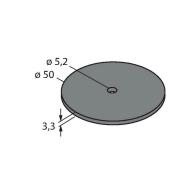


In TAG 500 2K FRAM HF Tag



Technical data

Operating frequency

| Туре | In TAG 500 2K FRAM |
|---|--|
| ID | 100002360 |
| Remark to product | Not suitable for direct mounting on metal |
| Device marking | II 1G Ex ia IIC T6 Ga II 1D Ex ia IIIC T85 °C Da I M1 Ex ia I Ma |
| Approval acc. to | Ex Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082X |
| Data transfer | Inductive coupling |
| Technology | HF RFID |
| Operating frequency | 13.56 MHz |
| Radio communication and protocol stan- dards | ISO 15693 NFC Typ 5 |
| Read/Write distance max. | 405 mm |
| | For explosion hazardous areas see in- struction leaflet |
| Design | Hard tag, R50 |
| Housing material | Plastic, PA6 |
| Active area material | Plastic, PA6, black |
| Protection class | IP69K |
| Tightening torque | ≤ 6.5 Nm |
| Packaging unit | 1 |
| Technical data | |
| Туре | In TAG 500 2K FRAM |
| ID | 100002360 |
| Remark to product | Not suitable for direct mounting on metal |
| Data transfer | Inductive coupling |
| Technology | HF RFID |
| On exeting frequency | 40.50 MUL |



Features

- The tags must undergo adequate stress tests within the proposed temperature processes before deployment.
- The following stress test was performed on this tag:
 - Cyclic temperature stress: 5 min at -40 $^\circ\text{C}$ 5 min at 90 $^\circ\text{C}$
- Number of tested cycles: 100, transition period: 30 seconds
- Continuous load: 140 °C for 100 hours
- This successfully performed test does not imply suitability for a specific application, but merely serves as proof of the basic usability.
- FRAM memory 2 kB
- Not for direct mounting on metal
- ATEX category II 1 G, Ex Zone 0
- ATEX category II 1 D, Ex Zone 20
- ATEX category I M1, mining

Functional principle

The HF read/write devices operating at a frequency of 13.56 MHz form a transmission zone the size of which (0...500 mm) varies, depending on the combination of read/write head and tag used.

The read/write distances mentioned here only represent standard values measured under laboratory conditions, free from any influences caused by surrounding materials.

The read/write distances of tags suitable for mounting in/on metal were determined in/on metal.

Attainable distances may vary by up to 30 % due to component tolerances, mounting conditions, ambient conditions and material qualities (especially when mounted in metal). Testing of the application under real operating conditions is therefore essential, especially with on-the-fly reading and writing!

