TECHNICAL BULLETIN

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[Title] Adjustment between channels when using A1S66ADA current output function **[Date of Issue]** May, '04
[Relevant Models] A1S66ADA

Thank you for your continued support of Mitsubishi programmable logic controllers, MELSEC-A series.

This bulletin provides cautions when using the A1S66ADA current output function.

1. Caution

When the current output function is used, a difference can occur between channels (A deviance in the offset/gain settings for the channel), which in some cases will result in a difference of up to 5.4% (shown in Table 1). (Overall accuracy can be a maximum of 6.4%.)
Therefore, an offset value can be derived, as shown in section 3, in order to adjust this phenomenon.

Table 1 Overall accuracy (before adjustment)

Item	Difference between channels	Overall accuracy
Current output (Channel 1)	-	±1% (±0.2mA) or less
Current output (Channel 2)	±5.4% (±1.08mA) or less	±6.4% (±1.28mA) or less

Table 2 Overall accuracy (after adjustment)

Item	Difference between channels	Overall accuracy
Current output (Channel 1)	-	±1% (±0.2mA) or less
Current output (Channel 2)	-	±1% (±0.2mA) or less

2. Applicable Modules

This caution **only** applies to modules with the serial no. 0305C or lower, as indicated on the rating plate that is on the side of the module.

3. Adjustment Method

By using the following steps, an offset value can be derived for the final digital value.
Please follow the steps as shown below.
(1) Adjust the reference channel offset and gain settings (Channel 1).
(2) Set 2000 for the reference channel digital input value (Channel 1) and measure the analog output value.
(3) Set 2000 for the deviance offset channel digital input value (Channel 2) and measure the analog output value.
(4) Therefore, the digital input value is altered with the deviance offset value obtained from the equation shown below.
Deviance offset value = - (Deviance offset channel analog output value – Reference channel analog output value) / Maximum resolution

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4. Adjustment Example

The following example assumes the input range is between 0 to 20mA (Maximum resolution: 0.005mA) and has an analog output value of 10mA (reference channel) and 10.25mA (offset channel):

(1) Deviance offset value calculation

Deviance offset value = - (Deviance offset channel analog output value – Reference channel analog output value) / Maximum resolution

= - (10.25 – 10) / 0.005

= - 50

(2) Program example

The following is a program example for counteracting the digital value deviance offset.

(a) System configuration

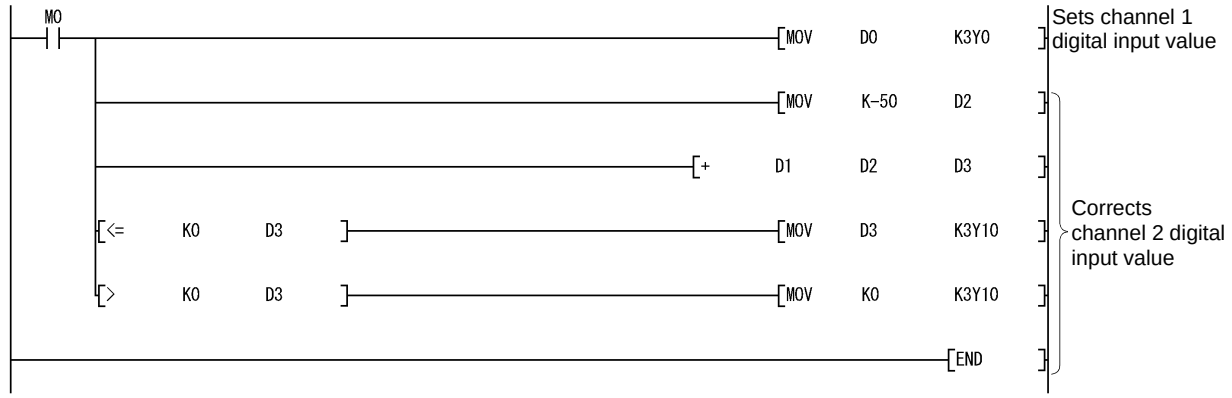
Install the A1S66ADA to “Slot 0” of the main base.

(b) Devices used:

1) Digital input value setting signal.....M0
2) Data register for channel 1 digital input value.....D0
3) Data register for channel 2 digital input value.....D1
4) Data register for channel 2 deviance offset value.....D2
5) Data register for channel 2 corrected deviance offset digital input value setting.....D3

<Before adjustment>

<After adjustment>



The adjustment result is shown in Fig. 1.
In this example, the minimum output current value is 0.25mA.

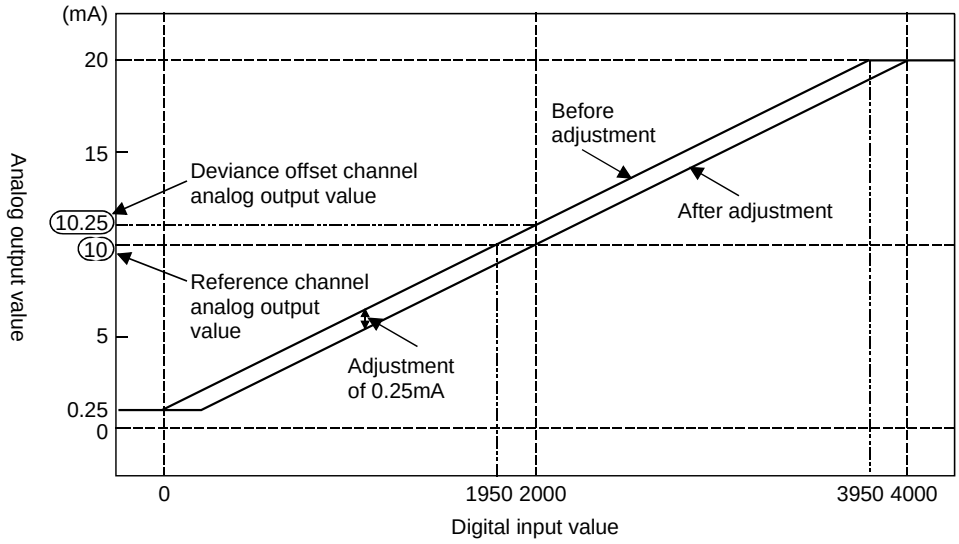


Fig. 1