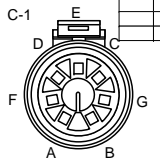
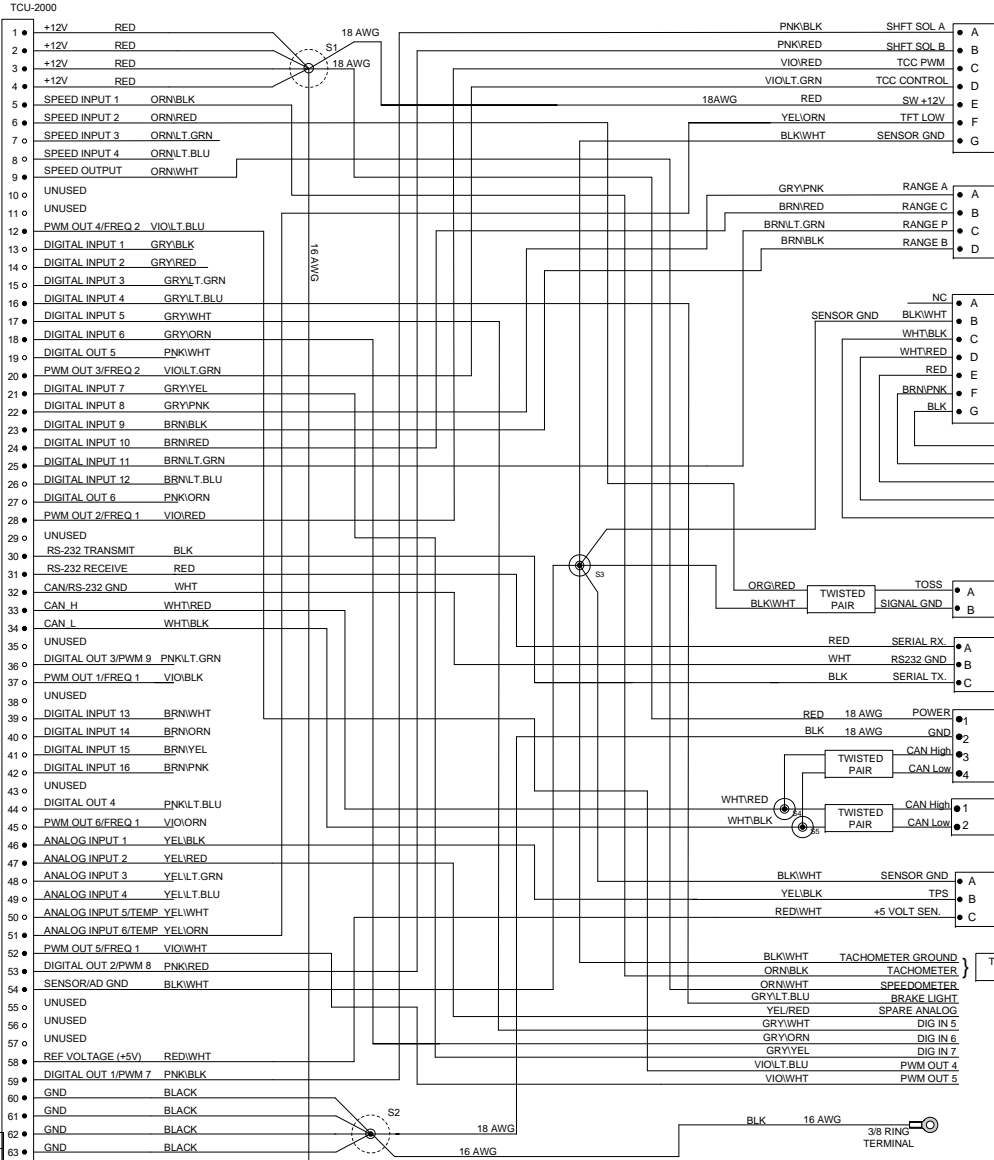
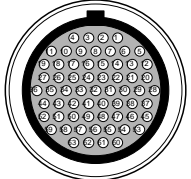
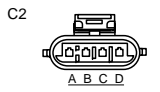


REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASE	2/6/2013	FAD	



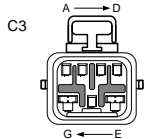
C-1 TRANSMISSION CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-4000	
2	TERMINALS	CON-1038	20 AWG
1	TPA	CON-	



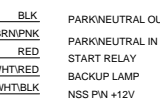
C-2 RANGE CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-3012	
2	TERMINALS	CON-1038	20 AWG
2	CABLE SEAL	CON-XXXX	
1	TPA	CON-3011	



C-3 7 PIN NSS/PNP CONNECTOR FRONT VIEW

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	



C-4 OUTPUT SHAFT SPEED SENSOR FRONT VIEW

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY



C-5 LAPTOP CAL CONNECTOR FRONT VIEW



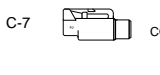
C-6 OPTION FRONT VIEW

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-0065	
4	TERMINALS	CON-0051	



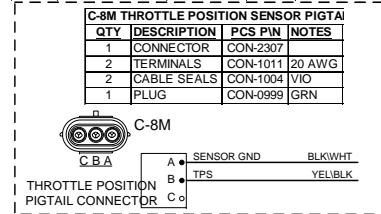
C-7 CAN CONNECTOR

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-5050	
2	TERMINALS	CON-5200	(20-18gauge)
1	WEDGE LOCK	CON-5100	ORN



C-8 THROTTLE POSITION SENSOR

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-2302	
3	TERMINALS	CON-1006	
3	CABLE SEALS	CON-1004	VIO



QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-2307	
2	TERMINALS	CON-1011	20 AWG
2	CABLE SEALS	CON-1004	VIO
1	PLUG	CON-0999	GRN

