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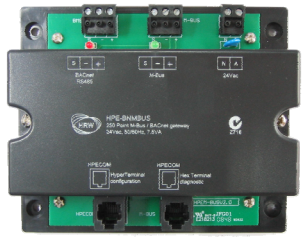


HPE-BNMOD – Modbus Integration to BACnet MS/TP

FW4

The HRW Point Expansion unit, type HPE-BNMOD, is for integration of Modbus RTU slave devices in to BACnet MS/TP networks. Multiple Modbus RTU devices of any mix may be connected to the HPE-BNMOD for read/write access of up to 250 data-points.

All points may be individually scaled and multiple points representing Modbus registers which use multiple Words may be combined so that only one Object Instance representing the scaled multiple Word register value needs to be read up by the BMS.

Application Data

Primary network protocol:	BACnet MS/TP	
Sub-network protocol:	Modbus RTU	
Administration points:	Point 1	- Diagnostic counter reset
	Point 2	- BACnet comms error count
	Point 3	- Modbus comms error count
	Point 1000	- BACnet node
	Point 1001	- BACnet baud rate
	Point 1002	- Modbus baud rate / config.
	DI	- BACnet global Device Instance
	MM	- Max Master
	SV	- System Vendor ID
Modbus RTU data points:	250 total, point 4…253	
Supported Modbus RTU functions:	01	- Read (write) Coil status
	02	- Read Discrete Input
	03	- Read (write) Holding Register
	04	- Read Input Register
Comm speed selection, BACnet MS/TP:	2400, 4800, 9600 (default), 19200, 38400, 76800	
Comm speed selection, Modbus subnet:	2400, 4800, 9600 (default), 19200	
Modbus subnet comm configuration:	7/8 data bits – Odd/Even/No parity – 1/2 stop bits (default – 8N1)	

Default Settings

The HPE-BNMOD is suitable for use with a wide range of Modbus RTU devices and is programmable by the user to suit the various connected devices. As a setup example the factory defaults include a number of points already configured. These default point settings relate to the Rail 350 Modbus RTU electricity meter (KR3502).

KR3502:

- kWh, kVArh, kVAh
- kW, kVAr, kVA
- Inductive VAr, Capacitive VAr
- Neutral current
- Volts, Amps, PF, Frequency
- Peak values, MD values
- %THD per phase V & I

If using the HPE-BNMOD for integration of devices other than the MR3002 the sample points may be overwritten or deleted.

Modbus RTU Addressing Structure

For the purpose of setting up the HPE-BNMOD, the Modbus RTU point numbers are grouped in to sets of 256 points (0…255). Each set of 256 points is referred to as a **Table** (AddHi) and each point within a table is referred to as **Row** (AddLo).

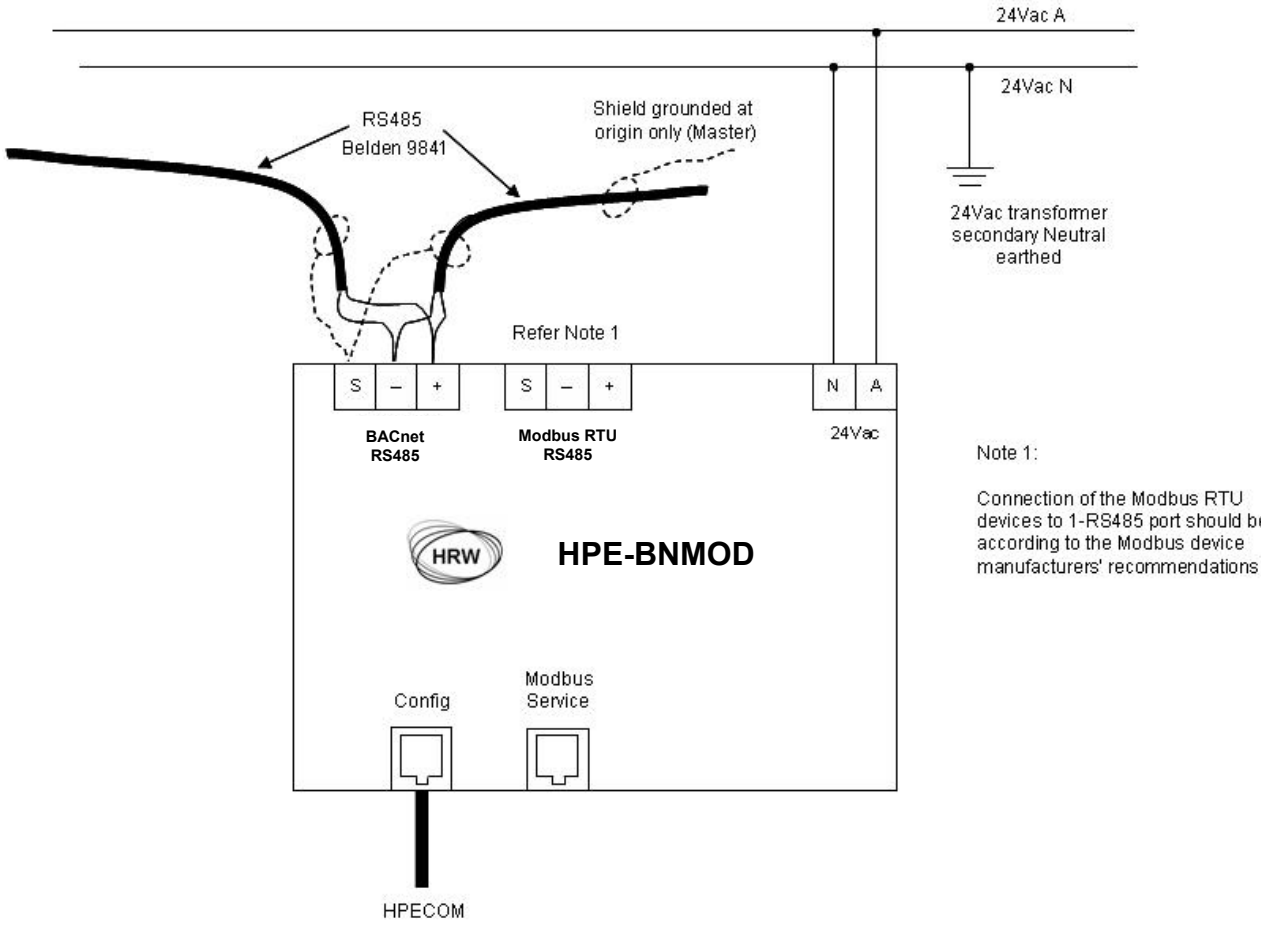
Although there is some difference between individual manufacturers in the way that they refer to points within devices, the Modbus RTU addressing in the background of their devices is similar, following the Modicon Modbus RTU or J-Bus addressing structure.

