Modbus register address ranges re-mapped for the Easygen using proconX gateways

Application Note 308

Revision 1, March 2011

proconX offers two gateways which are well suited to complement the range of Woodward genset controls like the Easygen-3000 series.

Both gateways offer alternative Modbus register ranges in addition to the default range of 50000. This is of particular interest if Modbus equipment is used which cannot address registers above a certain range.

Depending on the application and protocol used, either the **ESENET** or the **MBRG-300** gateway may be best suited.

Solution 1: Modbus/TCP

If Modbus/TCP is used as protocol, then the *proconX* **ESENET** gateway can be used.

Since firmware 0.4 the ESENET offers alternative access as Input Registers in the start address range from 1 to 271. The table below shows that the Visualisation Data can be accessed at three different locations. Either as Holding Registers or Input Registers (address block offset 4:00000, Modbus function code 03) at the standard start address 50001 or as Input Registers (address block offset 3:00000, Modbus function code 04) at start address 1.

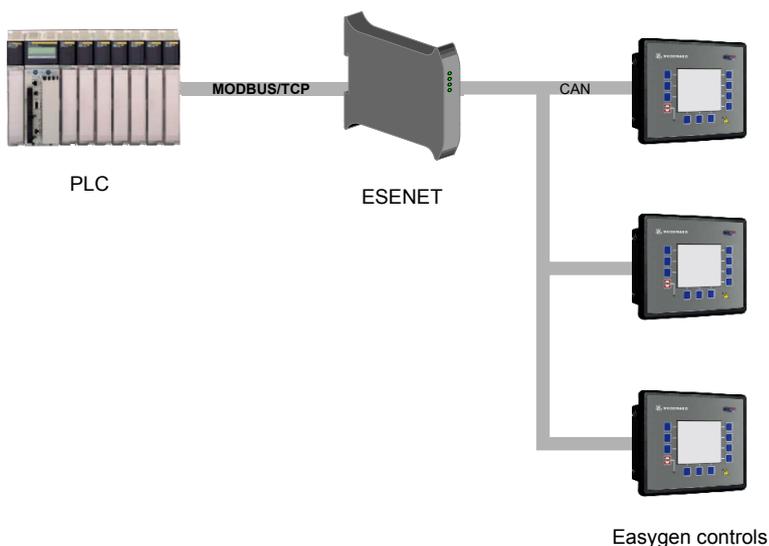The following diagram illustrated how the gateway is integrated into the CAN network:

Figure 1: ESENET gateway inserted into the CAN network offering Modbus/TCP access

Figure 2: ESENET's Modbus data table structure for Easygen-3000 series

Address block	Register address	Easygen-3000 interface manual designator
Input Registers range 1		
3	1	Protocol-ID, always 5003
3	2	Pickup speed
…	…	…
3	268	Exhaust Gas Temp
Input Registers range 50001		
3	50001	Protocol-ID, always 5003
3	50002	Pickup speed
…	…	…
3	50268	Exhaust Gas Temp
Holding Registers range 50001		
4	50001	Protocol-ID, always 5003
4	50002	Pickup speed
…	…	…[a]
4	50268	Exhaust Gas Temp

[a]For details refer to "easYgen-3000 Series Genset Control — Interface Manual"

Table 1: Modbus register addresses for Easygen-3000 series visualisation data

Solution 2: Serial Modbus

If Modbus RTU or ASCII is used as protocol, then the *proconX* **MBRG-300** gateway can be used.

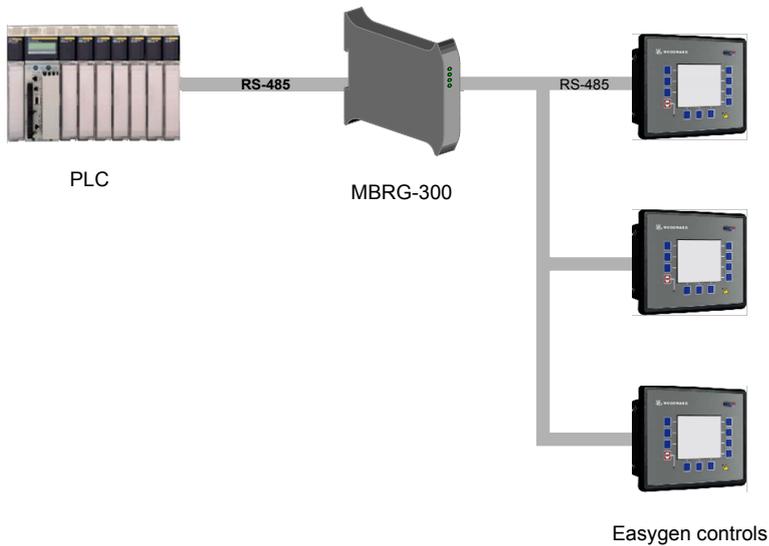The following diagram illustrated how the gateway is integrated into the RS-485 network:

Figure 3: MBRG-300 gateway inserted into the Modbus network as re-mapper

The MBRG-300 gateway offers a Modbus register re-mapping and routing feature, which can be utilised for the purpose of re-arranging Modbus addresses.

With only three settings to be made via the MBRG-300 web based interface, the following Modbus table mapping can be configured.

Figure 4: MBRG-300's re-mapped Modbus data table structure

The advantage of such a table is, that most Configuration Data can still be accessed while the Visualisation Data is at start address 1. Only rarely used Configuration Data within the range of 1 to 271 are hidden by the re-mapping and cannot be accessed.

