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FREQUENCY CHANNEL EXPANDER 6.1

**Lets you connect a total of 16 cup
anemometers to your Orbit 360
Premium data logger**

Accurately estimating the energy production during the development of a wind farm project requires very high assurance of the wind speed. To achieve this assurance, many wind farm developers are using taller and taller met masts for wind resource assessment and many are doubling up on the number of cup anemometers installed on each height (level) for redundancy and wakes.

With the Frequency Channel Expander 6.1 you can now add 6 frequency channels (pulse counters) to the 10 frequency channels already available on your Orbit 360 Premium data logger.

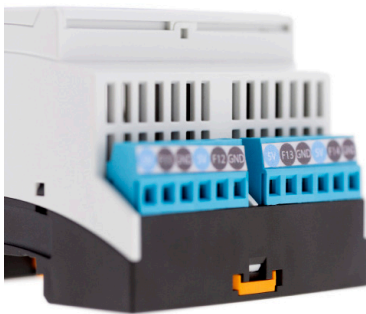
FREQUENCY CHANNEL EXPANDER 6.1 | FOR ORBIT 360 PREMIUM

DESCRIPTION

The Orbit 360 Premium data logger by default include 10 physical frequency channels (pulse counters) that are used to read the output from e.g. a Thies First Class Advanced II cup anemometer. Apart from the physical frequency channels (pulse counters), the Orbit 360 Premium feature 6 channels dedicated to read the output from digital sensors ,such as the Thies First Class Advanced X cup anemometer.

The Frequency Channel Expander 6.1 is an external add-on module for the Orbit 360 Premium. It adds 6 frequency channels (pulse counters) to the data logger, enabling our users to connect a total of 16 cup anemometers with frequency output. It is a convenient and cost-effective solution to add both flexibility and reassurance to wind measurement campaigns where many traditional sensors are used.

KEY FEATURES



- Conveniently adds 6 more frequency channels to the Orbit 360 Premium
- Single RS-485 communication interface with the Orbit 360 Premium
- All 6 channels feature same high precision as the Orbit 360 Premium
- Excellent noise and interface protection
- Each of the six channels can be configured individually
- IEC-61400.12.1 approved sampling rate of 1Hz
- Designed for use with Industry Standard DIN Rail Mounting

The channels on the Frequency Channel Expander 6.1 module have the same features as the existing 10 frequency channels on the Orbit 360 Premium and are all fully compatible with the entire list of sensors already compatible with the default frequency channels on the Orbit 360 Premium. This means that you can connect any sensor whose output consists of pulses with a voltage level of between 0 and 5 volts. Typical examples of these type of sensors include cup anemometers such as Thies First Class Advanced, WindSensor or Vector; but also, K611PB (barometer) and Geovanes (True North orientation). Refer to the Orbit 360 User Guide for extended technical specifications.


Note: The Frequency Channel Expander 6.1 is secured to the DIN rail in the cabinet and connected to the Orbit 360 Premium data logger via the RS-485 port.

Specifications

Power supply range	6...30V
Input current	10.8mA, measured at 12V with no sensors connected to its output terminals
RS-485 baudrate	9600bps.
Sampling rate	1Hz in compliance with IEC-61400.12.1
Resolution	16 bits
Voltage threshold	selectable between two fixed values (80mV or 1.5V)
Operating temperature range	-40...+85°C
Storage temperature range	-40...+85°C
Dimensions	72mm x 89.7mm x 62.2mm

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SENSOR WIRING TABLE

Model	Pin Description		Orbit 360		
			Section	Terminal	Type
	5V	Sensor supply			
	1	Sensor freq. signal			
	(-)	Sensor reference			
	5V	Sensor supply			
	2	Sensor freq. signal			
	(-)	Sensor reference			
	5V	Sensor supply			
	3	Sensor freq. signal			
	(-)	Sensor reference			
	5V	Sensor supply			
	4	Sensor freq. signal			
	(-)	Sensor reference			
	5V	Sensor supply			
	5	Sensor freq. signal			
	(-)	Sensor reference			
	5V	Sensor supply			
	6	Sensor freq. signal			
	(-)	Sensor reference			
	Vcc	Power Supply (+)	RS485	36 40	+
	GND	Power Supply (-)	RS485	35 39	-
	A	RS485-A	RS485	33 37 41	A
	B	RS485-B	RS485	34 38 42	B

LED behavior description

LED turned off: The Frequency Channel Expander is without power supply.

LED turned on and steady (not blinking): The Frequency Channel Expander has power supply but is not receiving data via the RS485 port.

LED turned on and blinking (one blink per second): The Frequency Channel Expander is receiving data via the RS485 port; however, the data received is corrupted. Probable causes for this is signal noise or that the cable connection to ports A and B is incorrectly connected (A and B swapped)

LED turned on and blinking (two blinks per second): The Frequency Channel Expander is receiving data via the RS485 port and operation is normal.

Note: The Frequency Channel Expander can be connected to either of the 3 serial buses on the Orbit 360 Premium as indicated above. Only one Frequency Channel Expander per data logger. The Frequency Channel Expander cannot share the serial bus on the Orbit 360 with other sensors. E.g. if Frequency Channel Expander is on Bus 1, Thies First Class Advanced X, must be on Bus 2 or Bus 3.

HOW TO CONFIGURE IN ATLAS

Open Atlas and go to the data logger you are working on. Scroll to the “channels” section and choose the following settings for the Frequency Channel Expander:

Serial bus 1 baud rate: 9600bps

Bus: Serial 1 >>> ID: A >>> Sensor model: Frequency expander >>> Name: FEXP_SERIAL1_A

- Group: Frequency channels (Only the channels FRQ11 to FRQ16 can be used to map the output from serial output devices)
- Sensor Type: Serial device
- Sensor Model: **FEXP_SERIAL1_A**
- Sensor Model: **Connected sensor on the each signal input (from 1 to 6)**

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