

# Application Notes

## How to Configure IDEC VFD and HMI over Modbus RTU communication

### Introduction:

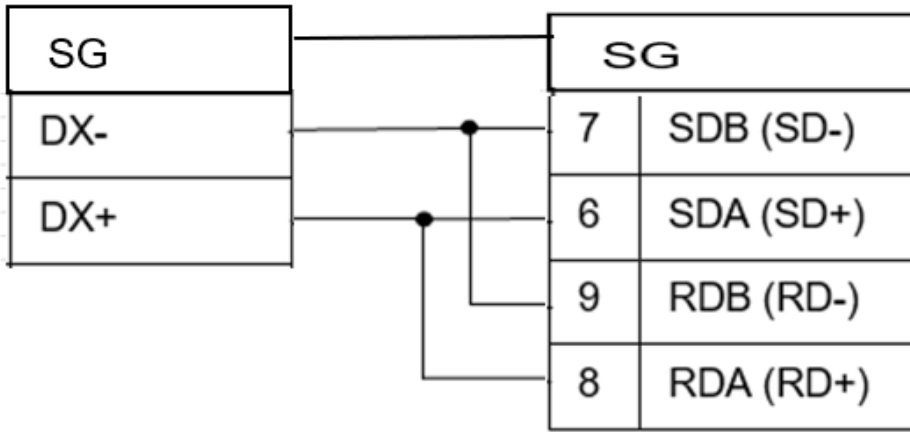
The following is the step by step instruction on how to configure the IDEC VFD and HMI via Modbus RTU protocol.

### System Overview



### Wiring Diagram

Terminal symbol	Description	Remarks
SD	Shield terminal	
DX-	RS-485 signal, low side	Built-in terminating resistor: 112 Ω Open/close with SW6*
DX+	RS-485 signal, high side	



## Step 1: Configure VF1A VFD communication settings

In this example, the Function codes are set by using the micro keypad that comes with the VFD unit.



1. After turning on the VFD power, the "operation mode" is set automatically. Press the [PRG / RESET] to switch to the "program mode".
2. Select "1.H\_ \_" on 7-segment LED by pressing the [Λ] and [V] buttons and press the [FUNC / DATA] key to set the H code.
3. Select "H30" by pressing the [Λ] key and press the [FUNC / DATA] key to display the current setting value of H30. (Default value of H30 is 0.)
4. Change it to 8 with the [Λ] key. (8: RS-485 communication (port 2))

5. Press the [FUNC / DATA] key to display SAVE and reflect the changed data. When the setting is completed, the next function will be automatically displayed. In this case, H42 will be displayed.
6. Press the [PRG / RESET] key twice to return to the “operation mode”.

Repeat the same procedure to set the following communication parameters on the VFD to match the HMI settings.

