

# Powertrain Control Solutions, LLC.

11139 Air Park Rd. Suite 2 Ashland, VA 23005  
 www.ptcs.us Phone: (804) 752-6025 Fax: (804) 752-3516

DRAWN BY: J.Ballenger DATE: 10/25/2004 PAGE: 1 OF 2

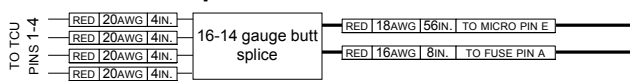
## TITLE: 4L60E/4L70E/4L80E HARNESS

PART NUMBER: TCM-4100

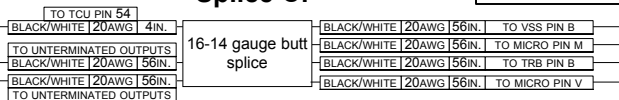
DESCRIPTION: 1993-CURRENT 4L60E/4L70E/4L80E HARNESS

REV.	DESCRIPTION	DATE	BY
0	4L60E ONLY HARNESS	7/14/2003	JB
1	4L80E FUNCTION ADDED	5/07/2004	JB
2	ADDED FEATURES/NEW FORMAT	10/25/2004	JB
3	ADD PWM 4.5 & INCREASE POWER/GROUND	1/3/2006	JT
4	ADD TURB HI & LOW TO GM CONN	3/17/2006	JT

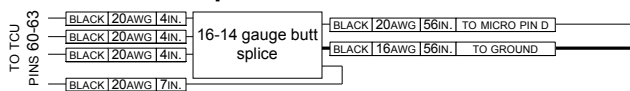
### Splice A:



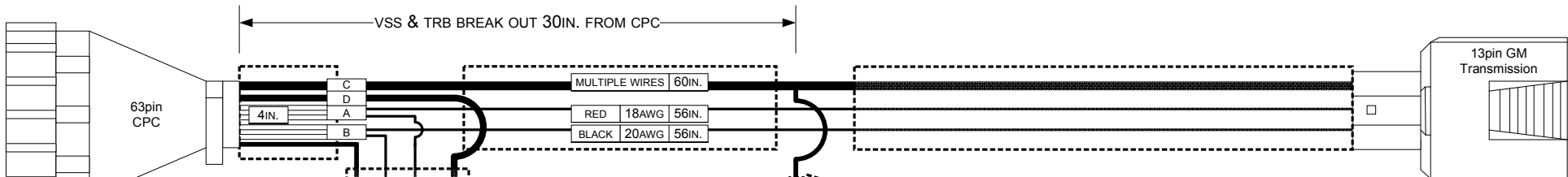
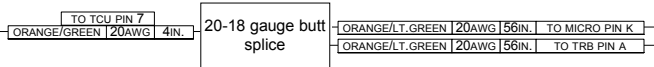
### Splice C:



### Splice B:

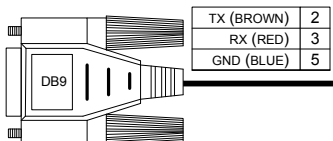


### Splice D:



Part Numbers:

CONNECTOR ASSEMBLY:	CON-0031/205842-1
BACKSHELL:	CON-0005/206138-1
TERMINAL:	CON-0046/5-66504-9
SEAL:	CON-0043



Part Numbers:

CONNECTOR ASSEMBLY:	WRE-2001
---------------------	----------

Part Numbers:

CONNECTOR ASSEMBLY:	CON-2200/15300027
FUSE CAP:	CON-2201/ES10CAP
TERMINAL (18-16GAUGE)	CON-1016/12048159
TERMINAL (14-12GAUGE)	CON-1017/12129497
CABLE SEAL (20-16GAUGE)	CON-1004/12089679
CABLE SEAL (18-14GAUGE)	CON-1001/12015323
CABLE SEAL (16-12GAUGE)	CON-1002/12010293

