

# OPERATION MANUAL

## Digital Humidity-Temperature Module HYT939 with I<sup>2</sup>C-Interface

### Description



### Technical data

Humidity measurement	
Measuring range humidity	0 ... 100 % RH
Accuracy humidity	± 1,8 % RH at +23 °C (0 % RH to 90 % RH)
Reproducibility	0 .. 10 % RH (0 ... 50 ° C) ± 0,2 % RH
Hysteresis	<± 1 % RH
Resolution Humidity	0,02 % RH
Linearity	< ± 1 % RH
Tk residual error (50 % RH)	0,05 % RH / K (0 ... 60 ° C)
Long-term drift	< 0,5 % RH / a
Measuring principle	Capacitive polymer humidity sensor
Temperature measurement	
Measuring range temperature	- 40 ... +125 °C
Accuracy temperature	± 0,2 K (0 °C to +60 °C)
Reproducibility	± 0,1 K
Resolution Temperature	0,015 °C
Long-term drift	< 0,05 K / a
Measuring principle	PTAT (integrated)
General	
Resolution	14 Bit
Dimensions (Ø x H)	13 mm x 32 mm
Operating voltage	2,7 ... 5,5 V
Current consumption (nominal)	< 22 µA at 1 Hz update rate
Current consumption (max.)	850 µA
Power consumption (sleep)	< 1 µA
Operating temperature	-40 °C ... +125 °C
Humidity range	0 ... 100 % RH
Digital interface	I2C, s. Art. No. page 1
Material	Polyamid, black
Water absorption	3...4%
Connection	5-pole flanged plug (M9x0.5); cable: 5-pole cable box, connection plug RJ12
Storage temperature	-20°C...+50°C
CE-conformance	2014/30/EU
Electromagnetic conductivity	EN 61326-1:2013
Environmental data	RoHS-compliant

### Features

- Dew resistant
- Temperature compensated
- I<sup>2</sup>C interface
- Low hysteresis
- Compensated linearity error
- Low temperature drift
- Easily replaceable

### Applications

- Mechanical engineering
- Environment technology
- Plant engineering
- Medical devices engineering
- Dryer systems
- Building automation
- in connection with internal bus systems

### Description

Accurately calibrated, digital humidity-temperature module with I<sup>2</sup>C interface. The sensor is dew resistant, temperature compensated, shows a very low hysteresis, negligible long term drift and linearity errors. Up to 112 addresses on the same bus line. It is mechanically robust, easy exchangeable and chemically resistant. The module features a high quality micro system on ceramic substrate using a polymer capacitive humidity sensor. The TO-39 housing with steel mesh filter is suitable among others for the use in medical devices and dryer systems.

### Attention

Please avoid extreme mechanical and inappropriate exposure. The device/product is not suitable for potential explosive areas and medical-technical applications.

### Article numbers

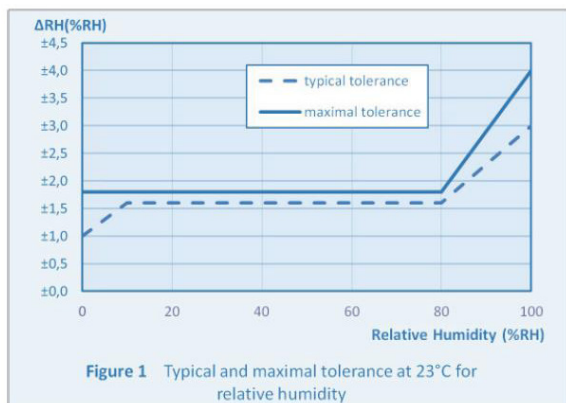
Humidity/temperature probe with I <sup>2</sup> C interface	
Adresse 0x28 (without cable)	0626 0110-05
Adresse 0x29	0626 0110-10
Adresse 0x2A	0626 0110-11
Shop article numbers	
Adresse 0x28	0626 0110-100
Adresse 0x29	0626 0110-101
Adresse 0x2A	0626 0110-102

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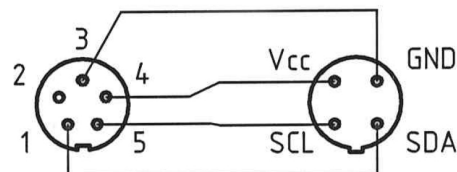
## Digital Humidity-Temperature Module HYT939 with I<sup>2</sup>C-Interface

### Accuracy relative humidity measurement



### Plug assignment

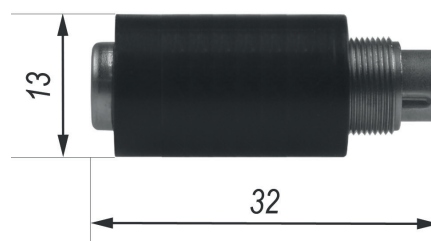
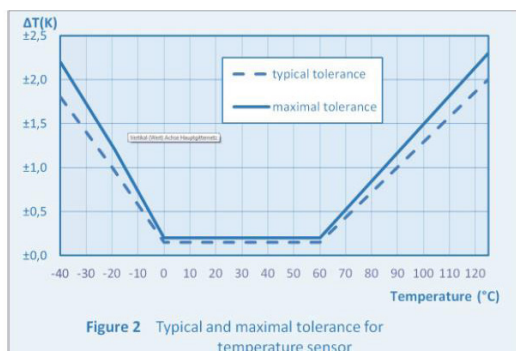
Binder M9 x 0.5 socket, 5-pole, 711 series, gold contacts



Binder 5pol.  
Series 711  
View from solder side

HYT939  
View sensor  
terminal side

### Accuracy temperature measurement



### Humidity scope



### Accessories

Article	Article number
RJ12 connectioncable 2 m	0409 3004
RJ12 connectioncable 5 m	0409 3004-01
RJ12 connectioncable 10 m	0409 3004-06



You can find the detailed datasheet on our home-page: [Service&Support](#) -> [Downloads](#) -> [Data sheet HYT939](#)