THIES FIRST CLASS ADVANCED X | CUP ANEMOMETER

4.3352.10.400
4.3352.00.400 (heated)

CABLE RECOMMENDATION
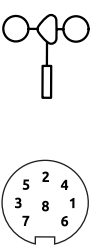
Signal cable up to 150m: **6x0.5 mm² + shield**. For longer cable, please consult sensor manufacturer.
Heating cable cross-section should be calculated based on the power system requirements (Volts and Amps) and the cable length. Please use a wire sizing tool for selecting the most suitable cable.

SENSOR WIRING TABLE

Prior to installation of this sensor, the configuration of the sensor itself should be done as this will determine how the sensor should physically be wired to the data logger:
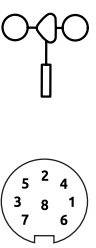
Option A (recommended): How to wire the sensor to the data logger using the RS485 output of the sensor. This option allows for higher precision measurements as the sensor can activate internal heating of the specific electronic components used for both inclination and pressure measurements.

Sensor Model	Sensor Pin		Kintech Colors		Orbit 360		
					Section	Terminal	Type
Base sensor view / Soldering connector view.	1	SIG	○	White	Do not connect		
	2	GND	●	Brown	Power Imput	(-)	
	3	Us (+)	●	Green	Power Input	⊕	
	4	Data (-)	●	Grey	RS485	34 38 42	B1, B2, B3
	5	Data (+)	●	Pink	RS485	33 37 41	A1, A2, A3
	6	Data GND	●	Yellow	RS485	35 39	(-)
		Shield	◓	Yellow-Green	Power Input	⏚	
	7	Heating (+)	●	Brown	Independent power supply 24 AC/DC		
	8	Heating (-)	●	Blue			

**Option B:** How to wire the sensor to the data logger using both the frequency and the RS485 output of the sensor simultaneusly. Please note that the following wiring **does not allow** for internal heating of electronic components of the sensor used for higher precision inclination and pressure measurements.

Sensor Model	Sensor Pin		Kintech Colors		Orbit 360		
					Section	Terminal	Type
Base sensor view / Soldering connector view.	1	SIG	○	White	Frequency Channels	2 5 8 11 14 17 20 23 26 29	Signal
	2	GND	●	Brown	Frequency Channels	1 4 7 10 13 16 19 22 25 28	(-)
	3	Us (+)	●	Green	Frequency Channels	3 6 9 12 15 18 21 24 27 30	5V
	4	Data (-)	●	Grey	RS485	34 38 42	B1, B2, B3
	5	Data (+)	●	Pink	RS485	33 37 41	A1, A2, A3
	6	Data GND	●	Yellow	RS485	35 39	(-)
		Shield	◓	Yellow-Green	Power Input	⏚	
	7	Heating (+)	●	Brown	Independent power supply 24 AC/DC		
	8	Heating (-)	●	Blue			

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REQUIRED DATA LOGGER VERSION
Minimum data logger required: **ORBIT 360 PREMIUM**.
Minimum **firmware** required: **2.24**.

HOW TO CONFIGURE IN ATLAS
Start Atlas and open the data logger you are working on. Now go to *Site settings* and scroll down to the *Channels* section and select the following type and model:

Option A (recommended): The variables from the digital output signal can be chosen (or assigned) to either a frequency or an analog channel according to the list here below (see example on the last page).

> Serial bus 1 baud rate: 9600bps
> Bus: Serial 1 >>> ID: A >>> Sensor model: Thies X Advanced >>> Name: Thies X Advanced_SERIAL1_A

- Group: Frequency channels
- Sensor Type: Serial device
- Sensor Model: **Thies X Advanced_SERIAL1_A**
  - Sensor Model: **Corrected Horizontal Speed**
  - Sensor Model: **Vibration Freq X**
  - Sensor Model: **Vibration Freq Y**

- Group: Analog channels
- Sensor Type: Serial device
- Sensor Model: **Thies X Advanced_SERIAL1_A**
  - Sensor Model: **Pressure**
  - Sensor Model: **TILT**
  - Sensor Model: **Vibration Acc X**
  - Sensor Model: **Vibration Acc Y**

Option B: The frequency output signal from the instrument must be connected to one of the frequency channels (FRQ1 to FRQ10):

- Group: Frequency channels
- Sensor Type: Anemometer
- Sensor Model: **Thies First Class Advanced**

For setting up the variables from the RS485, please follow the setup instructions in option A (on top of this page).

Important! Please make sure you are working with the latest version of Atlas. To check for new updates click the *Check for updates* button in the left-hand menu located in the main dashboard.

Sensor response time: **140ms.**
The sum of the response times of all the sensors connected to the same bus must not exceed 850ms.

USING ANEMOMETER THIES FIRST CLASS ADVANCED X WITH THE ORBIT 360 PREMIUM DATA LOGGER
The Orbit 360 Premium data logger is fully compatible with the Thies First Class Advanced X cup anemometer and can store variables from up to 8 devices simultaneously on each of the three RS485 buses.

The Thies First Class Advanced X cup anemometer features both a traditional frequency output signal as well as a new digital output signal. The traditional frequency output from the instrument is used to collect the non-corrected horizontal wind speed (no instrument calibration is applied to the frequency signal). The digital output signal is used to collect the remaining variables from the instrument, including density corrected wind speed, tilt, vibration etc.

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Example:

In the example below, Atlas is used to configure a Thies First Class Advanced X anemometer.

- Non-corrected wind speed from the frequency output is connected to channels FRQ1 (only for option B)
- Corrected wind speed from the digital output is mapped to channel FRQ2
- Vibration Freq X from digital output is mapped to channel FRQ3
- Vibration Freq Y from digital output is mapped to channel FRQ4
- Pressure from digital output is mapped to analog channel ANL1
- TILT from digital output is mapped to channel ANL2
- Vibration Acc X from digital output is mapped to channel ANL3
- Vibration Acc Y from digital output is mapped to channel ANL4

MEASNET CALIBRATION

Several options for Measnet calibration of the Thies First Class Advanced X anemometer are available.

Option A recommended: RS485 output calibrated.
Option B: either frequency or RS485 calibrated, always with internal sensors heating deativated.

For more information, please contact us on **web@kintech-engineering.com.**

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For more information please contact **web@kintech-engineering.com**
or visit our website **www.kintech-engineering.com**

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