

ProEFI ECUs to AEM CD Dash

Supported Devices

Pro128 ECU
Pro112 ECU
Pro48 ECU

CAN Bus Wiring

AEM CD has 2 separate CAN ports. For 3rd party devices, AEM recommends you use AEM CAN Bus 2, whose connections are contained in a 2 pin Deutsch DTM connector. On older harnesses it may be in an unterminated, twisted/shielded flying lead in the dash harness.

On the ProEFI you should use the following locations:

Pro128

Pro128 CAN+ (J1-B09) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 1 (Gray wire in twisted/shielded pair)

Pro128 CAN- (J1-B10) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 2 (Black wire in twisted/shielded pair)

Pro112

Pro112 CAN+ (B-A1) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 1 (Gray wire in twisted/shielded pair)

Pro112 CAN- (B-A2) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 2 (Black wire in twisted/shielded pair)

Pro48

Pro48 CAN+ (B20) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 1 (Gray wire in twisted/shielded pair)

Pro48 CAN- (B21) → AEM CD Dash "CAN 2" 2 Pin DTM Pin 2 (Black wire in twisted/shielded pair)

Terminating Resistors:

All 3 of the ProEFI ECU's have 120 ohm terminating resistors installed internally. As long as the ECU is on one physical end of the CAN Network and the CD-7 is on the other with its terminating resistor activated then no further action regarding terminating resistors is required.

Supported Channels

The ProEFI ECU's can potentially send out a large quantity of data but please note not all firmware versions of each ECU sends out all messages. The CD-7 supports the following 156 data channels that could be transmitted by the ProEFI ECUs:

Channel Name	Units	Update Rate
AFR1	(AFR)	100hz
AFR2	(AFR)	100hz
AFR1ControlTrim	(frac)	100hz
AFR2ControlTrim	(frac)	100hz

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Channel Name	Units	Update Rate
AFRTarget	(AFR)	20hz
AFRTarget1	(AFR)	50hz
AFRTarget2	(AFR)	50hz
BoostControlOutput	(%)	50hz
BoostPressureRatio		50hz
BrakePress	(psi)	20hz
CAM1PhaseRelative	(Deg)	50hz
CAM2PhaseRelative	(Deg)	50hz
CoolantTemp	(degC)	10hz
CoolantTempF	(degF)	20hz
CruiseControlTargetSpeed	(mph)	50hz
DriveShaftSpeed	(%)	50hz
DriveshaftSpeedTarget	(rpm)	50hz
ECU_EncoderFaultCount		10hz
ECU_EncoderState		10hz
ECU_Firmware		50hz
ECUBatteryVoltage	(V)	10hz
ECUPartNumber		50hz
ECUSerialNumber		50hz
EngineHPPotential	(hp)	20hz
EngineRunTime	(S)	20hz
EngineSpeed	(rpm)	100hz
EngineSpeedLimit	(rpm)	50hz
EngineTorqueEstimated	(ft-lb)	50hz
ExhaustTemp1	(degC)	50hz
ExhaustTemp2	(degC)	50hz
ExhaustTemp1_Ext	(degC)	20hz
ExhaustTemp2_Ext	(degC)	20hz
ExhaustTemp3_Ext	(degC)	20hz
ExhaustTemp4_Ext	(degC)	20hz
ExhaustTemp5_Ext	(degC)	20hz
ExhaustTemp6_Ext	(degC)	20hz
ExhaustTemp7_Ext	(degC)	20hz
ExhaustTemp8_Ext	(degC)	20hz
ExhPress1	(psi)	50hz
ExhPress1kPa	(kPa)	50hz
ExhPress2	(psi)	10hz
ExhPress2kPa	(kPa)	50hz
EXT_Lambda1	(Lambda)	100hz
EXT_Lambda2	(Lambda)	100hz
EXT_Lambda1SensorTemp	(degC)	100hz

