



THS80X series (THS801/802/803/804/805/806)

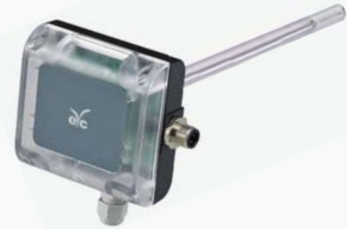
Industry Degree Temperature & Humidity Transmitter (Indoor/Duct/Remote)



THS801-indoor
0~50°C



THS802-duct
-40~+100°C



THS803-duct
-40~+120°C



THS804-remote
cable:PVC
-40~+80°C



THS805-remote
cable:TEFLON
-40~+100°C



THS806-remote
cable:TEFLON
-40~+200°C

Application

【 Feature 】

- Industrial sensor comes with high or low dew point and high accuracy and long-term stability. Acid alkali resistant
- Capable of temperature compensation and linear adjustment. Factory test report.
- Multifunction physical quantities — temperature & humidity/dew point/ frost point/wet-bulb temp./vapor pressure/mixture ratio/absolute humidity/ specific enthalpy
- Standard MODBUS RS-485 with 2 kinds of analogue output
- Probe : PC or S.S. ; Remote type : PVC or TEFLON
- Power supply : 8-35VDC and 12-35VAC
- RS-485 and MODBUS RTU
- Free programmable software - physical quantities/output/data logger/charts/calibration
- Option : USB to RS-485 Converter

【 Application 】

- Monitoring for high-end 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/chemical industry

Specification

Input

Input Type Capacitive Humidity Sensor & PT 100Ω A class

Working Range Suggest

Temperature 0~50°C (THS801) ; -40~+100°C (THS802/805)
 -40~+120°C (THS803) ; -40~+80°C(THS804)
 -40~+200°C (THS806)
 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 and 2 analogue output
 0-20mA/4~20mA/0-1V/0-5V/0-10V
 Signal Connection 3-wire
 Standard 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(0~90%) / (90~100%) $\pm 1.5\%RH / \pm 2\%RH$
 Temperature influence of body 0.05%RH/°C
 Load Resistance Current output : max. 500Ω /
 Voltage output : min. 10Ω
 Output calibration (ZERO & SPAN) Software setting
 adjustment range
 Response time t90 (temp. at +25°C) <20S(membrane filter) ;
 < 20S(Metal grid filter with mesh)

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. 200°C
 Cable (remote type) PVC cable : max. 80°C ; TEFLON cable : max. 200°C
 Storage temperature -25~+60°C
 Bearable pressure for S.S. probe 10bar
 Filter PC membrane filter (standard : PC probe)
 Metal grid filter with mesh (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

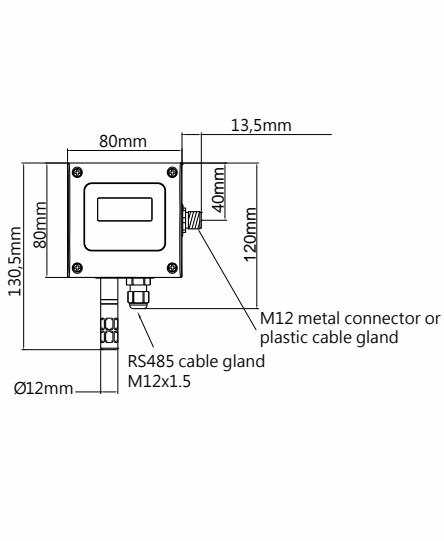
Power supply 8~35VDC / 12~30VAC
 Current consumption DC 24V : 60mA / DC 12V : 120mA
 AC 24V : 140mA / AC 12V : 230mA
 Electrical connection M12 - 4 PIN M12 metal connector with 2 m cable
 or N (plastic cable gland)
 Signal RS-485 : 2P terminal
 Protect degree body : IP65 ; probe : IP 20
 Electric protection ◎Polarity protection ◎over-voltage ◎short circuit
 Installation PC probe : Plastic flange (standard)
 Housing PC fire-proof class(PC-110)
 Probe PC fire-proof class(PC-110) / S.S. (SUS304)

