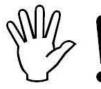
Instruction Manual



P/N 30-3901 2007-2009 Porsche 997.1 Turbo Manual Transmission Plug & Play Adapter Harness

STOP!



THIS PRODUCT HAS LEGAL RESTRICTIONS. READ THIS BEFORE INSTALLING/USING!

THIS PRODUCT MAY BE USED <u>SOLELY</u> ON VEHICLES USED IN SANCTIONED COMPETITION WHICH MAY NEVER BE USED UPON A PUBLIC ROAD OR HIGHWAY, UNLESS PERMITTED BY SPECIFIC REGULATORY EXEMPTION. (VISIT THE "EMISSIONS" PAGE AT <u>HTTP://WWW.SEMASAN.COM/EMISSIONS</u> FOR STATE BY STATE DETAILS.)

IT IS THE RESPONSIBILITY OF THE INSTALLER AND/OR USER OF THIS PRODUCT TO ENSURE THAT IT IS USED IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IF THIS PRODUCT WAS PURCHASED IN ERROR, <u>DO NOT</u> INSTALL AND/OR USE IT. THE PURCHASER <u>MUST</u> ARRANGE TO RETURN THE PRODUCT FOR A FULL REFUND.

THIS POLICY ONLY APPLIES TO INSTALLERS AND/OR USERS WHO ARE LOCATED IN THE UNITED STATES; HOWEVER CUSTOMERS WHO RESIDE IN OTHER COUNTRIES SHOULD ACT IN ACCORDANCE WITH THEIR LOCAL LAWS AND REGULATIONS.

WARNING: This installation is not for the tuning novice! Use this system with EXTREME caution! The AEM Infinity Programmable EMS allows for total flexibility in engine tuning. Misuse or improper tuning of this product can destroy your engine! If you are not well versed in engine dynamics and the tuning of engine management systems DO NOT attempt the installation. Refer the installation to an AEM-trained tuning shop or call 800-423-0046 for technical assistance.

NOTE: All supplied AEM calibrations, Wizards and other tuning information are offered as potential starting points only. IT IS THE RESPONSIBILITY OF THE ENGINE TUNER TO ULTIMATELY CONFIRM IF THE CALIBRATION IS SAFE FOR ITS INTENDED USE. AEM holds no responsibility for any engine damage that results from the misuse or mistuning of this product!

AEM Performance Electronics AEM Performance Electronics, 2205 126th Street Unit A, Hawthorne, CA 90250 Phone: (310) 484-2322 Fax: (310) 484-0152 http://www.aemelectronics.com Instruction Part Number: 10-3901 Document Build 2017-09-27

OVERVIEW

2

The 30-3901 AEM Infinity Adapter Kit was designed for the 2007-2009 Porsche 997.1 Turbo with manual transmission. This is a true standalone system that eliminates the use of the factory Porsche DME (ECU). The use of this adapter makes the kit "plug and play" so no cutting or splicing wires is necessary. The base configuration files available for the Infinity EMS are starting points only and will need to be modified for every specific application. Included in these instructions are descriptions of important differences between using the factory Porsche DME and using the AEM Infinity ECU.

The available AEM Infinity EMS part numbers for this adapter kit are:

• 30-7109 INFINITY 708

NOTE: The Porsche Infinity 708 EMS has 6 ignition coil outputs and 10 injector outputs.

GETTING STARTED

Refer to the **10-7100 for EMS 30-7100 Infinity Quick Start Guide** for additional information on getting the engine started with the Infinity EMS. Porsche 997.1 Turbo base sessions are located in C: \Documents\AEM\Infinity Tuner\Sessions\Base Sessions

DOWNLOADABLE FILES

Files can be downloaded from <u>www.aeminfinity.com</u>. An experienced tuner must be available to configure and manipulate the data before driving can commence. The Quick Start Guide and Full Manual describe the steps for logging in and registering at <u>www.aeminfinity.com</u>. These documents are available for download in the Support section of the AEM Electronics website: <u>http://www.aemelectronics.com/products/support/instructions</u>

Downloadable files for 2007-2009 Porsche 997.1 Turbo

• 7109-XXXX Infinity 708 Porsche 997.1 Turbo (XXXX = serial number)

NOTE: The Flash Enable connector (described in the following pages) MUST be "jumped" in order to connect to the Infinity and load the initial firmware file. Subsequent firmware upgrades will not require this step.

- § Ignition key OFF
- § Insert zip-tied jumper shunt connector into Flash Enable connector
- § Ignition key ON (RUN position)
- § Infinity Tuner | Target | Upgrade Firmware... | Upload downloaded .pakgrp file
- § Disconnect Flash Enable jumper connector
- § Infinity Tuner | File | Import Calibration Data | Select appropriate base session file

INFINITY CONNECTORS

The AEM Infinity EMS uses the MX123 Sealed Connection System from Molex. AEM strongly recommends that users become familiar with the proper tools and procedures for working with these high density connectors before attempting any modifications. The entire Molex MX123 User Manual can be downloaded direct from Molex at:

http://www.molex.com/mx_upload/family//MX123UserManu al.pdf



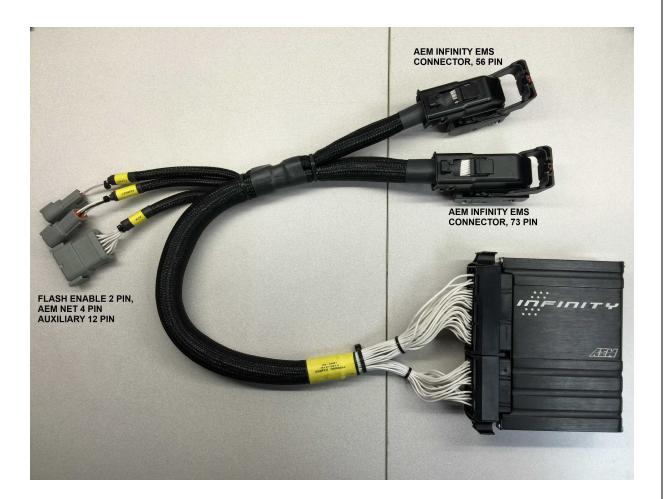
P/N 30-3901

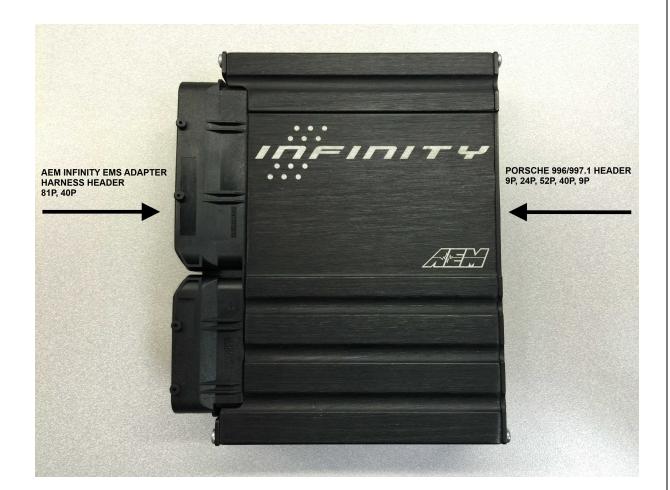
4

INFINITY ADAPTER HARNESS

Included with the 997.1 Turbo kit is a harness and adapter interface. These are used to make the connection between the AEM Infinity EMS and the Porsche wiring harness plug and play. This is depicted below with the 73-pin and 56-pin connectors and the Porsche 997.1 Turbo header. There are also a few other integrated connectors within this harness described below.







The gray Deutsch 2P DTM "Flash Enable" connector is used for secondary hardware flashing. The included shunt connector jumps the 2 wires together. Once initially flashed, the EMS is normally upgraded in the software, not using this connector.

The gray Deutsch 4P DTM connector is used for "AEMNet". AEMNet is an open architecture based on CAN 2.0 which provides the ability for multiple enabled devices, such as dashboards, data loggers, etc., to easily communicate with one another through two twisted cables (CAN+/CAN-).

The gray Deutsch 12P DTM "Auxiliary" connector is used to adapt many common ancillary inputs and outputs easily. Included in the kit are a DTM 12P mating connector, 12 DTM terminals, and a DTM 12P wedgelock. If used, these components will need to be terminated by the installer or end user with 16–22awg wire (not included). Note: the pin numbering is molded into the connector.

Below is a description of each of the available input/output found in the Porsche 997.1 Turbo specific "Auxiliary" connector.

Deutsch Pin	Destination Pin	Pin Description	Default Pin Function	Notes
1	A1-31	Sensor Ground	Isolated sensor ground	This is not the same as a power ground or chassis ground.
2	A1-29	+5V Ref	5 volt sensor reference supply	When measured with a voltmeter, it is normal to not measure exactly 5V.
3	A1-31	+12V From Relay	12 volt power supply from relay	This 12V is coming through the vehicle's main relay and should only be used for low current electronics.
4	C1-37	Analog 9	Fuel Pressure	This wire goes directly to the signal wire of the pressure sensor.
5	C1-36	Analog 8	МАР	This should be wired directly to the MAP sensor's signal pin. Note: The OEM Porsche boost pressure sensor connection must be removed if adding an external MAP sensor.
6	C1-1	Lowside 4	Not Assigned	This can be used as a switched ground or to PWM a 12V solenoid.
7	C1-26	Digital 5	Not Assigned	This pin needs to be wired directly to the signal pin of the fuel composition sensor.
8	C1-44	Highside 0	Not Assigned	For a relay, this should be wired to terminal 86 (or 85). Supply chassis ground to the opposite terminal 85 (or 86). If directly driving a low current component, wire this to the 12V terminal. 4 amps max current.
9	C2-15	Analog Temp 4	Charge Out Temp	
10	C1-40	Analog 12	Mode Switch	This analog input can be used for other functions such as launch boost target, 2 step, and start enable.
11	C1-33	Lowside 1	Boost Control	Boost control solenoids can be normally open (NO) or normally closed (NC). This will change the duty cycle strategy but is also depends upon how the wastegate is plumbed with hoses.

8	P/N 30	0-3901			
	12	C2-37	Digital 6	Not Assigned	This wire should be routed to the signal output of the component. If used with a simple ON/OFF switch, route the opposite terminal to an Infinity sensor ground.

AIRFLOW METERING

The Porsche 997.1 Turbo is equipped with two MAF (Mass Air Flow) sensors and one pre-throttle body charge pressure sensor. The Infinity supports both the factory mass airflow sensors and boost pressure sensor. Users can also add a MAP (Manifold Absolute Pressure) sensor and use the speed density airflow algorithm instead.

Note: If adding an external MAP sensor, users must disconnect the electrical connection from the OEM Porsche boost pressure sensor to the Infinity.

Mass Airflow Setup

Setup Wizard

To enable MAF on the Infinity, use the setup wizard's "Engine" tab to select "0-5V MAF" or "Frequency MAF" as the airflow calculation method. Users can choose a number of options for the main spark map load axis. The example below shows "MassAirflow [gms/rev]" as the main spark load axis. The 997.1 Turbo base calibration will have this pre-configured for use on a stock 997.1 Turbo.

- Basic Setup - 🔺	Engine		
Engine Tuning Preferences Cam/Crank Mass Airflow Injector Setup	Engine displacement, number of cyline injector mapping, and knock sensor Note that selecting Analog MAF (0.5V	assignment. 7 /) or Frequency MAF (digital) for Airflow	sic setup of airflow calculations, ignition and Calculation Method disables VE Table Load modifications to the Mass Airflow Wizard.
Basic Sensors DBW Tuning Set Throttle Range Ignition Sync - Advanced Setup - ¥ Outputs ¥	Engine Displacement (L) Number of Cylinders Engine Cycle Type Ignition Type Firing Order	3.60 6 4 Stroke Sequential (Coil On Plug) 1-6-2-4-3-5	
	Airflow Calculation Method Main Spark Map Load Axis Selection	0-5V MAF MassAirflow [gms/rev]	<u> </u>

Enable the MAF sensors and choose input options in the setup wizard's "Mass Airflow" tab. The MAF failsafe option can also be enabled here. The 997.1 Turbo base calibration will have this pre-configured for use on a stock 997.1 Turbo.

— Basic Setup — 🔺	Mass Airflow
Engine Tuning Preferences Cam/Crank Mass Airflow	There are two 1D tables in the calibration. They are named: - MAF1_Cal [gms/s] - MAF2_Cal [gms/s]
Injector Setup Basic Sensors DBW Tuning Set Throttle Range Ignition Sync - Advanced Setup - * Outputs - *	These two tables add together so the user can use one or two MAF sensors. There is a throttle rate based filter 1D table in the calibration. It is named: - MAF_filter Similar to the 2D 'CrankVE_Table [%]' for speed density, the MAF algorithm uses a 2D lookup table during cranking. It is called: - CrankMAF_Table [gms/rev]

Note: Users have the option of using either MAP [kPa] or Mass Airflow [gms/rev] (and in some cases, Throttle [%]) for options requiring an engine load. This includes ignition timing tables, lowside tables, lean protect tables, wall wetting tables, fuel trim tables, ignition trim tables, injector timing tables, staged fuel tables, VVC target tables, lambda target tables, nitrous activation, lambda feedback enable activation, decel fuel cut activation, etc. It is up to the user to determine which load reference to use in all cases.

Starting

Because there is little mass flow initially during cranking, the Infinity uses a look-up table during engine cranking (<400 RPM) to determine fuel requirements. This 2D Table is called "CrankMAF_Table [gms/rev]" and the Infinity will calculate mass airflow (grams/second) based on this grams/rev input. As shown in the example below, a "clear flood" function can be built into this table (>90% throttle shown).

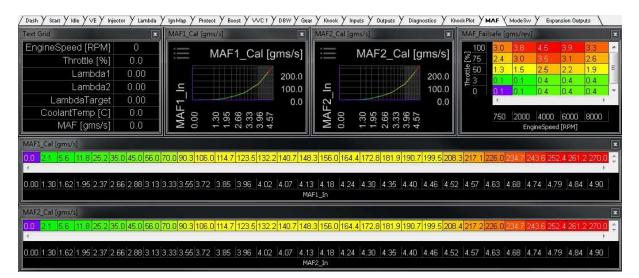


As the transition from engine cranking to engine running occurs (at 400 RPM), the Infinity switches from the "CrankMAF" look-up fueling method mentioned above to the MAF sensors. The smoothness of this transition can be maximized by using the 2D table "FuelTrim_Coolant" to add some initial fuel for a fraction of a second after the transition occurs, as shown below.

