



FTM84 / 85

Industrial Grade High Accuracy Thermo Air Velocity Transmitter

Air Velocity

[www.eyc-tech.com](http://www.eyc-tech.com)



## Features

- IP rating: IP67, rugged aluminum case, fit in variety harsh environment
- Capable of temperature compensation
- Linear calibration air velocity by computer, analog output or RS-485(Optional)
- High-speed, high-accuracy measurement, quickly respond
- Thermal mass flow sensor
- LCD, display air velocity and temperature
- Switch multifunction physical quantities: [m/s] \ [ft/s] \ [km/h] \ [mph] \ [kont]
- DIP SWITCH and RS-485 function
- Follow customer needs to plan measuring range, analog output, stations, and zero-point OFF SET or RS-485 adjustment zero-point OFF SET
- Free programmable software : Data logger / Maximum record 65535 data / Charts

## Applications

- Monitor air velocity in supplying gas consumption dry process in industry process / Compressed air consumption measurement / Building / Factory / Clean room / Hospitals / Semiconductor / Electronics / Paper / Printing / Textiles / Steel and iron Industry / Food / Chemical / Pharmaceutical / Biotechnology industry

## Specification

## Input

Sensor type	Thermal mass flow sensor
Measuring range	1 m/s; 2 m/s; 5 m/s; 10 m/s; 20 m/s; 40 m/s; 60 m/s; 90 m/s
Min. Measuring range	0.15 m/s
Temp. sensor & measuring range	Pt1000, 0 ... 80°C

## Output

Output	0 ... 20 mA / 4 ... 20 mA / 0 ... 1 V / 0 ... 5 V / 0 ... 10 V
Default output	Out1: Air velocity; Out2: Temp. (Default value: 0 ... 80°C)
Signal connection	3-wire
Load resistance	Current output: $\leq 500 \Omega$ ; Voltage output: $\geq 10 K\Omega$
Response time	$t_{90} \leq 3$ sec
Installation angle effect	$< 3\%$ of the measured value (When the installation angle $< 10^\circ$ )
Display type	LCD module with green black light
Display range	Upon request, one decimal place, double line character (Up: Air velocity; Down: Temp.)
Height of character	5.55mm

## Accuracy(+25°C)

Air velocity	$\pm 1.5\%$ F.S. (Nonlinear error, hysteresis error, repeatability error)
Temperature( $> 2$ m/s)	$\pm 0.3^\circ\text{C}$
Thermal sensitivity Temp. error	0.05% / °C

## Environment

Measuring medium	Air
Operating Temp.	Housing: -20 ... +80°C Housing with display: -20 ... +60°C Probe: -20 ... +100°C
Operating humidity	95%RH (Non-condensing)
Storage Temp.	-20 ... +60°C
Proof pressure	10 bar

## Electrical

Power supply	DC 8 ... 35 V & AC 12 ... 30 V
Current consumption	DC 8 V: 300 mA, 24 V: 100 mA AC 12 V: 350 mA, 24 V: 180 mA
Overvoltage protection	DC: $< 45$ V; AC: $< 40$ V
Electrical connection	M12 metal connector / Terminal

## Installation

Installation	Duct / Remote
Fix	1/2 PT outside thread

## Protection

IP rating	IP67 (Probe); IP65 (Body)
Electric protection	■ Polarity protection ■ Over-voltage ■ Short circuit