Physical Quantity Measuring Range List

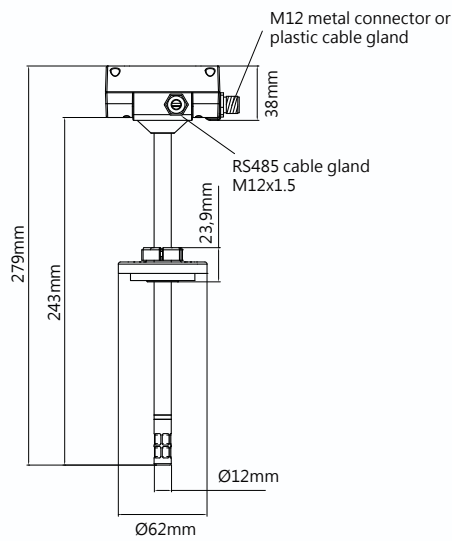
※ Beside temperature, other physical quantities range as default setting

Physical quantity	THS801 indoor (PC probe)	THS802 duct (PC probe)	THS803 duct (S.S. probe)	THS804 remote (PC probe + PVC cable)	THS805 remote (PC probe + TEFLON cable)	THS806 remote (S.S. probe +TEFLON cable)
Temperature (T)	0~50°C	-40~+100°C	-40~+120°C	-40~+80°C	-40~+100°C	-40~+200°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		0~80°C	0~100°C	
Vapor Pressure(E)	0~150mbar	0~1100mbar		0~500mbar	0~1100mbar	
Mixture Ratio (R)	0~100g/kg	0~999g/kg		0~600g/kg	0~999g/kg	
Absolute Humidity (V)	0~100g/m ³	0~700g/m ³		0~300g/m ³	0~700g/m ³	
Specific Enthalpy (S)	0~300kJ/kg	0~2800kJ/kg		0~1600kJ/kg	0~2800kJ/kg	

