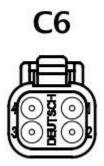


TA2 AEMNet Configuration

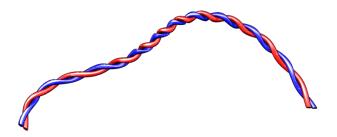
On the TA2 Chassis harness, Connector 6 (C6) is the AEMNet CAN Connector:



1- Viewed from REAR of Connector

C6: DTM06-4S Label: AEM NET								
Cav	Col.	Spec	End 2 name	End 2 location	Short Description	Terminal part no. supp		
1	BLK	22	C1	35	CAN HI	1062-20-0222		
2	BLK	22	C1	34	CAN LO	1062-20-0222		
3	BLK	22	SP6	L	AEM NET +12V	1062-20-0222		
4	BLK	22	SP3	L	GND	1062-20-0222		

To connect to a CAN device such as a dash, a mating connector DTM04-4P with terminals 1060-20-0222 are required. CAN HI (Pin 1) and CAN LO (Pin 2) wires must be twisted a **MINIMUM** of 1 twist per inch in route to a mating device. **NOTE: No shielding is required for twisted CAN wires.** Connect CAN HI and CAN LO wires to appropriate pins on device mating connector. **Ensure that mating device (DASH) has terminating resistor (120Ω) installed across CAN HI and CAN LO wires at mating connector of the device.**



Tech Support:



The following devices support AEMNet CAN Data streams and are to be configured as follows:

AIM MXL Dash:

- 1. Ensure that the RaceStudio 2 software is the most current revision from AIM.
 - a. RaceStudio 2software can be found at the following location:
 - i. <u>http://aimsports.com/software/index.html</u>
 - ii. At the time that this document was written, the latest revision of RaceStudio 2 is **2.55.32**.
- 2. Open RaceStudio 2 and select **Device Configuration** from the menu on the left of the task window.





3. Select the appropriate Dash from the Configuration Screen. Click **Go to**.

MyChron3 Kart Plus/Gold/Ext	EVO3 Pro/Pista
MyChron3 Auto/Moto Plus/Gold/Ext	EVO4
M3Log/Visor XGLog	SMC Bridge
MXL	SOLO DL
DaVid	
EVO3	

- 4. Under ECU Manufacturer drop down menu, select AEM.
- 5. Under ECU Model drop down menu, select Infinity v.96 CAN.
- 6. At top left of system manager dialog box, select **Transmit** to commit the configuration to the display.

(Arm)	System manage	er						
Racing Data Power		ansmit	Receive		CAN-Net info		SmartyCa se	
AIM Sportline	Current configuration	<u>1</u>						
The World Leader in Data Acquisition	Installation name	Data logger type	Ecu	Lap Timer	Vehicle name	Available time	Time	
	DEFAULT	MXL PISTA	AEM - Infinity v.96	Optical	DEFAULT	1.50.41 (h.m.s)	1.2	
A <u>n</u> alysis	Select configuration		n configuration CAN-	-		<u></u>		
	🔶 New	S S	Delete	Clone		ort 📋	Expor	
Download Data	N Installation	n name Logge	r	ECU Ma	anufacturer ECU M	odel Li	ap Tim	
	1 DEFAULT	MXL P	ICT A	- AEM	그 Infinity	OF CAN I	ptical	





MOTEC C125 Color Display:

1. Configure the **Communications Setup** as follows:

File Connections Calculations Functions Online Tools Help Image: Solution Solution Solution Image: Solution Solution Solution Image: Solution Solution Solution Image: Solution Solution Solution Image: Solution Solutite Solutite Solution Solution Solution Solution Soluti	MoTeC C125 Dash Manager - Untitled	X
Communications Setup CAN I CAN 2 CAN I CAN 2 Coptions Rate: Sections : Received Charnels : Section Name Select If 1 AEM 1_01F0A0000 If 2 AEM 2_01F0A0003 If 2 AEM 2_01F0A003 If 2 AEM 2_01F0A003 If 3 AEM 1_0150000 If 2 AEM 2_01F0A003 If 3 AEM 1_0150000 If 3 AEM 2_01F0A003 If 4 AEM 2_01F0A003 If 4 AEM 2_01F0A003	File Connections Calculations Functions Online Tools Help	
Communications Setup CAN I CAN Z CAN I CAN Z Options Rate: Sections : Received Channels : Section Name Select If 1 AEM 1_01F0A0000 If 2 AEM 2_01F0A003 If 2 AEM 2_01F0A003 If 2 AEM 2_01F0A003 If 3 AEM 1_01sF0A003 If 2 AEM 2_01F0A003 If 3 AEM 1_01sF0A003 If 3 AEM 2_01sF0A003 If 3 AEM 2_01sF0A000 If 4 AEM 2_01sF0A000 If 4 <	🖆 🖬 🖏 🗸 🚳 📑 🗠 😑 🚦 🗣 0 🕅 🗁 🙀 🌳 0	MoTeC
	Communications Setup CAN 1 CAN 2 R5232-1 R5232-2 RX Display Video Capture Options Rate : 500K Sections : Section Name \$\frac{2}{1}\$ AEM 1_01F0A000 \$\frac{2}{2}\$ AEM 2_01F0A003 Edit Whilde Speed \$\frac{2}{2}\$ AEM 2_01F0A003 Remove All	
Version 1.81.22.0 (HEX 1.81Q)	OK Cancel Help	
	Version 1.81.	22.0 (HEX 1.81Q)



The following is the AEM CAN Data Stream that outlines the CAN Messages transmitted by the Infinity ECU:

AEMnet

29 bit, 500 kBit/sec, 8 data bytes per message unless otherwise specified Multi-byte data is packed big endian (Motorola format, most significant byte transmitted first) Bits numbered MSB first, with the MSB = bit7, LSB = bit0

Both unit types (SI & US) should be made available to the customer whenever possible!

Message ID: 0x01F0A000

Sources: Infinity EMS (30-71XX)

AEM S2 & EMS-4 (30-6XXX)

20ms continuous (50hz)

20ms continuous (50hz)						SI Units (C / kPa / kph / Lambda)				US Units (F / PSI / MPH / AFR)		
Byte	Bit	Bitmask	Label	Data Type		Scaling	Offset	Range		Scaling	Offset	Range
0-1			Engine Speed	16 bit unsigned		0.39063 rpm/bit	0	0 to 25,599.94 RPM		<==	<==	<==
2-3			Engine Load (Deprecated in Infinity)	16 bit unsigned		0.0015259%/bit	0	0 to 99.998 %		<==	<==	<==
4-5			Throttle	16 bit unsigned		0.0015259%/bit	0	0 to 99.998%		<==	<==	<==
6			Intake Air Temp	8 bit signed, 2's comp		1 Deg C/bit	0	-128 to 127 C		1.8 Deg F/bit	32	- 198.4 to 260.6 F
7			Coolant Temp	8 bit signed, 2's comp		1 Deg C/bit	0	-128 to 127 C		1.8 Deg F/bit	32	- 198.4 to 260.6 F

Message ID: 0x01F0A003 Sources: Infinity EMS (30-71XX) Infini AEM S2 & EMS-4 (30-6XXX)

20ms continuous (50hz)					SI Units (C	/ Lambda)	US Units (F / PSI / MPH / AFR)			
Byte	Bit	Bitmask	Label	Data Type	Scaling	Offset	Range	Scaling	Offset	Range
0			Lambda #1	8 bit unsigned	0.00390625 Lambda/bit	0.5	0.5 to 1.496 Lambda	0.057227 AFR/bit	7.325	7.325 to 21.916 AFR
1			Lambda #2	8 bit unsigned	0.00390625 Lambda/bit	0.5	0.5 to 1.496 Lambda	0.057227 AFR/bit	7.325	7.325 to 21.916 AFR
2-3			Vehicle Speed	16 bit unsigned	0.0062865 kph/bit	0	0 to 411.986 km/h	0.00390625 mph/bit	0	0 to 255.996 MPH
4			Gear Calculated	8 bit unsigned	1	0	0 to 255	<==	<==	<==
5			Ign Timing	8 bit unsigned	.35156 Deg/bit	- 17	-17 to 72.65 Deg	<==	<==	<==
6-7			Battery Volts	16 bit unsigned	0.0002455 V/bit	0	0 to 16.089 Volts	<==	< ==	<==

