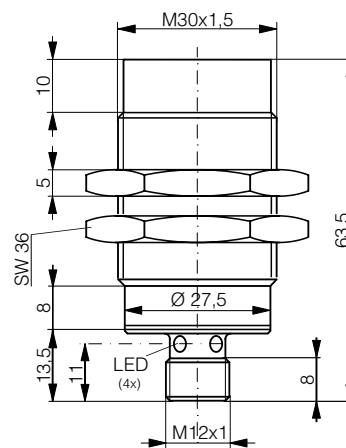
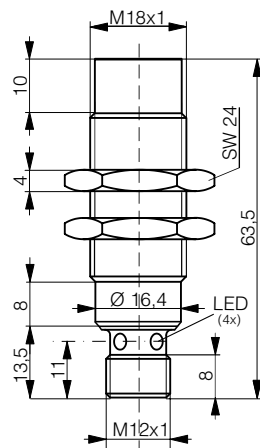
### KEY ADVANTAGES

- ✓ Powerful RS485 network protocol for LF and HF systems
- ✓ Threaded Read/Write Modules (RWMs) with S12 connector and RS485 output
- ✓ LF and HF RWMs can be mixed on the same network
- ✓ Rugged all-metal LF RWMs with impervious sensing face



# READ/WRITE MODULES

| FAMILY                         | BASIC | BASIC | EXTREME |
|--------------------------------|-------|-------|---------|
| HOUSING SIZE                   | M18   | M30   | M18     |
| MAX. READ/WRITE DISTANCE<br>MM | 36    | 41    | 12      |

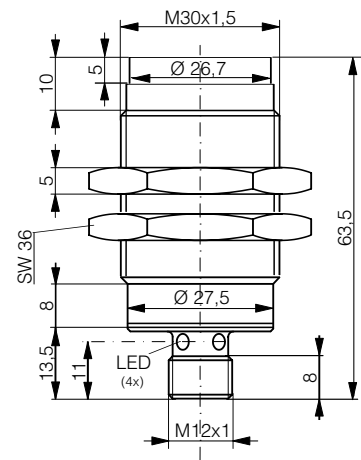
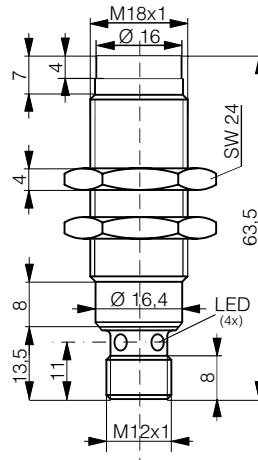
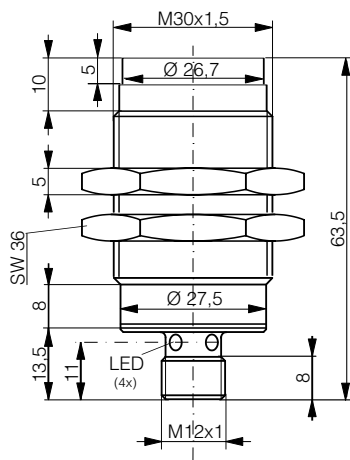


| DATA                      |                            |                            |                            |
|---------------------------|----------------------------|----------------------------|----------------------------|
| Housing material          | PBTP / chrome-plated brass | PBTP / chrome-plated brass | Stainless steel V2A        |
| Max. current consumption  | 30 mA                      | 30 mA                      | 30 mA                      |
| Mounting                  | Non-embeddable             | Non-embeddable             | Non-embeddable             |
| Ambient temperature range | -25...+80°C / -13...+176°F | -25...+80°C / -13...+176°F | -25...+80°C / -13...+176°F |
| Storage temperature range | -25...+80°C / -13...+176°F | -25...+80°C / -13...+176°F | -25...+80°C / -13...+176°F |
| Connection type           | Connector S12              | Connector S12              | Connector S12              |
| Weight (incl. nuts)       | 37 g                       | 127 g                      | 37 g                       |
| Part reference            | RLS-1181-030               | RLS-1301-030               | RLS-1180-030               |



# READ/WRITE MODULES

| EXTREME | WASHDOWN | WASHDOWN |
|---------|----------|----------|
| M30     | M18      | M30      |
| 12      | 12       | 12       |



| Stainless steel V2A        | Stainless steel V4A         | Stainless steel V4A         |
|----------------------------|-----------------------------|-----------------------------|
| 30 mA                      | 30 mA                       | 30 mA                       |
| Non-embeddable             | Non-embeddable              | Non-embeddable              |
| -25...+80°C / -13...+176°F | -40...+125°C / -40...+257°F | -40...+125°C / -40...+257°F |
| -25...+80°C / -13...+176°F | -40...+125°C / -40...+257°F | -40...+125°C / -40...+257°F |
| Connector S12              | Connector S12               | Connector S12               |
| 127 g                      | 37 g                        | 127 g                       |
| RLS-1300-030               | RLS-1182-031                | RLS-1302-031                |

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

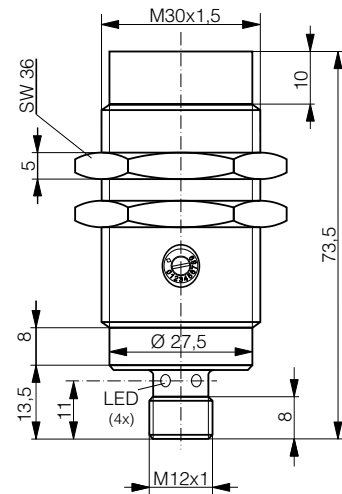
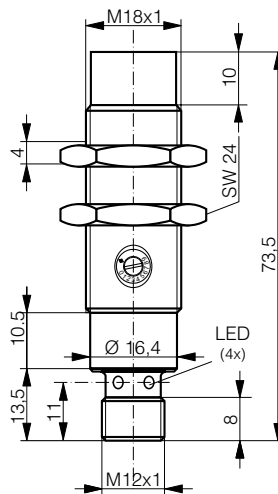
Glossary

Index



# READ/WRITE MODULES

| FAMILY                         | BASIC | BASIC |
|--------------------------------|-------|-------|
| HOUSING SIZE                   | M18   | M30   |
| MAX. READ/WRITE DISTANCE<br>MM | 31    | 50    |



| DATA                      |                            |                            |
|---------------------------|----------------------------|----------------------------|
| Housing material          | PBTP / Stainless steel V2A | PBTP / Stainless steel V2A |
| Max. current consumption  | 60 mA                      | 60 mA                      |
| Mounting                  | Non-embeddable             | Non-embeddable             |
| Ambient temperature range | -25...+80°C / -13...+176°F | -25...+80°C / -13...+176°F |
| Storage temperature range | -25...+80°C / -13...+176°F | -25...+80°C / -13...+176°F |
| Connection type           | Connector S12              | Connector S12              |
| Weight (incl. nuts)       | 37 g                       | 95 g                       |
| Part reference            | RLS-1183-020               | RLS-1303-020               |





10011010100110100100100100100110101  
10011010100110100100100100100110101010  
1001101010011010010010010010010





# IO-LINK - EASY TO GO!

## IO-LINK READ/ WRITE MODULES



**HIGH FREQUENCY**

### KEY ADVANTAGES

- ✓ Threaded Read/Write Modules (RWMs) with S12 connector
- ✓  IO-Link interface V1.1
- ✓ M18 and M30
- ✓ Two operating modes:
  - ✓ As  IO-Link device, three process-data configurations:
    - ✓ Scan UID
    - ✓ Scan user data
    - ✓ Scan read/write command
  - ✓ As stand-alone SIO with conditional output switch:
    - ✓ Tag presence
    - ✓ Data block comparison



# HIGH FREQUENCY

## AT A GLANCE

- High frequency Read/Write Modules (RWMs) with IO-Link interface
- Compatible with ISO 15693 transponders (4- or 8-byte memory block)
- IO-Link interface V1.1
- Two operating modes:
  - As IO-Link device, three process-data configurations:
    - Scan UID
    - Scan user data
    - Scan read/write command
  - As stand-alone SIO with conditional output switch:
    - Tag presence
    - Data block comparison

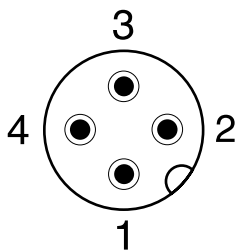
### FAMILY

### HOUSING SIZE

### MAX. READ/WRITE DISTANCE MM

## WIRING DIAGRAM



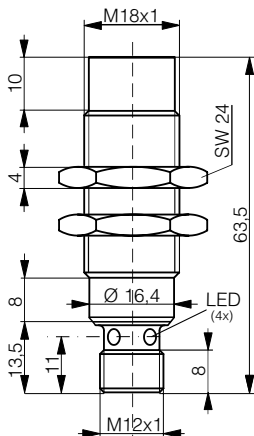
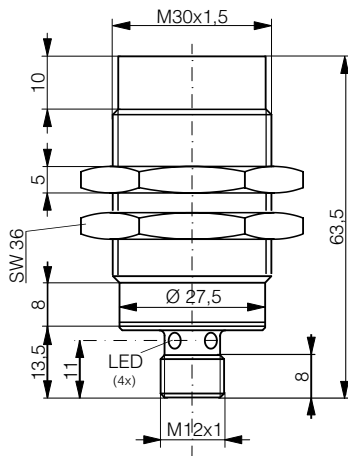
| PIN | SIGNAL | FUNCTION                                   |
|-----|--------|--|
| 1   | L+     | +24 V                                      |
| 2   | Q2     | DO (tag presence or data comparison)       |
| 3   | L-     | OV   |
| 4   | C/Q1   | SDCI/SIO (tag presence or data comparison) |



