

| REVISION HISTORY | | | | |
|------------------|-------------|----------|-----|-----|
| LEVEL | DESCRIPTION | DATE | DRN | APP |
| 1 | RELEASE | 10/17/15 | FD | |

NOTE:
This range connector pin-out shown here is correct. Some connectors are plastic molded with the pin numbers from left to right in the wrong order.

| RANGE CONNECTOR | ONT VI | DESCRIPTION | PIN | NOTES |
|-----------------|-----------|-------------|-------------------------|-------|
| 1 | CONNECTOR | CON-2131 | BLACK | |
| 1 | SPACER | CON-2126 | RED | |
| 3 | TERMINALS | CON-2120 | 18-20 AWG (PIN 3, 6, 7) | |
| 3 | TERMINALS | CON-2122 | 14-16 AWG (PIN 1, 2, 4) | |

| C-2 OUTPUT SHAFT SPEED SENSOR | | | | |
|-------------------------------|-------------|----------|-----|-------|
| QTY | DESCRIPTION | PCS | P/N | NOTES |
| 1 | CONNECTOR | CON-2130 | BLK | |
| 1 | WEDGE LOCK | CON-2127 | BLK | |
| 2 | TERMINAL | CON-2121 | | |

| C3 TRANS CONNECTOR | | | | |
|--------------------|------------------|----------|-----|-------|
| QTY | DESCRIPTION | PCS | PIN | NOTES |
| 1 | CONNECTOR | CON-2132 | | |
| 9 | TERMINALS | CON-2121 | | |
| 1 | WEDGE LOCK | CON-2127 | BLK | |
| 1 | MULTI CABLE SEAL | CON-2143 | | |
| 1 | CONNECTOR SEAL | CON-2144 | | |
| 1 | CAVITY PLUG | CON-1036 | | |

| C-4 LAPTOP CALIBRATION CONNECTOR | | | | |
|----------------------------------|-------------|----------|-------|-------|
| QTY | DESCRIPTION | PCS | PIN | NOTES |
| 1 | CONNECTOR | CON-3416 | | |
| 3 | TERMINALS | CON-1038 | | |
| 1 | TPA | CON-3417 | CREAM | |
| 3 | CABLE SEALS | CON-1027 | WHT | |

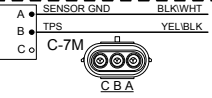
| C-5 OPTION | | | | |
|------------|-------------|----------|-----|-------|
| QTY | DESCRIPTION | PCS | PIN | NOTES |
| 1 | CONNECTOR | CON-0065 | | |
| 4 | TERMINALS | CON-0051 | | |

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

| C-7 THROTTLE POSITION SENSOR | | | | |
|------------------------------|-------------|----------|-----|-------|
| QTY | DESCRIPTION | PCS | PIN | NOTES |
| 1 | CONNECTOR | CON-2302 | | |
| 3 | TERMINALS | CON-1006 | | |
| 3 | CABLE SEALS | CON-1004 | VIO | |

| CHASSIS GND | | | | |
|-------------|-------------|----------|-------|--|
| QTY | DESCRIPTION | PIN | NOTES | |
| 1 | RING TERM. | CON-0350 | | |

| C-7M THROTTLE POSITION SENSOR PIGTAIL | | | | |
|---------------------------------------|-------------|----------|--------|-------|
| QTY | DESCRIPTION | PCS | PIN | NOTES |
| 1 | CONNECTOR | CON-2307 | | |
| 2 | TERMINALS | CON-1011 | 20 AWG | |
| 2 | CABLE SEALS | CON-1004 | VIO | |
| 1 | PLUG | CON-0995 | GRN | |



