

Digitron

HLX220 Series

Humidity / Temperature Transmitter with interchangeable probes

Unique for the HLX220 series are the interchangeable sensing probes.

The calibration data is stored in the probes, therefore a probe replacement does not affect the accuracy of HLX220.

The outstanding accuracy over the entire temperature range is based on very precise calibration methods and on the latest microprocessor technology. Well-proven humidity sensor elements ensure excellent long-term stability.

For high temperature applications (up to +80°C / +176°F) or in case of limited space availability, the sensing probes can be connected to HLX220 housing with cables (2m, 5m or 10m / 6.6ft, 16.4ft or 32.8ft) without any repercussions for the overall accuracy of the instrument.

Voltage 0 - 1 / 10V or current 4 - 20mA (2 wire) HLX220-outputs are available, of which the temperature output can be scaled according to the application (see ordering guide).

HLX220 is suitable for direct wall mounting and for installation on rails according to DIN EN 50022.

The optional display indicates the actual RH- and T-values.

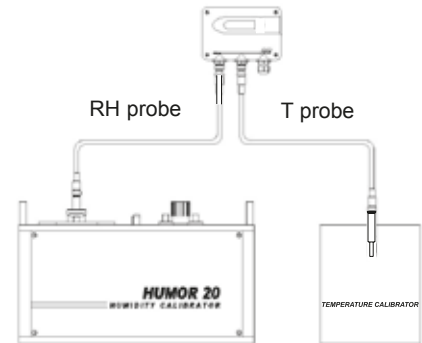
Duct mounting can be done easily with the optional duct mounting kit.



Field calibration of humidity and temperature

In the pharmaceutical and biotechnology industry a Loop-Calibration of the RH- and T-outputs, recommended by the FDA (Food and Drug Administration), can easily be performed utilizing separate RH- and T-probes (Type: HLX220-xxx2x).

The RH- and T-outputs can be adjusted with push buttons on the printed circuit board.



Reference probes

As useful accessories reference probes (incl. test report) representing fixed humidity and temperature values are available.

They shall be installed instead of the measuring probes to check function and accuracy of the evaluation unit.

One probe simulates high humidity and low temperature, the other low humidity and high temperature, to check the upper and lower end of both analogue outputs.

Typical Applications

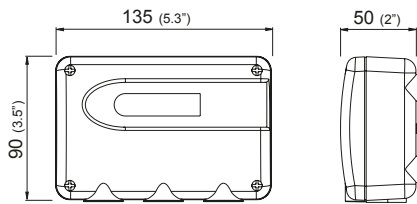
- pharmaceutical industry
- clean rooms
- storage rooms
- green houses
- cooling chambers

Features

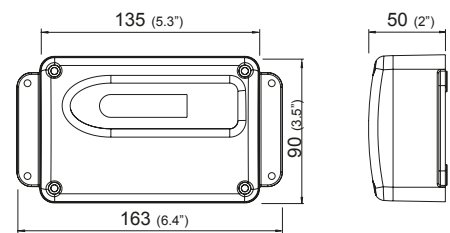
- interchangeable probes
- remote sensing probe up to 10m (32.8ft)
- measuring range 0...100% RH / -40...80°C (-40...176°F)
- optional display
- easy field loop-calibration

Housing dimensions (mm)

polycarbonate housing



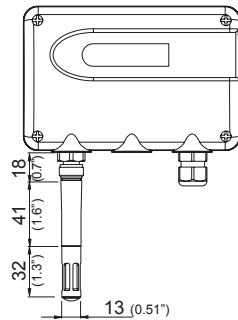
metal housing



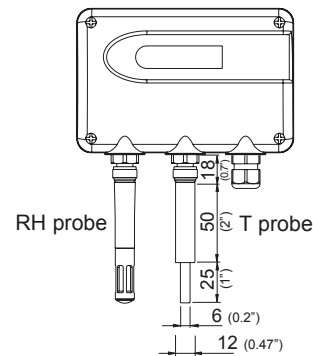
For use in harsh industrial environments all models of HLX220 series are available in a robust metal housing. (Interchangeable probes are also available in metal version.)
The smooth surface and the rounded outlines allow the use in clean room applications.

