APPLICATION NOTE

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Product Family: GS Drives and Entivity Software Products

Number: AN-GS-007
Date: 6/19/03

Subject: Direct connection to GS-EDRV and GS series of AC drive with Entivity's Modbus TCP/IP drivers.

Revision: Original

Specifications:

Drive network:	1 x GS2-XXXX 1 x GS-EDRV
PC's:	Standard network PC
Software:	Entivity Studio 7.2 or Think n Do Live 5.5

Entivity software has the ability to connect directly to the GS-EDRV card via Ethernet. It utilizes the new Driver Modbus TCP/IP recently added to both Entivity Studio 7.2 and Think N Do Live 5.5.

This application will allow the user to interface the GS series of drives over Ethernet to any type of application or project where a traditional discrete and analog control scheme would have normally been deployed.

The benefits are ease of set-up, more data available for the user from the drive, fast control, and state of the art technology.

Basic Drive Communication parameter setting:

GS2-43P0	DEFAULT	NEW	COMMENTS
P3.00	0	3	RS485 operation control enabled
P4.00	0	5	RS485 speed reference control
P9.00	1	X(1)	Communication address
P9.01	1	1	9600 Baud rate
P9.02	0	5	MODBUS RTU 8 data bits, odd parity, 1 stop bit

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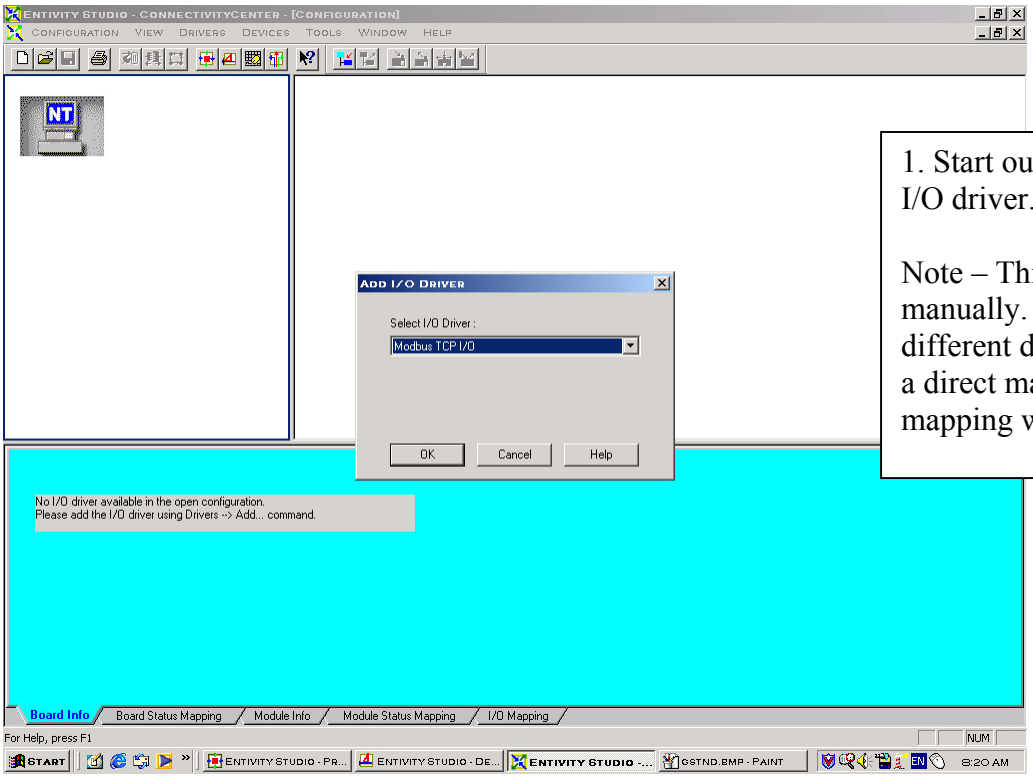
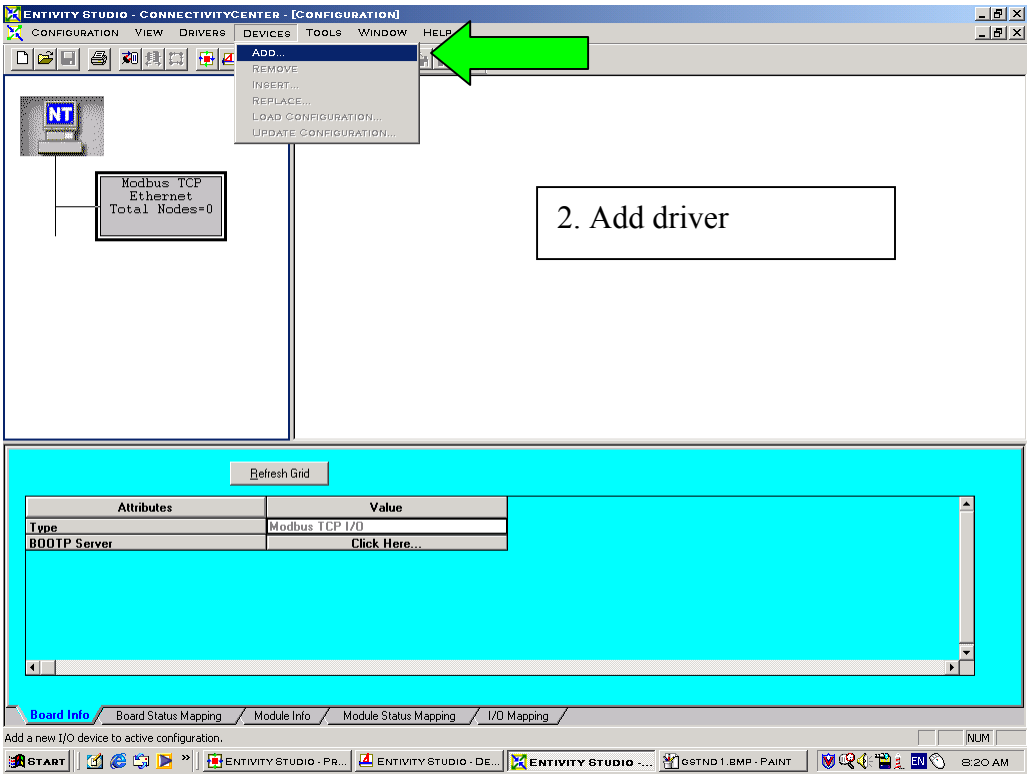


