



CGR-30 COMBO

Configuration Worksheet

CGR-30P Premium



CGR-30C



Download this file, fill it out, and save it. Include this file with your order.

General Info:

Aircraft Information:		Example
Customer Name		Peter Pilot
Customer Phone		555-555-5555
Customer E-mail		peterp@gmail.com
Aircraft Make Model		Cessna 182R
Aircraft Tail Number		N5555H
Engine Mfg Model		Continental O-470U
# of Cylinders Max HP		6 230 HP
Distance from EDC to farthest Cylinder		6 feet
<input type="checkbox"/> Include a Certificate of Conformance (\$10.00)		
<input type="checkbox"/> Include an 8130-3 (\$195.00). Can add up to two weeks to lead time.		

All data must be verified for accuracy and must match the POH/AFM and any changes required by any AD's, Supplements or STC's. Also, limit and marking information must be cross-checked against the instruments installed in the aircraft panel. A configuration file for a TSO'd and/or STC'd CGR-30P 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 Information: The information in this document must be verified for accuracy and match the aircraft's hardware and POH/AFM marking requirements. **If the data supplied in this document is incomplete or missing, your order will be delayed.** Our mission is to get your order shipped as soon as possible.

Dimming Control:

Traditional instruments with incandescent bulbs do not require backlight for day operations. For night operation, backlighting is required. The CGR-30C and CGR-30P require backlight for daylight operation and reduced backlighting for night operation. This is the opposite of what is required for traditional instruments.

If you plan on connecting the CGR-30C and CGR-30P backlight control line to a rheostat that is also controlling traditional instruments, select Option A.

If your plan on connecting the CGR-30C and CGR-30P backlight control line to a rheostat that is also controlling flat panel displays that require backlighting during the day, select Option B.

- ☐ **Option A:** The CGR-30C and CGR-30P will dim as the rheostat voltage is increased.
- ☐ **Option B:** The CGR-30C and CGR-30P will dim as the rheostat voltage is decreased.
- ☐ **Option C: Add Automatic Dimming Control Sensor (ADC-1)** photosensor-based dimming control. Automatically controls the brightness of the CGR-30C and CGR-30P based on light environment.

Choose your functions below:

Function	Select	Price	
RPM		included	P
Manifold Pressure		included	P
Fuel Flow		included	P
Fuel Pressure (aircraft w/ fuel pump)		included	PC
Main Fuel Level		included	C
Outboard Fuel Level		included	C
Aux/Tip Fuel Level		included	C
Oil Pressure		included	PC
Oil Temp		included	PC
TIT		included	P
Volts		included	C
AMPS		included	C
Vac		included	C
Carb Temp		included	PC
OAT in 'F		included	C
OAT in 'C		included	C
Hydraulic Pressure		included	C
G-Meter (does not have peak hold feature)		included	C
Horsepower		included	P
IAT		included	P
CDT		included	P
Cabin Pressure		included	C
Cabin Differential Pressure		included	C
CO Detector (not included, No Discounts)		\$495	C
Local Time		included	PC
Zulu Time		included	PC
Engine Time (must monitor RPM)		included	P
Tach Time (must monitor RPM)		included	P
Flight Time (must monitor RPM)		included	P
EGT (list additional channels below)		included	P
CHT (list additional channels below)		included	P
2nd AMPS Function (includes FM-VA-3)		included	C
Other 1:			
Other 2:			
Other 3:			
Other 4:			
Other 5:			
Other 6:			

Marking Information Required:

Provide the following information for all function.

Tachometer:

Markings:					
(Low)	Range	(High)	Color		Example
					2000 2500 Green
					2700 9990 Red

[] My engine is equipped with an electronic ignition. If this is the case, we need the pulses per revolution and voltage levels of the RPM signal for each set of spark plugs:

Example: Left: 2 pulses/rev, 0-5V pulse, Right: standard mag.

Manifold Pressure: Units:

This function uses the PT-30ABS Pressure Transducer.

Markings: If markings are not specified in the POH/AFM, write "00 00." Pressure requirements over 70"Hg require a different transducer (see below)					
(Low)	Range	(High)	Color		Example
					15.0 25.0 Green

[] Use the MP transducer that comes standard PT-30ABS (0 to 32" Hg).

[] Replace the MP transducer with the PT-60ABS (0 to 70" Hg).

[] Replace the MP transducer with the PT-200ABS (0 to 210" Hg).

If the MP tube is a hard line, you may need a flare fitting to interface to the manifold pressure transducer.

[] Add a 1/4" 37° flare fitting to the kit.

