

# Digitron

## HLX80

### HVAC Room Transmitter and Switches for CO<sub>2</sub>, Relative Humidity and Temperature

HLX80 series set new standards in CO<sub>2</sub> measurements for HVAC. The transmitters resp. switches combine CO<sub>2</sub>, relative humidity (RH) and temperature (T) measurement in one modern and user-friendly housing. The basic HLX80 version for CO<sub>2</sub> and T can be easily extended with a RH plug-in module.

The CO<sub>2</sub> measurement is based on the infrared principle. A patented auto-calibration procedure compensates for the aging of the infrared source and ensures outstanding long term stability. HLX80 provides analogue outputs (in V or mA). The optional display indicates sequentially the actual measuring data. As one more option a switching output with adjustable switching point and hysteresis is available.

A wide variety of models ensures an optimal adjustment for customised requirements. Two different housing designs ensure professional appearance according to regional standards.



HLX80

#### Typical Applications

building management for residential and office areas  
ventilation control

#### Features

CO<sub>2</sub> / RH / T measurement in one device  
RH output with plug-in module  
analogue or switching output  
modern design  
optional display  
easiest installation  
long-term stable

#### Technical Data

##### Measuring values

###### CO<sub>2</sub>

Measurement principle

Sensor

Working range

Accuracy at 25°C (77°F)

and 1013mbar

Response time  $t_{93}$

Temperature dependence

Long term stability

Sample rate

###### Temperature

Accuracy<sup>1)</sup> at 20°C (68°F)

###### Relative Humidity

Measurement principle

Sensor element

Working range<sup>2)</sup>

Accuracy<sup>1)</sup> at 20°C (68°F)

###### Temperature (passive output)

Type of T-Sensor

Non-Dispersive Infrared Technology (NDIR)

Dual Source Infrared System

0...2000 / 5000ppm

0...2000ppm: < ± (50ppm +2% of measuring value)

0...5000ppm: < ± (50ppm +3% of measuring value)

< 195s

typ. 2ppm CO<sub>2</sub>/°C

typ. 20ppm / year

approx. 15s

±0.3°C (±0.54°F)

version with current output 4 - 20mA: ±0.7°C (±1.26°F)

capacitive

HC103

10...90% RH

±3% RH (30...70% RH)

±5% (10...90% RH)

please see ordering guide

##### Outputs

###### Analogue Output

0...2000 / 5000ppm /

0...100% RH / 0...50°C (32...122°F)

0 - 5V

-1mA < I<sub>L</sub> < 1mA

0 - 10V

-1mA < I<sub>L</sub> < 1mA

4 - 20mA

R<sub>L</sub> < 500 Ohm

###### Switching Output

Max. switching voltage

50V AC / 60V DC

Max. switching load

0.7A at 50V AC

1A at 24V DC

Min. switching load

1mA at 5V DC

Contact material

Ag+Au clad

##### General

Supply voltage

24V AC ±20%

15 - 35V DC

Current consumption

typ. 10mA + output current

max. 0.5A for 0.3s

Warm up time<sup>3)</sup>

< 5 min

Housing / Protection class  
Display  
Electrical connection  
Electromagnetic compatibility

PC / IP30  
LC display: alternating CO<sub>2</sub> (ppm) / T (°C or °F) / RH (% RH)  
screw terminals max. 1.5 mm<sup>2</sup> (AWG16)  
EN61326-1 FCC Part 15  
EN61326-2-3 ICES-003 ClassB  
0...90% RH (non condensing) / -20...60°C (-4...140°F)  
0...90% RH (non condensing) / -20...60°C (-4...140°F)



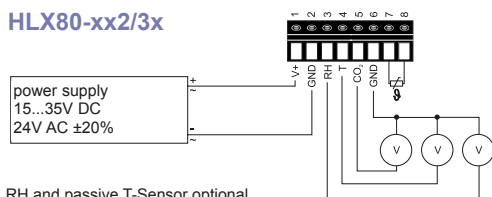
Working temperature range  
Storage temperature range