Untermated Wires		
2-SENSOR GND	BLACK/WHITE	54
RPM	ORANGE/BLACK	5
SPEEDOMETER DRIVE	ORANGE/WHITE	9
TPS	YELLOW/BLACK	46
MAP	YELLOW/RED	47
CLT	YELLOW/LT.GREEN	48
SPARE ANALOG 1	YELLOW/LT.BLUE	49
BRAKE LIGHT	GRAY/LT.BLUE	16
SPARE DIGITAL 1	GRAY/WHITE	17
SPARE DIGITAL 2	GRAY/ORANGE	18
SPARE DIGITAL 3	GRAY/YELLOW	21
+ 5 V	RED/WHITE	58
PWM OUT 4	VIOLET/LT.BLUE	12
PWM OUT 5	VIOLET/WHITE	52

Part Numbers:  
 Connector: CON-2001/12160280  
 TPA: CON-2003/12160494  
 Terminal (20-22AWG): CON-2804/15359001  
 Terminal (18AWG): CON-2805/15359002  
 Seal: Con-2005/12191510 - GREEN  
 Conduit Clip: Con-2008/12176394

13 PIN MICROPACK PINOUT & CORRESPONDANCE CHART				
PCS WIRE COLOR	PCS FUNCTION	TCU POS	GM FUNCTION	
A PINK/BLACK	DIGITAL OUTPUT 1	59	SHIFT SOL A - (1-2)	
B PINK/RED	DIGITAL OUTPUT 2	53	SHIFT SOL B - (2-3)	
C VIOLET/BLACK	PWM OUTPUT 1	37	LINE PRESSURE +	
D BLACK	GROUND SOURCE	60-63	LINE PRESSURE -	
E RED (18AWG)	+12v SOURCE	1-4	+12V SOL SOURCE	
K ORANGE/LT.GREEN	TURB HIGH	7	TURB SPEED +	
L YELLOW/ORANGE	ANALOG INPUT 6	51	TFT +	
M BLACK/WHITE	S.GROUND	54	TFT -	
N GRAY/BLACK	DIGITAL INPUT 1	13	RANGE A	
P GRAY/LT.GREEN	DIGITAL INPUT 3	15	RANGE C	
R GRAY/RED	DIGITAL INPUT 2	14	RANGE B	
S VIOLET/RED	PWM OUTPUT 2	28	3-2 DOWN SOL -	
T PINK/LT.GREEN	DIGITAL OUTPUT 3	36	TCC ON/OFF -	
U VIOLET/LT.GREEN	PWM OUTPUT 3	20	TCC PWM -	
V BLACK/WHITE	S.GROUND	54	TURB SPEED -	

Part Numbers:  
 Connector Assembly: CON-2169/12162195  
 Terminal (20-22AWG): CON-1033/12124075  
 Terminal (18AWG): CON-1034/12124075

2 PIN VSS CONNECTOR		
PCS COLOR	GM FUNCTION	
A ORANGE/RED	VSS+	6
B BLACK/WHITE	VSS-	54

2 PIN TURBINE SPEED CONNECTOR		
PCS COLOR	GM FUNCTION	
A ORANGE/LT.GREEN	TURB SPEED+	7
B BLACK/WHITE	TURB SPEED-	54

REV.	DESCRIPTION	DATE	BY
0	4L60E ONLY HARNESS	7/14/2003	JB
1	4L80E FUNCTION ADDED	5/07/2004	JB
2	ADDED FEATURES/NEW FORMAT	10/25/2004	JB
3	ADD PWM 4.5 & INCREASE POWER/GROUND	1/3/2006	JT
4	ADD TURB HI & LOW TO GM CONN	3/17/2006	JT

