

CE

Operating instructions
Air humidity sensor
LDH292

GB

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1 Safety instructions

- The unit described is a subcomponent for integration into a system.
 - The system architect is responsible for the safety of the system.
 - The system creator undertakes to perform a risk assessment and to create documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the architect of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ Intended use).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- The unit complies with the standard EN 61000-6-4 and is a class A product. The unit may cause radio interference in domestic areas. If interference occurs, the user must take appropriate actions.
- Protect units and cables against damage.

2 Preliminary note

You will find instructions, technical data, approvals and further information using the QR code on the unit / packaging or at www.ifm.com.

2.1 Symbols used

- ✓ Requirement
- ▶ Instructions
- ▷ Reaction, result
- [...] Designation of keys, buttons or indications
- Cross-reference
-  Important note
Non-compliance may result in malfunction or interference.
-  Information
Supplementary note

3 Items supplied

- Air humidity sensor LDH292
- Product information with safety instructions and reference to the complete operating instructions at www.ifm.com.

In addition, the following is necessary for installation and operation:

- Mounting material (→ Accessories)



Only use accessories from ifm electronic gmbh! The optimum function is not ensured when using components from other manufacturers.



Available accessories: www.ifm.com

4 Intended use

The unit detects the ambient humidity (relative humidity) and the ambient temperature and converts the measured values into IO-Link data. These signals can be used and processed by a controller or monitoring unit, e.g. a PLC.

4.1 Application area

The unit is suitable for ambient air in dry indoor spaces. Due to its' design, it is especially suitable for installation in control cabinets.

It covers the following measuring ranges:

- Relative humidity: 0...100 %
- Temperature: -40 ... +80 °C (-40 ... +176 °F)

4.2 Restriction of the application area

- The unit may only be operated in an environment which ensures degree of soiling 2 (or higher) according to IEC 61010. Degree of soiling 2 allows only non-conductive soiling. Occasionally, temporary conductivity due to condensation is to be expected.



Use only in environments with max. 90 % relative humidity (observe protection rating IP20).

- Do not operate the unit in turbulent ambient air (e.g. suction pipes and dew point applications). Incorrect measurements may occur.
- The unit must not be covered.
- The unit must not be operated in aggressive ambient air.
- It is only allowed to operate the unit at an altitude of up to 4000 m.

5 Function

5.1 Measuring principle

5.1.1 Humidity measurement

The unit measures the relative humidity of the ambient air by means of a capacitive measuring element. The air's water saturation level is indicated in the range of 0...100 %:

0%	Dry air
100%	Air is fully saturated with water

5.1.2 Temperature monitoring

The unit measures the ambient temperature by means of an integrated temperature element.

5.2 IO-Link

5.2.1 IO-Link in general

The device has an IO-Link communication interface which requires an IO-Link capable module (IO-Link master).

The IO-Link interface allows direct access to the process and diagnostic data and enables setting of the parameters of the unit during operation.

You will find further information about IO-Link and all the necessary information about the required IO-Link hardware and software at: → www.ifm.com

6 Electrical connection



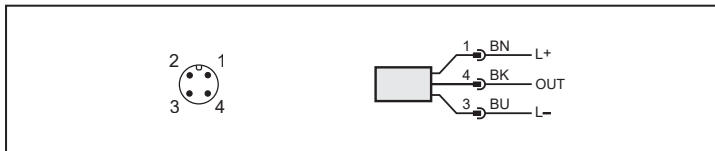
The unit must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.

Supply voltage SELV, PELV according to the technical data sheet.

► Disconnect power.

► Connect the unit as follows:



Pin	Core colour	
1:	BN	brown
4:	BK	black
3:	BU	blue
OUT: IO-Link		
Colours to DIN EN 60947-5-2		

7 Installation

7.1 Installation location / environment

(→ Observe  6) restriction of the application area

7.2 Installation procedure

The installation either requires a clip for 35 mm DIN rail, EN 60715 (DIN rail mounting) or the M5 screw connection.

8 Parameter setting

The unit is ready for operation already on delivery.



Changing parameters during operation may influence the function of the plant.

- ▶ Make sure that there will be no malfunctions or dangerous operation in your plant.

8.1 Parameter setting via IO-Link

A PC with USB IO-Link master or a configured IO-Link environment is required to set the parameters.

8.1.1 Parameter setting using PC and USB IO-Link master

- ▶ Preparing the PC, software and master. Observe the → operating instructions of the respective units / software.
- ▶ Connect the unit to the USB IO-Link master (→ Accessories).
- ▶ Follow the menu of the IO-Link software.
- ▶ Set the parameters, adjustable parameters (IODD Description).
- ▶ Check if the unit has accepted the parameter settings. If necessary, read sensor again.
- ▶ Remove the USB IO-Link master and put the unit into operation.

8.1.2 Parameter setting during operation

- ▶ Make sure that the sensor is connected to an IO-Link-capable module (master).
- ▶ Read the sensor using suitable IO-Link software. Observe the → operating instructions of the respective software.
- ▶ Set the parameters, adjustable parameters.
- ▶ Check if the parameter setting was accepted by the unit. If necessary, read sensor again.
- ▶ Check whether the unit operates correctly.

For further information, please refer to the IODD description (→ www.ifm.com) or to the context-specific parameter descriptions of the parameter setting software that is used.

9 Maintenance / Transport

- ▶ Check the unit at regular intervals and replace it, if necessary.
- ▶ It is not possible to repair the unit.
- ▶ In case of return shipment, ensure that the unit is free from soiling, especially from dangerous and toxic substances.
- ▶ For transport only use appropriate packaging to avoid damage of the unit.
- ▶ After use dispose of the device in an environmentally friendly way in accordance with the applicable national regulations.

10 Operation

10.1 Function check

After power-on the device is in the operating mode. It carries out its measurement and evaluation functions and generates process data (via IO-Link) according to the set parameters.

- ▶ Check whether the unit operates correctly.

10.2 Operating and diagnostic messages via IO-Link

IODD and IODD descriptive text as a PDF file at: → www.ifm.com

11 Factory setting

	Factory setting	User setting
Unit for Temperature	°C	
Application Specific Tag	***	
Plant tag	***	
Location Tag	***	

GB

12 Technical data and scale drawing



Technical data sheet and scale drawing at: www.ifm.com