

### Compact Moisture Content in Oil Transmitter for OEM Applications

Transmitter Series HLX385 are specially designed for the measurement of moisture content in oil and temperature. HLX385 is ideal for online monitoring of moisture in lubrication, hydraulic or insulation oil, which is very important for the long-term performance and preventive maintenance of plant and machinery.

#### Humidity measurement in oil

Similar to the humidity in the air, the water content in oil can be indicated by the relative value  $a_w$ :

-  $a_w$  (actual water content as fraction of the water content in saturated oil)

$a_w = 0$  corresponds to water-free oil, while  $a_w = 1$  indicates saturated oil.

$a_w$  measurement with the HLX385 transmitter is based on the outstanding long term stability and resistance to pollution of the capacitive sensor elements series HC.



## Technical Data

### Measuring values

#### Water activity

Measuring range

0...1 $a_w$

Accuracy incl. hysteresis and nonlinearity

$\pm 0.02a_w$  (0...0.9 $a_w$ )

$\pm 0.03a_w$  (0.9...1 $a_w$ )

0...60°C (32...140°F)

Traceable to intern. standards, administrated by NIST, PTB, BEV...

Response time with stainless steel filter at 20°C /  $t_{90}$

typ. 10min in still oil

#### Temperature

Measuring range

-40...120°C (-40...248°F)

Accuracy at 20°C (68°F)

$\pm 0.2^\circ\text{C}$  ( $\pm 0.36^\circ\text{F}$ )

### Outputs

Analogue outputs for  $a_w$  and T

2 x 4 - 20mA

$R_L < 500 \text{ Ohm}$

### General

Supply voltage

21...28V DC

Current consumption at 24V DC

typ. 80mA

Pressure range

0...20bar (0...290psi) / 0...100bar (0...1450psi)

Housing / Protection class

Al Si 9 Cu 3 / IP65

Electrical connection

M12 plug connector

Working temperature range

probe: -40...120°C (-40...248°F)

electronic:

-40...80°C (-40...176°F)

Storage temperature range

-40...80°C (-40...176°F)

Electromagnetic compatibility according to

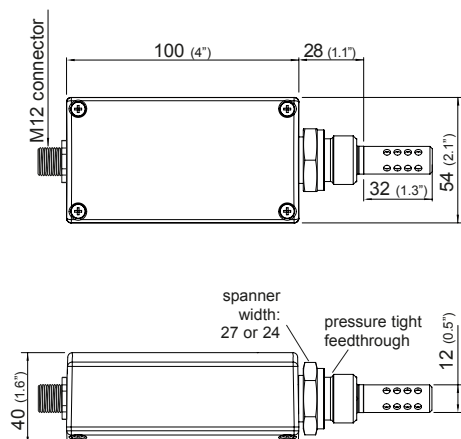
EN 61326-1 EN61326-2-3

ICES-003 ClassB

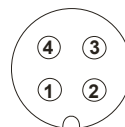
Industrial Environment

FCC Part15 ClassB





Male connector



- 1...V+
- 2...Temperature output
- 3...GND
- 4...Water activity output

## Ordering Guide

HLX385-

Hardware Configuration					
Model	transmitter			T	
Pressure range	up to 20bar (290psi)			E	
	up to 100bar (1450psi)			I	
Pressure tight feedthrough	G1/2" male thread			HA03	
	1/2" NPT thread			HA07	
	3/8" BSPP			HA09	
Software Configuration					
Physical parameters of outputs	Temperature	T [°C / °F]	(B)	B	
	Water activity	aw [ ]	(K)	K	
Type of output signals	4-20mA			6	
Temperature unit	°C			E01	
	°F				
Scaling of T-output (in °C or °F)	-40...60 (T02)	-20...100 (T14)	-40...140 (T83)	select according to Ordering Guide (Txx)	
	0...50 (T04)	0...120 (T16)	0...250 (T88)		
	0...100 (T05)	0...80 (T21)	32...120 (T90)		
	-30...70 (T08)	-20...80 (T24)	32...140 (T91)		
	-20...120 (T10)	-40...160 (T33)	32...250 (T94)		
	-40...120 (T12)	-40...250 (T81)	32...132 (T96)		
					other T-scaling on request

## Accessories

- Stainless steel filter (HA010110)

## Order Example

### HLX385-TEHA03/BK6T02

Model:	transmitter
Pressure range:	up to 20bar (290psi)
Pressure tight feedthrough:	G1/2" male thread
Output:	temperature, water activity
Output signal:	4-20mA
Temperature unit:	°C
Scaling of T-output:	-40...60°C