Digitron
HLX35 Series

Exact dew point monitoring is increasingly playing a more important role in many industrial applications, such as drying processes, air pressure pipelines, etc. For these purposes the multifunctional HLX35 Series offers the ideal features.

The HLX35 Series is based on a functional, user-friendly housing concept and on the proven polymer humidity sensors of the HC Series.

A specially developed autocalibration process enables measurements in a measurement range of -60...60°C Td (-76...140°F Td), with a Td measurement accuracy of ±2°C (±3.6°F).

Two freely configurable and scaleable analogue outputs are available for the two measurement values (Td, T).

An optional hygrostat output, which can be set by means of a potentiometer, provides an alarm signal in a simple way when a threshold of the permitted dew point is exceeded.

An optional display for the measurement values and the associated MIN/MAX values allows a quick overview of the current situation.

HLX35

Autocalibration

Dew points in the range of -60...-20°C (-76...-4°F) at room temperatures correspond to relative humidity values of 0.08...5.37% RH. The measurement of such low humidity values is not possible with conventional capacitive measurement methods. For the HLX35 Series, a special autocalibration process is used to compensate for the usual drift effects and thus to achieve high accuracy measurements also at -60°C Td (-76°F Td).

Installation

In addition to the direct mounting of the dew point probe, a ball valve installation enables the mounting and removal of the probe without having to interrupt the running process.

Alarm Output

An optional alarm module with one relay output is available for control and alarm purposes. The setting of the Td threshold can be easily done with the potentiometer on the printed circuit board.

Integrated power supply

A power supply, integrated in the back module of the housing, can be ordered optionally (100...240V AC, 50/60Hz; ordering code V01). The power supply V01 is available for both polycarbonate and metal housing and comes standard with two plugs for supply and outputs to allow an easy connection.

Typical Applications

industrial processes
monitoring of air pressure pipelines
warehouses
drying processes
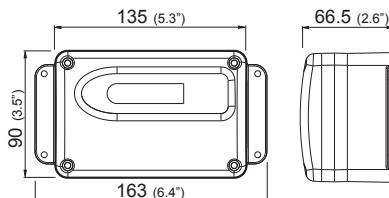**paper industries**
chemical industries

Features

measuring range -60...60°C Td (-76...140°F Td)
accuracy of measurement ±2°C Td (±3.6°F Td)
traceable calibration
alarm output for dew point
autocalibration

HLX35

Housing:

polycarbonate housing

135 (5.3") 66.5 (2.6")
90 (3.5")

metal housing

135 (5.3") 66.5 (2.6")
90 (3.5")
163 (6.4")
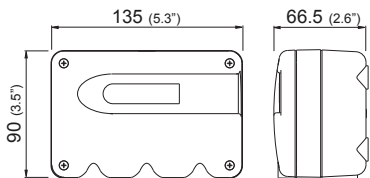
For use in harsh industrial environments the HLX35 series is available in a robust metal housing.

Model:

code "cable length"
code "probe length"
32 (1.3") 15 (0.59")
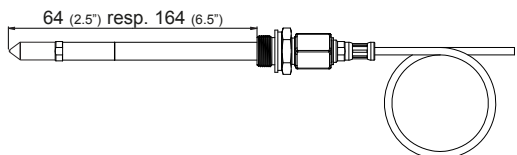13 (0.51")
12 (0.47")
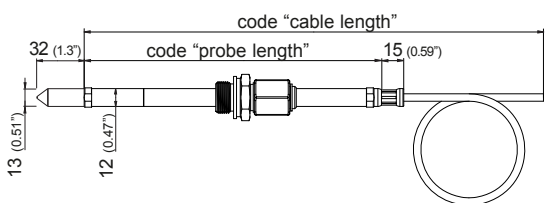
HLX35-xEx
Remote probe for T up to 60°C (140°F) and pressure-tight up to 20bar (300psi)
Probe material: stainless steel

23 (1")
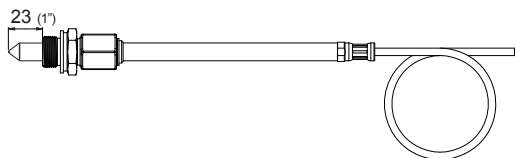
minimum installation depth

64 (2.5") resp. 164 (6.5")

maximum installation depth

ball valve installation
(pressure-tight up to 10bar/145psi)

1/2" ISO or 1/2" NPT

1/2" ISO or 1/2" NPT

bore diameter:
>13.1 (0.5")

fixed installation
(pressure-tight up to 20bar/300psi)

