



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque



**Basic features**

Antenna type	round
Approval/Conformity	CE UKCA WEEE
EN 55011	Size 1, Cl. A
EN 55022	Size 1, Cl. B
Food compatibility	Directive 02/72/EC
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Principle of operation	Data carrier

**Electrical data**

Data retention time/years	≥ 10 at 55 °C
Memory organization	250 × 8 bits
Programming cycles	≥ 10.000.000.000
Programming time	for 16 bytes: 0.060s
Read cycles	Unlimited
Read time	User ID for 8 bytes: 0.02 s for 16 bytes: 0.03 s

**Environmental conditions**

Ambient temperature	-25...85 °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	IP68
Storage temperature	-25...85 °C
Storage temperature temporary	140 °C 1x100 h -40 °C...90 °C 1x1000 h

**Functional Characteristics**

Memory type	FRAM
Supported data carrier types	DIN ISO 15693
UID serial number, read-only	8 Byte
User data, read/write	2000 Byte

**Material**

Housing material	PA 6
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**Mechanical data**

Application weight	3.00 g
Dimension	∅ 30 x 2.8 mm
Installation	metal-free (clear zone)

HF (13.56 MHz)  
**BIS M-111-02/L**  
**Order Code: BIS0045**

**BALLUFF**

**Remarks**

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Values are under rated conditions unless otherwise specified.  
Only when used together with the appropriate read/write head.  
For installation requirements see corresponding read/write head.  
Time specification includes data check.  
Torsional, bending and impact loading is not permitted.  
Recommended screw: M5, 8.8  
For installation in metal: Observe clear zone.  
IP68 tested according to BWN Pr 36