

LABEL DEFINITION TABLE			
NUM	NAME	PCS P/N	NOTES
L1	TCM-4101-001	WRE-8501	
L2	CAN BUS	WRE-8500	
L3	THROTTLE POSITION SENSOR	WRE-8500	
L4	SWITCHED +12V DC	WRE-8500	
L5	CHASSIS GROUND	WRE-8500	
L6	LAPTOP CAL CONNECTOR	WRE-8500	
L7	OUTPUT SHAFT SPEED SENSOR	WRE-8500	
L8	RANGE CONNECTOR	WRE-8500	
L9	TRANSMISSION CONNECTOR	WRE-8501	
L10	TACHOMETER GROUND	WRE-8500	
L11	TACHOMETER	WRE-8500	
L12	SPEEDOMETER	WRE-8500	
L13	BRAKE LIGHT	WRE-8500	
L14	ANALOG IN 2	WRE-8500	
L15	DIGITAL IN 9	WRE-8500	
L16	DIGITAL IN 10	WRE-8500	
L17	DIGITAL IN 11	WRE-8500	
L18	PWM OUT 4	WRE-8500	
L19	PWM OUT 5	WRE-8500	
L20	OPTION	WRE-8500	

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASE	2/12/2013	FAD	

C7 THROTTLE POSITION SENSOR				
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO	
A	SEN.GND	BLK/WHT	TCU-54, S3	
B	TPS	YEL/BLK	TCU-46	
C	+5V SENSOR	RED/WHT	TCU-58	

C5 OPTION				
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.	
1	SWITCHED +12V DC	RED	TCU-1, 2, 3, 4, S1	
2	GND	BLK	TCU-60, 61, 62, 63, S2	
3	CAN HIGH	WHT/RED	TCU-33	
4	CAN LOW	WHT/BLK	TCU-34	

C-3 OUTPUT SHAFT SPEED SENSOR				
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.	
A	TOSS	ORN/RED	TCU-6	
B	SENSOR GND	BLK/WHT	S3, TCU-54	

C6 CAN				
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.	
1	CAN HIGH	WHT/RED	TCU-33, S5	
2	CAN LOW	WHT/BLK	TCU-34, S6	

C2 RANGE CONNECTOR				
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO	
A	RANGE A	GRY/PNK	TCU-22	
B	RANGE C	BRN/RED	TCU-24	
C	RANGE P	BRN/LT.GRN	TCU-25	
D	RANGE B	BRN/BLK	TCU-23	

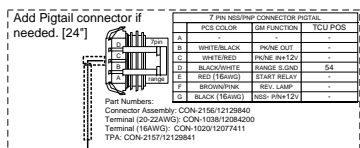
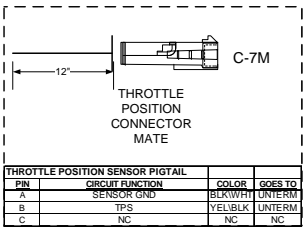
UNTERMINATED				
CIRCUIT FUNCTION	COLOR	CONNECTS TO		
TACHOMETER GROUND	BLK/WHT	TCU-54, S3		
TACHOMETER	ORN/BLK	TCU-5		
SPEEDOMETER	ORN/WHT	TCU-9		
BRAKE LIGHT	GRY/LT.BLU	TCU-16		
SPARE ANALOG IN	YEL/RED	TCU-47		
DIGITAL IN 5	GRY/WHT	TCU-17		
DIGITAL IN 6	GRY/ORN	TCU-18		
DIGITAL IN 7	GRY/YEL	TCU-21		
PWM OUT 4	VIOL/BLU	TCM-12		
PWM OUT 5	VIOWHT	TCM-52		

C1 TRANSMISSION CONNECTOR				
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO	
A	SHIFT SOL 1	PNK/BLK	TCU-59	
B	SHIFT SOL 2	PNK/RED	TCU-53	
C	LINE PRES HIGH	VIOL/BLK	TCU-37	
D	LP (-)	VIOL/LT.GRN	TCU-20	
E	SWITCHED +12V DC	RED	S1, TCU-1, 2, 3, 4	
F	NC	NC	NC	
G	NC	NC	NC	
H	NC	NC	NC	
I	NC	NC	NC	
J	NC	NC	NC	
K	NC	NC	NC	
L	TFT (-)	BLK/WHT	S3, TCU-54	
M	TFT (+)	YEL/ORN	TCU-51	
N	PSA A	GRY/BLK	TCU-13	
P	PSA C	GRY/LT.GRN	TCU-15	
R	PSA B	GRY/RED	TCU-14	
S	TURB (+)	ORN/LT.GRN	TCU-7	
T	TCC PWM (-)	VIOL/RED	TCU-28	
U	TCC SW +12V	RED	TCU-1, 2, 3, 4, S1	
V	TURB SPEED (-)	BLK/WHT	TCU-54, S3	
W	NC	NC	NC	

F1				
PIN	CIRCUIT FUNCTION	COLOR	WIRES TO	
A	SWITCHED +12V	RED	TCU- 1-4, S1	
B	SWITCHED +12V	RED	SWITCHED BATT SOURCE	

C4 LAPTOP CAL CONNECTOR				
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.	
A	SERIAL RX	RED	TCU-31	
B	SIGNAL GND.	WHT	TCU-32	
C	SERIAL TX	BLK	TCU-30	

WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	



APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES:

- 1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: TCU 4T60E HARNESS

DATE: 2/4/2013

DESIGNED BY: FRED D.

