

## TCM-2008 Current Monitor User's Guide

### 1.0 Overview

The TCM-2008 transmission controller is the standard transmission controller with the addition of a current monitor device added for each of the PWM and Digital Outputs. This current monitor option is selectable by each output channel. Monitor capability, is selected by a number of jumpers located in the controller case on the current monitor card. For each of the monitored outputs, a jumper selects an output of a corresponding current sensing device and is connected to a digital or analog input of the transmission controller. The digital or analog input will no longer be present (connected) the I/O connector of the transmission controller case. If the jumper is in the current sense position, the input will no longer be programmable for functionality in the computer interface software for transmission control. See Figure 1.

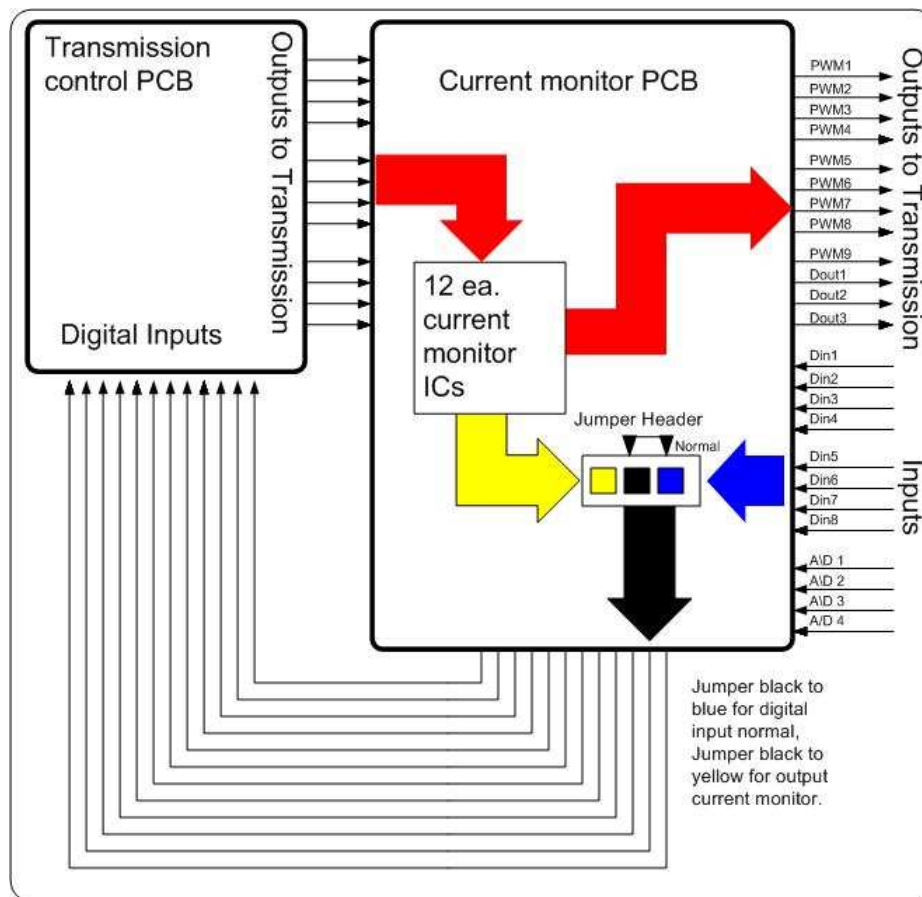


Figure 1

## 2.0 Configuring the Jumpers

Remove the top cover of the TCU by unscrewing the 12, 8-32 stainless steel cap screws. Note that ten of the screws are 7/16" long and two are 1/4" long. The 1/4" screws are located over the cable connectors.

Follow the cables from the box connectors to the current monitor PCB. Note the position of the jumpers in the event that you move a jumper in error and need to put it back in the original position.

Figure 2 indicates the locations of the jumper headers and a legend is provided for current monitor versus normal positions. Determine the output that requires current monitoring, locate the signal jumper header, and move the jumper from normal to current monitor.

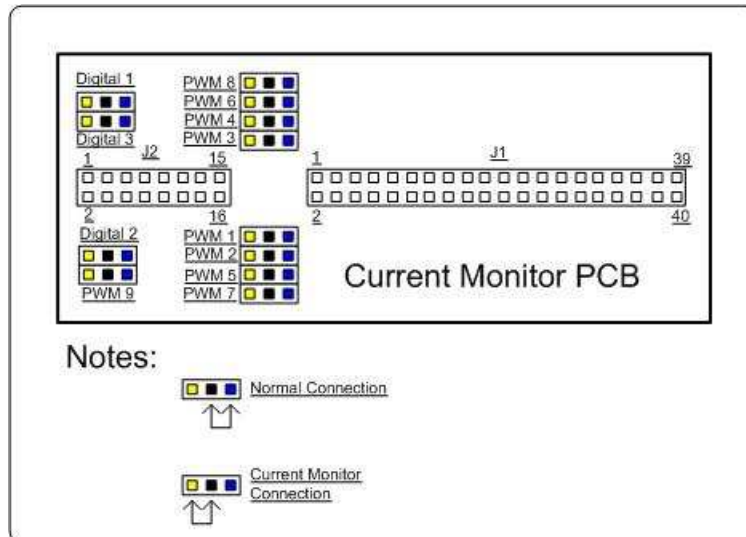


Figure 2

Once all jumpers are moved for outputs that need configuration for current monitoring are completed, replace the TCU top cover being sure that the cover gasket is not pinched in the cover and that the 1/4" screws are in the correct holes.

### 3.0 Channel Assignments and Conversion Information

The following table is a list of outputs that are monitored for current, the corresponding feedback channel and the conversion information. Please note that the functionality of the associated digital or analog input is lost when the input is jumped to monitor an associated output.

The current is read from the TCU using the Alternate Data Stream. The Alternate Data Stream is requested by sending an ASCII "d" to the controller. For more information regarding the Alternate Data Stream, please refer to the Alternate Data Stream Summary document.

Output Channel		Current Feedback Channel		Alternate Data Stream Information		
Name	Pin	Name	Pin	Location	Size (B)	Conversion
PWM 1	C2 - 25	Dig In 1	C2 - 4	16	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 2	C2 - 26	Dig In 3	C2 - 6	18	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 3	C2 - 27	Dig In 2	C2 - 5	17	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 4	C2 - 28	Dig In 4	C2 - 7	19	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 5	C2 - 29	Dig In 5	C2 - 8	20	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 6	C2 - 30	Dig In 6	C2 - 9	21	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 7	C2 - 31	Dig In 7	C2 - 10	22	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 8	C2 - 32	Dig In 8	C2 - 11	23	1	Current (A) = ((Data x 5 / 255) - 2.5) / 0.185
PWM 9	C2 - 33	A/D In 1	C1 - 4	0	2	Current (A) = ((Data x 5 / 65472) - 2.5) / 0.185
Dig Out 1	C2 - 34	A/D In 2	C1 - 5	2	2	Current (A) = ((Data x 5 / 65472) - 2.5) / 0.185
Dig Out 2	C2 - 35	A/D In 3	C1 - 6	4	2	Current (A) = ((Data x 5 / 65472) - 2.5) / 0.185
Dig Out 3	C2 - 36	A/D In 4	C1 - 7	6	2	Current (A) = ((Data x 5 / 65472) - 2.5) / 0.185

Connector C1 is the 16-pin connector and C2 is the 37-pin connector.

The current reading will be positive or negative based on the direction of the current flow.