CPC	Pin Function	Harness Function	4L60E	4L70E	4L80E	colors
1	+12v	Battery Connection	+12v	+12v	+12v	red
2	+12v	Battery Connection	+12v	+12v	+12v	red
3	+12v	Battery Connection	+12v	+12v	+12v	red
4	+12v	Battery Connection	+12v	+12v	+12v	red
5	Speed Input 1	Engine Speed Input	RPM	RPM	RPM	orange/black
6	Speed Input 2	Transmission Speed Input	VSS	VSS	VSS	orange/red
7	Speed Input 3	TCC Speed Input	-	TURBINE SPEED	TURBINE SPEED	orange/lt. green
8	Speed Input 4	Optional Speed Input	-	-	-	orange/lt. blue
9	Speed Output	Speedometer Drive Output	Speedometer In	Speedometer In	Speedometer In	orange/white
10	unused	-	-	-	-	-
11	unused	-	-	-	-	-
12	PWM Out 4/freq2	PWM/Solenoid Driver	SPARE PWM OUT	SPARE PWM OUT	SPARE PWM OUT	violet/lt. blue
13	Digital Input 1	Digital Input	RANGE A	RANGE A	RANGE A	gray/black
14	Digital Input 2	Digital Input	RANGE B	RANGE B	RANGE B	gray/red
15	Digital Input 3	Digital Input	RANGE C	RANGE C	RANGE C	gray/lt. green
16	Digital Input 4	Digital Input	BRAKE LIGHT	BRAKE LIGHT	BRAKE LIGHT	gray/lt. blue
17	Digital Input 5	Digital Input	SPARE DIG1	SPARE DIG1	SPARE DIG1	gray/white
18	Digital Input 6	Digital Input	SPARE DIG2	SPARE DIG2	SPARE DIG2	gray/orange
19	Digital Out 5	Digital Driver	-	-	-	pink/white
20	PWM Out 3/freq2	PWM/Solenoid Driver	TCC PRESSURE -	TCC PRESSURE -	-	violet/lt. green
21	Digital Input 7	Digital Input	SPARE DIG3	SPARE DIG3	SPARE DIG3	gray/yellow
22	Digital Input 8	Digital Input	-	-	-	gray/pink
23	Digital Input 9	Digital Input	-	-	-	brown/black
24	Digital Input 10	Digital Input	-	-	-	brown/red
25	Digital Input 11	Digital Input	-	-	-	brown/lt. green
26	Digital Input 12	Digital Input	-	-	-	brown/lt. blue
27	Digital Out 6	Digital Driver	-	-	-	pink/orange
28	PWM Out 2/freq1	PWM/Solenoid Driver	ACCUMULATOR	ACCUMULATOR	TCC PWM	violet/red
29	unused	-	-	-	-	-
30	RS-232 Transmit	Communications Cable	db9	db9	db9	white/orange
31	RS-232 Receive	Communications Cable	db9	db9	db9	white/lt. blue
32	CAN/RS-232 GND	Communications Cable	db9	db9	db9	white/lt. green
33	CAN High	Communications Cable	-	-	-	white/red
34	CAN Low	Communications Cable	-	-	-	white/black
35	unused	-	-	-	-	-
36	Digital Out 3/PWM 9	Digital Driver	TCC ON/OFF -	TCC ON/OFF -	-	pink/lt. green
37	PWM Out 1/freq 1	PWM/Solenoid Driver	LINE PRESSURE +	LINE PRESSURE +	LINE PRESSURE +	violet/black
38	unused	-	-	-	-	-
39	Digital Input 13	Digital Input	-	-	-	brown/white
40	Digital Input 14	Digital Input	-	-	-	brown/orange
41	Digital Input 15	Digital Input	-	-	-	brown/yellow
42	Digital Input 16	Digital Input	-	-	-	brown/pink
43	unused	-	-	-	-	-
44	Digital Out 4	Digital Driver	-	-	-	pink/lt. blue
45	PWM Out 6/freq1	PWM/Solenoid Driver	-	-	-	violet/orange
46	Analog Input 1	Analog Input	TPS	TPS	TPS	yellow/black
47	Analog Input 2	Analog Input	MAP	MAP	MAP	yellow/red
48	Analog Input 3	Analog Input	CLT	CLT	CLT	yellow/lt. green
49	Analog Input 4	Analog Input	SPARE ANALOG1	SPARE ANALOG1	SPARE ANALOG1	yellow/lt. blue
50	Analog Input 5/temp	Analog Input	-	-	-	yellow/white
51	Analog Input 6/temp	Analog Input	ATF TEMP	ATF TEMP	ATF TEMP	yellow/orange
52	Pwm Out 5/freq1	PWM/Solenoid Driver	SPARE PWM OUT	SPARE PWM OUT	SPARE PWM OUT	violet/white
53	Digital Out 2/PWM 8	Digital Driver	SHIFT SOL B -	SHIFT SOL B -	SHIFT SOL B	pink/red
54	Sensor/AD Gnd	Sensor or reference Gnd	ATF TEMP P/VSS	ATF TEMP P/VSS	ATF TEMP P/VSS	black/white
55	unused	-	-	-	-	-
56	unused	-	-	-	-	-
57	unused	-	-	-	-	-
58	Ref Voltage (+5v)	Sensor/reference Voltage	+5V	+5V	+5V	red/white
59	Digital Out 1/PWM 7	Digital Driver	SHIFT SOL A -	SHIFT SOL A -	SHIFT SOL A	pink/black
60	Gnd	Battery Connection	Gnd	Gnd	Gnd	black
61	Gnd	Battery Connection	Gnd	Gnd	Gnd	black
62	Gnd	Battery Connection	Gnd	Gnd	Gnd	black
63	Gnd	Battery Connection	Gnd	Gnd	Gnd	black

