# Injectronics

Remanufactured Automotive Electronics Components

#### **TECHNICAL BULLETIN**

**Document number: T0054** 

For further technical information regarding testing, repairs or to search for New or Remanufactured

Automotive electronic products, please visit <a href="www.injectronics.com.au">www.injectronics.com.au</a>, call our office on (+613) 8792 6999,

or email <a href="mailto:sales@injectronics.com.au">sales@injectronics.com.au</a>

Make: Various

Model: Various

Subject: Air flow meter pin outs

Injectronics receives many calls on how to test air flow meters. Usually these items are trouble free and don't 'go' out of calibration unless the top has been removed and someone has adjusted the spring tension.

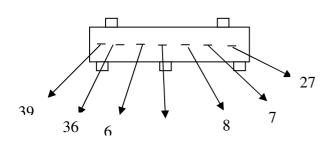
Some common problems are:

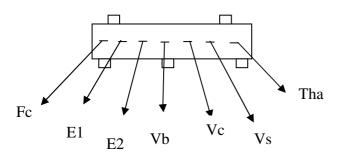
- 1. No output voltage
- 2. Intermittent output voltage -(worn circuit board)
- 3. Flat spots from binding flap or bearing
- 4. Calibration problems (Tampered with)

Injectronics can test and recalibrate Air flow meters using our computer operated Air flow test bench, however some quick basic tests that can be performed are:

- a. Check for binding flap throughout the full range
- b. Check there is an output voltage and that it increases at a steady rate as the flap is moved open (note: some systems decrease voltage as the flap opens). On some Bosch LE systems the tachometric relay will need to be bridged out to supply power to the Air flow meter
- c. If there is no output voltage, check the supply and earth's to the Air flow meter.

Some plug and wiring configurations are shown below





#### Early Bosch 7 pin

39,36 pump contacts

6 earth

9 supply in

8 reference voltage – approx 4v lower than supply

6 load/output signal

27 air temp sensor

#### Nippon denso (Toyota/Mazda)

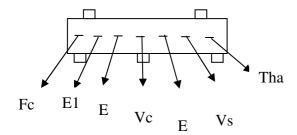
Fc,E1 pump contacts
E1,E2 earth
Vc reference voltage – approx 4v than supply
Vb supply voltage
Vs load/output signal
Tha air temp sensor

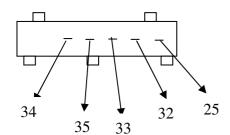
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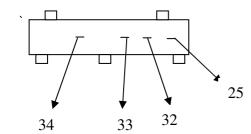
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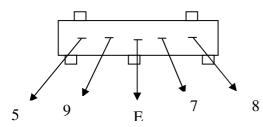
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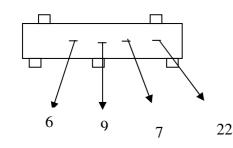
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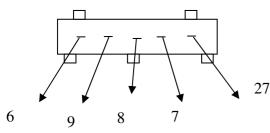












**Nippon denso 2 (Toyota/Mazda)** note: some start with a high voltage and go lower

Fc,E1 pump contacts
E earth
Vc reference voltage
Vb supply voltage
Vs load/output signal
Tha air temp sensor

#### Jecs 1 (Nissan/Subaru)

34 earth

35 12v supply

33 reference voltage –approx 4v lower than supply

32 loaed output signal

25 temp

## Jecs 2 (Nissan – N12 Turbo, some 280zx)

25 air temp

32 load/output signal

33 earth

34 8v power supply

#### Bosch LE 5 pin

5 earth

9 supply

E not used

7 load/output signal

8 reference voltage (approx 4v lower than supply)

#### Bosch digital (also xf ford)

6 earth

9 supply in 5 v

7 load/output signal

22 air temp sensor

### **Bosch (Pintara)**

6 earth

9 supply in

8 reference voltage

7 load/output signal

27air temp sensor

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