### DATA

|                           |
|---------------------------|
| Housing material          |
| Max. current consumption  |
| Mounting                  |
| Ambient temperature range |
| Storage temperature range |
| Connection type           |
| Degree of protection      |
| Weight (with nuts)        |
| Part reference            |

# READ/WRITE MODULES

| IO-LINK   |  | IO-LINK                        |  |  | Inductive     |
|---|--|--------------------------------|--|--|---------------|
| M18   |  | M30                            |  |  |               |
| 40  |  | 62                             |  |  |               |
| <div><div></div><div></div></div>     |  |                                |  |  | Photoelectric |
|   |  |                                |  |  | Safety        |
|   |  |                                |  |  | RFID          |
| <div><div></div><div></div></div> |  |                                |  |  | Connectivity  |
|   |  |                                |  |  | Accessories   |
| IO-Link   |  | IO-Link                        |  |  | Glossary      |
| PBTP / Chrome-plated brass  |  | PBTP / Chrome-plated brass     |  |  |               |
| 50 mA   |  | 50 mA                          |  |  |               |
| Non-embeddable  |  | Non-embeddable                 |  |  |               |
| -25 ... +80°C / -13 ... +176°F  |  | -25 ... +80°C / -13 ... +176°F |  |  |               |
| -25 ... +80°C / -13 ... +176°F  |  | -25 ... +80°C / -13 ... +176°F |  |  | Index         |
| Connector S12   |  | Connector S12                  |  |  |               |
| IP 67   |  | IP 67                          |  |  |               |
| 51 g  |  | 120 g                          |  |  |               |
| RLS-1181-320  |  | RLS-1301-320                   |  |  |               |





USB – DIRECT TO PC

# USB READ/WRITE MODULES



LOW FREQUENCY



HIGH FREQUENCY

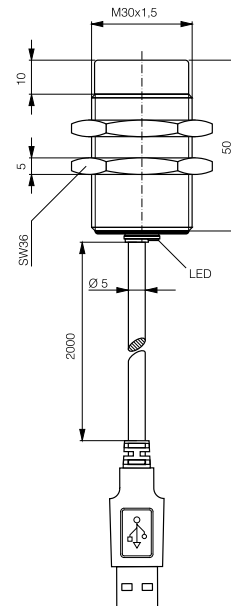
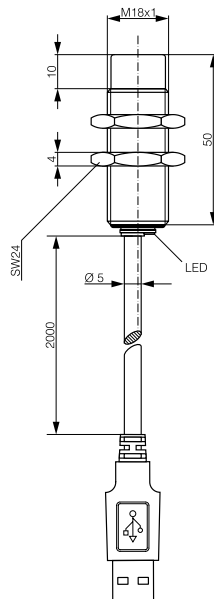
## KEY ADVANTAGES

- ✓ Direct connection of Read/Write Module (RWM) to PC
- ✓ Compatible with ContriNET LF/HF DEMO software
- ✓ LF and HF types in sizes M18 and M30



# READ/WRITE MODULES

| FAMILY                         | USB | USB |
|--------------------------------|-----|-----|
| HOUSING SIZE                   | M18 | M30 |
| MAX. READ/WRITE DISTANCE<br>MM | 36  | 41  |

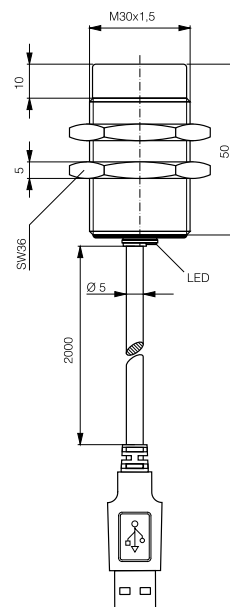
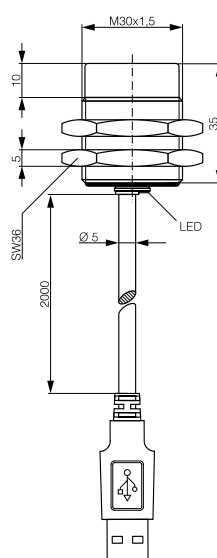
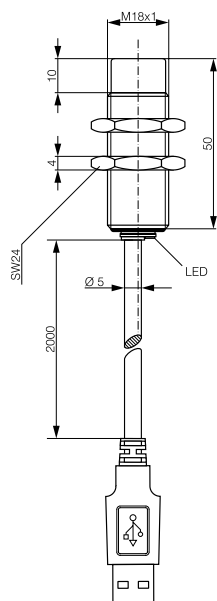
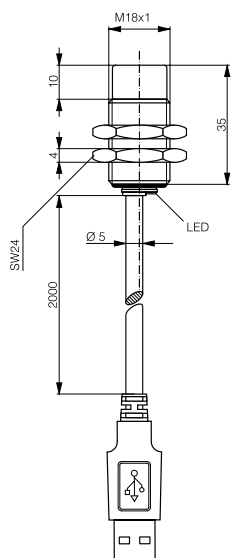


| DATA                      |                                |                                |
|---------------------------|--------------------------------|--------------------------------|
| Housing material          | PBTP / chrome-plated brass     | PBTP / chrome-plated brass     |
| Max. current consumption  | 200 mA                         | 200 mA                         |
| Mounting                  | Non-embeddable                 | Non-embeddable                 |
| Ambient temperature range | -25 ... +80°C / -13 ... +176°F | -25 ... +80°C / -13 ... +176°F |
| Storage temperature range | -25 ... +80°C / -13 ... +176°F | -25 ... +80°C / -13 ... +176°F |
| Connection type           | USB A male                     | USB A male                     |
| Weight (incl. nuts)       | 107 g                          | 144 g                          |
| Part reference            | RLS-1181-230                   | RLS-1301-230                   |



# READ/WRITE MODULES

| USB | USB | USB | USB |
|-----|-----|-----|-----|
| M18 | M18 | M30 | M30 |
| 31  | 31  | 60  | 60  |



| PBTP / chrome-plated brass     | PBTP / chrome-plated brass     | PBTP / chrome-plated brass     | PBTP / chrome-plated brass     |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 200 mA                         | 200 mA                         | 200 mA                         | 200 mA                         |
| Non-embeddable                 | Non-embeddable                 | Non-embeddable                 | Non-embeddable                 |
| -25 ... +70°C / -13 ... +158°F | -25 ... +70°C / -13 ... +158°F | -25 ... +70°C / -13 ... +158°F | -25 ... +70°C / -13 ... +158°F |
| -25 ... +70°C / -13 ... +158°F | -25 ... +70°C / -13 ... +158°F | -25 ... +70°C / -13 ... +158°F | -25 ... +70°C / -13 ... +158°F |
| USB A male                     | USB A male                     | USB A male                     | USB A male                     |
| 97 g                           | 107 g                          | 144 g                          | 165 g                          |
| RLS-1181-220-120               | RLS-1181-220                   | RLS-1301-220-120               | RLS-1301-220                   |

Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

Glossary

Index

## APPLICATION WITH USB READ/WRITE MODULE



The default address of USB read/write modules is 254.

USB read/write modules are not networkable, but they have a ContriNET firmware. In particular, they are compatible with ContriNET HF/LF DEMO software and other ContriNET support tools.