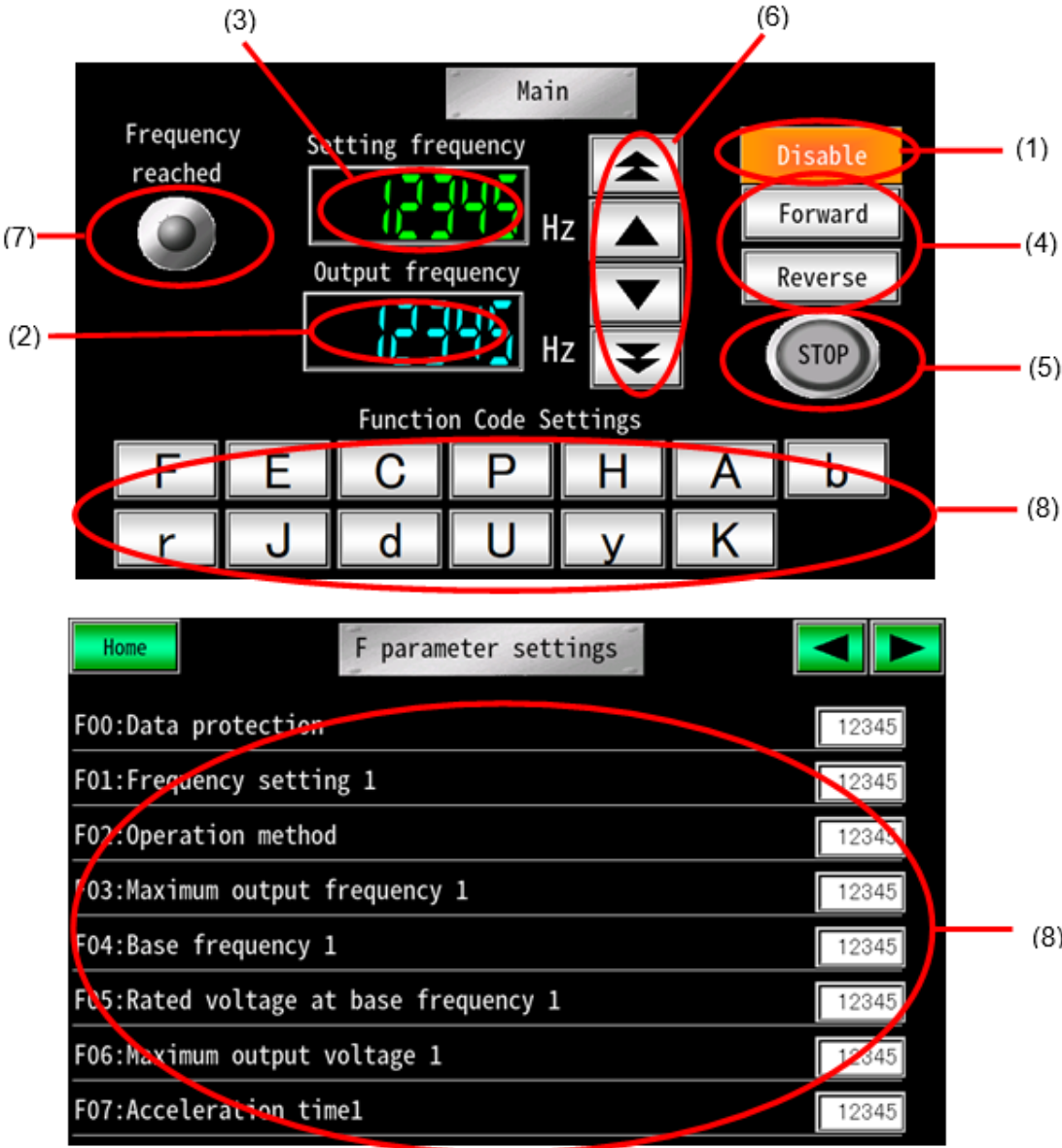
H30	Communication link function (Mode selection)	0: F01/C30 1: RS-485 (Port 1) 2: F01/C30 3: RS-485 (Port 1) 4: RS-485 (Port 2) 5: RS-485 (Port 2) 6: F01/C30 7: RS-485 (Port 1) <b>8: RS-485 (Port 2)</b>
Y11	RS-485 Communication 2	<b>1</b> to 255
Y14	(Baud rate)	0: 2400 bps 1: 4800 bps 2: 9600 bps <b>3: 19200 bps</b> 4: 38400 bps
Y15	(Data length selection)	<b>0: 8 bits</b> 1: 7 bits
Y16	(Parity selection)	<b>0: None (Stop bit: 2 bits)</b> 1: Even number parity (Stop bit: 1 bits) 2: Odd number parity (Stop bit: 1 bits) 3: None (Stop bit: 1 bits)
Y17	(Stop bit selection)	<b>0: 2 bits</b> 1: 1 bit
Y20	(Protocol selection)	<b>0: Modbus RTU protocol</b> 1: <del>Doesa</del> Loader Protocol ( <del>Doesa</del> protocol) 2: <del>Doesa</del> general-purpose inverter protocol

You are done with the parameter settings on the VFD.

# Step 2: Check the communication between the HMI and VFD

- 1. Launch NV4 software and open the HG2J demo program.
- 2. Download the HMI demo program.
- 3. The communication works if there is no communication error is displayed.

## Demo project data contents



1. Shows the operation status of the inverter.
2. Shows the current output frequency.
3. Show the output frequency setting
4. Forward or Reverse direction buttons
5. Stop the inverter
6. Increment or Decrement buttons
7. Indicator light when output frequency is reached to the set frequency
8. Function code settings – this takes you to a different base screen number