

## Rubicon M-Class Installation

The **Rubicon M Class** console from Sierra Automated Systems is a Console / Control Surface comprised of several independent modules housed in a common mainframe. Available modules are:

- MIPM M Class Input Module, 4 faders
- MCCM M Class Console Control Module, includes Monitor, Cue, Talkback, Gen Purpose Buttons and Meter Select Buttons
- MRIM M Class Router Input Module, 2 faders with Rotary Encoder and LED Alpha Display
- MICOM-8A M Class Intercom Module, 8 Buttons plus Encoder and Alpha Display
- TP Mods Assorted Accessory Button Panels

The **Rubicon M Class** is wired through an access hole in the bottom panel of the console, located in the right rear under the Console Control Module. All user connections are made to this location. Reference the M Class Wiring and Connector Description Drawing attached. The wires will typically be brought up through an access hole in the desktop under this area. There is enough clearance under the rear panel of the console for the wires to exit above the desktop if desired. The Side Panels are a unique two-piece design: the lower piece may be removed to allow thru-desk mounting of the M Class Console. Thru-desk mounting requires a large rectangular hole in the desktop and provides an even lower profile installation!

**Console Power** is typically provided by a SAS **PS-12-3** power supply. Two supplies may be used to provide full redundancy. The PS-12-3 provides 12 VDC at 3 Amps. Connect the power supply to J301 and/or J302.

The **Modules** communicate to an SAS System, RIO or 32KD, using **CAT 5 wiring, RJ-45 connections**, T568B wiring standard, accessible thru the Rubicon M Class bottom panel. The wires will connect to the SAS System either thru RJ-45 connectors to the RIO Rear Panel, or to blocks which are wired to either RIO chassis RS-485 ports or to DRC module RS-485 ports. Available blocks are SAS Model 89D-2132 with RJ-45s or Krone punch style block. Both the RIO connector adapter and the 89D-2132 block provide convenient RJ-45 connections with 4 RS-485 ports per connector (4 wire pairs). The physical communication is via SAS standard RS-485 protocol, with 4 faders/module slots per port (per wire pair). Therefore one RJ-45 connector (4 pair) supports up to 16 module slots. Each MIPM 4 fader Input Module requires one RS-485 port (one wire pair): each fader will reside at one Port/Address, four Addresses for each Port. Each MCCM Console Control Module requires one RS-485 port: Monitor controls are programmed at Address 0; General Purpose Buttons are programmed at Address 1; Address 2 is not used; and Meter Assignment controls are programmed at Address 3.

The Rubicon M Class **Meters, Headphones, Cue and Talkback** Audio are connected with Digital AES-3 format Audio. Connector J402-DIG AUDIO IN A provides four AES inputs to the M Class Console; Meter 1, Meter 2, Headphones and Cue/Talkback. Each **Audio Meter** displays Average Audio Level (VU) with a bar and Peak Audio Level (PPM) with a dot. The built in **Headphone Amplifier** drives the ¼" and 1/8" jacks on the front panel. The **Cue Speaker** input is mono and is carried on one channel (R) of an AES 3 Digital 2 Channel signal. The **Talkback** to console operator audio is also mono and is carried on the other channel (L) of the Cue/Talkback AES 3 signal. The signals are in the order (T568B wiring):  
Meter 1 – Talkback/Cue – Headphone – Meter 2.

The meter bridge area also provides a **Timer**. The **Timer** is controlled via front panel controls for Start and Stop. A logic input is provided for Remote 'Auto Start'. Auto Start allows the Timer to Start and count up whenever a programmed event occurs, such as a Mic being turned On. When the AUTO button is On, and if a closure is received on the logic input the Timer will Start and count up. This logic input should be connected to a RIO relay. The Relay Number is programmed in the Console Configuration screens of the Router Control Software. The Timer/Logic Input connector is wired with a CAT 5 cable that is normally punched down to relay outputs from a RIO chassis.

### **Console Configuration**

Each console is configured based on the complement of modules installed. For example, three MIPM Input Modules provide 12 faders and require 3 RS-485 ports. Add one MCCM Console Control Module, which requires 1 RS-485 port and 4 RS-485 ports are required. One User RJ-45 connector, J402-RS-485A will be used. Internal Console wiring and Port Assignment are explained below:

### **Input Module RS-485 Assignment**

Each Input Module has one RS-485 port on an RJ-45 connector which includes power and ground. All user RS-485 Data and Power connections to the M Class Console are made to the MCCM Console Control Module. User connections of System RS-485 are made to J402-RS-485-A and B. J402-RS485-A provides data ports 1 thru 4 and J402-RS-485-B provides data ports 5 thru 8. These RS-485 data connections are distributed to the console modules, along with Power and Ground, via connectors J401-1 thru 8. The data circuits of J401-1 thru 7 are connected from J402-RS-485-A and B, ports 1 thru 7. When configuring the console, input modules are typically connected to ports 1, 2, 3... etc from Left to Right (as the operator sits at the console). Auxiliary modules may also be connected to these data ports as required. Port 8 is connected per below.