CHECKED BY: XXXXX

APPROVED BY: XXXXX

CUSTOMER DRAWING NO. XXXXX-XXXXX

PCS PART NUMBER TCM-4102

REV: 001

SHEET 2 OF 3

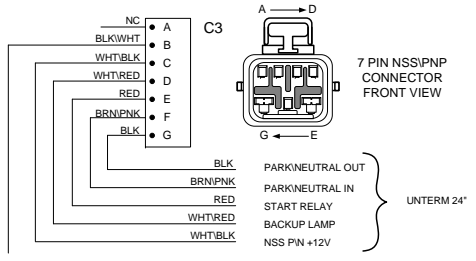
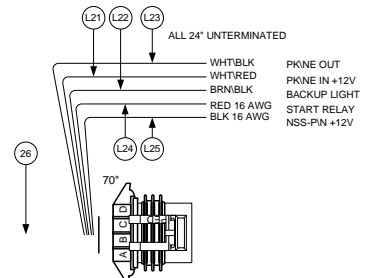
PCS COLOR	PCS FUNCTION	TCU POS	REV
A	GRAY/YELLOW	RANGE A	21
B	GRAY/WHITE	RANGE C	17
C	GRAY/YORANGE	RANGE P	18
D	GRAY/BLUE	RANGE B	16

PCS COLOR	PCS FUNCTION	TCU POS	REV
A	GRAY/YELLOW	RANGE A	21
B	GRAY/WHITE	RANGE C	17
C	GRAY/YORANGE	RANGE P	18
D	GRAY/BLUE	RANGE B	16

PCS FUNCTION	TCU POS
1-2 SHFT	99
2-3 SHFT	93
LP HIGH	97
LP LOW	95-93
+12V BUS	1-4
TFT LOW	54
TFT HIGH	51
RANGE A	13
RANGE C	15
RANGE B	14
T. SPD HIGH	54
TCC PWM	28
TCC +12V	1-4
T. SPD LOW	54

Part Numbers
CONNECTOR ASSEMBLY: CON-21851102828
TPA: CON-21851102828
TERMINAL (18AWG): CON-28651103902
TERMINAL (20AWG): CON-28651103902
WIRE: CON-21851110282
CONDUIT CLIP: CON-20081217884

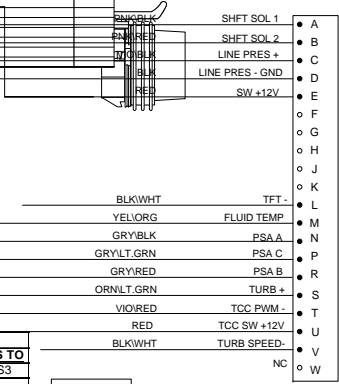
C3 7 PIN NSSIPNP CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	NC	NC	
B	PKINE OUT	WHT/BLK	UNTERM
C	PKINE IN +12V	WHT/RED	UNTERM
D	RANGE SIG GND	BLK/WHT	TCU-54
E	START RELAY	RED	UNTERM 16 AWG
F	BACKUP LIGHT	BRN/PNK	UNTERM
G	NSS-PIN+12V	BLK	UNTERM 16 AWG



QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-2156	
2	TERMINALS	CON-1038	20 AWG
1	TERMINALS	CON-1020	16 AWG
2	CABLE SEAL	CON-2157	

PCS COLOR	PCS FUNCTION	TCU POS
A	GRAY/YELLOW	RANGE A
B	GRAY/WHITE	RANGE C
C	GRAY/YORANGE	RANGE P
D	GRAY/BLUE	RANGE B
E	GRAY/BLACK	RANGE A
F	GRAY/BLACK	RANGE C
G	GRAY/BLACK	RANGE B
H	GRAY/BLACK	RANGE C
I	GRAY/BLACK	RANGE C
J	GRAY/BLACK	RANGE C
K	GRAY/BLACK	RANGE C
L	GRAY/BLACK	RANGE C
M	GRAY/BLACK	RANGE C
N	GRAY/BLACK	RANGE C
O	GRAY/BLACK	RANGE C
P	GRAY/BLACK	RANGE C
Q	GRAY/BLACK	RANGE C
R	GRAY/BLACK	RANGE C
S	GRAY/BLACK	RANGE C
T	GRAY/BLACK	RANGE C
U	GRAY/BLACK	RANGE C
V	GRAY/BLACK	RANGE C