Message ID: 0x01F0A004 Sources: Infinity EMS (30-71XX) V96.1+

20ms continuous (50hz) SI Units (C / kPa / kph / Lambda)						USUnits	(F / PSI / M	PH/AFR)		
Byte	Bit	Bitmask	Label	Data Type	Scaling	Offset	Range	Scaling	Offset	Range
0-1			MAP	16 bit unsigned	0.1 kPa/bit	0	0 to 6,553.5 kPa	0.014504 PSI/bit	- 14.6960	-14.696 to 935.81 PSIg
2			VE	8 bit unsigned	1%/bit	0	0 to 255 %	<==	<==	<==
3			FuelPressure	8 bit unsigned	0.040 bar/bit	0	0 to 10.2 Bar	0.580151 PSIg/bit	0	0 to 147.939 PSIg
4			OilPressure	8 bit unsigned	0.040 bar/bit	0	0 to 10.2 Bar	0.580151 PSIg/bit	0	0 to 147.939 PSIg
5			LambdaTarget	8 bit unsigned	0.00390625 Lambda/bit	0.5	0.5 to 1.496 Lambda	0.057227 AFR/bit	7.325	7.325 to 21.916 AFR
	0 (Isb)	0	FuelPump	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	1	2	Fan 1	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	2	4	Fan 2	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
6	3	8	N2O Active	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
0	4	16	O2FB Active	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	5	32	EngineProtectOut	Boolean	0 = false, 1 = true	0	0/1	<==	<==	<==
	6	64	MILOutput	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	7 (msb)	128	Lean Protect	Boolean	0 = false, 1 = true	0	0/1	<==	<==	<==
	0 (Isb)	0	Oil Press Protect	Boolean	0 = false, 1 = true	0	0/1	<==	<==	<==
	1	2	2 Step Fuel	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	2	4	2 Step Spark	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
7	3	8	Sync State	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	4	16	A/C On	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	5	32	BoostCut	Boolean	0=false, 1=true	0	0/1	<==	<==	<==
	6	64	CoolantProtect	Boolean	0 = false, 1 = true	0	0/1	<==	<==	<==
	7 (msb)	128	DBZ Error	Boolean	0 = false, 1 = true	0	0/1	<==	<==	<==

Tech Support:

310-484-2322 x**303**



Message ID: 0x01F0A005 Sources: Infinity EMS (30-71XX) V96.1+ ~~ (- -

20ms continuous (50hz)									
Byte	Bit	Bitmask	Label	Data Type					
0-1			Launch Ramp Time [ms]	16 bit unsigned					
2-3			MassAirflow [gms/s]	16 bit unsigned					
4-5			MassAirflow [gms/rev]	16 bit unsigned					
6			Clutch Pressure	8 bit unsigned					
	0 (Isb)	0	Brake Sw	Boolean					
	1	2	Clutch Sw	Boolean					
	2	4	Shift Sw	Boolean					
7	3	8	Staged Sw	Boolean					
	4	16		Boolean					
	5	32		Boolean					
	6	64		Boolean					
	7 (msb)	128		Boolean					

SI Units (C / kPa / kph / Lambda)							
Scaling	Offset	Range					
10 mS/bit	0	0 to 655,350 mS					
.05 [gms/s] / bit	0	0 to 3,276.75 gms/s					
.0005 [gms/rev] / bit	0	0 to 32.7675 gm s/rev					
0.344738 Bar/bit	0	0 to 87.91 Bar					
0=false, 1=true	0	0/1					
0=false, 1=true	0	0/1					
0=false, 1=true	0	0/1					
0=false, 1=true	0	0/1					

SI Units (C / kPa / kph / Lambda)

US Units (F / PSI / MPH / AFR) Offset Scaling Range <== <== <== .00661387 [lb/min]/bit 0 0to 433.440 lb/min .0000661387 [lb/rev]/bit 0 to 4.3344 lb/rev 0 5 PSIg/bit 0 to 1275 PSIg 0 <== <== <== <== <== <== <== <== <== <== <== <== ----

US Units (F/PSI/MPH/AFR)