FuelTrim	_Coolar	nt				X
120	0.60	0.00	0.00	0.00	0.00	*
100	0.60	0.00	0.00	0.00	0.00	
<u> </u>	0.60	0.00	0.00	0.00	0.00	
ີສູ້ 60	0.88	0.00	0.00	0.00	0.00	
ਸ਼੍ਰ 40	0.88	0.10	0.05	0.00	0.00	
8 20	0.88	0.20	0.10	0.05	0.00	
ŬO	0.88	0.30	0.15	0.05	0.05	
-20	0.88	0.40	0.15	0.05	0.05	-
	*			1	F.	
	0.1	0.3	3.0	8.0	15.0	[
		Afte	rStartTi	me [s]		

Fuel Tuning

Fuel tuning with MAF sensors uses the two 30-cell 2D tables below called "MAF1_Cal [gms/s]" and "MAF2_Cal [gms/s]". When two MAF sensors are enabled, these tables are added together to determine fuel requirements. The VE table is not used when MAF is enabled. The factory UEGO sensors are supported and the AEM adapter harness is wired to use them.



Tuning Ignition Timing

Unless users are using an external (non factory) MAP sensor plumbed into the intake manifold, it is recommended that users do not use "MAP [kPa]" as an engine load input into the Ignition table. This is because the OEM Porsche boost pressure sensor is located before the throttle blade and will not register manifold vacuum. The AEM 997.1 Turbo base calibration is configured to use the OEM boost pressure sensor and the main ignition map load axis is "MassAirflow [gms/rev]" as shown below.

Igni	Map (d	egBT	DC]																			×
	6.00	2.0	2.8	3.5	4.3	5.0	6.5	7.3	8.0	8.0	6.8	5.8	5.3	5.8	6.3	6.8	7.0	7.8	8.3	9.3	10.0	~
	5.50	2.5	3.3	3.8	4.5	6.0	7.5	8.8	9.5	9.3	7.8	6.5	5.8	6.3	7.0	7.3	7.8	8.3	9.0	9.8	10.5	
	5.00	2.8	3.5	4.8	6.0	7.5	9.3	10.8	11.5	11.0	9.3	7.5	6.8	7.3	8.0	8.5	9.0	9.3	10.0	10.8	11.5	
	4.50	3.3	4.0	6.0	7.3	9.3	11.5	13.3	14.0	13.0	10.8	8.8	7.8	8.3	9.0	10.0	10.5	10.8	11.3	12.0	12.8	
	4.00	3.8	4.5	7.0	8.8	11.3	13.8	15.5	16.3	15.0	12.5	10.0	9.0	9.3	10.0	11.3	11.8	12.0	12.8	13.5	14.0	
	3.50	4.3	5.0	7.8	10.0	13.0	15.8	17.8	18.0	16.8	14.0	11.5	10.3	10.5	11.3	12.5	13.3	13.5	14.3	14.8	15.3	
	3.25	4.5	5.8	8.8	11.5	14.5	17.5	19.3	19.3	18.3	15.5	13.0	11.5	11.8	12.5	13.8	14.5	15.0	15.5	16.0	16.5	
<u> </u>	3.00	5.0	6.5	10.0	12.8	16.0	19.0	20.8	20.5	19.5	16.8	14.5	13.0	13.0	13.8	15.0	16.0	16.3	17.0	17.5	17.8	
MassAirflow [gms/	2.75	5.5	6.8	9.8	14.0	17.5	19.8	21.8	21.5	20.8	18.3	16.0	14.5	14.5	15.0	16.3	17.3	17.8	18.3	18.8	19.0	
	2.50	5.8	7.3	10.3	15.0	18.8	20.8	22.5	22.8	22.0	19.8	17.5	15.8	15.8	16.5	17.8	18.5	19.0	19.5	19.8	20.0	
li flo	2.25	6.3	7.8	11.3	15.8	19.8	21.5	23.5	23.8	23.3	21.3	18.8	17.3	17.3	17.8	19.0	19.8	20.3	20.5	21.0	21.3	
dsse	2.00	6.8	8.3	12.0	16.5	20.8	22.3	24.5	25.0	24.3	22.5	20.3	18.8	18.8	19.3	20.3	20.8	21.3	21.5	22.0	22.3	
III — -	1.75	7.3	8.5	12.3	16.8	21.3	23.0	25.5	26.0	25.5	24.0	21.5	20.3	20.3	20.8	21.5	22.0	22.3	22.5	22.8	23.0	
	1.50	7.5	8.8	12.3	16.5	21.0	24.0	26.3	27.3	26.8	25.5	23.5	22.3	22.0	22.5	23.0	23.5	23.8	24.0	24.3	24.5	
- 11	1.25	8.0	8.8	11.5	15.8	20.5	24.8	27.3	28.3	28.0	27.0	25.8	24.8	24.5	24.8	25.3	25.8	26.0	26.0	26.3	26.5	
- 11	1.00	8.0	8.5	11.0	15.0	20.5	26.0	29.3	30.5	30.3	29.3	28.3	27.3	27.0	27.3	27.5	27.8	27.8	28.0	28.0	28.3	
- 11	0.75	8.0	8.3	10.5	14.8	21.3	28.0	31.3	32.3	32.3	31.5	31.0	30.3	30.0	30.0	30.3	30.3	30.3	30.5	30.5	30.5	
- 11	0.50	8.0	8.0	9.8	14.0	21.8	32.3	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	
- 11	0.25	8.0	8.0	10.0	14.3	23.0	35.5	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	
	0.00	8.0	8.0	10.0	14.3	24.0	37.5	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	*
		4																			-	ار
		500	750	1000	1250	1500	2000	2500	3000					5500	6000	6500	7000	7500	8000	8500	9000	
										E	ngineSp	beed (R	.PM]									

MAF Filter

Tuning the MAF filter properly plays an important role for large transient throttle changes. If throttle angle is quickly increased to wide open from a low throttle angle, high manifold vacuum condition, air mass fills the intake manifold (nearly equalizing pressure to atmospheric) at a quicker rate than is consumed by the engine (this is more prominent at lower RPM). Without filtering, this would result in poor (over) fueling. The example below shows higher filtering during quick throttle open events to combat over fueling and a lower filter for throttle closing events to allow for maximum decel fuel cut response.

MAF_filte	HF.				×
0.4	0.4	0.8	0.8	0.8	4.4
-500.0	50.0	100.0	250.0	500.0	
	1	hrottle Ra	ite		

MAF Failsafe

In the event of a sensor/wiring fault (MAF sensor input less than 0.05V or greater than 4.95V), the "ErrorMAF" channel will toggle from 0 to 1. If the MAF Failsafe Enable is active (configurable in the wizard's "Mass Airflow" tab), the system will use the 2D "MAF_Failsafe [gms/rev]" look-up table to calculate airflow instead of using the MAF sensors. Users can also choose between Throttle [%] and MAP [kPa] as a load axis. Users can also enable the lean protect function in the setup wizard for further engine safety.

In the event of a sensor/wiring fault (MAF sensor input less than 0.05V or greater than 4.95V), the 'ErrorMAF' channel will toggle from 0 to 1. If MAF Failsafe Enable is active, the system will use the '2D MAF_Failsafe [gms/rev] lookup to calculate airflow instead of using the MAF sensors.

MAF Failsafe Enable

MAF Failsafe y-axis

Throttle [%]

MAF_Fai	lsafe [g	ms/rev]				x
_ 100	3.0	3.8	4.5	3.9	3.3	*
₹75	2.4	3.0	3.5	3.1	2.6	
9 50 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.3	1.5	2.5	2.2	1.9	Ξ
<u>ਸਿੱ</u> 3	0.1	0.1	0.4	0.4	0.4	
i o	0.1	0.1	0.4	0.4	0.4	Ŧ
					Þ	
	750	2000	4000	6000	8000	
		Eng	ineSpeed	J[RPM]		

DRIVE-BY-WIRE THROTTLE CONTROL

The Porsche 997.1 Turbo uses a single throttle body controlled via drive-bywire (DBW). It is important to note that throttle control is a critical system which needs to be correct. The basic terms of drive-by-wire are as follows: the 'gas pedal' inside the passenger cabin is called the Accelerator Pedal (DBW_APP1%), while the electronically controlled throttle in the engine bay is referenced as 'Throttle' (Throttle%, DBW1_TPSA%). Based on the measured Accelerator Pedal position, the ECU determines a desired DBW_Target position and moves the Throttle to that position.



As shown, there is a Drive By Wire Wizard which must be used to calibrate accelerator pedal and throttle position sensors. Although sensor calibration values from one vehicle may be close enough to work for another vehicle under some circumstances, it is absolutely necessary to run the Drive By Wire Wizard before running the engine for the first time. The wizard should be repeated if any components in the throttle control system are removed or replaced such as the throttle bodies, TPS sensors, electronic throttle control motor, or accelerator pedal.

Please ensure the vehicle's battery is fully charged (at least 12.6 Volts) before running the Drive By Wire Wizard, as low battery voltage can result in abnormal sensor measurements. If a battery charger is available, it is preferable to connect the battery charger in 5A, 10A, or 20A mode and perform the Drive By Wire Wizard while the battery voltage is near 13.5–14.0 Volts. When connected to the Infinity EMS with the engine OFF, go to Wizards | Drive By Wire Wizard. Follow the step-by-step instructions for each page.

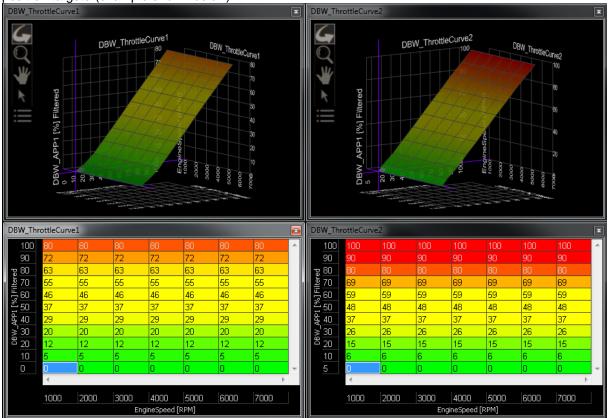
— Basic Setup — 🔺	DBW Tuning						
Engine	and the second						
Tuning Preferences							
Cam/Crank	Drive by Wire Setup						
Mass Airflow							
Injector Setup	Drive-by-Wire 1 User Enable	V					
Basic Sensors	Drive-by-Wire 2 User Enable						
DBW Tuning	Drive-by-wrie 2 User Enable						
Set Throttle Range							
Ignition Sync	DBW Idle Control						
- Advanced Setup - V	DBW Idle Control Range	10.0	* %				
— Outputs — 👻	The calculated 'Idle Position' DBW_Target by this amount calculations (0% to +5%), Th	Typical value ne larger the th	= 5 which repre-	sents 5% maximu	im throttle incre	ase due to idle d	control
	Show Advanced S	Setup					



The Porsche 997.1 Turbo SPORT button (Sport Chrono package only) located in the center console (shown) still serves as a switch input to the ECU. This switch changes the accelerator-pedal to throttle-target relationship and adds a temporary (10 second) overboost function (from 1.0 bar to 1.2 bar) in the stock Porsche DME. These throttle curves are configurable in the Infinity Tuner software using the DBW_ThrottleCurve1 /

DBW_ThrottleCurve2 tables, which allow the tuner to define the DBW throttle target based on Accelerator Pedal Position and Engine Speed. Instead of implementing overboost functionality into the sport button, Infinity uses the factory cruise control buttons over CAN instead to configure the MODE_SWITCH function to change boost targets. See the "Cruise Control" section of this manual for more information about MODE_SWITCH.

The 1D ModeSelect_DBW table is used to switch between the two different DBW_ThrottleCurve tables, depending on the status of the CAN_SPORTBUTTON signal. The CAN_SPORTBUTTON toggles between 0 and 1 (2 and 3 are not used) when depressing the SPORT button. States 0 and 1 are mapped to the DBW_ThrottleCurve1 and DBW_ThrottleCurve2 tables respectively. Both 2D tables use accelerator pedal position for the y-axis and RPM for the x-axis. The values that are entered in the table are throttle position targets (example shown below).



Note: There is also a DBW Tuning section in the Wizards | Setup Wizard | DBW Tuning... These settings can be used to fine tune DBW response.

	DDW/ Example	10000	Lauli	114
ing Preferences n/Crank	DBW Frequency	2000	÷	
s Airflow ctor Setup	DBW PID Settings			
ic Sensors	DBW Proportional Gain	4.000	*	
√ Tuning	DBW Integral Gain	20.000	-	
Throttle Range tion Sync	DBW Derivative Gain	0.030		
Advanced Setup – 💌	Dow Delivative dain	0.030	*	
— Outputs — 🗸	PID Integral Clamps			
	DBW Integral Clamp High	15.0	*	Typical value is between 10 to 20
	DBW Integral Clamp Low	-10.0	÷	Typical value is between -10 to -20
	Sensor Smoothing			
	DBW Accel Pedal Smoothing	50.0	*	<u>%</u>
	DBW Throttle Smoothing	15.0	*	<u>×</u>
	Mode Select			
	The ModeSelect_DBW table is DBW_ThrottleCurve2 table for o			ne DBW_ThrottleCurve1 table or the tion.
	ModeSelect_DBW x-axis input	CAN_SPORTBUTTO	4 +	
	DBW_Close duty cycle limit	90	*	<u>*</u>
	Error Response			
	Fuel and spark will be cut if En-	gineSpeed exceeds this v	/alue	while after the DBW throttle has been disabled due
	DBW Error Rev Limit	2500	*	m
	the target throttle position for ap process, DBW Tracking Errors to be evaluated when the engin	proximately 1 second wh can be disabled at 0 RPI e is off, without the DBW	hile the M. Tu / syste	e disabled if the actual throttle position differs from e engine is running. To simplify the PID tuning rning this option 'DFF' will allow different PID value em shutting down due to poor throttle tracking. Note 13.5V, so it is recommended to perform this

There are a few integrated DBW fail safes incorporated into the Infinity system. The ECU constantly monitors the accelerator pedal sensor voltage and throttle position sensor voltages to ensure the signals are not excessively high or low due to damaged sensors, short circuits, or broken wires. The ECU also performs self-diagnostics to ensure the electronic throttle is following desired DBW_Target properly, that the DBW throttle control motor is not using excessive energy to move the throttle, and watching to see that all the redundant sensors are working together as expected. If any of these conditions are determined to be abnormal or unsafe, the ECU can shut the engine down to prevent unintended engine acceleration. This error will reset when the ignition key is cycled.