1. Start out by manually adding the I/O driver. Select Modbus TCP/IP.

Note – This set-up will be done manually. If Auto-detect is used, a different drive card will come up as a direct map to the GS-EDRV. This mapping will not work.



2. Add driver

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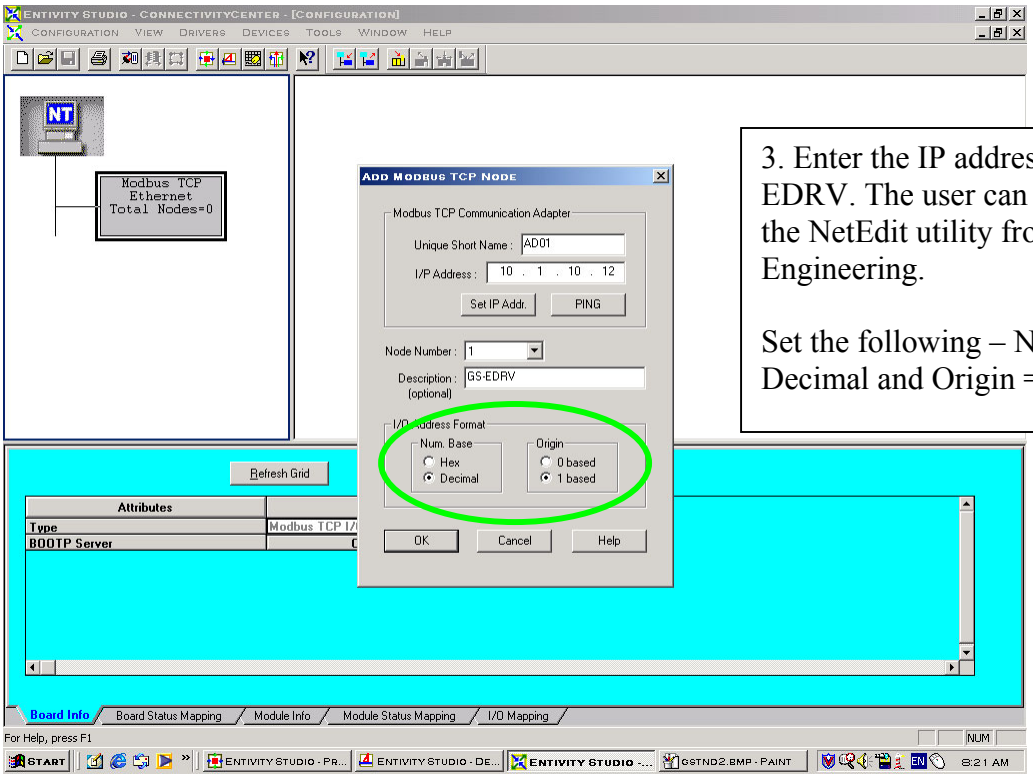
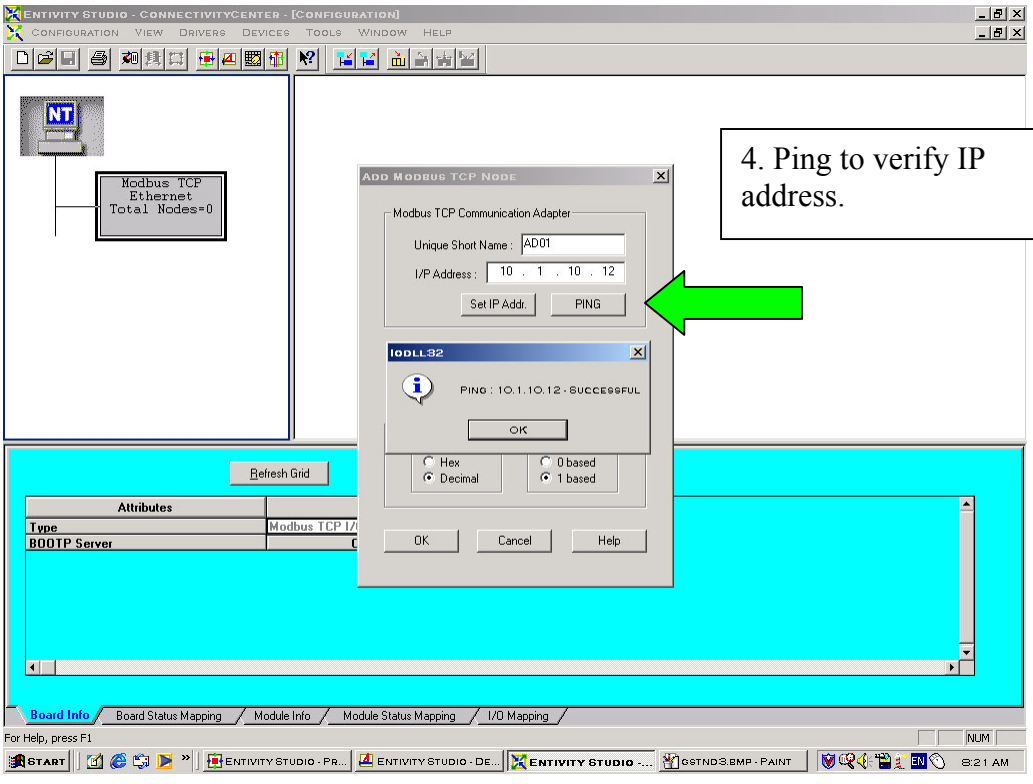


3. Enter the IP address of the GS-EDRV. The user can obtain this from the NetEdit utility from Host Engineering.

Set the following – Num Base = Decimal and Origin = 1 based.



