AC10 Clone module 1002-00-00

There are a number of different ways in which the Clone Module can be used with AC10 drive. It can be used to Clone a drive or it can be used as a USB to serial converter to allow a pc to communicate with an AC10 via the Modbus A and B terminals and the software PDB V1.3.

This is the procedure to use the Clone module as a serial converter:

To enable communication you must set the following parameters in the drive.

F900 = *Inverter Address*, range 1 – 255. **Recommended setting is 1**

F901 = *Modbus Mode*. 1 = ASCII mode, 2 = **RTU mode**. **Set to 2**.

F903 = *Parity Check*. **0 = no check**, 1 = Odd parity, 2 = Even parity. **Set to 0**.

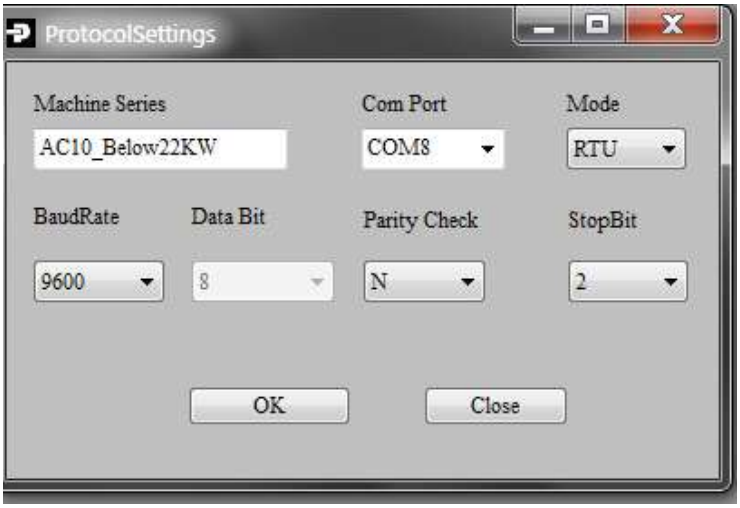
F904 = *Baud Rate* = 9600, **Set to 3.**

F905 Timeout period 0 – 3000 seconds.

If the inverter has not received a communication from the pc the duration of the time set, the A10 will trip on CE. Setting F905 to 0.0 seconds will disable the timeout alarm.

In PDB click on the protocol Icon 

. The settings must match those in the drive.



Select the timeout window 

to 50 ms, to speed up communications.

If you have questions, please call the Product Support Group at (704) 588-3246.

To use the Clone module as a Cloning tool:

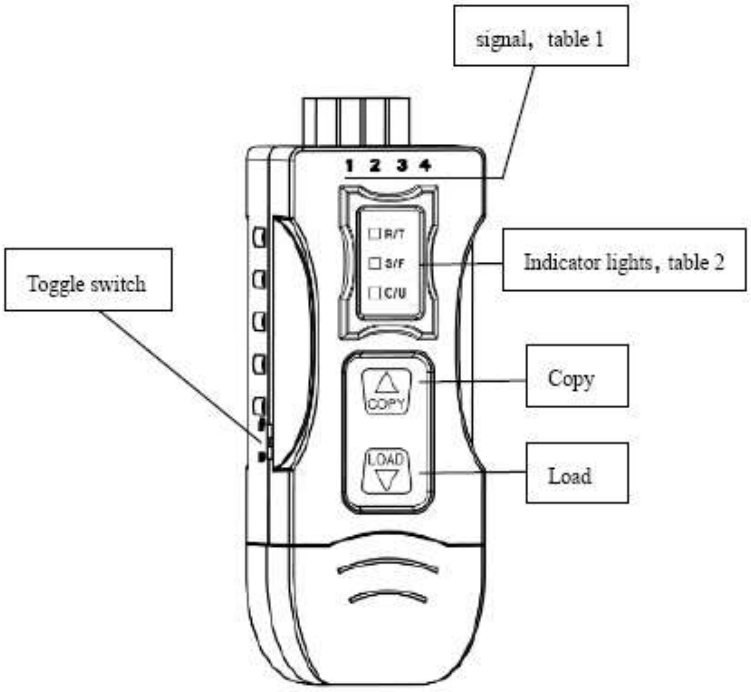
To use this feature the drive firmware must be version 2.07 or greater, for a 22kw drive or smaller. Parameter F105 is the firmware version. Verify the firmware version of the drive.

Wiring the Cloning Tool for AC10 IP20 Drives smaller than 22 kw.