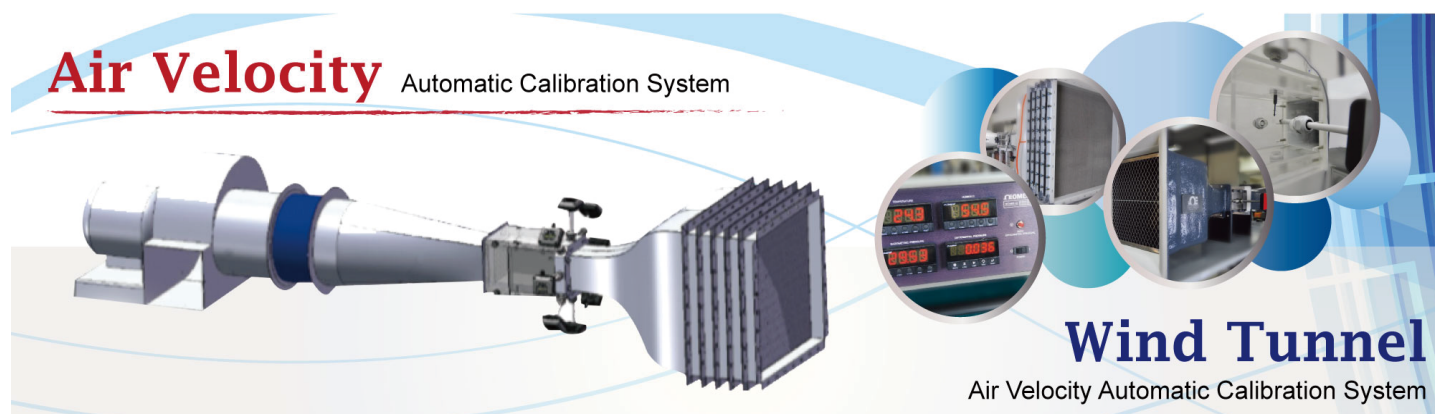
## Certification

CE Certification	Emission	EN 61326-1:2006 Class B EN 55011:2009 A1:2010 Group 1 Class B
	Immunity	EN 61326-1:2006 EN 61000-4-2:2009 EN 61000-4-3:2006 / A2:2010 EN 61000-4-8:2010

## Material

Housing	Aluminum alloy
Probe	SUS
Filter	POM
Cable	PTFE (Remote FTM85)
Option	Metal mounting flange
Weight	FTM84: 670 g / FTM85: 782 g

## Wind Tunnel Automatic QC System

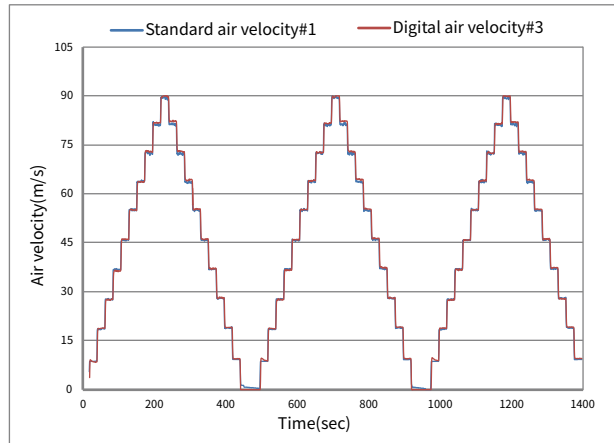
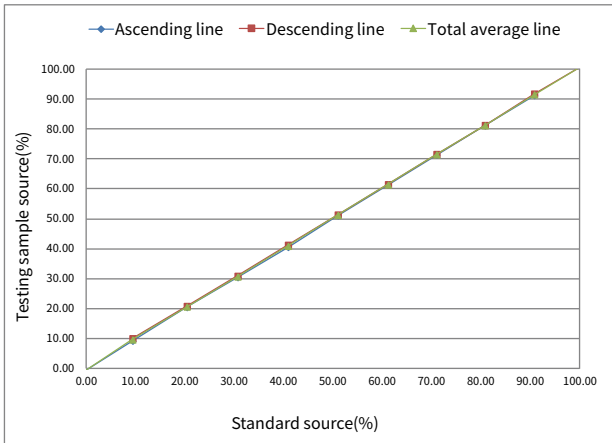


