

**Humidity sensor with resistor output 0... 1kOhm  
passive sensor in hazardous locations zones 1, 2**

**Type FFK-2G  
ATEX compliant**

## APPLICATION

**FFK-2G** Humidity sensor with resistance output for determining relative humidity in duct. In combination with Ex-i transducer Type EXL-IMU-1 with intrinsic safe circuit the sensors may be used in hazardous areas zones 1 and 2. The passive resistance output of the sensor is changed into an active signal of 0(2)... 10 V- or 0(4)... 20 mA.

## TECHNICAL DATAS

|                         |                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------|
| <b>Type</b>             | <b>FFK-2G</b>                                                                                   |
| Supply                  | by Ex-i transducer                                                                              |
| Sensor                  | 0...1000 $\Omega$ ,<br>2(3) wire, resistor linear                                               |
| Accuracy                | > 40 % r.F. = $\pm 2,5$ % r.F.<br>< 40 % r.F. = $\pm 3...8$ % r.F. acc. to diagramm, on request |
| Measure-, work range    | 0...100% r.F., 30...100 % r.F.                                                                  |
| Ambient temperature     | 0...+60 °C                                                                                      |
| Storage temperature     | -20...+60 °C                                                                                    |
| Permitted flow velocity | 8 m/s, 15 m/s with protective gauze                                                             |
| Measuring medium        | gaseous, pressureless, not aggressive                                                           |
| Connection              | Screw clamps 0,5 mm <sup>2</sup>                                                                |
| Enclosure               | Plastic, IP64, for wall and flush mounting                                                      |
| Sensor                  | Stainless steel, IP40                                                                           |
| Dimension and weight    | 120 x 80 x 60 mm, approx. 200 g                                                                 |
| Protection class        | simple apparatus acc. to EN60079-11                                                             |
| CE                      | 94/9/EC (ATEX)                                                                                  |
| Included in price       | 1 Duct humidity sensor FFK-2G                                                                   |
| Installation area       | Hazardous locations in zone 1, 2 with transducer Type EXL-IMU-1                                 |

suitable for  
Zone 1, 2  
acc. to ATEX



## Ex-i CIRCUITS - TABLE 1

### Operation values maximum at terminal

Simple apparatus suitable for Zone 1, 2

Only for connecting to intrinsically safe circuits with max values

|             |    |           |
|-------------|----|-----------|
| Voltage     | Uo | 9 VDC     |
| Current     | Io | 5 mA      |
| Power       | Po | 10 mW     |
| Capacity    | Ci | 0 $\mu$ F |
| Inductivity | Li | 0 mH      |

### The maximum values must not be exceeded!

Please check your external capacities and inductivities in acc. to the length of the cable and the method of installation.

## MOUNTING AND INSTALLATION

Notes to mechanical installation. The installation must comply with relevant directives and standards. Particularly with regard to:

- Comply with the EMC directive
- Avoid parallel wiring of power cable this causes measurement errors.
- Recommendation: Use shielded cable. Connect shield at PLC or control room area, sensor side is open.

## MAINTENANCE

In clean air, the measuring element is maintenance-free. Aggressive and solvent containing agents as per their type and concentration may cause faulty measurements.

Water repellent protective film forming deposits on the sensor, resin aerosols, lacquer aerosols, smoke deposits etc. are harmful to almost all types of humidity sensors.

The water resistance of the sensors makes it possible to clean them with water, solvents should not be used. Due to long term sensor stability, no re-calibration is necessary. No warranty will be guaranteed if inner parts of the device have been handled.

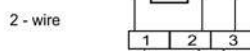
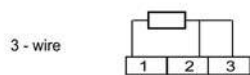
The probe should be inserted into the medium to a minimum of 170 mm!

## RECOMMENDED TRANSDUCER

- Transducer Mfr. Schischek Type EXL-IMU-1.
- In combination with transducer EXL-IMU-1 is intrinsic safety proof for simple circuits given.
- Manufacturer declaration zone 1 and 2.

## ELECTRICAL CONNECTION

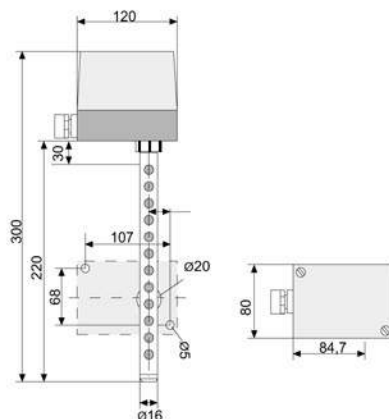
### Humidity Sensor FFK-2G



EXL-IMU-1

Ex-i Module EXL-IMU-1

## DIMENSIONS



## ATTENTION!

- For installation, use and maintenance the official standards and rules must be applied.
- The energy of intrinsically safe circuits are below the level to start an explosion in case of a spark..
- Intrinsic safe circuits must be installed with light blue coloured and separate from non intrinsic safe circuits.
- The sensor is passive and potential free for use in hazardous locations in zone 1, 2.
- Pay attention to the max values for wiring, listed in table 1.
- Avoid electrostatic discharge.
- Only wet cleaning.