Potomac Electric
USD-300-30
Quick Start

1. Connect protective earth (PE) to ground screw on the drive grounding lug shown in Fig1.

Fig1.

2. Connect Motor Power (X2 Connector) according to Fig 2.
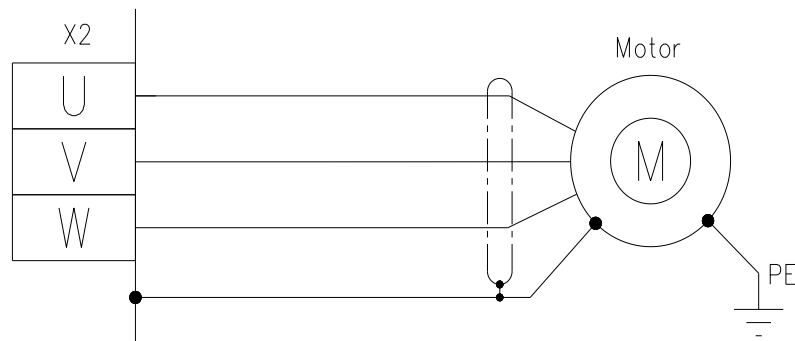

Figure 2. Motor power wirings details.
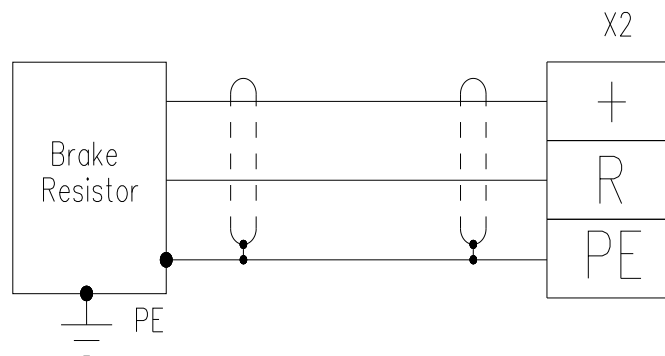
Connect Brake Resistor according to Fig 3.

Figure 3. Brake resistor wirings details.

Motor and Brake resistor connector:

Pin	Signal	Description
U	Motor phase U	Motor phase U
V	Motor phase V	Motor phase V
W	Motor phase W	Motor phase W
PE	PE	Protective Earth
+	DC Bus +	DC Bus +
R	Resistor	Brake resistor
-	DC Bus -	DC Bus -

Make sure that:
Cable length $<=25$m.
Wire gauge required varies with drive amperage.

3. Connect Feedback (X8 Connector or X6 connector)

Connect the feedback from the motor to the X6 connector according to Fig.3 if you use Encoder/ Commutation Encoder feedback.
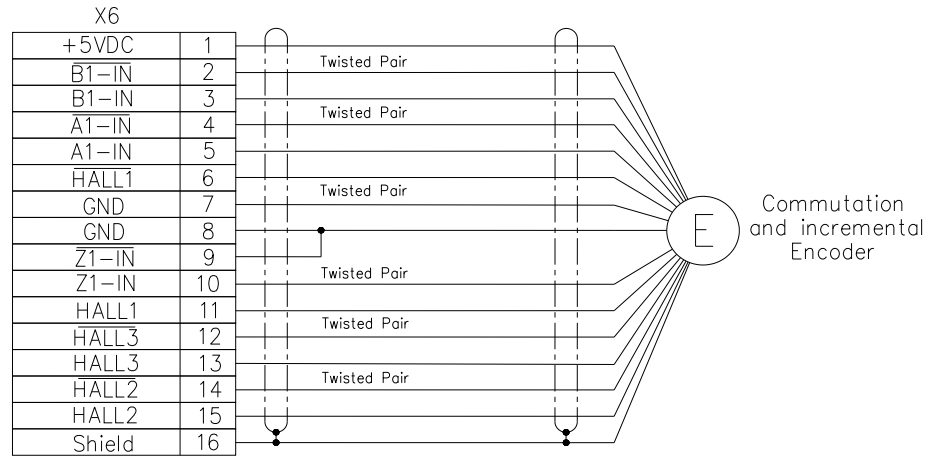
X6		
+5VDC	1	
$\overline{B1}$–IN	2	
B1–IN	3	
$\overline{A1}$–IN	4	
A1–IN	5	
$\overline{HALL1}$	6	
GND	7	
GND	8	
$\overline{Z1}$–IN	9	
Z1–IN	10	
HALL1	11	
$\overline{HALL3}$	12	
HALL3	13	
$\overline{HALL2}$	14	
HALL2	15	
Shield	16	

Figure 3. Commutation and incremental encoder wiring details.

Commutation Encoder connector:

Pin	Signal	Description
1	+5VDC	Encoder power supply
2	~B1-In	~B1-In
3	B1-In	B1-In
4	~A1-In	~A1-In
5	A1-In	A1-In
6	~Hall1	~Hall1
7	GND	Digital Ground
8	GND	Digital Ground
9	~Z1-In	~Z1-In
10	Z1-In	Z1-In
11	Hall1	Hall1
12	~Hall3	~Hall3
13	Hall3	Hall3
14	~Hall2	~Hall2
15	Hall2	Hall2
16	Shield	Shield