Probe dimensions (mm)

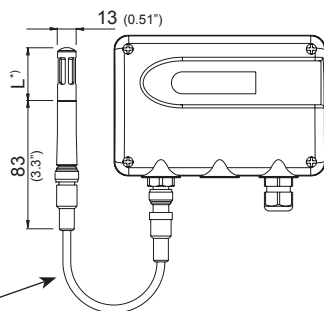
with one RH&T probe HLX220-xxx1x



with two separate probes for RH and T HLX220-xxx2x

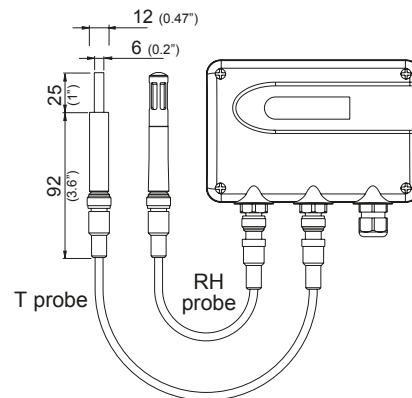


with one remote RH&T probe HLX220-xxx1x +HAxxxx



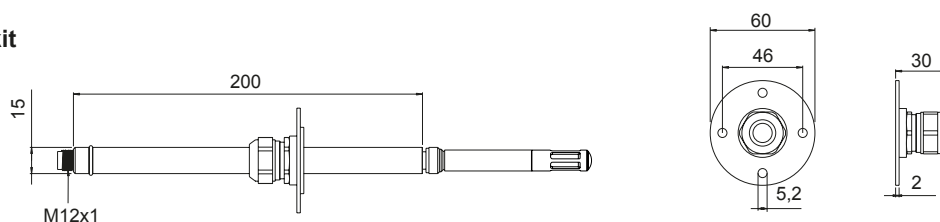
cable length	ordering code
2m (6.6ft)	HA010801
5m (16.4ft)	HA010802
10m (32.8ft)	HA010803

with two remote separate probes for RH and T HLX220-xxx2x +2x HAxxxx



*) L = Filter length see Datasheet „Accessories“

duct mounting kit HA010209



Technical Data

Sensing probe

refer to data sheet of respective sensing probe

Outputs

0...100% RH/ xx...yy°C²⁾
 (temperature output scale according to
 Txx ordering code)
 Temperature dependence of
 analogue outputs

0 - 1V
 0 - 10V
 4 - 20mA (two wire)
 max. $0.2 \frac{mV}{^{\circ}C}$ resp. $1 \frac{\mu A}{^{\circ}C}$
 $-0.5mA < I_L < 0.5mA$
 $-1mA < I_L < 1mA$
 $R_L < 500 \text{ Ohm}$

General

Supply voltage
 for 0 - 1V output
 for 0 - 10V output
 for 4 - 20mA output
 Load resistor for 4 - 20mA output

10 - 35V DC or 9 - 29V AC
 15 - 35V DC or 15 - 29V AC
 10 - 35V DC
 $R_L < \frac{U_L - 10V}{0.02A} [\Omega]$

Current consumption
 Electrical connection
 Cable gland
 Material
 Protection class of housing
 Electromagnetic compatibility
 Working temperature range of electronics
 Storage temperature range

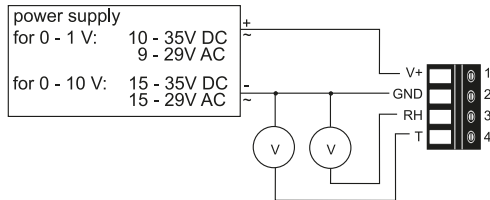
typ. 10mA for DC supply
 screw terminals max. 2.5mm²
 M16x1.5 cable Ø 4.5 - 10 mm (0.18 - 0.39")
 (optional connector; type: Lumberg, RSF 50/11)
 PC or Al Si 9 Cu 3
 IP65; Nema 4
 EN61326-1 EN61326-2-3 ICES-003 ClassB
 Industrial Environment FCC Part15 ClassB
 $-40...60^{\circ}C (-40...140^{\circ}F)$
 $-40...60^{\circ}C (-40...140^{\circ}F)$



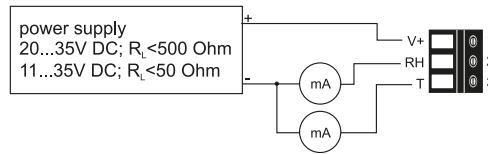
1) Refer to ordering guide

Connection Diagram

HLX220-x1x - x3x



HLX220-x6x



Overview of Sensing Probes

Application	Picture	Measuring Range	Accuracy	Order Code
Humidity/Temperature Probes				
RH/T probe for standard applications		0...100% RH -40...80°C (-40...176°F)	±2% RH (0...90% RH) ±3% RH (90...100% RH) ±0.1°C (±0.18°F) at 20°C (68°F)	HLX07-PFT1
RH/T probe for clean room applications, food and pharmaceutical industry		0...100% RH -40...80°C (-40...176°F)	±2% RH (0...90% RH) ±3% RH (90...100% RH) ±0.1°C (±0.18°F) at 20°C (68°F)	HLX07-MFT9
RH/T module for installation in small spaces or unobtrusive mounting		0...95% RH -40...85°C (-40...185°F)	±3% RH (10...100% RH) at 21°C (69.8°F) ±0.3°C (±0.54°F) at 20°C (68°F)	HLX03-FT9
Temperature Probes				
T probe for standard applications		-40...80°C (-40...176°F)	±0.1°C (±0.18°F) at 20°C (68°F)	HLX07-PT1
T probe for clean room applications, food and pharmaceutical industry		-40...80°C (-40...176°F)	±0.1°C (±0.18°F) at 20°C (68°F)	HLX07-MT