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Channel Name	Units	Update Rate
EXT_Lambda2SensorTemp	(degC)	100hz
FuelEconomyInstant	(mpg)	20hz
FuelEthanolContent	(%)	10hz
Fuellnj1Pulsewidth	(uS)	50hz
Fuellnj2Pulsewidth	(uS)	50hz
Fuellnj3Pulsewidth	(uS)	50hz
Fuellnj4Pulsewidth	(uS)	50hz
Fuellnj5Pulsewidth	(uS)	50hz
Fuellnj6Pulsewidth	(uS)	50hz
Fuellnj7Pulsewidth	(uS)	50hz
Fuellnj8Pulsewidth	(uS)	50hz
Fuellnj9Pulsewidth	(uS)	50hz
Fuellnj10Pulsewidth	(uS)	50hz
Fuellnj11Pulsewidth	(uS)	50hz
Fuellnj12Pulsewidth	(uS)	50hz
FuellnjDutyPrimary	(%)	50hz
FuellnjDutySecondary	(%)	50hz
FuellnjPrimaryFlow	(cc)	50hz
FuellnjPriStoich	(AFR)	10hz
FuellnjSecondaryFlow	(cc)	50hz
FuelMassFlow Rate	(g/s)	50hz
FuelPressPrimary	(psi)	50hz
FuelPressPrimarykPa	(kPa)	50hz
FuelPressSecondary	(psi)	50hz
FuelPressSecondarykPa	(kPa)	50hz
FuelTank1Level	(%)	50hz
FuelTank2Level	(%)	50hz
GearboxConverterClutchSlip	(%)	10hz
GearboxLinePress	(psi)	20hz
GearboxRatioCalculated		10hz
GearboxTemp	(degC)	10hz
GearCommanded		10hz
GearShiftPos		10hz
lBoostPosition		10hz
IgnitionTiming	(Deg)	100hz
IntakeManifoldAirPress	(kPa)	100hz
IntakeManifoldAirPressPSI	(psi)	20hz
IntakeManifoldAirTemp	(degC)	10hz
IntakeManifoldAirTempF	(degF)	20hz
IntakeManifoldSurfaceTemp	(degC)	50hz
Knk_Win_Int1		50hz

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Channel Name	Units	Update Rate
Knk_Win_Int2		50hz
Knk_Win_Int3		50hz
Knk_Win_Int4		50hz
Knk_Win_Int5		50hz
Knk_Win_Int6		50hz
Knk_Win_Int7		50hz
Knk_Win_Int8		50hz
KnockCyl1IgnOffset	(Deg)	50hz
KnockCyl2IgnOffset	(Deg)	50hz
KnockCyl3IgnOffset	(Deg)	50hz
KnockCyl4IgnOffset	(Deg)	50hz
KnockCyl5IgnOffset	(Deg)	50hz
KnockCyl6IgnOffset	(Deg)	50hz
KnockCyl7IgnOffset	(Deg)	50hz
KnockCyl8IgnOffset	(Deg)	50hz
KnockEnergyCyl1		100hz
KnockEnergyCyl2		100hz
KnockEnergyCyl3		100hz
KnockEnergyCyl4		100hz
KnockEnergyCyl5		100hz
KnockEnergyCyl6		100hz
KnockEnergyCyl7		100hz
KnockEnergyCyl8		100hz
LaunchControlApproachTimingRetard		50hz
LaunchControlRetardBeginRPM	(S)	50hz
LaunchRampTime	(S)	100hz
NitrousBottlePress1	(psi)	10hz
NitrousBottlePress2	(psi)	10hz
NitrousBottlePress3	(psi)	10hz
NitrousBottlePress4	(psi)	10hz
OilPress	(psi)	10hz
OilPressKpa	(kPa)	50hz
OilTemp	(degC)	10hz
RadiatorPress	(psi)	10hz
RadiatorPressKpa	(kPa)	50hz
Ref_Win_Int1		50hz
Ref_Win_Int2		50hz
Ref_Win_Int3		50hz
Ref_Win_Int4		50hz
Ref_Win_Int5		50hz
Ref_Win_Int6		50hz

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Channel Name	Units	Update Rate
Ref_Win_Int7		50hz
Ref_Win_Int8		50hz
ThrottleDBWDuty	(%)	10hz
ThrottleDBWTerm		10hz
ThrottlePedalPos1	(%)	20hz
ThrottlePedalPos2	(%)	20hz
ThrottlePos	(%)	50hz
ThrottlePos2	(%)	20hz
ThrottlePosRateofChange	(frac)	100hz
TracControlIgnOffsetRequest	(Deg)	50hz
TracControlSlipMeasured	(%)	50hz
TracControlSlipTarget	(%)	50hz
TurboSpeed1	(rpm)	50hz
TurboSpeed2	(rpm)	50hz
VehicleSpeed	(mph)	50hz
VVT1Setpoint	(Deg)	50hz
VVT2Setpoint	(Deg)	50hz
WasteGateDecreaseDuty	(%)	10hz
WastegatePress	(psi)	10hz
WasteGatePressKpa	(kPa)	50hz
WastegateSetpoint	(kPa)	50hz
WheelSpeedDriven	(mph)	50hz
WheelSpeedNonDriven	(mph)	50hz
XAxisDegrees	(Deg)	100hz
XAxisG	(G)	100hz
YAxisDegrees	(Deg)	100hz
YAxisG	(G)	100hz
ZAxisDegrees	(Deg)	100hz
ZAxisG	(G)	100hz

