HOW TO SCALE AN ANALOG OUTPUT ON A DCS800

Description:

There is no way to scale an analog output in the DCS800 via parameters or adaptive programming. The parameters for the analog output do not have a low value for scaling nor have the capability to adjust the maximum value or percent. Adaptive programming does not provide the resolution for scaling.

Solution:

To scale a value using the analog outputs requires using two analog outputs and 1 analog input.

Example:

Customer wants to scale the armature voltage to be fed off an analog output. Normal range is 0 to 240 vdc. Scaled range is 30 to 191 vdc.

1) Program one analog output (AO) to look at armature voltage.
2) Wire the AO programmed for armature voltage to an analog input (AI). Since the analog inputs can only accept voltage, a 500 ohm resistor will have to be placed in parallel, which will convert the 0-20 mA signal to 0-10 vdc.
    a. To calculate the minimum and maximum voltage values for the AI, divide the low and high value of the scaled range by 240. Then, multiply this value by 10 (the maximum AI voltage)
    b. 30 / 240 = .125 X 10 = 1.25 vdc or 125 mvdc
        i. Set 13.22 to 125 mvdc
    c. 191 / 240 = .796 X 10 = 7.96 vdc or 796 mvdc
        i. Set 13.21 to 796 mvdc
3) Program a second AO to look at the AI.

Author: Rick Peplinski, Louis Chatfield		Date: March 21, 2014
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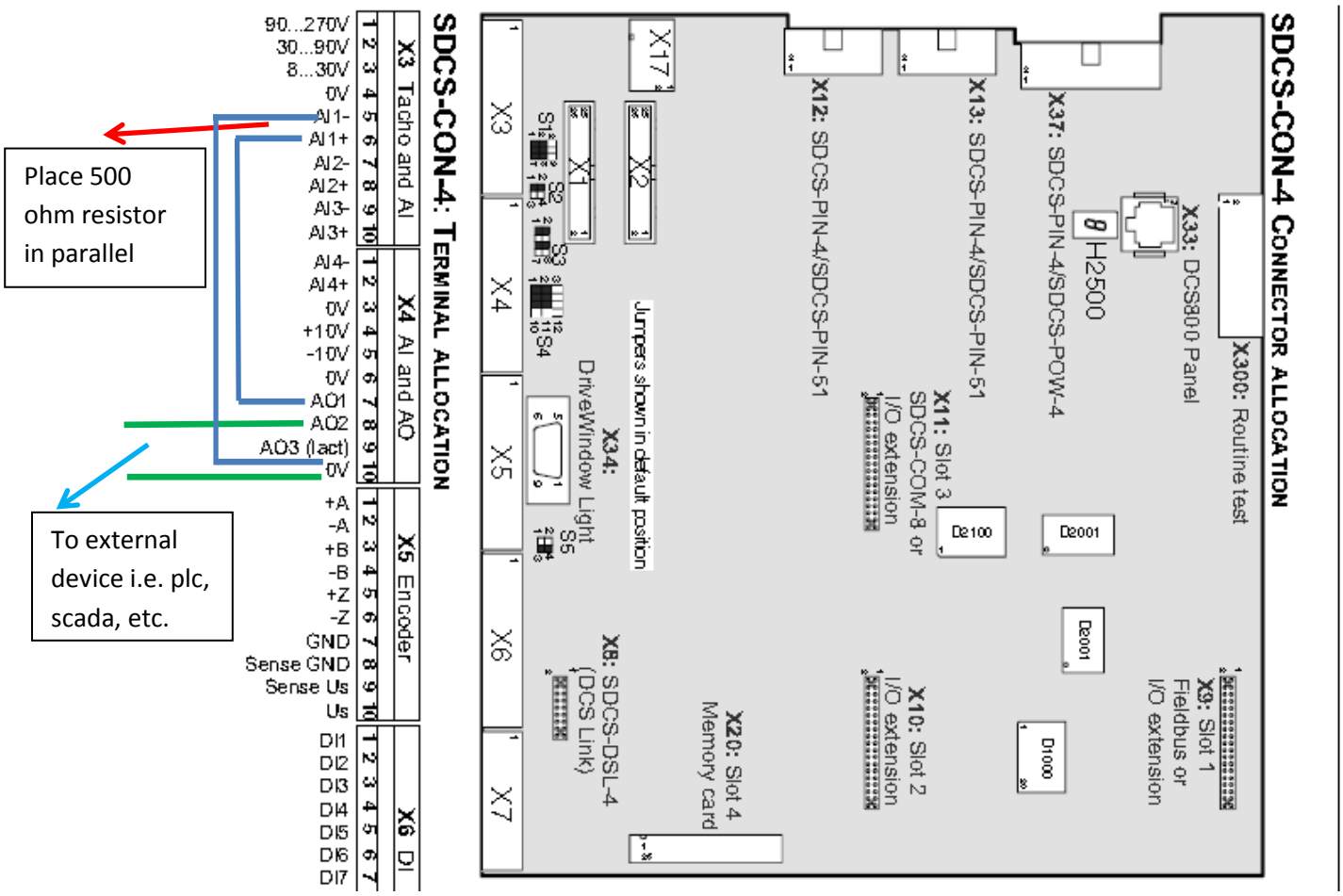
Product Categories: DCS800		



Documents or other reference material:

DCS800 Firmware Manual, document 3ADW000193 R0701 REV G

Corrective Actions:

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