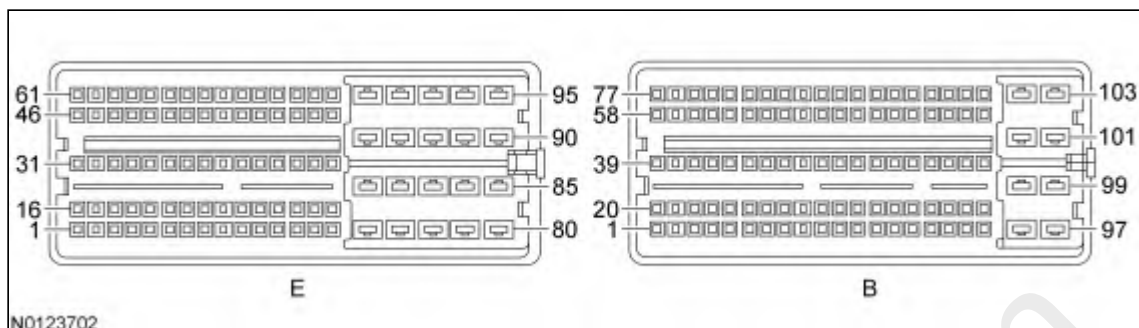


**3.0L Continental/MKZ****198 Pin PCM****Typical Diagnostic Reference Values**

| Inputs        | Component/PID Only | Measured/PID Values  |                      |                      |                      | Units Measured/PID      |
|---------------|--------------------|----------------------|----------------------|----------------------|----------------------|-------------------------|
|               |                    | KOEO                 | Hot Idle             | 48 KM/H (30 MPH)     | 89 KM/H (55 MPH)     |                         |
| AAT           | AAT Sensor         | 23 (73.4)            | 24 (75.2)            | 21 (69.8)            | 20 (68)              | DEG C (DEG F)           |
| AAT_V         | AAT Sensor         | 2.82                 | 2.78                 | 2.93                 | 2.98                 | VOLTS                   |
| AC_REQ        | PID                | NO                   | NO                   | NO                   | NO                   | YES/NO                  |
| APP           | APP Sensor         | 0                    | 0                    | 10                   | 20.50                | %                       |
| APP1          | APP Sensor         | 0.78                 | 0.78                 | 1.10                 | 1.43                 | VOLTS                   |
| APP1 (APP_D)  | APP Sensor         | 15.29                | 15.29                | 21.96                | 28.62                | %                       |
| APP2          | APP Sensor         | 0.39                 | 0.39                 | 0.56                 | 0.72                 | VOLTS                   |
| APP2 (APP_E)  | APP Sensor         | 7.84                 | 7.84                 | 10.98                | 14.11                | %                       |
| APP_MAXDIFF   | PID                | 0                    | 0                    | -0.06                | 0                    | DEG                     |
| APP_MODE      | PID                | NO PEDAL             | NO PEDAL             | PART PEDAL           | PART PEDAL           | NO PEDAL/<br>PART PEDAL |
| B+            | PID                | 12.56                | 14.11                | 14.19                | 14.36                | VOLTS                   |
| BARO          | PID                | 99 (14.36)<br>156.11 | 99 (14.36)<br>156.11 | 99 (14.36)<br>156.11 | 99 (14.36)<br>156.11 | kPa (PSI)/<br>Hz        |
| BOO1          | BPP Switch         | OFF                  | OFF                  | OFF                  | OFF                  | ON/OFF                  |
| BOO2          | BPP Switch         | OFF                  | OFF                  | OFF                  | OFF                  | ON/OFF                  |
| BRKOV RD_POSS | PID                | 227                  | 227                  | 228                  | 228                  | NUMERIC<br>VALUE        |

