# MEA-2x00 in RS-485 Serial Network

## Description

The AFP Network Protocol supports both single-device and multi-device communication over an RS-485 network. Each MEA can be assigned a unique identification number (ID), enabling multiple actuators to operate on the same network. This technical note describes the RS-485 hardware interface and provides example network commands using the AFP_CLIENT software to facilitate configuration and communication.

## Practicing with Different ID in Single User Operation

Before configuring the RS-485 network, it is recommended to first configure and test the MEA in single-device mode. This simplifies setup and verification before deploying a multi-device network. The procedures apply to both the MEA-2000 and MEA-2100 actuators.

## ID Number Exception

All command starts by "U" + ID number + CMD. It is just enough for a micro controller to "trig" on the command start and evaluate the ID number.

- **U00CMD**: Is not used (reserved for the server).
- **U99**: Is reserved for broadcast function.
- In a broadcast function all users react to the function but do not answer it to avoid communication conflict.

An example for broadcast command would be the SET TIME 99CMD_A_&030=14:05:58(13)(10).

## Changing the ID Number: Command 009 Format

| | | | | |
|---|---|---|---|---|
| Command Number | 009 | | | |
| Command Name | Set ID Number | | | |
| UXXCMD_Y_&009 | = | Parm 1 | (13) | (10) |
| Parm 1 | ID Number | | | |
| Value | 01 to 99 | | | |

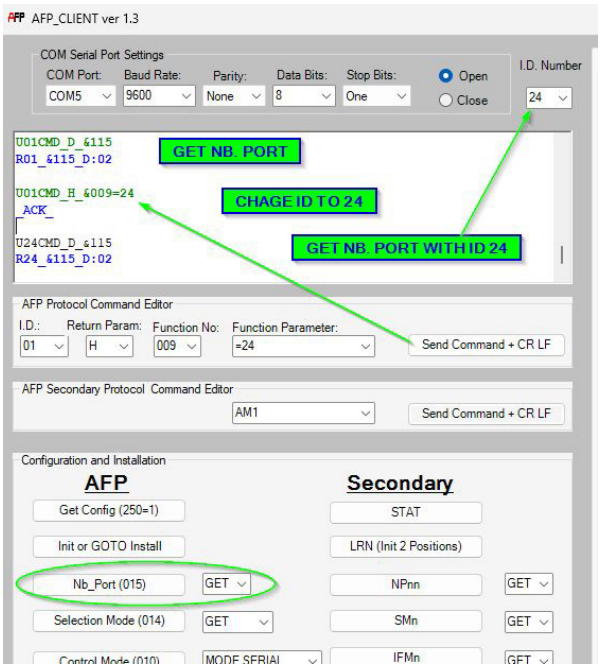
## Format Example:

Change ID Number From "01" to "24" U01CMD_D_&009=24(13)(10)
Change ID Number From"24" to "02" U24CMD_D_&009=02(13)(10)