CRUISE CONTROL

Currently, a cruise control feature is not supported with the AEM Infinity. However, the multi-functional steering wheel buttons are transmitted over the Porsche CAN bus and are available for miscellaneous purposes described below. There are 5 buttons: Enable, Cancel, Set, Accelerate+, and Decelerate- (as shown).

Note: Cruise enable (channel "CC_Enable") must be active (indicated by an illuminated green cruise light on the dash) for the below features to be functional. To



activate "CC_Enable", simply turn cruise control on (press the outer button on the cruise multifunction switch in once).

Cancel Button

The Cancel button (push down) now engages the 3-step rev limiter channel "CC_Cancel". A 3-step rev limiter is a simplified traction control based system that uses engine and vehicle speed or launch timer inputs to limit the RPM of the engine. To operate, first be sure the 3StepSwitch table is set to recognize the "momentary" Cancel button, as shown. Set the 3StepTargetFuel and/or the 3StepTargetSpark table's first (0 MPH) cell to the desired launch RPM. When the Cancel button is held down, the EMS will limit the engine's corresponding RPM. Once the car is launched and the EMS begins to register vehicle speed, the RPM limit can then be tailored to prevent wheel spin using these tables.

3Ste	pSw	itch				x	3Step	3StepTargetFuel [RPM]									×		
0				1		÷	500	00 50	00	5000	5000	5000	5000	500	0 50	000	5000	5000	< +
						Þ	4					-)	
0				1			0	10	0	200	400	600	800	100	0 12	200	1400	1600	
			.cc_c	ancel								LaunchRa	mpTime [m:	;]					
3StepTarget_Spark [RPM]																			×
	3	5000	5000	5000	5000	5000	5000	5000	500	0 5000	5000	5000	5000	5000	5000	500	0 500	0 5000	*
Gear	2	5000	5000	5000	5000	5000	5000	5000	500	0 500(5000 0	5000	5000	5000	5000	500	0 500	0 5000	
. ق	1	5000	5000	5000	5000	5000	5000	5000	500	0 5000	5000	5000	5000	5000	5000	500	0 500	0 5000	
	D	5000	5000	5000	5000	5000	5000	5000	500	0 5000	5000	5000	5000	5000	5000	500	0 500	0 5000	-
		4						_										1	
		0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	180	0 200	0 2200)
									Lau	nchRampTir	ne [ms]								

Resume Button

The Resume button (push up) is used as an AEM traction control switch. **Note: The "PSM Off" button is functional. The Porsche PSM system is still active with the AEM Infinity system and can be disabled by pressing the "PSM Off" button.** The latching Resume button changes the TC_SlipTargetTrim 1-axis lookup table (shown). Simultaneously, the low fuel light on the dash will blink to inform the driver the status of the programmable AEM traction control. Normally this table is used with a multiple position switch. However, because the Resume button is either OFF (0) or ON (1), only the first two cells of the table are used. Two possible traction scenarios, for example, could be ON/OFF or aggressive/nonaggressive. To use this feature, it must be enabled in Infinity Tuner: Wizard | Setup wizard | Traction Control | Traction Control Enable.

TC_Swit	tch_Mom	×	TC_S	ipTargetT	rim [MPH	Y.									×
0	1	+ +	3	20	20	20	20	20	20	20	20	20	20	20	* *
0	1		0	1	2	3	4	5	6	7	8	9	10	11	
	CC_Resume							TC_S	witch_Latch	ned					

Accel/Decel Buttons

The steering wheel's Accelerate+ and Decelerate- (pull towards, push away) momentary buttons increment and decrement the map switching function "CC_ModeSwitch". This feature is extremely flexible as it can be used to switch VE tables, ignition maps, lambda targets, and boost levels.

ModeSw	itch											×
0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	*
												۲.
0.0	1.0	2.0	3.0	4.0	5.0	6.0	7,0	8.0	8.0	8.0	8.0	
					,0	C_ModeSwitch	י 					
ModeSel	ect_IgnBlen	6										×
2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	~
-												Þ
1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	
						ModeSwitch						
ModeSel	ect_Ign											x
0.0	0.0	0.0	0.0	0,0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	^
<												F.
1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	
						ModeSwitch						
ModeSel	ect_Lambda	Blend										×
2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	<u>^</u>
		-			-			-				•
1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	
						ModeSwitch						
ModeSel	ect_Lambda											×
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<u>_</u>
4					-							P
1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	
						ModeSwitch						

Notes:

When the Accelerate+ or Decelerate- button is depressed (or when KeyOn occurs) the tachometer displays 1K, 2K, 3K, 4K, 5K, 6K, 7K, or 8K momentarily representing the currently selected value of ModeSwitch. Because of the Porsche 997.1 Turbo's tachometer range, 1–8 are the only valid values (9–12 are not used for this application but can be used if using an external 12 position switch).

In order for the current ModeSwitch mode to be recalled between key off/key on cycles, the "Key Off Commit" function must be enabled in the tuning preferences section of the wizard.

For safety precautions, the AEM base session files come standard with the VE tables, ignition maps, lambda targets, and boost tables all set the same because the Accelerate+ or Decelerate- button could be mistakenly bumped.

With the AEM Infinity, traction control and the rev limiter can be controlled using any combination of DBW, fuel cut, ignition cut, or ignition retard.

In order to use this feature, care must be taken into account when setting up the tables and tuning. Enter the number of the table into the corresponding mode selection table for each feature.

CAN BUS

The AEM Infinity EMS for the Porsche 997.1 Turbo supports the majority of the CAN features including: Tachometer, Oil Temperature Gauge, Oil Pressure Gauge, Coolant Temperature Gauge, A/C Request Button, Sport Button, Steering Angle, Steering Rate, Boost Pressure, Coolant Fan Control, Wheel Speed Sensors, Oil Pressure Warning, Reduced Engine Power Warning, MIL Warning, Cruise Light, and Fuel Consumption (MPG)



With key on engine off, the dash lights (cruise, check engine, ABS, high coolant temp, low fuel, notification present) will be in "test" mode and will all be illuminated. This light test function is associated with "SyncState" in the Infinity and will turn off when "Sync State" has a value of 1 (engine running). If at any time the system loses sync, the lights will illuminate in test mode.

Rather than OBD2 diagnostics, the "Check Engine" light is now dedicated to the AEM "MILOutput" feature. The AEM MILOutput activates if any one of the following inputs are in an error state: air temp, baro pressure, coolant temp, exhaust back pressure, fuel pressure, UEGO #1, UEGO #2, MAF analog, MAF digital, MAP, oil pressure, or throttle position. If any of these sensors are not used, they should be turned OFF in the Wizard to avoid any false readings. To activate the MILOutput feature, go to the Wizard and check "Enable MIL Output" in Advanced Setup > Engine Protection.

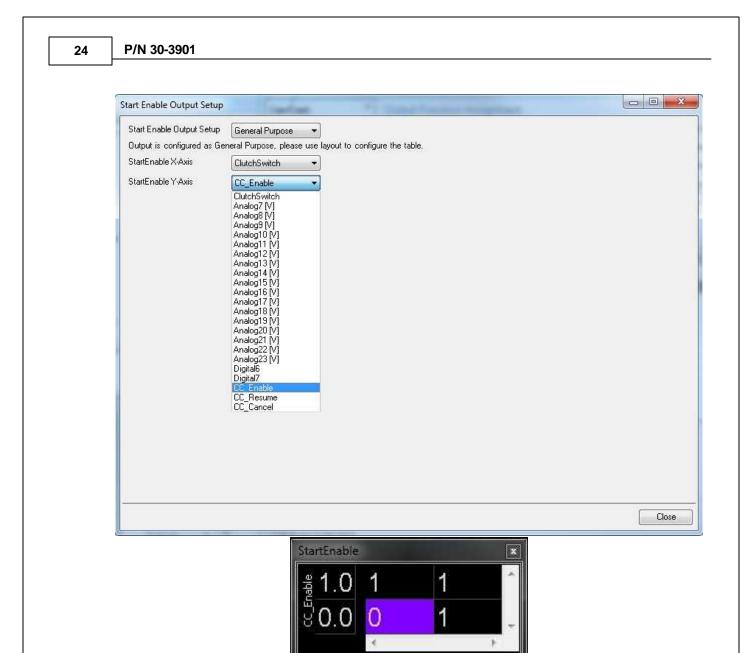
The following channels on the Porsche CAN bus are available for logging. The AEM traction control utilizes the CAN wheel speed sensors: CAN_FLWS [MPH], CAN_FRWS [MPH], CAN_RLWS [MPH], CAN_RRWS [MPH]. The following steering channels are only for data logging: CAN_SteeringAngle, CAN_SteeringRate.

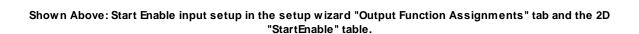
The fuel level sender on the Porsche 997.1 Turbo only actually measures the first 1/2 to 2/3 of a tank due to the saddle tank design to clear the front drive-train. The stock DME relays a fuel consumption rate via CAN to the factory dash. From here, the dash calculates fuel level and fuel mileage. The AEM Infinity does broadcast this message on the CAN bus. The fuel consumption rate is calculated based on injector duty cycle, injector size, engine speed, etc. Because there are many user configurable variables, if the fuel mileage not accurate, users can trim the flow rate being transmitted by using the trim channel "CAN_FuelFlowScaler". A value of 0.0007 should be close on a stock car.

STARTING

The Porsche 997.1 Turbo uses the clutch switch to enable starting on the factory Porsche DME. The Infinity allows this functionality to be user configurable. By using the 2D table "StartEnable", users can configure a number of analog, digital, or CAN inputs to enable starting. The supplied base calibration is configured to allow factory like starting with the clutch switch OR by pressing the cruise control enable button (effectively bypassing the clutch switch). For added security, users can add a hidden switch to enable starting. Taking things a step further, users can fully disable the 2D Start Enable table and password protect it, preventing starting until the table is password unlocked and and enabled again.

Cam/Crank	1000	Output Function Assignment					
Mass Airflow		All of the standard assigned functions	are preconfigured an	d do not need to	be adjusted	if the vehicle's wirir	na
njector Setup		matches the AEM pinout chart.					
Basic Sensors		Most of the ECU's Low-Side (switched LS Duty tables.	d ground) outputs car	n be reconfigured	by reassigni	ng the x- and y-inpu	uts of
DBW Tuning		Most of the ECU's High-Side (switche	d +12V) outputs can	be reconfigured I	oy reassignin	the x- and y-input	ts of
Set Throttle Range		'HS_Table' tables.					
gnition Sync		Porsche Expansion Low-Side (switche CAN_LS tables. These outputs are n	o grounoj outputs ca ot PWM-able and ca	an be reconrigure an only be used a	s an on/off f	iing the x- and y-inj unction.	puts d
Advanced Setup		Porsche Expansion Relay Drivers (swi	tched ground) output	ts can be reconfi	jured by rea:	signing the x- and	ų-
Accel and Decel Fuel		inputs of CAN_RelayCtrl tables. These low current relay control circuits.	e outputs are not PW	M-able and can o	only be used	as an on/off function	on in
Boost Control							
Engine Protection							
Fuel Trims		Low Side High Side Porsche Expa	nsion Low Side Por	sche Expansion R	elay Drivers	Porsche Start Ena	ible
dle		Function	Chan	nel	Pin	Status	
nput Function Assign		Start Enable Output Setup	Gener	al Purpose			
Knock Setup				600-54-60 4 /0009-5			
Lambda Control	=						
Launch Antilag							
Launch Timer							
Nitrous N2O							
Main Rev Limiter							
Rev Limit 2 Step							
Rev Limit 3 Step							
Shift Cut		-					
Traction Control		-					
JSB Logging		Pin Out					
WC							





0.0

1.0

ClutchSwitch

VARIABLE TURBINE GEOMETRY TURBOCHARGERS

The Porsche 997.1 Turbo uses Variable Turbine Geometry (VTG) turbochargers from the factory. This technology allows faster spool on larger frame turbos and simplifies the system by eliminating wastegates. The AEM Infinity fully supports this style of boost control for users retaining factory VTG style turbochargers. Boost control tuning using VTG turbochargers does require a different method than a typical solenoid/wastegate setup.

Output Setup

The AEM 997.1 Turbo base calibration is configured for Lowside 6 (driver side turbo) and Lowside 8 (passenger side turbo) as the boost control outputs.

Important!

The output frequency to the VTG turbochargers MUST be 250 hZ and Duty Cycle MUST be between 20% and 80% at all times! Set "<u>Boost Solenoid Min Duty</u>" to 20% and "<u>Boost Solenoid Max Duty</u>" to 80% Duty cycle values less than 20% and greater than 80% are for diagnostic/calibration purposes only and will cause the vanes to close. A key off/key on event will reset the turbos if they enter diagnostic/calibration mode.

