MODBUS RTU SETUP FOR TDS V8 DRIVES

1. **Enable Modbus RTU as the Command Source**
For the inverter to accept run commands and frequency references via Modbus, you must set the command sources to the RS-485 port.

FOR VFD CONTROL:

Parameter Sn-04: Run Source selection

Default Value: 0 or 1 (Typically Keypad or Control Terminals)

Required Value: 2 (Operation Command comes from RS-485 port)

Parameter Sn-05: Frequency Command selection

Default Value: 0 or 1 (Typically Keypad or Control Terminals)

Required Value: 2 (Frequency Command comes from RS-485 port)

2. Set the Communication Parameters
These parameters define the physical layer of the Modbus network.

Parameter Sn-36: Inverter Address

Default Value: 1

Required Value: 1 (This is the requested slave address. The range is 1-31).

Parameter Sn-37: RS-485 communication baud rate setting

Default Value: 3 (9600 bps)

Required Value: 3 (9600 bps)

Note: The numerical values correspond to: 0=1200, 1=2400, 2=4800, 3=9600.

Parameter Sn-38: RS-485 communication transmission parity setting

Default Value: 0 (No Parity)

Required Value: 0 (No Parity)

Note: This setting, combined with the default stop bits, creates the 8N1 format. The manual states that with no parity, the character frame has one stop bit.

WARNING: The manual specifies that after changing Sn-37 or Sn-38, the inverter must be **POWERED OFF** and then **BACK ON** for the new settings **TO TAKE EFFECT**.

3. (Optional) Configure Communication Fault Behavior
Set how the drive reacts if the Modbus communication fails.

Parameter Cn-27: Communication Fault Detection Time

Default Value: 01.0 seconds

Description: This defines how long the drive waits without a valid message before triggering a communication fault/alarm. If set to 00.0, fault detection is disabled.

Parameter Sn-39: RS-485 communication Fault stop selection

Default Value: 0 (decelerate to stop according to parameter bn-02)

Description: Defines the stopping method if a communication fault (CE-r) is detected. Other options are free-run stop, fast deceleration, or continue running.

Verification of Communication
After wiring the RS-485 cables to terminals S(+) and S(-) and configuring the parameters:

Power Cycle: Ensure you power the inverter off and on again to activate the new communication settings (Sn-37, Sn-38).

Check Standby Status: If the parameters are set correctly and the drive is in STOP mode but not receiving data, the digital controller will display "CE-r" blinking. This indicates it is correctly configured and in standby, waiting for a command from the Modbus master.

Test with Modbus Software: Use a Modbus master tool (e.g., ModScan, Simply Modbus) to read a well-known register.

Example Test: Read the Output Frequency from monitor register 0025H.

Master Query (Read): 01 03 00 25 00 01 [CRC16]

A valid response from the inverter (e.g., containing a frequency value) confirms the slave address, baud rate, and data format are correct. The blinking "CE-r" display should stop once communication is established.

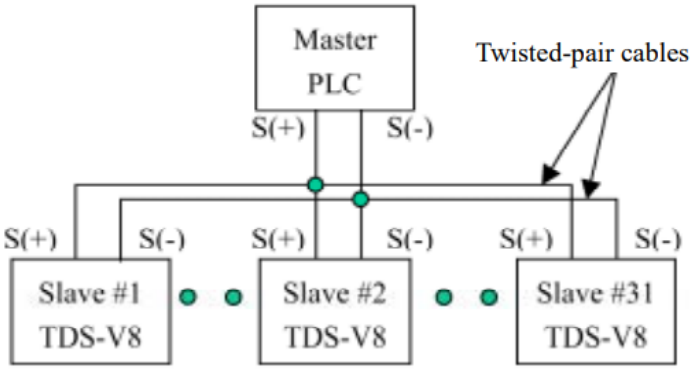
HIGHLIGHTED ARE THE PARAMETERS THAT SHOULD BE CONFIGURE FOR "VFD CONTROL" IF MONITORING PURPOSE ONLY THEN SKIP THAT PARAMETERS

Parameter	Name	Default Value	Required Value	Description
Sn-36	Inverter Address	1	1 (or desired 1-31)	Sets the Modbus slave address.
Sn-37	Baud Rate	3 (9600 bps)	3 (9600 bps)	0=1200, 1=2400, 2=4800, 3=9600
Sn-38	Parity	0 (No Parity)	0 (No Parity)	0=No Parity (8N1), 1=Even, 2=Odd
Sn-04	Run Source	0 (Keypad)	2	Set to 2 for commands from RS-485.
Sn-05	Frequency Command	0 (Keypad)	2	Set to 2 for reference from RS-485.
Cn-27	Comm Fault Time	1.0s	Set as needed	Time before CE-r fault on comms loss. 00.0=Disabled.
Sn-39	Fault Stop Method	0	Set as needed	Defines inverter behavior on comms fault (CE-r).