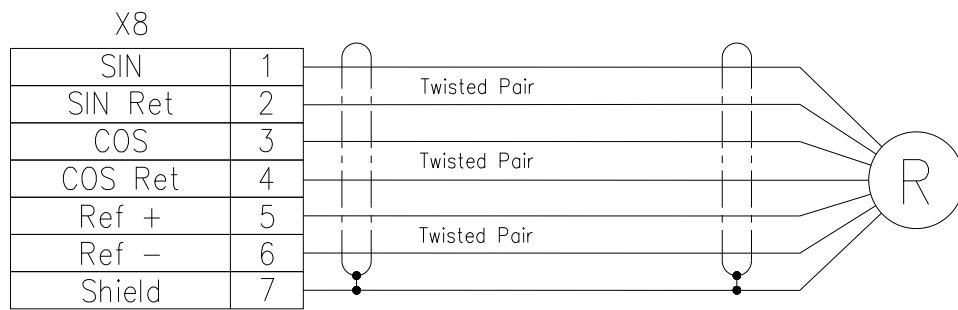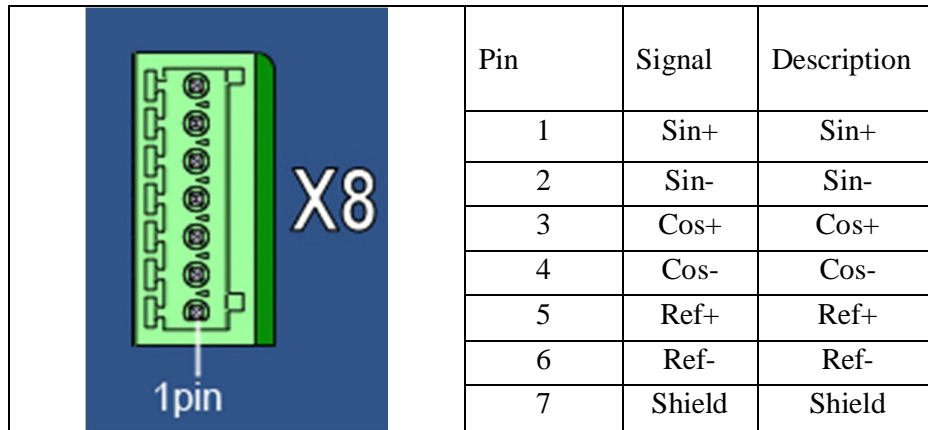Connect the feedback from the motor to the X8 connector according to Fig.4 if you use Resolver feedback.

X8			
SIN	1		
SIN Ret	2	Twisted Pair	
COS	3		
COS Ret	4	Twisted Pair	
Ref +	5		
Ref −	6	Twisted Pair	
Shield	7		

Figure 4. Resolver wirings details.

Resolver connector:

Pin	Signal	Description
1	Sin+	Sin+
2	Sin-	Sin-
3	Cos+	Cos+
4	Cos-	Cos-
5	Ref+	Ref+
6	Ref-	Ref-
7	Shield	Shield

4. Connect I/O (X7 Connector)

Connect the I/O from control system to the X7 connector according to Fig.5
DIN, DOUT pins can be configured.
Analog Inputs, Outputs can be configured.
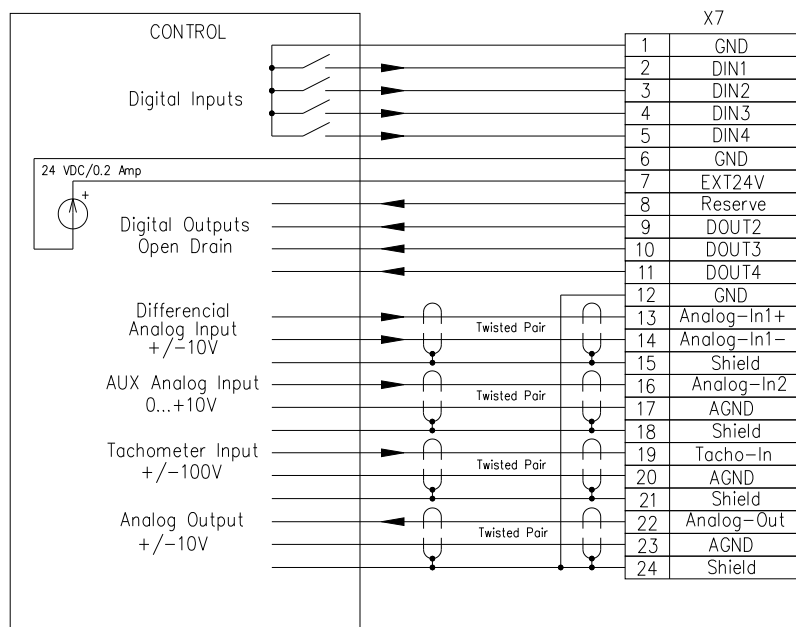
Figure 5. I/O wirings details.

I/O connector:

	Pin	Signal	Description
	1	GND	Digital Ground
	2	Din1	Digital Input 1
	3	Din2	Digital Input 2
	4	Din3	Digital Input 3
	5	Din4	Digital Input 4
	6	GND	Digital Ground
	7	Ext24V	Open-drain supply
	8	Dout1	Reserve
	9	Dout2	Digital Output 2
	10	Dout3	Digital Output 3
	11	Dout4	Digital Output 4
	12	GND	Digital Ground
	13	Analog-In1+	Analog difference input+
	14	Analog-In1-	Analog difference input-
	15	Shield	Shield
	16	Analog-In2	Aux analog input
	17	AGND	Analog Ground
	18	Shield	Shield
	19	Tacho-In	Tachometer Input