Message ID: 0x01F0A006

Sources: Infinity EMS (30-71XX) V96.1+

40ms continuous (25hz)

Byte	Bit	Bitmask	Label	Data Type	Scaling	Offset	Range	Scaling	Offset	Range
0			Inj1Pulse	8 bit unsigned	0.1 mS/bit	0	0 to 25.5 mS	<==	<==	<==
1			Inj 1Lam bd a FB	8 bit unsigned	0.5 %/bit	-64.00	-64 to 63.5 %	<==	<==	<==
2			PrimaryInjDuty [%]	8 bit unsigned	0.392157 %/bit	0	0 to 100 %	<==	<==	<==
3			Mode Sw	8 bit unsigned	1/bit	0	0 - 255	<==	<==	<==
4			WaterPressure	8 bit unsigned	0.040 bar/bit	0	0 to 10.2 Bar	0.580151 PSIg/bit	0	0 to 147.939 PSIg
5			Pan Pressure	8 bit unsigned	1 kPa/bit	0	0 to 255 kPa	0.14504 PSI/bit	-14.696	-14.696 to 22.289 PSIg
6-7			Est Torque	16 bit unsigned	0.1 Nm/bit	- 3276.8	-3276.8 to 3276.7 Nm	0.0737562 ft-lbs/bit	-2416.843	+/- 2416.77 ft-lbs

Message ID: 0x01F0A007 Sources: Infinity EMS (30-71XX) V96.1+

40ms continuous (25hz)

Byte	Bit	Bitmask	Label	Data Type			
0			InjectorProbability [%]	8 bit unsigned			
1			SparkProbability [%]	8 bit unsigned			
2			LambdaTrim_Knock	8 bit unsigned			
3			Baro Press	8 bit unsigned			
4			FlexContent	8 bit unsigned			
5			Airbox Temp	8 bit unsigned			
6			Oil Temp	8 bit unsigned			
	0 (Isb)	0	LaunchTimerArmed	Boolean			
	1	2	ECU Logging Active	Boolean			
	2	4	Made Calanti Inc.	21.11			
7	3	8	ModeSelect_Ign	2 bit unsigned			
/	4	16					
	5	32	ModeSelect_Lambda	2 bit unsigned			
	6	64	ModeSelect_DBW	1 bit unsigned			
	7 (msb)	128	VTEC	Boolean			

SI Units (C / kPa / kph / Lambda)

SI Units (C / kPa / kph / Lambda)								
Scaling	Offset	Range						
0.392157 %/bit	0	0 to 100 %						
0.392157 %/bit	0	0 to 100 %						
0.001 Lambda/bit	0	0 to 0.255 Lambda						
0.25 kPa/bit	0.25 kPa/bit 50 50 to 113.75 kPa							
0.392157 %/bit	0	0 to 100 %						
1 Deg C/bit	-50.00	-50 to 205 C						
1 Deg C/bit	-50.00	-50 to 205 C						
0=false, 1=true	0	0/1						
0=false, 1=true	0	0/1						
####00## = !	//////////////////////////////////////	101## = Mode 2						
####10## =	Node 3, ####	#11## = Mode 4						
###00#### = !	Mode 1, ##01	.#### = Mode 2						
##10#### = !	Mode 3, ##11	.#### = Mode 4						
#0###### = 1	Mode 1, #1##	/#### = Mode 2						
0=false, 1=true	0 = false, 1 = true 0 0/1							

US Units (F / PSI / MPH / AFR)

Scaling	Offset	Range							
<==	<==	<==							
<==	<==	<==							
0.01465 AFR/bit	0	0 to 3.73575 AFR							
0.073825 inHg/bit	14.76	14.76 to 33.5903 in Hg							
<==	<==	<==							
1.8 Deg F/bit	-58	-58 to 401 F							
1.8 Deg F/bit	-58	-58 to 401 F							
<==	<==	<==							
<==	<==	<==							
<==	<==	<==							
<==	<==	<==							
<==	<==	<==							
<==	<===	<==							

Message ID: 0x01F0A008

Sources: Infinity EMS (30-71XX) V96.1+

200ms continuous (5hz)

