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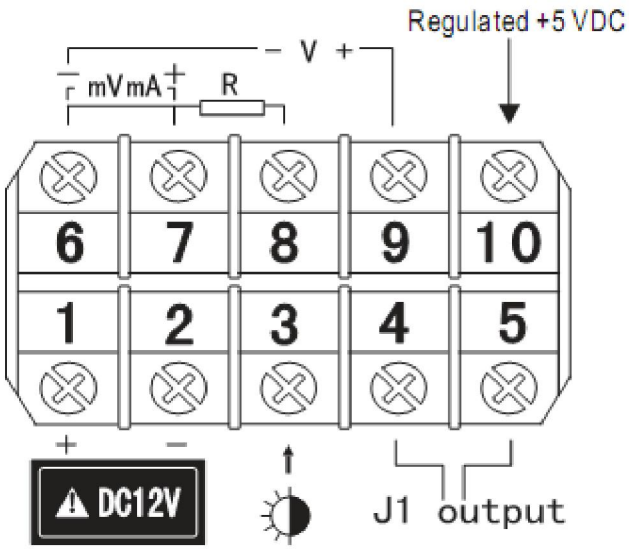
SCINTEX 20 QUICK GUIDE & TROUBLE SHOOTING MANUAL

Pressure Applications

IMPORTANT:

1) Ensure you wire the positive (+) and negative (-) power connections as per the diagram as reverse polarity will cause damage to the controller.
2) Avoid overheating the gauge. Do not leave the gauge exposed to the sun, particularly in an enclosed vehicle.

This meter is capable of displaying a variety of pressures (Boost, Fuel, Oil, Water, Air Pressure) with high pressure relay activation to warn users of excessive or low pressure. To operated it, connect 12 VDC to terminal 1 (+) and 2 (-). Connect the pressure sensor as shown below.



Connecting the Pressure Probe to the gauge:

RED Wire - Terminal 10 - Power
WHITE or GREEN - Terminal 9 - Signal
YELLOW or BLACK - Terminal 6 - Ground

Adjusting Gauge Settings:

a) Press 'SET', display will flash “0000”
b) Enter code 0089 and press 'SET'
c) Using the 'up' and 'down' arrows and the 'SET' button ensure the following is programmed.

Symbol	Description	Setting
Inty	Input Type	5V (For pressure applications)
Outy	Control Output Type	0
Atdu	Autotuning SV Bias	0
Psb	PV Bias	0
Rd	Control Action Type	1
CorF	Temperature units	0 for ^{o}C
END	Exit	

Changing Set Points:

a) Enter code 0001 to set the alarms
b) Using the 'up' and 'down' arrows and the 'SET' button ensure the following is programmed

Symbol	Description	Setting
Sv	Set Value	800 (this value is disabled and has no meaning)
AH1	Relay J1 pull-in value	Pressure setting HIGH
AL1	Relay J1 drop-out value	Pressure setting LOW

Programming the gauge for your pressure sensor type:

Pressure Probe - 0 to 250 PSI

PuL -31.2
PuH 281.2
DOT 000.0

For Boost application consider:

PuL -031

PuH 0281
DOT 0000

If the display shows 1psi while on the bench adjust the settings as follows;

PuL -032
PuH 0280

If the display shows -1psi while on the bench adjust the settings as follows;

PuL -030
PuH 0282

Voltage = Slope x Pressure + b

where b = voltage at atmospheric pressure (between terminals 6 & 9)

eg. Voltage = 0.0667P+0.5

Pressure Probe -10 to 50PSI

PuL -17.2
PuH 57.7
DOT 000.0

Installation & Programming Guide

1) To display the pressure unit in PSI (1psi resolution), enter the Basic Parameter setting mode with code 0089, a) Set input type, Inty, to 5v for 0-5 V input. b) Set the decimal point, dot= 0000. c) Set the PuL = -018 PuH = 0163.

2) To display the pressure unit in Bar (0.1 bar resolution), enter the Basic Parameter setting mode with code 0089, a) Set input type, Inty, to 5v for 0-5 V input. b) Set the decimal point, dot= 000.0. c) Set the PuL= -01.2. PuH=011.3.

