

<b>APPLICATION NOTE</b>	<b>FECA-AN-101D</b>
<b>USB to RS-485 Converter Usage</b>	

<b>Inverter type</b>	FRENIC-Mini Series
<b>Software version</b>	All versions
<b>Required options</b>	OPC-C1-RS
<b>Related documentation</b>	FRENIC Loader 3.2 Instruction Manual INR-SI47-1549b-E FRENIC-Mini Instruction Manual INR-SI47-1205b-E
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<b>Revision</b>	D

## Introduction

This application note provides the recommended USB to RS-485 converter as it applies to the connection to Fuji Electric's **FRENIC Loader 3.1EN Software** and **FRENIC Loader 3.2EN**.

## Converter Data

The recommended USB to RS-485 converter-  
Black Box Network Services  
USB to RS-485 2 wire converter  
Model Number IC832A  
<http://www.blackbox.com>

**Required option-** Fuji RS-485 Option card OPC-C1-RS

This model was tested for connectivity and functionality. It is capable of communicating using Fuji Electric's **FRENIC Loader 3.1EN Software, Loader 3.2EN** on PC's running **Windows XP**, and **WIN 7 (32 and 64 bit)**.

## Setup

### Function Codes

Set the drive function codes as shown in Table 1.

Table 1: Inverter Function Codes

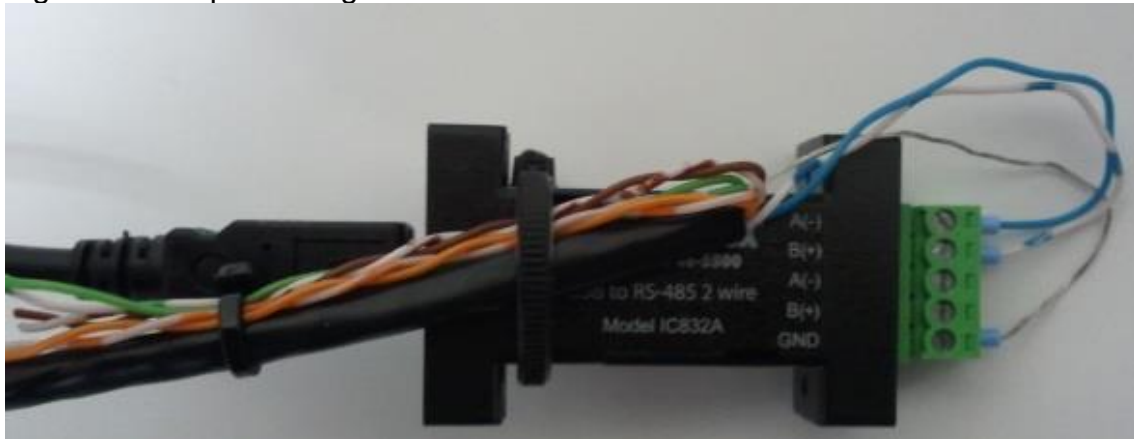
Function Code	Setting	Description
H30	3	Freq and Run command through RS-485
Y01	1	Station address (inverter address)
Y04	3	19,200 Baud rate
Y05	0	8 bits Data Length, Data Bits
Y06	0	None, Parity check
Y07	0	2 stop bits
Y10	1	FRENIC Loader protocol

### Wiring

Strip one end of your Ethernet cable and wire like Figure 1A. Isolate the remaining wires.

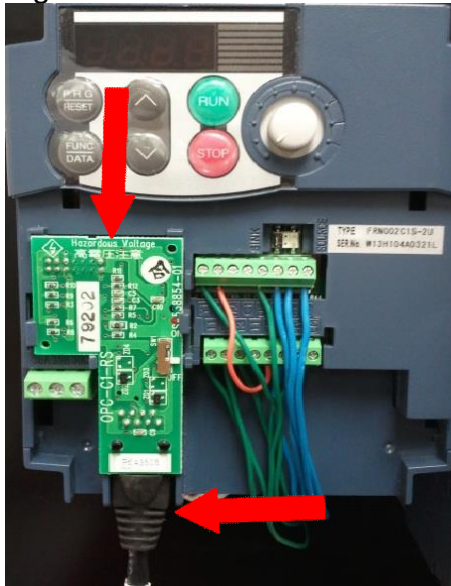
- Blue will go to port A(-).
- White/Blue will go to port B(+).
- The shield will go to the port GND.
- Isolate the remaining wires.