| Inputs                     | Component/PID Only        | Measured/PID Values |                    |                    |                    | Units Measured/PID  |
|----------------------------|---------------------------|---------------------|--------------------|--------------------|--------------------|---------------------|
|                            |                           | KOEO                | Hot Idle           | 48 KM/H (30 MPH)   | 89 KM/H (55 MPH)   |                     |
| BRKOV <sub>R</sub> _ACTION | PID                       | 0                   | 0                  | 0                  | 0                  | NUMERIC VALUE       |
| CAC_T                      | CACT Sensor               | 29 (84.2)           | 29 (84.2)          | 30 (86)            | 27 (80.6)          | DEG C (DEG F)       |
| CAC_V                      | CACT Sensor               | 2.25                | 2.32               | 2.24               | 2.35               | VOLTS               |
| CHT2                       | CHT2 Sensor               | 0.57/91 (195.8)     | 0.56/90 (194)      | 3.27/98 (208.4)    | 3.25/104 (219.2)   | VOLTS/DEG C (DEG F) |
| CLRDIST                    | PID                       | 510.89 ( )          | 510.89 ( )         | 516.89 ( )         | 514.89 ( )         | KM (MILES)          |
| CRNKCAS_P <sub>RS</sub>    | Crankcase Pressure Sensor | 0                   | -6 (-0.87)         | -51 (-7.40)        | -70 (-10.15)       | Pa (PSI)            |
| CRNKCAS_P_V                | Crankcase Pressure Sensor | 0                   | 3.92               | 3.90               | 3.88               | VOLTS               |
| DECHOKE                    | PID                       | YES                 | NO                 | NO                 | NO                 | YES/NO              |
| DIST_ <sub>BRKOV</sub> RD  | PID                       | 3883.08 (2412.83)   | 3883.08 (2412.83)  | 3888.58 (2416.25)  | 3886.08 (2414.70)  | KM (MILES)          |
| DTCCNT                     | PID                       | 0                   | 0                  | 0                  | 0                  | Numeric Value       |
| ECT                        | ECT Sensor                | 0.57/92 (197.6)     | 0.60/90 (194)      | 0.51/95 (203)      | 0.45/100 (212)     | VOLTS/DEG C (DEG F) |
| EQ_RAT11                   | PID                       | 0:1                 | 14.57:1            | 14.91:1            | 14.73:1            | RATIO               |
| EQ_RAT21                   | PID                       | 0:1                 | 14.81:1            | 14.50:1            | 13.61:1            | RATIO               |
| ETC_ACT                    | PID                       | 7.64                | 2.61               | 8.91               | 6.55               | DEG                 |
| ETC_TRIM                   | PID                       | 0.39                | 0.39               | 0.25               | 0.25               | DEG                 |
| FLI                        | Fuel Level Sensor         | 82.35 (H)           | 80 (H)             | 74.90 (H)          | 75.68 (H)          | %                   |
| FLP                        | Fuel Pressure Sensor      | 628 (91.08)         | 578.50 (83.90)     | 578.50 (83.90)     | 566.50 (82.16)     | kPa (PSI)           |
| FLP_V                      | Fuel Pressure Sensor      | 4.06                | 3.76               | 3.76               | 3.69               | VOLTS               |
| FPM                        | PID                       | 40.40               | 39.99              | 40.39              | 39.99              | %                   |
| FPM2                       | PID                       | 39.99               | 41                 | 40.40              | 39.99              | %                   |
| FRP                        | FRP Sensor                | 1.10/3600 (522.14)  | 0.94/2680 (388.70) | 0.79/1730 (250.92) | 0.93/2570 (372.75) | VOLTS/kPa (PSI)     |
| FTP                        | FTP Sensor                | 2.63/29 (0)         | 2.55/-125 (-0.02)  | 2.17/-796 (-0.12)  | 2.06/-976 (-0.14)  | VOLTS/Pa (PSI)      |
| FTP_H2O                    | FTP Sensor                | 0.1                 | -0.51              | -3.20              | -3.93              | NUMERIC VALUE       |
| HTRCM12                    | HO2S12 Sensor             | 0                   | 0                  | 1.16               | 1.16               | mA                  |
| HTRCM22                    | HO2S22 Sensor             | 0                   | 0                  | 1.24               | 1.24               | mA                  |
| IAT                        | IAT Sensor                | 1.56/42 (107.6)     | 1.56/42 (107.6)    | 2.15/26 (78.8)     | 2.24/24 (75.2)     | VOLTS/DEG C (DEG F) |
| IAT2                       | IAT2 Sensor               | 1.67/42 (107.6)     | 1.77/39 (102.2)    | 1.67/42 (107.6)    | 1.79/39 (102.2)    | VOLTS/DEG C (DEG F) |
| KEYST                      | Ignition Switch           | ON                  | ON                 | ON                 | ON                 | ON/OFF              |

