Electronics International Inc.®

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MVP-50P
Marking and Configuration Requirements for Certified Aircraft

Rev: F, 7/29/09

Electronics International Inc. will configure the MVP-50P to the range limits, markings and hardware outlined for the specified aircraft listed on this form. All data will to be provided by the pilot/owner and the mechanic and must be verified for accuracy. The data must match the POH/AFM and any changes required by any AD's, Supplements or STC's. Also, limit and marking information may be cross-checked against the instruments mounted in the aircraft panel.

This document must be completed and signed by the aircraft owner AND by a FAA certified mechanic. This form should then be delivered to Electronics International Inc., at which time a configuration file for a specific MVP-50P will be generated. A configuration file for a TSO'd MVP-50P can *only* be generated or changed by Electronics International Inc. If any of the information provided on this form is wrong, there may be a reprogramming fee to change the configuration.

IMPORTANT: The information in this document must be verified for accurate and matches the aircraft's hardware and POH/AFM marking requirements.

> **If you have not ordered the probes and transducers to support the functions you have listed in this document, your order will be delayed. Also, if data supplied in this document is incomplete or missing, your order will be delayed.**

Aircraft Information		Example
Customer Name		Peter Pilot
Customer Phone #		555-555-5555
FAA Certified A&P Mechanic's Name		Marty Mechanic
FAA Certified A&P Mechanics's Phone #		555-555-5555
A&P Mechanic's FAA Certificate #		12345678
Aircraft Make & Model		Cessna, 182R
Engine Manufacturer & Model		Continental, O-470U
Aircraft Tail Number		N5555H
# of Cylinders & Max Engine Horsepower		6, 230 HP

EGT Markings: If markings are not specified in the POH/AFM, write "No Limits"

If markings are not specified, EGT limits can be set by the pilot for engine diagnostics.

Color	Range	Example
		No Limits

CHT Markings: Whether the CHTs are primary or not the FAA does not allow the CHT limits to be set by the pilot. Specify the CHT limits.

Color	Range	Example
		Red, 460°F and Above
		Yellow, 400 to 460°F
		Green, 200 to 400°F

Manifold Pressure Markings: If markings are not specified in the POH/AFM, write "No Limits".

High Manifold Pressure (up to 70" Hg) option available. See EI Price list for details.

Color	Range	Example
		Green, 15 to 25

Tachometer Markings

Color	Range	Example
		Red, 2700 and Above
		Green, 2000 to 2500

Fuel Flow Markings: If markings are not specified in the POH/AFM, write "No Limits"

If you have a pressure carburetor, you will need the **FFDM-1** Differential Module to accommodate the fuel return. See EI Pricelist for details.

Color	Range	Example
		Green, 0 and above

Fuel Pressure Markings

Aircraft Fuel Pressure configuration:
- [ ] Fuel Pressure monitored at the Fuel Pump.
- [ ] Turbocharged system and the Fuel Pressure is referenced to the Upper Deck Pressure (you must purchase the UDP option, see EI Price list for details).
- [ ] Metered Fuel Pressure monitored at the Flow Divider.
- [ ] Gravity Feed system with no Fuel Pump (Fuel Pressure can NOT be monitored).
- [ ] Fuel Pressure will NOT be monitored.

Color	Range	Example
		Red, 14 PSI and Above
		Green, 9 to 14 PSI
		Red, 9 PSI and Below

Oil Pressure Markings

Color	Range	Example
		Red, 100 PSI and Above
		Green, 40 to 90 PSI
		Red, 25 PSI and Below

Oil Temperature Markings

Color	Range	Example
		Red, 240°F and Above
		Yellow, 200 to 240°F
		Green, 65 to 200°F
		Yellow, 65°F and Below

Volts

Specify 12-Volt or 24-Volt system: _____

Amps: If markings are not specified in the POH/AFM, write "No Limits."

A 100 Amp shunt is provided in the kit or the MVP can be connected to the aircraft's existing shunt. The value of the existing shunt must be provided. See www.buy-ei.com and look under MVP, Downloads for help on determining the value of your existing shunt.

Is the Amps a measurement of the Alternator output current or the Battery current (check one)?
- [ ] Battery Current
- [ ] Alternator Current

Color	Range	Example
		Red, 50 Amps and Above

Existing Shunt Value: _____ **Amps at** _____ **mV.**
(Not required if the 100 Amp Shunt supplied in the kit is to be used)

60 Amp, 50 mV

Optional Functions

Additional functions may be displayed on the MVP-50P. See the EI Price list for available functions and prices. Please verify that your EDC has the necessary inputs to support the optional function to be added to the system.