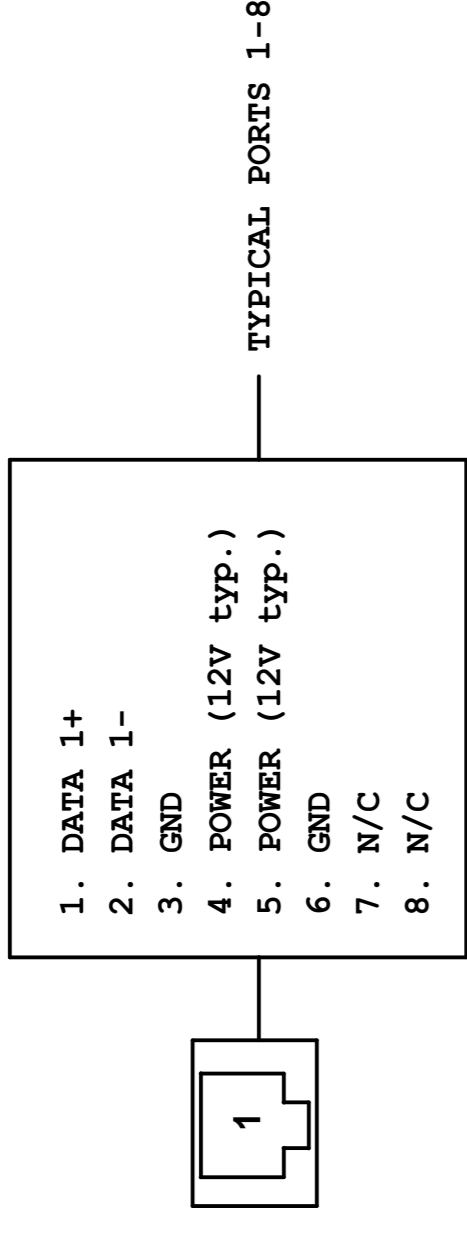
### **MCCM Console Control Module RS-485 Assignment**

The RS-485 for the MCCM Console Control Module functions (Monitor, General Purpose Buttons, Meter Assignment) may be assigned to any RS-485 data port, 1 through 7, by RJ-45 data cable. The MCCM RS-485 is connected by default to J401 connector 8. To connect J401-8 to the port required, simply connect an RJ-45 thru cable from J401-8 to J401-'required port'. e.g. If the configuration requires the MCCM Console Control Module data to be connected to System RS-485 Port 4, then connect the RJ-45 data cable from J401-8 to J401-4. If it is required to connect the MCCM RS-485 to J402-RS-485-B-Port 8 install jumpers J406 & J407 on the MCCM printed circuit above connector J403-2 ; these jumpers will connect J401-8 directly to J402-4 RS-485 B port 8.