## 【Wind Tunnel System Important advantage】

- Certified ILAC / TAF(ISO17025)
- Wind tunnel system (Detecting chamber) which could control the air velocity
- PC-based automatic air velocity controlling, QC inspection and HMI
- Automated output air velocity quality control inspection report, inspection report and factory inspection report
- Laboratory grade equipment to inspect the products produced, to confirm the best quality

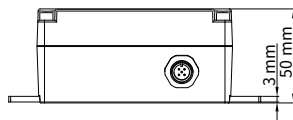
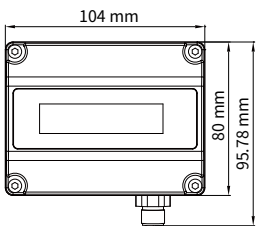
## 3-Cycle Curve

※According to IEC 61298 and ISO 17025 standard to measuring 3-cycle curve.  
As the charts result, accuracy of test sample match with accuracy chart of standard source.

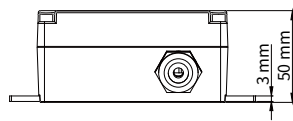
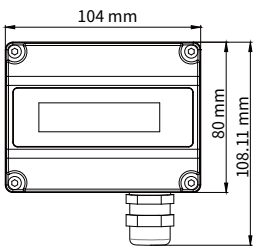


## Dimension

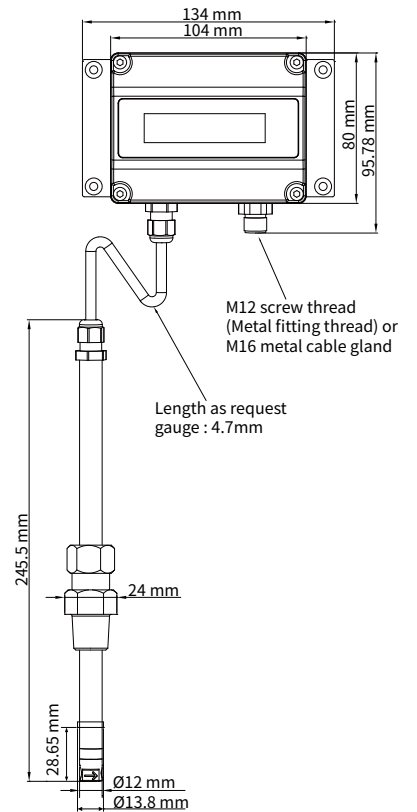
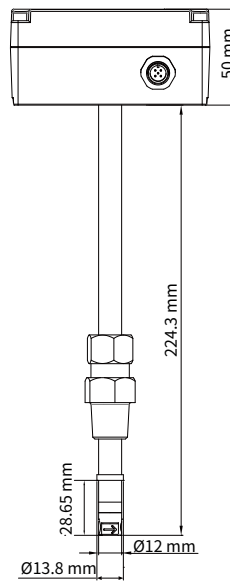
M type



N type

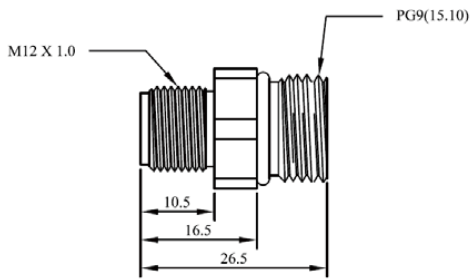


FTM84(Duct)

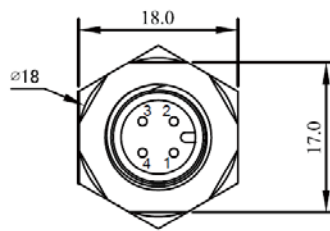


## Electric Connector

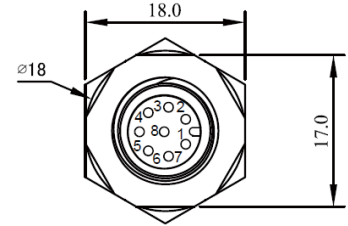
Unit : mm



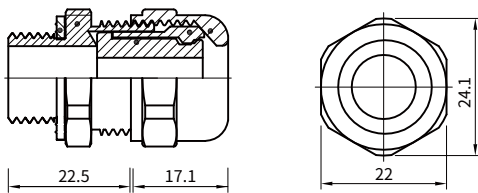
M type : M12-4PIN metal connector ;  
RS-485 or analog