## Example With AFP_CLIENT

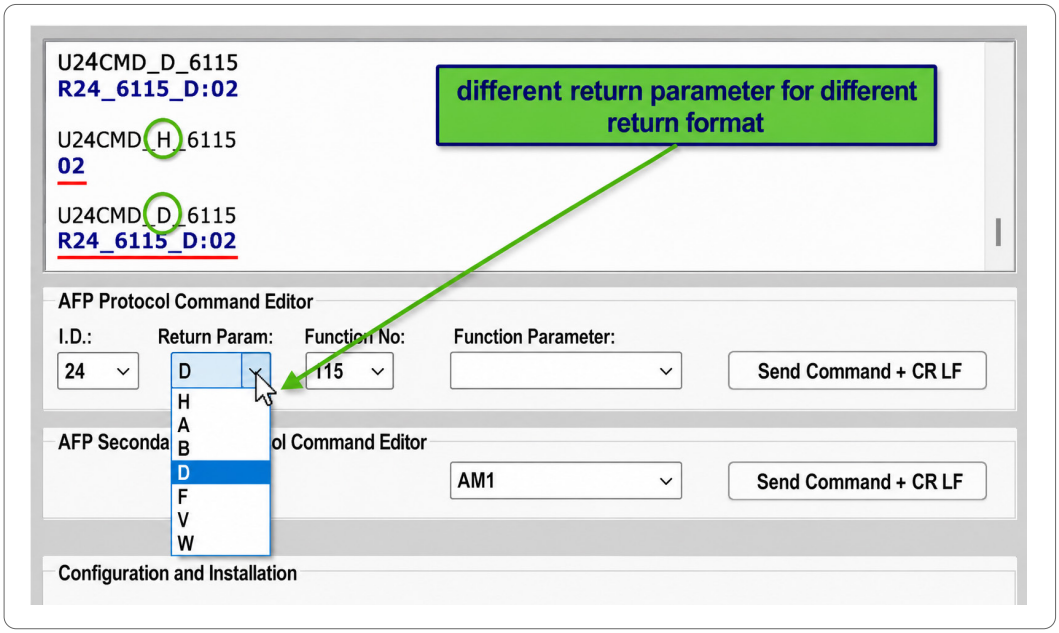
### Actions in the example

- Get NB. PORT from ID no. 1
- SET the MEA ID number to 24 using the AFP Protocol Command Editor
- AFP_CLIENT is set to 24 in the upper right corner
- Get NB. PORT from ID no. 24



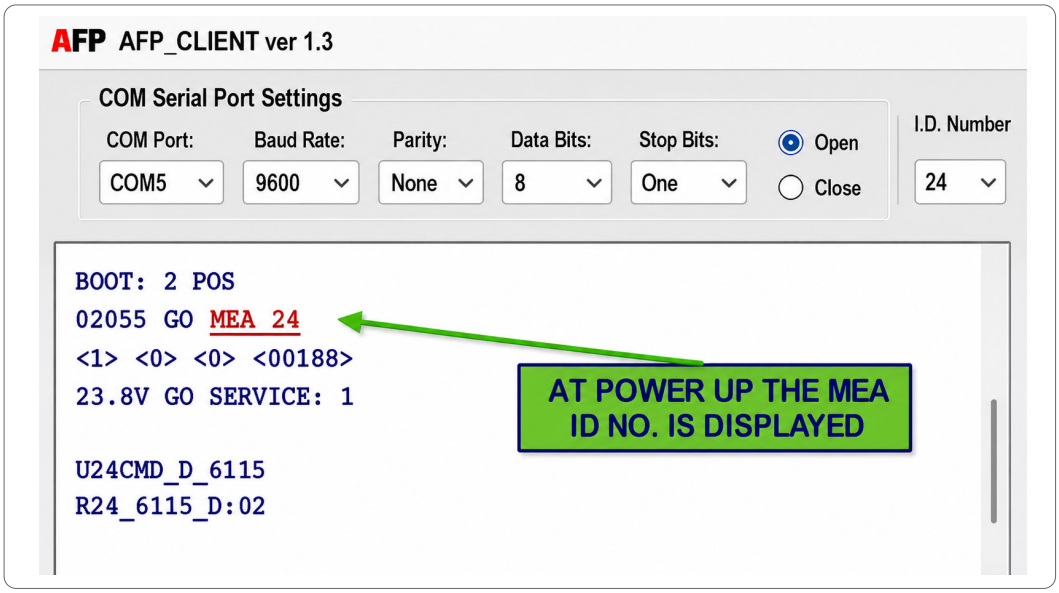

AFP
Schivo Group

## Other Actions with the AFP Command Editor




## Finding OU Confirming the ID Number at Power-Up

Monitor the data transmitted during MEA power-up to verify the assigned MEA ID and confirm proper communication.




## RS-485 Hardware Settings

The following images illustrate how to open the enclosure to access the jumper settings.