AEM Infinity-10					×	LS6_Duty	[%]			×
- Basic Setup - 🔺 🔺	Output Function Assignment					100.0		0 100 100		
Engine						⋥ 83.3	84 84	84 84	84 84	84
Tuning Preferences	All of the standard assigned functions are preconfigure AEM pinout chart.	d and do not need	to be adjusted	if the vehicle's wiri	ng matches the	ੱਚ 66.7	67 67	67 67	67 67	67
Cam/Crank	Most of the ECU's Low-Side (switched ground) output:	s can be reconfigu	red by reassigni	ng the x-and y-inp	uts of LS_Duty	ਵੇਂ 50.0	50 50	50 50	50 50	50
Mass Airflow	tables. Most of the ECUPs High Side (suitaked 17/0) outputs	tables. Most of the ECU's High-Side (switched +12V) outputs can be reconfigured by reassigning the x- and y-inputs of 'HS_Tabl						34 34	34 34	34
Injector Setup	tables.	51 30 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ື ຜິ 16.7	17 17	17 17	17 17	17			
Basic Sensors	Porsche Expansion Low-Side (switched ground) output tables. These outputs are not PWM-able and can on	ts can be reconfig	ured by reassign	ning the x- and y-in	nputs of CAN_LS	0.0	0 0		0 0	0 -
DBW Tuning	Porsche Expansion Relay Drivers (switched ground) o	utputs can be reco	infigured by rea:	ssigning the x- and	ly-inputs of		4	0 0	0 0	
Set Throttle Range	CAN_RelayCtrl tables. These outputs are not PWM-at	ole and can only be	e used as an on	/off function in low	current relay			Actual Land I	AND THE PARTY	
Ignition Sync	control circuits.									1
Advanced Setup								EngineSpeed	[RPM]	
Accel and Decel Fuel	Low Side High Side Porsche Expansion Low Side	Porsche Expansio	n Relay Drivers	Porsche Start Ena	able	LS8 Duty	ež			
Boost Control	Function	Channel	Pin	Status						
Engine Protection		C_On		OFF		100.0		0 100 100		
Fuel Trims	Lowside 1 Output Setup	C_011	C1-33	on		₹83.3	84 84	84 84	84 84	84
Idle		uelPump_2		OFF		ਤੋਂ 66.7	67 67	67 67	67 67	67
Input Function Assignm		VC1A_Duty [%]		0.00%		ਵੇਂ 50.0	50 50	50 50	50 50	50
Knock Setup	Lowside 4 Output Setup		C1-1			¥ 33.3	34 34	34 34	34 34	34
Lambda Control	Lowside 5 Output Setup V	VC1B_Duty [%]	C1-2	0.00%		a 16.7	17 17	17 17	17 17	17
Launch Antilag	Lowside 6 Output Setup B	oostControl [%]	61-3	0.00%			0 0		0 0	ñ -
Launch Timer	Lowside 7 Output Setup		C2-44				4		~ ~	
Nitrous N20		oostControl [%]		0.00%				Rear Rear	Sec. Gui	
Main Rev Limiter	Lowside 9 Output Setup		C2-29							1
Rev Limit 2 Step								EngineSpeed	[RPM]	
Rev Limit 3 Step	Pin Out					LS6_Freq [121			F
Shift Cut						250.0	250.0	250.0	250.0	
Lowside 6 Output Setup						250.0	250.0	250.0	250.0	7
Lowside 6 Output Setup	BoostControl [%]						Inner	Langer	00000	
						0.0	2000.0	4000.0	6000.0	
Condition	At Least → 0.00 ÷ Engine	Speed [RPM] 🔻					Engi	neSpeed [RPM]		
_						LS8_Freq [包			
V Hide Frequency	Control					250.0	250.0	250.0	250.0	÷
						4				+
LS6 Frequency X-Axis	EngineSpeed [RPM]					0.0	2000.0	4000.0	6000.0	
		ie.	2 2 2 10					4000.0 neSpeed [RPM]	0000.0	
			EngineSpeed [RPM]	 LS6_Freq [Hz] 			ungi	restreet [kubi]		
			0.0	250.0						
					_					
			2000.0	250.0						
£			4000.0	250.0						
हूँ 250 -			6000.0	250.0						
250 June 199	T T									
52		L								
		00 5 500 6 000								
0 500 1,00	00 1,500 2,000 2,500 3,000 3,500 4,000 4,500 5,0	00 0,000 0,000								
0 500 1,00	00 1,500 2,000 2,500 3,000 3,500 4,000 4,500 5,0 EngineSpeed [RPM]	00 0,000 0,000								
0 500 1,00		00 0,000 0,000								
0 500 1,00										
0 500 1,00										

Boost Control Setup/Options

Users can change all boost control options in the setup wizard's "Boost Control" tab (shown below)

Important!

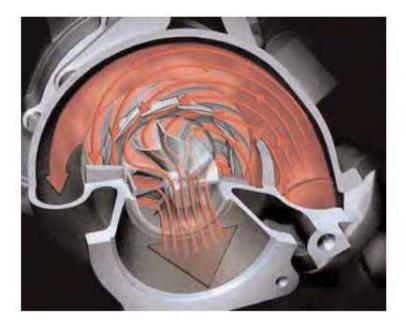
The output frequency to the VTG turbochargers MUST be 250 hZ and Duty Cycle MUST be between 20% and 80% at all times! Set "<u>Boost Solenoid Min Duty</u>" to 20% and "<u>Boost Solenoid Max Duty</u>" to 80% Duty cycle values less than 20% and greater than 80% are for diagnostic/calibration purposes only and will cause the vanes to close. A key off/key on event will reset the turbos if they enter diagnostic/calibration mode.

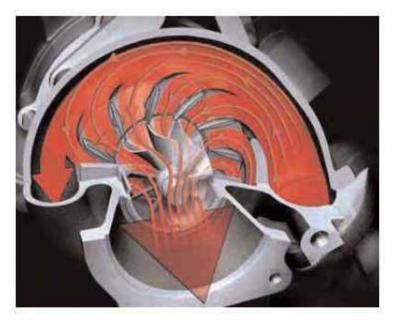
— Basic Setup — 🔺	Boost Control		
Engine Taila Distance	There are two 2D base duty tables i	n the calibration. They ar	e named:
Tuning Preferences Cam/Crank	- BoostBaseDuty1 [%]		
Mass Airflow	- BoostBaseDuty2 [%]		
Injector Setup	These two tables add together so th	e user can use one table	as primary and the second as a trim if desired.
Basic Sensors	Similarly, there are two 2D boost tar	get tables in the calibration	n. They are named:
DBW Tuning			
Set Throttle Range	 BoostTargetTable1 [kPa] BoostTargetTable2 [kPa] 		
Ignition Sync	576 5 5		
Advanced Setup - 🔺	These two tables add together so th	e user can use one table	as a primary and the second as a trim if desired.
Accel and Decel Fuel	Both sets of tables allow the user to	select from many possible ;	K or Y axis inputs.
Boost Control			
Engine Protection	Boost Output Enable		
Fuel Trims	boost output Endble		
Idle	Boost Feedback Enable		
Input Function Assignments			
Knock Setup	Boost Feedback Enable Below Error	allows for open loop boos	t control during spool up until MAP [kPa] is within this
Lambda Control	range of the current boost target.		
Launch Antilag			
Launch Timer	Boost Feedback Enable Below Error	8	kPa
Nitrous N20 Main Rev Limiter			
Rev Limit 2 Step	Base Duty Tables Axis Setu	o	
Rev Limit 3 Step			
Shift Cut		1	
Traction Control	Boost Base Duty Table1 X-Axis	EngineSpeed [RPM]	.
USB Logging	Boost Base Duty Table1 Y-Axis	BoostTargetError [kPa]	•
WC	Boost Base Duty Table2 X-Axis	MAP Rate	•
Diagnostics	Boost Base Duty Table2 Y-Axis	BoostTargetError [kPa]	
Outputs A			
Output Function Assignme	The outputs from these two tables ar	e ADDED together to equ	al the channel BoostBaseDuty [%]!
	Boost Target Tables Axis S	etup	
	Boost Target Table1 X-Axis	EngineSpeed [RPM]	•
	Boost Target Table1 Y-Axis	Throttle [%]	
	Boost Target Table2X-Axis	FlexContent [%]	•
	Boost Target Table2 Y-Axis	InjPressure (psig)	
	The outputs from these two tables an	e ADDED together to equa	al the channel BoostTarget [kPa]!

Advanced Setup Advanced Setup	 Hide Advanced Setup 		
Boost Control	Boost Solenoid Control Frequency [Hz]	30.00	÷ 1
Engine Protection	A typical value here would be 30 for AEM	1 boost control sole	1
Fuel Trims Idle	Boost Solenoid Max Duty Cycle	80	2
Input Function Assignments	Boost Solenoid Min Duty Cycle	20	* 2
Knock Setup			
Lambda Control	Boost Duty Cycle Invert		
Launch Antilag		(<u>1997</u>)	8
Launch Timer	Boost Integral Gain Low Clamp	-10.00	*
Nitrous N20	Boost Integral Gain High Clamp	10.00	
Main Rev Limiter			
Rev Limit 2 Step	Boost Solenoid Min Throttle	0	÷ 2
Rev Limit 3 Step Shift Cut	Show BoostGain_Kp Table S	Setup	
Traction Control USB Logging	Show BoostGain_Ki Table S	etup	
VVC Diagnostics	Show BoostGain_Kd Table S	Setup	

Tuning

Porsche Variable Turbine Geometry works by varying the angle of 11 vanes that direct exhaust flow through the turbine wheel. This adjustment allows users to fully control the vane gap and exhaust angle into the turbine wheel. Closing this gap will increase exhaust velocity and the exhaust angle onto the turbine wheel. This is great for spooling a turbo quickly at lower RPM but as exhaust mass flow increases, the vanes must open in a similar manner to prevent excessive back pressure. Decreasing the vane gap is how boost is controlled/limited. Turbo exhaust temperature is available to monitor/log using the OEM Porsche turbo temperature sensors. These channels are called "ExhTemp1 [C]" and "ExhTemp2 [C]" (shown below).





Shown Above: Vanes Closed (top) and vanes open (bottom)

© 2017 AEM Performance Electronics

ExhTemp1 [C]	0
ExhTemp2 [C]	0

Important!

It is recommended that users leave boost control in open loop during spool up for ultimate spool control. The point at which boost control enters closed loop control can be adjusted by changing the "Boost Feedback Enable Below Error" option in the wizard's "Boost Control" tab.

Because duty cycle values less than 20% and greater than 80% are used for diagnostic purposes, the useful range for vane control is 20% to 80%. 20% duty cycle is the fully "closed" or minimum vane gap position (low flow). 80% duty cycle is the fully "open" or maximum vane gap position (high flow).

To help prevent over-boost spikes, users can begin decreasing the vane gap in anticipation of hitting boost target (example shown below in the BoostBaseDuty1 table). Users will need to spend time on a dynamometer to fully tune turbo response to their liking. The AEM supplied base calibration is tuned to decrease spool time and provide maximum control on a stock-ish 997.1 Turbo at stock-like boost levels.

eDuty1	[%]									x
60	60	60	60	60	60	60	60	60	60	*
62	62	62	61	61	60	60	60	60	60	
64	64	64	63	62	58	58	60	59	57	
65	65	65	64	62	57	55	50	50	50	
67	67	67	65	63	55	53	40	40	40	
55	55	55	56	54	41	40	36	38	40	
55	55	55	50	48	41	35	36	38	40	
33	33	33	33	35	35	35	36	38	40	
33	33	33	33	34	34	34	36	38	40	
26	26	26	26	26	26	26	26	26	26	-
1			3 X	-					Þ	
1500	2000	2500					5000	5500	6000	
	60 62 64 65 67 55 55 33 33 26 ∡	62 62 64 64 65 65 67 67 55 55 33 33 26 26	60 60 60 62 62 62 64 64 64 65 65 65 67 67 67 55 55 55 33 33 33 33 33 33 26 26 26	60 60 60 60 62 62 62 61 64 64 63 63 65 65 65 64 67 67 67 65 55 55 55 50 33 33 33 33 36 26 26 26 1500 2000 2500 3000	60 60 60 60 60 62 62 62 61 61 64 64 64 63 62 65 65 64 62 63 67 67 65 64 63 55 55 55 56 54 33 33 33 33 35 33 33 33 33 34 26 26 26 26 26 1500 2000 2500 3000 3500	60 60 60 60 60 60 62 62 62 61 61 60 64 64 63 62 58 65 65 64 62 57 67 67 67 65 63 55 55 55 55 50 48 41 33 33 33 33 35 35 33 33 33 33 34 34 26 26 26 26 26 26 1500 2000 2500 3000 3500 4000	60 60 60 60 60 60 60 62 62 62 61 61 60 60 64 64 63 62 58 58 65 65 65 64 62 57 55 67 67 67 65 63 55 53 55 55 55 56 54 41 40 55 55 55 50 48 41 35 33 33 33 33 35 35 35 33 33 33 33 34 34 34 26 26 26 26 26 26 26 26	60 60<	60 60<	60 60 <td< td=""></td<>

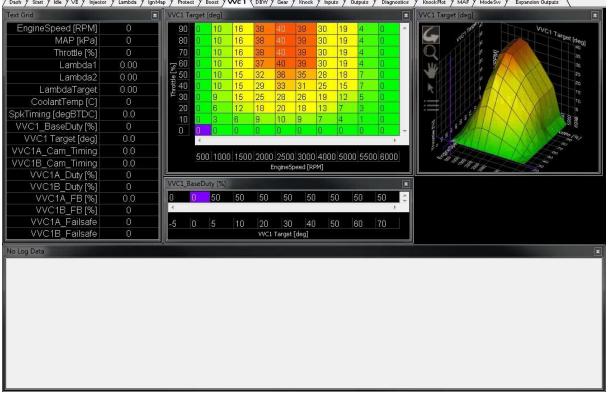
VARIOCAM PLUS

The AEM Infinity fully supports the Porsche 997.1 Turbo Variocam Plus system. This includes both a user configurable low/high cam profile and 40 degrees of infinitely variable advance on both intake camshafts.

Variocam Plus VVC can be configured in the setup wizard's "VVC" tab and tuned using the "VVC1" Infinity Tuner layout tab (shown below).

