TRANSMITTERS AND REGULATORS FOR HUMIDITY, TEMPERATURE AND CO_2

HIGHLIGHTS:

- Indoor air quality permitting automatic ventilation rate by CO_2 analysis correlate to the real presence of people in the rooms

HD46… series

HD45… series

AIR QUALITIY

other design types upon request

HD46-17B-DT-R
Humidity, Temperature and CO_2 with display and 3 x relay output

HD46-17B-DT-A
Humidity, Temperature and CO_2 with display and 3 x 4 ... 20 mA output

HD45-B-0-R
Only CO_2 without display (just indicator) and 1 x relay output
other design types upon request

General:

The instruments of the series HD45 and HD46 are transmitters, indicators and regulators, to measure and control, depending on the model, the following environmental parameters:
• Relative humidity (RH)
• Ambient temperature (T)
• Carbon dioxide (CO_2)
• Dew point temperature (DP, calculated measurement)
They are suitable for monitoring indoor air quality. A typical application is the examination of air quality in: buildings where there is crowding of people (schools, hospitals, auditoriums, cafeterias, etc.); workplaces to optimize comfort and in general to see if there are small losses CO which may cause explosions or fire. This analysis allows the adjustment of air conditioning (temperature and humidity) and ventilation (changes air/hour) in order to achieve a twofold objective. The instruments are factory calibrated and require no further adjustment by the installer. The instruments are wall mounted and their sensors are installed inside the housing.The temperature T is measured with a high precision NTC sensor.
The measurement of CO_2 (carbon dioxide) is obtained with a special infrared sensor (NDIR technology: Non-Dispersive Infrared Technology), which, by using a double filter and a particular measurement technique, ensures accurate measurements and stable measurements over time. The presence of a protective membrane, which is spread through the air portion, protects the sensor from dust and weather. The instrument can be wall mounted and sensors are internal to the instrument.
The measurement of RH (Relative Humidity) is obtained with a capacitive sensor.
All models perform continuous measure storing and data can be downloaded on a PC.

Specifications:

Measuring frequency:	1 sample every 3 s
Storage capacity:	2.304 records
Serial output:	Serial output for USB (mini-USB/USB cable with adapter cod. RS45I)
Analog output:	4 ... 20 mA (RL MAX = 400 Ω) (only HD45_A and HD46_A)
Relay output:	Two-state (only HD45 ... R and HD46 ... R) Contact: max 1 A @ 30 V dc resistive load
Power supply:	24 V AC ±10 % (50 ... 60 Hz) or 15 ... 35 V DC
Power consumption:	100 mW (except of the models with current output) 400 mW (for the models with current output)
Stabilizing time:	15 min (to guarantee the declared accuracy)
Working temperature of the instrument:	0 ... 50 °C
Working humidity of the instrument:	0 ... 90 % RH no condensate
Dimensions:	34 x 80 x 80 mm (HD45-B-Blank) (H x W x D) 34 x 80 x 120 mm (HD46.17B...) (H x W x D)
Housing material:	ABS
Protection degree:	IP30
Scope of supply:	Device, manual

Relative humidity RH

Sensor:	Capacitive
Measuring ranges:	0 ... 100 % RH, -40 ... +85 °C Dew point Td
Working range of the sensor:	-40 ... +80 °C
Accuracy:	±1.5 % RH (0 ... 90 % RH) ±2 % RH (elsewhere) for T=15 ... 35 °C ±(1.5 +1.5 % of the measure) % RH for T=40 ... +80 °C
Resolution:	0.1 %
Temperature dependence:	2 % on the whole temperature range
Hysteresis and repeatability:	1 % RH
Response time (T_{90}):	<20 s (air speed = 2 m / s and stable temperature)

Temperature T

Sensor type:	NTC 10 kΩ
Measuring ranges:	-30 ... +85 °C (-22 ... +185 °F)
Accuracy (except for models with current outputs):	±0.2 °C ±0.15 % of the measured value within 0 ... 70 °C ±0.3 °C ±0.15 % of the measured value within -30 ... 0 °C and 70 ... 85 °C
Accuracy (for models with 4 ... 20 mA):	±0.5 °C ±0.15 % of the measured value within -30 ... +85 °C
Resolution:	0.1 °C
Response time (T_{90}):	<30 s (air speed = 2 m / s)

Carbon dioxide (CO_2)

Sensor:	Dual wavelength NDIR (2 frequences)
Measuring ranges:	0 ... 5.000 ppm
Working range of the sensor:	0 ... 50 °C
Accuracy:	±(50 ppm +3 % of the measured value) @ 20 °C and 1013 hPa
Resolution:	1 ppm
Temperature dependence:	0.1 % f.s./°C
Response time (T_{90}):	<120 s (air speed = 2 m / s and stable temperature)

Configuration:

The instruments are equipped with serial output easily accessible on the side of the instrument that allows you to connect to the USB port of your PC via the cable RS45-0 or RS45-I with built-in adapter, for custom configurations. With the RS45-0 cable the instrument is powered directly from the USB port of your PC, thus allowing the configuration of the instrument in the field using a laptop before installing fixed.

Accessories:

DeltaLog14
Software for connecting to the PC via the serial output, for the configuration of the instrument and data download. For Windows® operating systems.

RS45-0
Not isolated serial connection cable with built-in adapter. USB connector for PC and mini-USB connector for the serial port of the instrument. The cable powers the instrument.

RS45-I
Isolated serial connection cable with built-in adapter. USB connector for PC and mini-USB connector for the serial port of the instrument. The cable does not power the instrument.

HD45-TCAL
The Kit includes the RS45 cable with built-in adapter and the CD-ROM with the DeltaLog14 software for Windows operating systems. The cable is provided with USB connector on the PC side and mini-USB connector for the serial port of the instrument.

Important information:
RS45-... and DeltaLog14 are necessary for configuration.
Models of the series HD46-... can be equipped with keyboard that allows you to easily configure the instrument even without a PC connection.