20	Analog-out	Analog Output
21	Shield	Shield
22	Analog-out	Analog Output
23	AGND	Analog Ground
24	Shield	Shield
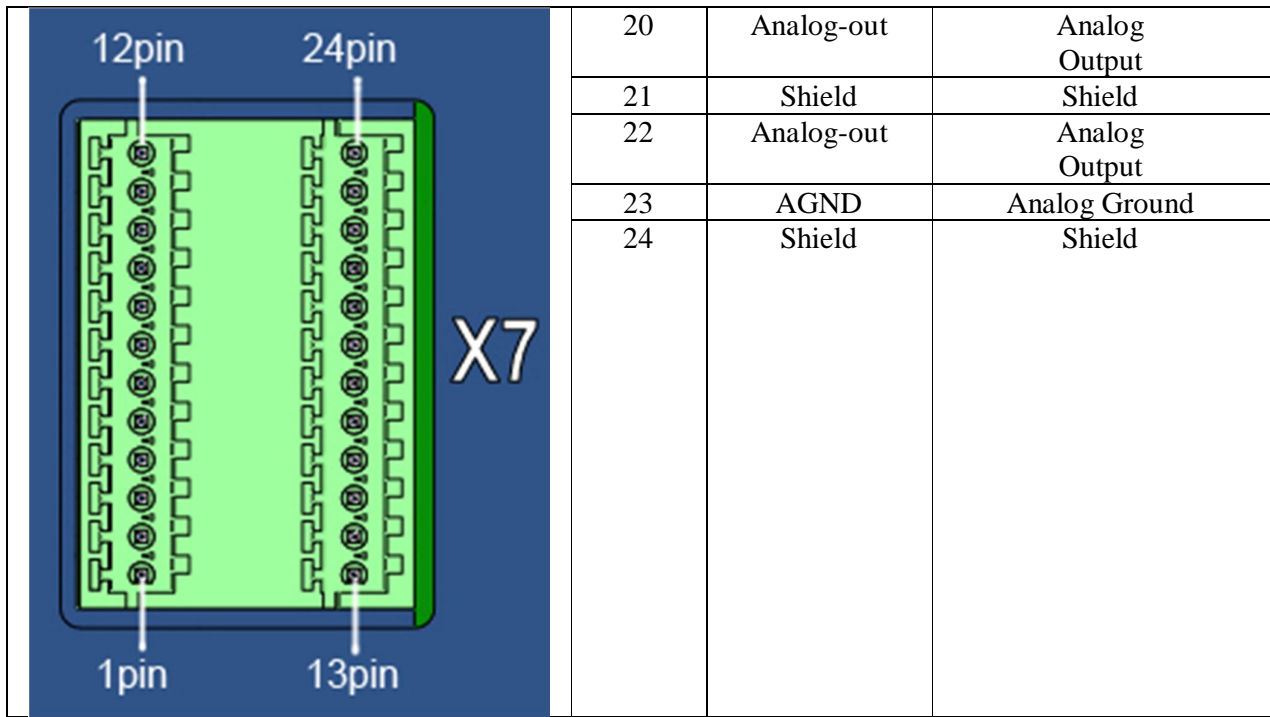
5. Connect Master encoder/Encoder emulation system (X4,5 Connectors) according to Fig.6.
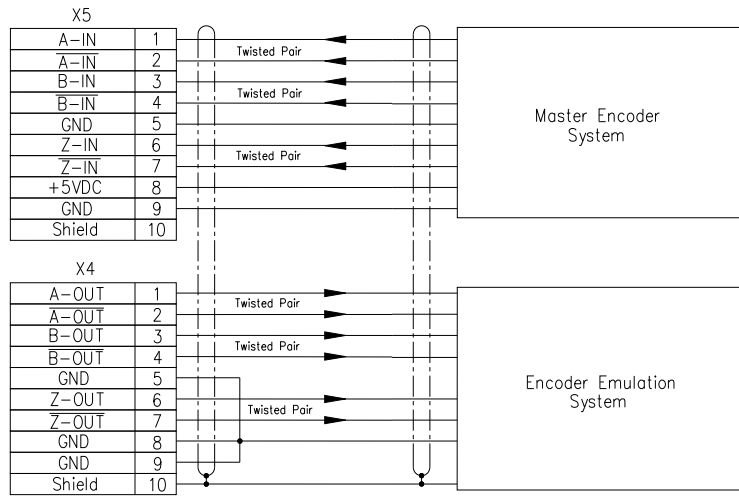
Figure 6. Master encoder/ Encoder emulation wirings details

Encoder emulation connector:

Pin	Signal	Description
1	A-Out	A-Out
2	~A-Out	~A-Out
3	B-Out	B-Out
4	~B-Out	~B-Out
5	GND	Digital Ground
6	Z-Out	Z-Out
7	~Z-Out	~Z-Out
8	GND	Digital Ground
9	GND	Digital Ground
10	Shield	Shield
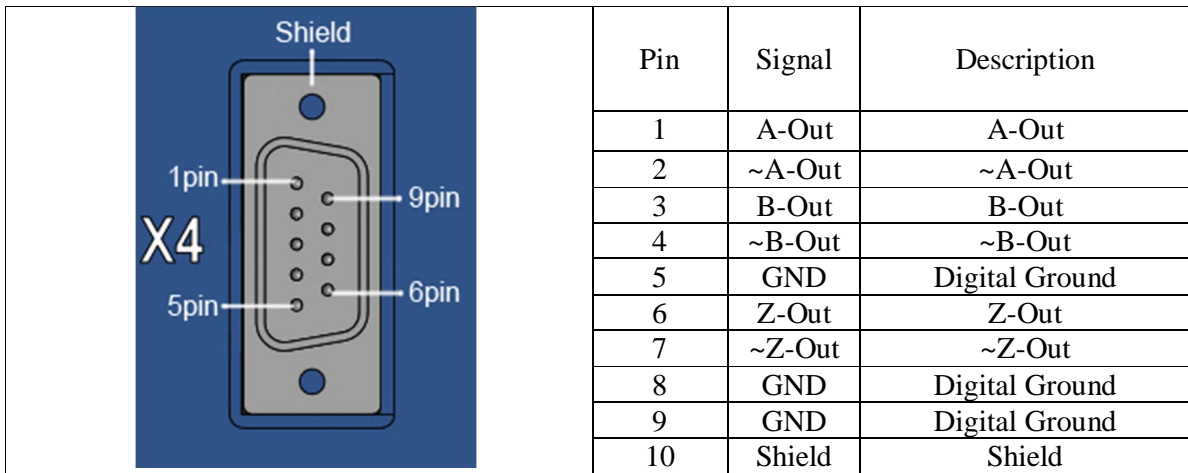
Master encoder connector:

Pin	Signal	Description
1	A-In	A-In
2	~A-In	~A-In
3	B-In	B-In
4	~B-In	~B-In
5	GND	Digital Ground
6	Z-In	Z-In
7	~Z-In	~Z-In
8	+5VDC	Encoder power supply
9	GND	Digital Ground
10	Shield	Shield
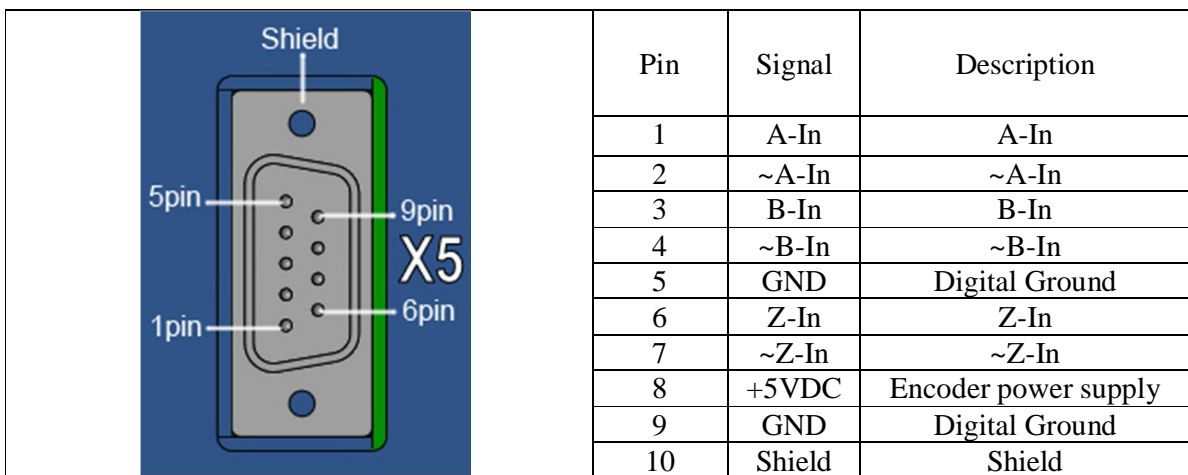
6. Connect drive communication RS-485 (X9 Connector) according to Fig.7
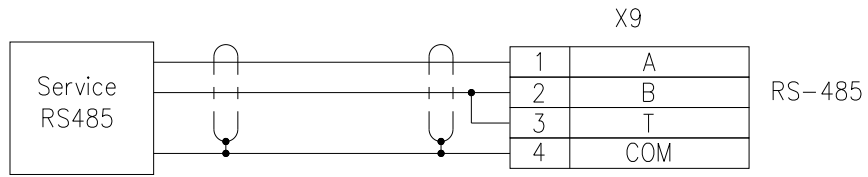
Figure 7. drive communication wirings details

RS-485 Connector:

Pin	Signal	Description
1	A	A (Data+)
2	B	B (Data-)
3	T	Terminator connection
4	Com	RS ground

7. Connect AC input power as shown in Fig. 8. Do not apply power until all hardware connections are made.
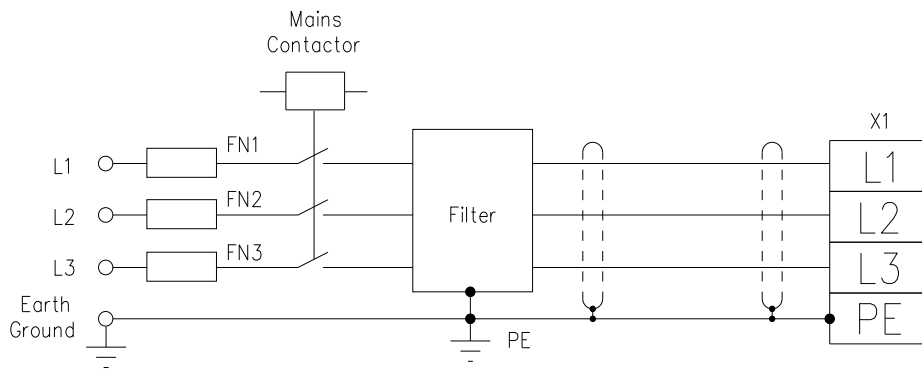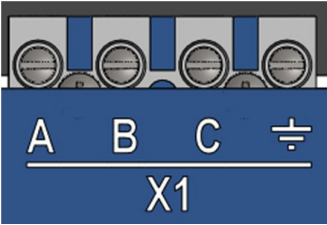
Figure 8. AC Input power wiring diagram

AC Input power connector:

	Pin	Signal	Description
	A	L1	Main A
	B	L2	Main B
	C	L3	Main C
	PE	PE	Protective Earth

Ethernet connection to USD

If USD has Ethernet connection (see X9 socket):

1. Load configuration utility for Ethernet connection with USD device.
The utility is located at:
http://www.moxa.com/support/sarch_result.aspx?prod_id=66&type_id=5&type=soft

Figure 9

2. Install NPort Search Utility and run it (file nploc.exe). Turn on USD. Make sure that USD is connected to local network via X9 socket. Press Search button:

Figure 10

If NPort Search Utility finds the USD, the IP Address will be indicated:

Figure 11

3. Double click of mouse button at indicated IP Address will open web-browser. Make correction of parameters according pictures and press button Submit:
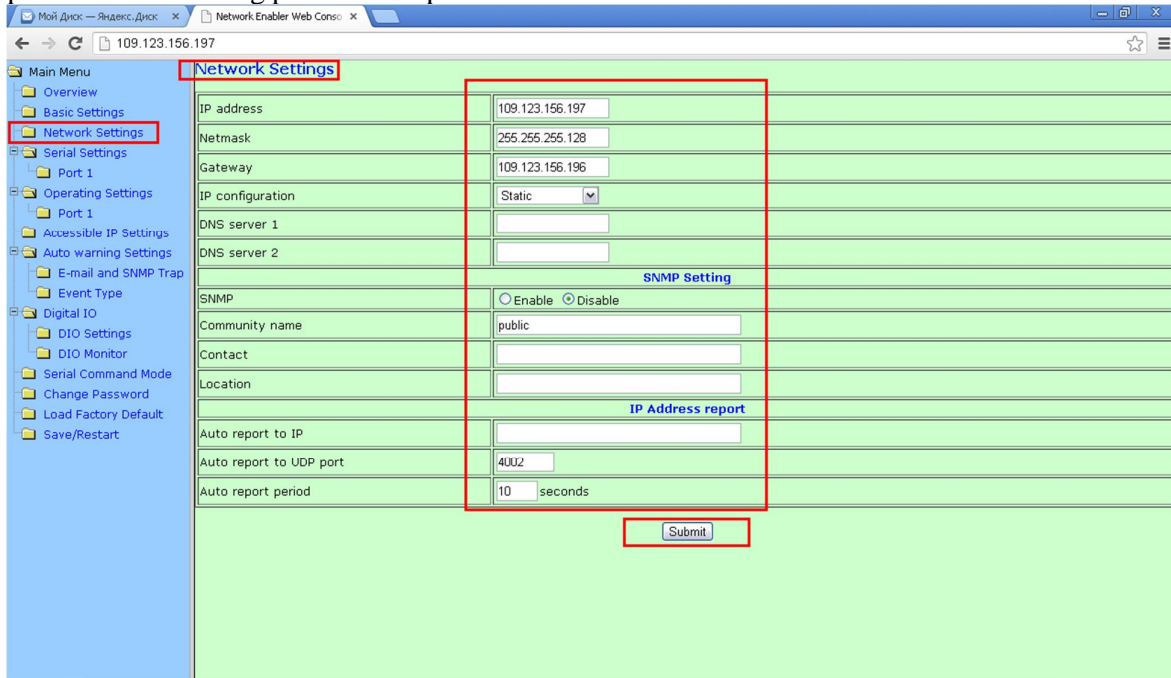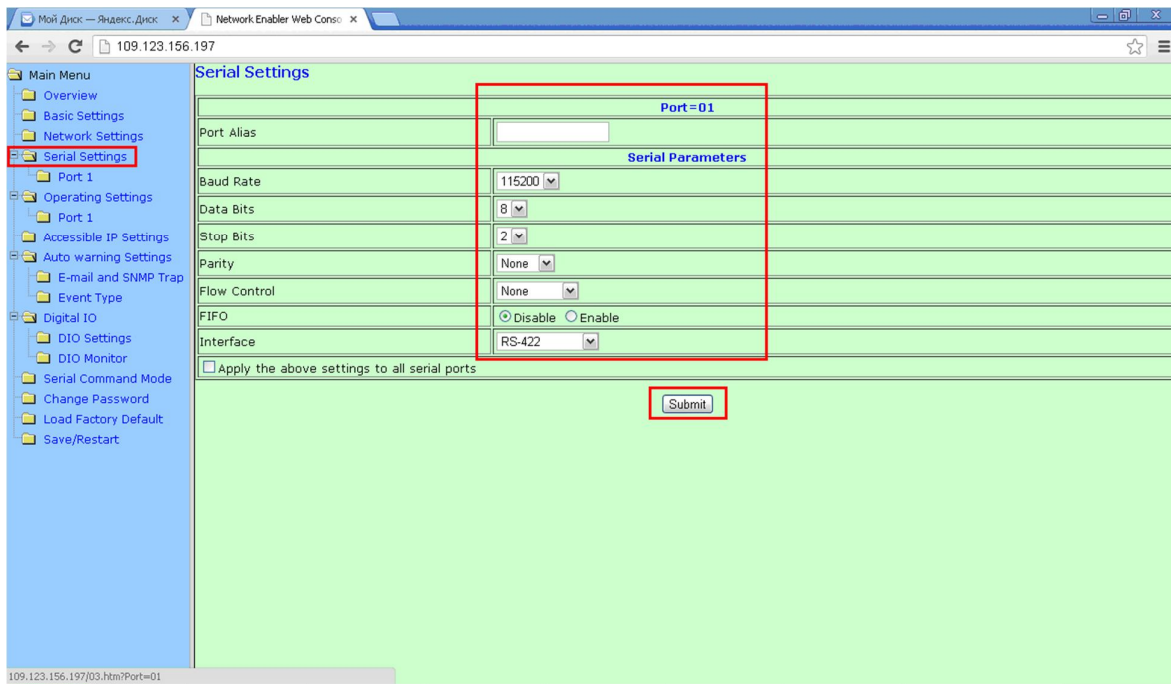