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	

F1	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-2200	
1	FUSE CAP.	CON-2201	BLK
1	TPA	CON-2202	BLU
2	TERMINAL	CON-1020	(18-16 AWG)
1	FUSE	CON-2221	10A
2	CABLE SEAL	CON-1001	GRN

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	RED
S2	GROUND	BLK
S3	SENSOR GROUND	BLK/WHT
S4	CAN HIGH	WHT/RED
S5	CAN LOW	WHT/BLK

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 +/- 1/32 INCH
- 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3) TAPS 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 ENDS. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED ENDS.
- 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: TCU 4T60E HARNESS

SIZE: C

CUSTOMER DRAWING NO. XXXXX-XXXXX

PCS PART NUMBER TCM-4101

REV: 001

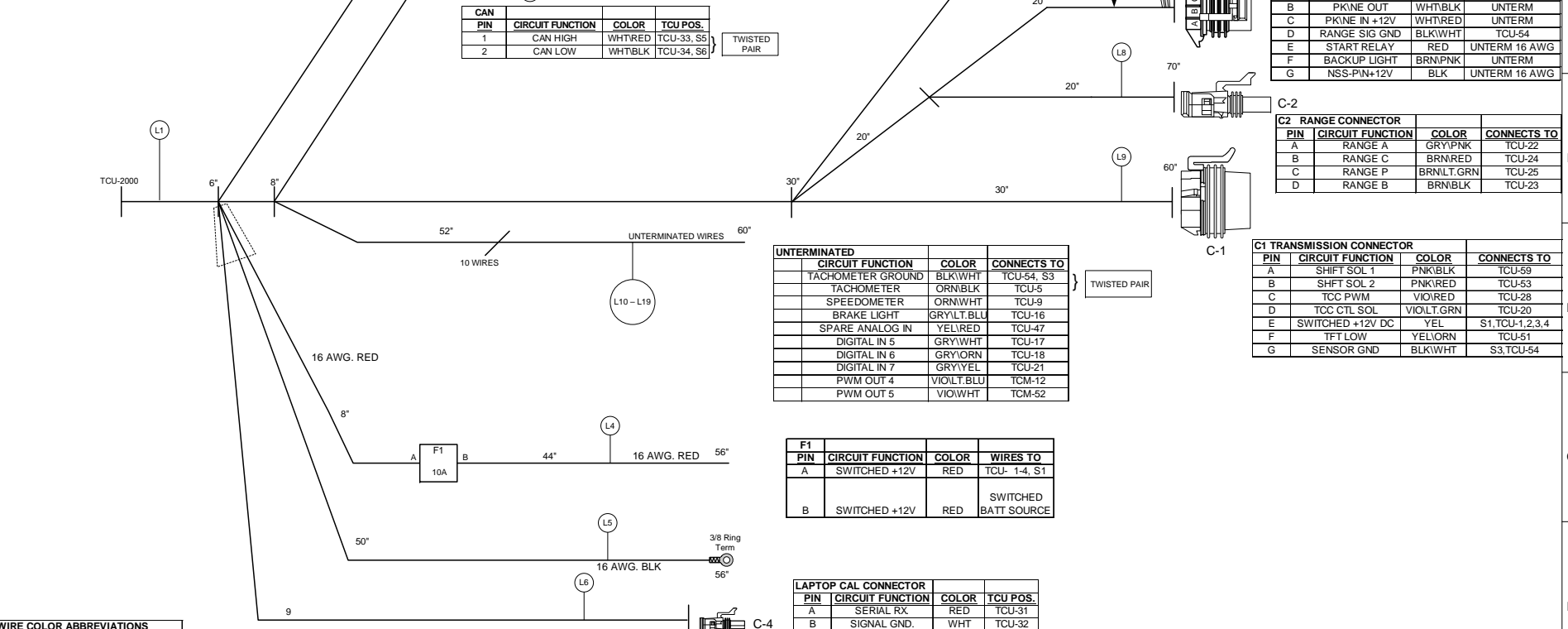
DATE: 2/4/2013

APPROVED BY: XXXXX

SHEET 1 OF 7

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 +12VDC	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	
L21	PKINE IN +12V	WRE-8500	
L22	BACKUP LIGHT	WRE-8500	
L23	PKINE OUT	WRE-8500	
L24	START RELAY	WRE-8500	
L25	NSS-PIN +12V	WRE-8500	

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASE	2/6/2013	FAD	



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, S4

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

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

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

C3 7 PIN NSS/PNP 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

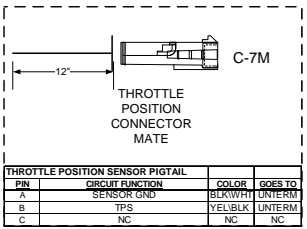
C2 RANGE CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	RANGE A	GRY/PNK	TCU-22
B	RANGE C	BRN/RED	TCU-24
C	RANGE P	BRN/LT.GRN	TCU-25
D	RANGE B	BRN/BLK	TCU-23

UNTERMINATED			
CIRCUIT FUNCTION	COLOR	CONNECTS TO	
TACHOMETER GROUND	BLK/WHT	TCU-54, S3	} TWISTED PAIR
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	VIOLT/BLU	TCM-12	
PWM OUT 5	VIOWHT	TCM-52	

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

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 TX UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: TCU 4T60E HARNESS

SIZE: C CUSTOMER DRAWING NO. XXXXX-XXXXX PCS PART NUMBER TCM-4101 REV: 001

DRAWN BY: FRED D. DATE: 2/4/2013 APPROVED BY: XXXXX DATE: SHEET 2 OF 7