4. Ping to verify IP address.

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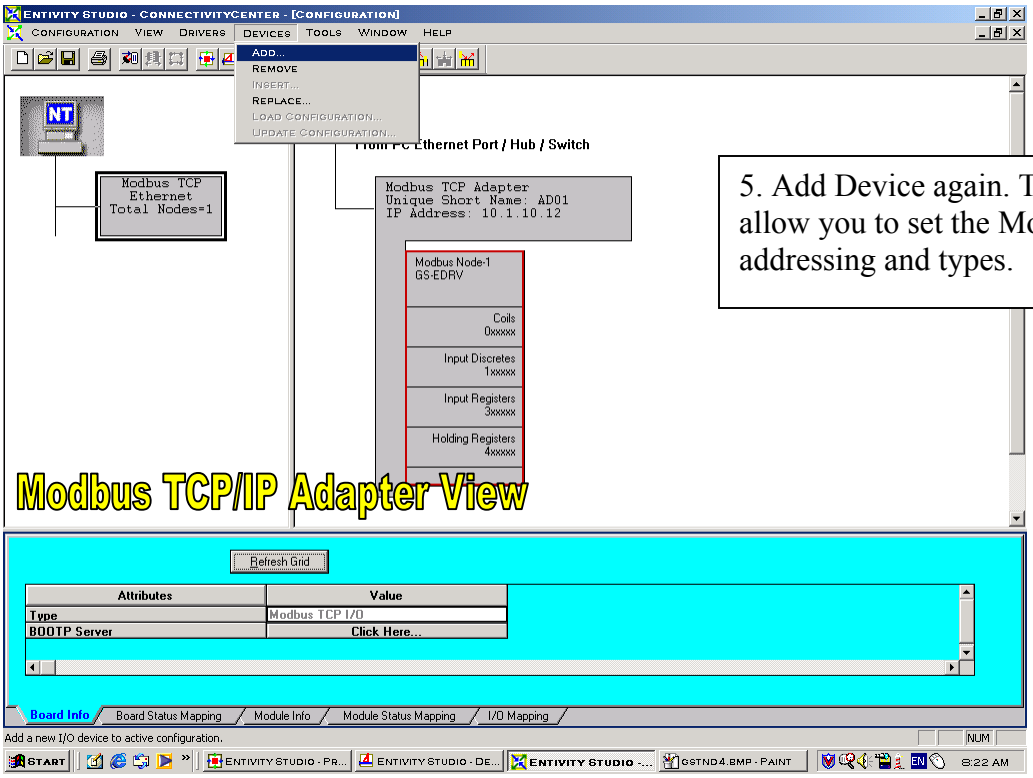
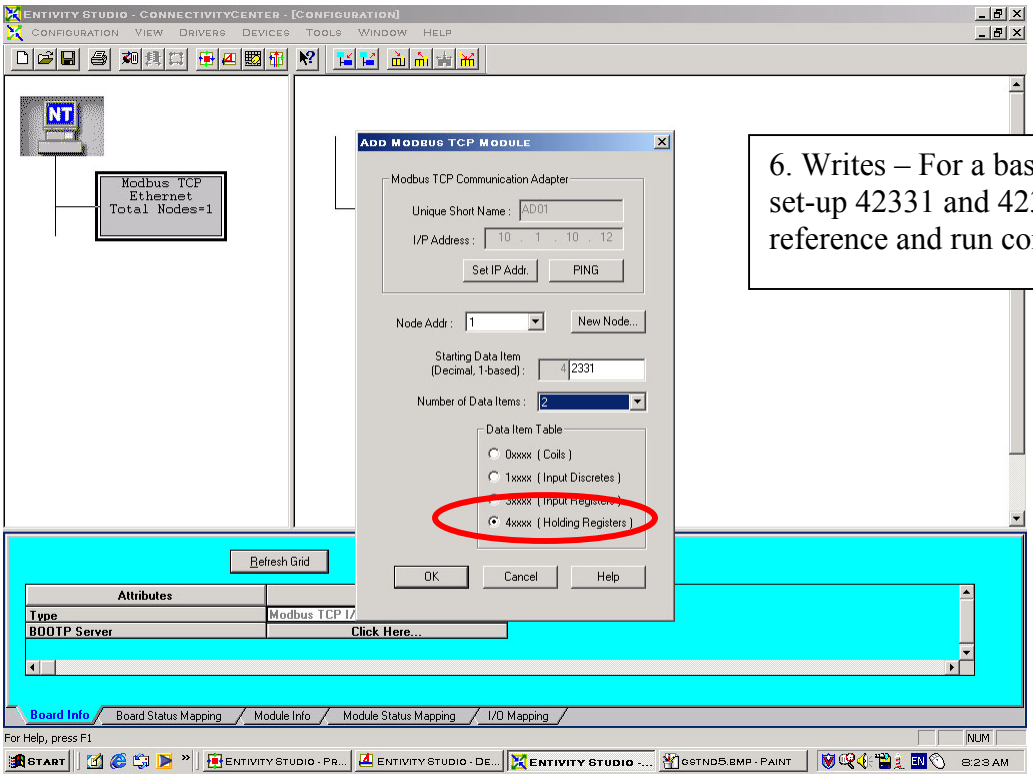