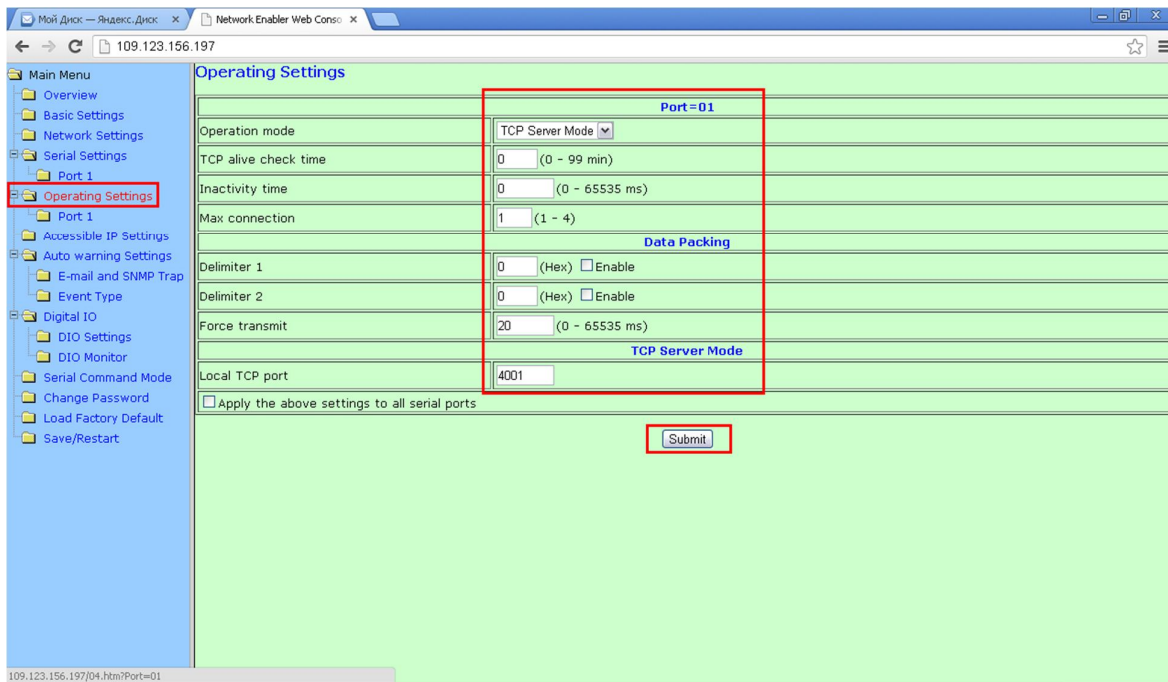
Figure 12

Figure 13

Figure 14

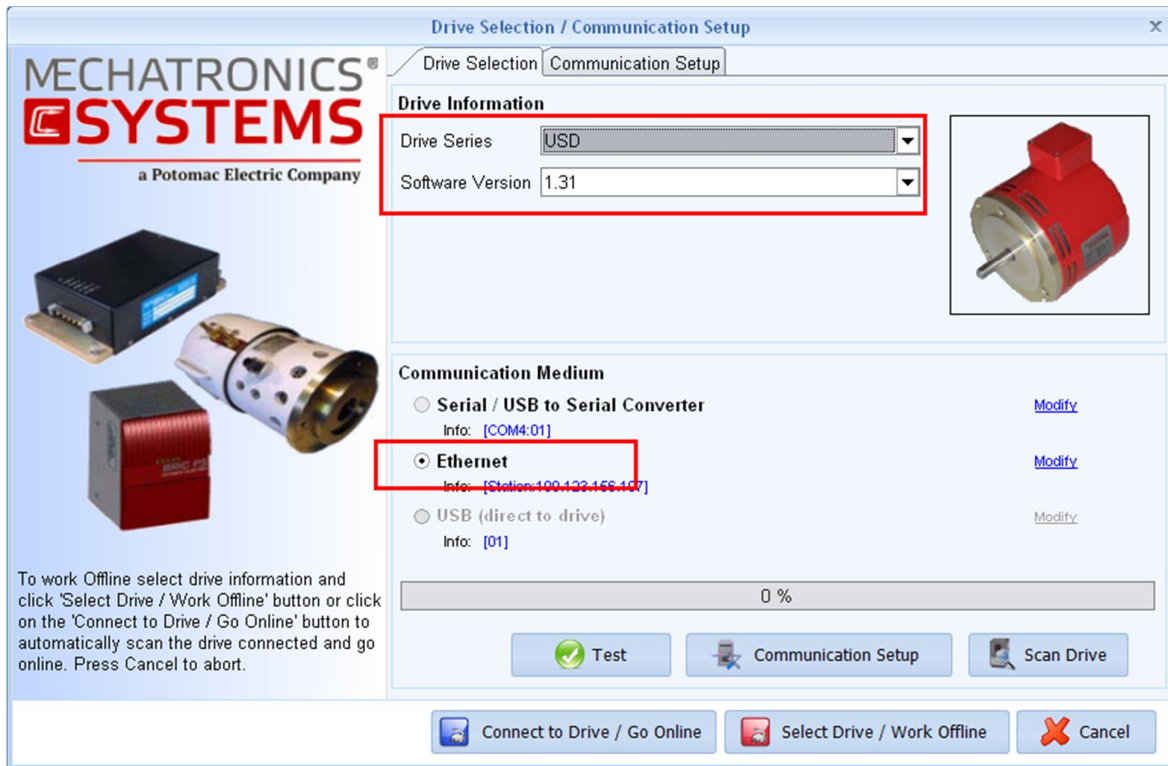4. Run DriveLink. Choose device as USD and software version of USD. Choose Ethernet connection:

Figure 15

5. Choose Communication setup page and install the IP Address.
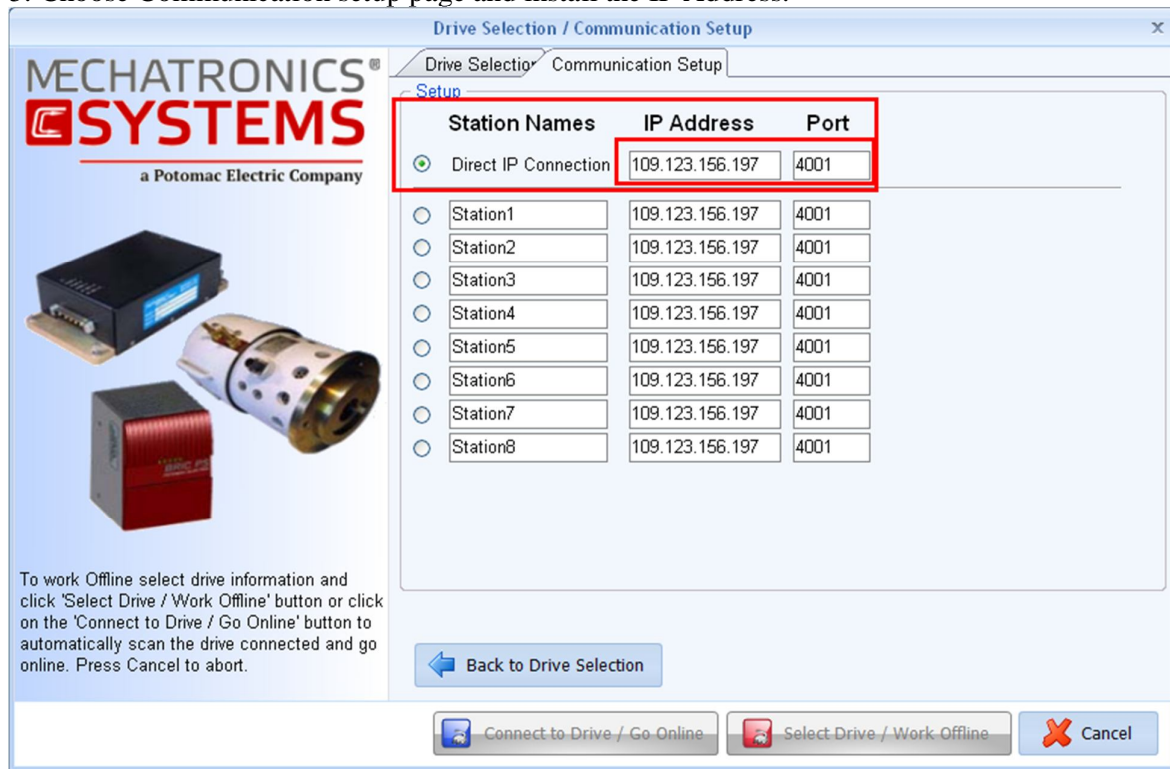

Figure 16

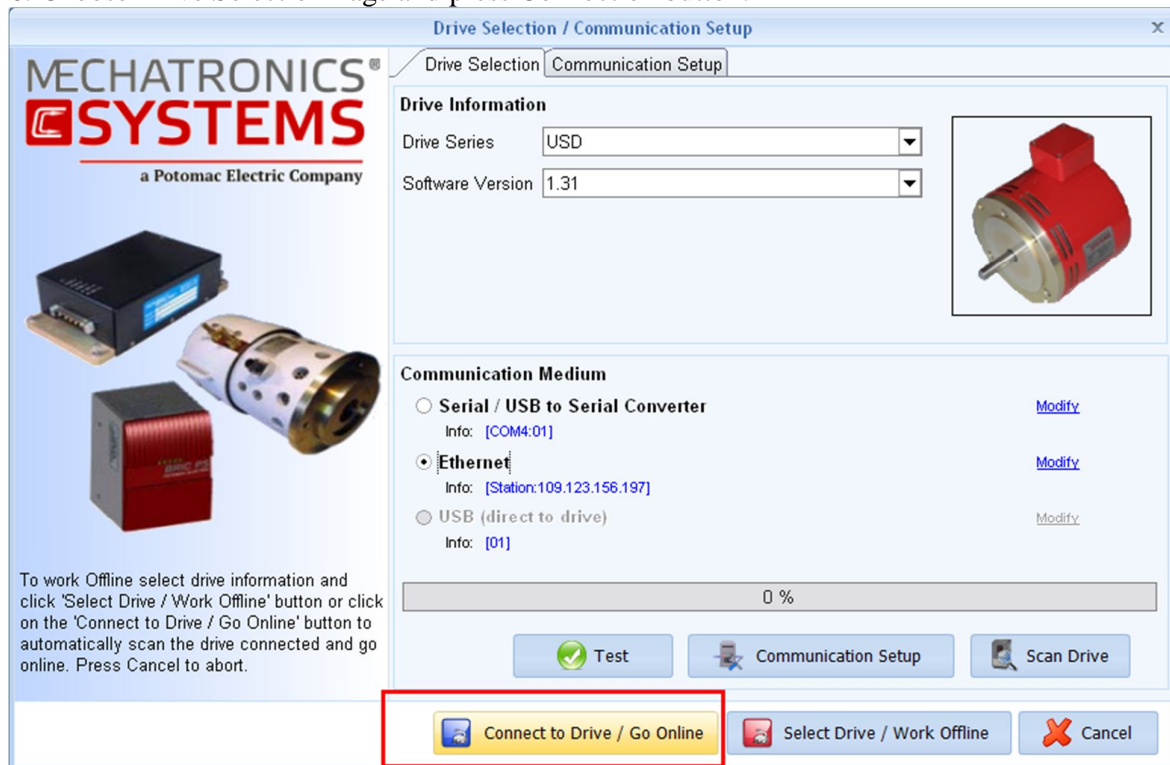6. Choose Drive Selection Page and press Connection button:

Figure 17

7. If connection exists, the status of it will be indicated in Status Bar of DriveLink as ONLINE:
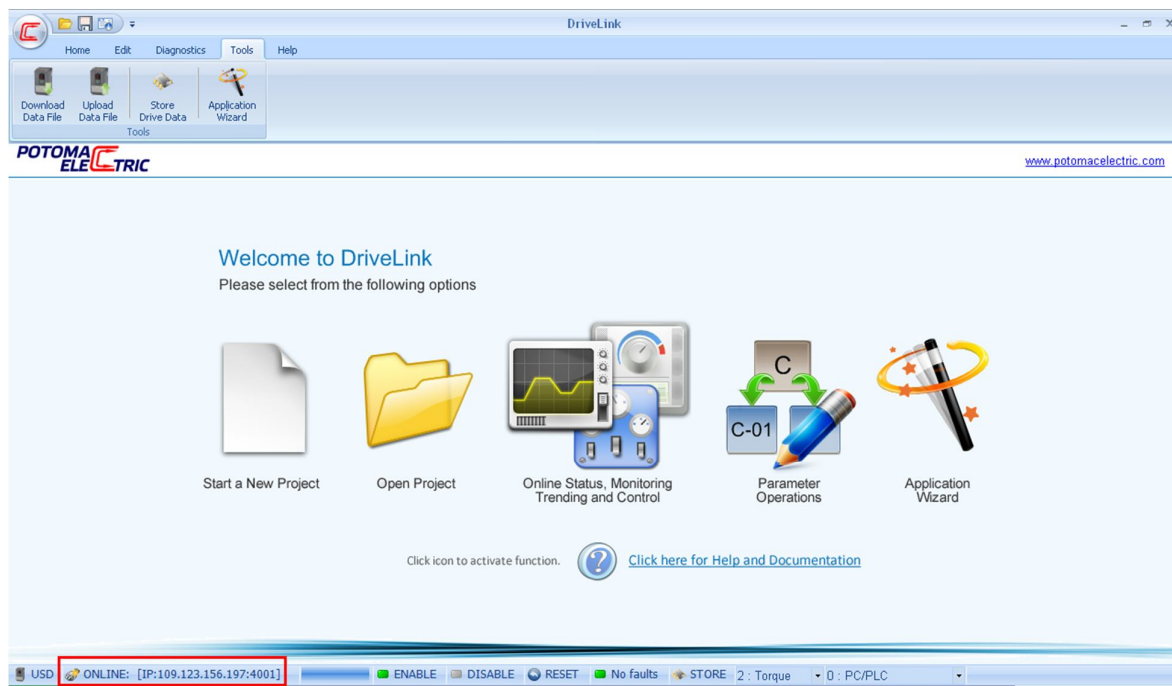

Figure 18

Now you can change parameters of the device according to your requirements.