| Inputs        | Component/PID Only | Measured/PID Values |               |                  |                  | Units Measured/PID |
|---------------|--------------------|---------------------|---------------|------------------|------------------|--------------------|
|               |                    | KOEO                | Hot Idle      | 48 KM/H (30 MPH) | 89 KM/H (55 MPH) |                    |
| KNK_CNTR_CYL1 | PID                | 1                   | 1             | 1                | 1                | COUNT              |
| KNK_CNTR_CYL2 | PID                | 0                   | 0             | 0                | 0                | COUNT              |
| KNK_CNTR_CYL3 | PID                | 0                   | 0             | 0                | 0                | COUNT              |
| KNK_CNTR_CYL4 | PID                | 1                   | 1             | 1                | 1                | COUNT              |
| KNK_CNTR_CYL5 | PID                | 1                   | 1             | 1                | 1                | COUNT              |
| KNK_CNTR_CYL6 | PID                | 0                   | 0             | 0                | 0                | COUNT              |
| KNOCK_1       | KS1 Sensor         | 198                 | 20            | 49               | 47               | COUNT              |
| KNOCK_2       | KS2 Sensor         | 198                 | 20            | 33               | 36               | COUNT              |
| LOAD          | PID                | 0.00 (l)            | 34.90         | 40               | 19.60            | %                  |
| LONGFT1       | PID                | (l)                 | -20 TO +20    | -20 TO +20       | -20 TO +20       | %                  |
| LONGFT2       | PID                | (l)                 | -20 TO +20    | -20 TO +20       | -20 TO +20       | %                  |
| MAP           | MAP Sensor         | 99 (14.36)          | 48 (6.96)     | 72 (10.44)       | 33 (4.79)        | kPa (PSI)          |
| MAP_GAUGE     | MAP Sensor         | (l)                 | 53 (7.69)     | 29 (4.21)        | 68 (9.86)        | kPa (PSI)          |
| MAP_V         | MAP Sensor         | 1.52                | 0.72          | 1.10             | 0.48             | VOLTS              |
| MIL_DIS       | PID                | 0                   | 0             | 0                | 0                | KM (MILES)         |
| MISFIRE       | PID                | NO                  | NO            | NO               | NO               | YES/NO             |
| MP_LRN        | PID                | YES                 | YES           | YES              | YES              | YES/NO             |
| O2S11_CUR     | HO2S11 Sensor      | (l)                 | switching     | switching        | switching        | mA/uA              |
| O2S11_IMP     | HO2S11 Sensor      | 4.92                | 1.02          | 1.01             | 1.02             | VOLTS              |
| O2S11_READY   | HO2S11 Sensor      | NO                  | YES           | YES              | YES              | YES/NO             |
| O2S11_TR      | HO2S11 Sensor      | 0                   | 0             | 0                | 0                | Kohm               |
| O2S12         | HO2S12 Sensor      | (l)                 | switching (D) | switching (D)    | switching (D)    | VOLTS              |
| O2S21_CUR     | HO2S21 Sensor      | (l)                 | switching     | switching        | switching        | mA/uA              |
| O2S21_IMP     | HO2S21 Sensor      | 4.93                | 1.07          | 1.02             | 1.01             | VOLTS              |
| O2S21_READY   | HO2S21 Sensor      | NO                  | YES           | YES              | YES              | YES/NO             |
| O2S21_TR      | HO2S21 Sensor      | 0                   | 0             | 0                | 0                | Kohm               |
| O2S22         | HO2S22 Sensor      | (l)                 | switching (D) | switching (D)    | switching (D)    | VOLTS              |
| OCTADJ_R_LRND | PID                | 15.76               | 15.76         | 15.76            | 15.76            | %                  |
| OSS_SRC       | OSS Sensor         | 0                   | 0             | 1248.25          | 2283.25          | RPM                |
| RO2FT1        | PID                | 0                   | -0.57         | 1.51             | 1.51             | %                  |