Ordering Guide

Position 1 - Convertor		HLX220-																					
Hardware Configuration																							
Housing	metal housing polycarbonate housing	M P																					
Output	0-1V 0-10V 4-20mA	1 3 6																					
Model	wall mounting - cable gland M16x1.5 wall mounting - rear cable outlet	A F																					
Number of probes	1 (for probe RH/T) 2 (for probe RH+T)	1 2																					
Display	without Display with Display	D07																					
Plug (only for type A)	without plug 1 plug for power supply and outputs	C03																					
Software Configuration																							
T-Unit	°C °F	E01																					
T-Scaling	<table border="0"> <tr> <td>-40...60 (T02)</td> <td>0...120 (T16)</td> <td>-20...50 (T48)</td> </tr> <tr> <td>-10...50 (T03)</td> <td>-30...60 (T20)</td> <td>-40...176 (T80)</td> </tr> <tr> <td>0...50 (T04)</td> <td>0...80 (T21)</td> <td>0...140 (T85)</td> </tr> <tr> <td>0...60 (T07)</td> <td>-40...80 (T22)</td> <td>0...176 (T86)</td> </tr> <tr> <td>-30...70 (T08)</td> <td>-20...80 (T24)</td> <td>32...120 (T90)</td> </tr> <tr> <td>-10...70 (T11)</td> <td>-20...60 (T25)</td> <td>32...140 (T91)</td> </tr> <tr> <td>-40...120 (T12)</td> <td>-30...50 (T45)</td> <td>32...132 (T96)</td> </tr> </table>	-40...60 (T02)	0...120 (T16)	-20...50 (T48)	-10...50 (T03)	-30...60 (T20)	-40...176 (T80)	0...50 (T04)	0...80 (T21)	0...140 (T85)	0...60 (T07)	-40...80 (T22)	0...176 (T86)	-30...70 (T08)	-20...80 (T24)	32...120 (T90)	-10...70 (T11)	-20...60 (T25)	32...140 (T91)	-40...120 (T12)	-30...50 (T45)	32...132 (T96)	Select according to Ordering Guide (Txx) Other T-scaling refer to data sheet „T-Scalings“
-40...60 (T02)	0...120 (T16)	-20...50 (T48)																					
-10...50 (T03)	-30...60 (T20)	-40...176 (T80)																					
0...50 (T04)	0...80 (T21)	0...140 (T85)																					
0...60 (T07)	-40...80 (T22)	0...176 (T86)																					
-30...70 (T08)	-20...80 (T24)	32...120 (T90)																					
-10...70 (T11)	-20...60 (T25)	32...140 (T91)																					
-40...120 (T12)	-30...50 (T45)	32...132 (T96)																					
Position 2 - Probe																							
Humidity / Temperature	probe RH/T (polycarbonat) probe RH/T (metal) module RH/T	HLX07-PFTx HLX07-MFTx HLX03-FT9																					
Temperature	probe T (polycarbonat) probe T (metal)	HLX07-PTx HLX07-MT																					
Position 3 - Probe cable																							
Cable for HLX07	2m (6.6ft) 5m (16.4ft) 10m (32.8ft)	HA010801 HA010802 HA010803																					
Cable for HLX03	2m (6.6ft) 5m (16.4ft)	HA010328 HA010329																					

Accessories / Replacement Parts

(For further information see data sheet „Accessories“)

- Display + housing cover in metal (D07M)
- Display + housing cover in polycarbonate (D07P)
- Duct mounting kit (HA010209)
- Probe cable 2m (6.6ft) / 5m (16.4ft) / 10m (32.8ft) (HA0108xx)
- Bracket for rail installation* (HA010203)
- External supply unit (V02)
- Reference probes (HA010403)

*Note: Only for plastic housing, not for metal housing

Order Example

Position 1 - Convertor:

HLX220-M3A1C03/T07

housing: metal housing
output: 0-10V
model: wall mounting - cable gland M16x1.5
number of sensor slots: 1
display: without display
plug: 1 plug for power supply and outputs
T-Unit: °C
scaling of T-output: 0...60°C

Position 2 - Probe:

HLX07-MFT9

probe: probe RH/T (metal)
filter: metal grid filter (stainless steel)

Position 3 - Probe cable:

1x HA010802
5m (16.4ft) cable for HLX07