**BL ident®** – modular UHF RFID system – interference-proof/long-range transmission

The new UHF read/write heads enable long distance read/write distances, even at high speed. The data carriers are almost infinitely re-usable (EEPROM: 10^6 or 10^7 times).

**Long-range** – new areas of application with one UHF read/write head; even at high speed.

**Flexed** – more operations or time-saving IF on one BL ident® electronic module.

**Application optimisation** – modular system for up to 16 different read/write heads per interface.

**Universal** – durable, also made for special applications, direct mounting on metal, in autoclaves, high-temperature resistant up to +210 °C.

**Interoperable** – interfaces for PROFINET, DeviceNet™, EtherCAT®/Ethernet, Modbus-TCP, OPC-UA;

**Rugged** – interference-free operation, IFG tested, active read/write heads.

For more information on RFID, please see flyer D101759 and D111010.

www.turck.com
BL ident® – modular UHF RFID system – interference-proof/long-range transmission

MODULAR RFID SYSTEM UHF

BL ident® – use the strengths of UHF technology in your applications!

Whether applied in production control systems, logistics or automation processes, the long range UHF technology at heart® by TURCK makes it possible. Compared to HF, longer operating distances are achieved, even in harsh industrial environments and with data exchange on the fly.

The approved UHF modules can be combined flexibly and plugged to the at heart® system without complicated configuration.

New read/write heads enable long distance bulk reading, first and last, on-the-fly and even at high speed. The data carriers are almost infinitely readable (EEPROM: 10⁸ or 10⁹ times).

- Long range – new area of operation
- read/write heads enable operating distances of up to 3 m on the fly, even at high speed.
- Flexible – more operations at once: read/write heads on one BL ident® electronic reader
- Simplified – modular system fits up to different read/write heads per interface
- Universal – durable, also made for special applications, direct mounting on metal, in automobiles, high temperature resistant up to +210 °C
- Integrated – Interfaces for PROFINET, ETHERCAT®, EtherCAT® Modbus TCP, PROFINET IO, EtherCAT® programming gateway
- Robust – interference-free operation, PROFINET active read/write heads
- Interoperable – international standards (ISO 18000-6C/Gen 2, ISO 15693)

For more information on RFID, please see flyer D101687 and D101688.
Rugged UHF RFID data carrier

<table>
<thead>
<tr>
<th>Dimension drawing</th>
<th>Type code</th>
<th>Description</th>
<th>Memory [byte] (S-FROM)</th>
<th>Frequency band [MHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-Q240L280-H1147</td>
<td>TN865-Q240L280</td>
<td>For direct mounting on metal</td>
<td>33 64</td>
<td>860-868</td>
</tr>
<tr>
<td>RH-Q280L640-V1147</td>
<td>TN865-Q280L640</td>
<td>For direct mounting on metal</td>
<td>33 64</td>
<td>860-868</td>
</tr>
<tr>
<td>TH-C1147</td>
<td>RH-C1147</td>
<td>Flexible connection cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-Q240L280</td>
<td>TW865-868-R50</td>
<td>Ø 50 mm with metal eyelets, self-adhesive</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BL ident® modular RFID system data carriers and read/write heads for UHF operation

Mixed operation of UHF and HF, reliable, interference-free and safe

Thanks to high UHF data transmission rates, even high speed reading at high speed is possible. The integrated HF and UHF read/write heads incorporate the antenna and electronics in the housing. They guarantee safe transmission of data, even when exposed to electromagnetic fields, such as in direct vicinity to welding or switching jobs. High performance antenna systems also contribute to reliable reading and transmission via high frequency cables.

Note
For more information on connection technology for fieldbus standards, please refer to the BL ident® overview in D10166.

Easy integration of UHF

With Ray-Tracer, a special UHF RFID simulation software, different system combinations can be tested in customer environments before installation. The test results are reliable and reduce the cost for planning and analyzing of UHF RFID systems significantly.

Large operating distances in industrial environments

Read/write distances of several meters are achieved, even on dirty surfaces. The data carriers are suitable for mixed operation of HF and UHF as well as for pure operation. The read/write heads incorporate the antenna and electronics in the housing. They guarantee safe transmission of data, even when exposed to electromagnetic fields, such as in direct vicinity to welding or switching jobs. High performance antenna systems also contribute to reliable reading and transmission via high frequency cables.

