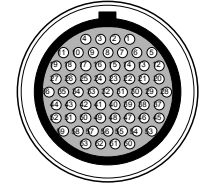


TCU-2000

1	+12V	RED
2	+12V	RED
3	+12V	RED
4	+12V	RED
5	SPEED INPUT 1	ORN/BLK
6	SPEED INPUT 2	ORN/RED
7	SPEED INPUT 3	ORN/LT.GRN
8	SPEED INPUT 4	ORN/LT.BLU
9	SPEED OUTPUT	ORN/WHT
10	UNUSED	
11	UNUSED	
12	PWM OUT 4/FREQ2	VIO/LT.BLU
13	DIGITAL INPUT 1	GRY/BLK
14	DIGITAL INPUT 2	GRY/RED
15	DIGITAL INPUT 3	GRY/LT.GRN
16	DIGITAL INPUT 4	GRY/LT.BLU
17	DIGITAL INPUT 5	GRY/WHT
18	DIGITAL INPUT 6	GRY/ORN
19	DIGITAL INPUT 5	PNK/WHT
20	PWM OUT 3/FREQ2	VIO/LT.GRN
21	DIGITAL INPUT 7	GRY/YEL
22	DIGITAL INPUT 8	GRY/PNK
23	DIGITAL INPUT 9	BRN/BLK
24	DIGITAL INPUT 10	BRN/RED
25	DIGITAL INPUT 11	BRN/LT.GRN
26	DIGITAL INPUT 12	BRN/LT.BLU
27	DIGITAL OUT 6	PNK/ORN
28	PWM OUT 2/FREQ1	VIO/RED
29	UNUSED	
30	RS-232 TRANSMIT	BLK
31	RS-232 RECEIVE	RED
32	CAN/RS-232 GND	WHT
33	CAN_H	WHT/RED
34	CAN_L	WHT/BLK
35	UNUSED	
36	DIGITAL OUT 3/PWM 9	PNK/LT.GRN
37	PWM OUT 1/FREQ1	VIO/BLK
38	UNUSED	
39	DIGITAL INPUT 13	BRN/WHT
40	DIGITAL INPUT 14	BRN/ORN
41	DIGITAL INPUT 15	BRN/YEL
42	DIGITAL INPUT 16	BRN/PNK
43	UNUSED	
44	DIGITAL OUT 4	PNK/LT.BLU
45	PWM OUT 6/FREQ1	VIO/ORN
46	ANALOG INPUT 1	YEL/BLK
47	ANALOG INPUT 2	YEL/RED
48	ANALOG INPUT 3	YEL/LT.GRN
49	ANALOG INPUT 4	YEL/LT.BLU
50	ANALOG INPUT 5/TEMP	YEL/WHT
51	ANALOG INPUT 6/TEMP	YEL/ORN
52	PWM OUT 5/FREQ1	VIO/WHT
53	DIGITAL OUT 2/PWM 8	PNK/RED
54	SENSOR/AD GND	BLK/WHT
55	UNUSED	
56	UNUSED	
57	UNUSED	
58	REF VOLTAGE (+5V)	RED/WHT
59	DIGITAL OUT 1/PWM 7	PNK/BLK
60	GND	BLACK
61	GND	BLACK
62	GND	BLACK
63	GND	BLACK

TCU2000 CONNECTOR	QTY	DESCRIPTION	PCS P/N	NOTES
1	40	TERMINALS	CON-1003	
1	1	BACK SHELL	CON-1004	
1	1	MULTI CABLE SEAL	CON-1005	
1	1	MULTI CABLE SEAL	CON-1003	BLK



WIRE COLOR ABBREVIATIONS

TXL	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	

SPLICE INFORMATION

S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	RED
S2	GROUND	BLK
S3	SENSOR GROUND	BLK/WHT
S4	NONE	NONE
S5	CAN HIGH	WHT/RED
S6	CAN LOW	WHT/BLK
S7	TSS	ORN/LT.GRN

F1	QTY	DESCRIPTION	PCS P/N	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

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 500'
- 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: TCU 4T65E HARNESS

SIZE: C	CUSTOMER DRAWING NO: XXXXX-XXXXX	PCS PART NUMBER: TCM-4120-001	REV: 001
DRAWN BY: FRED D.	DATE: 2/4/2013	APPROVED BY: XXXXX	DATE: SHEET 1 OF 7

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	TRANSMISSION CONNECTOR	WRE-8501	
L9	TACHOMETER GROUND	WRE-8500	
L10	TACHOMETER	WRE-8500	
L11	SPEEDOMETER	WRE-8500	
L12	BRAKE LIGHT	WRE-8500	
L13	ANALOG IN 2	WRE-8500	
L14	DIGITAL IN 9	WRE-8500	
L15	DIGITAL IN 10	WRE-8500	
L16	DIGITAL IN 11	WRE-8500	
L17	PWM OUT 4	WRE-8500	
L18	PWM OUT 5	WRE-8500	
L19	OPTION	WRE-8500	

C6 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

C4 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

C2 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

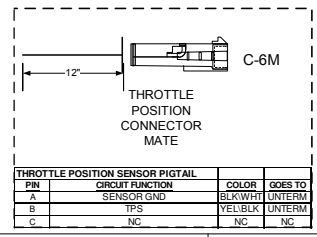
UNTERMINATED			
CIRCUIT FUNCTION	COLOR	CONNECTS TO	
TACHOMETER GROUND	BLK/WHT	TCU-54, S3	
TACHOMETER	ORN/BLK	TCU-5	
SPEEDOMETER	ORN/WHT	TCU-9	
BRAKE LIGHT	GRY/LT.BLU	TCU-16	
SPARE ANALOG IN	YEL/RED	TCU-47	
DIGITAL IN 5	GRY/WHT	TCU-17	
DIGITAL IN 6	GRY/ORN	TCU-18	
DIGITAL IN 7	GRY/YEL	TCU-21	
PWM OUT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

C1 TRANSMISSION CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL 1-2	PNK/BLK	TCU-59
B	SHIFT SOL 2-3	PNK/RED	TCU-53
C	LINE PRES (+)	VIO/BLK	TCU-37
D	LINE PRES (-)	BLK	TCU-60, 61, 62, 63, S2
E	+12V	RED(18 AWG)	TCU-1, 2, 3, 4, S1
F	RANGE A	BRN/BLK	TCU-23
G	RANGE B	BRN/RED	TCU-24
H	RANGE B	BRN/LT.GRN	TCU-25
J	RANGE P	BRN/LT.BLU	TCU-26
K	RANGE SIG GND	BLK/WHT	TCU-54, S3
L	TFT+	YEL/ORN	TCU-51
M	TFT-	BLK/WHT	TCU-54, S3
N	RANGE A	GRY/BLK	TCU-13
P	RANGE C	GRY/LT.GRN	TCU-15
R	RANGE B	GRY/RED	TCU-14
S	TURB -	ORN/LT.GRN	TCU-7
T	TCC PWM -	VIO/RED	TCU-28
U	TCC SW	GRY/PNK	TCU-22
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

C3 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	



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 +/- .12 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 CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: TCU 4T65E HARNESS

SIZE: C CUSTOMER DRAWING NO. XXXXX-XXXXX PCS PART NUMBER TCM-4120-001 REV: 001

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