USER- / INSTALLATION MANUAL

HD29X.. Air speed transmitters

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AIR SPEED TRANSMITTERS
HD2903T… - HD29V3T… series
Temperature, Air speed transmitters
HD2937T… - HD29V37T… series
Temperature, Relative Humidity and Air speed transmitters
HD29371T… - HD29V371T… series

The HD29 series of transmitters… are used for controlling air speed for conditioning and ventilation applications (HVAC/BEMS) in the following sectors: pharmacy, museums, clean rooms, ventilation ducts, crowded places, canteens, auditoria, gyms or high-density farms, as well as industrial and civil sectors. The sensors in combination with an accurate electronics guarantee precise and reliable measurements in the course of time. The thin film sensor for air speed, the AISI304 probe sheath, the 20ſ metal grid fi lter for Relative Humidity enable their usage even for hostile applications. There are two possible installations: in the TO version, the horizontal probe is joined to the electronics enclosure while in the TC version the probe is connected to the electronics through a cable. In the TO version, the duct probe is fi xed to the electronics enclosure and it is available in three different lengths. To fi x the probe to the duct, you can use, for example, the HD9008.31 fl ange, a 3/8” universal biconical connection or a PG16 metal cable gland (□10…14mm). In the TC version, the probe together with the sensors is equipped with a cable which can be 2, 5 or 10 meters long. The probes are available in three different lengths.

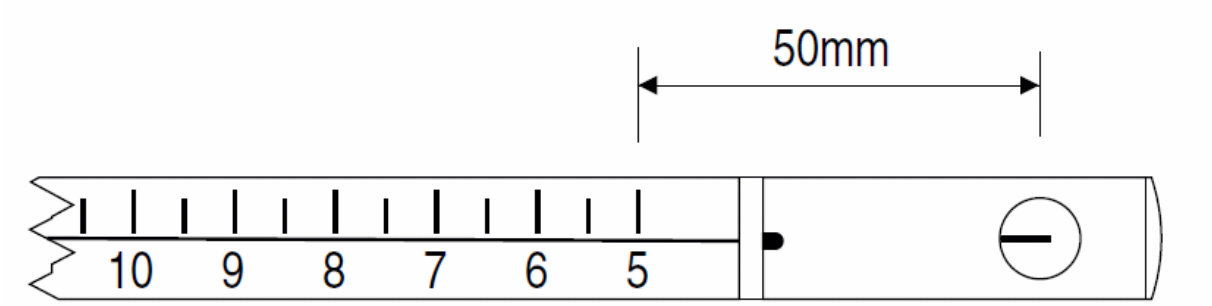
Common technical specifications		Notes
Air speed Measuring range	0.05…1m/s 0.05…2m/s 0.05…10m/s 0.05…20m/s	The measuring range can be selected by dip-switch.
Air speed Accuracy range 0…1m/s range 0…2m/s range 0…10m/s range 0…20m/s	 ±(0.04m/s+2% of measurement) ±(0.04m/s+2% of measurement) ±(0.2m/s+3% of measurement) ±(0.2m/s+3% of measurement)	at 50%RH and 1013hPa
Temperature Measuring range	-10…+60°C	HD2937, HD29V37, HD29371 and HD29V371 models
Temperature Accuracy	±0.3°C	
Relative Humidity Measuring range	5…98%RH	HD29371 and HD29V371 models
Relative Humidity Accuracy	±2% (5..90%RH), ±2.5% remaining range	
Relative Humidity Output Range	0…100%RH	
Output (according to the models)	4…20mA 0…10Vdc	R_L < 500Ω R_L > 10kΩ
Power supply	16…40Vdc or 12…24Vac±10%	
Response time (selected by jumper)	0.2s 2.0s	Fast Slow
Operating temperature electronics probe	 0…+60°C -30…+100°C	
Compensation temperature	**0…+80°C**	
Storage temperature	-10…+70°C	
Electronics protection class	IP67	
Sensor working conditions	Clean air, RH<90%	
Case dimensions	**80x84x44**	**Without probe**

Model description

Model	Output		Measured parameters		
	4...20mA	0...10Vdc	Air speed	Temperature	Relative Humidity
HD2903T...	•		•		
HD29V3T...		•	•		
HD2937T...	•		•	•	
HD29V37T...		•	•	•	
HD29371T...	•		•	•	•
HD29V371T...		•	•	•	•