13.56 MHz



Technical data

| ChipFujitsu MB89R118Memory size2048 ByteMemoryRead/WriteFreely usable memory2000 ByteNumber of read operationsunlimitedNumber of write operations 10^{10} Typical read time0.5 ms/ByteTypical write time0.5 ms/ByteRadio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal10 mmTemperature during read/write access-25+85 °CTemperature outside detection range-45+85 °C140 °C, 1 × 100 hFor explosion hazardous areas see instruction leafletDevice markingII 1G Ex ia IIC T6 Ga I 1M Ex ia IIC T6 Ga I M1 Ex ia I IM T6 S°C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X EX Veritas 21UKEX1103X IECEX EXV 21.0082XDesignHard tag, R50Diameter5.0 mm +/- 0.5 mmHousing height3.5 mm +/- 0.5 mmHousing heightS.5 mm +/- 0.5 mmHousing naterialPlastic, PA6 Active area materialProtection classIP69KPackaging unit1 | Memory type | FRAM |
|---|--------------------------------------|----------------------------|
| MemoryRead/WriteFreely usable memory2000 ByteNumber of read operationsunlimitedNumber of write operations10 ¹⁰ Typical read time0.5 ms/ByteTypical write time0.5 ms/ByteRadio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal10 mmTemperature during read/write access-25+85 °CTemperature outside detection range-45+85 °CTemperature outside detection range-45+85 °CDevice markingII 1G Ex ia IIC T6 Ga IM Ex ia IIC T6 Ga IM Ex ia IIC T85 °C Da IM Ex ia IIC T85 °C CaDevice markingII 4G Ex ia IIC T6 Ga IM Ex ia IIC T85 °C Ca IM Ex | Chip | Fujitsu MB89R118 |
| Freely usable memory2000 ByteNumber of read operationsunlimitedNumber of write operations101°Typical read time0.5 ms/ByteTypical write time0.5 ms/ByteRadio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal10 mmTemperature during read/write access-25+85 °CTemperature outside detection range-45+85 °CTemperature outside detection range-45+85 °CDevice markingII 10 Ex ia IIC T6 Ga II 10 Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X EX Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter5.2 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Memory size | 2048 Byte |
| Number of read operationsunlimitedNumber of write operations10*°Typical read time0.5 ms/ByteTypical write time0.5 ms/ByteRadio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal10 mmTemperature during read/write access-25+85 °CTemperature outside detection range-45+85 °CTemperature outside detection range-45+85 °CDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X EX Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter5.0 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Memory | Read/Write |
| Number of write operations 10^{10} Typical read time 0.5 ms/Byte Typical write time 0.5 ms/Byte Radio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal 10 mm Temperature during read/write access $-25+85 \text{ °C}$ Temperature outside detection range $-45+85 \text{ °C}$ Temperature outside detection range $-45+85 \text{ °C}$ Device markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIIC T6 Ga II 1D Ex ia IIIC T8 5 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter $50 \text{ mm} + /- 0.3 \text{ mm}$ Housing height $3.5 \text{ mm} + /- 0.5 \text{ mm}$ Housing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque $\leq 6.5 \text{ Nm}$ | Freely usable memory | 2000 Byte |
| Typical read time0.5 ms/ByteTypical write time0.5 ms/ByteRadio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal10 mmTemperature during read/write access-25+85 °CTemperature outside detection range-45+85 °CTemperature outside detection range-45+85 °CDevice markingI1 G Ex ia IIC T6 Ga II 1D Ex ia IIIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter5.2 mm +/- 0.3 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Number of read operations | unlimited |
| Typical write time0.5 ms/ByteRadio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal10 mmTemperature during read/write access-25+85 °CTemperature outside detection range-45+85 °CTemperature outside detection range-45+85 °CDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIC T6 Ga II 1D Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X EX Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Number of write operations | 10 ¹⁰ |
| Radio communication and protocol standardsISO 15693 NFC Typ 5Minimum distance to metal10 mmTemperature during read/write access-25+85 °CTemperature outside detection range-45+85 °CTemperature outside detection range-45+85 °CDevice markingI140 °C, 1 × 100 hDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.5 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackProtection classIP69K | Typical read time | 0.5 ms/Byte |
| dardsNFC Typ 5Minimum distance to metal10 mmTemperature during read/write access $-25+85$ °CTemperature outside detection range $-45+85$ °CTemperature outside detection range $-45+85$ °C140 °C, 1 × 100 hFor explosion hazardous areas see in- struction leafletDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X ECX EXV 21.0082XDesignHard tag, R50Diameter 50 mm +/- 0.5 mmInternal diameter 5.2 mm +/- 0.3 mmHousing height 3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque ≤ 6.5 NmProtection classIP69K | Typical write time | 0.5 ms/Byte |
| Temperature during read/write access-25+85 °CTemperature outside detection range-45+85 °C140 °C, 1 × 100 hFor explosion hazardous areas see in- struction leafletDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | | |
| Temperature outside detection range-45+85 °C140 °C, 1 × 100 hFor explosion hazardous areas see in- struction leafletDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Minimum distance to metal | 10 mm |
| 140 °C, 1 × 100 hFor explosion hazardous areas see in- struction leafletDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Temperature during read/write access | -25+85 °C |
| For explosion hazardous areas see in- struction leafletDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing naterialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Temperature outside detection range | -45+85 °C |
| struction leafletDevice markingII 1G Ex ia IIC T6 Ga II 1D Ex ia IIIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | | 140 °C, 1 × 100 h |
| II 1D Ex ia IIIC T85 °C Da I M1 Ex ia I MaApproval acc. toEx Veritas 21ATEX1101X Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | | • |
| Ex Veritas 21UKEX1103X IECEx EXV 21.0082XDesignHard tag, R50Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Device marking | II 1D Ex ia IIIC T85 °C Da |
| Diameter50 mm +/- 0.5 mmInternal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Approval acc. to | Ex Veritas 21UKEX1103X |
| Internal diameter5.2 mm +/- 0.3 mmHousing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Design | Hard tag, R50 |
| Housing height3.5 mm +/- 0.5 mmHousing materialPlastic, PA6Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Diameter | 50 mm +/- 0.5 mm |
| Housing material Plastic, PA6 Active area material Plastic, PA6, black Tightening torque ≤ 6.5 Nm Protection class IP69K | Internal diameter | 5.2 mm +/- 0.3 mm |
| Active area materialPlastic, PA6, blackTightening torque≤ 6.5 NmProtection classIP69K | Housing height | 3.5 mm +/- 0.5 mm |
| Tightening torque ≤ 6.5 Nm Protection class IP69K | Housing material | Plastic, PA6 |
| Protection class IP69K | Active area material | Plastic, PA6, black |
| | Tightening torque | ≤ 6.5 Nm |
| Packaging unit 1 | Protection class | IP69K |
| | Packaging unit | 1 |