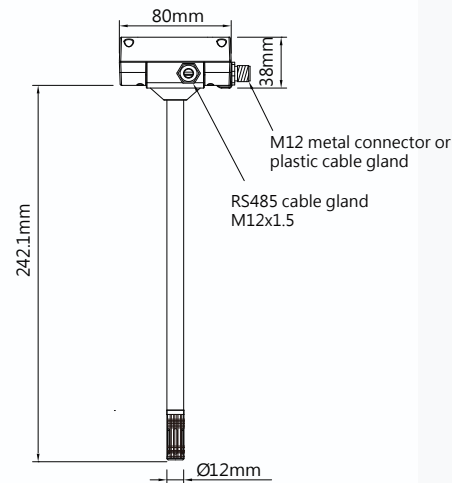
Dimension



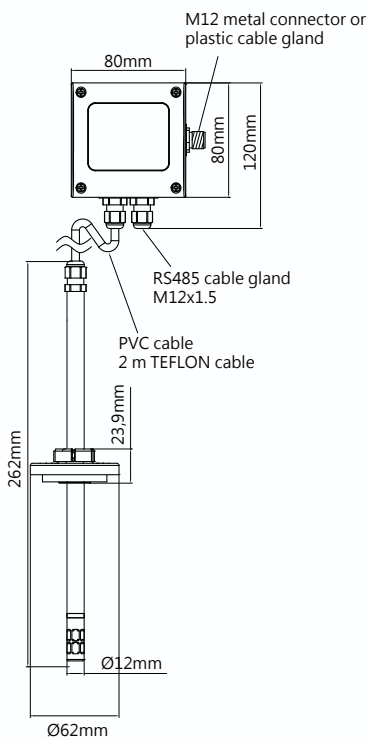
THS801(indoor)
– PC probe



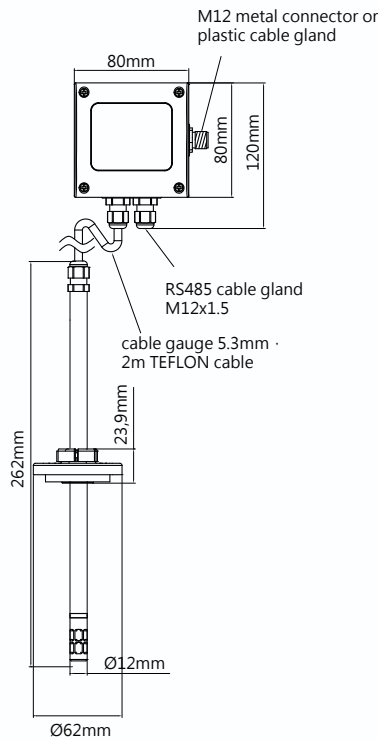
THS802(duct)
– PC probe
– standard : plastic flange



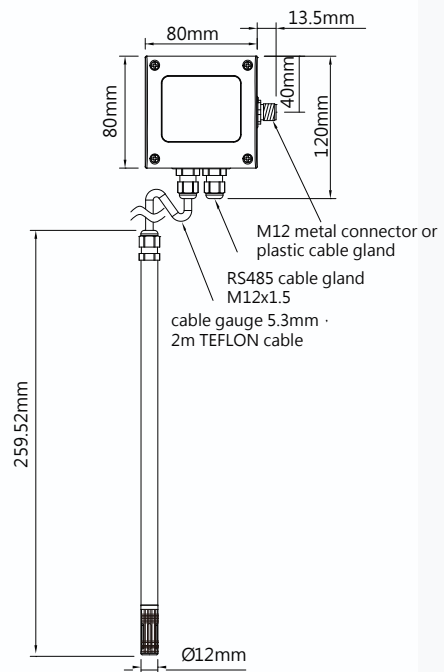
THS803(duct)
– S.S. probe



THS804(remote)
– PC probe+2 m PVC cable
– standard : plastic flange



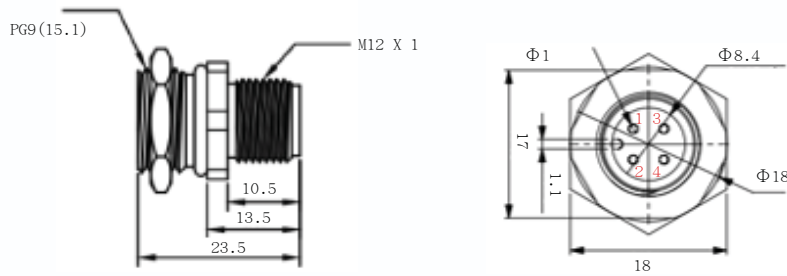
THS805(remote)
– PC probe+2 m TEFLON cable
– standard : plastic flange



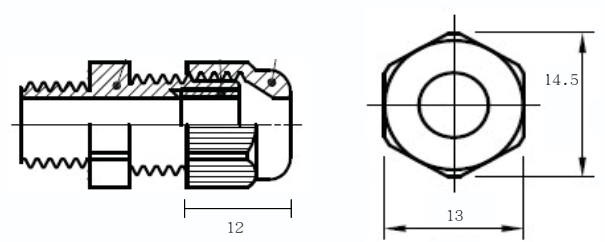
THS806(remote)
– S.S. probe+2 m TEFLON cable