1/2" ISO or 1/2" NPT

bore diameter:
>13.1 (0.5")
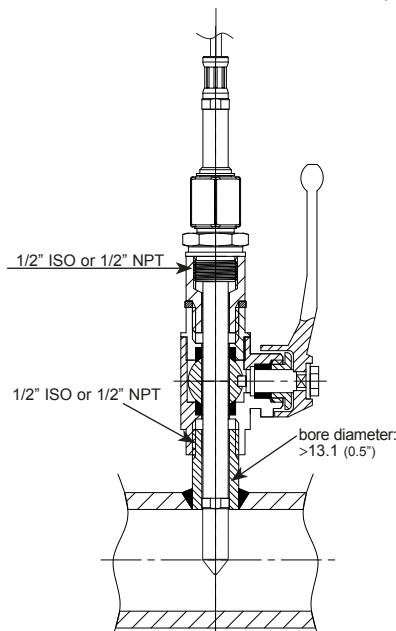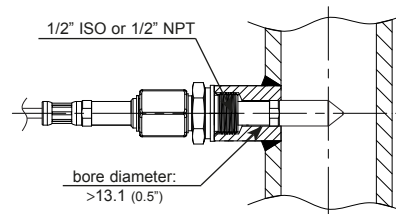
Connection Versions

Standard
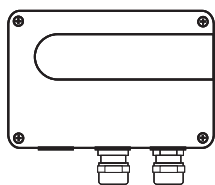
2x M16x1.5

Plug Option C03

Lumberg
RKC 5/7

Power supply +
Analogue output

Plug Option C06
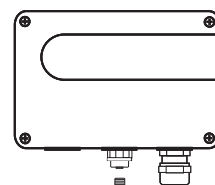
Lumberg
RSC 5/7

M16x1.5

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Technical Data

Measuring Quantities

Dew point

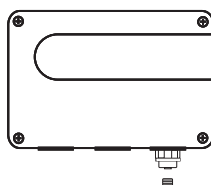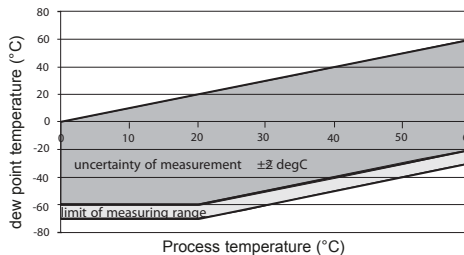|	
Humidity sensor	HC1000-400
Measuring range	standard calibration: -40...60°C (-40...140°F)
(below 0°C / 32°F the transmitter outputs frostpoint)	special calibration: -60...60°C (-76...140°F)
Accuracy	≤ ±2°C (≤ ± 3.6°F)
Traceable to intern. standards, administrated by NIST, PTB, BEV...	

dew point temperature (°C) vs Process temperature (°C)

uncertainty of measurement ±2 degC

limit of measuring range

Response time t_{90}	80 sec.	-20°C	-40°C	(-4°F	-40°F)
	10 sec.	-40°C	-20°C	(-40°F	-4°F)

Temperature

Sensor	Pt1000 DIN A
Measuring range	0...60°C (32...140°F)
Accuracy of temperature measurement at 20°C (68°F)	±0.2°C (±0.36°F)
Sensitivity error at full scale	±0.1°C (±0.18°F)
	0.005°C/°C

Outputs

Two freely selectable and scaleable analogue outputs	0 - 5V	$-1mA < I_L < 1mA$
xx...yy°C T, Td/Tf / xx...yy°C respectively	0 - 10V	$-1mA < I_L < 1mA$
	4 - 20mA	$R_L < 500$ Ohm
	0 - 20mA	$R_L < 500$ Ohm

General

Supply voltage	8...35V DC
	12...30V AC (optional 100...240V AC, 50/60Hz)
Current consumption - voltage output	typ. 40mA, with autocalibration: 100mA
- current output	typ. 80mA, with autocalibration: 140mA
Pressure range	0...20bar (0...300psi)
Housing / protection class	PC or Al Si 9 Cu 3 / IP65; Nema 4
Cable gland	M16 x 1.5 (option: plug) cable Ø 4.5 - 10 mm (0.18 - 0.39")
Electrical connection	screw terminals up to max. 1.5mm² (AWG 16)
Sensor protection	stainless steel sintered filter
Working temperature range	probe: -40...60°C (-40...140°F)
	electronic: -40...60°C (-40...140°F)
	with LC display: -20...50°C (-4...122°F)
	with alarm module: -40...60°C (-40...140°F)
Storage temperature range	-40...60°C (-40...140°F)
Electromagnetic compatibility according to	EN 61326-1 EN61326-2-3 ICES-003 ClassB
	Industrial Environment FCC Part15 ClassB

CE

Technical Data for Options

Display	graphical LC display (128x32 pixels), with integrated push-buttons for selecting parameters Td or T and MIN/MAX functions
Alarm output for Td/Tf	- range: -60...40°C Td (-60...40°F Td) adjustable with the potentiometer on the printed circuit board
	- 1 switch contact
	- 250V AC/6A or 28V DC/6A

Connection Diagram

Terminal		
RxD/B-	8	serial connection for configuration
TxD/A+	7	
GND Ser	6	
OUT 2	5	analogue output
OUT 1	4	
GND	3	
GND	2	supply
V+	1	