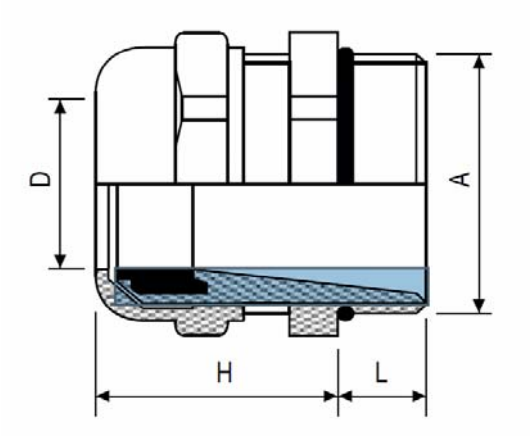
INSTALLATION NOTES

- The sensor(s) hole must be oriented in the same direction as the flow: to help position the probe, for example inside a duct, a graduated scale along the stem shows how deep the air speed sensor hole is inside the duct. Once the sensor is inside the duct, to orient it properly according to the flow, make sure that the air speed passing hole and the line at the bottom of the graduated scale are on the same axis.

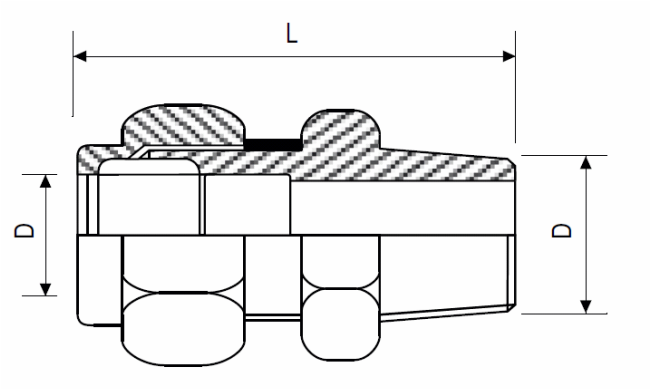


- To fix the probe inside a ventilation duct, a pipe , etc. you can use, for example, HD9008.31 flange, a PG16 metal cable gland (10…14mm) or a 3/8” universal biconical connection.

HD9008.31 FLANGE

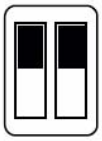
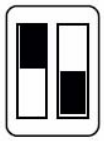
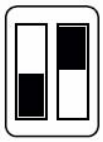
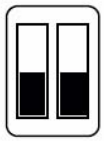


PG16 METAL CABLE GLAND
D = 10…14MM
L = 6.5MM
H = 23MM
A = PG16

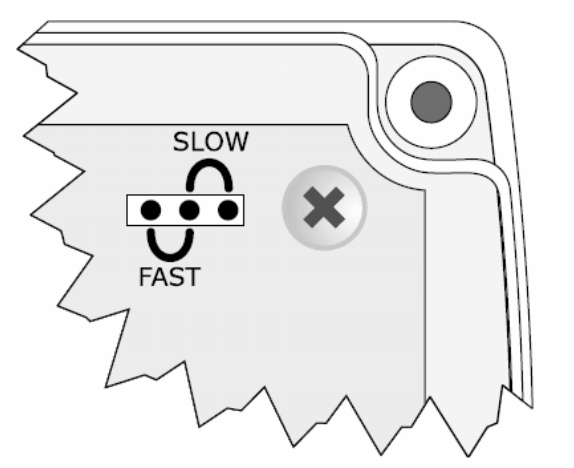


UNIVERSAL BICONICAL CONNECTOR
L = 35MM
D = 14MM
A = 3/8”

- The transmitters are factory calibrated and no further adjustments are required.
- To select the air speed **output range** by using the dual dip-switch on the board, please see the chart below:

Output range	0…1m/s	0…2m/s	0…10m/s	0…20m/s
Dip-switch position				

- The jumper on the board selects an **integrated response time in 0.2s in the FAST position and in 2s in the SLOW position. Please set the integration time at SLOW in case of turbulence, otherwise please select the FAST position.**



