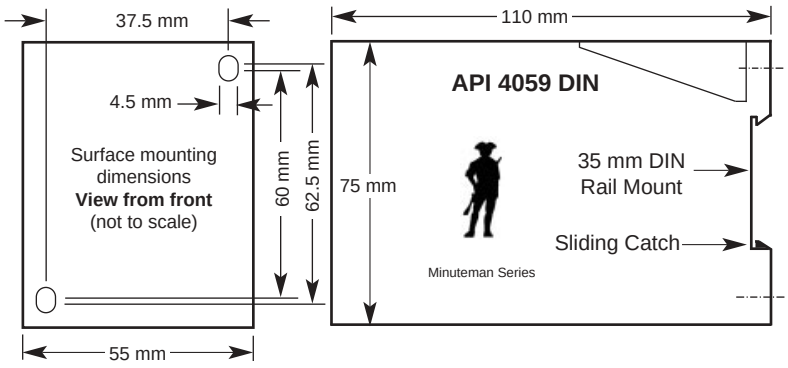
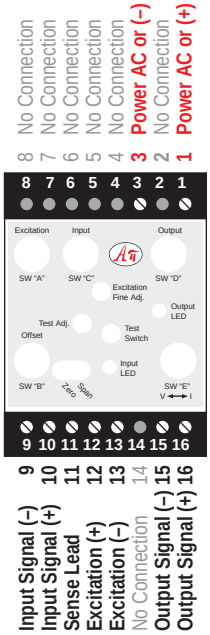
API 4059 DIN Range Selection

ABSOLUTE PROCESS INSTRUMENTS, Inc.





Quick Setup

1. Set switch **A** for desired excitation voltage.
2. Set switches **B, C, D** for desired input & output ranges per table.
3. Set switch **E** for voltage (V) or current (I) output as required.
4. Set Zero and Span controls.
5. Set output test level by holding Test Switch and adjusting Test Adj. potentiometer.

INPUT RANGES

OUTPUT RANGES	0-5 mV	0-10 mV	0-20 mV	0-25 mV	0-30 mV	0-40 mV	0-50 mV	0-100 mV	0-200 mV	0-250 mV	0-300 mV	0-400 mV	±10 mV	±20 mV
Switches➤	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD
0-1 V	020	0A0	030	060	0E0	0B0	000	080	010	040	0C0	090	330	3B0
0-2 V	028	0A8	038	068	0E8	0B8	008	088	018	048	0C8	098	338	3B8
0-4 V	021	0A1	031	061	0E1	0B1	001	081	011	041	0C1	091	331	3B1
1-5 V	026	0A6	036	066	0E6	0B6	006	086	016	046	0C6	096	336	3B6
0-5 V	029	0A9	039	069	0E9	0B9	009	089	019	049	0C9	099	339	3B9
0-8 V	022	0A2	032	062	0E2	0B2	002	082	012	042	0C2	092	332	3B2
2-10 V	027	0A7	037	067	0E7	0B7	007	087	017	047	0C7	097	337	3B7
0-10 V	023	0A3	033	063	0E3	0B3	003	083	013	043	0C3	093	333	3B3
±5 V	024	0A4	034	064	0E4	0B4	004	084	014	044	0C4	094	334	3B4
±10 V	025	0A5	035	065	0E5	0B5	005	085	015	045	0C5	095	335	3B5
0-2 mA	070	0A0	030	060	0E0	0B0	000	080	010	040	0C0	090	330	3B0
2-10 mA	026	0A6	036	066	0E6	0B6	006	086	016	046	0C6	096	336	3B6
0-10 mA	029	0A9	039	069	0E9	0B9	009	089	019	049	0C9	099	339	3B9
0-16 mA	022	0A2	032	062	0E2	0B2	002	082	012	042	0C2	092	332	3B2
4-20 mA	027	0A7	037	067	0E7	0B7	007	087	017	047	0C7	097	337	3B7
0-20 mA	023	0A3	033	063	0E3	0B3	003	083	013	043	0C3	093	333	3B3

API 4059 DIN Setup and Calibration

1. First examine your transducer to determine what excitation voltage to use and select that voltage using switch A. The excitation fine adjust may be used to precisely trim this voltage, if desired.

2. For a five- or six-lead bridge with a "sense" lead, you will want to use this lead to allow the Api 4059 DIN to compensate for leadwire resistance effects. For four-wire bridges, it is best to connect the sense terminal on the 4059 DIN to the (+) excitation terminal. It is not necessary to do this, but the final trim adjustment should be done after all bridge connections are made.

3. Determine how much full-scale output in millivolts the load cell will produce at full load.

4. Look in the setup table on the side of the unit for the setup code for your desired input/output ranges and set switches B, C, and D according to the table.

5. Switch E must be set to select voltage or current output, as required.

6. After all switches are set, the Zero and Span controls must be set to precisely adjust the module output. This can be done easily with a suitable calibration device or simulator, if one is available, or in actual use with dummy loads or weights.

7. Finally the Test Cal control should be set with the Test button pressed to obtain the desired Test level.

Using Offset Switch B

The Api 4059 DIN offset switch B allows cancelling or taring of non-zero deadweights or other sensor offsets. Often the desired zero, or low end, of the transmitter output may not coincide with zero output from the sensor. For example, a user may want a 0 to 10 VDC output from the transmitter when a 10 to 100 lb load is placed on the platform. In this case, the 10 lb deadweight results in a non-zero output from the sensor when azero output is required.

Certain low-output sensors (e.g., less than 1 mV/V) may have zero offsets large enough that the Zero control may not produce the desired zero output. The switch B setting may be changed from the table values to realign the zero output by following steps 8 -10.

8. Switch B is the only switch needed to correct zero offsets. The other switches are set up per steps 1-7. Switch B does not interact with any other switch. Its only purpose is to adjust or cancel effects of the low end of the input range not corresponding nominally to 0 mV. Setting this switch to "0" results in no offset.

9. To RAISE the output zero, rotate switch B clockwise from "1" thru "7", until the Zero control can be set for your application. This elevation of the output is useful for bipolar input ranges such as ±10 mV.

10. To LOWER the output zero, rotate switch B clockwise from "9" thru "F", until the Zero control can be set for your application. This suppression of the output is useful for elevated input ranges such as 10-20 mV.