# MARKET-LEADING FIELDBUS COVERAGE

## INTERFACES



**LOW FREQUENCY**



**HIGH FREQUENCY**

### KEY ADVANTAGES

- ✓ Widest fieldbus coverage on market
- ✓ Interfaces for connection of ContriNET to PROFIBUS, DeviceNet, EtherNet/IP, PROFINET, EtherCAT, POWERLINK and Ethernet TCP/IP
- ✓ Comprehensive accessories including T-connectors and line terminators

### NEW:

- ✓ TCP/IP interface in lightweight plastic, 120 mm x 80 mm x 30 mm

# INTERFACES

## FIELDBUS

## PROFIBUS-DP

### HOUSING SIZE MM

100 X 52 X 64



### AT A GLANCE

- Compact, ready-to-use device
- Allows connection of ContriNET to an industrial fieldbus
- Synthetic housing in ABS
- Mounting on rail DIN EN 60715

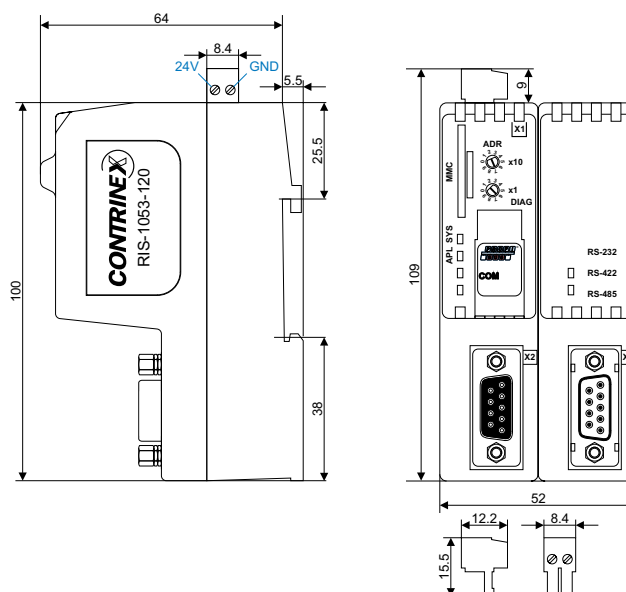
### FIELDBUS

|             |              |
|-------------|--------------|
| PROFIBUS    | RIS-1053-120 |
| DeviceNet   | RIS-1053-220 |
| EtherNet/IP | RIS-1053-320 |
| PROFINET    | RIS-1053-520 |
| EtherCAT    | RIS-1053-620 |
| POWERLINK   | RIS-1053-820 |

### FIRMWARE

On SD card

Selectable using the RIS-1053-X20 card configurator software



## DATA

|                           |                              |
|---------------------------|------------------------------|
| Housing material          | ABS                          |
| Mounting                  | DIN rail EN 60715            |
| Ambient temperature range | 0 ... +50°C / +32 ... +122°F |
| Storage temperature range | 0 ... +50°C / +32 ... +122°F |
| Weight                    | 150 g                        |
| Part reference            | RIS-1053-120                 |



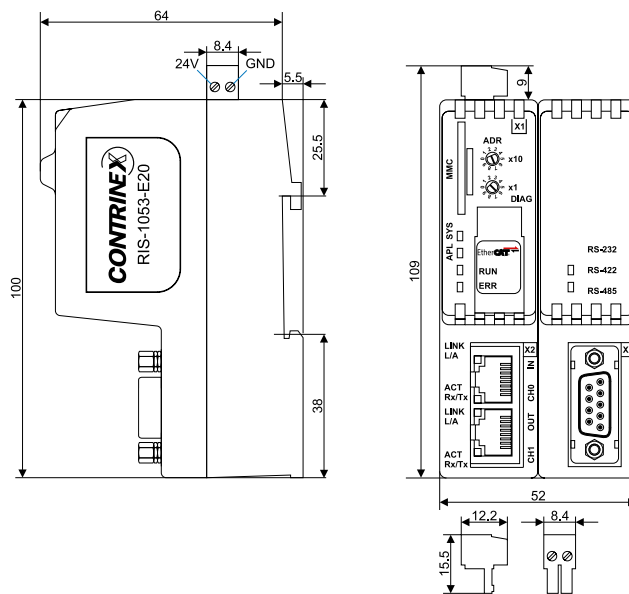
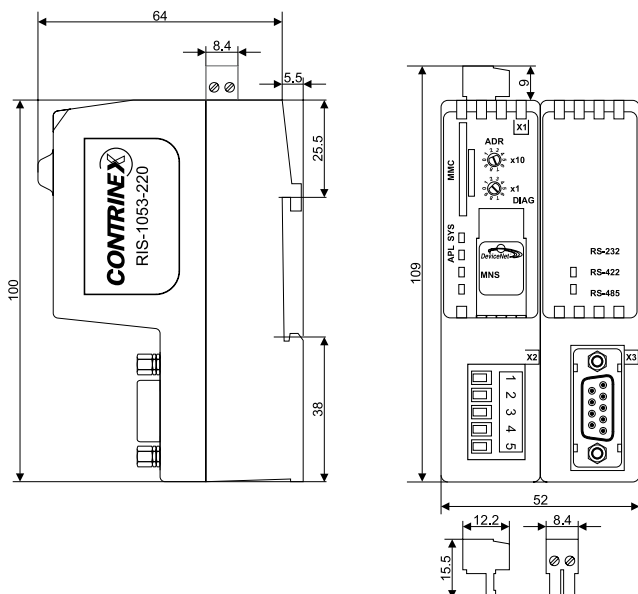
# INTERFACES

DEVICENET

100 X 52 X 64

ETHERNET/IP / PROFINET IO  
ETHERCAT / POWERLINK

100 X 52 X 64



ABS

DIN rail EN 60715

0 ... +50°C / +32 ... +122°F

0 ... +50°C / +32 ... +122°F

150 g

RIS-1053-220

ABS

DIN rail EN 60715

0 ... +50°C / +32 ... +122°F

0 ... +50°C / +32 ... +122°F

150 g

RIS-1053-E20

Inductive

Photoelectric

Safety

RFID

Connectivity

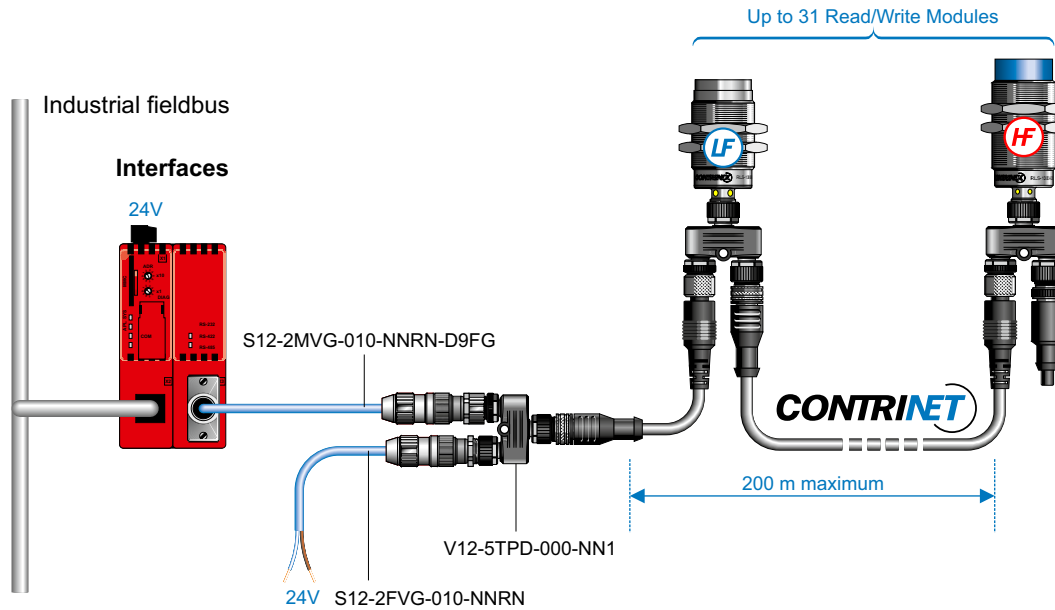
Accessories

Glossary

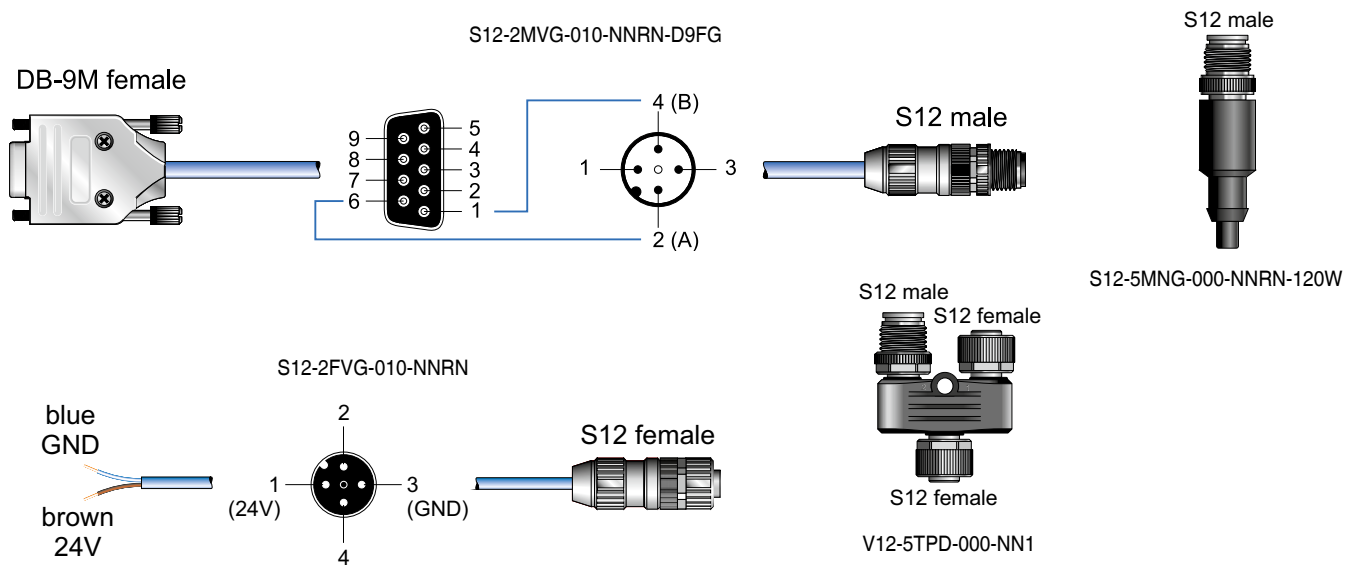
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# INTERFACES