The first setting to made is to configure routing from serial port 1 to serial port 2. The following screen shows the appropriate configuration entry on the gateway:
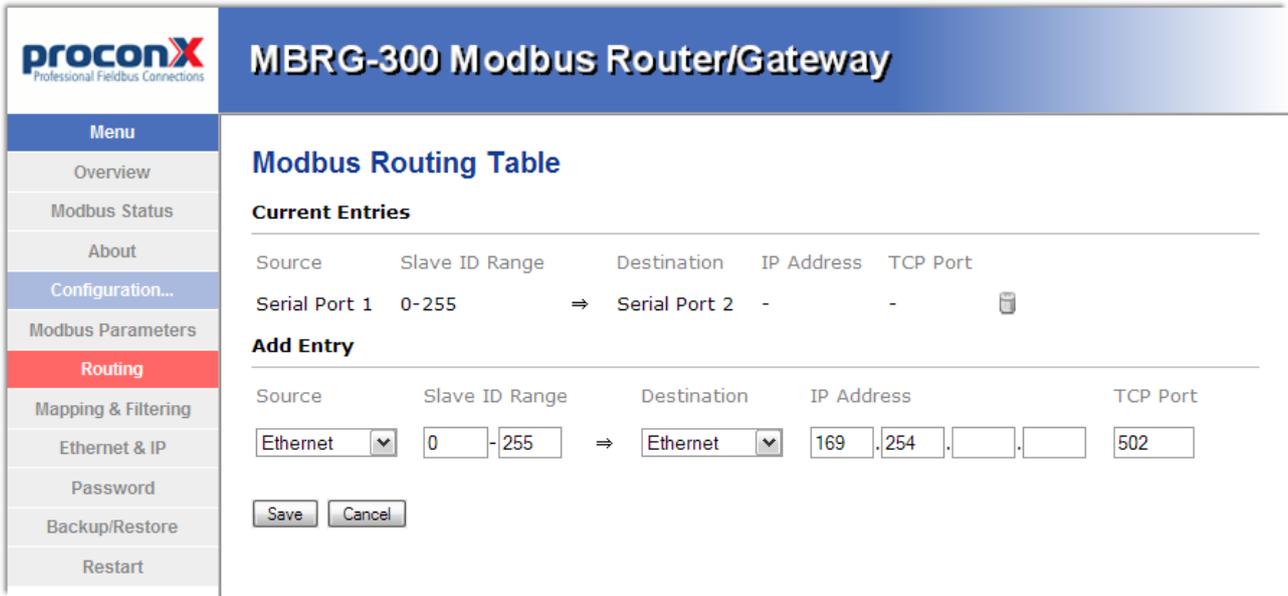

Figure 5: Screenshot of MBRG-300 gateway routing table configuration

The next setting is the register mapping. The following screen shot shows how re-mapping of the 50000 range is done into to the 1 start address range while still allowing access to configuration parameters above address 272:
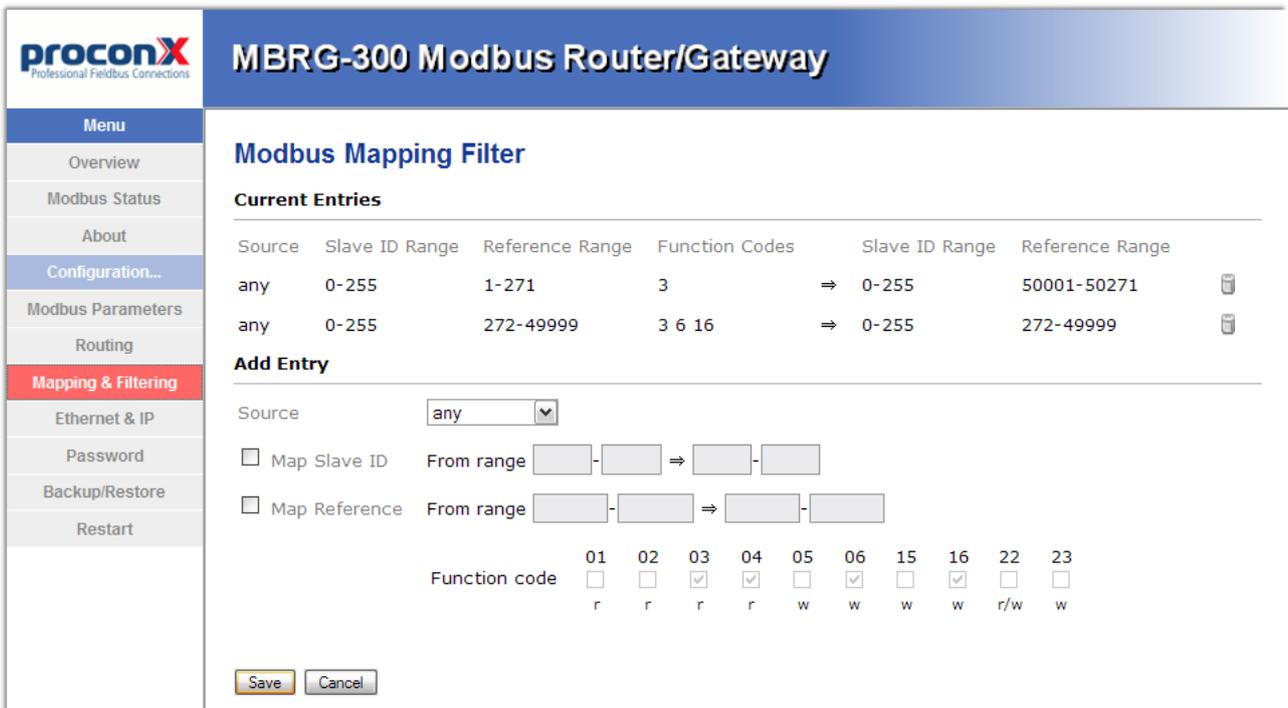

Figure 6: Screenshot of MBRG-300 gateway mapping filter configuration

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