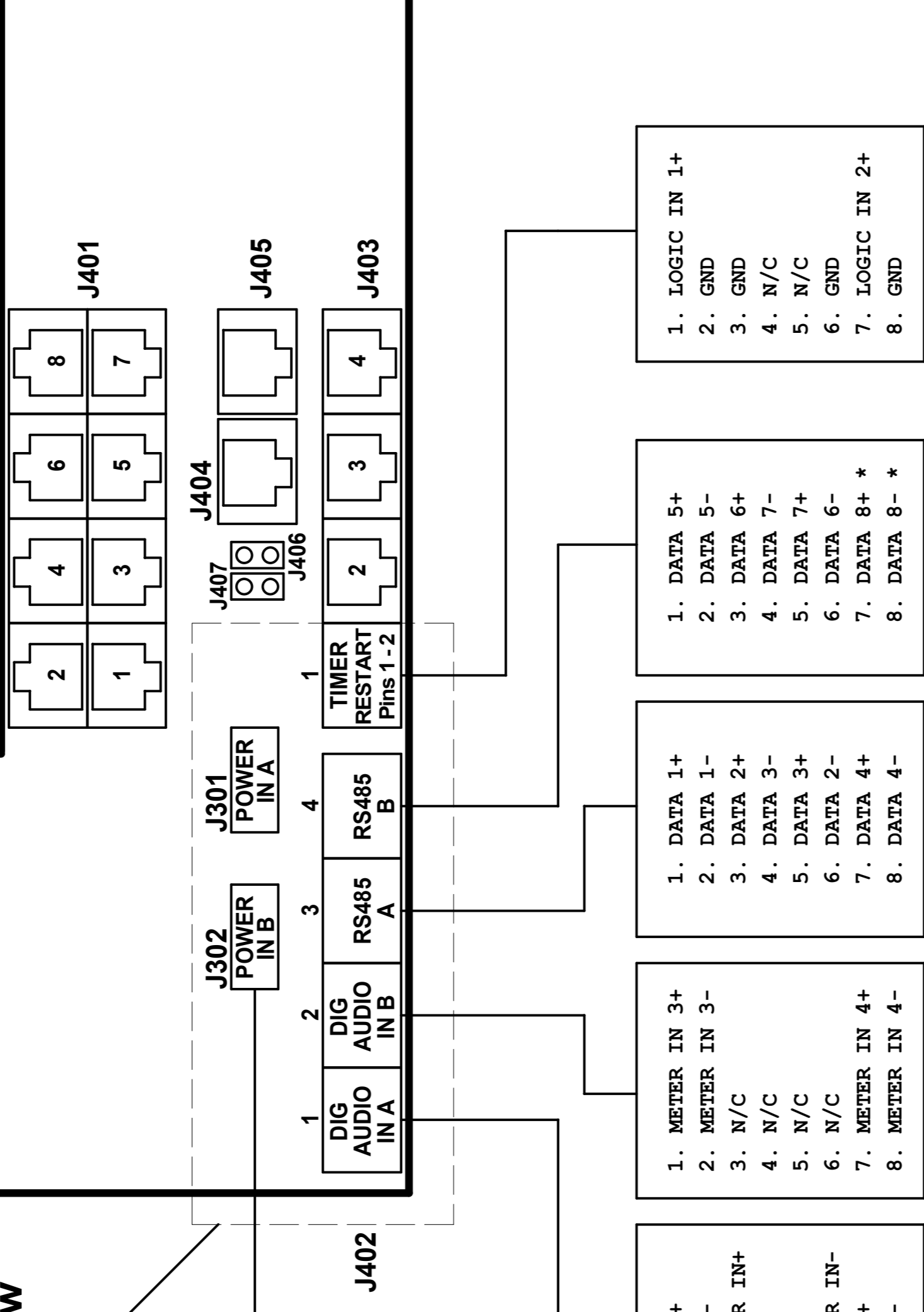
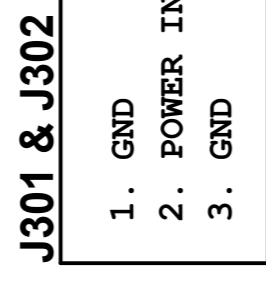
### **Console Spreadsheet**

A Spreadsheet is available from SAS which details channel locations within the RIO or 32KD system. This is a useful tool for system planning. SAS typically supplies a configuration spreadsheet with each console. Please review the default assignments created by SAS. The configuration is easily changed. If you keep the spreadsheet up to date with changes you make it will help you in understanding the configuration you create and it will also be required by SAS if you require telephone / remote internet installation support.

