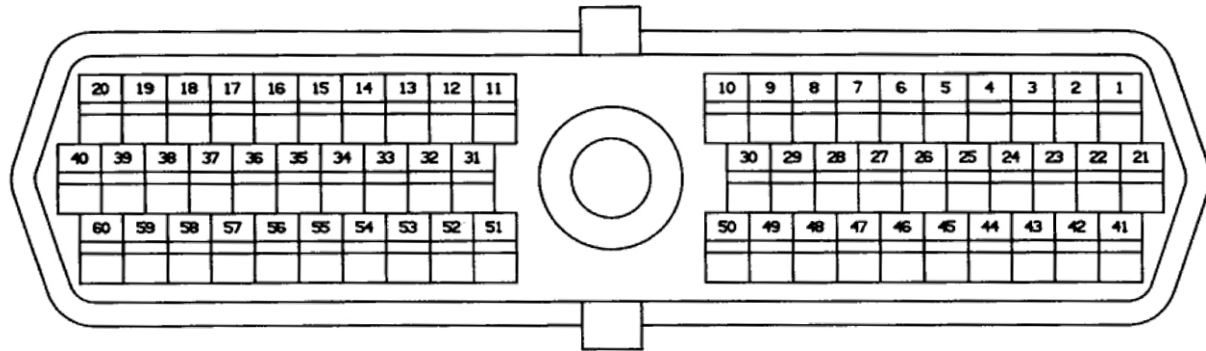# FTC1-019D Fuel/Timing Calibrator for Jeep 2.5 and 4.0

Use and Installation Instructions for models from 1991 through 1995
This is the wire side view of the PCM connector:

Wire colors below are for the 1991 Wrangler. See the table on the following page for the specific wire colors used on all models from 1992 through 1995.

1) Use with R4 software
2) Select Vac/Pressure and Programmable Signal Calibrator under system settings.
     Refer to the FTC1 data sheet for more information.
3) Select one cylinder and 4 stroke under Options and Engine settings
4) Program the fuel in Map table A
5) A cell value of 10 is neutral. Reduce the cell value to lean the mixture. Increase the
     cell value to make the mixture richer.
6) The highest cell value is 20.
7) Cell values can have one decimal place. For example 10.1. There are a total of 200
     levels available for cell value
8) Program timing retard in Map table B
9) The cell values can range from 0 to 20. A value of 20 will result in 20 degrees of retard.
10) Cell values can have one decimal place. For example 10.1. There are a total of 200
     levels available for cell value
11) Disconnect the battery before making connections to the factory wiring harness.
12) Use solder and heat shrink for the best electrical connections
13) Wire colors in bold refer to wires on the FTC1
14) Connect the **RED** wire (B+) to the yellow wire on pin 9
15) Connect the **BLACK** wire (B-) to the brown/red wire on pin 4
16) Cut the red/white MAP sensor wire leading from the stock MAP sensor to the ECU on
     pin 1
17) Connect the **VIOLET** wire to the red/white MAP sensor wire leading to the ECU on pin
     1. The output of the stock map sensor is left disconnected.
18) Cut the red/green crank sensor wire leading to pin 24
19) Connect the **GRAY** wire to the wire leading to the crank sensor
20) Connect the **GRAY/BLACK** wire to the wire leading to the ECU crank sensor input
21) Cut the grey/black sync sensor wire leading to pin 44
22) Connect the **TAN** wire to the wire leading to the cam sensor
23) Connect the **TAN/YELLOW** and the **YELLOW/BLACK** wire to the wire leading to the
     ECU cam sensor input
24) Cut the grey O2 sensor wire leading to pin 41
25) Connect the **PINK** wire to the wire leading to the O2 sensor

26) Connect the **PINK/BLUE** wire to the wire leading to the ECU O2 sensor input
27) The **WHITE** and **WHITE/GREEN** wire can be left disconnected
28) If you would like to control an external load with the R4 software connect the **ORANGE** wire as follows
29) Connect the **ORANGE** relay driver wire to the negative side of the relay coil
30) Connect the coil positive to a fused B+ circuit
31) Switch the load through the relay contacts
32) Set up the turn-on threshold for the relay under options, output settings and output B
33) The threshold can be set according to any combination of RPM and pressure
34) Connect the vacuum line to the intake manifold
35) Reconnect the battery

Wire colors by function for 1991 through 1995 Wrangler

Function	Pin#	1991	1992	1993	1994	1995
IGN	9	YL	WT/YL	DB/WT	DB/WT	DB/WT
Ground	4	BR/RD	BR/RD	BK/LB	BK/LB	BK/LB
Map	1	RD/WT	RD/WT	DG/RD	DG/RD	DG/RD
Crank	24	RD/GN	RD/GN	GY/BK	GY/BK	GY/BK
Sync	44	GY/BK	GY/BK	TN/YL	TN/YL	TN/YL
O2 B1	41	GY	GY	BK/DG	BK/DG	BK/DG

Wire colors by function for 1991 through 1995 Cherokee

Function	Pin#	1991	1992	1993	1994	1995
IGN	9	DB	DB	DB	DB	DB
Ground	4	BK/LB	BK/LB	BK/LB	BK/LB	BK/LB
Map	1	DG/RD	DG/RD	DG/RD	DG/RD	DG/RD
Crank	24	GY/BK	GY/BK	GY/BK	GY/BK	GY/BK
Sync	44	TN/YL	TN/YL	TN/YL	TN/YL	TN/YL
O2 B1	41	BK/DG	BK/DG	BK/DG	BK/DG	BK/DG

Wire colors by function for 1991 through 1995 Comanche and Grand Cherokee

		Comanche		Grand Cherokee		
Function	Pin#	1991	1992	1993	1994	1995
IGN	9	DB	DB	LB/RD	LB/RD	LB/RD
Ground	4	BK/LB	BK/LB	BK/LB	BK/LB	BK/LB
Map	1	DG/RD	DG/RD	RD/WT	RD/WT	RD/WT
Crank	24	GY/BK	GY/BK	RD/LG	RD/LG	RD/LG
Sync	44	TN/YL	TN/YL	GY/BK	GY/BK	GY/BK
O2 B1	41	BK/DG	BK/DG	BK/OR	BK/OR	BK/OR

Color Code

Abbreviation	Color	Abbreviation	Color
BL	Blue	OR	Orange
BK	Black	PK	Pink
BR	Brown	RD	Red
DB	Dark Blue	TN	Tan
DG	Dark Green	VT	Violet
GY	Grey	WT	White
LB	Light Blue	YL	Yellow
LG	Light Green		