## CONTRINET APPLICATION WITH INTERFACES



## ACCESSORIES TO CONNECT INTERFACES TO CONTRINET



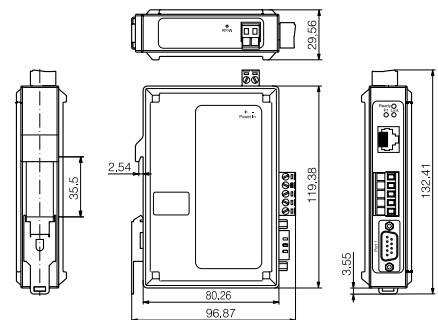
\*Other cables available on pages 438-439

## DATA

|                        |                                |
|------------------------|--------------------------------|
| S12-2MVG-010-NNRN-D9FG | S12 - DB9 - RS485 - PVC 1 m    |
| S12-2FVG-010-NNRN      | 24V - S12 power supply cable   |
| V12-5TPD-000-NN1       | S12 T-connector                |
| S12-4MNG-000-NN2       | S12 male connector             |
| S12-4FNG-000-NN2       | S12 female connector           |
| S12-5MNG-000-NNRN-120W | S12 ContriNET terminator 120 Ω |

## TCP/IP INDUSTRIAL INTERFACE

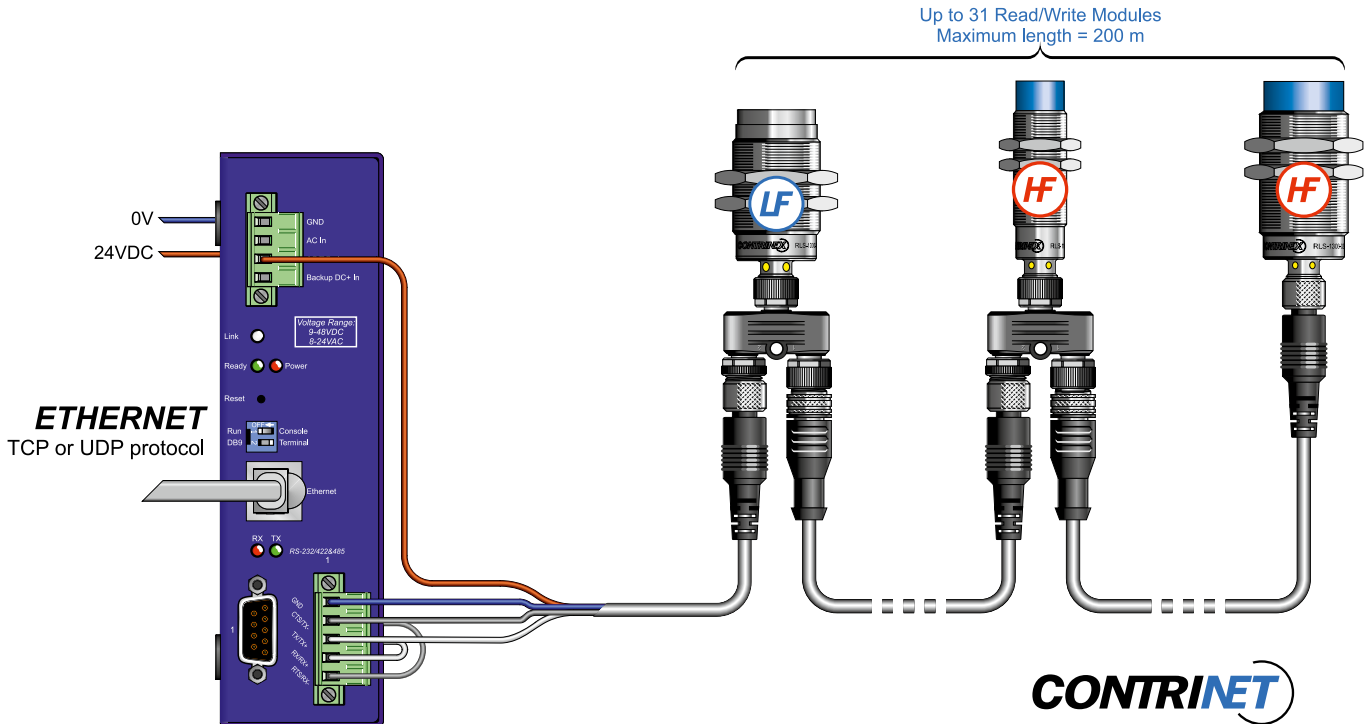
**120 X 80 X 30**

RIS-1208-400

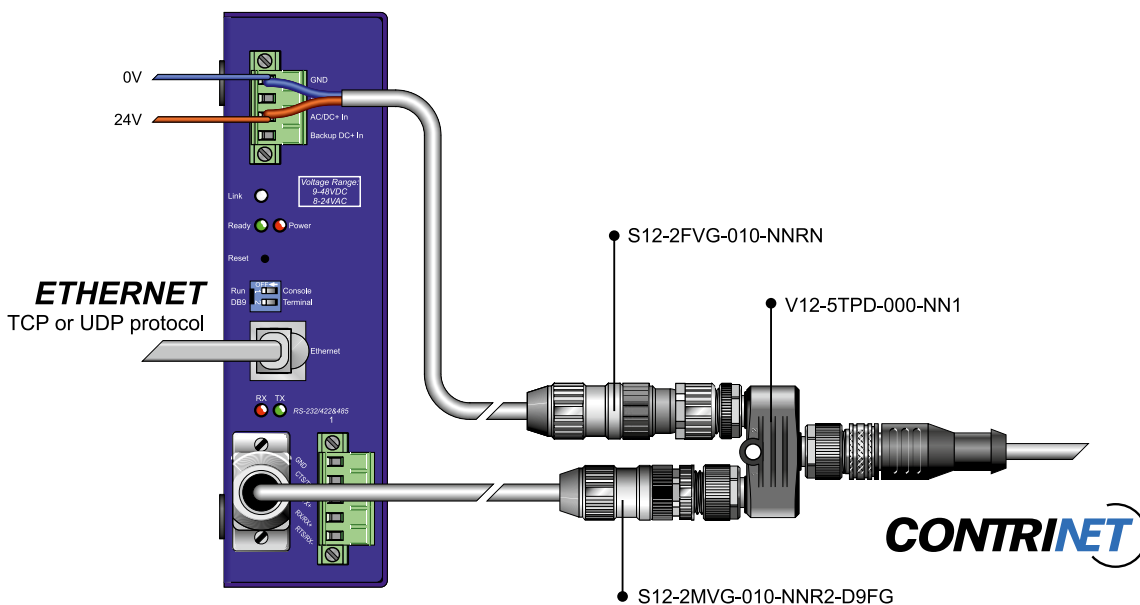
# INTERFACES

## APPLICATION EXAMPLES WITH RIS-1613-400

### RIS-1613-400 Miniconnect



### RIS-1613-400 DB-9M

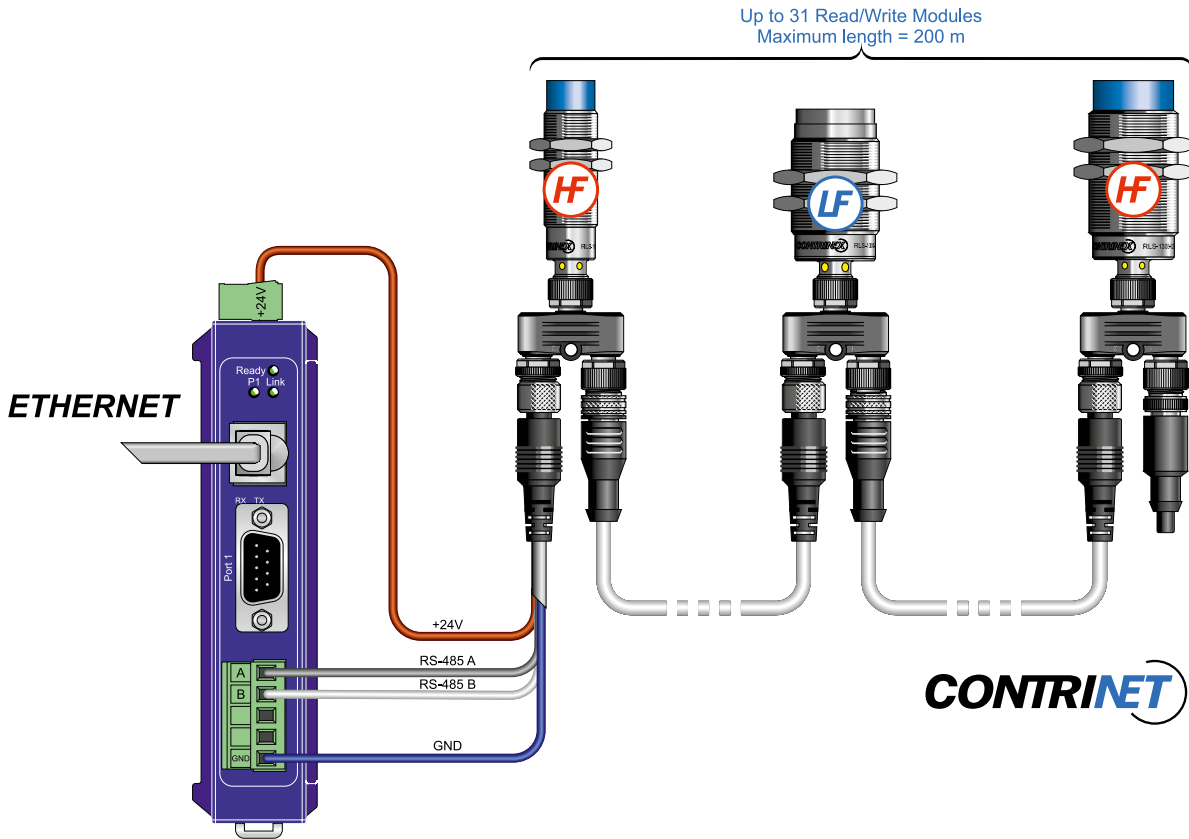




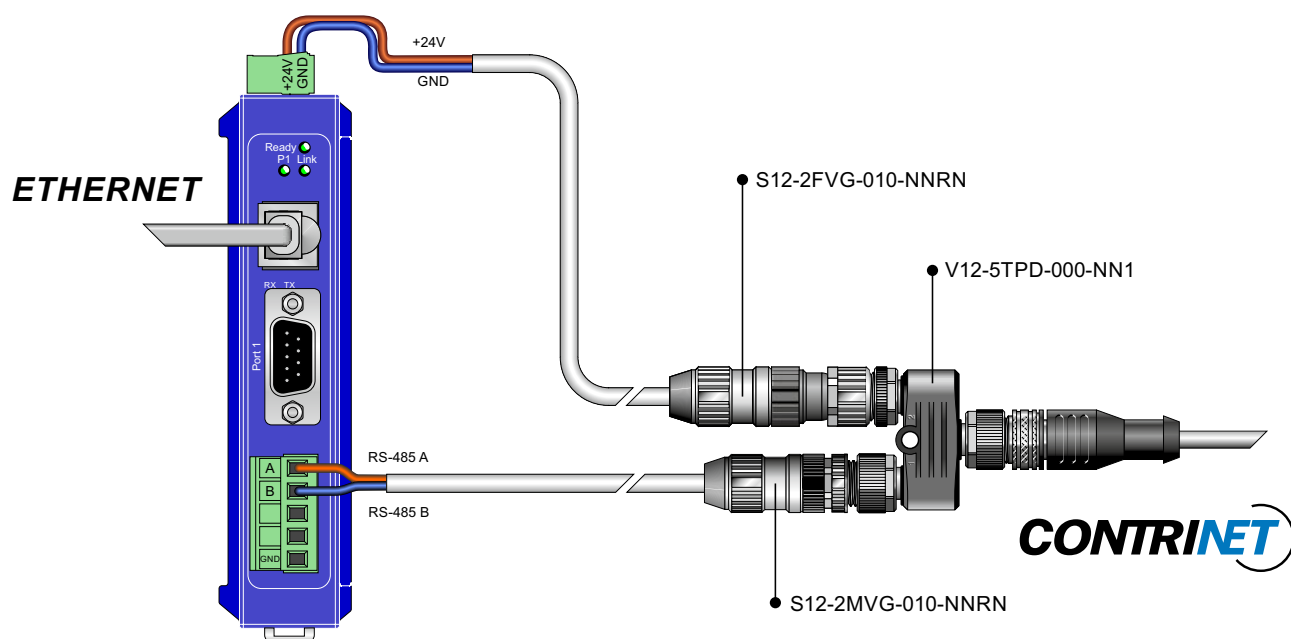
# INTERFACES

## APPLICATION EXAMPLES WITH RIS-1208-400

### RIS-1208-400 Miniconnect



### RIS-1208-400 S12-2MVG



Inductive

Photoelectric

Safety

RFID

Connectivity

Accessories

Glossary

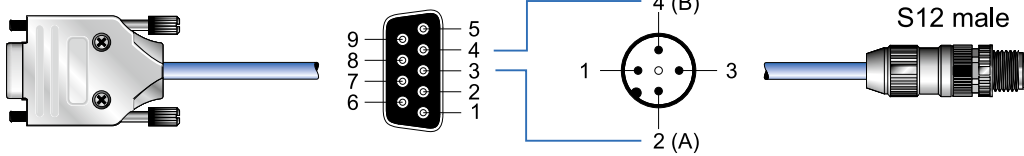
Index

# INTERFACES

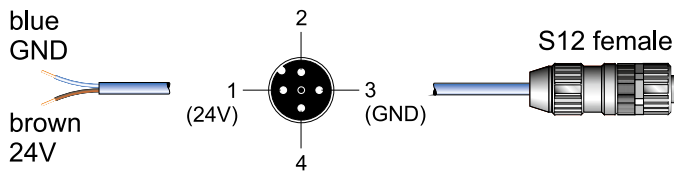
