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Issue 03 29/04/07 (added settings for usb-comi-m)

Application note: ND Multicube 3 meters with RS485 option

Connections using RS485 / RS422 and Multicube meters.

Important Note

The ND handbook for the Modbus option shows the polarity of the Modbus connections reversed. Use the connections shown in the tables below.

Troubleshooting

1. External module only – some models are incorrectly marked, swapping BUS and CMD lights. The internal RS485 meters are OK.
2. If just one meter on the bus, use 253 address since a meter will always respond to this 'special' address. This removes any confusion of address.
3. If bus LED (or the CMD LED in point 1 above) flashes, and not CMD, check Baud rate, if that OK, swap A and B terminals – incorrect in ND handbook.
4. When using ND's Busker, Local Echo of the serial port **MUST** be disabled, else will get CRC errors.
5. Bias resistors – May be needed in some situations, eg. very long runs with mains in close proximity.

Internal RS485 in Multicube 3 – only supports 2 wire RS485

Multicube	function	direction	UBUS-COMi 9way D
28	+(B)	<->	2
27	-(A)	<->	1
25	Gnd		5

USB-COMi links: Fit 1,5,7,11,15,19

USB-COMi-M links: Fit 1,3,5,13 Switches S1 on, S2 off, S3 off, S4 off

External RS485 in Multicube 3 – 2 wire RS485

Multicube	function	direction	UBUS-COMi 9way D
30	-(A)	<->	1
29	+(B)	<->	2
28	Link to 30		
27	Link to 29		
26	Gnd		5

USB-COMi links: Fit 1,5,7,11,15,19

USB-COMi-M links: Fit 1,3,5,13 Switches S1 on, S2 off, S3 off, S4 off

External RS485 in Multicube 3 – 4 wire RS422

Multicube	Function	direction	UBUS-COMi 9way D
30	-(A)	<-	1
29	+(B)	<-	2
28	-(A)	->	4
27	+(B)	->	3
26	Gnd		5

USB-COMi links: Fit 1,3,9,13,17

USB-COMi-M links: Fit 1,3,5,13 Switches S1 on, S2 off, S3 on, S4 on

Modbus Data Addresses

Note that the "Address" value specified for each parameter in the ND documentation corresponds to the value that appears in the Modbus data frame.

However, the normal Modbus convention for specifying data addresses in documentation starts at 1, not zero. This means that when setting up parameters in a SCADA application, you will *probably* need to specify data addresses 1 greater than that in the ND documentation.

For example, to collect Table 11 (instantaneous values) from a Multicube 3, the ND documentation specifies :-

Address 2816 (kW 3-Ph) to Address 2840 (Power Scale)

To program your SCADA application you will *probably* have to specify :-

Address 2817 (kW 3-Ph) to Address 2841 (Power Scale)