Electrical connections

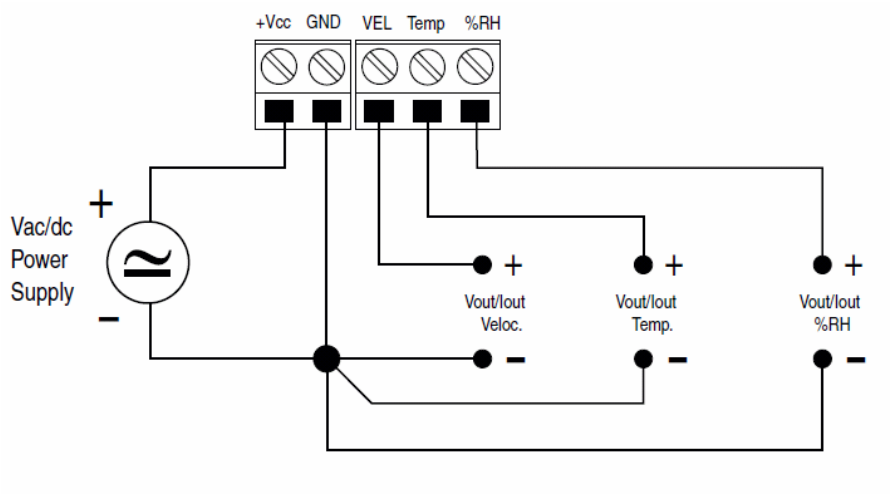
Power supply

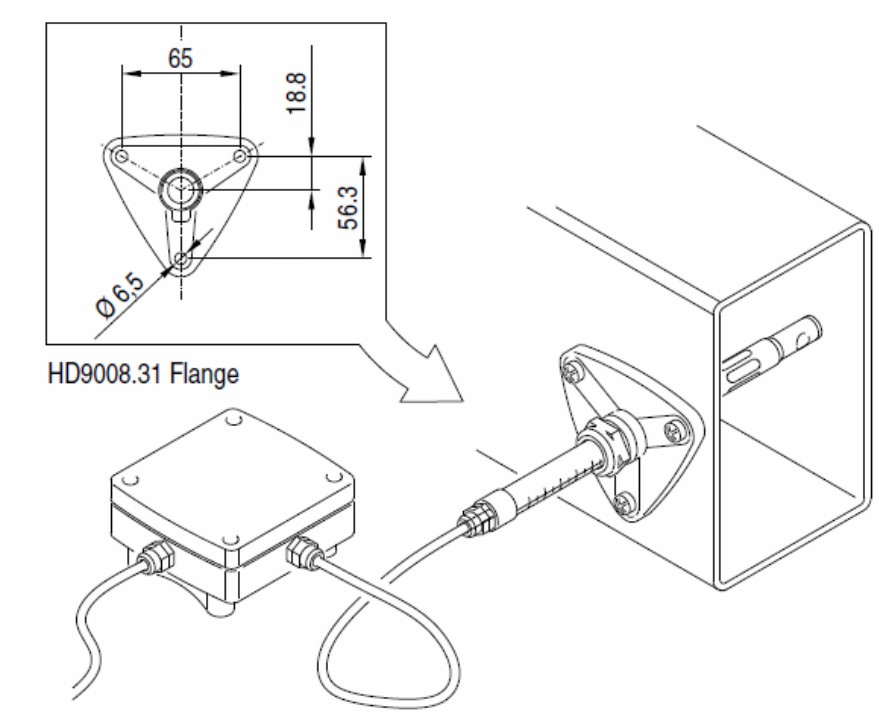
Power the instrument at the voltage shown in the electrical specifi cations: power supply terminals are marked as +Vcc and GND.