## ACCESSORIES TO CONNECT INTERFACES TO CONTRINET

S12-2MVG-010-NNR2-D9FG

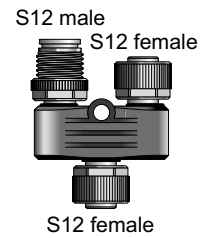
DB-9M female



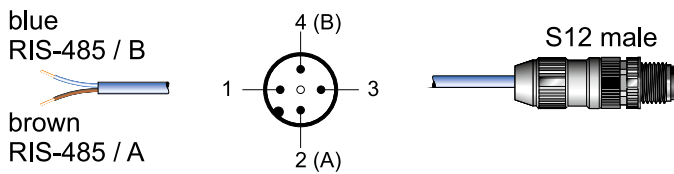
S12-2FVG-010-NNRN



V12-5TPD-000-NN1



S12-2MVG-010-NNRN



S12-5MNG-000-NNRN-120W



\*Other cables available on pages 438-439

## DATA

|                        |  |
|------------------------|--|
| S12-2MVG-010-NNR2-D9FG | S12 - DB9 - RS485 - PVC 1 m - RIS-1613-400 |
| S12-2FVG-010-NNRN      | S12 - 24V - power supply cable             |
| V12-5TPD-000-NN1       | S12 T-connector                            |
| S12-5MNG-000-NNRN-120W | S12 ContrINET terminator 120 $\Omega$      |
| S12-2MVG-010-NNRN      | S12 - RS485 - PVC 1 m                      |



# INTERFACES

## USB ADAPTOR

HOUSING SIZE MM

67 X 66 X 28

### AT A GLANCE

- Synthetic ABS housing
- Serial RS485 connection to Contrinet
- USB connection to control PC

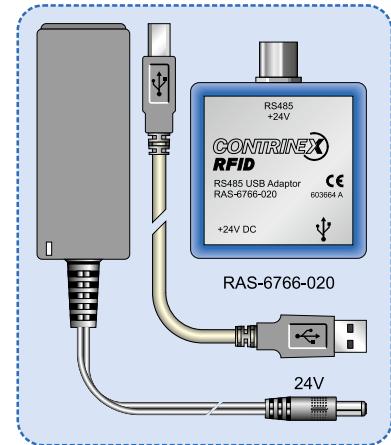
### LEDs

#### Red LED:

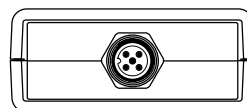
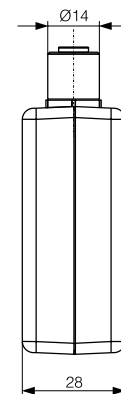
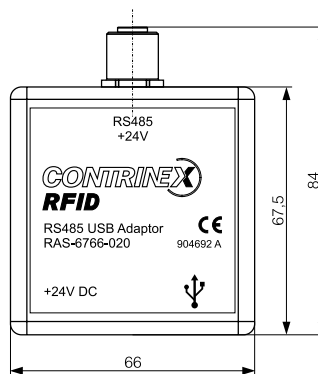
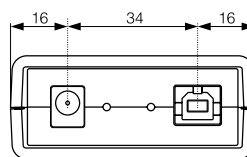
Describes the connection control PC - USB connector.

#### Green LED:

Indicates that the device is fed by an external power supply unit.