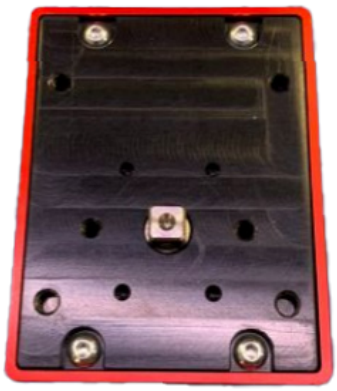


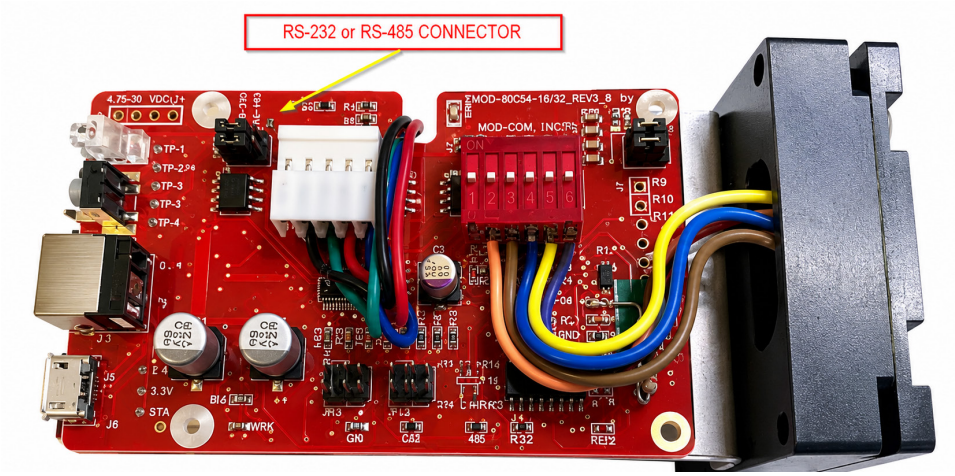
Figure 1: Retrieve the 4 screws.
Tool: 2 mm. Allen Key

Figure 2: Retrieve the 4 corner screws.
Tool: 2 mm. Allen key

# MECHANICAL INFORMATION

## Figure 3

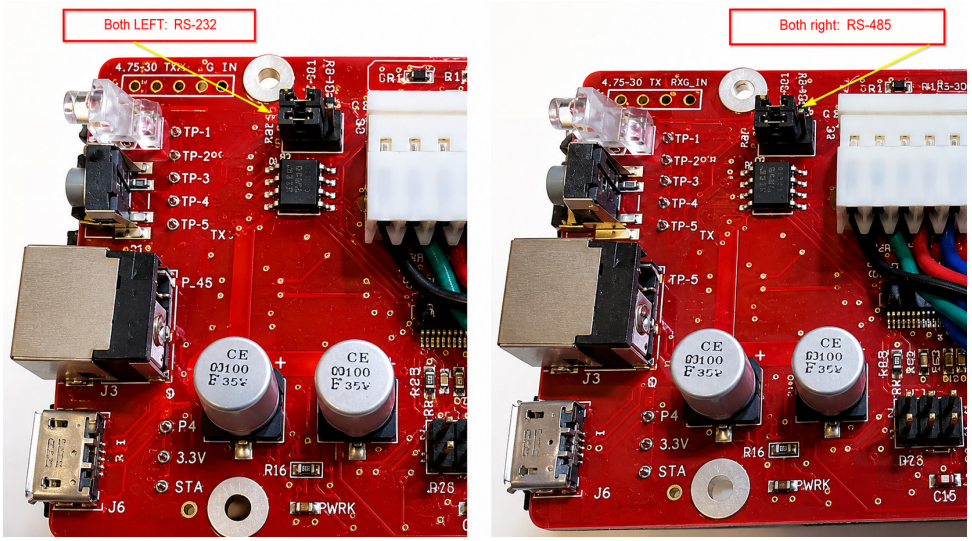
Locate the JUMPER on the upper left side.




## Figure 4 and 5

are the JUMPER position for RS-232 and RS-485 setting. There are two JUMPERS per setting, technically one for RX/A+ and one for TX/B- With the power off, changing the JUMPER will go back and fort from RS-232 to RS-485.

