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### Using Simply Modbus to read Temperature with Modbus Slave Thermocouple module.

Set up Simply Modbus.

- 1. Download demo or purchase the RTU Simply Modbus Master from www.simplymodbus.ca.
- 2. Install and run the Software.

#### Simply Modbus www.datexel.com

#### Set up DAT3016.

- 1. Connect 24 Vdc to Terminal I and J.
- 2. Connect RS485 from the PC to A (D-) and B (D+)
- 3. Connect a thermocouple or temperature Calibrator to Channel 0.
- 4. If you do not know the Thermocouple Modbus Slave connect the short on INIT and recycle the power. This will set all the communication parameters to the following.
- Baud Rate 9600.
- Data bits 8.
- Stop Bits 1.
- Parity None.

#### Setting the Communication Port on the Simply Modbus Software.

- 1. The mode of Communication is RTU.
- 2. The Com port of the PC is 3. This could be different.
- 3. The Baud rate is 9600.
- 4. The Data bits is 8.
- 5. The Stop bits is 1.
- 6. The Parity is none.



Simply Modbus Master 8.0.4			
mode COM port baud data bits stop bits parity	copy down 🛞 register#	bytes	results LOG
RTU 3 9600 8 1 None	16bit INT 40015	OOFE	254
Slave ID First Register No. of Regs	16bit INT 40016	35BB	13755
40015 4	16bit INT 40017	35BB	13755
Enction mining effect / Vise defaults	16bit INT 40018	OOFE	254
2 byte ID code 40001 Figure stars Figure stars Request or cr 01 03 00 0E 00 04 25 CA SEND			
load before send response time (seconds) 0.2			
01 03 08 00 FE 35 BB 35 BB 00 FE 95			
-			
♥ High byte first     expected response bytes       ♥ High word first     orc       95CF     13       SAVE CFG     RESTORE CFG       WRITE     ABOUT       Ctrl+H for context help     remove echo	send resp continuously resp time between sends 10.0	onse time 0.2 responses 2 failed 3	2 max 0.2 avg 0.150 min 0.1 reset 3

#### www.datexel.com

Call 561 779 5660 for Technical Support.

## Setting the Slave ID and Read Registers.

- 1. The Slave ID on the DAT3016 is 1.
- 2. The Register of Channel 0 is 40015.
- 3. As the DAT3016 is a 4 channel thermocouple Modbus Slave we would like to read all 4 channels, so we type 4 in No. of Regs.
- 4. The offset is 40001.

More information on the register tables are in the User Guide.

## Sending the Command and Receiving the Temperature.

- 1. Click Send.
- 2. If all is good the DAT3016 should return the Temperature.
- 3. The result is a temperature of 254 which equals 25.4'C.