In addition to the 150+ data channels, the ProEFI ECU's can also send out a large quantity of status flags which inform the user to the specific states the ECU is operating in. Again, not all firmw are versions of each ECU send out all these status updates. The CD-7 supports the following 210 data channels that could be transmitted on the ProEFI network:

Channel Name	Units	Channel Name	Units
AC_PressureRangeHigh	(OK/Fault)	MAP_IR_High	(OK/Fault)
AC_PressureRangeLow	(OK/Fault)	MAP_IR_Low	(OK/Fault)
AntilagSwitchStatus	(On/Off)	MAPRangeHigh	(OK/Fault)
APP1AdaptHiMax	(OK/Fault)	MAPRangeLow	(OK/Fault)
APP1AdaptHiMin	(OK/Fault)	MAPSticking	(OK/Fault)
APP1AdaptLoMax	(OK/Fault)	MAPTimeRangeHigh	(OK/Fault)
APP1AdaptLoMin	(OK/Fault)	MAPTimeRangeLow	(OK/Fault)

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Channel Name	Units	Channel Name	Units
APP1RangeHigh	(OK/Fault)	MSTRangeHigh	(OK/Fault)
APP1RangeLow	(OK/Fault)	MSTRangeLow	(OK/Fault)
APP2AdaptHiMax	(OK/Fault)	N2OBottle1PressLimitExceeded	(OK/Fault)
APP2AdaptHiMin	(OK/Fault)	N2OBottle2PressLimitExceeded	(OK/Fault)
APP2AdaptLoMax	(OK/Fault)	N2OBottle3PressLimitExceeded	(OK/Fault)
APP2AdaptLoMin	(OK/Fault)	N2OBottle4PressLimitExceeded	(OK/Fault)
APP2RangeHigh	(OK/Fault)	N2OBottlePress1RangeHigh	(OK/Fault)
APP2RangeLow	(OK/Fault)	N2OBottlePress1RangeLow	(OK/Fault)
APPSensorsConflict	(OK/Fault)	N2OBottlePress2RangeHigh	(OK/Fault)
AutoCrankFailed	(OK/Fault)	N2OBottlePress2RangeLow	(OK/Fault)
Baro_PressureRangeHigh	(OK/Fault)	N2OBottlePress3RangeHigh	(OK/Fault)
Baro_PressureRangeLow	(OK/Fault)	N2OBottlePress3RangeLow	(OK/Fault)
BoostLimitExceeded	(On/Off)	N2OBottlePress4RangeHigh	(OK/Fault)
BrakePressureRangeHigh	(OK/Fault)	N2OBottlePress4RangeLow	(OK/Fault)
BrakePressureRangeLow	(OK/Fault)	NitrousArmed	(Armed/Off)
CamEdgesFault	(OK/Fault)	NitrousArmedStage1	(Armed/Off)
CamHighActive	(On/Off)	NitrousArmedStage2	(Armed/Off)
CamSyncFault	(OK/Fault)	NitrousArmedStage3	(Armed/Off)
CANWideband2Open	(OK/Fault)	NitrousArmedStage4	(Armed/Off)
CANWideband1Open	(OK/Fault)	NitrousEngagedStage1	(On/Off)
CnkCamPhaseFault	(OK/Fault)	NitrousEngagedStage2	(On/Off)
CrankEdgesFault	(OK/Fault)	NitrousEngagedStage3	(On/Off)
CrankSyncFault	(OK/Fault)	NitrousEngagedStage4	(On/Off)
CruiseSwich1	(On/Off)	NitrousTriggered	(On/Off)
CruiseSwich2	(On/Off)	O2_A_TargetVarianceEQExceed	(OK/Fault)
CruiseSwich3	(On/Off)	O2_B_TargetVarianceEQExceed	(OK/Fault)
CruiseSwich4	(On/Off)	O2_LeanLimitExceeded	(OK/Fault)
CruiseSwich5	(On/Off)	O2FailedLeanA	(OK/Fault)
DecelFuelCutEnabled	(On/Off)	O2FailedLeanB	(OK/Fault)
DiffWheelSpeedExceed	(On/Off)	O2FailedRichA	(OK/Fault)
DriveShaftRPMLimitExceed	(On/Off)	O2FailedRichB	(OK/Fault)
ECTOverTempFault	(OK/Fault)	OilPressLow	(OK/Fault)
ECTRangeHigh	(OK/Fault)	OilPressureRangeHigh	(OK/Fault)
CnkCamPhaseFault	(OK/Fault)	NitrousEngagedStage2	(On/Off)
CrankEdgesFault	(OK/Fault)	NitrousEngagedStage3	(On/Off)
CrankSyncFault	(OK/Fault)	NitrousEngagedStage4	(On/Off)
CruiseSw ich1	(On/Off)	NitrousTriggered	(On/Off)
CruiseSw ich2	(On/Off)	O2_A_TargetVarianceEQExceed	(OK/Fault)
CruiseSw ich3	(On/Off)	O2_B_TargetVarianceEQExceed	(OK/Fault)
CruiseSw ich4	(On/Off)	O2_LeanLimitExceeded	(OK/Fault)
CruiseSw ich5	(On/Off)	O2FailedLeanA	(OK/Fault)

