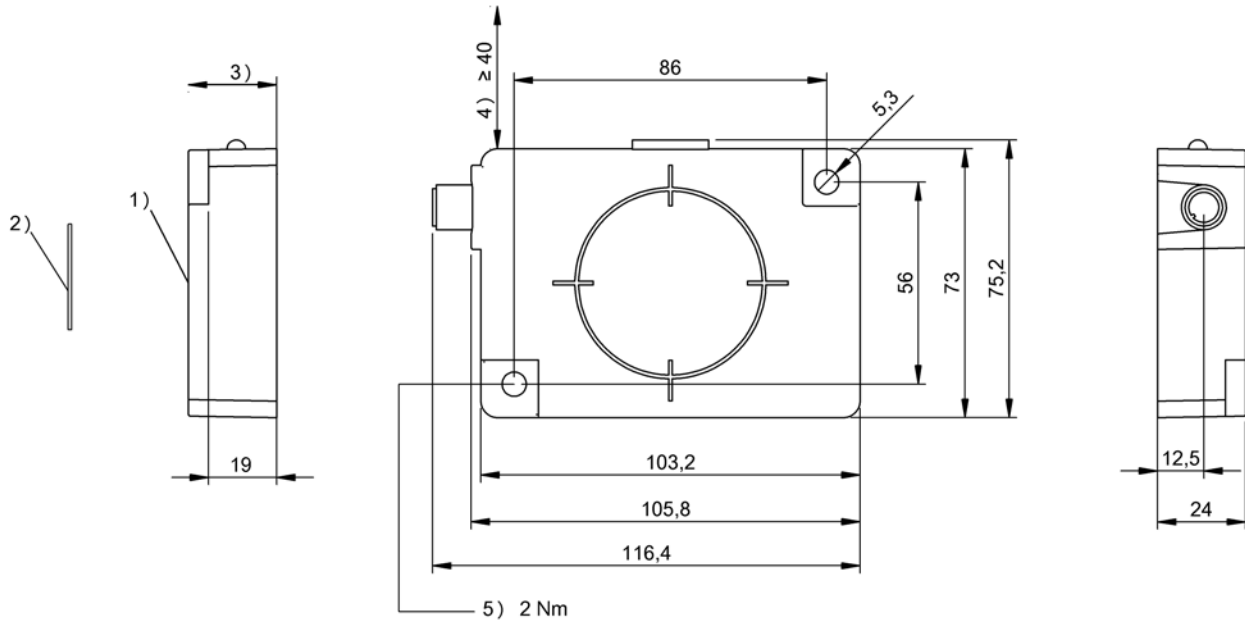


HF (13.56 MHz)  
 BIS M-411-068-001-02-S115  
 Order Code: BIS00W7

**BALLUFF**



- 1) Sensing surface
- 2) Data carrier
- 3) Clear zone
- 4) Clear zone surrounding
- 5) Tightening torque



### Basic features

|                               |                            |
|-------------------------------|----------------------------|
| <b>Antenna type</b>           | round                      |
| <b>Approval/Conformity</b>    | CE<br>cULus<br>EAC<br>WEEE |
| <b>EN 55011</b>               | Size 1, Cl. A              |
| <b>Principle of operation</b> | Read/write device          |

### Display/Operation

|                           |   |
|---------------------------|---|
| <b>Function indicator</b> | COM field, LED yellow<br>RF field, LED red<br>Power (ON), LED green |
|---------------------------|---|

### Electrical connection

|                   |   |
|-------------------|---|
| <b>Connection</b> | (RS422/power supply): M12x1-<br>Male, 8-pin |
|-------------------|---|

### Electrical data

|  |               |
|--|---------------|
| <b>Current consumption max. at 24 V DC</b> | 400 mA        |
| <b>EN 300330-1</b>                         | Power Class 5 |
| <b>Operating voltage <math>U_b</math></b>  | 10...30 VDC   |
| <b>Residual ripple max.</b>                | included      |

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# BALLUFF

### Environmental conditions

|                         |             |
|-------------------------|-------------|
| Ambient temperature     | -20...50 °C |
| Continuous shock load   | yes         |
| EN 60068-2-27, Shock    | yes         |
| EN 60068-2-32 Free fall | yes         |
| EN 60068-2-6, Vibration | yes         |
| IP rating               | IP67        |
| Storage temperature     | -20...70 °C |

### Functional Characteristics

|                              |                                      |
|------------------------------|--------------------------------------|
| Supported data carrier types | DIN<br>ISO<br>14443<br>DIN ISO 15693 |
|------------------------------|--------------------------------------|

### Functional safety

|              |         |
|--------------|---------|
| MTTF (40 °C) | 107.7 a |
|--------------|---------|

### Material

|                  |                     |
|------------------|---------------------|
| Housing material | PC, With PU potting |
|------------------|---------------------|