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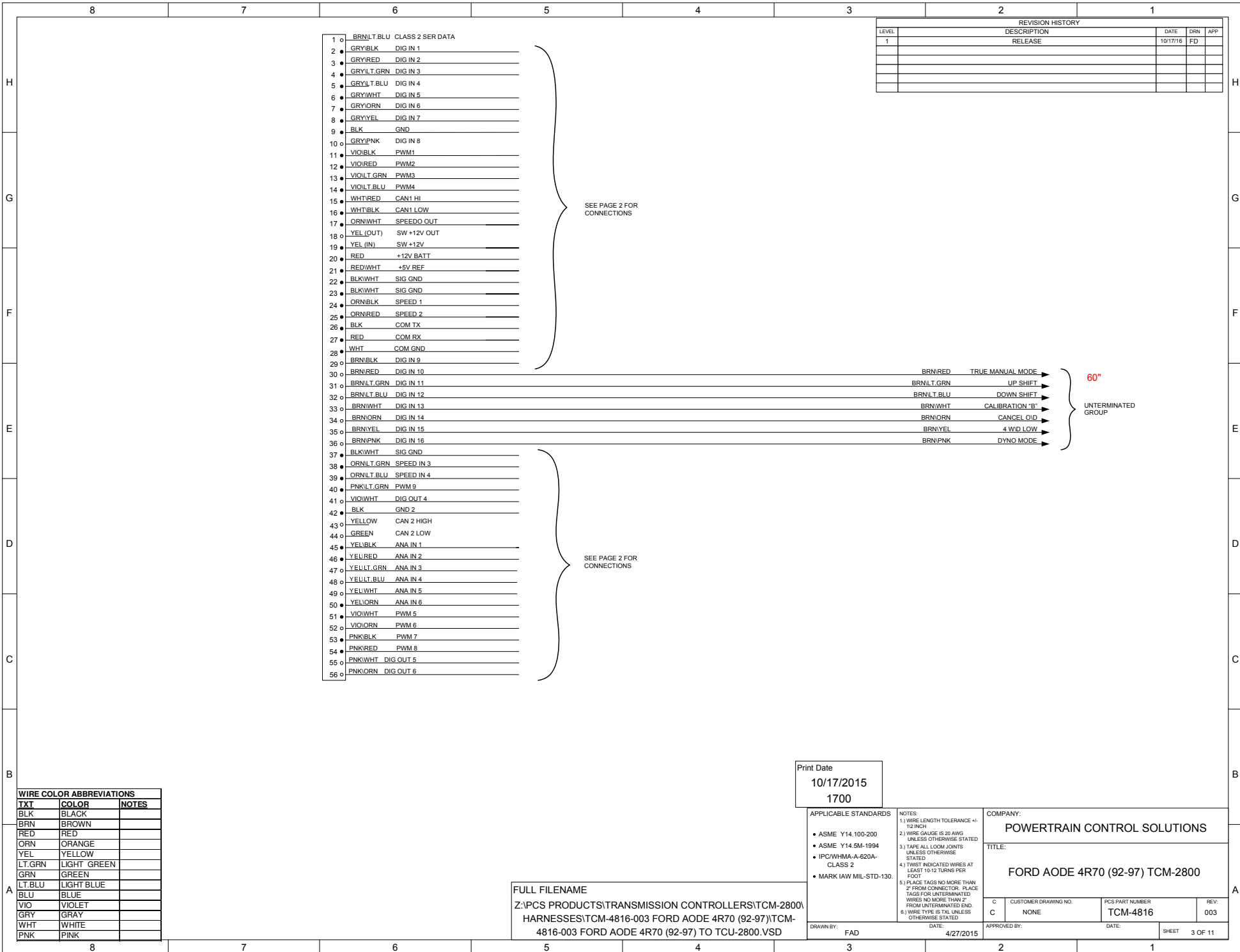
- APPLICABLE STANDARDS
- ASME Y14.100-200
 - ASME Y14.5M-1994
 - IPC-WHMA-A-620A-CLASS 2
 - MARK IAW MIL-STD-130.

- NOTES:
- 1) WIRE LENGTH TOLERANCE +/- 1/2 INCH
 - 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
 - 3) TAPES 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:
FORD AODE 4R70 (92-97) TCM-2800

| | | | |
|---|----------------------|-----------------|------|
| C | CUSTOMER DRAWING NO. | PCS PART NUMBER | REV. |
| C | NONE | TCM-4816 | 003 |



| REVISION HISTORY | | | | |
|------------------|-------------|----------|-----|-----|
| LEVEL | DESCRIPTION | DATE | DRN | APP |
| 1 | RELEASE | 10/17/16 | FD | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