Fast and safe bulk reading

Thanks to high UHF data transmission rates, even high speed reading at high speed is possible. The integrated HF and UHF read/write heads incorporate the antenna and electronics in the housing. They guarantee safe transmission of data, even when exposed to electromagnetic fields, such as in direct vicinity to welding or switching jobs. High performance antenna systems also contribute to reliable reading and transmission via high frequency cables.

UHF RFID read/write heads

<table>
<thead>
<tr>
<th>Dimension drawing</th>
<th>Type code</th>
<th>Description</th>
<th>Memory [byte] (S-FROM)</th>
<th>Frequency band [MHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-Q208L400</td>
<td>TM860-604</td>
<td>Read distances approx. 1.5 m *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-Q208L400</td>
<td>ZKP4-10-WAS4/S77/S366</td>
<td>Connection cable for RH-Q208L400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-Q208L400</td>
<td>ZKP4-5-WAS4/S77/S366</td>
<td>Connection cable for RH-Q208L400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UHF RFID smart labels

<table>
<thead>
<tr>
<th>Dimension drawing</th>
<th>Type code</th>
<th>Description</th>
<th>Memory [byte] (S-FROM)</th>
<th>Frequency band [MHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-Q240L280</td>
<td>TW865-868-L7-21-T-E029</td>
<td>Tag label, double layer customer-specific print, applicable</td>
<td>12 8</td>
<td>860-868</td>
</tr>
</tbody>
</table>

Note
For more information on connection technology for fieldbus standards, please refer to the BL ident® overview in D10166.
**Rugged UHF RFID data carrier**

<table>
<thead>
<tr>
<th>Dimension drawing</th>
<th>Type code</th>
<th>Description</th>
<th>Memory [byte]</th>
<th>Frequency band [MHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TW865-Q240L280-H1147</td>
<td>Read distances approx. 4 m *</td>
<td></td>
<td>12</td>
<td>965-988</td>
</tr>
<tr>
<td>TW865-Q280L640-H1147</td>
<td>For direct mounting on metal</td>
<td>44</td>
<td>865-888</td>
<td></td>
</tr>
<tr>
<td>TW865-Q132L120-M-B110</td>
<td>For direct mounting on metal and outdoor applications</td>
<td>32</td>
<td>64</td>
<td>865-888</td>
</tr>
<tr>
<td>TW865-Q128L120-M-B110</td>
<td>For direct mounting on metal</td>
<td>32</td>
<td>64</td>
<td>865-888</td>
</tr>
</tbody>
</table>

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**UHF RFID smart labels**

<table>
<thead>
<tr>
<th>Dimension drawing</th>
<th>Type code</th>
<th>Description</th>
<th>Memory [byte]</th>
<th>Frequency band [MHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TW865-806-L92-15-T-B28</td>
<td>Tool label, double-layer customerspecific print</td>
<td>12</td>
<td>965-988</td>
<td></td>
</tr>
<tr>
<td>TW865-806-L92-15-T-B28</td>
<td>Tool label, double-layer customerspecific print</td>
<td>12</td>
<td>965-988</td>
<td></td>
</tr>
<tr>
<td>TW865-806-L92-15-T-B28</td>
<td>Self-adhesive, for direct mounting on metal</td>
<td>32</td>
<td>64</td>
<td>965-988</td>
</tr>
</tbody>
</table>

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**UHF RFID read/write heads**

<table>
<thead>
<tr>
<th>Dimension drawing</th>
<th>Type code</th>
<th>Description</th>
<th>Memory [byte]</th>
<th>Frequency band [MHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TW865-515L100-520</td>
<td>Read distances approx. 5 m *</td>
<td></td>
<td>12</td>
<td>965-988</td>
</tr>
<tr>
<td>TW865-515L100-520</td>
<td>Read distances approx. 5 m *</td>
<td></td>
<td>12</td>
<td>965-988</td>
</tr>
<tr>
<td>TW865-515L100-520</td>
<td>High-temperature bake-up to 250 °C, up to 30 minutes</td>
<td>32</td>
<td>64</td>
<td>865-888</td>
</tr>
</tbody>
</table>

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**Easy integration of UHF**

With Ray-Tracer, a special UHF RFID simulation software, different system combinations can be tested in operator environments before installation. The test results are reliable and reduce the costs for planning and analysis of UHF RFID systems significantly.

