



Microwave Moisture Probe for measurement in hazardous areas



Characteristical Features

- Effordless changing of measuring head on-site
- High scanning speed to guarantee exact measurement
- High temperature stability (0-70°C)
- Deep penetrating measurement
- Smallest dimensions through latest electronic components
- Universal installation possibilities
- Probe type corresponds to ATEX 95 and corresponds to Requirement 94/4/EG



Application fields

In several concrete based industries, chemical, pharmaceutical, food and agriculture industries and many more



**Exchangeable
measuring head**

Technical Data:

Permitted field of application	Zone 20 (probe head) Zone 22 (mounting base)
Power Supply	+ 24 V DC (± 25%)
Outputs (analog)	2 x 0-20 mA
Power Consumption	0,2 Amp.
Frequency	433,92 MHz
Temperature Range	0° C- +70° C
Cable Connection	5 x 0,25 mm ² shielded (foil shield) L: 2 mtr., Miniature Round Connector, 5-pole, male
Dimensions	∅: 75 mm; Aggregate Probe L: 200 mm
Weight	2,7 kg
Cover	Stainless Steel, IP 68



[1] **EC-TYPE EXAMINATION CERTIFICATE**
- Translation -

[2] Equipment or Protective System Intended for use
in Potentially Explosive Atmospheres, **Directive 94/9/EC**

[3] EC-Type Examination Certificate Number: **IBExU00ATEX1073**

[4] Equipment or Protective System: Microwave-hygrometer probe

[5] Manufacturer: Franz Ludwig Gesellschaft für Mess- und
Regeltechnik mbH

[6] Address: Budenheimer Str. 1
D-55124 Mainz

[7] This equipment or protective system and any acceptable variation thereto is specified in the
schedule to this EC-Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with
Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protec-
tive system has been found to comply with the Essential Health and Safety Requirements relating
to the design and construction of equipment or protective systems intended for use in potentially
explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report IB-00-295 of 30.10.2000.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance
with: - DIN EN 50 281-1-1:1999
- DIN EN 50 281-1-2:1999

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective
system is subject to special conditions for safe use specified under [17] in the schedule to this EC-
Type Examination Certificate.

[11] This EC-Type Examination Certificate relates only to the design and construction of the specified
equipment or protective system according to the Directive 94/9/EC. If applicable, further require-
ments of this Directive apply to the manufacture and supply of this equipment or protective system.

[12] The marking of the equipment or protective system shall include the following:

 II 1/3D T 135 °C

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7 - D-09599 Freiberg
Phone: 0049 3731 3805.0 - Fax: 0049 3731 23650

Authorized for certifications
- Explosion protection -

Freiberg, 03.07.02

By order

(Dr. Lösch)

- Seal -
(Identification No. 0637)

Schedule

[13] **Schedule**

[14] **to EC-TYPE EXAMINATION CERTIFICATE IBExU00ATEX1073**

[15] **Description of equipment or protective system**

The probe serves to the determination of the humidity content of a dust with the help of resonance effects of emitted microwaves.

The enclosure consists of stainless steel. It is constructed dust-tight.

The probe tip rises into the Zone 20. The durable fixed cable of the probe is connected over a special plug and a terminal box to the supply apparatus and the evaluation apparatus. This apparatus is placed outside of the explosion-hazardous area.

Technical Data

Type designation: Microwave-hygrometer probe

Connected load: 24 V DC, 200 mA

Fuse in the evaluation apparatus: 0.5 A

UHF- radiation density: < 1 mW/cm²

Range of operating temperature: -20 °C up to +70 °C

Type of protection: IP 66

Further details are fixed in the documents (see Annex).

[16] **Test Report**

The test results are recorded comprehensively in the confidential test report IB-00-295 of 30.10.2000.

Summary of the Results:

The dust probe fulfils the requirements of the dust-explosion protection for equipment of the equipment group II and category 1/3. The maximum surface temperature is 135 °C in case of excessive dust layer. The probe tip is applicable for use in areas, which are explosion hazardous - in case of an installation in a dividing wall. At this, the enclosure of the attachment is placed in Zone 22.

Safety notes:

Before the CE-mark is attached, the manufacturer is obliged to carry out the necessary checks in context of the evaluation method for conformity according to the Directive 94/9/EC.

The dust probe is only permitted for the connection to a supply apparatus (FL-AE) over a terminal box outside of the explosions-hazardous area and with the fixed fuse-value.

At the installation, the heat dissipation of the enclosure of the attachment should not be inhibited. The enclosure has to be connected to earth.

The ignition temperature of the actual dust/air-mixture resp. the smouldering temperature of the actual dust has to be higher, than the maximum surface temperature of the dust probe (considering the safety value, which is fixed in DIN EN 50 281-1-2:1999).

Precautions have to be taken to prevent electrostatic charges on the surface of the cable.

[17] **Special conditions for safe use**

Non.

By order

Freiberg, 03.07.02

(Dr. Lösch)

Annex

Test documents

The detailed list of the examined technical documents (drawings and part lists) is contained at the German version of the EC-Type Examination Certificate IBExU00ATEX1073.

IBExU Institut für Sicherheitstechnik GmbH

An-Institut der TU Bergakademie Freiberg

- [1] **1st Addition to**
EC-TYPE EXAMINATION CERTIFICATE IBExU00ATEX1073
according to Directive 94/9/EC, Annex III



- Translation -

- [2] Equipment: **Microwave-hygrometer probe**
- [3] Manufacturer: Franz Ludwig Gesellschaft für
Mess-und Regeltechnik mbH
- [4] Address: Budenheimer Str. 1
55124 Mainz
GERMANY

[5] **Addition/Modification**

The Microwave-hygrometer probe mentioned in [2] can be manufactured according to changed documents and can be marked in accordance with the current standards mentioned under [7].

[6] **Test report**

The proof of the explosion protection of the equipment mentioned in [2] is documented in the test report IB-12-3-164 of 20th July 2012. The test documents are part of the test report and listed there.

[7] **Test result**

IBExU certifies that changes of the the equipment mentioned in [5] has been found to comply with the Essential Health and Safety Requirements given in the Directive 94/9/EC by compliance with EN 60079-0:2009 and EN 60079-31:2009.

The equipment mentioned in [2] fulfils the requirements of the explosion protection for the Equipment Group II, Category 1/3 D in type of protection protection by enclosure.

The marking of the equipment mentioned in [2] shall include the following:

II 1/3 D Ex ta/tc IIIC T135 °C
-20 °C ≤ T_a ≤ +70 °C

Safety notes

The dust probe is only permitted for the connection to a supply apparatus over a terminal box outside of the explosions-hazardous area and with the fixed fuse-value (0.5 A).

At the installation, the heat dissipation of the enclosure of the attachment should not be inhibited.

For selection and erection of electrical design the EN 60079-14, C. 5.6.3 is to consider.

Precautions have to be taken to prevent electrostatic charges on the surface of the cable.

The enclosure has to be connected to earth.

This addition is only valid in connection with the EC-Type Examination Certificate IBExU00ATEX1073 of 07 November 2000.

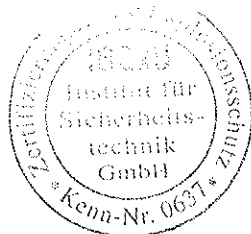
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Authorised for certifications

- Explosion protection -

By order

(Dr. Wagner)



- Seal -
(ID no. 0637)

Freiberg, 20 July 2012

Certificates without signature and seal are not valid.
Certificates may only be duplicated completely and unchanged.
In case of dispute, the German text shall prevail.