A conversion of Modbus RTU addresses to HPE-BNMOD Table & Row is as follows (based on Function 03):

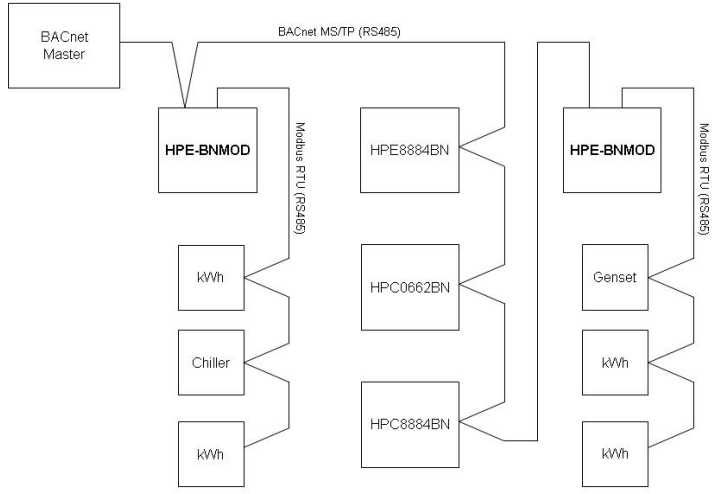
MODBUS Addr Range		**HPE-P1MOD**	
		Table #	**Row #**
40001…	40256	0	0… 255
40257…	40512	1	0… 255
40513…	40768	2	0… 255
40769…	41024	3	0… 255
41025…	41280	4	0… 255
41281…	41536	5	0… 255
41537…	41792	6	0… 255
41793…	42048	7	0… 255
42049…	42304	8	0… 255
42305…	42560	9	0… 255
42561…	42816	10	0… 255
42817…	43072	11	0… 255
43073…	43328	12	0… 255
43329…	43584	13	0… 255

and so on…

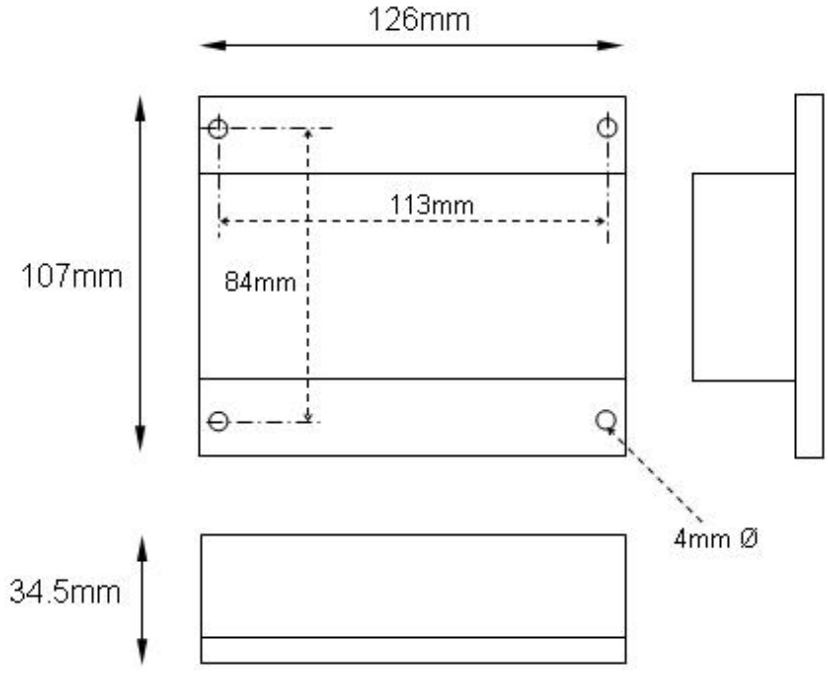
Connections



Network Configuration (example)



Dimensions



Ordering

HPE-BNMOD	250 point gateway – BACnet MS/TP integration of Modbus RTU devices - for control panel mounting
Standard Packaging	40 units per carton

Accessories

HDA0002	DIN rail adapters factory fitted to HPE-BNMOD
HPECOM	Config. data cable (DB9 <> RJ11)
U232-P9	RS232 (DB9) <> USB converter cable