

OPERATION MANUAL FOR MODEL 217

GENERAL INTRODUCTION

The model 217 is a high performance, industrial grade, loop powered process indicator housed in an environmentproof NEMA-4X plastic case.

The model 217 can be field programmable for 4-20 mA or 10-50 mA operations.

Internal DIP switches in conjunction with the 25 turn ZERO and SPAN controls, decimal point position select, dummy zero select and polarity select, allows the model 217 to be scaled to display in any engineering units.

DISMANTLING THE INSTRUMENT

The instrument must be dismantled to access the internal DIP switches and the input terminals. A hole can be drilled on the plastic case to fit the appropriate connector to the NEMA 4X housing.

1. Unscrew the four screws on the top of the case to remove the transparent case top. The ZERO and SPAN controls are accessible through the facia plate.
2. Unscrew the two screws on the facia plate to remove the facia plate. The two sets of DIP switches will be exposed.
3. Lift up the circuit board assembly to access the input connectors, located on the lower circuit board.

INTERNAL DIP SWITCHES

The DIP SWITCH FORMAT is shown on **TABLE 1**.

SW	1-1 ON	10 ~ 50 mA	SW	2 - 1	1 . X X X DP
	OFF	4 ~ 20 mA		2 - 2	1X . X X DP
	1-2 ZERO	- 2300 ~ -1200		2 - 3	1 X X . X DP
	1-3 ZERO	- 1200 ~ - 200		2 - 4	1X X X 0 DUMMY ZERO
	1-4 ZERO	- 200 ~ + 640		2 - 5	-1X X X MINUS SIGN
	1-5 ZERO	+ 640 ~ +1540		2 - 6	SPAN 10 ~ 38
	1-6 ZERO	+1540 ~ +2400		2 - 7	SPAN 38 ~ 134
	1-7 ZERO	+2400 ~ +3100		2 - 8	SPAN 134 ~ 520
				2 - 9	SPAN 520 ~2000

TABLE

INPUT RANGES FOR MODEL 217

The model 217 can be used with 4-20 mA and 10-50 mA loops. The input range can be selected by SW1-1.

Input Range	SW1-1 Setting
4-20	OFF
10-50	ON

“ DUMMY ZERO”

The model 217 is a 3 ½ digit indicator with a “dummy zero”. The following shows the display with and without “dummy zero” and the SW2-4 setting.

Displayed value	SW2-4 Setting
1XXX	OFF
1XXX0	ON

DECIMAL POINT SELECT

The decimal point can be selected by setting DIP switches SW2-1 to SW2-3 to the ON position.

Decimal point location	DIP switch set to ON
1.999	SW2-1
19.99	SW2-2
199.9	SW2-3

POLARITY

The polarity of the display can be reversed, without changing the absolute value of the display, by DIP switch SW2-5. For absolute polarity SW2-5 is set to the OFF position.

Input polarity	Display	SW2-5 setting
Positive	1XXX	OFF
	-1XXX	ON
Negative	-1XXX	OFF
	1XXX	ON

The “+” sign is not displayed.

ZERO AND SPAN DIP SWITCHES

1. Six DIP switches in conjunction with the ZERO control are used to set the displayed value for an input of 4 mA (10 mA). Set DIP switches SW1-2 to SW1-7 to the desired displayed range for a 4 mA input.
2. Four DIP switches in conjunction with the SPAN control are used to set the displayed value for an input of 20 mA (50 mA). Set DIP switches SW2-6 to SW2-9 to the desired range of the SPAN, corresponding to a 20 mA (50 mA) input.

2.1 SPAN is defined as the absolute value of the maximum displayed value less the minimum displayed value. Decimal point and “dummy zero” are to be ignored.

2.2 Example 1:

Displayed value for 4 mA (10 mA) input is 1.0X.

Displayed value for 20 mA (50 mA) input is 10.0X.

X is the “dummy zero”

The value of the SPAN for the two displayed values is 90.

Example 2:

Displayed value for 4 mA (10 mA) input is –10.0.

Displayed value for the 20 mA (50 mA) input is 100.0.

The value of the SPAN for the two displayed values is 1100.

SETTING UP THE INSTRUMENT

(Refer to DIP SWITCH FORMAT, TABLE 1)

1. Dismantle the instrument.
2. Drill a hole on the instrument housing to fit the appropriate connector for the input leads.
3. Connect the current loop input leads and set the internal DIP switches to the desired positions.
4. Replace the circuit board assembly and the facia plate.
5. Input a stable 4 mA (10 mA) current source.
6. Adjust the ZERO control for the desired display value.
7. Input a stable 20 mA (50 mA) current source.
8. Adjust the SPAN control for the desired displayed value.
9. Repeat 5 through 8 until both desired values are obtained. Check the value of the input current source and the DIP switch settings, if the desired readings cannot be obtained.
10. Replace the transparent cover.