5. Add Device again. This will allow you to set the Module addressing and types.



6. Writes – For a basic control test – set-up 42331 and 42332 for speed reference and run control

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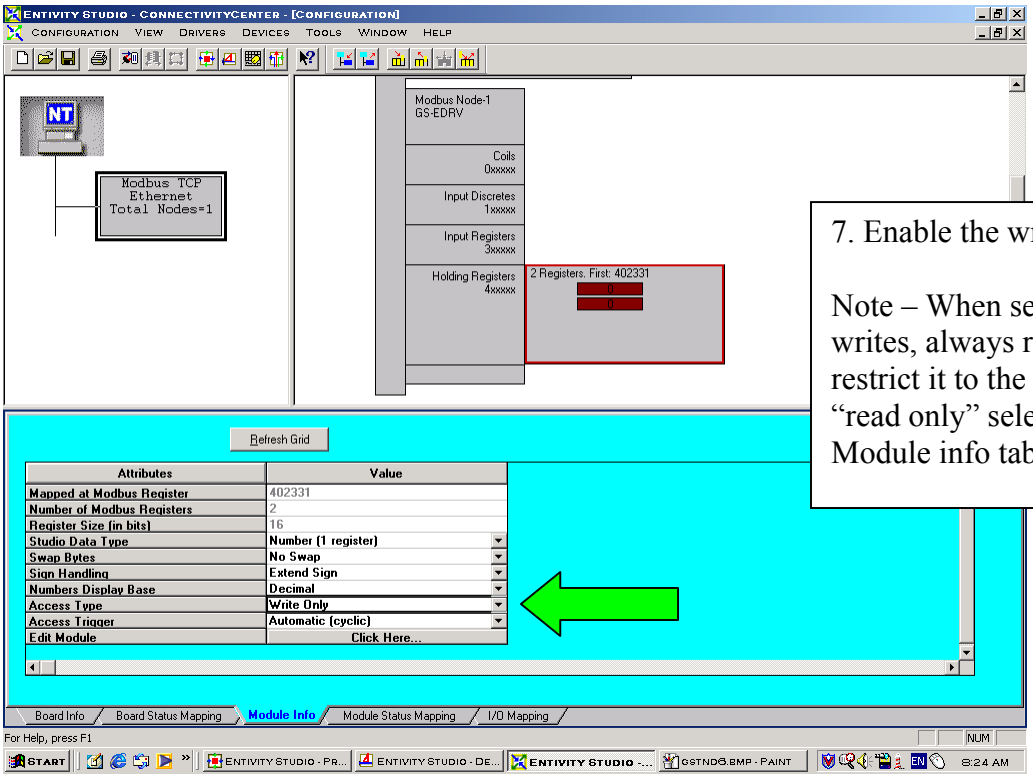
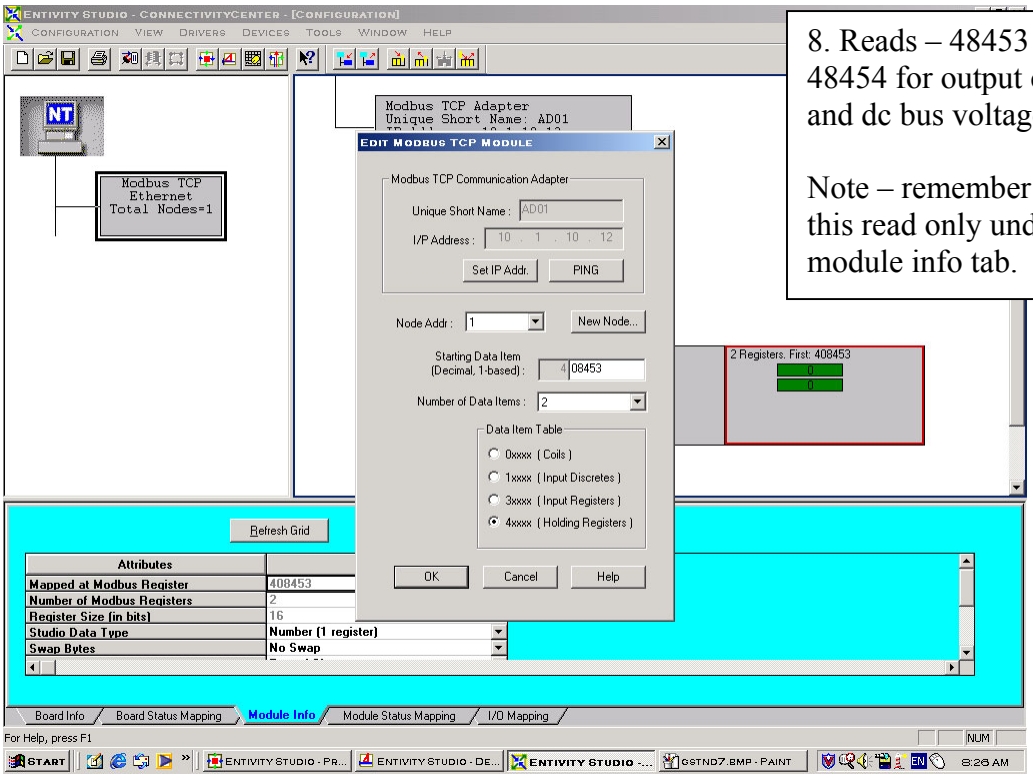


7. Enable the write only function.

Note – When setting up reads and writes, always remember to restrict it to the "write only" or "read only" selection under the Module info tab.



8. Reads – 48453 and 48454 for output current and dc bus voltage.

Note – remember to make this read only under the module info tab.

