DELTA HMI communication connection diagram...

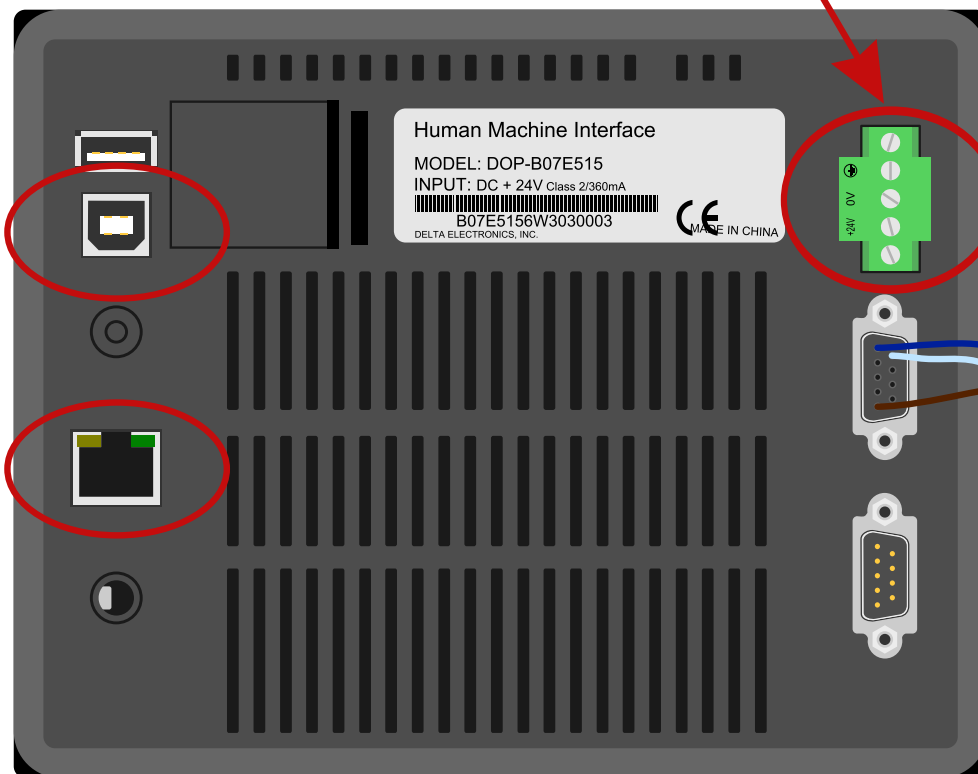| COM Port	PIN	MODE1 COM2 RS-232	MODE1 COM3 RS-485	MODE2 COM2 RS-485	MODE2 COM3 RS-485	MODE3 COM2 RS-232	MODE3 COM3 RS-422
PIN1	1			D+			TXD+
	2	RXD				RXD	
	3	TXD				TXD	
	4		D+		D+		RXD+
	5	GND		GND		GND	
	6			D-			TXD-
	7						
	8						
	9		D-		D-		RXD-

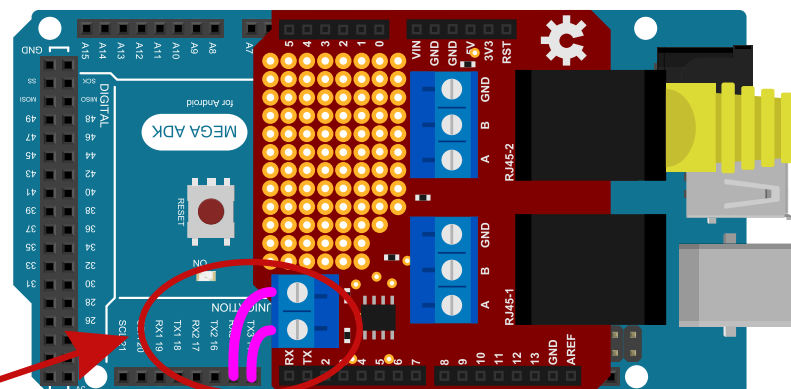1. External 24V power supply required by the HMI... cannot use 5V from the Arduino...

2. "USB-direct" connection is used to program the HMI using DELTA DOPSOFT HMI design software...

3. Could use the Ethernet Port instead of the DB9 connector... but this is MODBUS TCP/IP only and would not work with the AET RS485 shield and SimpleModbusMaster Arduino library...

Human Machine Interface
MODEL: DOP-B07E515
INPUT: DC + 24V Class 2/360mA
B07E5156W3030003
DELTA ELECTRONICS, INC.

Rear view of Delta HMI model DOP-B07E515

5. Refer to "Sheet 2 - DELTA HMI Software Setup" for details on how to select MODE2 - COM2 - RS485 as in this table...

Ethernet Cable Pin 4	(Blue)	HMI - PIN 1
Ethernet Cable Pin 5	(Blue & White)	HMI - PIN 6
Ethernet Cable Pin 8	(Brown)	HMI - PIN 5

Software Required for this system setup:

1. DELTA DOPsoft for HMI screen design, programming and register and communication setup.

2. Arduino IDE with the AET SimpleModbusMater library loaded. (see https://github.com/aetcnc/RS485-Shield)

3. Sample program from the above GITHUB repository which grabs key press information from the HMI modbus registers and turns them into a "BUTTONSTATE" variable so the user can tell which button has been pressed.

4. The AET RS485 Arduino shield uses the SimpleModbusMaster library which implements Modbus RTU protocol. (NOT Modbus ASCII...which is VERY different)

Rx and Tx from AET RS485 Shield to Rx3 and Tx3 of ATMEGA

DELTA DOP-B07E515
Prepared By: GHJ Date: 12/12/2013

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Delta HMI with Arduino - Sheet 1/3
- Connection Diagram