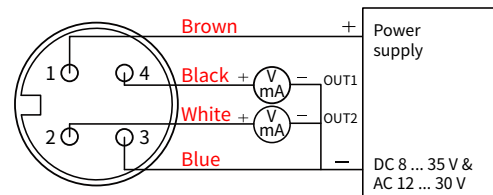
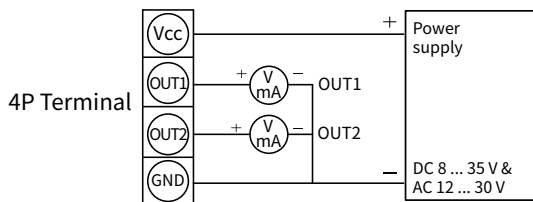
M type : M12-8PIN metal connector  
RS-485+analog



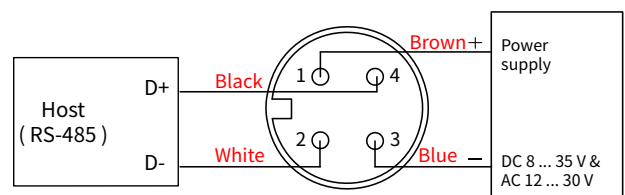
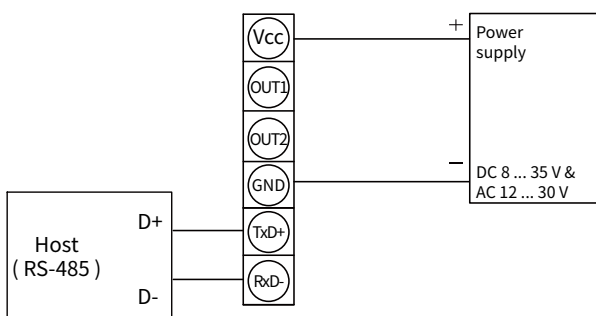
N type : M16 cable gland, RS-485+analog



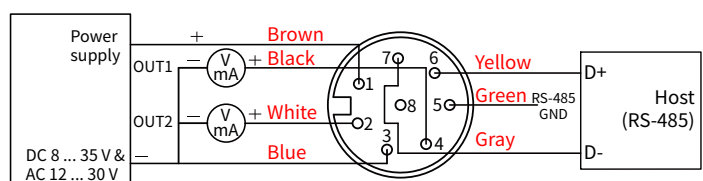
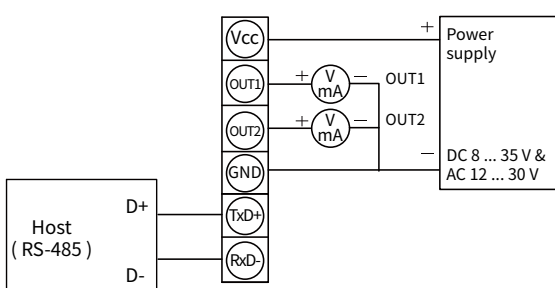
## Analog Diagram