The set contains:  
1 USB adaptor, 1 power supply, 1 USB cable



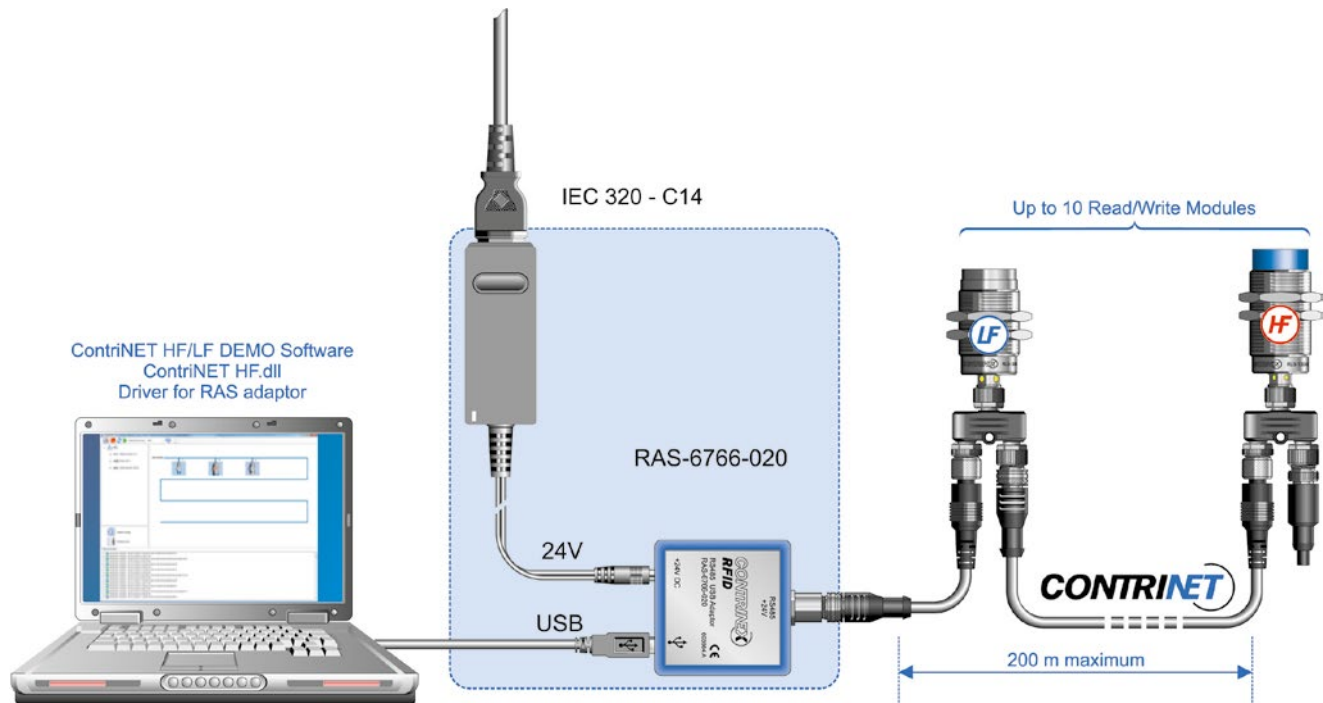
### DATA

|                           |  |
|---------------------------|--|
| Housing material          | ABS  |
| Power supply              | 24 V   |
| Max. current consumption  | 625 mA   |
| Connection (RS485 side)   | Connector S12  |
| Ambient temperature range | 0 ... +50°C / +32 ... +122°F (with external power supply unit) |
| Storage temperature range | -40 ... +85°C / -40 ... +185°F                                 |
| Weight                    | 67 g   |
| Part reference            | RAS-6766-020   |



# INTERFACES

## APPLICATION WITH USB ADAPTOR



### CONNECTION

The adaptor acts as the interface between a network of Read/Write Modules and the USB port of the control PC. The delivery package includes a USB cable.

### EXTERNAL POWER SUPPLY UNIT

An external power supply unit (24V / 15W, 625 mA) is included in the delivery package.

### DRIVERS AND SOFTWARE

Drivers compatible with the various Windows versions and software for demonstration and training (ContriNET HF/LF) can be downloaded from the RAS-6766-020 product page of the Contrinex website.

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# ACCESSORIES



**LOW FREQUENCY**



**HIGH FREQUENCY**

## **RFID ACCESSORIES**

- ✓ Starter kits
- ✓ Handheld device
- ✓ RFID couplers
- ✓ Cables for RFID couplers
- ✓ Standard cables
- ✓ Quick-lock cables

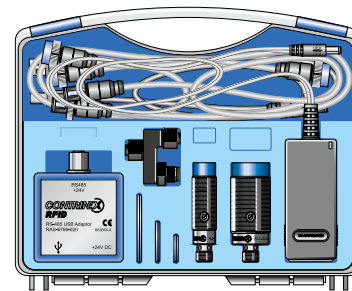
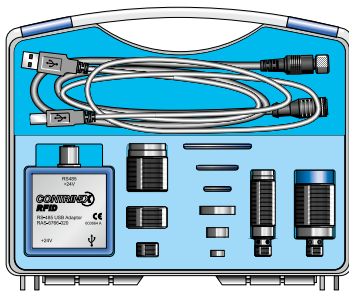


# ACCESSORIES

## STARTER KITS

DIMENSIONS MM

255 X 205 X 60



The low-frequency starter kit contains all components necessary for a simple RFID application:

- 1 USB adaptor RAS-6766-020
- 1 Full-metal Read/Write Module M18
- 1 Read/Write Module M30
- 1 set of transponders
- Cable connectors

The necessary ContriNET HF/LF software can be downloaded from the starter kit product page of the Contrinex website.

The high-frequency starter kit contains all components necessary for a simple RFID application:

- 1 USB adaptor RAS-6766-020
- 1 Read/Write Module M18
- 1 Read/Write Module M30
- 1 set of transponders
- Cable connectors

The necessary ContriNET HF/LF software can be downloaded from the starter kit product page of the Contrinex website.

### DATA

|                     |   |
|---------------------|---|
| STARTER-KIT RFID LF | 1 USB adaptor, 2 RWMs, 6 tags, 2 T-connectors, 1 power supply, 1 USB cable, 2 connecting cables |
| STARTER-KIT RFID HF | 1 USB adaptor, 2 RWMs, 5 tags, 2 T-connectors, 1 power supply, 1 USB cable, 2 connecting cables |





# ACCESSORIES

## HANDHELD DEVICE

DIMENSIONS MM

155 X 75 X 49 (WITH DOCKING STATION)



RPA-0111-000 / RPA-0112-000

The handheld LF read/write device may be used to read and write ConID LF transponders. Its most important features are as follows:

- Portable and light
- No connector
- Robust and ergonomic housing
- Simple navigation
- Integrated RFID Read/Write Module
- Alphanumeric LC display with 16 characters
- 34 alphanumeric and function keys
- Integrated clock and calendar
- Belt clip
- 128 KB memory

The handheld read/write device features a NiMH battery pack, which charges automatically when positioned on its docking station. The latter enables the read/write device to communicate by means of an RS232 interface.

### DATA

|              |   |
|--------------|---|
| RPA-0111-000 | Handheld read/write device with docking station with EU adapter |
| RPA-0110-000 | Handheld read/write device without docking station              |
| RPA-0101-000 | Docking station with EU adapter                                 |
| RPA-0112-000 | Handheld read/write device with docking station with US adapter |
| RPA-0102-000 | Docking station with US adapter                                 |

## AT A GLANCE

- Metal threaded cylindrical housings
- Sensing face of PBTP (polybutylene terephthalate) or stainless steel V2A
- Insensitive to dirt
- Passive (without power supply)

An RFID coupler consists of two coupling heads linked by a cable. It is passive and enables data to be transferred between the Read/Write Module and the transponder, acting as a contact-free extension for data transfer.

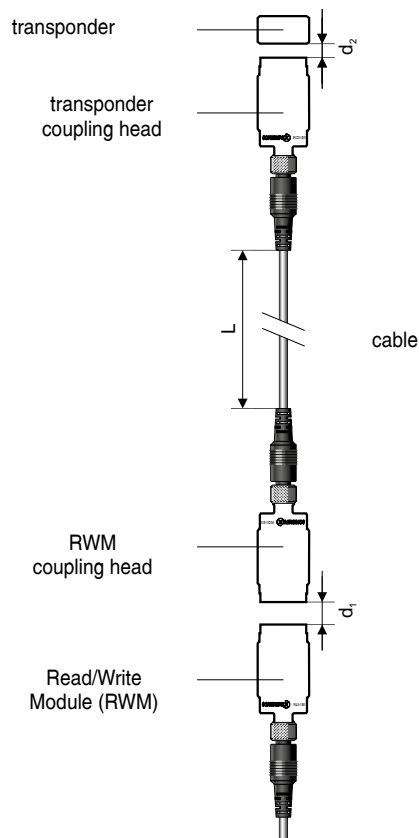
A coupler is used whenever a double mechanical interface is required.