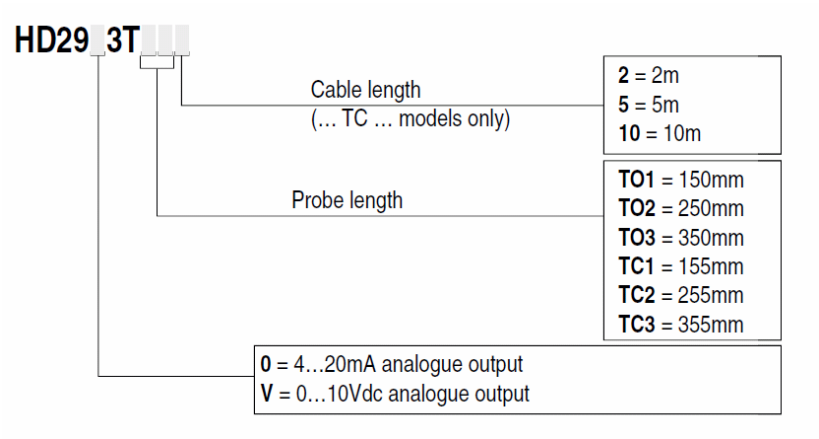
Analogue output

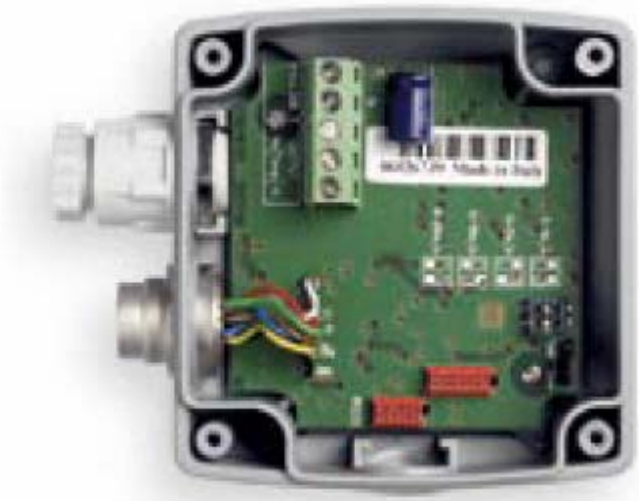
According to the model, the output signal comes from:

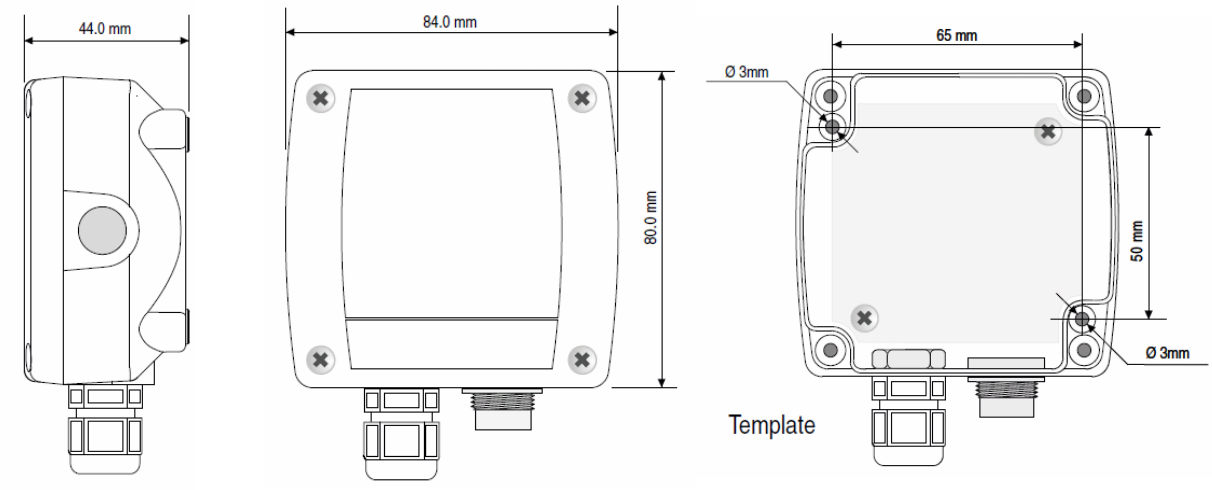
- VEL and GND terminals for air speed transmitters,
- VEL and GND, Temp and GND terminals for temperature / air speed transmitters,
- VEL and GND, Temp and GND, %RH and GND terminals for temperature / relative humidity / air speed transmitters.