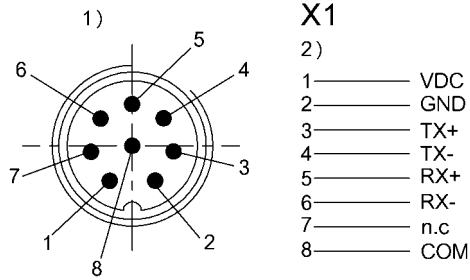
### Mechanical data

|                    |                         |
|--------------------|-------------------------|
| Application weight | 200.00 g                |
| Dimension          | 75 x 24 x 105 mm        |
| Installation       | metal-free (clear zone) |

### Output/Interface

|           |       |
|-----------|-------|
| Interface | RS422 |
|-----------|-------|

### Connector Drawings



### Help Views

HF (13.56 MHz)

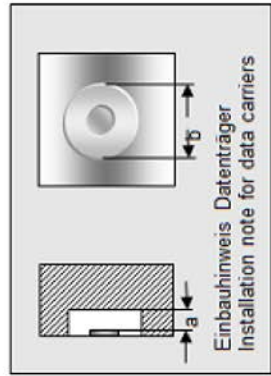
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**BALLUFF**

**BIS M-411-\_\_**

|   | BIS M-130-03/L | BIS M-130-07/L | BIS M-132-03/L | BIS M-132-03/L-<br>HT |
|---|----------------|----------------|----------------|-----------------------|
| passende Datenträger<br>Appropriate data carriers                                 |                |                |                |                       |
| Abstand Datenträger zu Metall in mm ( a )<br>Data carrier distance to metal in mm | >10            | >10            | >25            | >25                   |
| Freizone Datenträger in mm ( b )<br>Data carrier clear zone in mm                 | >60            | >60            | >100           | >100                  |
| Schreibabstand in mm<br>Write distance in mm                                      | 0-20           | 0-13           | 0-80           | 0-70                  |
| Lesabstand in mm<br>Read distance in mm   | 0-20           | 0-13           | 0-80           | 0-70                  |
| Versatz in mm<br>bei Abstand von  | 0 ±22          | ±22            | ±50            | ±42                   |
|   | 5 ±22          | ±22            | ±50            | ±42                   |
|   | 9 ±19          | ±20            | ±50            | ±42                   |
|   | 12 ±19         | ±12            | ±50            | ±42                   |
|   | 13 ±19         | ±5             | ±50            | ±42                   |
|   | 15 ±19         |                | ±50            | ±42                   |
|   | 20 ±14         |                | ±50            | ±42                   |
|   | 22             |                | ±40            | ±39                   |
|   | 26             |                | ±40            | ±39                   |
|   | 30             |                | ±40            | ±39                   |
|   | 35             |                | ±40            | ±39                   |
|   | 40             |                | ±40            | ±39                   |
|   | 45             |                | ±35            | ±36                   |
|   | 50             |                | ±35            | ±36                   |
|   | 60             |                | ±35            | ±36                   |
|   | 65             |                | ±30            | ±28                   |
|   | 70             |                | ±30            | ±28                   |
|   | 75             |                | ±30            |                       |
|   | 80             |                | ±30            |                       |
|   | 90             |                |                |                       |
|   | 100            |                |                |                       |



HF (13.56 MHz)

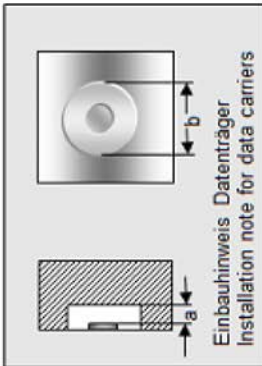
BIS M-411-068-001-02-S115

Order Code: BIS00W7

**BALLUFF**

**BIS M-411-**

|  | BIS M-132-10/L  | BIS M-132-10/L-<br>HT                         | BIS M-133-02/A | BIS M-134-10/L  | BIS M-134-10/L-<br>HT   |
|--|---|---|----------------|---|---|
| passende Datenträger<br>Appropriate data carriers  |   |   |                |   |   |
| Abstand Datenträger zu Metall in mm ( <b>a</b> )<br>Data carrier distance to metal in mm | >25   | >25   | >25            | >50   | >50   |
| Freizone Datenträger in mm ( <b>b</b> )<br>Data carrier clear zone in mm                 | >100  | >100  | >100           | >150  | >150  |
| Schreibabstand in mm<br>Write distance in mm   | 0-26  | 0-22  | 38-52          | 0-56  | 0-60  |
| Leseabstand in mm<br>Read distance in mm   | 0-26  | 0-22  | 38-52          | 0-56  | 0-60  |
| Versatz in mm<br>bei Abstand von   | 0<br>5<br>10<br>15<br>20<br>22<br>26<br>30<br>38<br>40<br>45<br>50<br>52<br>56<br>60<br>70<br>80<br>90<br>100<br>110<br>120 | ±20<br>±20<br>±20<br>±20<br>±15<br>±15<br>±15 |                | ±35<br>±35<br>±35<br>±35<br>±35<br>±30<br>±30<br>±30<br>±30<br>±25<br>±25<br>±25<br>±25 | ±32<br>±32<br>±32<br>±32<br>±32<br>±30<br>±30<br>±30<br>±30<br>±25<br>±25<br>±25<br>±25 |
| Offset in mm<br>at distance  |   |   |                |   |   |