### CONNECTION

The coupling heads feature 4-pole S12 connectors. The cable connectors have been designed specifically for use with RFID couplers and are equipped with 4-pole sockets at both ends.



The coupling heads must not be connected to the power supply, nor to an interface device.







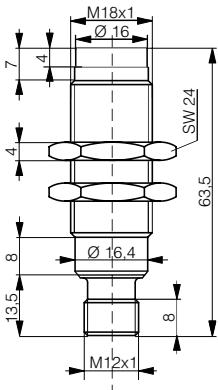
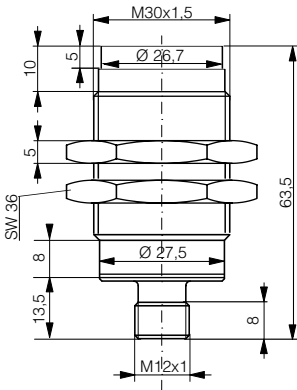
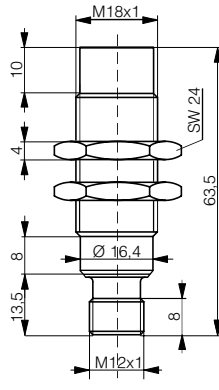
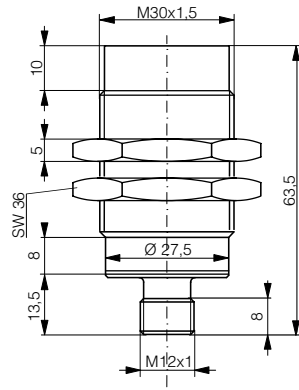
### HOUSING SIZE

### DATA

|                           |
|---------------------------|
| Housing material          |
| Sensing face material     |
| Mounting                  |
| Ambient temperature range |
| Storage temperature range |
| Connection type           |
| Degree of protection      |
| Weight (with nuts)        |
| Part reference            |

# ACCESSORIES

## RFID COUPLERS

| M18   | M30   | M18  | M30   |
|---|---|--|---|
| COUPLING HEAD   | COUPLING HEAD   | COUPLING HEAD  | COUPLING HEAD   |
|    |    |    |    |
|  |  |  |  |
| Stainless steel V2A   | Stainless steel V2A   | Chrome-plated brass  | Chrome-plated brass   |
| Stainless steel V2A   | Stainless steel V2A   | PBTP   | PBTP  |
| Non-embeddable  | Non-embeddable  | Non-embeddable   | Non-embeddable  |
| -25 ... +80°C / -13 ... +176°F  | -25 ... +80°C / -13 ... +176°F  | -25 ... +80°C / -13 ... +176°F   | -25 ... +80°C / -13 ... +176°F  |
| -25 ... +80°C / -13 ... +176°F  | -25 ... +80°C / -13 ... +176°F  | -25 ... +80°C / -13 ... +176°F   | -25 ... +80°C / -13 ... +176°F  |
| Connector S12   | Connector S12   | Connector S12  | Connector S12   |
| IP 68 & IP 69 K   | IP 68 & IP 69 K   | IP 67  | IP 67   |
| 51 g  | 120 g   | 51 g   | 120 g   |
| RCS-1180-000*   | RCS-1300-000*   | RCS-1181-000*  | RCS-1301-000*   |

\* Coupling heads must not be connected to the power supply, nor to an interface device!

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# ACCESSORIES

## AT A GLANCE

- Metal threaded cylindrical housings
- Sensing face of PBTP (polybutylene terephthalate)
- Insensitive to dirt
- Passive (without power supply)

An RFID coupler consists of two coupling heads linked by a cable. It is passive and enables data to be transferred between the Read/Write Module and the transponder, acting as a contact-free extension for data transfer.

A coupler is used whenever a double mechanical interface is required.

### HOUSING SIZE

### DATA

|                           |
|---------------------------|
| Housing material          |
| Sensing face material     |
| Mounting                  |
| Ambient temperature range |
| Storage temperature range |
| Connection type           |
| Degree of protection      |
| Weight (with nuts)        |
| Part reference            |

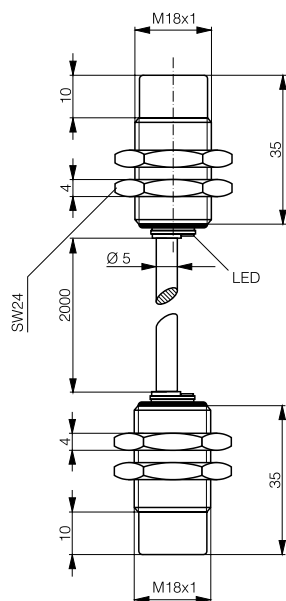


# ACCESSORIES

## RFID COUPLERS

M18

COUPLING HEAD



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Chrome-plated brass

PBTP

Non-embeddable

-25 ... +80°C / -13 ... +176°F

-25 ... +80°C / -13 ... +176°F

PVC cable

IP 67

80 g

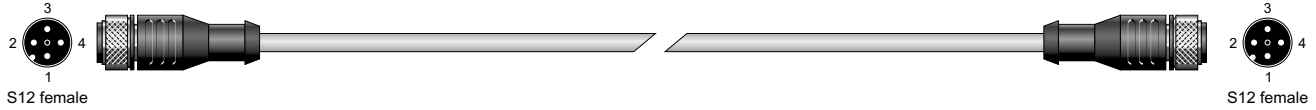
RCK-1181-020



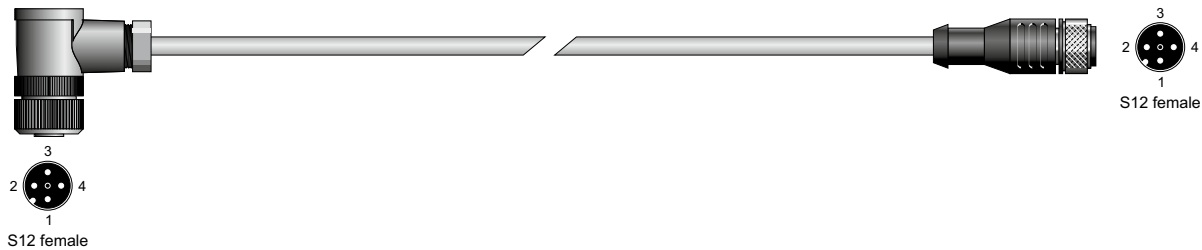
# ACCESSORIES

## CABLES

### CABLES FOR RFID COUPLERS LF



| PART REFERENCE         | TYPE                              | CABLE | LENGTH |
|------------------------|-----------------------------------|-------|--------|
| S12-4FUG-010-NNRN-12FG | Socket straight / socket straight | PUR   | 1 m    |
| S12-4FUG-020-NNRN-12FG | Socket straight / socket straight | PUR   | 2 m    |
| S12-4FUG-050-NNRN-12FG | Socket straight / socket straight | PUR   | 5 m    |



| PART REFERENCE         | TYPE                                 | CABLE | LENGTH |
|------------------------|--------------------------------------|-------|--------|
| S12-4FUW-010-NNRN-12FG | Socket right angle / socket straight | PUR   | 1 m    |
| S12-4FUW-020-NNRN-12FG | Socket right angle / socket straight | PUR   | 2 m    |
| S12-4FUW-050-NNRN-12FG | Socket right angle / socket straight | PUR   | 5 m    |



| PART REFERENCE         | TYPE                                    | CABLE | LENGTH |
|------------------------|---|-------|--------|
| S12-4FUW-010-NNRN-12FW | Socket right angle / socket right angle | PUR   | 1 m    |
| S12-4FUW-020-NNRN-12FW | Socket right angle / socket right angle | PUR   | 2 m    |
| S12-4FUW-050-NNRN-12FW | Socket right angle / socket right angle | PUR   | 5 m    |

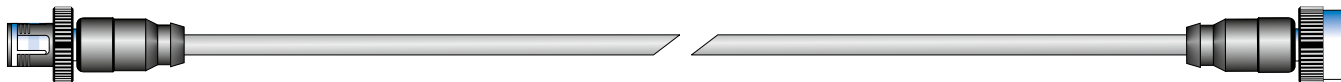
## CABLES

### STANDARD CABLES



| PART REFERENCE    | TYPE                            | CABLE | LENGTH |
|-------------------|---------------------------------|-------|--------|
| S12-4FVG-006-12MG | Socket straight / plug straight | PVC   | 0.6 m  |
| S12-4FVG-020-12MG | Socket straight / plug straight | PVC   | 2 m    |
| S12-4FVG-050-12MG | Socket straight / plug straight | PVC   | 5 m    |
| S12-4FUG-006-12MG | Socket straight / plug straight | PUR   | 0.6 m  |
| S12-4FUG-020-12MG | Socket straight / plug straight | PUR   | 2 m    |
| S12-4FUG-050-12MG | Socket straight / plug straight | PUR   | 5 m    |