- 1 ○ BRNLT.BLU CLASS 2 SER DATA
- 2 ○ GRYBLK DIG IN 1
- 3 ○ GRYRED DIG IN 2
- 4 ○ GRYLT.GRN DIG IN 3
- 5 ○ GRYLT.BLU DIG IN 4
- 6 ○ GRYWHT DIG IN 5
- 7 ○ GRYORN DIG IN 6
- 8 ○ GRYYEL DIG IN 7
- 9 ○ BLK GND
- 10 ○ GRYPNK DIG IN 8
- 11 ○ VIOBLK PWM1
- 12 ○ VIORED PWM2
- 13 ○ VIOILT.GRN PWM3
- 14 ○ VIOILT.BLU PWM4
- 15 ○ WHTRED CAN1 HI
- 16 ○ WHTBLK CAN1 LOW
- 17 ○ ORNWHT SPEEDO OUT
- 18 ○ YEL (OUT) SW +12V OUT
- 19 ○ YEL (IN) SW +12V
- 20 ○ RED +12V BATT
- 21 ○ REDWHT +5V REF
- 22 ○ BLKWHT SIG GND
- 23 ○ BLKWHT SIG GND
- 24 ○ ORNBLK SPEED 1
- 25 ○ ORNRED SPEED 2
- 26 ○ BLK COM TX
- 27 ○ RED COM RX
- 28 ○ WHT COM GND
- 29 ○ BRNBLK DIG IN 9
- 30 ○ BRNRED DIG IN 10
- 31 ○ BRNLT.GRN DIG IN 11
- 32 ○ BRNLT.BLU DIG IN 12
- 33 ○ BRNWHT DIG IN 13
- 34 ○ BRNORN DIG IN 14
- 35 ○ BRNYEL DIG IN 15
- 36 ○ BRNPNK DIG IN 16
- 37 ○ BLKWHT SIG GND
- 38 ○ ORNLT.GRN SPEED IN 3
- 39 ○ ORNLT.BLU SPEED IN 4
- 40 ○ PNKLT.GRN PWM 9
- 41 ○ VIOWHT DIG OUT 4
- 42 ○ BLK GND 2
- 43 ○ YELLOW CAN 2 HIGH
- 44 ○ GREEN CAN 2 LOW
- 45 ○ YELBLK ANA IN 1
- 46 ○ YELRED ANA IN 2
- 47 ○ YELLT.GRN ANA IN 3
- 48 ○ YELLT.BLU ANA IN 4
- 49 ○ YELWHT ANA IN 5
- 50 ○ YELORN ANA IN 6
- 51 ○ VIOWHT PWM 5
- 52 ○ VIOORN PWM 6
- 53 ○ PNKBLK PWM 7
- 54 ○ PNKRED PWM 8
- 55 ○ PNKWHT DIG OUT 5
- 56 ○ PNKIORN DIG OUT 6

SEE PAGE 2 FOR CONNECTIONS

SEE PAGE 2 FOR CONNECTIONS

- BRNRED TRUE MANUAL MODE
 - BRNLT.GRN UP SHIFT
 - BRNLT.BLU DOWN SHIFT
 - BRNWHT CALIBRATION 'B'
 - BRNORN CANCEL O/D
 - BRNYEL 4 W/D LOW
 - BRNPNK DYNO MODE
- 60°
UNTERMINATED GROUP