HF (13.56 MHz)

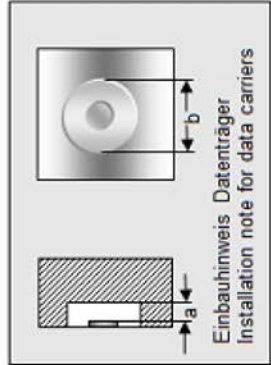
BIS M-411-068-001-02-S115

Order Code: BIS00W7

**BALLUFF**

**BIS M-411-\_\_**

|   | BIS M-135-02/L | BIS M-135-03/L | BIS M-135-03/L-<br>HT | BIS M-135-07/L | BIS M-135-07/L-<br>HT |
|---|----------------|----------------|-----------------------|----------------|-----------------------|
| passende Datenträger<br>Appropriate data carriers                                 |                |                |                       |                |                       |
| Abstand Datenträger zu Metall in mm ( a )<br>Data carrier distance to metal in mm | >50            | >50            | >50                   | >50            | >50                   |
| Freizone Datenträger in mm ( b )<br>Data carrier clear zone in mm                 | >150           | >150           | >150                  | >150           | >150                  |
| Schreibabstand in mm<br>Write distance in mm                                      | 0-100          | 0-110          | 0-125                 | 11-95          | 11-75                 |
| Leseabstand in mm<br>Read distance in mm  | 0-100          | 0-110          | 0-125                 | 11-95          | 11-75                 |
| Versatz in mm<br>bei Abstand von  | 0 ±50          | ±62            | ±65                   |                |                       |
|   | 5 ±50          | ±62            | ±65                   |                |                       |
|   | 11 ±50         | ±62            | ±65                   | ±52            | ±50                   |
|   | 15 ±50         | ±62            | ±65                   | ±52            | ±50                   |
|   | 20 ±50         | ±62            | ±65                   | ±52            | ±50                   |
|   | 25 ±50         | ±62            | ±65                   | ±52            | ±50                   |
|   | 30 ±50         | ±62            | ±65                   | ±52            | ±50                   |
|   | 35 ±50         | ±58            | ±65                   | ±48            | ±42                   |
|   | 40 ±50         | ±58            | ±65                   | ±48            | ±42                   |
|   | 45 ±50         | ±58            | ±62                   | ±48            | ±42                   |
|   | 50 ±50         | ±58            | ±62                   | ±48            | ±42                   |
|   | 55 ±50         | ±58            | ±62                   | ±48            | ±42                   |
|   | 60 ±50         | ±58            | ±62                   | ±48            | ±42                   |
|   | 75 ±45         | ±52            | ±62                   | ±44            | ±35                   |
|   | 85 ±45         | ±52            | ±58                   | ±44            | ±35                   |
|   | 95 ±45         | ±52            | ±58                   | ±40            |                       |
|   | 100 ±45        | ±52            | ±58                   |                |                       |
|   | 110            | ±48            | ±58                   |                |                       |
|   | 120            |                | ±58                   |                |                       |
|   | 125            |                | ±58                   |                |                       |
|   | 130            |                | ±50                   |                |                       |



HF (13.56 MHz)

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**BALLUFF**

**BIS M-411-\_\_**

|   | BIS M-110-02/L | BIS M-111-02/L |  |  |  |
|---|----------------|----------------|--|--|--|
| passende Datenträger                      |                |                |  |  |  |
| Appropriate data carriers                 |                |                |  |  |  |
| Abstand Datenträger zu Metall in mm ( a ) |                |                |  |  |  |
| Data carrier distance to metal in mm      | >25            | >25            |  |  |  |
| Freizone Datenträger in mm ( b )          |                |                |  |  |  |
| Data carrier clear zone in mm             | >100           | >100           |  |  |  |
| Schreibabstand in mm                      |                |                |  |  |  |
| Write distance in mm                      | 0-45           | 0-67           |  |  |  |
| Leseabstand in mm                         |                |                |  |  |  |
| Read distance in mm                       | 0-45           | 0-67           |  |  |  |
| Versatz in mm                             | 0              | ±30            |  |  |  |
| bei Abstand von                           | 5              | ±30            |  |  |  |
|   | 10             | ±30            |  |  |  |
|   | 15             | ±28            |  |  |  |
|   | 20             | ±28            |  |  |  |
|   | 25             | ±28            |  |  |  |
|   | 30             | ±28            |  |  |  |
|   | 35             | ±25            |  |  |  |
|   | 40             | ±25            |  |  |  |
|   | 45             | ±10            |  |  |  |
|   | 50             |                |  |  |  |
|   | 55             | ±35            |  |  |  |
|   | 60             | ±35            |  |  |  |
|   | 67             | ±10            |  |  |  |
|   | 70             |                |  |  |  |
|   | 75             |                |  |  |  |
|   | 80             |                |  |  |  |
|   | 85             |                |  |  |  |
|   | 90             |                |  |  |  |
|   | 95             |                |  |  |  |
|   | 100            |                |  |  |  |