### QUICK-LOCK CABLES



| PART REFERENCE         | TYPE                            | CABLE | LENGTH |
|------------------------|---------------------------------|-------|--------|
| S12-4FVG-003-NNNQ-12MG | Socket straight/ plug straight  | PVC   | 0.3 m  |
| S12-4FVG-006-NNNQ-12MG | Socket straight / plug straight | PVC   | 0.6 m  |
| S12-4FUG-003-NNNQ-12MG | Socket straight / plug straight | PUR   | 0.3 m  |
| S12-4FUG-006-NNNQ-12MG | Socket straight / plug straight | PUR   | 0.6 m  |

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# RFID PRODUCTS

## TRANSPONDERS

### RTM-0160-000

|                             |           |  |          |
|-----------------------------|-----------|--|----------|
| <b>RFID PRODUCT</b>         | <b>R</b>  | <b>TEMPERATURE</b>                       |          |
| <b>TRANSPONDER</b>          | <b>T</b>  | Standard up to + 80°C                    | <b>0</b> |
| <b>SERIES</b>               |           | High up to +125°C                        | <b>1</b> |
| All metal V2A               | <b>F</b>  | Ultra high up to +250°C                  | <b>2</b> |
| All metal, laser welded V4A | <b>L</b>  | <b>TECHNOLOGY</b>                        |          |
| Metal V2A                   | <b>M</b>  | Low Frequency EM4056                     | <b>0</b> |
| Plastic                     | <b>P</b>  | High Frequency ISO 15693 ICode SLI-S     | <b>2</b> |
| <b>TYPE</b>                 |           | High Frequency ISO 15693 FRAM MBR89R1186 | <b>6</b> |
| Smooth sleeve               | <b>0</b>  | High Frequency ISO 15693 ICode SLI       | <b>8</b> |
| Non-embeddable              | <b>1</b>  | <b>PROGRAMMING</b>                       |          |
| Embeddable                  | <b>2</b>  | Blank                                    | <b>0</b> |
| <b>SIZE</b>                 |           | Preprogrammed                            | <b>1</b> |
| Diameter [mm]               | <b>XX</b> | <b>MATERIAL</b>                          |          |
|                             |           | Epoxy                                    | <b>0</b> |
|                             |           | PBTP                                     | <b>1</b> |
|                             |           | LCP                                      | <b>2</b> |
|                             |           | PPS                                      | <b>3</b> |

| Part reference | Chapter/page | Part reference | Chapter/page |
|----------------|--------------|----------------|--------------|
| RTF-1300-000   | 4/395        | RTP-0201-020   | 4/399        |
| RTL-0102-001   | 4/396        | RTP-0263-020   | 4/400        |
| RTL-0162-001   | 4/396        | RTP-0301-000   | 4/393        |
| RTL-0262-001   | 4/396        | RTP-0301-020   | 4/399        |
| RTL-1302-001   | 4/397        | RTP-0501-000   | 4/393        |
| RTL-2162-001   | 4/397        | RTP-0501-020   | 4/399        |
| RTL-2302-001   | 4/397        | RTP-0502-022   | 4/401        |
| RTM-0100-000   | 4/394        | RTP-0502-062   | 4/401        |
| RTM-0160-000   | 4/394        | RTP-0502-082   | 4/401        |
| RTM-0260-000   | 4/394        |                |              |
| RTM-2160-000   | 4/395        |                |              |
| RTM-2300-000   | 4/395        |                |              |
| RTP-0090-020   | 4/400        |                |              |
| RTP-0160-020   | 4/400        |                |              |
| RTP-0201-000   | 4/393        |                |              |



# RFID PRODUCTS

## READ/WRITE MODULES

### RLS-1181-030 (-120)

|                          |          |                              |
|--------------------------|----------|------------------------------|
| <b>RFID PRODUCTS</b>     | <b>R</b> | <b>SHORT HOUSING</b>         |
| <b>READ/WRITE MODULE</b> | <b>L</b> | <b>TEMPERATURE</b>           |
| <b>CONNECTION</b>        | <b>S</b> | Standard up to + 80°C 0      |
| S12 connector, 4-pins    |          | High up to +125°C 1          |
| USB A male               |          | <b>TECHNOLOGY</b>            |
| <b>TYPE</b>              |          | ContriNET HF 2               |
| Non-embeddable 1         |          | ContriNET LF 3               |
| <b>SIZE</b>              |          | <b>NETWORK</b>               |
| M18 18                   |          | ContriNET 0                  |
| M30 30                   |          | USB 2                        |
|                          |          | IO-Link 3                    |
|                          |          | <b>MATERIAL</b>              |
|                          |          | Stainless steel V2A 0        |
|                          |          | PBTP / chrome-plated brass 1 |
|                          |          | Stainless steel V4A 2        |
|                          |          | PBTP / stainless steel V2A 3 |

| Part reference   | Chapter/page |
|------------------|--------------|
| RLS-1180-030     | 4/404        |
| RLS-1181-030     | 4/404        |
| RLS-1181-220     | 4/415        |
| RLS-1181-220-120 | 4/415        |
| RLS-1181-230     | 4/414        |
| RLS-1181-320     | 4/411        |
| RLS-1182-031     | 4/405        |
| RLS-1183-020     | 4/406        |
| RLS-1300-030     | 4/405        |
| RLS-1301-030     | 4/404        |
| RLS-1301-220     | 4/415        |
| RLS-1301-220-120 | 4/415        |
| RLS-1301-230     | 4/414        |
| RLS-1301-320     | 4/411        |
| RLS-1302-031     | 4/405        |
| RLS-1303-020     | 4/406        |

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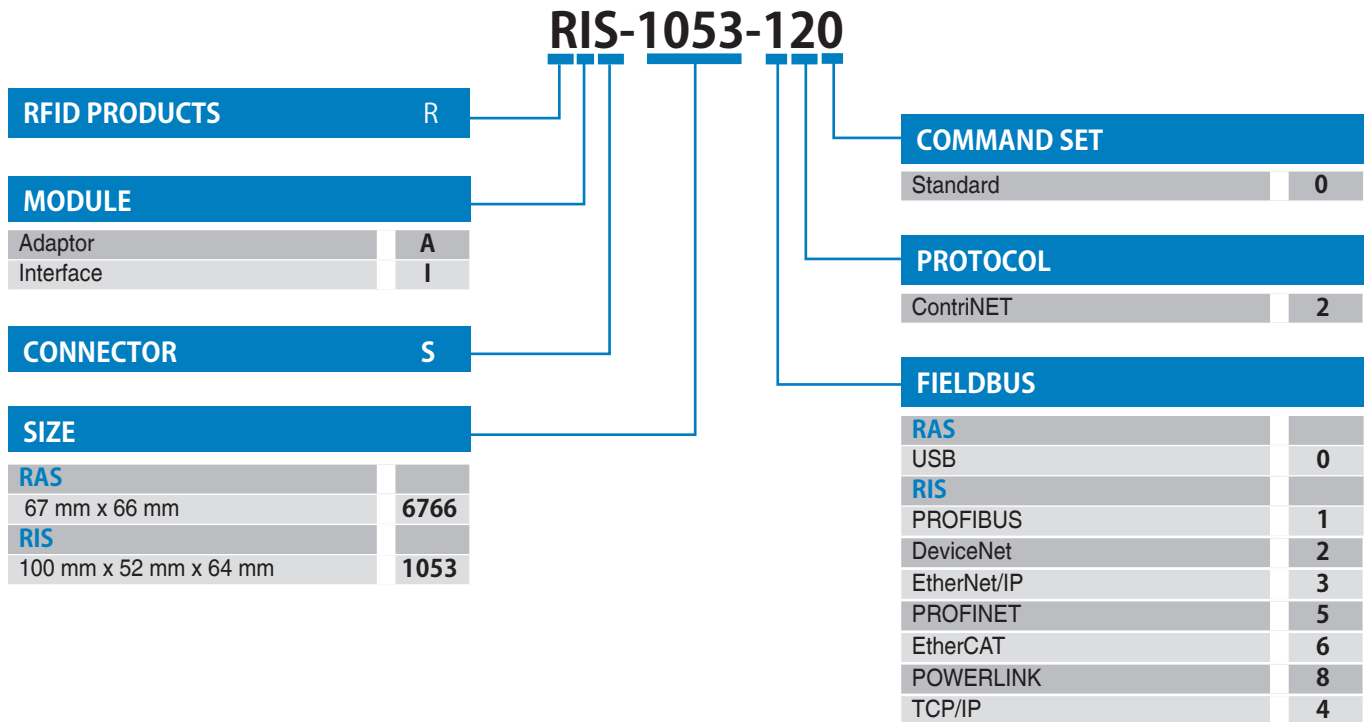
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### Part reference

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|              |       |
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| RAS-6766-020 | 4/428 |
| RIS-1053-120 | 4/420 |
| RIS-1053-220 | 4/421 |
| RIS-1053-320 | 4/421 |
| RIS-1053-520 | 4/421 |
| RIS-1053-620 | 4/421 |
| RIS-1053-820 | 4/421 |
| RIS-1613-400 | 4/423 |
| RIS-1208-400 | 4/423 |