| Inputs         | Component/PID Only      | Measured/PID Values |                    |                  |                    | Units Measured/PID     |
|----------------|-------------------------|---------------------|--------------------|------------------|--------------------|------------------------|
|                |                         | KOEO                | Hot Idle           | 48 KM/H (30 MPH) | 89 KM/H (55 MPH)   |                        |
| RO2FT2         | PID                     | 0                   | -0.56              | 1.72             | 1.67               | %                      |
| RPM            | CKP Sensor              | 0                   | 603.75             | 1791             | 1670.50            | RPM                    |
| SHRTFT1        | PID                     | (I)                 | -10 TO +10         | -10 TO +10       | -10 TO +10         | %                      |
| SHRTFT2        | PID                     | (I)                 | -10 TO +10         | -10 TO +10       | -10 TO +10         | %                      |
| SYNC           | PID                     | NO                  | YES                | YES              | YES                | YES/NO                 |
| TCBP           | TCBP Sensor             | 99.89 (14.49)       | 99.82 (14.48)      | 102.12 (14.81)   | 102.68 (14.89)     | kPa (PSI)              |
| TCBP_V         | TCBP Sensor             | 1.52                | 1.52               | 1.55             | 1.56               | VOLTS                  |
| TP1            | ETBTPS                  | 4.19/15.68          | 4.43/10.98         | 4.36/12.54       | 4.23/15.29         | VOLTS/%                |
| TP1_LRN_TRIM   | ETBTPS                  | 9.25                | 9.25               | 9.25             | 9.25               | DEG                    |
| TP2            | ETBTPS                  | 0.80/16.07          | 0.56/10.98         | 0.64/12.54       | 0.77/15.29         | VOLTS/%                |
| TP2_LRN_TRIM   | ETBTPS                  | 9.25                | 9.25               | 9.25             | 9.25               | DEG                    |
| TP_MAXDIFF     | PID                     | -0.06               | 0                  | 0                | -0.06              | %                      |
| TQ_CNTRL       | PID                     | TORQUE BASED DECEL  | IDLE SPEED CONTROL | NONE REQUESTED   | TORQUE BASED DECEL | STATUS                 |
| TURBO_BP1_STAT | TCBY Valve              | NO FAULT            | NO FAULT           | NO FAULT         | NO FAULT           | FAULT/ NO FAULT        |
| VCTSYS         | PID                     | OPEN LOOP           | CLOSED LOOP        | CLOSED LOOP      | CLOSED LOOP        | OPEN LOOP/ CLOSED LOOP |
| VCT_EXH_ACT1   | PID                     | 0                   | -0.25              | -0.12            | 0                  | DEG                    |
| VCT_EXH_ACT2   | PID                     | 0                   | -0.06              | 40.42            | 43.18              | DEG                    |
| VCT_EXH_DIF1   | PID                     | 0                   | 0.18               | -2.18            | 2.25               | DEG                    |
| VCT_EXH_DIF2   | PID                     | 0                   | 0.06               | -1.93            | 0.81               | DEG                    |
| VCT_INT_ACT1   | PID                     | 0                   | -0.06              | -0.06            | -3.75              | DEG                    |
| VCT_INT_ACT2   | PID                     | 0                   | -0.06              | -0.12            | -7.06              | DEG                    |
| VCT_INT_DIF1   | PID                     | 0                   | -0.06              | 0.06             | 0.18               | DEG                    |
| VCT_INT_DIF2   | PID                     | 0                   | -0.06              | 0                | 0.18               | DEG                    |
| VSS            | PID                     | 0                   | 0                  | 48 km/h (30 MPH) | 89 km/h (55 MPH)   | km/h / MPH             |
| WGATE_PRES     | Wastegate Vacuum Sensor | 100 (14.50)         | 100 (14.50)        | 99.50 (14.43)    | 49.50 (7.18)       | kPa (PSI)              |

| Inputs        | Component/PID Only      | Measured/PID Values |          |                  |                  | Units Measured/PID |
|---------------|-------------------------|---------------------|----------|------------------|------------------|--------------------|
|               |                         | KOEO                | Hot Idle | 48 KM/H (30 MPH) | 89 KM/H (55 MPH) |                    |
| WGATE_V       | Wastegate Vacuum Sensor | 4.28                | 4.28     | 4.25             | 2.23             | VOLTS              |
| WGATE_VAC_INF | PID                     | 0                   | 0        | 0                | 50 (7.25)        | kPa (PSI)          |

