

ADKH1x Series Multifunction Temperature & Humidity Transmitter



ADKH1W - Wall
-30°~+70°C



ADKH1D - Duct
-30°~+70°C

Application

〈 Feature 〉

- Industrial sensor comes with high accuracy and long-term stability
- Capable of temperature compensation and linear adjustment
- Multifunction physical quantities — temperature & humidity/dew point/frost point/wet-bulb temp./vapor pressure/mixture ratio/absolute humidity/specific enthalpy

〈 Application 〉

- Monitoring for HVAC process/ air conditioning/ environmental ventilation control
- Building / factory / hospital/ clean room / Lab. / storeroom
- Cooling tank/crisper/environmental chambers/weather station
- Indoor pool/greenhouse/livestock nursery
- Pharmaceutical/textile/agriculture/food/manufacturing industry/ monitoring for process/drying facility

Specification

Input

input type	Capacitive Humidity Sensor & PT 100Ω class A
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Working Range Suggestion

temperature	-30°~+70 °C (ADKH1W)
	-30°~+70 °C (ADKH1D)
humidity	0~100%
dew point	-40~+60 °C
Frost Point(F) 、Wet-bulb Temperature(W) 、Vapor Pressure(E) 、Mixture Ratio(R) 、Absolute Humidity(V) 、Specific Enthalpy(S) : please refer to physical quantity measuring range list	

Output

output	standard RS-485 or 2 analogue output
	0-20mA/4~20mA/0~1V/0-5V/0-10V
signal Connection	3-wire
modbus	RS-485 (programmable)
	and 2 analogue output
display type	LCD Module with back light, double line character
display range	upon request, one decimal place
height of character	5.56mm

Linear Accuracy (at 25°C)

temperature	$\pm 0.15^{\circ}\text{C} \pm 0.002^{\circ}\text{C} \times t_{\text{actual}}$
humidity	$\pm 2\%\text{RH}$
temperature influence of body	(at+25 °C) 0.05%RH/°C
load Resistance	current output : max. 500Ω / voltage output : min. 10KΩ
output calibration (ZERO & SPAN)	software
response time t90 (temp. at +25 °C)	< 20S (membrane filter / S.S. metal grid filter
	with mesh) ; < 30S(sintered filter)

Environment

Media measured	air
Working temp. for housing	-20~+60 °C
Working humidity for housing	0~95%(non-cond.)
Working temp. for housing with display	0~60 °C
Working temp. for probe	PC probe : max. 120 °C ; S.S. probe : max. 180 °C
Cable (remote type)	PVC cable : max. 80 °C ; TEFLON cable : max. 180 °C
Storage temperature	-25~+60 °C
proof pressure for S.S. probe	10bar
filter	PC membrane filter (standard : PC probe)
	sintered filter (standard : S.S. probe)
CE certification	EN 61326-1 : 2006 、EN 61326-2-2 : 2006
	Emissions
	EN 55011 : 2009/A1 : 2010
	Immunity
	IEC 61000-4-2 : 2008
	IEC 61000-4-3 : 2006 / A1 : 2007 / A2 : 2010
	IEC 61000-4-8 : 2009

Electrical

Power supply	8~35VDC / 12~30VAC
Current consumption	DC 24V : 60mA / DC 12V : 120mA
	AC 24V : 140mA / AC 12V : 230mA
Electrical connection	M12 metal connector with 2 m cable
	or terminal (cable gland)
Protect degree	housing : IP65 ; probe : IP 20
Elecric protection	◎Polarity protection ◎over-voltage ◎short-circuit
Installation	PC probe : Plastic flange (standard)
Housing	PC fire-proof class (PC-110) (UL94V-2)
Probe	PC fire-proof class (PC-110) / S.S. (SUS304)

Physical Quantity Measuring Range List

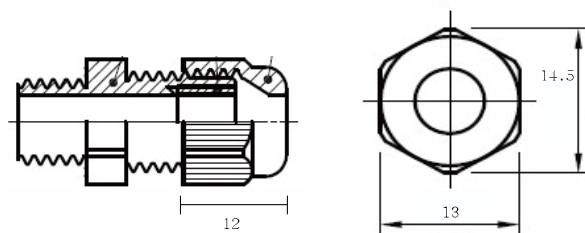
※ Beside temp. & dew point, other physical quantities range as default setting

Physical quantity	THS301 indoor PC probe	THS302 duct PC probe					
Temperature (T)	-30°~+70°C	-30°~+70°C					
Humidity (H)	0~100%RH						
Dew Point (D)	-40~+50°C	-40~+60°C					
Frost Point (F)	-40~0°C						
Wet-bulb temp. (W)	0~50°C	0~100°C					
Vapor Pressure (E)	0~150mbar	0~1100mbar					
Mixture Ratio (R)	0~100g/kg	0~999g/kg					
Absolute Humidity (V)	0~100g/m ³	0~700g/m ³					
Specific Enthalpy (S)	0~300kj/kg	0~2800kj/kg					

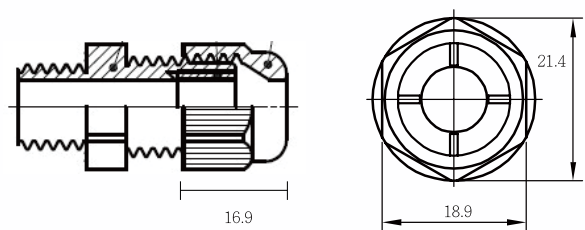
Electric Connector

unit : mm

【 N type (M12 cable gland) 】 RS-485 or analogue



【 N type (M16 cable gland) 】 RS-485+analogue

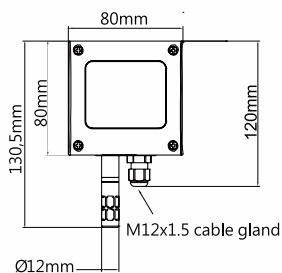


Dimension

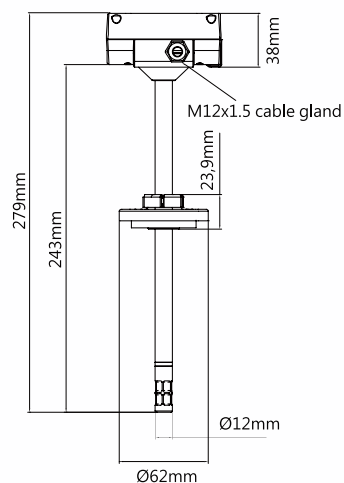
【 ADKH1W (Wall) — PC probe 】

【 ADKH1D (duct) — PC probe 、 standard plastic flange 】

M type (4P) : RS-485 or analogue
M type (8P) or N type : RS-485 + analogue



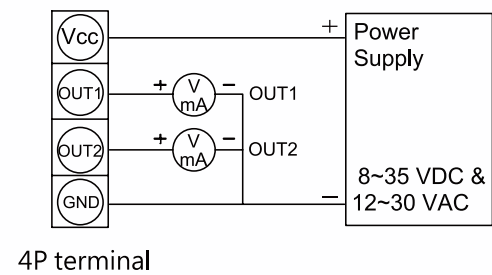
N type : RS-485 or analogue



M type (4P) : RS-485 or analogue
M type (8P) or N type : RS-485+analogue

N type : RS-485 or analogue

Analogue Diagram



4P terminal

N type