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Channel Name	Units	Channel Name	Units
DecelFuelCutEnabled	(On/Off)	O2FailedLeanB	(OK/Fault)
DiffWheelSpeedExceed	(On/Off)	O2FailedRichA	(OK/Fault)
DriveShaftRPMLimitExceed	(On/Off)	O2FailedRichB	(OK/Fault)
ECTOverTempFault	(OK/Fault)	OilPressLow	(OK/Fault)
ECTRangeHigh	(OK/Fault)	OilPressureRangeHigh	(OK/Fault)
EGT7_Variance_Exceeded	(OK/Fault)	RollingLimiterActive	(OK/Fault)
EGT8_Variance_Exceeded	(OK/Fault)	SecondaryFuelPressRangeHigh	(OK/Fault)
EngineBayTempRangeHigh	(OK/Fault)	SecondaryFuelPressRangeLow	(OK/Fault)
EngineBayTempRangeLow	(OK/Fault)	SecondaryFuelPressVariance	(OK/Fault)
EngineOverspeed	(On/Off)	SecondaryInjDutyLimitExceeded	(OK/Fault)
ETCOpenFault	(OK/Fault)	SensVoltRangeHigh	(OK/Fault)
ETCSpringTest	(On/Off)	SensVoltRangeLow	(OK/Fault)
ETCSticking	(OK/Fault)	StrainGaugeCut	(On/Off)
EthanolContentLow Fault	(OK/Fault)	SysVoltRangeHigh	(OK/Fault)
ExhaustBP2RangeHigh	(OK/Fault)	SysVoltRangeLow	(OK/Fault)
ExhaustBP2RangeLow	(OK/Fault)	TorqueConverterLockState	(Lock/Unlock)
ExhaustBPRangeHigh	(OK/Fault)	TPS1AdaptHiMax	(OK/Fault)
ExhaustBPRangeLow	(OK/Fault)	TPS1AdaptHiMin	(OK/Fault)
ExhaustBPVarianceExceeded	(OK/Fault)	TPS1AdaptLoMax	(OK/Fault)
EXTO2_1RangeHigh	(OK/Fault)	TPS1AdaptLoMin	(OK/Fault)
EXTO2_1RangeLow	(OK/Fault)	TPS1RangeHigh	(OK/Fault)
EXTO2_2RangeHigh	(OK/Fault)	TPS1RangeHigh	(OK/Fault)
EXTO2_2RangeLow	(OK/Fault)	TPS1RangeLow	(OK/Fault)
FlexFuelRangeHigh	(OK/Fault)	TPS2AdaptHiMax	(OK/Fault)
FlexFuelRangeLow	(OK/Fault)	TPS2AdaptHiMin	(OK/Fault)
FuelCutActive	(On/Off)	TPS2AdaptLoMax	(OK/Fault)
FuelHighOctaneSwitchState	(High/Low)	TPS2AdaptLoMin	(OK/Fault)
FuelLevel1RangeHigh	(OK/Fault)	TPS2RangeHigh	(OK/Fault)
FuelLevel1RangeLow	(OK/Fault)	TPS2RangeLow	(OK/Fault)
FuelLevel2RangeHigh	(OK/Fault)	TracControlActiveState	(On/Off)
FuelLevel2RangeLow	(OK/Fault)	TracControlEnabledState	(Enabled/Off)
FuelTankPressRangeHigh	(OK/Fault)	TractionControl_Switch	(On/Off)
FuelTankPressRangeLow	(OK/Fault)	Trans_Pump_PressRangeHigh	(OK/Fault)
FuelTankPurgeActive	(On/Off)	Trans_Pump_PressRangeLow	(OK/Fault)
GearShiftManAutoSwitch	(Man/Auto)	TransmissionTempFault	(OK/Fault)
HB1FaultStepper	(OK/Fault)	TransTempRangeHigh	(OK/Fault)
HB2FaultStepper	(OK/Fault)	TransTempRangeLow	(OK/Fault)
HBridgeFaultETC	(OK/Fault)	TTC_RangeHigh	(OK/Fault)
HighLowSwitchActive	(On/Off)	TTC_RangeLow	(OK/Fault)
L_BoostRangeHigh	(OK/Fault)	Turbo_Speed1_Limit_Exceeded	(OK/Fault)