8 - 35V DC / 12 - 30V AC
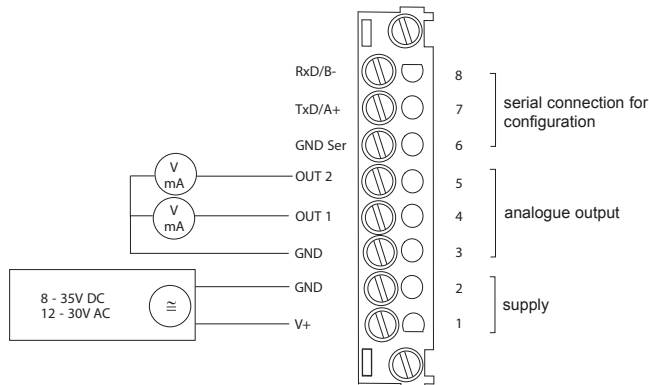
Terminal configuration - Alarm output

REL 1	NC	11
	C	12
	NO	13

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Ordering Guide HLX35
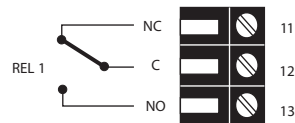
			HLX35-
Hardware Configuration			
Housing	metal housing		**M**
	polycarbonate housing		**P**
Type	pressure tight		**E**
Cable length	1m (3.3ft)		**01**
(incl. probe length)	2m (6.6ft)		**02**
	5m (16.4ft)		**05**
Probe length	100mm (3.9")		**3**
	200mm (7.9")		**5**
Pressure tight	1/2" male thread		**HA03**
feedthrough	1/2" NPT thread		**HA07**
Display	without display		
	with display		**D05**
Alarm output[1]	without relay		
	with relay		**SW**
Plug	cable glands		
	1 plug for power supply and outputs		**C03**
	1 cable thread / 1 plug for RS232		**C06**
Probe	fixed		
	pluggable		**P01**
Td Calibration	standard -40...60°C (-40...140°F)		
	special calibration -60...60°C (-76...140°F)		**CA02**
Supply voltage	8...35V DC / 12...30V AC		
	integrated power supply 100...240V AC, 50/60Hz[2]		**V01**
Software Configuration			
Physical parameters	temperature	T [°C/°F]	output 1	**B**
of the outputs	dew point temperature	Td [°C/°F]	output 2	**C**
	frost point temperature	Tf [°C/°F]		**D**
Type of ouput signals	0-5V		**2**
	0-10V		**3**
	0-20mA		**5**
	4-20mA		**6**
T / Td / Tf Unit	°C		
	°F		**E01**

Scaling of T-output	-40...60 (T02)	-60...20 (T65)	-40...100 (T79)	output T	Select accorcding to ordering guide (Txx)
	-50...50 (T27)	-50...100 (T66)	-40...140 (T83)		
	-80...20 (T63)	-20...70 (T73)	-60...120 (T97)		Other T-scaling refer to page 165
	-60...60 (T64)	20...140 (T77)			
Scaling of Td/Tf-output	-40...60 (T02)	0...60 (T07)	-60...60 (T64)	output Td resp.Tf	Select accorcding to ordering guide (Tdxx resp. Tfxx)
	-10...50 (T03)	0...80 (T21)	32...120 (T90)		
	0...50 (T04)	-40...80 (T22)	32...140 (T91)		Other Td/Tf-scaling refer to page 165
	0...100 (T05)	-20...80 (T24)	32...132 (T96)		

1) Combination alarm output and plugs is not possible (with cable glands only) / combination alarm output and integrated power supply is not possible
2) Integrated power supply includes 2 plugs for power supply and outputs / further plug options are not possible

Accessories

- Ball valve set 1/2" ISO (HA050101)
- Ball valve set 1/2" NPT (HA050104)
- Display + housing cover in metal (D05M)
- Display + housing cover in polycarbonate (D05P)
- Stainless steel sintered filter (HA010103)

- Interface cable for PCB (HA010304)
- Interface cable for plug C06 (HA010311)
- Bracket for installation onto mounting rails*(HA010203)
- Sealing element (HA050308)

*Note: Only for plastichousing, not for metalhousing

Order Example

HLX35-ME025HA03D05P01/BC5-T02-Td02

Housing:	metal housing	Output 1:	T
Type:	pressure tight	Output 2:	Td
Cable length:	2m (6.6ft)	Output signal:	0-20mA
Probe length:	200mm (7.9")	Measured value unit:	metric
Pressure tight feedthrough:	1/2" male thread	Scaling of T-output:	-40...60°C
Display:	with display	Scaling of Td-output:	-40...60°C
Alarm output:	without relay		
Plug:	cable glands		
Sensing probe:	pluggable		
Td Calibration:	standard		
Supply voltage:	8...35V DC / 12...30V AC		