TITLE

1981 BMW 528I L-JETRONIC DIAGRAM
Megasquirt Conversion

Copyright Firstfives.org
2002-2003

DRAWN BY	DATE	REVISED
PETER FLORANCE	3/11/2003	03/18/2003

REV.	DESCRIPTION	DATE	BY
1	corrected coolant temp sensor pin	03/18/03	PF

Battery Buss
Battery Connection
Starter
Solenoid connection
Ignition Switch ('run' portion)
Ignition Switch (start portion)
50 Start
Off
Start-run Buss
1.5 gn
Battery
Fuse 1 Fuel pump
2.5 bk
2.5 gn/yl
4 rd
Engine Connector
Engine Connector is located on the side of the fuse box facing the engine.
2 Engine Connector
1 Engine Connector
1.5 bk/yl
1.5 gn/yl
1.5 bk/yl
88y
86a
86c
88z
Diode
Fuel Pump Relay A
Relay B
88d
88c
86
85
86b
88a
88b
88e
1.5 gn/vi
wt
8 Engine Connector
S1
1.5 gn/vi
C47 Pin 8 (under driver's kick panel)
1.5 gn/vi
C65 (under rear seat)
1.5 gn/vi
Cold Start Valve
wt
wt
wt
In-tank fuel pump
Main fuel pump
1.5 bn
1.5 bn
W
G
T
Thermo-Time Switch
Element on G heats up and combined with engine heat opens switch on terminal W, shutting off cold start valve
36
1/2 of AFM Connector
39
2.5 wt
S311
S310
Injector #1
Injector #2
Injector #3
Injector #4
Injector #5
Injector #6
1.5 wt
wt
15
33
32
14
30
31
32
33
34
35
Injector +12V
29
+12V
28
Switched +12V
10
Fuel pump on
20
fuel pump
37
Combo relay ground
28
(Aux air valve and wire not present on 1979 528i)
Aux Air Valve
aux air valve gnd
34
wt
4
16
17
35
G99
(on intake plenum support bracket forward of throttle)
Ljet ECU Conector

Megasquirt PCB
(modified for +12V fuel pump output on pin 37)

Oxygen Sensor Connector
grn
23
24
O2
Tach and (-) lead of ignition coil (connection in glovebox
blk
1
Tach
24
5
23
3
22
0V
TPS
2
0 volts
18
Throttle position
Open Throttle
TPS
3
Vref (+5V)
26
Vref
12
9
high altitude
9
8
AFM Ref voltage
8
7
AFM Wiper
7
1/2 of AFM Connector
1
6
wt
6
20
air temp
27
wt
27
Air Temperature Sensor (NTC)
Air sensor spliced onto AFM connector wires
21
coolant
13
2
wt
white connector
T
5
wt
wt
G99?
Coolant Temperature Sensor (NTC)

Both air and coolant temp sensors (NTC type) have following values:
@70F - 1950 to 3000 ohms
@100F - 950 to 1600 ohms
@160F - 250 to 550 ohms

Fuel pump operation:

Power is supplied to relay pin 88y through fuse 1 and pin 2 of engine connector (green w/violet wire).

Starting:
Power from starter solenoid signal is applied to 86a which engergizes relay coil A (fuel pump relay) through the diode which is a one-way device. This prevents the current from flowing from 86b to 86a.

Running:
When the Megasquirt is ready to power the pump, voltage is applied to pin 86b from MS pin 20 and ecu connector pin 37 (should have power) and through the coil 'A' and out 85 (should have ground) to the ecu which is actually grounded inside. The diode blocks current from MegaSquirt on 86b from flowing to 86a and engaging the starter while the car is running

Starting or running:
When the coil A is energized by the MS ECU or starter solenoid signal, the switch between 88y and 88d (and 88c) is closed and power should appear on 88d and 88c. The wire on 88d runs through engine connector pin 8, through the fuse box and to a connector under the rear seat. From there it runs to fuel pump and in-tank fuel pump.