

Calibration - Quadrature Input RAF185

1

First link JP1 on pcc156, with the power off. This puts the module in calibration mode when the power is applied.

2

Bridge the required link on the PCB pcc156.

LINK NUMBER	INPUT RANGE (number of pulses for full scale output)
LK3	896 TO 1151
LK4	640 TO 895
LK6	384 TO 639
NONE OF THE ABOVE	128 TO 383
LK5	INVERT RESET INPUT

3

When power is applied the analogue output represents the position that the pots are in. When the output is at a minimum the number of pulses for full scale output corresponds to the minimum for the selected range. When the output is at a maximum the number of pulses for full scale output corresponds to the maximum for the selected range. There are 255 discrete steps between the minimum and maximum output values, each step represents one pulse.

The BCD output is not valid during calibration.

4

Calculate the required output using the following formula.

$$STEP = ((OUTPUT_{MAX} - OUTPUT_{MIN}) / 255)$$

$$OUTPUT = ((STEPS_{REQ} - STEPS_{RANGE}) * STEP) + OUTPUT_{MIN}$$

Where

OUTPUT_{MAX} = maximum attainable output. (e.g. 20mA for a 4 – 20mA transmitter)

OUTPUT_{MIN} = minimum attainable output.(e.g. 4mA for a 4 – 20mA transmitter)

STEPS_{REQ} = the number of pulses required for full scale output.

STEPS_{RANGE} = the minimum number of pulses for the selected range.

5

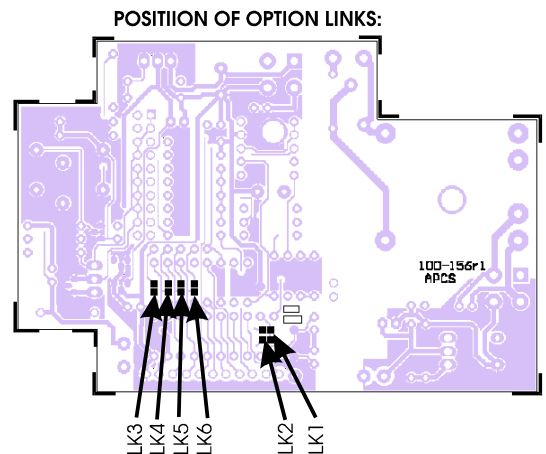
Adjust the output to the value calculated above using the 2 pots (P3 and P4)on pcc157. One of these pots functions as a course control and the other as a fine control. **** try to adjust the pots to the centre of the range of adjustment, to avoid the pot values being incorrectly measured when the unit powers up.

6

Remove the link from JP1 on pcc156. Cycle the power to the transmitter (it is now in normal operating mode).

Note

There will probably be some rounding errors on both the BCD and analogue output. For example if 256 steps are required for full scale the BCD output will only go to 99.8% (the first 3 digits of(the integral part of (999000 / steps required))*steps required).



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