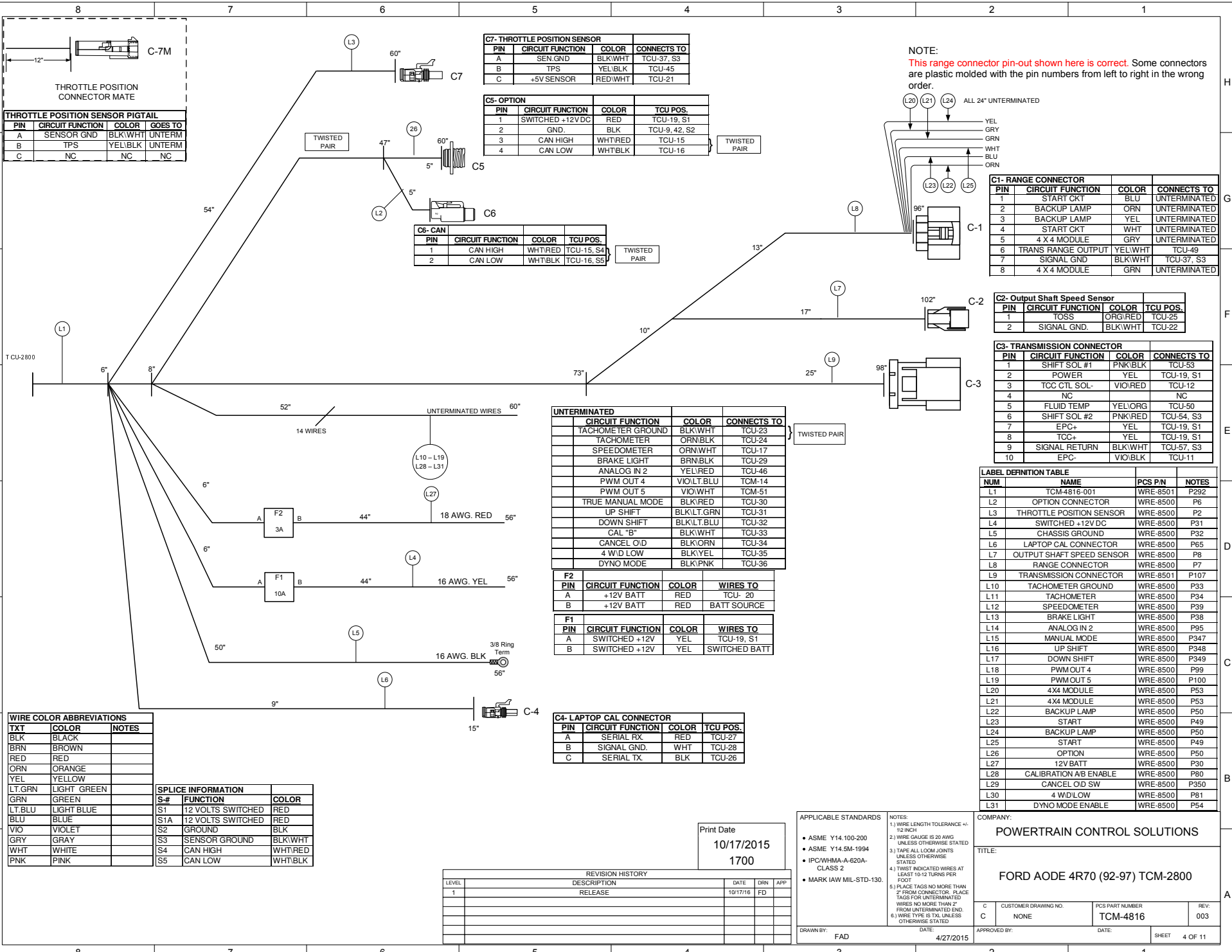
| WIRE COLOR ABBREVIATIONS | | |
|--------------------------|-------------|-------|
| TXI | COLOR | NOTES |
| BLK | BLACK | |
| BRN | BROWN | |
| RED | RED | |
| ORN | ORANGE | |
| YEL | YELLOW | |
| LT.GRN | LIGHT GREEN | |
| GRN | GREEN | |
| LT.BLU | LIGHT BLUE | |
| BLU | BLUE | |
| VIO | VIOLET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

FULL FILENAME
 Z:\PCS PRODUCTS\TRANSMISSION CONTROLLERS\TCM-2800\HARNESSES\TCM-4816-003 FORD AODE 4R70 (92-97)\TCM-4816-003 FORD AODE 4R70 (92-97) TO TCU-2800.VSD

Print Date
 10/17/2015
 1700

| APPLICABLE STANDARDS | NOTES |
|--|--|
| <ul style="list-style-type: none"> • ASME Y14.100-200 • ASME Y14.5M-1994 • IPC/WHMA-A-620A-CLASS 2 • MARK IAW MIL-STD-130. | 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 TXI UNLESS OTHERWISE STATED |

| | | | |
|--|------------------------------|-----------------------------|-------------|
| COMPANY: POWERTRAIN CONTROL SOLUTIONS | | | |
| TITLE: FORD AODE 4R70 (92-97) TCM-2800 | | | |
| C | CUSTOMER DRAWING NO. NONE | PCS PART NUMBER TCM-4816 | REV: 003 |
| DRAWN BY: FAD | | APPROVED BY: | |
| DATE: 4/27/2015 | | DATE: | |
| SHEET | | 3 OF 11 | |