RS485 Wiring Setup

3. TDS-V8 connections:

RS-485 series communication port comprises S(+) and S(-) pins for semi-duplex communication transfer. For connecting multi RS-485 ports, just series-link all the S(+)s and all the S(-)s respectively.



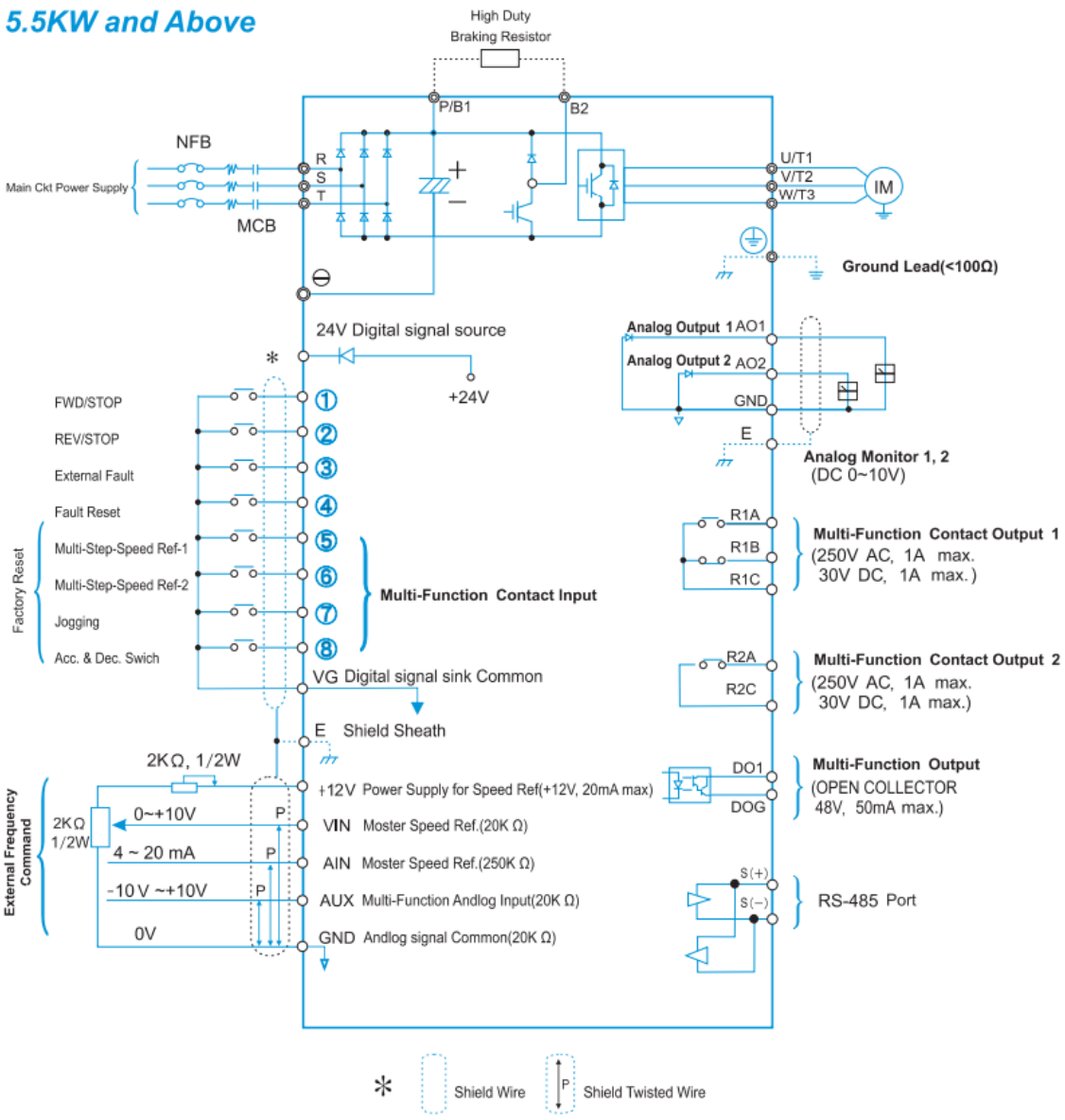
RS-485 connecting diagram

4. TDS-V8 connection procedures:

(1) Power ON the inverter, then setup RS-485 related parameters and connect the RS-485 cable. Communication with the controller is now enabled.

(2) During wiring the cable, if the inverter parameter setting for Operation/Frequency command comes from RS-485 port (Sn-04=2 or Sn-05=2), if the inverter, in the STOP mode, does not receive any information in the period set by Cn-27, the digital controller will display the " CErr " blinking message, indicating that the system is in standby for communication. On receipt of data, the blinking message will go off. During the operation, if no data comes in during the period set by Cn-27, the system will respond according to the Sn-39 setting, and the digital controller will display the " CErr " error message.

5.5KW and Above



NO BUILT IN TERMINATION MUST USE 120 OHMS FOR BOTH ENDS