BOLEC

SENDER/GAUGE CORRECTOR MODULE

P/no. SC303 - 12/24VDC

GENERAL

The SC303 has been designed to correct the problem that occurs when an original vehicle sender is not available to match a particular gauge and vice versa. Another example is where the level sender in an LPG tank can be used to accurately drive the original (petrol) fuel gauge in a vehicle. Or the unit could be automatically switched to read between petrol & gas.

It can also 'copy' the signal from an existing gauge/sender combination so that the fuel level may also be observed at a different location. In this case, one sender can be used to drive three or four matching gauges.

Because the unit is effectively a 'resistance converter' it can also be used on temperature or pressure gauges to correct where the original sender is no longer available for a gauge.

A further advantage is the 8 point conversion curve built in to the unit. This allows it to be used where the resistance graph is a curve, as in large and irregular shaped fuel tanks on trucks and off-road vehicles.

Setting up is extremely simple and can be done on site with almost all applications. Alternately the modules can be pre-programmed if necessary to fit a particular application.

SETTING PROCEDURE

1: Set Pull-up Resistor

The pull-up resistor is located at the top right corner of the board and can be switched in to the input circuit by moving the link marked 'PULLUP' from OFF to ON. The unit is supplied with the pull-up resistor out of circuit for normal applications. ie: one gauge & sender combination driving a second gauge.

If using a sender without a gauge on the input, (eg: on 4WD vehicles when replacing an original fuel tank with a long range tank) then you will need to have a pull-up resistance connected to the input. To do this on the board, move the pull-up link from OFF to ON.

2: Set Resistance Curve Segments

There is a green LED at the top left of the board. This will be on when power is supplied to +ve.
There is a push button above the 7 segment display labelled PROG.
There is a push button at the middle bottom of the board marked SET.

1. Turn trim pot fully C.C.W. (This is a 25 turn potentiometer, so make sure it is all the way cc/w)
2. Set up the origin of operating range (eg: Empty position on a fuel gauge)
   Press PROG … a P will scroll ON and '0' will appear to set the origin or zero starting point.
3. To trigger the setting process, turn the trim pot a little and the '0' will blink to indicate that you are ready to set the origin value.
   Note: if this is not performed under 25 seconds, the unit will exit Programming mode and any changes made are not kept.
4. Set the Input resistance/voltage to the desired point, and then adjust the trim pot to get the desired output.
5. When the origin setting is OK press the SET button and a '1' will appear, indicating it is waiting for the next set point.
6. Continue with this process until all desired points are set.
   Note: there are a maximum of 8 points that can be set, but if you only use 2 or 3 three, the unit will calculate its curve based on these only.
7. When your last reference point is set, push PROG to save the values to permanent memory, and exit programming mode. An 'F' will display to indicate the Programming is finished

3: Resistance Curve Graph
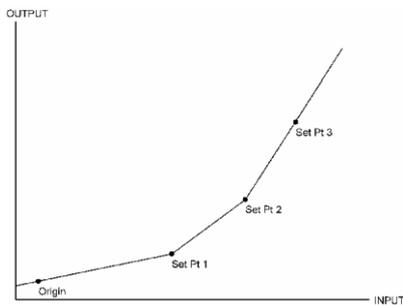
If an origin and 3 points had been programmed then between these points the output would follow the profile and the centre LED will flash about once per second. If the input goes past either the Origin or, in this case, Set Pt 3, the unit will extrapolate a linear output using the last gradient calculated and a 'o' ('o'ut of range) will appear in the display.

4: Set Slosh Delay

Press the SET button, SLOSH will spell out then it will display the current Slosh value. After about 25 seconds these will timeout, the unit will retain its previous Slosh value and then continue normal operation.
If you want to change the Slosh value, turn the trimpot and the trimpot value will then be displayed. Turn the pot C.W. or C.C.W. to change the value. The resulting change can be observed on the output gauge. When the desired Slosh value has been adjusted, press the PROG push button to save it. Then 'F' followed by 'S' ('F'inish 'S'losh) will appear to indicate the new value has been saved and then the saved value is then displayed.. If you want to retain the previous value at this point, press the SET button again to retain the previous value. The unit will then continue normal operation. Alternately the Slosh set routine will terminate after about 25Sec and retain the previously set value before continuing normal operation.

5: Diagnostics

1. If the input/sender becomes detached and goes to either 0V or V+ an 'E' will be displayed to indicate an error condition
2. To exit programming mode without saving any changes made, turn power off for 3 seconds or let the unit time out of programming mode (ie: wait for 25 seconds)
3. When the module is running the centre bar on the display will flash approximately once a second. This indicates that the unit is running normally and is within the range of the origin and the last set point
4. If the unit is running normally, but the range is above the last set point or below the origin (1st set point) then the display will read '0'.

NOTES

This unit can only be used with resistive senders. Not capacitive senders as used on XD, XE Falcons
This unit will not work if supply to it fails or the gauge or sender fails.

CONNECTIONS

Red   -Ignition +Ve
Black   -Ground
White   -Input Resistance/Gauge
Blue   -Output Gauge
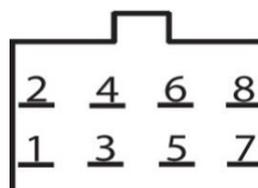
1 Input Resistance / Gauge
2 Output Gauge
3 Ignition +Ve
4 GND
7 Voltage out (0.5A Max)
5,6,8 No Connection

SPECIFICATIONS

Dimensions: 76L x 101W x 29H (mm).
Mounting: 85mm apart, 5.5mm clearance.
Voltage: 12/24vdc negative ground, 30mA typical quiescent current draw.
Input: Resistive only. 0-12VDC or 0-24VDC (220ohm pull up resistor included)
Output: Resistive only. 0-12VDC or 0-24VDC (Pull up resistor not required)