Figure 1A Adapter wiring



Install the OPC-C1-RS option card. Then plug one end of your straight Ethernet cable into the RJ-45 port on the OPC-C1-RS card (Figure 1B).

Figure 1B



Plug the USB cable into an available USB port on the computer (Figure 1C).  
Figure 1C



**\*Note: only use a straight Ethernet cable and wire one end like above in Figure 1A. Do not use any other wiring as damage to the inverter may result.**

### Software Settings

Port settings as shown in Figure 2

- Bits per second: 19200
- Data bits: 8
- Parity: None
- Stop bits: 2
- Flow control: None

Figure 2: Computer COM port settings



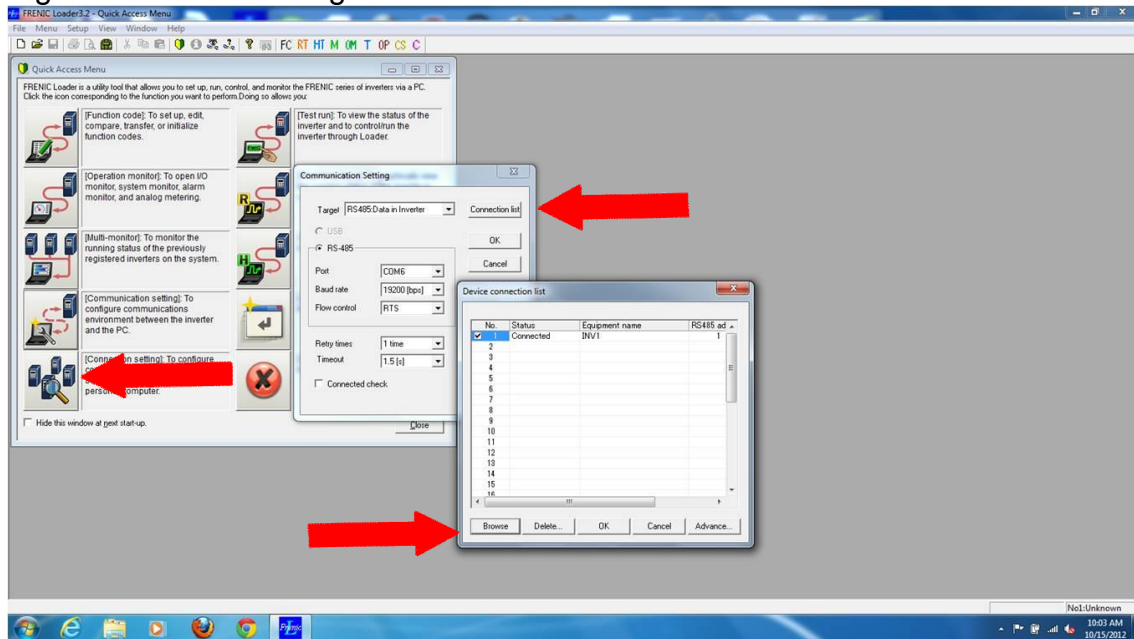
Loader Settings as shown in Figure 3

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- Click on *Communication settings*.
- Choose the target: RS-485 Data in inverter.
- Set the Port and Baud rate.
- Click *Connection List*.
- Identify your inverter.
- Click *Browse*.
- The status should change from Unknown to Connected.

Figure 3: Loader settings



At this point you can click OK and begin to use FRENIC Loader to operate, monitor, and troubleshoot your drive.

For further information:

See the **FRENIC Loader 3.2 Instruction Manual INR-SI47-1549b-E**, and **FRENIC-Mini Instruction Manual (INR-SI47-1205b-E)** for more information.