The EDC (Engine Data Converter) monitors all the probes and transducers and provides the MVP-50P with digital information via two wires (RS422). After the primary functions have been selected (as was done on the previous pages) the EDC will have the following channels available:

Channels: (Type and Qty)	Channels Used So Far:	Channels Available:
Volts - 1	1	0
Amps - 1	1	0
Fuel Flow - 1	1	0
Pressure - 6	3 (MP/OP/FP)	3
Temp - 17	10 (for a 4-Cyl) 14 (for a 6-Cyl) (OAT/EGT/CHT/OT)	7 (for a 4-Cyl) 3 (for a 6-Cyl)
Fuel Level - 4	0	4
RPM - 2	2 (Right and Left)	0

Note: To increase the available channels, a second EDC may be purchased and connected to the MVP-50P (RS232 Port 3). See the EI price sheet for further information.

TIT Markings: This Function requires 1 EDC Tempreture Channel and the TIT Option for each TIT monitored. See EI Price Sheet.		
Color	**Range**	**Example**
		Red, 1650°F and Above
		Green, Below 1650°F

Carb Temp Markings: This Function requires 1 EDC Tempreture Channel and the CarbT Option. See EI Price Sheet. If markings are not specified in the POH/AFM, use Recommended Limits.		
Color	**Range**	**Recommended Limits**
		Blue, 10 to 39°F
		Green, All except above.

Vacuum Pressure Markings: This Function requires 1 EDC Pressure Channel and the Vac Option for each Vacuum system monitored. See EI Price Sheet. If markings are not specified in the POH/AFM, use recommended Limits.		
Color	**Range**	**Recommended Limits**
		Green, 4.5 to 5.5

Airspeed Markings: This Function requires 1 EDC Pressure Channel and the AS Option. See EI Price Sheet.
This is only to be used as a backup instrument. Yellow and Red markings are not allowed.

Color	Range	Example
		Green, 80 to 180 kts

Pressure Altitude Markings: This Function requires 1 EDC Pressure Channel and the Alt Option. See Price Sheet.

Color	Range	Example
		All Green

Cabin Altitude Markings: This Function requires 1 EDC Pressure Channel and the CAlt Option. See EI Price Sheet.

Color	Range	Example
		Yellow, => 12,500 ft.
		Green, < 12,500 ft.

Cabin Differential Pressure Markings: This Function requires 1 EDC Pressure Channel and the CDP Option.

Color	Range	Example
		Red, => 8.0 psi
		Yellow, 7.0 to 8.0 psi
		Green, < 7.0 psi

Hydraulic Pressure Markings: This Function requires 1 EDC Pressure Channel and the HydP Option.

Color	Range	Example
		Green, 0 to 3000 PSI

Carbon Monoxide Detector Markings: This Function requires RS232 Input Port 3 on the MVP and the COT Option. See EI Price Sheet.
If markings are not specified in the POH/AFM, use recommended limits.
If a second EDC is to be used, this function is not available.

Color	Range	Recommended Limits
		Red, => 75 ppm
		Yellow, 25 to 75 ppm
		Green, 0 to 25 ppm

AUX Volts: **This Function requires 1 EDC Temperature or Fuel Level Channel and a VI-221 Option. See EI Price Sheet.**

	Example
Specify Function Name (6 characters max): _____ (This name will be displayed on the MVP-50 Screen)	V. AUX
Specify 12-Volt or 24-Volt system: _____	12 volts

AUX Amps: **This Function requires 1 EDC Temperature Channel and the VA option. See the E.I. Price sheet.**

 If markings are not specified in the POH/AFM, write "No Limits."

 A 100 Amp shunt is provided in the kit. The MVP can be connected to the aircraft's existing shunt. The value of the shunt must be provided. See www.buy-ei.com and look under MVP, Downloads for help on determining the value of your existing shunt.