3) To set the alarm on at 6.5 Bar and off at 6.4 Bar, Enter code 0001 to set AH1=6.5 and AL1=6.4. The detail can be found in section C 2 of the instruction manual.

4) Zero Adjustment. If the pressure does not show 0.0 bar or 0 psi when no pressure is applied, you can adjust the display to zero by shifting the value of PuL and PuH for the same amount. e. g. if the display shows 2 psi when no pressure is applied to the sensor, you can minus 2 from PuL and PuH. Set PuL to -020 (-18-2=-20), and PuH 0161 (163-2=161). Please note that the overall accuracy of the sensor is 1.5% of full scale. It is normal to see the zero point to fluctuate slightly.

Discussion

1) The peak holding function is set for displaying the Maximum pressure only. To display the peak pressure from the last run, or display the pressure in the peak holding mode continuously, press the “>” key once. The MAX (MIN) LED will be on, indicating the display is in the peak mode. Press “>” again to change back to display the current reading.

Press and hold “Λ” for 3 second will reset the memory. Three additional peak parameters are turned off. They are, the time that the maximum pressure was recorded, the minimum pressure and its recording time. If you want see them, use code 0037 to turn on these functions. The detail can be found in section C3 of the instruction manual.

If you want the meter to display a pressure unit that is not Bar or PSI, or if you have a pressure sensor (sender, transducer or transmitter) that has different output specification, you need to find the value of PuL and PuH. Appendix 1 shows how the Scintex20 sensor parameter is determined.

C. Appendix 1

Example, how to determine the set up parameters for the Scintex transducer.
For a pressure sensor that is powered by 5 V DC, the linear range of the output signal will be above 0V and less than 5 V due to the nature of mechanics and electronics. Published data. 0 bar = 0.5V, 10 bar =4.5 V. What this data tells us is that the sensor has a linear output between 0.5 and 4.5 V when the input signal is between 0 and 10 Bar, In other words, within this range, the relationship between pressure and output voltage can be represented by
$V = a \times P + b$ (1)

Where P is the pressure, V is the voltage. a, is the slop, b is the intersection at zero pressure, Because the meter is set for 0-5V linear input, we need to find out what is the pressure when we extend the equation (1) from 0.5-4.5V to the 0 and 5 V.

Calculating slop a and intersection b
a= (4.5-0.5)/(10-0) = 0.4
b = 0.5
So, V = 0.4P +0.5, or P = (V -0.5)/0.4

Therefore, at 0 V, P = -1.25; at 5 V, P = 11.25.

To display pressure in Bar,

Set dot to 000.0, PuL=-1.2, PuH=11.3

To display the pressure with PSI units instead of Bar, multiply the number by 14.5 (1bar=14.503PSI)

Set dot to 0000, PuL=-18, PuH=163.

Trouble Shooting Your Scintex 20

Scintex offers a 1 Yr warranty on digital gauges and sensors. If you believe your goods are faulty please contact Scintex via email for further instructions. Faulty goods can be repaired / replaced as necessary. If goods are found not to be faulty a technician's fee may apply. If you feel confident please attempt the trouble shooting steps below before contacting us.

1) Display is reading EEEE

a) *The controller displays EEEE when there is an issue with the input sensor. Please check the controller input type is set as per the instructions above. Controllers are sent pre-programmed.*

b) *You can test if your sensor is faulty by bridging terminals 6 & 7 on the controller with a short piece of wire. The controller should no longer display EEEE and instead display ambient temperature/pressure when energised.*

2) Temperature displays erratically jumping from positive to negative for no reason

a) *This can be caused if the sensor internals become earthed to your vehicle. Try removing the sensor from the fitting so it isn't contacting the vehicles earth. If you have a multimeter you can test for continuity between the sensor leads and the outer stainless steel casing at the sensor tip.*

b) *A faulty controller may be responsible for this fault.*

3) The gauge cuts out after a short period of time

a) *This is due to overheating or when the gauge has been overheated. Try ventilating the gauge. Avoid prolonged sun exposure to the gauge, particularly if the gauge is housed in an enclosure.*

4) The Pressure reading appears to be incorrect

a) *The sensor is calibrated to read accurately in the pressure range listed on the pressure sensor. Please adjust the PuL and PuH readings as per the instructions above if you have inaccurate readings at atmospheric pressure.*