Basic Setup 🔺	WC		
Engine	This many is used to souther to Western	le Velue, Central (er	ments in the Alexan 1070
Tuning Preferences	This wizard is used to configure Variab	ie valve control (st	Apports up to 4-cam VVL).
Cam/Crank			
Mass Airflow	WC Cam Sync		
Injector Setup	e	· 5.20 0	
Basic Sensors			WC channels disabled, start and idle the engine. The intake e at full advance. These points will serve as the WC cam zero
DBW Tuning	reference. View the channels 'Cam0_	Timing [deg]', 'Cam	n1_Timing [deg]', 'Cam2_Timing [deg]', 'Cam3_Timing [deg]' and
Set Throttle Range	they do not read zero, add what they cu		ing channels again, they should all read zero or close to zero. If current value below and check again
Ignition Sync		anonay road to the	current value below and encost again.
- Advanced Setup - 🔺	Failure to set cam sync properly may re	esult in improper V	/C function and possible engine damage!
Accel and Decel Fuel			
Boost Control	Cam 0 Sync [deg]	23	
Engine Protection	Cam 1 Sync (deg)	640	 *
Fuel Trims	cam r sync [deg]	040	
Idle			
Input Function Assignments	VVC Enable		
Knock Setup			
Lambda Control	VVC1A Enable	S	Intake - Bank 1
Launch Antilag	VVC1B Enable	V	Intake - Bank 2
Launch Timer			
Nitrous N20			
Main Rev Limiter	WC Hardware Outputs		
Rev Limit 2 Step	Use the Lowside Assignment Tables se	tun wizard to confi	gure the Lowside outputs for the desired frequency [Hz] and duty
Rev Limit 3 Step	[%]		galo and contrado carpara for the desired nequeiney [int] and day
Shift Cut			
Traction Control	WC Target Table		
USB Logging	The religion rules		
WC	VVC Target Table Load Axis Selection	Throttle [%]	•
Diagnostics		9	
Outputs Y	VVC Minimum Coolant Temperature	60.0	21
	Show VVC1 Options		

Accel and Decel Fuel Boost Control Engine Protection Fuel Trims Idle Input Function Assignments	VVC1A or VVC1B failsafe will er failsafe is enabled, the VVC car the failsafe conditions are no lo	nable when WC1A or W n that is in failsafe will di inger met.	/C1B cam timing sable VVC contri	camshaft movement plus a 5 degree buffer. 9 goes out of the failsafe range. When the of and feedback, retarding the intake cam until e WC1 Failsafe Min' to -5 and the WC1
Knock Setup	VVC1 Failsafe Min	-5	<u></u>	
Lambda Control Launch Antilag Launch Timer	VVC1 Failsafe Max	45	÷.	
Nitrous N20	WC1 Feedback Min	-30	\$ %	
Main Rev Limiter Rev Limit 2 Step	WC1 Feedback Max	30	÷ ×	
Rev Limit 3 Step				
Shift Cut	WC1 Duty Min	0	* %	
Traction Control USB Logging	VVC1 Duty Max	90	<u></u> 2	
WC Diagnostics	WC1 PID Settings			
Outputs 👻	WC1 Proportional Gain	2.0000	<u></u>	
	VVC1 Integral Gain	2.0000	-	
	WC1 Derivative Gain	0.0100	*	



Variocam Plus Lo/Hi cam control can be configured in the "CAN Lowside 2 Output Setup" of the "Output Function Assignment" wizard tab. Select "VTEC_Active" as the main input. Because the Porsche 997.1 Turbo's small cam lobes are significantly smaller than the large cam lobes, the default settings

© 2017 AEM Performance Electronics

P/N 30-3901

activate the "hi" lobe at just 1200RPM and 14% throttle. Users can configure this to best suit their driving style.

- Basic Setup - A Outp	ut Function Assignment						
Engine All of the Tuning Preferences ALM program Cam/Crank Most on tables. Mass Airflow Most on tables. Most on tables. Porsch DBW Tuning Porsch Set Throttle Bange CAN_F	he standard assigned functions are preco inout chart. If the ECU's Low-Side (switched ground) If the ECU's High-Side (switched +12V) o	outputs can be reconf utputs can be reconfig outputs can be recon ible and can only be u und) outputs can be re	figured gured hfigure used a econfi	l by reassigni by reassignin d by reassigr is an on/off l gured by rea	ing the x- g the x-a ning the x function. ssigning th	and y-inputs of LS_Dut and y-inputs of 'HS_Tab - and y-inputs of ne x- and y-inputs of	ty ble'
- Advanced Setup - A	Side High Side Porsche Expansion Low	Side Porsche Expan	veion F	Ralau Drivare	Porsche	Start Enable	
		i energia interes	1310(11)	1000002		Start Enable	-
		Channel		Pin	Status		_
	Lowside 0 Output Setup	General Purpose 3-31		OFF			
	Lowside 1 Output Setup Lowside 2 Output Setup	CoolantFan2On VTEC Active		3-16 3-1 & 3	OFF		
nput Function Assignments	Lowalde 2 output Setup	INTEC_ACTIVE		0.1 0.0	2153.00m		
Knock Setup	CAN Lowside 2 Output Setup						
Lambda Control Launch Antilag	CAN Lowside 2 Output Setup	VTEC Active	•				
Launch Timer	Condition	At Least	•]1	000.00	A Y	EngineSpeed (RPM)	•
Main Rev Limiter	Use the following settings to co	onfiaure VTEC.					
Rev Limit 2 Step	VTEC Off Below RPM	1000		<u>rpm</u>			
Shift Cut	VTEC On Above RPM	1200	*	<u>rpm</u>			
Traction Control JSB Logging	VTEC Off Below Throttle	12	-	<u>%</u>			

EXPANSION OUTPUTS

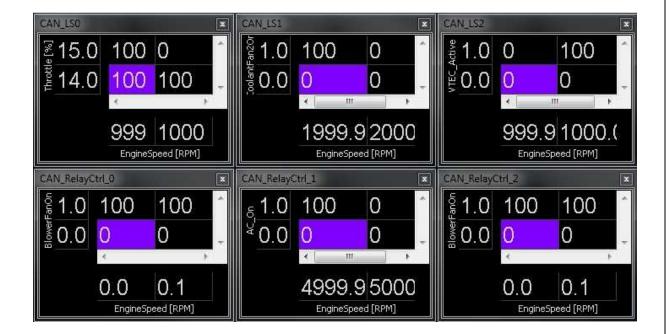
The AEM Adapter Interface includes three additional lowside outputs (ON/OFF 6A Max, not PWM-able) and three additional lowside relay drivers (500mA Max, not PWM-able). These outputs can be reconfigured in the Output Function Assignments wizard tab.

0.20472	Output Function Assignment					
ngine		ured and do not need	to be adjusted	if the vehicle's wi	ring matches th	
uning Preferences	All of the standard assigned functions are preconfigured and do not need to be adjusted if the vehicle's wiring matches the AEM pinout chart.					
Cam/Crank	Most of the ECU's Low-Side (switched ground) outputs can be reconfigured by reassigning the x- and y-inputs of LS_Duty					
lass Airflow	tables. Most of the ECU's High-Side (switched +12V) outputs can be reconfigured by reassigning the x- and y-inputs of 'HS_Table'					
njector Setup	tables.	10 N R	125 3	a 25 540	10 M	
asic Sensors	Porsche Expansion Low-Side (switched ground) outputs can be reconfigured by reassigning the x- and y-inputs of CAN LS tables. These outputs are not PW/M-able and can only be used as an on/off function.					
)BW Tuning	CAN_LS tables. These outputs are not PWM-able and can only be used as an on/off function. Porsche Expansion Relay Drivers (switched ground) outputs can be reconfigured by reassigning the x- and y-inputs of					
et Throttle Range	CAN_RelayCtrl tables. These outputs are not PWM	-able and can only be	used as an or	n/off function in lo	w current relay	
gnition Sync	control circuits.					
– Advanced Setup – 💌						
— Outputs — A	Low Side High Side Porsche Expansion Low Side	e Porsche Expansion	n Relay Drivers	Porsche Start Er	able	
Jutput Function Assignme	Function	Channel	Pin	Status	250250	
rurput nunçadırı Assignme	CAN Lowside 0 Output Setup	General Purpose	3-31	ordiao		
	CAN Lowside 1 Output Setup	CoolantFan20n	3-16	OFF		
	CAN Lowside 2 Output Setup	VTEC_Active	3-1 & 3			
	CAN Lowside 2 Output Setup	VIEC_ACTIVE	-1 α	. UFF		
uning Preferences am/Crank	Output Function Assignment All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables.					
Basic Setup Angine uning Preferences am/Crank tass Airflow njector Setup asic Sensors IBW Tuning et Throttle Range gnition Sync:	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp	uts can be reconfigur its can be reconfigure puts can be reconfigu and can only be used outputs can be reco	ed by reassigni d by reassignin ired by reassign d as an on/off i nfigured by rea	ng the x- and y-in g the x- and y-inp ning the x- and y-i function. ssigning the x- an	uts of LS_Dut uts of 'HS_Tab nputs of d y-inputs of	
ngine uning Preferences am/Crank Iass Airflow jiector Setup asic Sensors BW Tuning et Throttle Range	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) output tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground CAN_RelayCtrl tables. These outputs are not PWM control circuits.	uts can be reconfigur its can be reconfigue puts can be reconfigu and can only be used outputs can be reco able and can only be	ed by reassigni d by reassignin red by reassign d as an on/off I nfigured by rea used as an or	ng the x- and y-in g the x- and y-inp ning the x- and y-i function. ssigning the x- an y-off function in low	puts of LS_Dut uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow jector Setup asic Sensors BW Tuning et Throttle Range nition Sync	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) output tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground CAN_RelayCtri tables. These outputs are not PWM	uts can be reconfigur ts can be reconfigure puts can be reconfigu and can only be used outputs can be reco -able and can only be e Porsche Expansior	ed by reassigni d by reassignin red by reassign d as an on/off I nfigured by rea used as an or	ing the x- and y-ing g the x- and y-inp ning the x- and y-i function. ssigning the x- an y-off function in low	puts of LS_Dut uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) output tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground CAN_RelayCtrl tables. These outputs are not PWM control circuits.	uts can be reconfigur its can be reconfigue puts can be reconfigu and can only be used outputs can be reco able and can only be	ed by reassigni d by reassignin red by reassign d as an on/off I nfigured by rea used as an or	ng the x- and y-in g the x- and y-inp ning the x- and y-i function. ssigning the x- an y-off function in low	puts of LS_Dui uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outpu tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) CAN_RelayCtrl tables. These outputs are not PWM control circuits.	uts can be reconfigur ts can be reconfigure puts can be reconfigu and can only be used outputs can be reco -able and can only be e Porsche Expansior	ed by reassignin d by reassignin red by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers	ng the x- and y-in g the x- and y-inp ning the x- and y-i function. signing the x- an yoff function in low Porsche Start En	puts of LS_Du uts of 'HS_Tab nputs of d y-inputs of w current relay	
igine ining Preferences im/Crank ass Airflow ector Setup sic Sensors IW Tuning it Throttle Range nition Sync Advanced Setup — V Outputs A	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched round) out cables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) CAN_RelayCtrl tables. These outputs are not PWM control circuits.	uts can be reconfigur its can be reconfigure puts can be reconfigu and can only be usec outputs can be reco able and can only be e Porsche Expansior Channel	ed by reassignin red by reassignin red by reassign as an on/off nfigured by rea used as an or used as an or n Relay Drivers Pin	ng the x- and y-in g the x- and y-inp ning the x- and y-i runction. ssigning the x- an Volf function in low Porsche Statt En Status	puts of LS_Du uts of 'HS_Tab nputs of d y-inputs of w current relay	
gine ming Preferences m/Crank ass Airflow ector Setup sic Sensors I/W Tuning t Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched round) out cables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup	uts can be reconfigur ts can be reconfigure puts can be reconfigu and can only be usec outputs can be recon -able and can only be e Porsche Expansior Channel BlowerFanOn	ed by reassigni d by reassignin red by reassign as an on/off nfigured by rea used as an or nRelay Drivers Pin 4-25	ng the x- and y-in g the x- and y-inp ning the x- and y-i unction. ssigning the x- an Volf function in low Volf function in low Porsche Statt En Status OFF	uts of LS_Du uts of 'HS_Tat nputs of d y-inputs of w current relay	
igine ining Preferences im/Crank ass Airflow ector Setup sic Sensors IW Tuning it Throttle Range nition Sync Advanced Setup — V Outputs A	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	uts of LS_Du uts of 'HS_Tat nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dui uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine ning Preferences m/Crank ass Airflow ector Setup sic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Du uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Du uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dui uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow jector Setup asic Sensors BW Tuning et Throttle Range nition Sync Advanced Setup — Outputs A	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dui uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow jector Setup asic Sensors BW Tuning et Throttle Range nition Sync Advanced Setup — Outputs	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dui uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ijector Setup asic Sensors BW Tuning et Throttle Range inition Sync Advanced Setup — V	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dut uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow jector Setup asic Sensors BW Tuning et Throttle Range nition Sync Advanced Setup — Outputs	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dut uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow jector Setup asic Sensors BW Tuning et Throttle Range nition Sync Advanced Setup — Outputs A	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) output tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 0 Output Setup CAN Relay 2 Output Setup CAN Relay 2 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigue and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dui uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow jector Setup asic Sensors BW Tuning et Throttle Range nition Sync Advanced Setup — Outputs	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) outputables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) out CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 1 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigu and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dut uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) output tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 0 Output Setup CAN Relay 2 Output Setup CAN Relay 2 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigu and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Du uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) output tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 0 Output Setup CAN Relay 2 Output Setup CAN Relay 2 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigu and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	puts of LS_Dut uts of 'HS_Tab nputs of d y-inputs of w current relay	
ngine uning Preferences am/Crank ass Airflow ector Setup asic Sensors 3W Tuning at Throttle Range nition Sync: Advanced Setup — ~ Outputs ~	All of the standard assigned functions are preconfig AEM pinout chart. Most of the ECU's Low-Side (switched ground) outp tables. Most of the ECU's High-Side (switched +12V) output tables. Porsche Expansion Low-Side (switched ground) out CAN_LS tables. These outputs are not PWM-able Porsche Expansion Relay Drivers (switched ground) CAN_RelayCtrl tables. These outputs are not PWM control circuits. Low Side High Side Porsche Expansion Low Side Function CAN Relay 0 Output Setup CAN Relay 0 Output Setup CAN Relay 2 Output Setup CAN Relay 2 Output Setup	uts can be reconfigur its can be reconfigue puts can be reconfigu and can only be used outputs can be recor- outputs can be recor- outputs can be recor- outputs can only be e Porsche Expansion Channel BlowerFanOn AC_On	ed by reassigni d by reassign as an on/off 1 nfigured by rea used as an or n Relay Drivers Pin 4-25 4-27	ng the x- and y-in g the x- and y-inp function. ssigning the x- an y-off function in low Porsche Start En Status OFF OFF	uts of LS_Du uts of 'HS_Tai nputs of d y-inputs of w current relay	

© 2017 AEM Performance Electronics

Output	Pin	Function
CAN_LS0	AEM Adapter, Porsche Header	Electronic Bypass Valve Direct
	Side, Connector 3, Pin 31	Control
CAN_LS1	AEM Adapter, Porsche Header	Turbocharger Electronic Water
	Side, Connector 3, Pin 16	Pump Direct Control
CAN_LS2	AEM Adapter, Porsche Header	Variocam Plus Lo/Hi Cam Direct
	Side, Connector 3, Pin 1 and Pin	Control
	26	
CAN_RelayCtrl_0	AEM Adapter, Porsche Header	Engine Compartment Blower Fan
	Side, Connector 4, Pin 25	Relay Control
CAN_RelayCtrl_1	AEM Adapter, Porsche Header	A/C Compressor Relay Control
	Side, Connector 4, Pin 27	
CAN_Relay_Ctrl_2	AEM Adapter, Porsche Header	Engine Compartment Blower Fan
	Side, Connector 4, Pin 31	Relay Control

Although reconfigurable, the AEM base calibration has these expansion outputs setup as follows:



© 2017 AEM Performance Electronics

FUEL PUMPS

The Porsche 997.1 Turbo is equipped with two fuel pumps. Fuel pump 1 will prime at key on (Lowside 0) and run when the engine is running. Fuel pump 2 (Lowside 2) is user configurable and will activate only when both throttle and RPM go above the "Fuel Pump 2 On Throttle" and "Fuel Pump 2 On RPM" and remain active until throttle or RPM dip below the "Fuel Pump 2 Off Throttle" or "Fuel Pump 2 Off RPM" conditions. This is configurable in the Output Function Assignments tab of the wizard.