Electric Connector

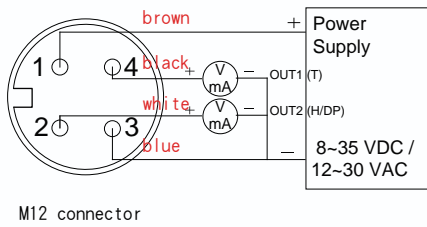
【 M type (M12-4 PIN metal connector) 】



【 N type (plastic cable gland) 】

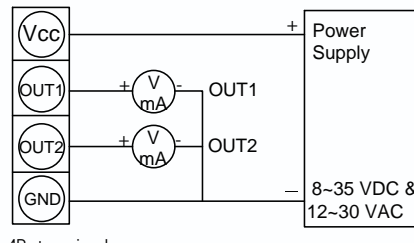


Analogue Diagram



M12 connector

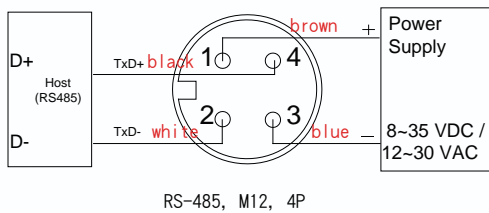
M type : M12 connector



4P terminal

N type : cable gland

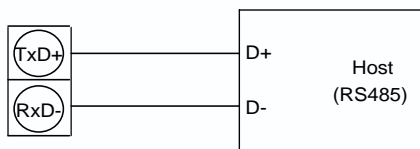
RS-485 Diagram



RS-485, M12, 4P

M type

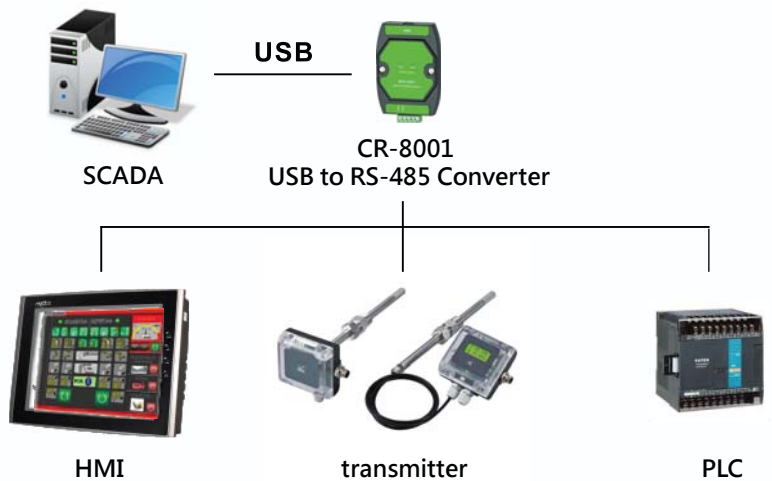
※ FOR RS-485 CONNECTION ONLY



RS485 Signal connector

N type

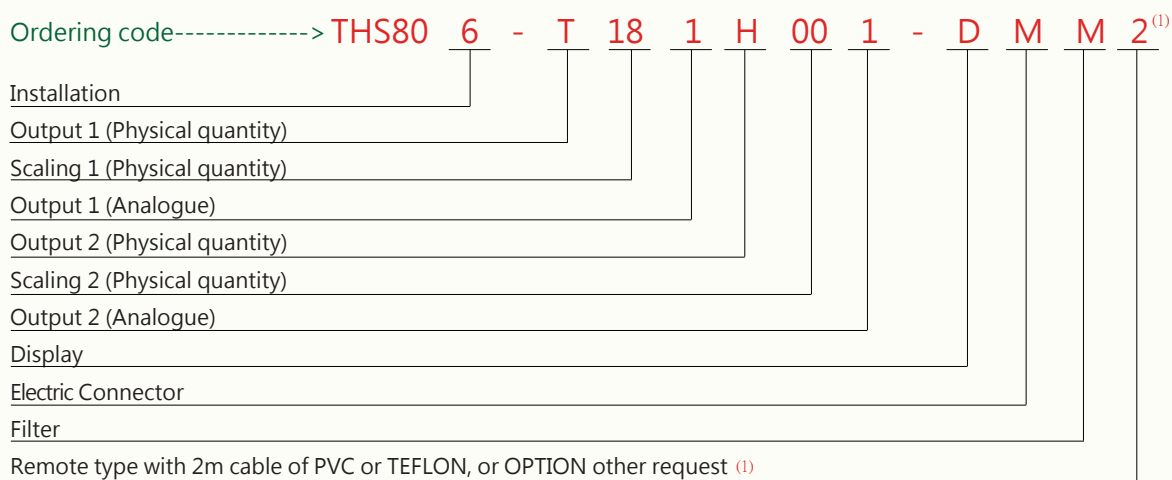
USB to Isolated RS485 Application



※ option converter: CR-8001

※ EYC free programmable software : <http://www.eyc-tech.com/download/download149.html>