Simply Modbus Master 8.0.4			
mode COM port baud data bits stop bits parity	copy down 🛞 register#	bytes	
RTU \$ 3 \$ 9600 \$ 8 \$ 1 \$ None	16bit INT 40015	OOFE	254
Skove ID First Register No of Regs	16bit INT 40016	35BB	13755
40015	16bit INT 40017	35BB	13755
function marks offset	16bit INT 40018	OOFE	254
2 byte ID code 40001			· · ·
Events History			
Request / crc			
01 03 00 0E 00 04 25 CA			
load before send response time (seconds) 0.2			
Response fail in 2.0			
01 03 08 00 FE 35 BB 35 BB 00 FE 95 A			
High byte first expected response bytes	i send		
High word first arc 95CF 13	continuously resp	conse time 0.1	2 max 0.2 avg 0.150
SAVE CFG RESTORE CFG WRITE ABOUT	time between sends	failed 3	min 0.1
	10.0		reset
			· · · ·
Ctri-H for context help			
Context help     Internove echo     Simply Modbus Master 8.0.4			
Cut +t for context help     Simply Modbus Master 8.0.4      mode COM port baud data bits stop bits parity	copy down 🎯 register#	bytes	
Cut +i for context help i emove echo Simply Modbus Master 8.0.4  mode COM port baud data bits stop bits parity RTU #3 #9600 #8 #1 #None	copy down 🛞 register #	bytes 00FE	results 106
Cut +i for context help i emove echo Simply Modbus Master 8.0.4	copy down (3) register # 16bit INT 400 15 16bit INT 400 16	bytes 00FE 35BB	resetts LOG (254) 13755
Cut++ for context hep etho S Simply Modbus Master 8.0.4  Total data bits stop bits parity CM port baud data bits stop bits pa	copy down () register # 16bit INT 40015 16bit INT 40016 16bit INT 40017	bytes 00FE 35BB 35BB	results 100 254 13755 13755
Cut ++ for context hep ethol S Simply Modbus Master 8.0.4	copy down (2) register # 16bit INT 40015 16bit INT 40016 16bit INT 40017 16bit INT 40018	bytes 00FE 35BB 35BB 00FE	results LOG 254 13755 13755 254
Cut ++ for context hep  Simply Modbus Master 8.0.4  COM port Baud Comparis C	copy down () register # 16bit INT 40015 16bit INT 40016 16bit INT 40018 16bit INT 40018	bytes 00FE 35BB 35BB 00FE	results 100 254 13755 13755 254
Cut ++ for context hep ethos  Simply Modbus Master 8.0.4  COM port baud data bits stop bits parity  RTU \$3 \$9600 \$8 \$1 \$10000  Slave ID First Register No. of Regs  Slave ID First Register No. of Regs  Cut +1 for cuton minus offset register size	copy down () register # 16bit INT 40015 16bit INT 40016 16bit INT 40018 16bit INT 40018	bytes 00FE 35BB 35BB 00FE	results 100 254 13755 13755 254
Cut ++ for context hep  Simply Modbus Master 8.0.4  COM port baud data bits stop bits parity  CUM port baud data bits stop bits parity  CUM port baud data bits stop bits parity  Slave ID First Register No. of Regs  function minus offset register size  Logister size  Logister size  Events History  Register size  First Regi	copy down 16bit INT 40015 16bit INT 40016 16bit INT 40017 16bit INT 40018	bytes 00FE 35BB 35BB 00FE	12755 254 13755 254
Cut ++ for context hep  Cut ++ for context hep  Simply Modbus Master 8.0.4  COM port  COM port  Save ID  First Register  Cut +	copy down (2) register # 16bit INT 40015 16bit INT 40016 16bit INT 40017 16bit INT 40018	bytes 00FE 35BB 35BB 00FE	results 100 254 13755 13755 254
Cut ++ for context hep  Cut ++ for context hep  Simply Modbus Master 8.0.4  COM port  Save ID  First Register  Save ID	copy down (2) register # 16bit INT 40015 16bit INT 40016 16bit INT 40016 16bit INT 40017 16bit INT 40018	bytes 00FE 35BB 35BB 00FE	results 100 254 3755 13755 254
Cut ++ for context hep  Cut ++ for context hep  Simply Modbus Master 8.0.4  COM port  COM port  Since  Comparison	copy down (2) register #	bytes 00FE 35BB 35BB 00FE	results 100 254 13755 13755 254
Cut ++ for context hep  Cut +	copy down (3) register # 16bit INT 40015 16bit INT 40016 16bit INT 40017 16bit INT 40018	bytes 0072 3588 3588 0072	results Log 254 13755 254
Cut ++ for context hep ethole etho  Simply Modbus Master 8.0.4  Comport baud data bits stop bits parity  RTU \$3 \$9600 \$8 \$1 \$10000  Register No. of Regs  D First Register No. of Regs  D function milus offset register size  Code \$4001  D Good \$4000  Code \$4000  D Good \$400  Code \$4000  D Good \$400  Code \$4000  Code \$	copy down ③ register # 16bit INT 400 15 16bit INT 400 16 16bit INT 400 17 16bit INT 400 18	bytes 0072 3588 3588 0072	results Log 254 13755 13755 254
COM port baud data bits stop bits parity     RTU 4 3 49600 8 1 1 40000     RTU 4 3 49600 8 1 1 40000     Seve ID First Register No. of Regs     1 440015 4 4     function minus offset register size     2byte ID code 40001 9 16 bit registers     2byte ID code 40001 9 16 bit registers     Request crc     D1 03 00 0E 00 04 25 CA     Sevo     load before send response time (seconds) 0.2     Response fail n 2.0     O1 03 00 0FE 35 BB 35 BB 00 FE 95 1	copy down ③ register #	bytes 0072 3588 3588 0072	results 109 254 13755 13755 254
Simply Modbus Master 8.0.4  COM port baud data bits stop bits parity RTU 4 3 49600 8 4 1 4None Save ID First Register No. of Regs 1 44015 4 4  function minus offset register size 2 byte ID code 440011 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 440001 9 16 bit registers 2 byte ID code 9 10 00 04 25 CA 9 16 bit registers 2 bit 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 35 BB 35 BB 00 FZ 95 10 10 03 08 00 FZ 95 10 10 10 03 08 00 FZ 95 10 10 10 10 10 10 10 10 10 10 10 10 10	copy down ③ register #	bytes 0072 3588 3588 0072	results 109 254 13755 13755 254
Simply Modbus Master 8.0.4  COM port baud data bits stop bits parity  RTU 43 49600 8 4 1 4 None Save ID First Register No. of Regs  f 40015 4 4  function minus offset register size 2 byte ID code 40001 9 14  function minus offset register size 2 byte ID code 40001 9 16 bit registers  Request crc  D 1 03 00 0E 00 04 25 CA  Response fail n 2.0  D 1 03 08 00 FE 35 BB 35 BB 00 FE 95  A High byte first expected response bytes  W High word first crc  9 50F 13	copy down > register #	bytes 0072 3588 3588 0072	resets 109 254 13755 254 254 254
Simply Modbus Master 8.0.4  COM port baud data bits stop bits parity RTU 13 baud data bits stop bits parity RTU 13 baud data bits stop bits parity RTU 13 baud data bits stop bits parity function minus offset register size byte ID code 10001 Code 1000 Code 10001 C	copy down () register # 16bit INT 40015 16bit INT 40016 16bit INT 40017 16bit INT 40018 16bit INT 40018 send resp time between sends	bytes 007E 35BB 35BB 007E 007E	resets Log 254 13755 254 254 254
Simply Modbus Master 8.0.4  COM port baud data bits stop bits parity RTU \$3 First Register No. of Regs 1 First Register No. of Regs 1 First Register size 2 byte ID code \$40001 First Register size 2 byte ID code \$40001 First Register size 1 bad before send response time (seconds) D2 Response D1 03 08 00 FZ 35 BB 35 BB 00 FZ 95 First Register or 95CF First Register or 95CF SAVE CFG RESTORE CFG WRITE ABOUT ABOUT	copy down register # 16bit INT 40015 16bit INT 40016 16bit INT 40017 16bit INT 40018 16bit INT 40018 send resp time between sends 10.0	bytes 0072 3588 3588 0072 0072	resets 100 254 13755 254 254 254 254 254 254