| Outputs       | Component/PID Only       | Measured/PID Values |               |                  |                  | Units Measured/PID    |
|---------------|--------------------------|---------------------|---------------|------------------|------------------|-----------------------|
|               |                          | KOEO                | Hot Idle      | 48 KM/H (30 MPH) | 89 KM/H (55 MPH) |                       |
| AEIS_ACTION   | PID                      | 0                   | 0             | 0                | 0                | NUMERIC VALUE         |
| AEIS_POSS     | PID                      | 16                  | 16            | 20               | 20               | NUMERIC VALUE         |
| CYL_1-6_ACCL  | PID                      | (I)                 | -1 TO +1      | -1 TO +1         | -1 TO +1         | NUMERIC VALUE         |
| DIST_AEIS     | PID                      | 0                   | 0             | 0                | 0                | KM (MILES)            |
| ETC [TAC_PCT] | PID                      | 9.41                | 3.13          | 10.58            | 16.86            | %                     |
| EVAP020C      | PID                      | NO                  | NO            | NO               | NO               | YES/NO                |
| EVAPCP        | EVAPCP Valve             | 0                   | 55.17         | 78.12            | 75.25            | %                     |
| EVAPCV        | CANV Valve               | 0/OFF               | 0/OFF         | 0/OFF            | 0/OFF            | %/ON/OFF              |
| EVAPPCT       | PID                      | 0                   | 54.90         | 78.03            | 74.90            | %                     |
| EVAPSOAK      | PID                      | YES                 | YES           | YES              | YES              | YES/NO                |
| EVAPSTA       | PID                      | NOT RUNNING         | NOT RUNNING   | NOT RUNNING      | NOT RUNNING      | STATUS                |
| FP            | Fuel Pump Control Module | 75/OFF              | 27.81/ON      | 27.21/ON         | 26.85/ON         | %/ON/OFF              |
| FRP_DSD       | PID                      | 370 (53.66)         | 2630 (381.45) | 2480 (359.69)    | 2550 (369.85)    | kPa (PSI)             |
| FUELSYS       | PID                      | OPEN LOOP           | CLOSED LOOP   | CLOSED LOOP      | CLOSED LOOP      | OPEN LOOP/CLOSED LOOP |
| F_VCV         | Fuel Injection Pump      | 0                   | 2.51          | 7.16             | 6.99             | %                     |
| HFC           | PID                      | OFF                 | OFF           | OFF              | OFF              | ON/OFF                |
| HTR11         | HO2S11 Sensor            | OFF                 | ON            | ON               | ON               | ON/OFF                |
| HTR12         | HO2S12 Sensor            | OFF                 | ON            | ON               | ON               | ON/OFF                |
| HTR21         | HO2S21 Sensor            | OFF                 | ON            | ON               | ON               | ON/OFF                |
| HTR22         | HO2S22 Sensor            | OFF                 | ON            | ON               | ON               | ON/OFF                |
| INJ1-6_OFF    | Injector 1-6             | -----               | -----         | -----            | -----            | -----/<br>DISABLE     |
| LFC           | PID                      | OFF                 | OFF           | OFF              | OFF              | ON/OFF                |

| Outputs         | Component/PID Only                                  | Measured/PID Values |          |                  |                  | Units Measured/PID   |
|-----------------|-----------------------------------------------------|---------------------|----------|------------------|------------------|----------------------|
|                 |                                                     | KOEO                | Hot Idle | 48 KM/H (30 MPH) | 89 KM/H (55 MPH) |                      |
| MIL             | PID                                                 | OFF                 | ON       | OFF              | ON               | ON/OFF               |
| O2S11_HTR       | HO2S11 Sensor                                       | 0                   | 53.72    | 38.03            | 39.21            | %                    |
| O2S21_HTR       | HO2S21 Sensor                                       | 0                   | 83.52    | 34.11            | 37.25            | %                    |
| O2_DS_<br>DISBL | PID                                                 | YES                 | YES      | NO               | NO               | YES/NO               |
| PATSENABL       | PID                                                 | ENABLED             | ENABLED  | ENABLED          | ENABLED          | ENABLED/<br>DISABLED |
| SPARKADV        | PID                                                 | 10                  | 3.25     | 53               | 44.75            | DEG                  |
| TURBO_<br>BPASS | TCBY Valve                                          | OFF                 | OFF      | OFF              | OFF              | ON/OFF               |
| TURBO_<br>WGATE | Turbocharger Wastegate<br>Regulating Valve Solenoid | 0                   | 2.77     | 0.05             | 1.16             | %                    |
| VCT_EXH_<br>DC1 | VCT12 Solenoid                                      | 0                   | 0        | 40.42            | 49.02            | %                    |
| VCT_EXH_<br>DC2 | VCT22 Solenoid                                      | 0                   | 0        | 42.02            | 45.75            | %                    |
| VCT_INT_<br>DC1 | VCT11 Solenoid                                      | 0                   | 0        | 0                | 38.72            | %                    |
| VCT_INT_<br>DC2 | VCT21 Solenoid                                      | 0                   | 0        | 0                | 0                | %                    |

| Other | Component/PID Only | Measured/PID Values |          |                  |                  | Units Measured/PID |
|-------|--------------------|---------------------|----------|------------------|------------------|--------------------|
|       |                    | KOEO                | Hot Idle | 48 KM/H (30 MPH) | 89 KM/H (55 MPH) |                    |
| VPWR  | PID                | VBAT                | VBAT     | VBAT             | VBAT             | VOLTS              |
| VREF  | PID                | 5                   | 5        | 5                | 5                | VOLTS              |

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