

PRODUCT DATASHEET

TELID® RFID Sensors

TELID® 454.moisture

Passive RFID moisture sensor transponder with UHF wireless interface

- moisture measurement for plant production or material health monitoring
- contactless identification and data communication, ISO 18000-6C compliant
- passive sensor device, energy harvesting by RF field
- with sensor pin, epoxy packaged TAG

RFID Sensor TELID® devices are an integral part of *microsensys* iID® system solution. These devices are very useful for wireless sensor or actuator applications in industrial solutions, for condition monitoring and material handling. TELID® sensor transponders are well supported by *microsensys* iID® contactless interfaces.



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this data sheet is subject to change
contact *microsensys* for latest information TELID454.moisture-001.docx

RFID Technology:

Type: RFID system TELID®400, based on ISO 18000-6C
Operating Frequency: long distance UHF sensor solution
Communication Rate: EU/US Band
Communication Distance: up link 128 kbps, down link 640 kbps
0 ... 150 cm, depending on reader antenna and environmental conditions

Environmental Conditions:

Working Temperature: IP68
Storage Temperature: -25°C...+60°C
-40°C ... +85°C, recommended 25°C

Sensor:

Type: material moisture, soil moisture
Resolution: volumetric water content (%), capacitive measurement
Accuracy: 1%, for details see type information
dependent on media type, typ. ±5 vol. %

Data Memory:

EPC Memory: EEPROM, non volatile, write endurance >100.000 cycles, data retention > 10 years
User Memory: EPC length up to 128bit
General: Up to 1984bit, for parameters, manufacturer data, remarks
Security features: password protected Kill/Access commands

Operation:

Basic functions: powered & triggered by RFID reader
Parameters: READ UII/EPC, READ/WRITE user memory, GET MOISTURE
calibration data (optional)

Housing:

Material: plastic housing
Marking: for dimension, see type information
Mounting instruction: glass fibre and epoxy casing
printed label with free area
no mounting, plug in pin

Energy Source:

Battery: PASSIVE SENSOR, no battery

Operation Devices:

Industrial environment: iID® INDUSTRY0906 or INDUSTRYpro8
Stationary: iID® controller
Mobile: iID® POCKETwork UHF

Software / solution:

iID® DEMOsoft 2020, SENSORDemo demonstration software
iID® controller running iID® sensor data capture software

Device interface:

GET_SENSOR_UHF command (for iID® contactless RFID interfaces)
iID® driver engine Windows/Android (for iID® contactless RFID interfaces)

*) in development or on request

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TELID® 454.moisture-pin95

TELID®454.moisture is a passive sensor transponder supporting unique identification, data storage and measurement of material moisture, specially soil moisture of diverse grounds. The most performant measurement evaluation is given by operating with sensor commands of iID®contactless RFID readers.

Device type:	Ground moisture sensor	Unit
Dimension pin probe	Pin - glass fibre substrate (FR4) with W=15, L=95, T=1.5	mm
Dimension antenna	Plate - glass fibre substrate (FR4) D=45, T=1.5	mm
Measurement type	capacitance	
Measurement range cap	0 ... 17	pF
Resolution cap	0.1	pF
Measurement range	0 ... 100	%, VWC
Accuracy	5 ⁱ	%, VWC
Resolution	1	%, VWC
Product code	15.454.303.00	

ⁱ typical value, may require material specific calibration