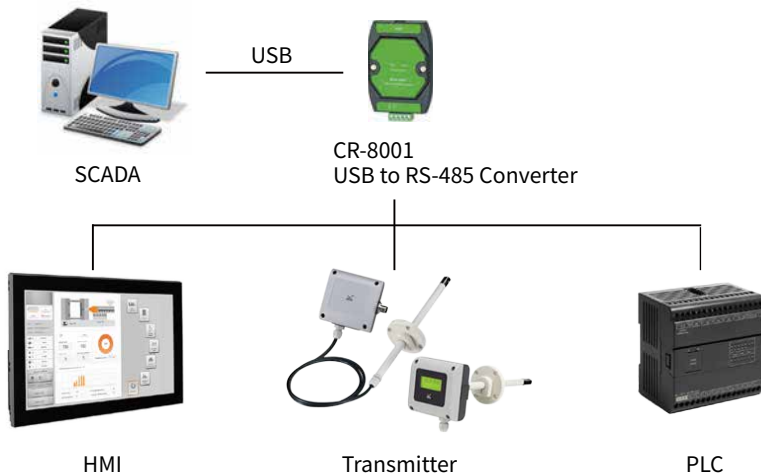
## RS-485 Diagram



## Analog+RS-485 Diagram



## USB to Isolated RS-485 Application



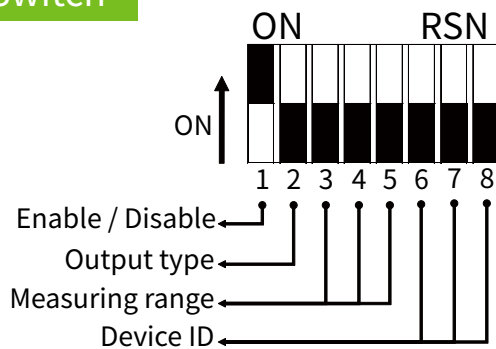
※Device

- 1.PC
- 2.RS-485 to USB converter
- 3.Power supply
- 4.UI software

※Option converter : CR-8001

※Free programmable software  
UI download please see FTM84 / 85  
product page "Attach"

## DIP Switch



- 1.DIP switch active / deactivate:  
Set the DIP switch as On/ Off

STATUS	ON	OFF
DIP Switch 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- 2.The type for analog output:  
Analog output type for Out1 & Out2

STATUS	0 ... 0 V	4 ... 20 mA
DIP Switch 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3. Setting the output measuring range:  
Set the maximum value for analog output  
(The output physical type must be "Air Flow  
Velocity") ※Only switch wide to small range

DIP Switch 3	DIP Switch 4	DIP Switch 5	RANGE (m/s)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	20
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	60

- 4.Setting the device ID:  
Set the slave device ID for modbus RTU.

DIP Switch 6	DIP Switch 7	DIP Switch 8	Device ID
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8

## Ordering Guide

Type	FTM	85	—	60	1	1	—	1	5	M
Installation	Duct	84								
	Remote	85								
Range	1 m/s		—	01						
	2 m/s		—	02						
	5 m/s		—	05						
	10 m/s		—	10						
	20 m/s		—	20						
	40 m/s		—	40						
	60 m/s		—	60						
	90 m/s		—	H90						
Output	4 ... 20 mA				1	1				
	0 ... 20 mA				2	1				
	0 ... 10 V				6	1				
	0 ... 5 V				7	1				
	0 ... 1 V				8	1				
	RS-485				9	1				
Modbus	Analog						—	0		
	RS-485						—	1		
	RS-485&Analog						—	2		
	※M type:M12(8P) metal connector N type:M16 metal cable gland									
Cable	2 m cable								2	
	5 m cable								5	
	Other lengths								W	
Electrical connector / Option	Metal cable gland									N
	M12 metal connector (with 2 m electrical cable)									M
	Display									D
	Other request									W

\*Please make sure the product and the device which connect with RS-485 are on common ground, avoid damaged product.

## | Additional Option (ILAC / TAF) Test Report |



Additional option: (ILAC / TAF) Test report - Standard calibration laboratory (TAF accreditation: 3032, complying with ISO / IEC 17025)  
TAF has mutual recognition arrangement with ILAC MRA

Project	Measurand level or range
Anemometer	0.2 ... 60 m/s (8 basic points on average or specified by customer)