Extra wires list	
1	orange/lt. blue
2	pink/white
3	gray/pink
4	brown/black
5	brown/red
6	brown/lt. green
7	brown/lt. blue
8	pink/orange
9	white/red
10	brown/white
11	brown/orange
12	brown/yellow
13	brown/pink
14	pink/lt. blue
15	violet/orange
16	yellow/white
17	white/black

db9 pinout	DB9
1	none
2	transmit <b>brown</b>
3	receive <b>red</b>
4	none
5	gnd <b>blue</b>
6	none
7	none
8	none
9	none

4L60E Connector Key	PCS Wire
a	shift sol a - (1-2) pink/black
b	shift sol b - (2-3) pink/red
c	line pressure + violet/black
d	line pressure - black
e	tcc, 1-2, 2-3, 3-2 + Red (18 AWG)
l	ATF temp + yellow/orange
m	ATF temp - black/white
n	range a gray/black
p	range c gray/lt. green
r	range b gray/red
s	3-2 shift - violet/red
t	tcc on/off - pink/lt. green
u	tcc pwm - (pressure) violet/lt. green

4L70E Connector Key	PCS Wire
a	shift sol a - (1-2) pink/black
b	shift sol b - (2-3) pink/red
c	line pressure + violet/black
d	line pressure - black
e	tcc, 1-2, 2-3, 3-2 + Red (18 AWG)
k	turb speed + orange/lt. green
l	ATF temp + yellow/orange
m	ATF temp - black/white
n	range a gray/black
p	range c gray/lt. green
r	range b gray/red
s	3-2 shift - violet/red
t	tcc on/off - pink/lt. green
u	tcc pwm - (pressure) violet/lt. green
v	turb speed - black/white

4L80E Connector Key	PCS Wire
a	shift sol a - (1-2) pink/black
b	shift sol b - (2-3) pink/red
c	line pressure + violet/black
d	line pressure - black
e	tcc, 1-2, 2-3, 3-2 + Red (18 AWG)
l	ATF temp + yellow/orange
m	ATF temp - black/white
n	range a gray/black
p	range c gray/lt. green
r	range b gray/red
s	tcc pwm - violet/red