| PIN | CIRCUIT FUNCTION | COLOR | GOES TO |
|-----|------------------|---------|---------|
| A | SENSOR GND | BLK/WHT | UNTERM |
| B | TPS | YEL/BLK | UNTERM |
| C | NC | NC | NC |

| PIN | CIRCUIT FUNCTION | COLOR | CONNECTS TO |
|-----|------------------|---------|-------------|
| A | SEN GND | BLK/WHT | TCU-37, S3 |
| B | TPS | YEL/BLK | TCU-45 |
| C | +5V SENSOR | RED/WHT | TCU-21 |

| PIN | CIRCUIT FUNCTION | COLOR | TCU POS. |
|-----|------------------|---------|---------------|
| 1 | SWITCHED +12VDC | RED | TCU-19, S1 |
| 2 | GND. | BLK | TCU-9, 42, S2 |
| 3 | CAN HIGH | WHT/RED | TCU-15 |
| 4 | CAN LOW | WHT/BLK | TCU-16 |

| PIN | CIRCUIT FUNCTION | COLOR | TCU POS. |
|-----|------------------|---------|------------|
| 1 | CAN HIGH | WHT/RED | TCU-15, S4 |
| 2 | CAN LOW | WHT/BLK | TCU-16, S5 |

| CIRCUIT FUNCTION | COLOR | CONNECTS TO |
|-------------------|------------|-------------|
| TACHOMETER GROUND | BLK/WHT | TCU-23 |
| TACHOMETER | ORN/BLK | TCU-24 |
| SPEEDOMETER | ORN/WHT | TCU-17 |
| BRAKE LIGHT | BRN/BLK | TCU-29 |
| ANALOG IN 2 | YEL/RED | TCU-46 |
| PWM OUT 4 | VIO/LT.BLU | TOM-14 |
| PWM OUT 5 | VIO/WHT | TOM-51 |
| TRUE MANUAL MODE | BLK/RED | TCU-30 |
| UP SHIFT | BLK/LT.GRN | TCU-31 |
| DOWN SHIFT | BLK/LT.BLU | TCU-32 |
| CAL "B" | BLK/WHT | TCU-33 |
| CANCEL O/D | BLK/ORN | TCU-34 |
| 4 W/D LOW | BLK/YEL | TCU-35 |
| DYNO MODE | BLK/PNK | TCU-36 |

| F2 | PIN | CIRCUIT FUNCTION | COLOR | WIRES TO |
|----|-----|------------------|-------|-------------|
| F2 | A | +12V BATT | RED | TCU-20 |
| | B | +12V BATT | RED | BATT SOURCE |

| F1 | PIN | CIRCUIT FUNCTION | COLOR | WIRES TO |
|----|-----|------------------|-------|---------------|
| F1 | A | SWITCHED +12V | YEL | TCU-19, S1 |
| | B | SWITCHED +12V | YEL | SWITCHED BATT |

| PIN | CIRCUIT FUNCTION | COLOR | TCU POS. |
|-----|------------------|-------|----------|
| A | SERIAL RX | RED | TCU-27 |
| B | SIGNAL GND. | WHT | TCU-28 |
| C | SERIAL TX | BLK | TCU-26 |

NOTE:
This range connector pin-out shown here is correct. Some connectors are plastic molded with the pin numbers from left to right in the wrong order.

| PIN | CIRCUIT FUNCTION | COLOR | CONNECTS TO |
|-----|--------------------|---------|--------------|
| 1 | START CKT | BLU | UNTERMINATED |
| 2 | BACKUP LAMP | ORN | UNTERMINATED |
| 3 | BACKUP LAMP | YEL | UNTERMINATED |
| 4 | START CKT | WHT | UNTERMINATED |
| 5 | 4 X 4 MODULE | GRY | UNTERMINATED |
| 6 | TRANS RANGE OUTPUT | YEL/WHT | TCU-49 |
| 7 | SIGNAL GND | BLK/WHT | TCU-37, S3 |
| 8 | 4 X 4 MODULE | GRN | UNTERMINATED |

| PIN | CIRCUIT FUNCTION | COLOR | TCU POS. |
|-----|------------------|---------|----------|
| 1 | TOSS | ORG/RED | TCU-25 |
| 2 | SIGNAL GND. | BLK/WHT | TCU-22 |