The cloning tool requires an external +5vdc supply for AC10 IP20 Drives smaller than 22kw.
The 4 pin connection s are as below;

Table 1

Pin	Signal	AC10 pin
1	T/R-	B-
2	T/R+	A+
3	+5V	
4	0V	



RS-485 output signals and PIN assignment

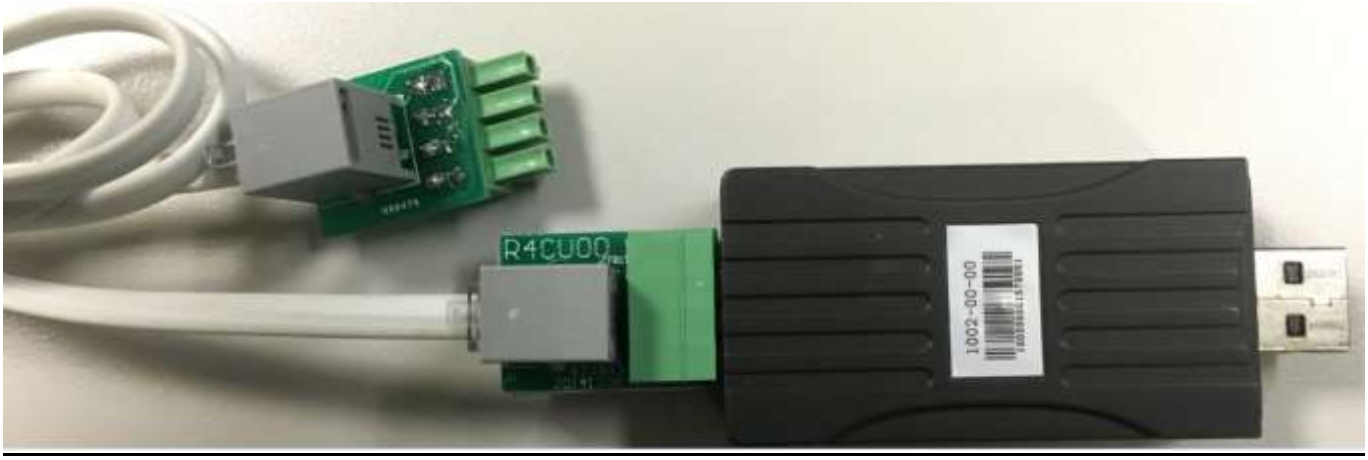
Table 2

Indicator Lights	Signal Description
R/T	RXD / TXD (flashes on Receiving / Transmitting of data)
S/F	Parameters copying success (Green) or failure (Red).
C/U	Mode selection of parameter copying Cloning Tool or USB /485 converter.

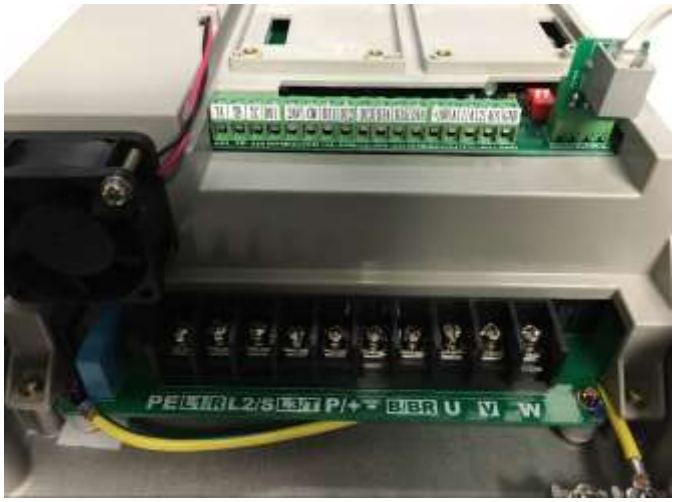
If you have questions, please call the Product Support Group at (704) 588-3246.

Wiring the Cloning Tool for AC10 IP 20 Drives over 30 kw **and** all AC10 IP66 Drives

For these drive use the cable and connectors which come with the module. Connect it up as shown here:



For an AC10 IP20 Drive over 30 kw connect it as Shown.



For an AC10 IP66 Drive connect it as Shown.

Using the Cloning Tool to Copy a Drive

If you have questions, please call the Product Support Group at (704) 588-3246.

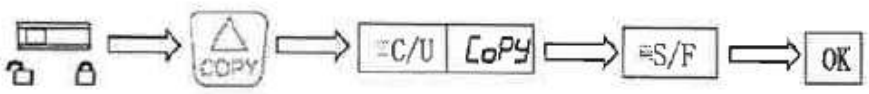
To use this feature the drive firmware must be version 2.07 or greater, for a 22kw drive or smaller. Parameter F105 is the firmware version. Verify the firmware version of the drive.

The communication parameters in the drive must be set to the default parameters

AC10 Drive parameters setting for clone stand alone with drive		
Parameter	SET	Setting Description
F900 Communication Address	1	Inverter Address
F901 Communication Mode	2	RTU
F903 Parity Check	0	Invalid
F904 Baud Rate(bps)	3	9600
Note :- When cloning the clone must be disconnected from the PC and must be connected to an external 5V supply		
COPY side to paddlock open		
LOAD side to paddlock closed		

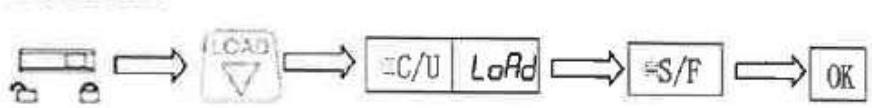
To "COPY" the AC10 drive parameters into the Clone tool: .