1) U<sub>v</sub>=24V DC and R<sub>i</sub>=250 Ω for version with current output 2) refer to the working range of the humidity sensor HC103!  
3) warm up time for performance according specification

## Connection Diagram

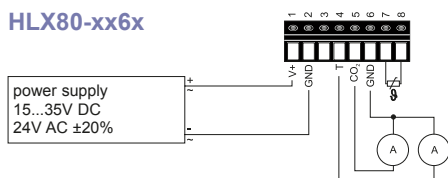
### Analogue Output

#### HLX80-xx2/3x



RH and passive T-Sensor optional.

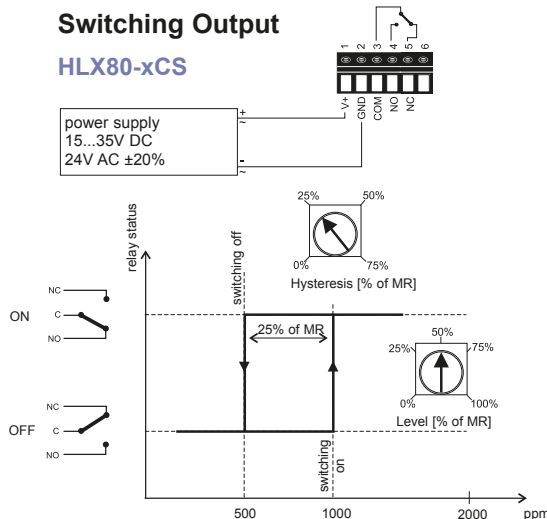
#### HLX80-xx6x



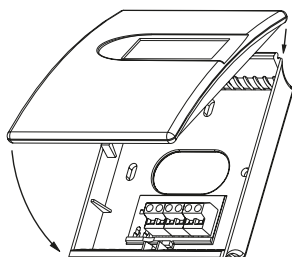
Passive T-Sensor optional.

### Switching Output

#### HLX80-xCS



## Housing Dimensions (mm)



Colour of housing: Cover: RAL 9003 (signal white)  
Back: RAL 7035 (light grey)

Europe: W x H x D = 85 x 100 x 26mm (3.3 x 3.9 x 1")  
USA: W x H x D = 85 x 136 x 26mm (3.3 x 5.4 x 1")

## Ordering Guide

### HLX80 voltage / current output:

WORKING RANGE	MODEL	OUTPUT	T-SENSOR (only passive)	DISPLAY	HOUSING	T-UNIT	T-SCALE
0...2000ppm (2)	CO <sub>2</sub> + T (CT)	0-5V (2)	Pt 100 DIN A (A)	without Display (-)	Europe (-)	°C (-)	0...50 (T04)
0...5000ppm (5)	CO <sub>2</sub> + T <sub>passive</sub> (CP)	0-10V (3)	Pt 1000 DIN A (C)	with Display (D04)	USA (US)	°F (E01)	-5...55 (T31)
	CO <sub>2</sub> + T + rF (CTF)	4-20mA <sup>3)</sup> (6)					32...122 (T76)
							other (Txx)

#### HLX80-

3) current output (6) not available for model CTF

### HLX80 switching output:

WORKING RANGE	MODEL	OUTPUT	DISPLAY	HOUSING
0...2000ppm (2)	CO <sub>2</sub> (C)	switching output (S)	without Display (-)	Europa (-)
0...5000ppm (5)			with Display (D04)	USA (US)

#### HLX80-

## Order Example

### HLX80-2CT3D04-T04

Version with voltage output:  
Working range: 0...2000ppm  
Model: CO<sub>2</sub> + T  
Output: 0-10V  
Display: with display  
T-Unit: °C  
T-Scale: 0...50°C (32...122°F)

## Accessories

- humidity plug-in module (HA011003)