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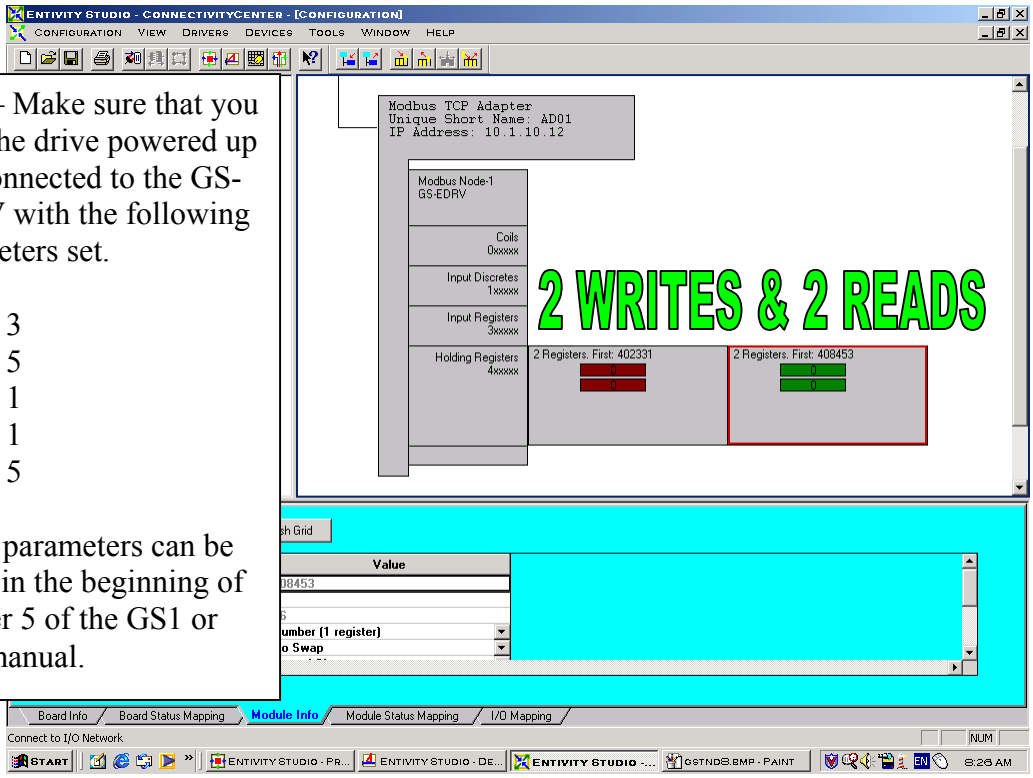
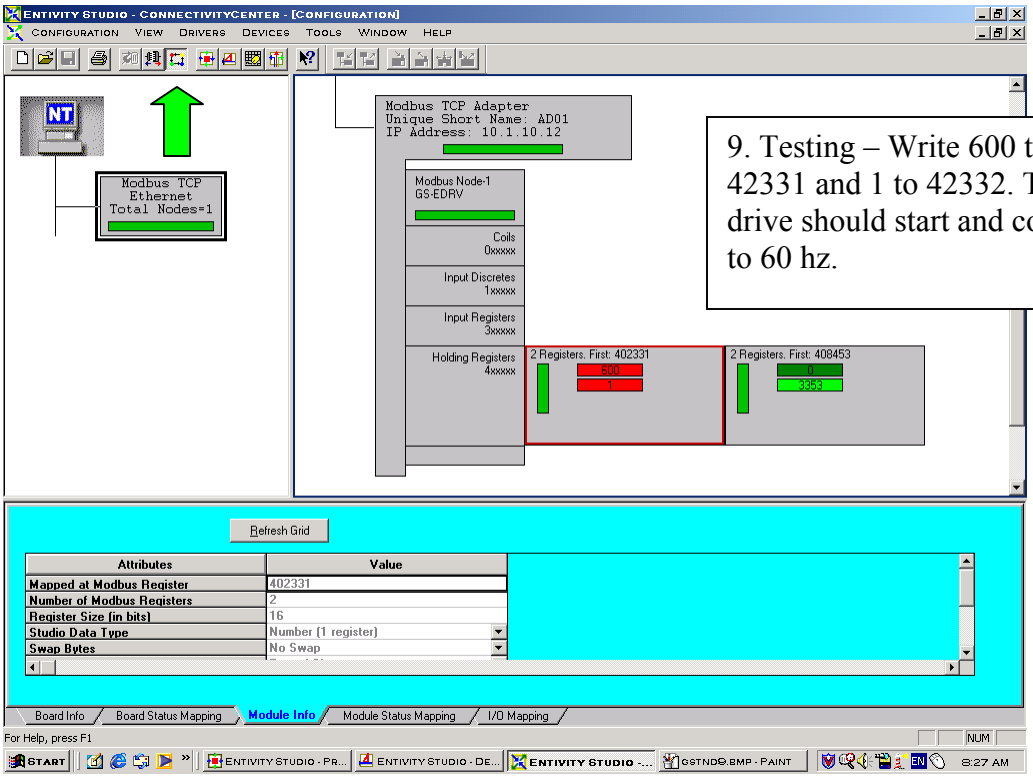
Note – Make sure that you have the drive powered up and connected to the GS-EDRV with the following parameters set.