Byte	Bit	Bitmask	Label	Data Type	Scaling	Offset
0			Trans Temp	8 bit unsigned	1 Deg C/bit	-50.00
1-2	1-2		SparkCut [RPM] 16 bit unsigne		0.39063 rpm/bit	0
3-4 Fue		FuelCut [RPM]	16 bit unsigned	0.39063 rpm/bit	0	
5			2StepTargetFuel [RPM]	8 bit unsigned	100 rpm/bit	0
6			2StepTargetSpark [RPM]	8 bit unsigned	100 rpm/bit	0
	0 (Isb) 0 ErrorThrottle		ErrorThrottle	Boolean	0=false, 1=true	0
	1	2	ErrorCoolantTemp	Boolean	0=false, 1=true	0
	2	4	ErrorFuelPressure	Boolean	0=false, 1=true	0
7	3	8	ErrorOilPressure	Boolean	0=false, 1=true	0
/	4	16	ErrorEBP	Boolean	0=false, 1=true	0
	5	32	ErrorMAP Boolean		0 = false, 1 = true	0
	6	64	ErrorAirTemp	Boolean	0=false, 1=true	0
	7 (msb)	128	ErrorBaro	Boolean	0 = false, 1 = true	0

SI Units (C / kPa / kph / Lambda)

ambda)	US Units (F / PSI / MPH / AFR)									
Range	Scaling	Offset	Range							
-50 to 205 C	1.8 Deg F/bit	-58	-58 to 401 F							
0 to 25,599.94 RPM	<==	<==	<==							
0 to 25,599.94 RPM	<==	<==	<==							
0to 25,500 RPM	<==	<==	<==							
0to 25,500 RPM	<==	<==	<==							
0/1	<==	<===	<==							
0/1	<==	<==	<==							
0/1	<==	<==	<==							
0/1	<==	<==	<==							
0/1	<==	<==	<==							
0/1	<==	<==	<==							
0/1	<==	<==	<==							
0/1	<==	<==	<==							

1/5/2017



310-484-2322 x**303**

Message ID: 0x01F0A009 Sources: Infinity EMS (30-71XX) V96.1+

40ms continuous (25hz)						SI Units (C / kPa / kph	/ Lambda)	US Units (F / PSI / MPH / AFR)				
Byte	Bit	Bitmask	Label	Data Type		Scaling	Offset	Range	Scaling	Offset	Range		
0-1			Brake Pressure	16 bit unsigned		0.006895 Bar/bit	0	0 to 451.85 Bar	0.1 PSIg/bit	0	0to 6553.5 PSIg		
2-3			Steering Angle	16 bit unsigned		0.1 degree/bit	-3276.8	-3276.8 to 3276.7 deg	<==	<==	<==		
4-5			Launch Boost Target	16 bit unsigned		0.1 kPa/bit	0	0 to 6,553.5 kPa	0.014504 PSI/bit	-14.6960	-14.696 to 935.81 PSIg		
6									<==	<==	<==		
7									<==	<==	<==		

Message ID: 0x000A0000

Byte

0-1

2-3

4-5

6

7

Sources: AEM Vehicle Dynamics Module (30-2203)

			,	· · ·								
		100	Oms continuous (10hz)			SI Units (C	/ Lambda)	US Units (F / PSI / MPH / AFR)				
Byte	Bit	Bitmask	DBC Label	Data Type	ĺ	Scaling	Offset	Range		Scaling	Offset	Ra
0-3			GPS_Latitude	32 bit float		Degrees reference WGS 84 datum North is positive	0	+90.00 (north) to -90.00 (south) Degrees		<==	<==	<
4-7			GPS_Longitude	32 bit float		Degreesreference WGS- 84 datum East is positive	0	+180.00 (east) to -180.00 (west) Degrees		œ	<==	<

Message ID: 0x000A0001

Sources: AEM Vehicle Dynamics Module (30-2203) 100ms continuous (10hz)

