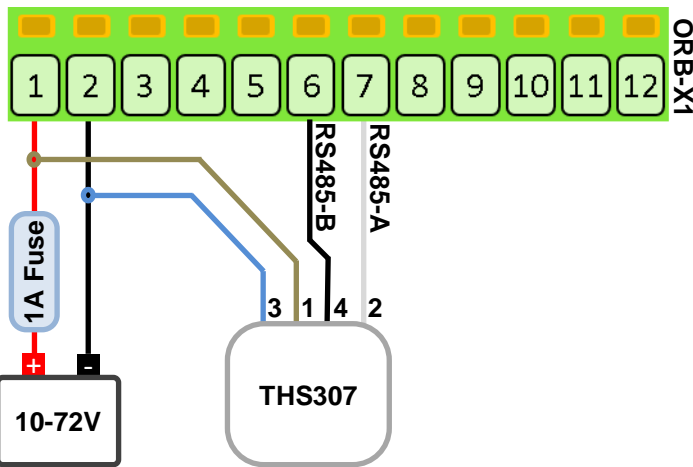## TT006: MODBUS Temperature and Humidity Sensor

This technical tip shows how to connect a MODBUS temperature and humidity sensor to the ORB-X1. The ORB-X1 allows up to 5 MODBUS devices to be connected to its serial port simultaneously. The sensor shown is also available with 2 x 4-20mA outputs that could be attached to the ORB as an alternative connection method.

Sensor Parameters

Part Number	THS307
Type	Multifunction Temperature and Humidity Transmitter - Outdoor
Operating Range	-40°C to 80°C; 0-100% RH
Supply Voltage	8V to 35V DC
Output	MODBUS (RS485) or 2 x 4-20mA
Supplied by	www.newenglandinstrument.com

Temperature and Humidity Sensor

ORB-X1

Setting (Serial 1)	Value	Comment
Name	Multi Sensor	A meaningful name for the sensor data
Interval	1	1 means the sensor is sampled on every base interval
Type	RS485	The sensor uses MODBUS over RS485
Termination Resistor	Disabled	May need to be enabled for if the sensor is a long way from the ORB
Mode	Modbus	The THS307 is a MODBUS sensor
Baud Rate	57600	Configurable on the sensor and could be 9600, 19200, 38400, 57600 or 115200
Settings	8N1	Configurable on the sensor; 8N1 is the most common
High Warning	50	The level above which a warning will be issued
Modbus 1 / 2 Name	Temperature / Humidity	Modbus reading 1 will be configured for temperature and 2 for humidity
Function 1 / 2	3: Read Holding	From the THS307, temperature and humidity are stored in a holding register
Slave Address 1 / 2	1 / 1	Address is configurable on the sensor from 1 to 247
Register Address 1 / 2	1025 / 1029	From the THS307 datasheet, the temperature register is 1025 and humidity 1029
Calibration		The THS307 outputs in °C and % humidity and so do not require calibration
Modbus 1 / 2 Unit	°C / %	Units of temperature and humidity that will be displayed on the Senquip Portal
Warnings and Alarms		Warnings and Alarms can be set in °C and % humidity as required