# PRODUCT DATASHEET

TELID® RFID Sensors

# TELID® 2m-D24

**Sensor transponder with RFID / NFC contactless communication interface**
- unique identification and free user memory
- battery-less measurement of temperature, humidity, pressure
- contactless data communication, HF ISO15693 / NFC
- ODP: on device data processing and formatting
- non-flexible hard TAG, package D24special

TELID®200 passive sensor transponders are an integral part of *microsensys* iID® contactless system solution. Battery-less sensors are very useful for maintenance-free wireless identification and sensor applications in industrial environment, quality check in food and pharma or in logistic processes. TELID®200 sensor transponders can be used together with iID®contactless RFID readers, third party RFID readers or NFC based mobile devices.

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contact microsensys for latest information          TELID2m-D24-011.docx

**Contactless interface:**                         closed coupling HF sensor solution TELID®200, iID®2000 system
*Chip Type / Compliance:*                          ISO15693 / NFC-V / NFC tag type 5 compliant
*Carrier Frequency / Communication Rate:*          13.56MHz / 26,48 kbps
*Communication Distance:*          0 ... 60 mm, depending on reader antenna and environmental conditions

**Environmental parameters:**
*Working Temperature:*                             -40°C ... +85°C
*Storage Temperature:*                             -40°C ... +95°C

**Sensor parameters:**                             integrated semiconductor sensor
*Measurement Range:*                               see type information
*Resolution:*                                      see type information
*Accuracy:*                                        see type information
*Thermal Time Constant:*                           depending on mounting technology

**Memory parameters:**     EEPROM non volatile memory,   read write endurance >$10^6$ cycles, data retention > 40 years
*Memory size:*                                     2kbit, 1.5kbit for free usage
*Static Memory (partial read-only protection*):*            TID, UID, parameters, calibration data
*Dynamic Memory:*                                  device information, measurement data

**Security features*:**
*Write protection:*                                partial read-only protection
*Password:*                        full, read-only or no memory access based on 32bit password
*Authentication:*                                  128-bit AES authentication
*Originality:*                             ECC-based programmable originality signature

**Operation:**
*Initialization:*                        permanent device and measurement parameter storage
*Functions:*                                       identify, read, write, get sensor
*Measurement:*          power on measurement, measurement on request, measurement series*
                                                   measurement adjustment by calibration data*

**Housing:**                               round, flat case, for dimension see type information
*Packaging:*                          glass fiber enforced housing, epoxy moulding (black)
*Marking:*                                         optional custom laser print
*Mounting instruction:*          usage in metal or non metal environment, see type information
                                   Mounting with glue or optional self adhesive glue pad

**Reading:**
*Industrial environment:*          M18 or M30 head reader, industrial handheld devices with NFC interface
*Desktop/OEM environment:*                   iID®PENmini, iID®module UNI13, iID®board U70
*Mobile use:*             iID® POCKEtwork, iID®PENsolid, mobile devices with NFC interface

**Software:**                              TELID®200 configuration tool for PC x86/x64
                                           iID® DEMOsoft for PC x86/x64

**Device interface:**                              driverless using text/plain NDEF message
                               GET_SENSOR command (for iID®contactless RFID interfaces)
                       iID® driver engine Windows/Android (for iID®contactless RFID interfaces)

# TELID® 210.m-D24

TELID®210.m-D24 is a passive sensor transponder supporting unique identification, data storage and temperature measurement supporting operation with iID®contactless RFID readers, third party RFID readers or NFC based mobile devices. The product can be attached to metal or non metal surfaces.

| Device type: | Temperature sensor TAG | Unit |
|---|---|---|
| Mounting | On metal and non metal surface | |
| Package | D24S<br>Plastic housing PA6.6 GF30<br>Epoxy moulding | |
| Dimension | D24 x 2.5 | mm |
| Measurement range | -40°C … +125°C<br>-40°F … +257°F | |
| Accuracy | +/- 1K at -40°C … +125°C (-40°F … +257°F)<br>+/- 0.5K at 0°C … +65°C (32°F … +149°F) | |
| Resolution | 0.0625 | K |
| Thermal contact | | |
| Productcode | **12.210.454.100** | |

# TELID® 290.m-D24

TELID®290.m-D24 is a multi sensor transponder supporting measurement of temperature, relative humidity and environmental pressure. It comes with unique identification number and allows object data storage. TELID®290.m supports operation with iID®contactless RFID readers, third party RFID readers or NFC based mobile devices.

| Device type: | Multi sensor TAG, temperature / relative humidity / pressure | Unit |
|---|---|---|
| Mounting | On metal and non metal surface | |
| Package | D24S<br>Plastic housing PA6.6 GF30<br>Epoxy moulding | |
| Dimension | D24 x 3 | mm |
| Measurement range | -40°C … +85°C<br>0%RH ... 100%RH<br>300hPa ... 1100hPa | |
| Accuracy | ± 0.5°K (25°C), ± 1.0°K (0°C…+65°C)<br>± 3%RH (20%RH…80%RH)<br>± 1hPa | |
| Resolution | 0.1°K<br>0.1%RH<br>1.3Pa/50mg | |
| Thermal contact | - | |
| Productcode | **12.290.454.100** | |

*) in development or on request