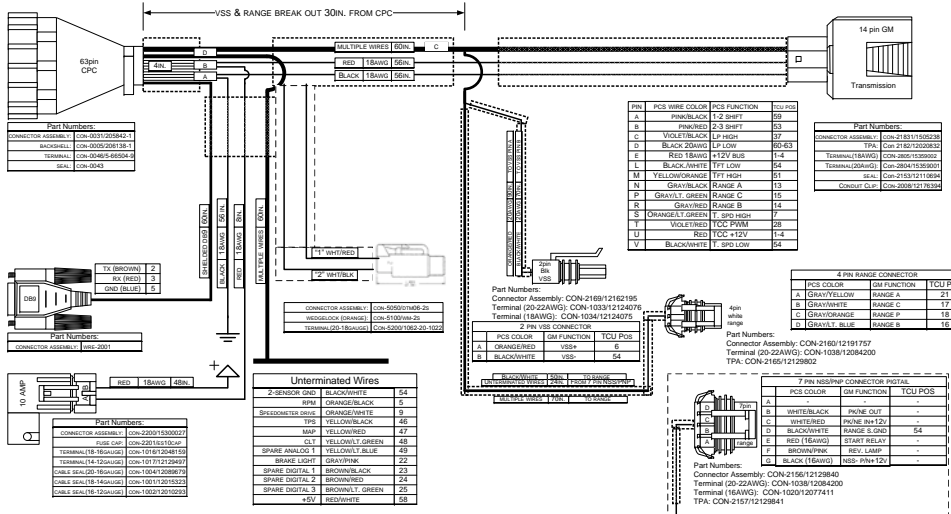
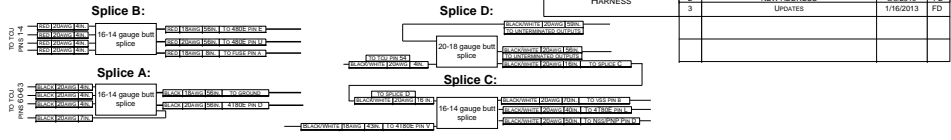
CIRCUIT FUNCTION	COLOR	CONNECTS TO
TACHOMETER GROUND	BLK/WHT	TCU-54, S3
TACHOMETER	ORN/BLK	TCU-5
SPEEDOMETER	ORN/WHT	TCU-9
BRAKE LIGHT	GRY/PNK	TCU-22
ANALOG IN 2	YEL/RED	TCU-47
DIGITAL IN 9	BRN/BLK	TCU-23
DIGITAL IN 10	BRN/RED	TCU-24
DIGITAL IN 11	BRN/LT.GRN	TCU-25
PWM OUT 4	VIO/LT.BLU	TCM-12
PWM OUT 5	VIO/WHT	TCM-52



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 10511 Old Ridge Road Ashland, VA 23005
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 (804) 227-3023 FAX: (804) 227-3005

TCU 4T80E HARNESS OLD
 PART NUMBER: TCM - 4102
 DESCRIPTION: 4T80E TRANSMISSION HARNESS

REV: 0 ORIGINAL REVISION DATE: 7/26/2004 BY: JB
 REV: 1 NEW FORMAT DATE: 5/25/2005 BY: RC
 REV: 2 NEW ADDRESS DATE: 5/3/2010 BY: FD
 REV: 3 UPDATES DATE: 1/16/2013 BY: FD



CIRCUIT FUNCTION	COLOR	CONNECTS TO
TACHOMETER GROUND	BLK/WHT	TCU-54, S3
TACHOMETER	ORN/BLK	TCU-5
SPEEDOMETER	ORN/WHT	TCU-9
BRAKE LIGHT	GRY/PNK	TCU-22
ANALOG IN 2	YEL/RED	TCU-47
DIGITAL IN 9	BRN/BLK	TCU-23
DIGITAL IN 10	BRN/RED	TCU-24
DIGITAL IN 11	BRN/LT.GRN	TCU-25
PWM OUT 4	VIO/LT.BLU	TCM-12
PWM OUT 5	VIO/WHT	TCM-52

POWERTRAIN CONTROL SOLUTIONS

GM 4T80 EARLY TO TCM-2000

APPLICABLE STANDARDS:
 • ASME Y14.100-200
 • ASME Y14.5M-1994
 • IPC-WHMA-A-620-CLASS 2
 • MARK IAW MIL-STD-130

NOTES:
 1) WIRE LENGTH TOLERANCE +/- 1/2 INCH
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 5) PLACE TAGS NO MORE THAN 2" FROM UNTERMINATED ENDS
 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: GM 4T80 EARLY TO TCM-2000

SIZE: C CUSTOMER DRAWING NO: XXXXX-XXXXX PCS PART NUMBER: TCM-4102 REV: 001

DATE: 2/8/2013 APPROVED BY: XXXXX SHEET 3 OF 3

WIRE TYPE IS TXL UNLESS OTHERWISE STATED

DATE: 2/8/2013 APPROVED BY: XXXXX SHEET 3 OF 3