# J401: COM Ports to Input Modules



## User access window



### T568B Color Code

- 1. WHITE/ORANGE
- 2. ORANGE
- 3. WHITE/GREEN
- 4. BLUE
- 5. WHITE/BLUE
- 6. GREEN
- 7. WHITE/BROWN
- 8. BROWN

\*

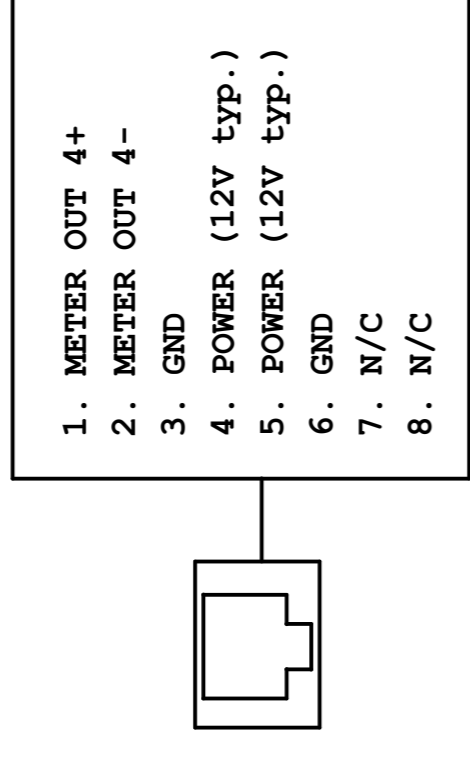
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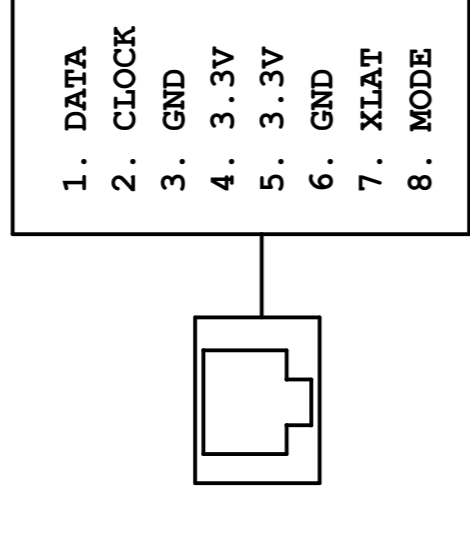
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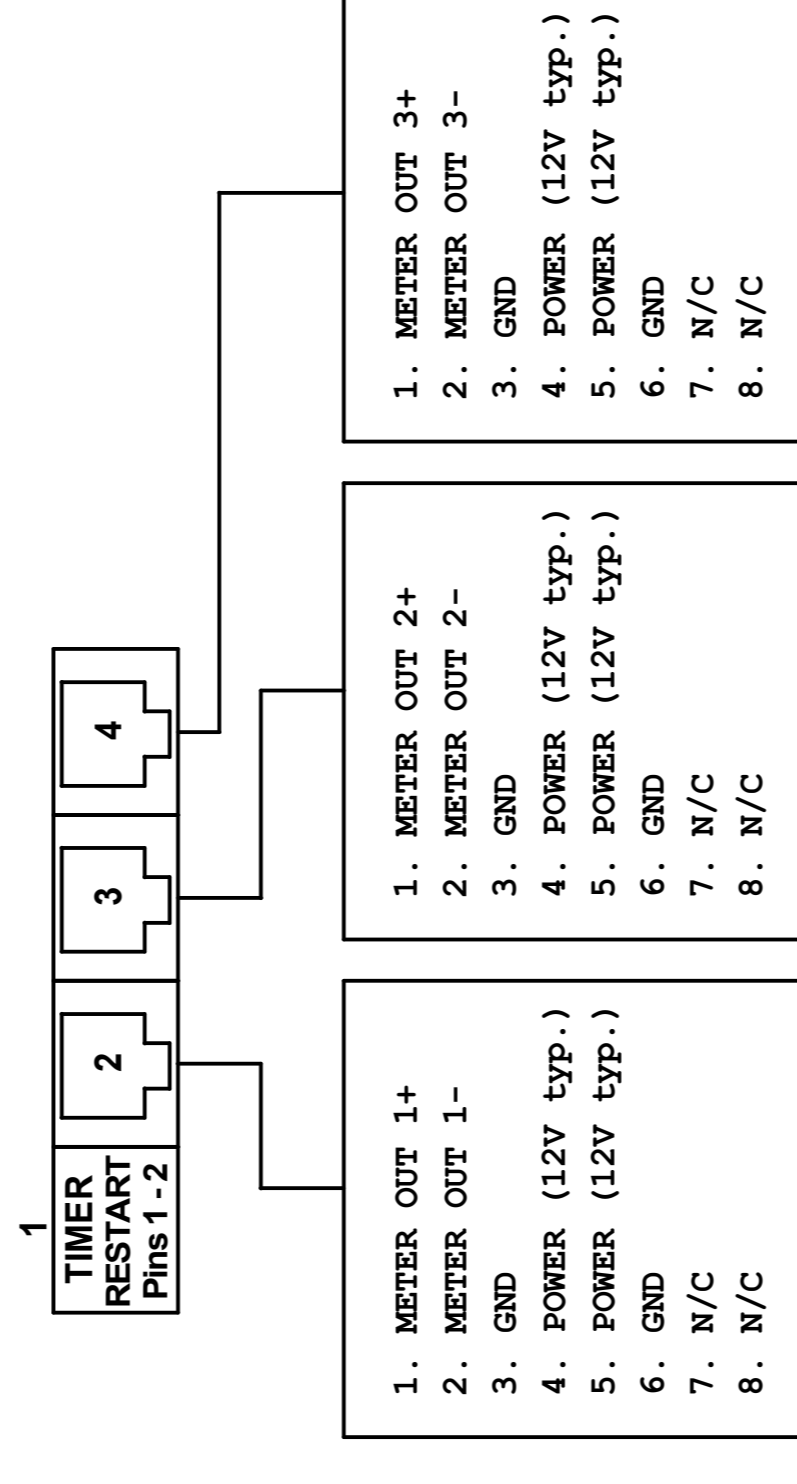
## J404: METER 4 OUT



## J405: TIMER OUT



## J403: METERS 1-3 OUT and TIMER RESTART



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Title: M Class Connector Description  
Size: B Document Number  
Rev: B

Date: Monday, July 27, 2009 Sheet 1 of 1