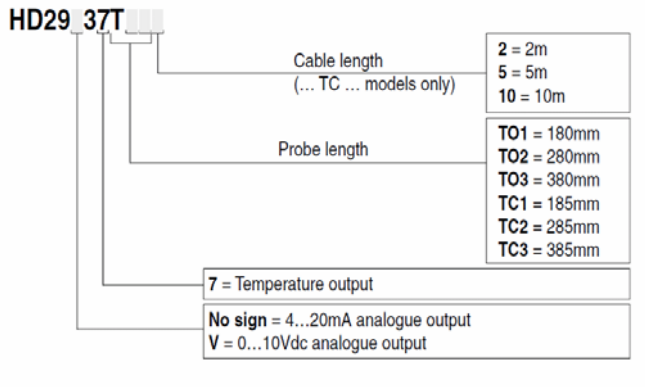


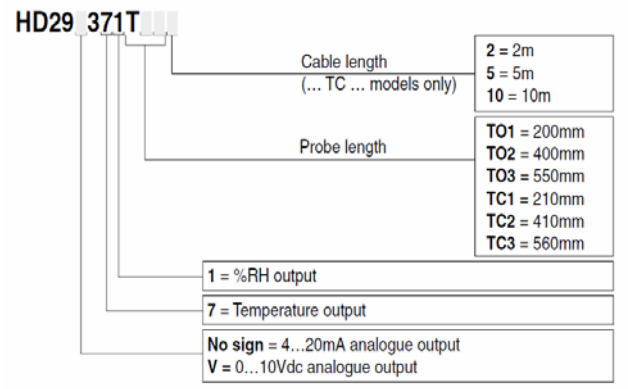


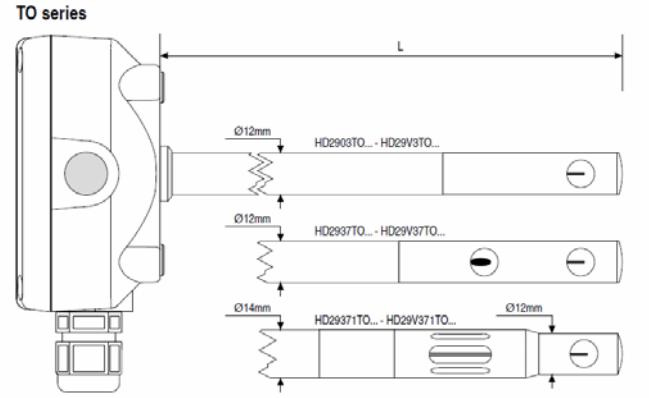

HD29 3T
Cable length
(... TC ... models only)
2 = 2m
5 = 5m
10 = 10m
Probe length
TO1 = 150mm
TO2 = 250mm
TO3 = 350mm
TC1 = 155mm
TC2 = 255mm
TC3 = 355mm
0 = 4...20mA analogue output
V = 0...10Vdc analogue output

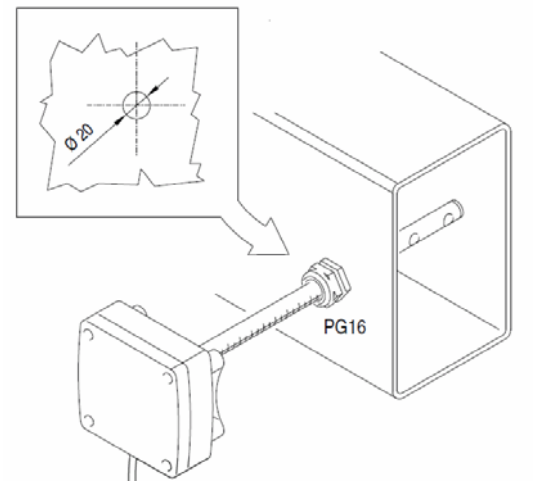


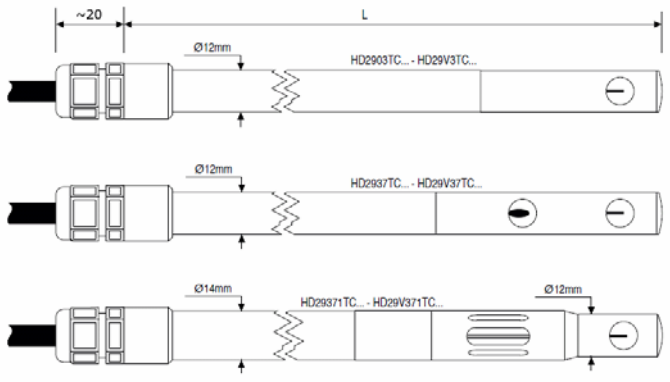

44.0 mm
84.0 mm
80.0 mm
65 mm
Ø 3mm
50 mm
Ø 3mm
Template


HD29_37T
Cable length
(... TC ... models only)
2 = 2m
5 = 5m
10 = 10m
Probe length
TO1 = 180mm
TO2 = 280mm
TO3 = 380mm
TC1 = 185mm
TC2 = 285mm
TC3 = 385mm
7 = Temperature output
No sign = 4...20mA analogue output
V = 0...10Vdc analogue output


HD29_371T
Cable length
(... TC ... models only)
2 = 2m
5 = 5m
10 = 10m
Probe length
TO1 = 200mm
TO2 = 400mm
TO3 = 550mm
TC1 = 210mm
TC2 = 410mm
TC3 = 560mm
1 = %RH output
7 = Temperature output
No sign = 4...20mA analogue output
V = 0...10Vdc analogue output


TO series
L
Ø12mm
HD2903TO... - HD29V3TO...
Ø12mm
HD2937TO... - HD29V37TO...
Ø14mm
HD29371TO... - HD29V371TO...
Ø12mm


Ø 20
PG16


~20
L
Ø12mm
HD2903TC... - HD29V3TC...
Ø12mm
HD2937TC... - HD29V37TC...
Ø14mm
HD29371TC... - HD29V371TC...
Ø12mm