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Channel Name	Units	Channel Name	Units
I_BoostRangeLow	(OK/Fault)	Turbo_Speed2_Limit_Exceeded	(OK/Fault)
IAT_IR_Fault	(OK/Fault)	UEGO1_RangeHigh	(OK/Fault)
IATRangeHigh	(OK/Fault)	UEGO1_RangeLow	(OK/Fault)
IATRangeLow	(OK/Fault)	UEGO1_UR_RangeHigh	(OK/Fault)
IdleControlStatus	(On/Off)	UEGO1_UR_RangeLow	(OK/Fault)
IncreasingFaultCounts	(OK/Fault)	UEGO2_RangeHigh	(OK/Fault)
IndicatorDriverInfoState	(On/Off)	UEGO2_RangeLow	(OK/Fault)
IndicatorMILState	(On/Off)	UEGO2_UR_RangeHigh	(OK/Fault)
InjectorTestTimeExceeded	(On/Off)	UEGO2_UR_RangeLow	(OK/Fault)
Inlet_PressureRangeHigh	(OK/Fault)	Valet_Mode	(On/Off)
Inlet_PressureRangeLow	(OK/Fault)	Valet_Mode2	(On/Off)
KnockControlActive	(On/Off)	Valet_Speed_Limit_Exceeded	(On/Off)
KnockSensorFault	(OK/Fault)	Vehicle_Speed_Limit_Exceeded	(On/Off)
MAFRRangeHigh	(OK/Fault)	VVT1NoRegionFound	(OK/Fault)
MAFRRangeLow	(OK/Fault)	VVT2NoRegionFound	(OK/Fault)
MAFVoltsRangeHigh	(OK/Fault)	WasteGatePressRangeHigh	(OK/Fault)
MAFVoltsRangeLow	(OK/Fault)	WasteGatePressRangeLow	(OK/Fault)

Layout Overview & CAN Setup

The fastest way to get something working is to use the AEM created setup for the ProEFI ECUs named, "ProEFI_rev1.aemcd7" (use the newest revision available) which can be found in the same location as this document was. This is our default black layout with the ProEFI CAN inputs preconfigured and includes the all the data channels listed earlier. If you choose this method then simply load this configuration into your dash and you are done.

If you want to create something from scratch, (it may still be quicker and easier to modify the AEM created setup described above) you can either start with a new dash layout by selecting "File" then "New" in DashDesign or you can select from a pre-designed layout that has screens already designed and inserted but has the CAN inputs left blank. These are chosen by selecting "File" then "Open" and selecting one of the setups titled xzyblank.aemcd7 with the xyz representing a description of the layouts contained in the file. To import the CAN configuration into your setup you select "Setup" then "Display" from the main DashDesign menu. Once the dialog box opens you select the "CAN Receive" tab.

SETUP GUIDE



Change the settings to the following:

Show: "Port 2"

Baudrate: 1Mbit/s

Termination Resistor: Checked

Address Mask Enabled: Unchecked

M800 Support: "OFF"

Once properly configured it should look something like this →

Then click on "Import CAN" on the lower left and select the ProEFI CAN setup file. The new items will appear in the Outputs tab. They can now be viewed on the display or logged. You can rename, filter, or manipulate any of these channels to make them more useful.