Ordering Guide



【Ordering item】

Installation	code	Output 1 (physical quantity)	code	Scale 1 (physical quantity) ⁽²⁾	code	Output 1 (Analogue)	code
indoor	1	※please refer to physical quantity measuring range list		0~50 °C	30	4~20mA	1
duct (PC probe)	2	humidity	H	0~80 °C	38	0~20mA	2
duct (S.S. probe)	3	temperature	T	0~100 °C	40	0~10V	6
remote (PC probe, PVC cable)	4	dew point	D	0~120 °C	42	0~5V	7
remote (PC probe, TEFLON cable)	5	frost-point	F	0~180 °C	48	0~1V	8
remote (S.S. probe, TEFLON cable)	6	wet-bulb temperature	W	0~200 °C	47	standard : RS-485 ⁽³⁾	9
		vapor pressure	E	-20~+40 °C	13		
		mixture ratio	R	-40~+60 °C	14		
		absolute humidity	V	-40~+120 °C	16		
		specific enthalpy	S	-40~+180 °C	18		
		RS-485(Default Temp. : 0~50 °C)	N	-40~+200 °C	20		
				-70~+180 °C	49		
				as physical quantity	00		
				measuring range list			
				(H, F, W, E, R, V, S, RS-485)			
				special range	YY		

Output 2 (physical quantity)	code	Scale 2 (physical quantity) ⁽²⁾	code	Output 2 (Analogue)	code	Display	code	Electric connector	code
※please refer to physical quantity measuring range list		0~50 °C	30	4~20mA	1	yes	D	plastic cable gland	N
humidity	H	0~80 °C	38	0~20mA	2	no	X	M12 metal connector	M
temperature	T	0~100 °C	40	0~10V	6	(standard : 2m cable)			
dew point	D	0~120 °C	42	0~5V	7	Filter			
frost-point	F	0~180 °C	48	0~1V	8	code			
wet-bulb temperature	W	0~200 °C	47	standard : RS-485	9	PC membrane filter (standard : PC probe)			
vapor pressure	E	-20~+40 °C	13			S.S. Metal grid filter with mesh			
mixture ratio	R	-40~+60 °C	14			sintered filter			
absolute humidity	V	-40~+120 °C	16			PC membrane filter + Metal mesh			
specific enthalpy	S	-40~+180 °C	18			Remote type⁽¹⁾			
RS-485(Default Humidity : 0~100% RH)	N	-70~+180 °C	49			code			
		as physical quantity	00			cable length (max. 10 m) or OPTION			
		measuring range list				standard : 2 m cable of PVC or TEFLON			
		(H, F, W, E, R, V, S, RS-485)				5m			
		special range	YY			other length			
						other request (charge for demand) ⁽⁴⁾			
						W			

» NOTICE :

(1) The order code of room type and duct type are till filter code. Order Example: THS303-H001D141-DMP

The order code of remote type is till remote code. Order Example: THS304-H001D141-DMP2






(2) Default setting : please refer to page 2 , physical quantity measuring range list (H, F, W, E, R, V, S),.

(3) Analogue Output : RS-485(code 9)→please refer to the P4 RS-485 Diagram M type


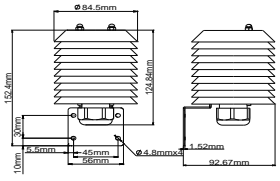
(4) Special request, please put "W" code at last. Order Example:THS301-H001D141-DMPW

Option List


– Filter > Please choose the fit filter to protect sensitive components according to the using environment.