Lowside 2 Output Setup				×
Lowside 2 Output Setup	FuelPump_2	•		1
Condition	At Least	•](0.00 ÷ EngineSpeed [RPM] +	
The Fuel Pump 2 function will ac and stay on until Throttle or RPM Throttle' at least 5% lower than '(2.	stivate only when bol 1 goes below the 'Fu On Throttle' and con	th Thro iel Pum figure 'C	ttle and RPM go above the respected 'Fuel Pump 2 On Throttle' and 'Fuel Pump On RPM' p 2 Off Throttle' or 'Fuel Pump 2 Off RPM'. Note: it is recommended to configure 'Off Off RPM' at least 500 RPM lower than 'On RPM' to avoid excessive cycling of Fuel Pump	
Fuel Pump 2 Off Below RPM	2000	A. 	<u>Ipm</u>	
Fuel Pump 2 On Above RPM	3500	*	<u>ipm</u>	
Fuel Pump 2 Off Below Throttle	30	*	<u>×</u>	
Fuel Pump 2 On Above Throttle	60	*	<u>*</u>	ш
Show Frequency Co	ntroi			
				-
			Close	

P/N 30-3901

INFINITY EMS INSTALLATION

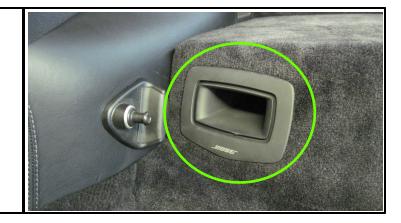
The following installation instructions are shown on a Porsche 997.1 Turbo coupe. Installation on a Porsche 997.1 Turbo convertible will vary.

Step 1

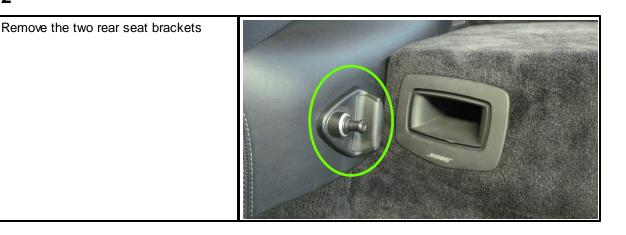
Open the hood and disconnect the battery.

Lower the rear seats and locate the factory sub-woofer

Carefully pull out the two plastic subwoofer port trim pieces.



Step 2



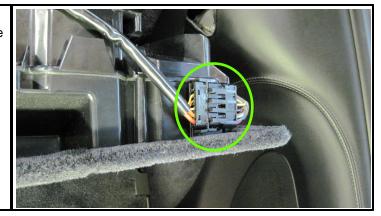
Step 3

Remove the two bolts below the subwoofer ports.



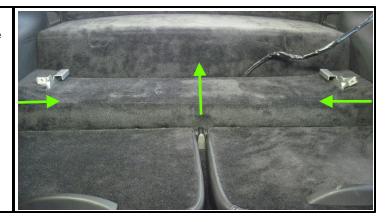
Step 4

Slide the subwoofer assembly forward, un-clip the power connector and remove the subwoofer.



Step 5

Pull the center of the carpet pad up while pulling the ends inward to remove the carpet pad, exposing the ECU shelves.



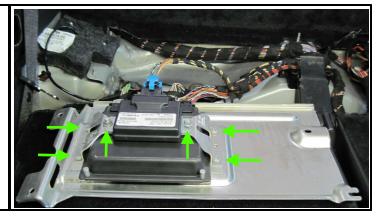
Step 6

Remove the five 10mm nuts fastening the ECU shelves to the car and flip them over, exposing the DME.

P/N 30-3901

Step 7

Remove the four bolts and two nuts fastening the DME and 4WD controller to the shelf. Remove the five electrical connectors to the DME and remove the DME and 4WD controller brackets as they will not be re-used.



Step 8

To make room for the AEM Infinity, the relay carrier on the driver's side of the vehicle must be modified as half of the holder is unused. Remove the relays/fuses and cut the holder directly in half. Replacement relay holders can be purchased from Porsche for ~\$30 and the Porsche part number is 996.610.111.00.

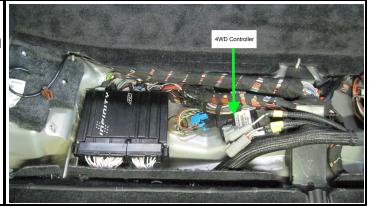


Step 9

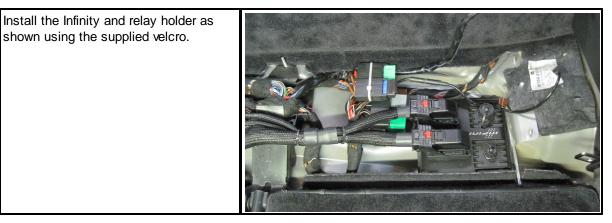
Re-install the relays/fuses in the shown orientation and add a piece of the supplied velcro as shown.

Step 10

Plug in both ends of the Infinity adapter in and affix the adapter and 4WD controller to the vehicle with the supplied velcro.

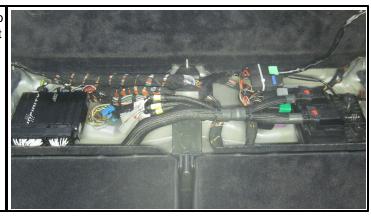


Step 11



Step 12

The finished install should look similar to this. Route USB/Logging/AUX/AEM Net cables/wires as desired. Re-install the aluminum shelf, carpet, and subwoofer in reverse order from removal.



PINOUTS

Porsche Pinouts

P	Pin	2007-2009	Adapter Pin	Infinity	Hardware	Function	Hardware	Notes
		Porsche 997.1 Turbo		Pin	Reference		Specification	
1	1	DME Relay, Terminal 15	A2-98, A2-106	C1-65	+12V Ignition Sw itch	lgnition Sw itch	10K Pulldow n	Full time battery pow er must be available at C1- 10 before this input is triggered.
	2	DME Relay, Terminal 30	A2-99, A2-100	C1-10	+12V R8C CPU	+12V Perm Pow er	Dedicated Pow er CPU	Full time battery pow er
	3	W-Wire	A2-114					
	4	Ground, Electronics	A2-94, A2-95, A2-96, A2-97, A2-115, A2-116, A2-117	C1-30, C1-55, C1-60, C1-73, C2-3, C2-39, C2-40	GND	Pow er Ground	Pow er Ground	Battery ground
	5	Ground, Fuel Injectors		C1-30, C1-55, C1-60, C1-73, C2-3, C2-39, C2-40	GND	Pow er Ground	Pow er Ground	Battery ground
	6	Ground, Output Stages	A2-94, A2-95, A2-96, A2-97, A2-115, A2-116, A2-117	C1-30, C1-55, C1-60, C1-73, C2-3, C2-39, C2-40	GND	Pow er Ground	Pow er Ground	Battery ground
	7	Throttle Motor Actuator + Open	A1-121	C1-54	Harness_HB ridge0_1	HBridge0_1	5.0A max Throttle Control Hbridge Drive	+12V to open
	8	DME Relay, Terminal 87	A1-3, A1-4, A1- 5	C1-61, C1-64	+12V	+12V	12 Volt Pow er From Relay	Relay must be controlled by +12V relay control signal from pin C1-29
	9	Throttle Motor Actuator - Close	A1-120	C1-53	Harness_HB ridge0_0	HBridge0_0	5.0A max Throttle Control Hbridge Drive	+12V to close
2	1	O2 Sensor Heater B2S2						
	2	O2 Sensor Pump Current Regulator B1S1	A2-82	C1-5	UEGO 1 IA	UEGO 1 IA	UEGO 1 IA	O2 sensor 1 pump current regulator
	3							
	4							
	5	O2 Sensor Pump Current Regulator B1S1	A2-83	C1-6	UEGO 1 IP	UEGO 1 IP	UEGO 1 IP	O2 sensor 1 pump current regulator
	6	O2 Sensor Pump Current Regulator B2S1	A2-86	C2-48	UEGO 2 IA	UEGO 2 IA	UEGO 2 IA	O2 sensor 2 pump current regulator
	7	O2 Sensor Heater B1S2						
	8	O2 Sensor Ground B2S2						
	9	O2 Sensor Ground B1S1	A2-84	C1-8	UEGO 1 VM	UEGO 1 VM	UEGO 1 VM	O2 sensor 1 ground

- 41

	10	O2 Sensor Ground B2S1	A2-88	C2-45	UEGO 2 VM	UEGO 2 VM	UEGO 2 VM	O2 sensor 2 ground
	11	O2 Sensor Ground B1S2						
	12							
	13	O2 Sensor Heater B2S1	A2-118	C2-49	UEGO 2 Heat	UEGO 2 Heat	UEGO 2 Heat	O2 sensor 2 heater
	14	O2 Sensor Signal B2S2						
	15	O2 Sensor Signal B1S1	A2-85	C1-7	UEGO 1 UN	UEGO 1 UN	UEGO 1 UN	O2 sensor 1 signal
	16	O2 Sensor Signal B2S1	A2-89	C2-46	UEGO 2 UN	UEGO 2 UN	UEGO 2 UN	O2 sensor 2 signal
	17	O2 Sensor Signal B1S2						
	18							
	19	O2 Sensor Heater B1S1	A2-119	C1-4	UEGO 1 Heat	UEGO 1 Heat	UEGO 1 Heat	O2 sensor 1 heater
	20							
	21	Engine Compartment Temp Sensor	A2-90	C2-16	Analog Temp 5	Airbox Temperature	2.49K pullup to 5V	Main input to blow er fan control
	22	5v Supply Mass Airflow Sensor	A2-91	C1-42	Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor pow er	Analog sensor pow er
	23							
-	24	O2 Sensor Pump Current Regulator B2S1	A2-87	C2-47	UEGO 2 IP	UEGO 2 IP	UEGO 2 IP	O2 sensor 2 pump current regulator
3	1	Valve Lift Control B1			CAN Low side 2	Valve Lift Control B1	On/Off only low side sw itch, 6A max	Not PWM-able, see setup w izard for configuration
	2	Fuel Injector Cylinder 5	A1-65	C1-57	Injector 5	Injector 5	Saturated or peak and hold, 3A max continuous	-
	3	Valve, Tank Vent						
	4	Acutation Charge Air Pressure Positioner B2	A1-63	C2-43	Low side 8	VTG Turbo Boost Control B2	Low side sw itch, 4A max w ith internal flyback diode. Inductive load should NOT have full time pow er	Low side sw itch, 4A max w ith internal flyback diode. Inductive load should NOT have full time pow er
	5	Oil Temperature Sensor	A1-48	C1-68	Analog Temp 3	Oil Temperature	2.49K pullup to 5V	See setup w izard for configuration
[6							
	7	5v Supply Charge Air Pressure & Oil Pressure Sensor	A1-28	C1-41	Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor pow er	Analog sensor pow er
	8	Signal, Throttle Position Sensor 2	A1-49	C2-21	Analog 16	Throttle Position 2	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently

							damage the ECU. Monitor DBW1_TPSB [%]
9	Ground, Mass Airflow Sensor	A1-12	C1-19	Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground
10	5v Supply Throttle Actuation	A1-13	C2-24	Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor pow er	Analog sensor pow er
11	Triggering of Secondary Air Pump Relay (Terminal 85)						
12	Signal, Camshaft Position Sensor B1	A1-9	C1-22	Digital 1	Camshaft Position Senor B1	10K pullup to 12V	See setup wizard for options
13							
14	Acutation Charge Air Pressure Positioner B1 (VTG)	A1-64	C1-3	Low side 6	VTG Turbo Boost Control B1	Low side sw itch, 4A max w ith internal flyback diode. Inductive load should NOT have full time pow er	Low side sw itch, 4A max w ith internal flyback diode. Inductive load should NOT have full time pow er
15	Fuel Injector Cylinder 3	A1-26	C1-59	Injector 3	Injector 3	Saturated or peak and hold, 3A max continuous	,
16	Turbo Water Pump			CAN Low side 1	Turbocharge r Cooling Water Pump	low side sw itch,	Not PWM-able, see setur wizard for configuration
17	Ground, Sensors	A1-50	C1-20	Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground
18	Signal, Camshaft Position Sensor 2	A1-8	C1-23	Digital 1	Camshaft Position Senor B1	10K pullup to 12V	See setup w izard for options
19	Alternator Feedback	A1-1					
20	Exhaust Gas Temperature Sensor B2			Exhaust Temp 2	Exhaust Temp 2	N⁄A	This is transmitted via CAN from the adapter to the Infinity
21							
22	Engine Coolant Temperature Sensor	A-51	C1-66	Analog Temp 1	Coolant Temperature	2.49K pullup to 5V	See setup w izard for configuration
23	Signal, Mass Airflow B1	A-52	C2-33	Analog 20	Mass Airflow Sensor B1	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU.
24	Signal, Throttle Position Sensor 1	A1-53	C1-35	Analog 7	Throttle Position 1	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU. Monitor DBW1_TPSA [%]
25	Ground,	A1-50	C1-20	Sensor	Sensor		Dedicated analog ground
	Throttle			Ground	Ground	ground	