Is the Amps a measurement of the Alternator output current or the Battery current (check one)?
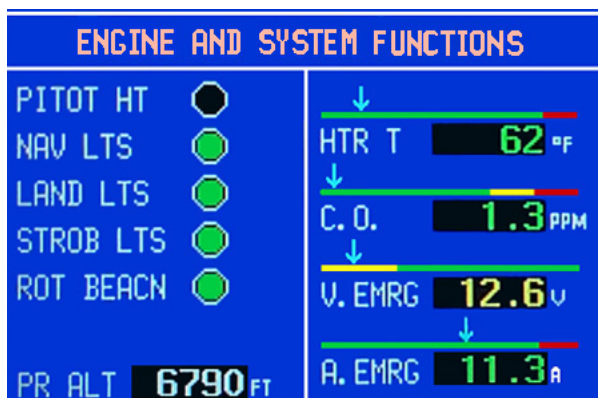- ☐ Battery Current
- ☐ Alternator Current

Color	Range	Example
		Red, 50 Amps and Above

Specify Function Name (6 characters max): _____ **(This name will be displayed on the MVP-50 Screen)**	A. AUX
Existing Shunt Value: _____ **Amps at** _____ **mV.** (Not required if the Shunt supplied in the kit is to be used)	60 Amp, 50 mV

Fuel Level: **This Function requires 1 EDC Fuel Level Channel per Tank and the RFLM Option for tanks with resistive sensors (see EI price sheet for more information). For an aircraft with an existing capacitive system, the output wires connected to the existing fuel gauges will be rerouted to the EDC. DO NOT connect an RFLM to a capacitive system, damage may occur.**

Important Information: The MVP can provide accurate fuel level readings for straight and level flight. By calibrating the MVP to the fuel tank, nonlinearity in the tank's shape and nonlinearity in the Fuel Level Sensor can be compensated for. The MVP can not correct for inconsistent or non-repeatable readings from a Resistive Fuel Level Sensor. Unfortunately, many Resistive Fuel Level Sensor (and in some cases even new units) exhibit these problems. If you find inconsistent or inaccurate fuel level readings (do to a defective Resistive Fuel Level Sensor), you must have the sensor replaced or repaired. Read the "Important Notice" in the MVP Operating Instructions. E.I. manufactures a P-300M Magnetic Float Sensor that can replace a Resistive Fuel Level Sensors. See the E.I. price sheet for further information.

Fuel Tank Name (6 Characters Max)	Probe Type: Capcitance or Resistive	Resistive Probes Only: Does the resistance of the Fuel Probe Increases or Decreases when adding fuel? (This can be checked using an Ohm Meter)	Full Fuel Level	Example
				L Main, Res, Incrs, 40 gal
				R Main, Res, Incrs, 40 gal
				Aux, Res, decrs, 20 gal

Optional Annunciators

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ENGINE AND SYSTEM FUNCTIONS
PITOT HT    ●
NAV LTS     ○
LAND LTS    ○
STROB LTS   ○
ROT BEACN   ○

HTR T        62 °F
C.O.        1.3 PPM
V.EMRG     12.6 V
A.EMRG     11.3 A
PR ALT  6790 FT
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Any unused Temperature or Resistive Fuel Level channel on the EDC may be used to monitor the state of a switch, relay or output from a device. This output can be used to trigger a light (annunciator) on the MVP-50P. Annunciator lights such as Landing Lights, Rotating Beacon, Strobes, Baggage Door, Deice, Pitot Heat, Fire, etc. can be displayed on either the Main or System screen on the MVP-50P. Each Annunciator requires one VI-221 Annunciator Interface. See the EI price sheet . Please verify that your EDC has the available inputs to support these optional annunciator(s).

The Off-State of the Annunciator will be black. The On-State can be Green, Yellow, Red, or Blue. Red and Yellow should only be use if they are called out in the POH/AFM.

If an Annunciator is to be activated by a relay connected to ground, a pull-up resistor will be required to provide a voltage to the EDC when the relay is open. See the MVP Installation Instructions for further details.

Optional Annunciator:	This Option Requires 1 EDC Temperature or Fuel Level Channel per Annunciator. A VI-221 will be required for each Annunciator. See E.I. price sheet for more information.			
Annunciator Name (6 Characters Main Screen) (9 Characters System Screen)	*** ON-State Voltage Level**	*** ON-State Color**	*** OFF-State Voltage Level**	**Example**
				BOOST P, 12 volts, Green, 0 volts
				LND LTS, 12volts, Green, 0 volts
				STRB LTS, 12 volts, Green, 0 Volts
				FIRE, 0 vots, Red, 12 volts

* Note: The ON-State Voltage Level is the voltage provided to the EDC when the ON-State Color is displayed. For example: The voltage to the EDC may be 0 volts when the annunciator is to be Green (on). The Off-State Voltage Level is the voltage provided to the EDC when the annunciator is to be black (off).