3.00 – 3
4.00 – 5
9.00 – 1
9.01 – 1
9.02 – 5

These parameters can be found in the beginning of chapter 5 of the GS1 or GS2 manual.





9. Testing – Write 600 to 42331 and 1 to 42332. The drive should start and control to 60 hz.

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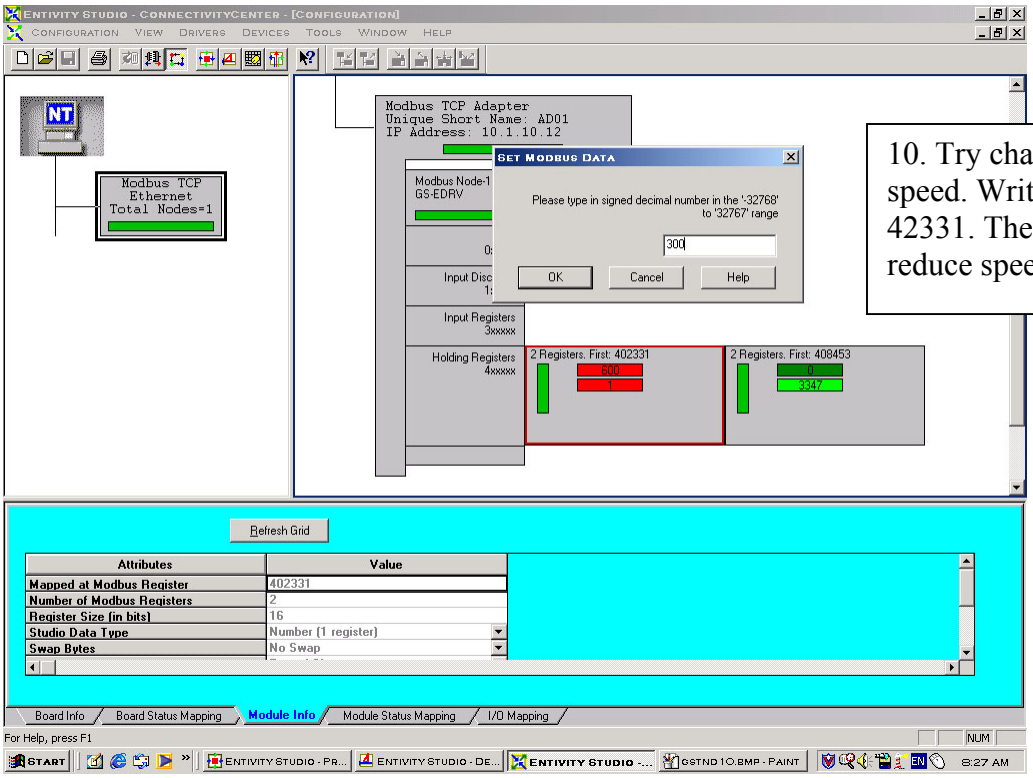

10. Try changing just the speed. Write 300 into 42331. The drive should reduce speed to 30 Hz.

Modbus Addresses:

Read/Write	Hex	Modbus
Speed Reference	091AH	42331
Run Command	091BH	42332
Direction	091CH	42333
External Fault	091DH	42334
Fault reset	091EH	42335
Jog	091FH	42336
Status 1	2100H	48449
Status 2	2101H	48450
Frequency command	2102H	48451
Output frequency	2103H	48452
Output current	2104H	48453
DC-bus voltage	2105H	48454
Output voltage	2106H	48455
Motor RPM	2107H	48456
Scale frequency (low)	2108H	48457
Scale frequency (high)	2109H	48458
% Load	210BH	48460
Firmware Version	2110H	48465

Technical Assistance: If you have questions regarding this Application Note, please contact us at 770-844-4200 for further assistance.