Connection to USD via USB/RS485 converter

If USD has RS485 interface (see X9 socket):
1. Choose Connection as Serial/USB Serial Converter (page Drive Selection)
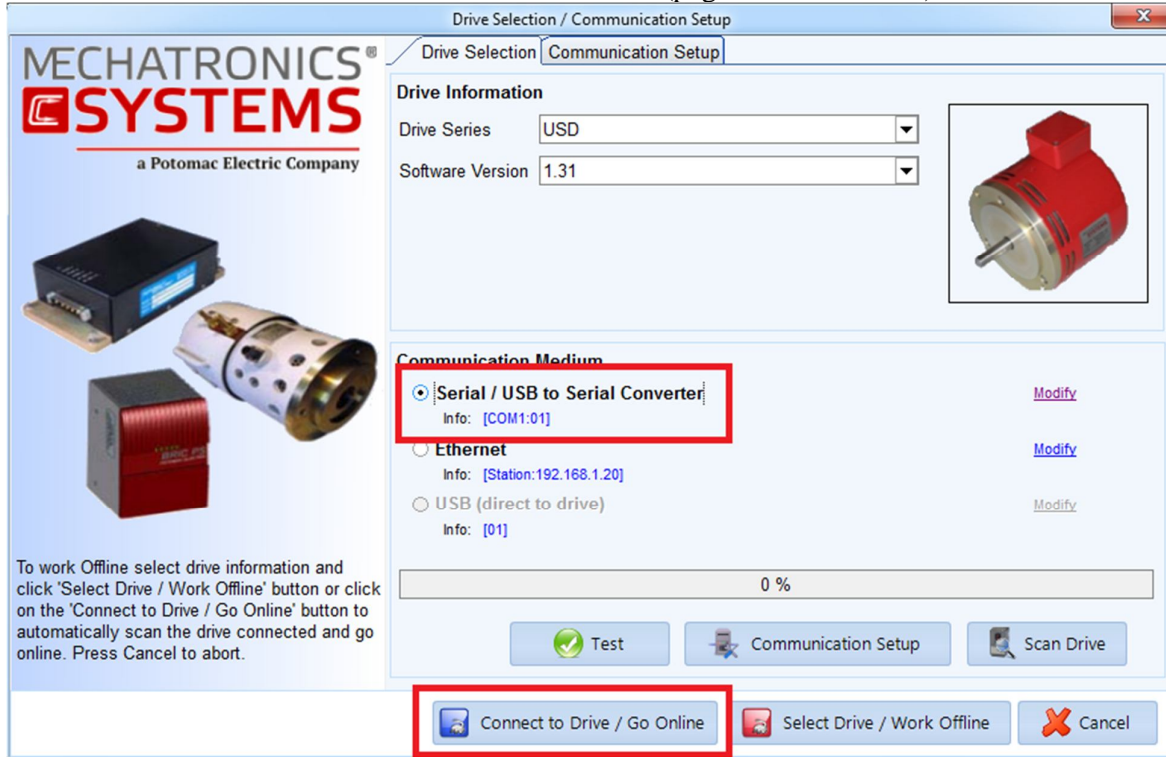

Figure 19

2. Choose the number of virtual COM-port which is used of USB/RS485 converter (page Communication Setup). The number of virtual COM-port can be determine via Device Manager of Windows.
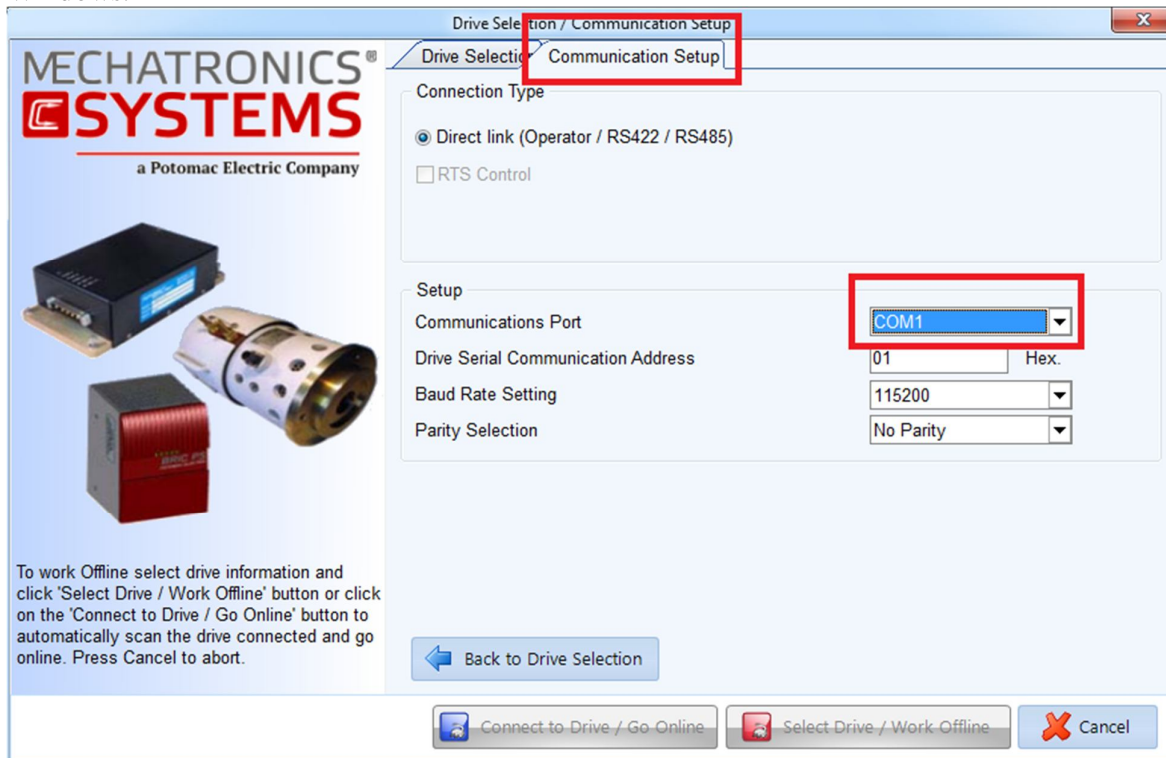

Figure 20

3. Return on page Drive Selection and press on button Connect to Drive. If communication is successful, status bar of DriveLink will indicate status ONLINE
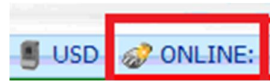

Figure 21

Now you can change parameters of the device according to your requirements.