Optional Landing Gear Indicator
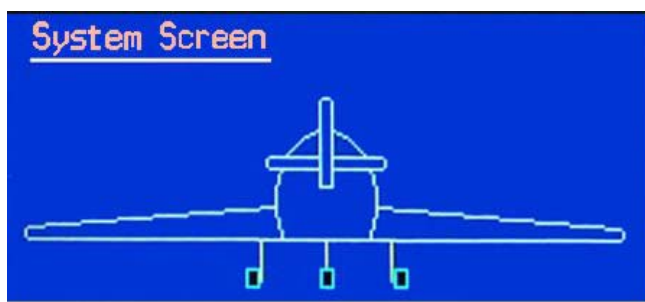
The landing gear position can be displayed on the pictured aircraft shown on the MVP-50P System Screen. This display is secondary to the gear lights mounted on the aircraft instrument panel. Each gear can be monitored independently, requiring three (Temperature or Resistive Fuel Level) channels on the EDC.

An alternate method is to use one EDC channel connected to the nose gear to activate the display of all three landing gears on the MVP-50 System Screen. The disadvantage of this method is when the nose gear is down, all the gears will be shown in the down position regardless of their actual position (although an UNSAFE Annunciator will show if any gear is hung). The advantage of this method is only one EDC channel is required.

An UNSAFE Annunciator will show just above the gears on the MVP System Screen any time the UNSAFE Light on the aircraft panel is ON. This display is secondary to the UNSAFE lights mounted on the aircraft instrument panel and requires one (Temperature or Resistive Fuel Level) channel on the EDC. If the EDC does not have available channels, a second EDC can be purchased. A VI-221 (Voltage Interface Resistor) must be placed in each line of an EDC channel used.

Optional Gear Indicator: This Option Requires 4 EDC channels (Temperature or Fuel Level). A VI-221 will be required for each EDC channel. See E.I. price sheet for more information.			
Function	**Voltage to the EDC when the Gear is UP**	**Voltage to the EDC when the Gear is DOWN**	**Example**
Noise Gear			0v, 12v
Main Left Gear			0v, 12v
Main Right Grar			0v, 12v
	Voltage to the EDC when the Unsafe Light is ON	**Voltage to the EDC when the Unsafe Light is OFF**	
UNSAFE (required)			0v, 12v

Optional Gear Indicator: This Option Requires 2 EDC Temperature or Fuel Level Channels. A VI-221 will be required for each EDC channel. See E.I. price sheet for more information.			
Function	**Voltage to the EDC when the Gear is UP**	**Voltage to the EDC when the Gear is DOWN**	**Example**
Noise Gear (provides the signal for all gear indications)			0v, 12v
	Voltage to the EDC when the Unsafe Light on ON	**Voltage to the EDC when the Unsafe Light on OFF**	
UNSAFE (required)			0v, 12v

Optional G-Meter

G-Meter Markings: This Function requires 1 EDC Pressure Channel and the GS Option. See EI Price Sheet.

The G-Meter function (GS Option) provides a real time g-force display on the MVP-50. The MVP-50 does not provide a peak-hold function but the g-force readings are recorded for the entire flight. To capture the g-forces for all phases of the flight with no gaps, set the "Data Sample Rate" to .3 seconds. The G-Meter option can be used to capture g-forces in slow flight when turning to final, hard landings, turbulence, hard pull-ups, steep turns, aerobatic maneuvers, stalls, spins or when performing any maneuver that may stress the aircraft or lead to a stall/spin situation.

Color	Range	Example
		Red, < -1.5
		Green, -1.5 to 3.8
		Red, > 3.8

We (the undersigned) have entered and verified all the limits, markings and aircraft configurations listed in this worksheet to be correct and taken from the information in the aircraft's POH/AFM which includes any changes mandated by any AD's, Supplements and STCs. We understand there is important safety information in the Installation and Operating Instructions that <u>must be read before installing the MVP-50P</u> and flying the aircraft.

**** Be sure you have ordered the hardware to support all the functions specified in this document ****

**** Check all range and configuration information is complete and accurated ****

_____   _____   _____
Owner/Pilot's Printed Name   Owner/Pilot's Signature   Date

_____   _____   _____
Mechanic's Printed Name   Mechanic's Signature   Date