1. Slide the toggle switch into the Padlock **open** position located on the side of the module.
2. Press & hold the **COPY** ▲button until the drive MMI display will show **COPY**. This may take 5 seconds
3. The **C/U LED** on the Clone tool will turn Red on then off.
4. When the parameters have been downloaded successfully, the **S/F LED** will be Green.



To "LOAD" parameters into an AC10 drive:

1. To copy **Motor Parameters** set F640 = 0. By default F640 = 1. Motor data is NOT copied. See Note 1 at the end of this document
2. Set the toggle switch to the Padlock **closed** position.
3. Press the **LOAD** ▼button. The drives display will show **LOAD**. This could take up to 10 seconds.
4. The **C/U LED** on the clone tool will turn Red on then go off.
5. When the parameters have been downloaded successfully, the **S/F LED** will be Green.

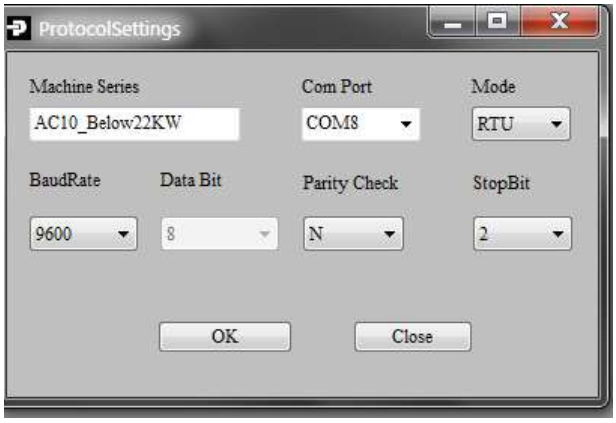


If you have questions, please call the Product Support Group at (704) 588-3246.

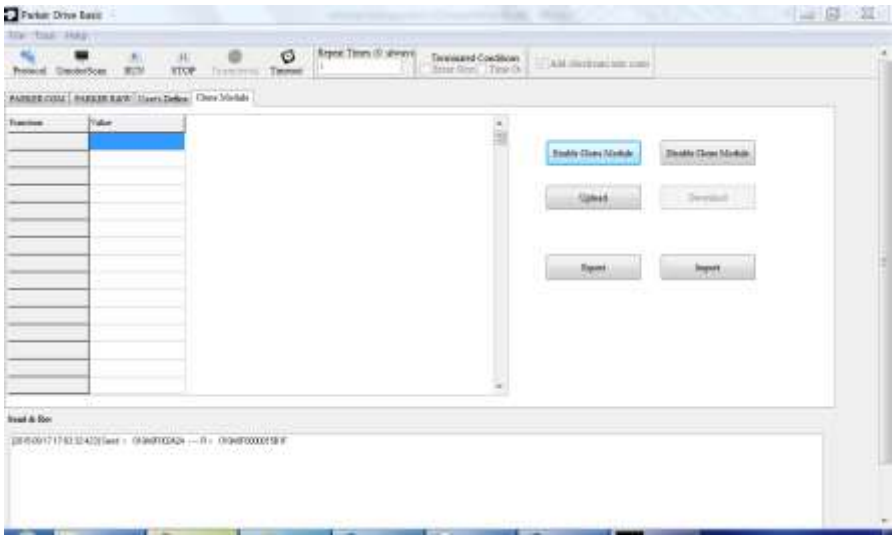
Using the Clone Tool, a PC, and the software PDB (Parker Drive Basic) to Upload /Download parameters.

Parameters stored in the Clone Module can be uploaded into PDB and parameters stored in PDB can be downloaded in the clone module.

Plug the Cloning tool into a USB port on your pc. It must NOT be connected to a drive. Check the COM port number in Device Manger. The Protocol settings in PDB must be set as shown below. Also the Timeout function must be set to 500ms.



Click on the **Clone Module** tab and then the **Enable Clone Module**.



Upload: Uploads drive parameters stored in the clone module into PDB.

Export: Saves Uploaded data as an ".xls" file.

Download: Downloads drive parameters open in PDB into the clone tool.

Import: Loads an ".xls" file into PDB.

Disable Clone: Disables the Clone Module.

If you have questions, please call the Product Support Group at (704) 588-3246.

Troubleshooting

Fault mode	Indicator Lights	Possible reason for fault
1	S/F LED is always on	No valid data in Clone module or it is wrong
2	S/F LED is on once in 2 seconds	Data is received wrong
3	S/F LED is on twice in 2 seconds	Receiving wrong code. PC is forbidden copying.
4	S/F LED is on 3 times in 2 seconds	Slave computer is interrupted while copying

Note 1:

When "LOADing" parameters into an AC10 drive you have these options:

Function Code	Function Definition	Setting Range	Mfr's Value	Change
F638	Parameters copy enabled	0: Copy forbidden 1: Parameters copy 1 (voltage level and power rating are totally same) 2: Parameters copy 2 (without considering voltage level and power rating)	1	√
F640	Parameter copy type	0: Copy all parameters 1: Copy parameters (except motor parameters from F801 to F810/F844)	1	√

If you have questions, please call the Product Support Group at (704) 588-3246.