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**Fast and safe bulk reading**

Thanks to high UHF data transmission rates, even bulk reading at high speed is possible. Multiple read/write heads can be connected up to the same interface. Mixed operation of UHF and HF is also possible. Cable lengths of up to 50 m enable flexible mounting between interface and read/write head. Active read/write heads incorporate the antenna and electronics in the housing. They guarantee UHF transmission of data, even when exposed to electromagnetical fields, or contact to any other metal surface.

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**Mixed operation of UHF and HF, reliable, interference-free and safe**

HF and UHF read/write heads can be connected to the same interface. Mixed operation of UHF and HF is also possible. Cable lengths of up to 50 m enable flexible mounting between interface and read/write head. Active read/write heads incorporate the antenna and electronics in the housing. They guarantee UHF transmission of data, even when exposed to electromagnetical fields, or contact to any other metal surface.

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**Notes**

For more information on connection technology for fieldbus standards, please refer to the BL ident overview in D101686.

* Actual distances may deviate from the indicated measures.
Rugged UHF RFID data carrier

<table>
<thead>
<tr>
<th>Dimension drawing</th>
<th>Type code</th>
<th>Description</th>
<th>Memory [byte]</th>
<th>Frequency band</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN865-Q150L170</td>
<td>M-B1147</td>
<td>Read distances approx. 1.5 m *</td>
<td>15</td>
<td>64</td>
</tr>
<tr>
<td>TN865-Q240L280</td>
<td>M-B1147</td>
<td>Read distances approx. 5 m *</td>
<td>24</td>
<td>64</td>
</tr>
</tbody>
</table>

* Attainable distances always depend on the combination of read/write head and data carrier as well as the mounting conditions.

Mixed operation of UHF and HF, reliable, interference-free and safe

Thanks to high UHF data transmission rates, even fast reading at high speed is possible. The UHF and HF read/write heads incorporate the antennas and interface (S = simple I/O communication directly in your system, DI = digital interface, P = programmatic interface, C = optional card interface) into the housing. They guarantee safe transmission of data, even when exposed to electromagnetic fields, or contact to any material. HF and UHF read/write heads can be connected to the same interface. Mixed operation of HF and UHF data carriers is possible in EPC Gen2 and ISO 15693 protocols. UHF data carriers can be enclosed in metal and operate reliably in the environment of control and field level.

Easy integration of UHF

With Ray-Tracer, a special UHF RFID simulation software, different system combinations can be tested in operation and environments before installation. The test results are reliable and reduce the costs for planning and analysis of UHF RFID systems significantly.

Fast and safe bulk reading

Thanks to high UHF data transmission rates, even fast reading at high speed is possible. The UHF and HF read/write heads incorporate the antennas and interface (S = simple I/O communication directly in your system, DI = digital interface, P = programmatic interface, C = optional card interface) into the housing. They guarantee safe transmission of data, even when exposed to electromagnetic fields, or contact to any material. HF and UHF read/write heads can be connected to the same interface. Mixed operation of HF and UHF data carriers is possible in EPC Gen2 and ISO 15693 protocols. UHF data carriers can be enclosed in metal and operate reliably in the environment of control and field level.

Note

For more information on connection technology for fieldbus standards, please refer to the BL ident® overview in D101686.
BL ident® – modular UHF RFID system – interference-proof/long-range transmission

BL ident® – use the strengths of UHF technology in your applications!

Whether applied in production control systems, in logistics or automation processes, the long range UHF technology at heart® by TURCK makes it possible. Compared to HF, longer operating distances are achieved, even in harsh industrial environments and with data exchange on-the-fly.

The approved UHF modules can be combined flexibly and plugged into the at heart® system without complicated configuration.

The new line of read/write heads enable long distance bulk reading, fast and safe, on-the-fly and even at high speed. The data carriers are almost infinitely rescanable (IDF/R/ID: 100 or 10^7 times).

Long range – new areas of operation: long range operating distance up to 3m.

Flexible – more operations on one ident® by TURCK module.

Plug connection – module connection to different read/write heads per interface.

Varied – universal, also made for special applications, direct mounting on metal, in automobiles, high temperature resistant up to +210°C.


Rugged – interference-free operation, IP67 rated, active read/write heads.

Interoperable – international standards (ISO 18000-6C/Gen2).

Sense it! Connect it! Bus it! Solve it!