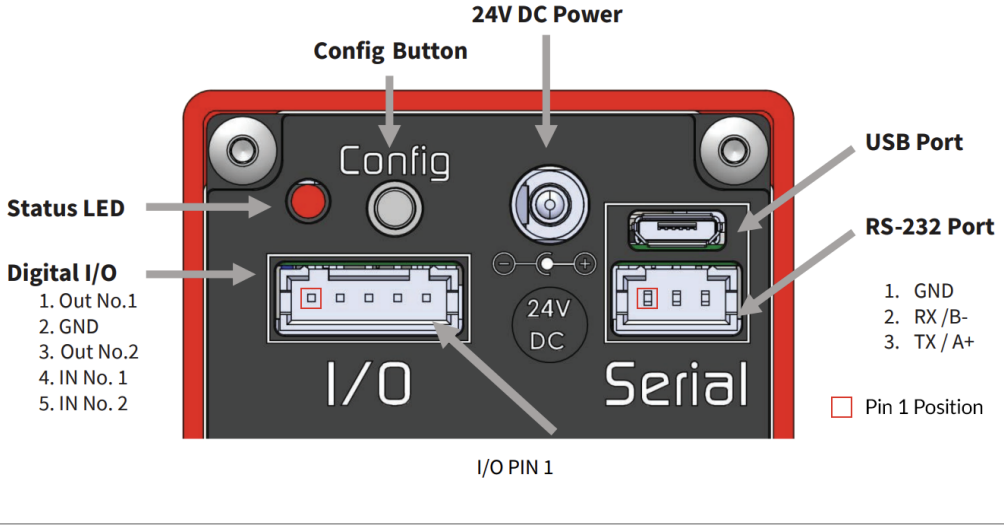
You can then practice AFP command with the open enclosure.




## RS-485 PINOUT:

The pinout in RS-485 doesn't have very clear standard. For the MEA Pin3 if the SERIAL connector is the ground and you can switch the other 2 wires to find out the good pinout for your RS-485 converter.

**Example with a FTDI USB to RS-485 smart cable and a EA00-9010-1030 AFP cable**



# MECHANICAL INFORMATION

| WIRE | | | MEA 3 Pin Connector | |
|---|---|---|---|---|
| FTDI Color | AFP Color | RS-485 | Serial Port Pin | Postion |
| Yellow | Red | A Signal | 3 | Right |
| Orange | White | B Signal | 2 | Center |
| Black | Black | GND | 1 | Left |

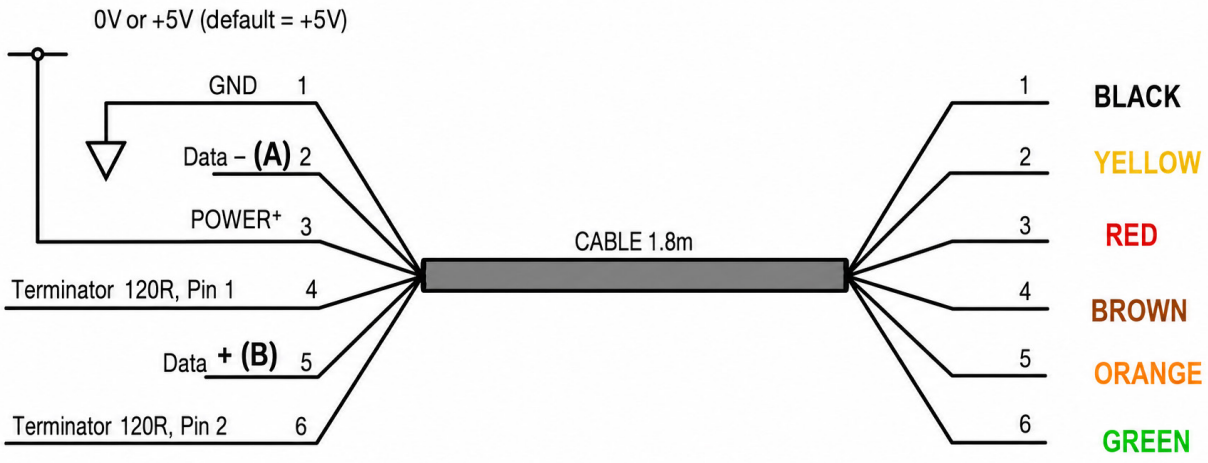



**Figure 5.1 USB-RS485-WE Connections**