4	13

	Position Sensors 1&2						
26	Valve Lift Control B2			CAN Low side 2	Valve Lift Control B2	On/Off only low side sw itch,	Not PWM-able, see setu wizard for configuratio
27	Fuel Injector Cylinder 4	A1-25	C1-58	Injector 4	Injector 4	6A max Saturated or peak and hold, 3A max continuous	Injector 4
28	Fuel Injector Cylinder 6	A1-27	C1-56	Injector 6	Injector 6	Saturated or peak and hold, 3A max continuous	,
29							
30							
31	Bypass Valve			CAN Low side 0	Bypass Valve	On/Off only low side sw itch, 6A max	Not PWM-able, see setu wizard for configuratio
32	Ground, Shielded	A1-50	C1-20	Sensor Ground	Sensor Ground	ground	Dedicated analog grour
33							
34	Intake Air Temperature Sensor	A1-70	C1-67	Analog Temp 2	Intake Air Temperature	2.49K pullup to 5V	See setup w izard for configuration
35							
36	Input, Knock Sensor 2	A1-61	C1-28	Knock 2	Knock 2	Dedicated knock signal processor	See setup wizard for configuration
37	Ground, Knock Sensor 2	A1-11	C2-30	Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog grour
38							
39	Charge Air Pressure Sensor	A1-68	C1-36	Analog 8	MAPsensor	100k pullup to 5V	Sensor is pre-throttle blade and will not respond like a manifolo referenced sensor.
40	Fuel Injector Cylinder 2	A1-65	C1-62	Injector 2	Injector 2	Saturated or peak and hold, 3A max continuous	
41	Fuel Injector Cylinder 1	A1-7	C1-63	Injector 1	Injector 1	Saturated or peak and hold, 3A max continuous	Injector 1
42	Signal, Mass Airflow B2	A2-109	C2-12	Analog 17	Mass Airflow Sensor B2		Do not connect signal referenced to +12V as this can permanently damage the ECU.
43							
44							
45	Crank VR+	A1-46	C1-45	VR0+	Crank VR+	Differential variable reluctance zero cross detection	See setup wizard for configuration
46	Crank VR-	A1-47	C1-46	VR0-	Crank VR-	Differential variable reluctance zero cross detection	See setup w izard for configuration
47							
48							
49	Input, Knock Sensor 1	A1-62	C1-27	Knock 1	Knock 1	Dedicated knock signal processor	See setup w izard for configuration

P/N 30-3901

_						-		L
5	50	Ground,	A1-11	C2-30	Sensor	Sensor	-	Dedicated analog ground
		Knock Sensor 1			Ground	Ground	ground	
Ę	51							
Ę	52	Exhaust Gas			Exhaust	Exhaust	N/A	This is transmitted via
		Temperature Sensor 1			Temp 1	Temp 1		CAN from the adapter to the Infinity
4	1	Interlock			Clutch	Clutch	N/A	This is transmitted via
		Clutch Switch			Sw itch	Sw itch		CAN from the adapter to the Infinity
	2							
	3							
	4	Triggering of Fuel Pump 2 Relay	A1-22	C1-17	Low side 2	Fuel Pump 2 Control	Low side sw itch, 4A max, NO internal flyback diode	See setup wizard for configuration
	5							
	6							
	7	Ground, Pedal Sensor 1	A1-58	C2-31	Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground
	8	Signal, APP Sensor 1	A1-21	C2-13	Analog 18	Accelerator Position 1	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU. Monitor DBW_APP1 [%]
	9	5v Supply, Pedal Sensor 1	A1-20	C2-23	Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor pow er	Analog sensor pow er
1	10	Fuel Pump 1 Relay Control	A1-2	C1-34	Low side 0	Fuel Pump 1 Control	Low side sw itch, 4A max, NO internal flyback diode	See setup wizard for configuration
1	11							
1	12	Ground, Pedal Sensor 2	A1-14	C2-32	Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground
1	13	Signal, APP Sensor 2	A1-15	C2-14	Analog 19	Accelerator Position 2	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU. Monitor DBW_APP2 [%]
1	14	5v Supply, Pedal Sensor 2	A1-19	C2-22	Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor pow er	Analog sensor pow er
1	15							
1	16	Crash Signal						
1	17	Speed Signal Output						
1	18							
1	19							
2	20							
2	21							
2	22							
2	23							
	24			1				

	1						
25	Engine Compartment Fan Hi Relay Control			CAN Relay Control 0	CAN Relay Control 0	Low side relay driver, 500mA max	See setup wizard for configuration
26	DME Relay Control	A1-55	C1-29	+12V Relay Control	+12V Relay Control	0.7A max ground sink for external relay control	Will activate at key on and at key off according to the configuration settings.
27	A/C Compressor Relay Control			CAN Relay Control 1	CAN Relay Control 1	Low side relay driver, 500mA max	See setup wizard for configuration
28	Checkback Signal Charge Air Pressure 1	A1-57	C1-24	Digital 3	Turbo B1 Position Feedback Signal	10K pullup to 12V. Will w ork w ith ground or floating sw itches.	This duty cycle reflects turbo vane actual position and under normal conditions, should reflect the control signal duty cycle.
29							
30	EVAP Canister Shutoff Valve						
31	Engine Compartment Fan Lo Relay Control			CAN Relay Control 2	CAN Relay Control 3	Low side relay driver, 500mA max	See setup w izard for configuration
32							
33	Start Enable			Start Enable	Start Enable	Low side relay driver, 500mA max	See setup w izard for configuration
34	Checkback Signal Charge Air Pressure 2	A1-56	C1-25	Digital 4	Turbo B2 Position Feedback Signal	10K pullup to 12V. Will w ork w ith ground or floating sw itches.	This duty cycle reflects turbo vane actual position and under normal conditions, should reflect the control signal duty cycle.
35	Oil Pressure Sensor	A1-18	C2-18	Analog 13	Oil Pressure	100k pullup to 5V	See setup w izard for configuration
36	CAN Hi	A1-72	C2-41	CANB+	CANB+	Dedocated high speed CAN tranceiver	Porsche CAN bus communication
37	CANLO	A1-73	C2-42	CAN B -	CANB-	Dedocated high speed CAN tranceiver	Porsche CAN bus communication
38							
39							
40							
1	Ignition Coil 6	A1-81	C1-15	Ignition Coil 6	Ignition Coil 6	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
2	Ignition Coil 4	A1-79	C1-11	Ignition Coil 4	Ignition Coil 4	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.

© 2017 AEM Performance Electronics

46	P/N 30-3901											
	3	Ignition Coil 2	A2-112	C1-13	Ignition Coil 2	Ignition Coil 2	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.				
	4	Ignition Coil 5	A1-80	C1-16	Ignition Coil 5	Ignition Coil 5	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.				
	5	Ground	A2-94, A2-95, A2-96, A2-97, A2-115, A2-116, A2-117	C1-30, C1-55, C1-60, C1-73, C2-3, C2-39, C2-40	GND	Pow er Ground	Pow er Ground	Battery ground				
	6	Ignition Coil 1	A1-111	C1-14	Ignition Coil 1	Ignition Coil 1	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.				
	7	Camshaft Adjustment, Bank 1	A1-23	C1-18	Low side 3	VVC1A	Low side sw itch, 4A max w ith internal flyback diode. Inductive load should NOT have full time pow er	Low side switch, 4A max with internal flyback diode. Inductive load should NOT have full time pow er				
	8	Camshaft Adjustment, Bank 2	A1-24	C1-2	Low side 5	VVC1B	Low side sw itch, 4A max w ith internal flyback diode. Inductive load should NOT have full time pow er	Low side sw itch, 4A max w ith internal flyback diode. Inductive load should NOT have full time pow er				
	9	Ignition Coil 3	A2-113	C1-12	Ignition Coil 3	Ignition Coil 3	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.				

47

Infinity Pinouts

Infinity Pin	Porsche Pin	Adapter Pin	12P AUX Pin	Hardware Reference	Function	Hardware Specification	Notes
C1-1			AUX 6	Lowside 4	Available	Lowside switch, 1.7A max, NO internal flyback diode.	Available, see setup wizard for configuration
C1-2	5-8	A1-24		Lowside 5	VVC1B	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power
C1-3	3-14	A1-64		Lowside 6	VTG Turbo Boost Control B1	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power
C1-4	2-19	A2-119		UEGO 1 Heat	UEGO 1 Heat	UEGO 1 Heat	O2 sensor 1 heater
C1-5	2-2	A2-82		UEGO 1 IA	UEGO 1 IA	UEGO 1 IA	O2 sensor 1 pump current regulator
C1-6	2-5	A2-83		UEGO 1 IP	UEGO 1 IP	UEGO 1 IP	O2 sensor 1 pump current regulator
C1-7	2-15	A2-85		UEGO 1 UN	UEGO 1 UN	UEGO 1 UN	O2 sensor 1 signal
C1-8	2-9	A2-84		UEGO 1 VM	UEGO 1 VM	UEGO 1 VM	O2 sensor 1 ground
C1-9			FLASH 1	Flash Enable	Flash Enable	Flash Enable	+12V Flash Enable
C1-10	1-2	A2-99, A2- 100		+12V R8C CPU	+12V Perm Power	Dedicated Power CPU	Full time battery power
C1-11	5-2	A1-79				25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-12	5-9	A2-113		Ignition Coil 3	Ignition Coil 3	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-13	5-3	A2-112		Ignition Coil 2	Ignition Coil 2	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-14	5-6	A1-111		Ignition Coil 1	Ignition Coil 1	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-15	5-1	A1-81		Ignition Coil 6	Ignition Coil 6	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-16	5-4	A1-80		Ignition Coil 5	Ignition Coil 5	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C1-17	4-4	A1-22		Lowside 2	Fuel Pump 2 Control	Lowside switch, 4A max, NO internal flyback diode	See setup wizard for configuration

C1-18	5-7	A1-23		Lowside 3	VVC1A	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power
C1-19	3-9	A1-12		Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground
C1-20	3-17, 3-25, 3-32	A1-50		Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground
C1-21				Digital 0		10K pullup to 12V	See setup wizard for options.
C1-22	3-12	A1-9		Digital 1	Camshaft Position Senor B1		See setup wizard for options
C1-23	3-18	A1-8		Digital 2	Camshaft Position Senor B2	10K pullup to 12V	See setup wizard for options
C1-24	4-28	A1-57		Digital 3	Turbo B1 Position Feedback Signal	10K pullup to 12V. Will work with ground or floating switches.	This duty cycle reflects turbo vane actual position and under normal conditions, should reflect the control signal duty cycle.
C1-25	4-34	A1-56		Digital 4	Turbo B2 Position Feedback Signal	10K pullup to 12V. Will work with ground or floating switches.	This duty cycle reflects turbo vane actual position and under normal conditions, should reflect the control signal duty cycle.
C1-26			AUX 7	Digital 5	Available	10K pullup to 12V. Will work with ground or floating switches.	Available, see setup wizard for configuration
C1-27	3-49	A1-62		Knock 1	Knock 1	Dedicated knock signal processor	See setup wizard for configuration
C1-28	3-36	A1-61		Knock 2	Knock 2	Dedicated knock signal processor	See setup wizard for configuration
C1-29	4-26	A1-55		+12V Relay Control	+12V Relay Control	0.7A max ground sink for external relay control	Will activate at key on and at key off according to the configuration settings.
C1-30	1-4, 1-5, 1- 6, 5-5	A2-94, A2- 95, A2-96, A2-97, A2- 115, A2- 116, A2-117		GND	Power Ground		Battery ground
C1-31			AEM NET 2	AEM Net CAN L	Dedicated High Speed CAN Transceiver	AEM Net CAN L	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-32			AEM NET 1	AEM Net CAN H	High Speed CAN Transceiver	AEM Net CAN H	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-33			AUX 11	Lowside 1	Boost Control	Lowside switch, 1.7A max with internal flyback diode. Inductive load should NOT have full time power.	Available, see setup wizard for configuration
C1-34	4-10	A1-2		Lowside 0	Fuel Pump 1 Control	Lowside switch, 4A max, NO internal flyback diode	See setup wizard for configuration

P/N 30-3901

C1-35	3-24	A1-53		Analog 7	Throttle Position 1	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage
							the ECU. Monitor DBW1_TPSA [%]
C1-36	3-39	A1-68	AUX 5	Analog 8	MAP sensor	100k pullup to 5V	Sensor is pre-throttle blade and will not respond like a manifold referenced sensor.
C1-37			AUX 4	Analog 9	Fuel Pressure	100K pullup to 5V	Available, see setup wizard for configuration
C1-38				Analog 10	Baro Sensor	100K pullup to 5V	Available, see setup wizard for configuration
C1-39				Analog 11	Shift Switch	100K pullup to 5V	Available, see setup wizard for configuration
C1-40			AUX 10	Analog 12	ModeSwitch	100K pullup to 5V	Available, see setup wizard for configuration
C1-41	3-7	A1-28		Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-42	2-22	A2-91		Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor power	Analog sensor power
C1-43				Highside 1	Highside Switch	0.7A max, High Side Solid State Relay	Available, see setup wizard for configuration
C1-44			AUX 8	Highside 0	Highside Switch	0.7A max, High Side Solid State Relay	Available, see setup wizard for configuration
C1-45	3-45	A1-46		VR0+	Crank VR+	Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-46	3-46	A1-47		VR0-	Crank VR-	Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-47				VR1-		Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-48				VR1+		Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-49				VR2+	Non Driven Left Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-50				VR2-	Non Driven Left Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-51				VR3-	Driven Left Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-52				VR3+	Driven Left Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration
C1-53	1-9	A1-120		Harness_HBri dge0_0	HBridge0_0	5.0A max Throttle Control Hbridge Drive	+12V to close
C1-54	1-7	A1-121		Harness_HBri dge0_1	5	5.0A max Throttle Control Hbridge Drive	+12V to open
C1-55	1-4, 1-5, 1- 6, 5-5	A2-94, A2- 95, A2-96, A2-97, A2- 115, A2- 116, A2-117		GND	Power Ground	Power Ground	Battery ground
C1-56	3-28	A1-27		Injector 6	Injector 6	Saturated or peak and hold, 3A max continuous	Injector 6