Product	Order No./Name	Statement	Feature
	8203104010 PC membrane filter for THS series	Material: PC fire-proof class + cotton filter Outside diameter:12mm Length:32mm	- common filtering effect - max. temp. : 80°C
	4425000013 SUS sintered filter for THS series (40 μm, SUS316L, Φ 12*32m)	Material: SUS sintered filter for THS series Aperture:40 μm Outside diameter:12mm Length:38mm	- resist pressure, pollution and corrodent - nice filtering ability - max. temp.:200°C
	4415000020 Metal grid filter without mesh for THS series	Material: Metal grid filter without mesh for THS series Outside diameter:12mm Length:32mm	- no protection ability - react quickly - endure high temp. - nice ventilation - max. temp.:200°C
	8203104011 Metal grid filter with mesh for THS series	Material: Metal grid filter with mesh for THS series Outside diameter:12mm Length:32mm	- common resisting pollution - react quickly - endure high temp. - nice ventilation - max. temp.:200°C
	8203104013 PC membrane filter + Metal mesh for THS series	Material: PC fire-proof class+ Metal mesh for THS series Outside diameter:12mm Length:32mm	- fitting in with high humidity environment - max. temp.:200°C

- Shield


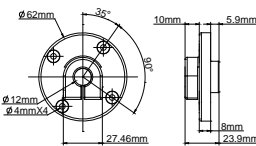

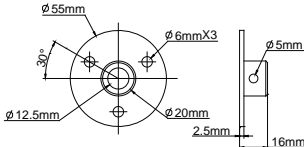

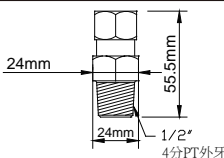

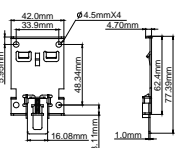

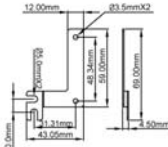
Product	Order No./Name	Size	Feature
	THSA-0303 Shield: PC, Radiation shield (THS/TH)		Material: PS+SPCC Fit products: TH/THS series-duct / remote

- M (electronic connection cable)


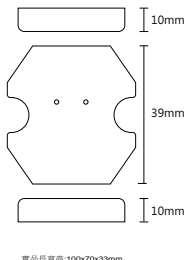
Product	Order No./Name	Statement	Feature
	M12-F4N-200 M12 Waterproof Length:2m	Female connection : 4 PIN Material:PC oil-proof 4 X 0.3mm	Working voltage:250VAC/300VDC Working current:4A Working temp. :-20~+85°C Waterproof degree:IP67 Thermal limit:105°C Mobile resistant cable
	M12-F4N-500 M12 Waterproof Length:5m		

OPTION LIST

- Installation

Product	Order No./Name	Size	Feature
	542500009 Plastic flange		Material: PC fire-proof class For THS & FTS series
	441500022 Metal mounting flange		Material: SUS304 (φ 12xH18.5mm) Fitting products: THS64/65/74/75 series
	8203104012 Installation: Fitting thread		Material: SUS304 Fitting products: THS & FTS series
	HS-S Installation: Fixed board		Material: SUS304 Fitting products: THS/FTS/GS/GM series indoor/remote type
	443500005 L board Fixed board		Material : SPCC+Zinc plated Fitting products: THS/FTS/GS/GM series indoor/remote type

- Converter

Product	Order No./Name	Size	Feature
	CR-8001 USB to Isolated RS485 Converter	 青品片规格:100x70x33mm	No External Power Supply required Fully Compliant with the USB 1.1/2.0 (High Speed) 3000 VDC Isolation Protection on the RS-485 side ESD Protection for the RS-485 & USB Data Line Automatic RS-485 Direction Control Driver Supports : Windows XP/Vista (32/64-bit)/7 (32/64-bit)/Linux/Mac