

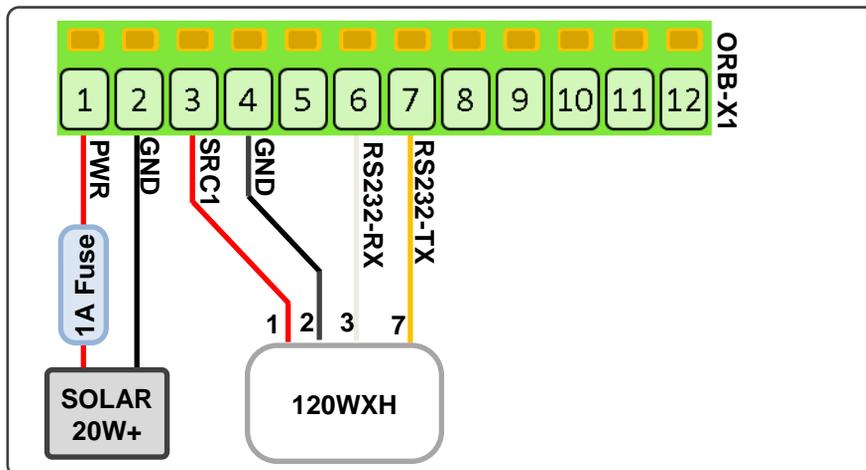
TT010: Airmar WeatherStation

This technical tip shows how to connect an Airmar WeatherStation to the ORB-X1 using MODBUS over RS422 or RS232. The WeatherStation measures apparent wind speed and angle, barometric pressure, air temperature and wind chill temperature. It is designed specifically for stationary operation in ice-prone environments. In this application, we have chosen to power the WeatherStation from the ORB using the current source outputs. This allows us to use solar or supply voltages outside the range of the WeatherStation. To save power, it is assumed that the base interval is set to 10 minutes, meaning a weather update every 10 minutes.

Extensions: In high winds, use the ORB output turn on a warning sign. Send an email and SMS to warn users that an airfield is closed.

Sensor Parameters

Part Number	120WXH
Type	Weather Station
Operating Range	Wind: 0-40m/s, Temp: -40°C to 80°C, Press: 300 to 11hpa
Supply Voltage	12V to 24V DC, >28mA at 24V
Output	ASCII NMEA0183 over RS232 or RS422
Supplied by	Instrument Choice (www.instrumentchoice.com.au)



Setting (Serial 1)	Value	Comment
Name	Airfield	A meaningful name for the sensor data
Interval	1	1 means the sensor is sampled on every base interval
Type	RS232	The sensor uses NMEA over RS232. For RS422, select RS485.
Mode	Capture	We will wait for NMEA messages and capture the one that we require
Baud Rate	4800	Baud rate as specified for NMEA0183
Settings	8N1	Data bits, parity and stops bits as specified for NMEA0183
Start String	\$WIMDA	Start capturing when the WIMDA message arrives. This message is a composite that contains pressure, wind speed, direction, temperature and other parameters.
End String	\0D\0A	Stop capturing when the end of message indicator <CR><LF> is received.

Setting (Current 1)	Value	Comment
Name	Power for WeatherStation	A meaningful name for the sensor data.
Interval	1	1 means the sensor is sampled on every base interval.
Always On	Disabled	To save power, we will only power the WeatherStation when required.
Start Time	30	Allow 30 seconds for the weather station to start before turning off power.