							· · · · · · · · · · · · · · · · · · ·				
C1-57	3-2	A1-65 Injector 5		Injector 5	Saturated or peak and hold, 3A max continuous	Injector 5					
C1-58	3-27	A1-25		Injector 4	Injector 4	Saturated or peak and hold, 3A max continuous	Injector 4				
C1-59	3-15	A1-26		Injector 3	Injector 3	Saturated or peak and hold, 3A max continuous	Injector 3				
C1-60	1-4, 1-5, 1- 6, 5-5	A2-94, A2- 95, A2-96, A2-97, A2- 115, A2- 116, A2-117		GND	Power Ground	Power Ground	Battery ground				
C1-61	1-8	A1-3, A1-4, A1-5		+12V	+12V	12 Volt Power From Relay	Relay must be controlled by +12V relay control signal from pin C1-29				
C1-62	3-40	A1-65		Injector 2	Injector 2	Saturated or peak and hold, 3A max continuous	Injector 2				
C1-63	3-41	A1-7		Injector 1	Injector 1	Saturated or peak and hold, 3A max continuous	Injector 1				
C1-64	1-8	A1-3, A1-4, A1-5		+12V	+12V	12 Volt Power From Relay	Relay must be controlled by +12V relay control signal from pin C1-29				
C1-65	1-1	A2-98, A2- 106		+12V Ignition Switch	Ignition Switch		Full time battery power must be available at C1-10 before this input is triggered.				
C1-66	3-22	A-51		Analog Temp 1	Temperature	2.49K pullup to 5V	See setup wizard for configuration				
C1-67	3-34	A1-70		Analog Temp 2	Intake Air Temperature	2.49K pullup to 5V	See setup wizard for configuration				
C1-68	3-5	A1-48		Analog Temp 3	Oil Temperature	2.49K pullup to 5V	See setup wizard for configuration				
C1-69				Stepper 2A	Stepper 2A	Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal coil of the stepper motor are properly paired with the 1A/1B and 2A/2B ECU outputs. Supports Bi-Polar stepper motors only.				
C1-70				Stepper 1A	Stepper 1A	Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal				
C1-71				Stepper 2B	Stepper 2B	Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal coil of the stepper motor are properly paired with the 1A/1B and 2A/2B ECU outputs. Supports Bi-Polar stepper motors only.				
C1-72				Stepper 1B	Stepper 1B	Programmable Stepper Driver, up to 28V and ±1.4A	Be sure that each internal				
C1-73	1-4, 1-5, 1- 6, 5-5	A2-94, A2- 95, A2-96, A2-97, A2- 115, A2- 116, A2-117		GND	Power Ground	Power Ground	Battery ground				
C2-1				Harness_HBri dge1_0	HBridge1_0	5.0A max Throttle Control Hbridge Drive	+12V to close				

51

C2-2				Harness_HBri dge1_1	HBridge1_1	5.0A max Throttle Control Hbridge Drive	+12V to open				
C2-3	1-4, 1-5, 1- 6, 5-5	A2-94, A2- 95, A2-96, A2-97, A2- 115, A2- 116, A2-117		GND	Power Ground		Battery ground				
C2-4				Injector 7	Injector 7	Saturated or peak and hold, 3A max continuous	Injector 7				
C2-5				Injector 8	Injector 8	Saturated or peak and hold, 3A max continuous	Injector 8				
C2-6				Injector 9	Injector 9	Saturated or peak and hold, 3A max continuous	Injector 9				
C2-7				Injector 10	Injector 10	Saturated or peak and hold, 3A max continuous	Injector 10				
C2-8				GND	Power Ground	Power Ground	Battery ground				
C2-9				+12V	+12V	12 Volt Power From Relay	Relay must be controlled by +12V relay control signal from pin C1-29				
C2-10				Injector 11	Injector 11	Saturated or peak and hold, 3A max continuous	Injector 11				
C2-11				Injector 12	Injector 12	Saturated or peak and hold, 3A max continuous	Injector 12				
C2-12	3-42	A2-109		Analog 17	Mass Airflow Sensor B2	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU.				
C2-13	4-8	8 A1-21 Analog 1		Analog 18	Accelerator Position 1	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU. Monitor DBW_APP1 [%]				
C2-14	4-13	A1-15		Analog 19	Accelerator Position 2	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU. Monitor DBW_APP2 [%]				
C2-15			AUX 9	Analog Temp 4	Charge Out Temperature	2.49K pullup to 5V	Available, see setup wizard for configuration				
C2-16	2-21	A2-90		Analog Temp 5	Temperature	2.49K pullup to 5V	Main input to blower fan control				
C2-17				Analog Temp 6	Temperature	2.49K pullup to 5V	Available				
C2-18	4-35	A1-18		Analog 13	Oil Pressure	100k pullup to 5V	See setup wizard for configuration				
C2-19				Analog14	Traction Control Mode/Sensitiv ity		See setup wizard for configuration				
C2-20				Analog 15	Exhaust Back Pressure	100k pullup to 5V	See setup wizard for configuration				
C2-21	3-8	A1-49		Analog16	Throttle Position 2	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU. Monitor DBW1_TPSB [%]				
C2-22	4-14	A1-19		Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor power	Analog sensor power				
C2-23	4-9	A1-20		Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor power	Analog sensor power				

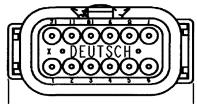
C2-24	3-10	A1-13		Sensor +5V	Sensor +5V	Regulated, fused +5V supply for sensor power	Analog sensor power				
C2-25				VR5+	Driven Right Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration				
C2-26				VR5-	Driven Right Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration				
C2-27				VR4-	Non Driven Right Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration				
C2-28				VR4+	Non Driven Right Wheel Speed Sensor	Differential variable reluctance zero cross detection	See setup wizard for configuration				
C2-29				Lowside 9	Available	Lowside switch, 4A max with internal flyback diode, 2.2K 12V pullup. Inductive load should NOT have full time power	Available, see setup wizard for configuration				
C2-30	3-37, 3-50	A1-11		Sensor Ground	Sensor Ground		Dedicated analog ground				
C2-31	4-7	A1-58		Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground				
C2-32	4-12	A1-14		Sensor Ground	Sensor Ground	Dedicated analog ground	Dedicated analog ground				
C2-33	3-23	A-52		Analog 20	Mass Airflow Sensor B1	100k pullup to 5V	Do not connect signals referenced to +12V as this can permanently damage the ECU.				
C2-34				Analog 21	3 Step Enable/TPS 2B	100k pullup to 5V	See setup wizard for configuration				
C2-35				Analog 22	USB Log Switch		See setup wizard for configuration				
C2-36				Analog 23	Charge Out Pressure	100k pullup to 5V	See setup wizard for configuration				
C2-37			AUX 12	Digital 6	N2O Switch/Staged Switch/MAF/St art Enable	No Pullup	Available, see setup wizard for configuration				
C2-38				Digital 7	N2O Switch/Staged Switch/MAF/St art Enable	No Pullup	Available, see setup wizard for configuration				
C2-39	1-4, 1-5, 1- 6, 5-5	A2-94, A2- 95, A2-96, A2-97, A2- 115, A2- 116, A2-117		GND	Power Ground	Power Ground	Battery ground				
C2-40	1-4, 1-5, 1- 6, 5-5	A2-94, A2- 95, A2-96, A2-97, A2- 115, A2- 116, A2-117		GND	Power Ground	Power Ground	Battery ground				
C2-41	4-36	A1-72		CAN B +	CAN B +	Dedocated high speed CAN tranceiver	Porsche CAN bus communication				
C2-42	4-37	A1-73		CAN B -	CAN B -	Dedocated high speed CAN tranceiver					
C2-43	3-4	A1-63		Lowside 8	VTG Turbo Boost Control B2	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power	Lowside switch, 4A max with internal flyback diode. Inductive load should NOT have full time power				

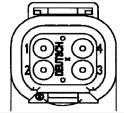
© 2017 AEM Performance Electronics

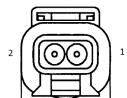
		1	1	1	1	· · · · · · · · · · · · · · · · · · ·
C2-44			 Lowside 7	Available	Lowside switch, 1.7A max with internal flyback diode. Inductive load should NOT have full time power.	Available, see setup wizard for configuration
C2-45	2-10	A2-88	 UEGO 2 VM	UEGO 2 VM	UEGO 2 VM	O2 sensor 2 ground
C2-46	2-16	A2-89	 UEGO 2 UN	UEGO 2 UN	UEGO 2 UN	O2 sensor 2 signal
C2-47	2-24	A2-87	 UEGO 2 IP	UEGO 2 IP	UEGO 2 IP	O2 sensor 2 pump current regulator
C2-48	2-6	A2-86	 UEGO 2 IA	UEGO 2 IA	UEGO 2 IA	O2 sensor 2 pump current regulator
C2-49	2-13	A2-118	 UEGO 2 Heat	UEGO 2 Heat	UEGO 2 Heat	O2 sensor 2 heater
C2-50			 +12V R8C CPU	+12V Perm Power	Dedicated Power CPU	Full time battery power
C2-51			 Ignition Coil 7	Ignition Coil 7	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C2-52			 Ignition Coil 8	Ignition Coil 8	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C2-53			 Ignition Coil 9	Ignition Coil 9	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C2-54			 Ignition Coil 10	Ignition Coil 10	25 mA max source current	0-5V Falling edge fire. DO NOT connect directly to coil primary. Must use an ignitor OR CDI that accepts a FALLING edge fire signal.
C2-55			 Highside 2	Highside Switch	0.7A max, High Side Solid State Relay	Available, see setup wizard for configuration
C2-56			 Highside 3	Highside Switch	0.7A max, High Side Solid State Relay	Available, see setup wizard for configuration

54

AUX Connector Pinouts







PIN	DESTINATION	DESCRIPTION	PIN	DESTINATION	DESCRIPTION	PIN	DESTINATION	DESCRIPTION
1	A1-31	Sensor Ground	1	C1-32	CAN A+	1	C1-9	Flash Enable
2	A1-29	+5V Ref	2	C1-31	CAN A-	2	A2-100	Permanent +12V Power
3	A1-3	+12V From Relay	3	SP-2	+12V Relay Power		A = 1	nfinity Adapter Connector
4	C1-37	Analog 9	4		C = 1	nfinity ECU Connector		
5	C1-36	Analog 8		A = In	finity Adapter Connector	•		
6	C1-1	Lowside 4	1	SP = Sp	blice			
7	C1-26	Digital 5						
8	C1-44	Highside 0						
9	C2-15	Analog Temp 4						
10	C1-40	Analog 12						
11	C1-33	Lowside 1						

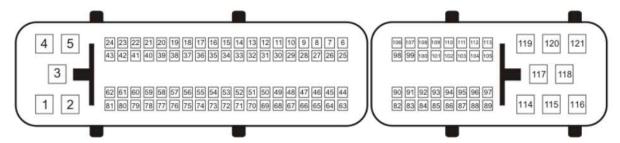
C2-37 Digital 6 A = Infinity Adapter Connector C = Infinity ECU Connector

Porsche Pin Numbering

7	8	9	19	20) 21	22	23	24	40	41	42	43	44	45	46	47	48	49	50	51	52	31	32	33	34	35	36	37	38	39	40	7	8	9
			13	14	115	5 16	17	18	27	28	29	30	31	32	33	34	35	36	37	38	39	21	22	23	24	25	26	27	28	29	30			
4	5	6			2)				3									4								4	5	6					
		H																																
1	2	3	7	8	9	10	11	12	14	15	16	17	18	19	20	21	22	23	24	25	26	11	12	13	14	15	16	17	18	19	20	1	2	3
			1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	8	9	10			

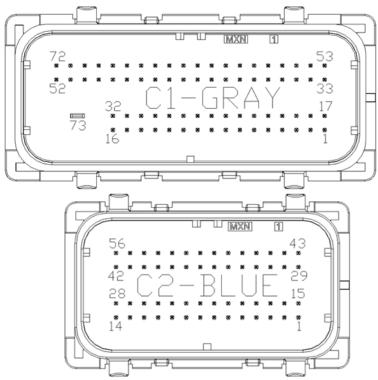
Porsche Connectors Viewed from Wire Side

Adapter Pin Numbering



Adapter Connectors Viewed from Wire Side

Infinity Pin Numbering



AEM Infinity Connectors Viewed from Wire Side

12 MONTH LIMITED WARRANTY

Advanced Engine Management Inc. warrants to the consumer that all AEM High Performance products will be free from defects in material and workmanship for a period of twelve (12) months from date of the original purchase. Products that fail within this 12-month warranty period will be repaired or replaced at AEM's option, when determined by AEM that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of the AEM part. In no event shall this warranty exceed the original purchase price of the AEM part nor shall AEM be responsible for special, incidental or consequential damages or cost incurred due to the failure of this product. Warranty claims to AEM must be transportation prepaid and accompanied with dated proof of purchase. This warranty applies only to the original purchaser of product and is non-transferable. All implied warranties shall be limited in duration to the said 12-month warranty period. Improper use or installation, accident, abuse, unauthorized repairs or alterations voids this warranty. AEM disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by AEM. Warranty returns will only be accepted by AEM when accompanied by a valid Return Merchandise Authorization (RMA) number. Product must be received by AEM within 30 days of the date the RMA is issued.

UEGO oxygen sensors are considered wear items and are not covered under warranty.

Please note that before AEM can issue an RMA for any electronic product, it is first necessary for the installer or end user to contact the EMS tech line at 1-800-423-0046 to discuss the problem. Most issues can be resolved over the phone. Under no circumstances should a system be returned or a RMA requested before the above process transpires.

AEM will not be responsible for electronic products that are installed incorrectly, installed in a non-approved application, misused, or tampered with.

Any AEM electronics product can be returned for repair if it is out of the warranty period. There is a minimum charge of \$50.00 for inspection and diagnosis of AEM electronic parts. Parts used in the repair of AEM electronic components will be extra. AEM will provide an estimate of repairs and receive written or electronic authorization before repairs are made to the product.