| PIN | CIRCUIT FUNCTION | COLOR | CONNECTS TO |
|-----|------------------|---------|-------------|
| 1 | SHIFT SOL #1 | PNK/BLK | TCU-53 |
| 2 | POWER | YEL | TCU-19, S1 |
| 3 | TCC CTL SOL- | VIO/RED | TCU-12 |
| 4 | NC | | NC |
| 5 | FLUID TEMP | YEL/ORG | TCU-50 |
| 6 | SHIFT SOL #2 | PNK/RED | TCU-54, S3 |
| 7 | EPC+ | YEL | TCU-19, S1 |
| 8 | TCC+ | YEL | TCU-19, S1 |
| 9 | SIGNAL RETURN | BLK/WHT | TCU-57, S3 |
| 10 | EPC- | VIO/BLK | TCU-11 |

| NUM | NAME | PCS P/N | NOTES |
|-----|---------------------------|----------|-------|
| L1 | TCM-4816-001 | WRE-8501 | P292 |
| L2 | OPTION CONNECTOR | WRE-8500 | P6 |
| L3 | THROTTLE POSITION SENSOR | WRE-8500 | P2 |
| L4 | SWITCHED +12V DC | WRE-8500 | P31 |
| L5 | CHASSIS GROUND | WRE-8500 | P32 |
| L6 | LAPTOP CAL CONNECTOR | WRE-8500 | P65 |
| L7 | OUTPUT SHAFT SPEED SENSOR | WRE-8500 | P8 |
| L8 | RANGE CONNECTOR | WRE-8500 | P7 |
| L9 | TRANSMISSION CONNECTOR | WRE-8501 | P107 |
| L10 | TACHOMETER GROUND | WRE-8500 | P33 |
| L11 | TACHOMETER | WRE-8500 | P34 |
| L12 | SPEEDOMETER | WRE-8500 | P39 |
| L13 | BRAKE LIGHT | WRE-8500 | P38 |
| L14 | ANALOG IN 2 | WRE-8500 | P95 |
| L15 | MANUAL MODE | WRE-8500 | P347 |
| L16 | UP SHIFT | WRE-8500 | P348 |
| L17 | DOWN SHIFT | WRE-8500 | P349 |
| L18 | PWM OUT 4 | WRE-8500 | P99 |
| L19 | PWM OUT 5 | WRE-8500 | P100 |
| L20 | 4X4 MODULE | WRE-8500 | P53 |
| L21 | 4X4 MODULE | WRE-8500 | P53 |
| L22 | BACKUP LAMP | WRE-8500 | P50 |
| L23 | START | WRE-8500 | P49 |
| L24 | BACKUP LAMP | WRE-8500 | P50 |
| L25 | START | WRE-8500 | P49 |
| L26 | OPTION | WRE-8500 | P50 |
| L27 | 12V BATT | WRE-8500 | P30 |
| L28 | CALIBRATION A/B ENABLE | WRE-8500 | P80 |
| L29 | CANCEL O/D SW | WRE-8500 | P350 |
| L30 | 4 W/D LOW | WRE-8500 | P81 |
| L31 | DYNO MODE ENABLE | WRE-8500 | P54 |

| 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-N | FUNCTION | COLOR |
|-----|-------------------|---------|
| S1 | 12 VOLTS SWITCHED | RED |
| S1A | 12 VOLTS SWITCHED | RED |
| S2 | GROUND | BLK |
| S3 | SENSOR GROUND | BLK/WHT |
| S4 | CAN HIGH | WHT/RED |
| S5 | CAN LOW | WHT/BLK |

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| LEVEL | DESCRIPTION | DATE | DRN | APP |
|-------|-------------|----------|-----|-----|
| 1 | RELEASE | 10/17/16 | FD | |

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 TX UNLESS OTHERWISE STATED.

COMPANY:
POWERTRAIN CONTROL SOLUTIONS

TITLE:
FORD AODE 4R70 (92-97) TCM-2800

CUSTOMER DRAWING NO.: NONE
 PCS PART NUMBER: TCM-4816
 REV: 003

DRAWN BY: FAD DATE: 4/27/2015
 APPROVED BY: DATE: SHEET 4 OF 11