Operation Manual

ELECTRO-PNEUMATIC POSITIONER
IP8100-0*1-*-X83
IP8100-0*1-*-X84

WITH OUTPUT CURRENT(4～20mADC)

SMC CORPORATION

Wiring and zero point / span adjusting of output current of IP8100 type electro-pneumatic positioner output signal specification (potentiometer built-in)

This product is IP8100 having potentiometer and the P.C.board built in it. It is for ensuring actuator's opening by 4～20mADC of output signal produced by supplying power to it.

Supplying power can be set freely between DC12～35V.

1.Wiring of input signal , power source and ammeter

Connect input signal(for positioner control) to 1(+) and 2(－) of the terminal board.

Connect power source(for detecting output current) to 3(+) and 4(－) of the terminal board.

Connect ammeter in series between (+)side and 3(+) of terminal board or (－)side and 4(－).
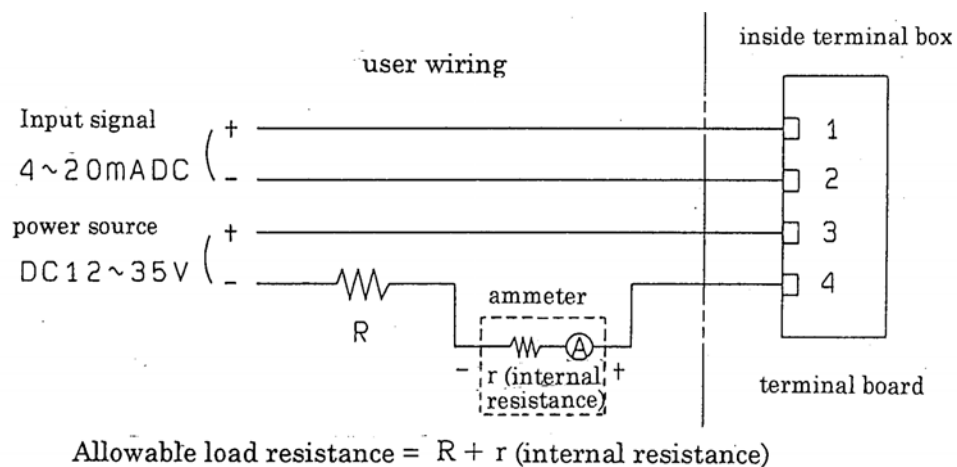
Please refer Fig.1 for wiring.

Allowable load resistance = R + r (internal resistance)

Fig 1 Wiring diagram

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NOTE
 Allowable load resistance in drawing 1 depends on supply voltage
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Allowable load resistance is obtained by the formula below.

Allowable load resistance $\leqq$ (Supply voltage $-$ 12V) $/$ 20mADC $-$（1）

Normal output current is not be obtained if the load resistance value exceed the result of formula(1). Please confirm internal resistance when selecting ammeter.

2.Zero・Span adjusting

This product requires zero・span adjustment of output current according to actuator's opening (rotating angle).

Please follow steps below.

① Set actuator's output opening 0% after adjusting the zero・span.

② Output signal is connected to rise in normal operation(clockwise) when shipped.
To apply the positioner in reverse operation(counter-clockwise), swap terminal
〃A〃and〃C〃 in Fig.2.

③ Loosen potentiometer set screws applying power and ensuring output current, then rotate the potentiometer 10°〜20° away from dead band (see Fig.3) to decide the start point. Settle the potentiometer with the screws again(Refer 〃Cautions〃！)

④ Adjust zero・span with variable resistor.
Adjust zero point and span alternately repeatedly as they act each other. Since this variable resistor can be wound endlessly, do not overwind otherwise internal equipment might be broken. Adjust them ensuring output signal.

Cautions(settling potentiometer)

(1) Output signal dose not go at the dead band of the potentiometer

(2) If set the start point(4mADC) at the border line of resistance portion and the dead band, malfunction might be occurred.

(3) If output current is 0mADC during opening, the potentiometer is possibly used across the border between the resistance and the dead band. Follow③of section 2 ensuring potentiometer rotating direction.

(4) When the positioner is used in reverse action, adjust the potentiometer fixing position to avoid interpretation between cam and lead wire of the potentiometer.
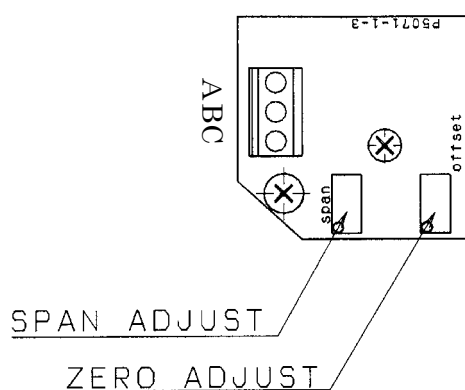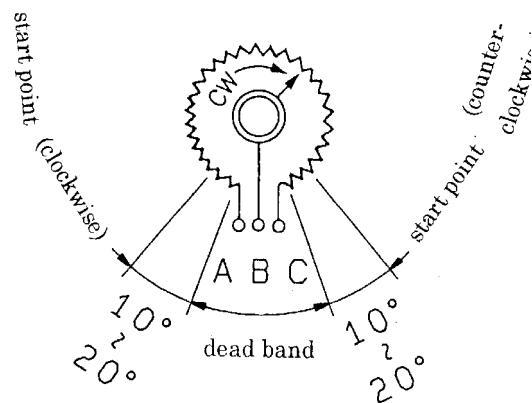

SPAN ADJUST

ZERO ADJUST

Fig2. P.C.board

dead band

A