Bit Bitmask

ms continuous (10hz)		SI Units (C	C / kPa / kph	/ Lambda)	US Units (F / PSI / MPH / AFR)			
DBC Label	Data Type	Scaling	Offset	Range	Scaling	Offset	Range	
GPS_Speed	16 bit unsigned	0.01609344 kph/bit	0	0 to 1054.684 kph	0.01 mph/bit	0	0 to 655.35 MPH	
GPS_Altitude	16 bit signed	0.3048 meter/bit	0	-9,987.7 to 9,987.4 meters	1 ft/bit	0	-32,768 to 32,767 Feet	
GPS_Course	16 bit unsigned	0.01 deg/bit	0	Oto 655.35 degrees	<==	<==	<==	
GPS_Satellite_Count	8 bit unsigned	1	0	0 to 255	<==	<==	<==	
GPS_Valid	8 bit unsigned	1	0	0 to 255	<==	<==	<==	

SI Units (C / kPa / kph / Lambda)

Message ID: 0x000A0002

Sources: AEM Vehicle Dynamics Module (30-2203)

200ms continuous (5hz)

		20	onis continuous (Silz)		or offics (c) kraj kpirj cambda j					05 01113 (1 / 151 / MILTI / AIR)			
Byte	Bit	Bitmask	DBC Label	Data Type	1	Scaling	Offset	Range		Scaling	Offset	Range	
0			GPS_Valid	8 bit unsigned]	0 = N/G, 1 = OK	0	0-255		<==	<==	<==	
1			GPS_Year	8 bit unsigned		1	2000	2000-2255 Years UTC		<==	<==	<==	
2			GPS_Month	8 bit unsigned]	1	0	0-255 Months UTC		<==	<==	<==	
3			GPS_Day	8 bit unsigned		1	0	0-255 Days UTC		<==	<==	<==	
4			GPS_Debug_Flags	8 bit unsigned]	1	0	0-255		<==	<==	<==	
5			GPS_Hours	8 bit unsigned	1	1	0	0-255 Hours UTC	Γ	<==	<==	<==	
6			GPS_Minutes	8 bit unsigned		1	0	0-255 Minutes UTC		<==	<==	<==	
7			GPS_Seconds	8 bit unsigned		1	0	0-255 Seconds UTC		<==	<==	<==	

Mess 0x000A0003

Sources: AEM Vehicle Dynamics Module (30-2203)

10ms continuous (100hz)

		10n	ns continuous (100hz)	SI Units (C / kPa / kph	/ Lambda)	US Units (F / PSI / MPH / AFR)			
Byte	Bit	Bitmask	DBC Label	Data Type	Scaling	Offset	Range	Scaling	Offset	Range	
0-1			X_Axis_Accel	16 bit signed	0.0002441406g/bit	0	-8g to +8g	<==	<==	<==	
2-3			Y_Axis_Accel	16 bit signed	0.0002441406g/bit	0	-8g to +8g	<==	<==	<==	
4-5			Z_Axis_Accel	16 bit signed	0.0002441406g/bit	0	-8g to +8g	<==	<==	<==	
6			-	8 bit unsigned	1	0		<==	<==	<==	
7			-	8 bit unsigned	1	0		<==	<==	<==	

Message ID: 0x000A0004

Sources: AEM Vehicle Dynamics Module (30-2203)

10ms continuous (100hz)

Byte	Bit	Bitmask	DBC Label	Data Type						
0-1			X_Axis_Yaw_Rate	16 bit signed						
2-3			Y_Axis_Yaw_Rate	16 bit signed						
4-5			Z_Axis_Yaw_Rate	16 bit signed						
6			-	8 bit unsigned						
7			-	8 bit unsigned						

SI Units (C / kPa / kph / La nhda)

(0	/ kPa / kph	/ Lambda)	US Units (F / PSI / MPH / AFR)							
	Offset	Range	Scaling	Offset	Range					
	0	-500 deg/s to +500 deg/s	<==	<==	<==					
	0	-500 deg/s to +500 deg/s	<==	<==	<==					
	0	-500 deg/s to +500 deg/s	<==	<==	<==					
	0		<==	<==	<==					
	0		<==	<==	<==					

Scaling

0.01525879 deg/s/bit

0.01525879 deg/s/bit

0.01525879 deg/s/bit

US Units (F / PSI / MPH / AFR)									
Scaling	Offset	Range							
<==	<==	<==							
<==	<==	<==							
<==	<==	<==							
/==	/==	/==							

US Units (F / PSI / MPH / AFR)

Range

<==

<==