EGT: Units:

EGT limits are normally not specified. Select the EGT Probe to be used:

- ☐ P-110-F, Fast Response, hose clamp (*ineligible for turbo-charged engines*)
☐ P-110-R, Long life, hose clamp

CHT: Units:

CHT Markings: Aircraft that do not have cowl flaps normally do not have limits for the CHTs. If CHT limits are not listed in the POH/AFM, mark "00 | 00 | "

(Low) Range (High)	Color	Example
		00 450 Green
		450 9999 Red

The following CHT Probes are available. Select one:

- ☐ P-100, Screw-in, 3/8" – 24 (standard in the kit)
☐ My engine is equipped with Tanis Heaters. Note: P-102-3/8 probes will be provided in the kit.
☐ P-101, Military Bayonet with an A-101 CHT Adaptor. Up charge: \$17.00 each probe.
☐ P-101, Grounded with an A-101 CHT Adaptor. Up charge: \$17.00 each probe.
☐ P-102-18, Gasket, 18mm
☐ P-102-14, Gasket, 14mm
☐ P-102-12, Gasket, 12mm
☐ P-102-3/8, 3/8" Piggy-Back Gasket
☐ P-103, Metric, M10x1.5

Fuel Flow: Units:

Select one of the following:

- ☐ This aircraft is a gravity feed system with no fuel pump.
☐ This aircraft has a Fuel Pump.
☐ This aircraft has a Fuel Pump and a pressure carburetor with a fuel return line. You will need to purchase a FFDM-1, differential flow module.

To display "Estimated Fuel Remaining" we need the following information:

_____ Total Fuel Available (usable fuel, see POH/AFM)
 _____ Tab or Partial Fuel Level (level if you do not wish to carry a full load of fuel)

Notes:

- a) Also available is a FFAM-1, Fuel Flow Add Module. This module adds the fuel flow for two flow transducers (\$395.00).
- b) Primary Fuel Flow (this is normally derived from metered fuel pressure at the flow divider):
 - 1) If any limit on your current primary fuel flow gauge is marked in pressure only, the CGR-30P **MUST** also display metered fuel pressure to replace this gauge.
 - 2) If all the limits on your current primary fuel flow gauge are marked in flow (even though pressure may also be shown), the CGR-30P fuel flow system will replace this gauge and metered pressure does not need to be measured

Fuel Flow Markings: Example shows no limits.

(Low) Range (High)	Color	Example
Example		00 00 - No Limits

Fuel Pressure: Units:

Select one of the following:

- ☐ Fuel Pressure is monitored at the fuel pump.
- ☐ This is a turbocharged aircraft and fuel pressure is referenced to the upper deck. You must purchase the PT-30GA Pressure Transducer (\$195.00) to measure the upper deck.
- ☐ Fuel Pressure is monitored at the flow divider. See Fuel Flow (b) above.
- ☐ This is a gravity feed system with no fuel pump. Note: Fuel Pressure cannot be monitored.
- ☐ Fuel Pressure is not monitored.

Markings:

(Low) Range (High)	Color	Example
		0.0 9.0 Red
		9.0 14.0 Green
		14.0 999.0 Red

Fuel Level: Units:

The CGR-30P can provide accurate fuel level readings for straight and level flight. By calibrating the CGR-30P to the fuel tank, nonlinearity in the tank's shape and nonlinearity in the fuel level sensor can be compensated. The CGR-30P cannot correct for inconsistent or non-repeatable readings from a resistive fuel level sensor. Unfortunately, many resistive fuel level sensors (and in some cases even new units) exhibit these problems. If you find inconsistent or inaccurate fuel level readings (due to a defective resistive fuel level sensor), you must have the sensor replaced or repaired. Read the "Important Notice" in the CGR-30P Operating Instructions. **Fuel Level Sensors are not provided in the kit.** The following are some E.I. probes and modules available:

P-300C: This is 3/4" OD capacitive probe (\$395.00).

P-300C Mini: This is a 3/16" OD capacitive probe (\$249.00).

P-300M: Magnetic Float Sensor, replacement for resistive sensor (\$395.00).

RFLM-4: Provides the current for up to 4 resistive fuel level sensors.

FLAM -4: Monitors up to 4 capacitive fuel level probes in one tank and outputs the signal to the EDC-33P as single tank (\$475.00).

Important Notice: Only use the RFLM-4 for a resistive probe, otherwise damage will occur.

For each fuel level probe we require the following information:

Displayed Name	Main Left (Probe Type)	Tank Configuration
6 Characters	Select only one: <input type="checkbox"/> Resistive Probe <input type="checkbox"/> E.I. P-300M magnetic probe. <input type="checkbox"/> E.I. P-300C capacitive probe. <input type="checkbox"/> Penny Cap Capacitive Probe (select only one below): <input type="checkbox"/> The Signal Conditioner box provides the signal. <input type="checkbox"/> The signal will come from the probes. <input type="checkbox"/> Other Probe _____ <input type="checkbox"/> Variable Frequency <input type="checkbox"/> Variable Voltage Empty Freq: _____ Empty Voltage: _____ Full Freq: _____ Full Voltage: _____ Powered by: <input type="checkbox"/> Bus Power <input type="checkbox"/> EDC Power	Full Fuel Level: _____ Select only one: <input type="checkbox"/> This tank can be selected to feed the engine. <input type="checkbox"/> Fuel is only transferred from this tank to another. Note: All displayed Fuel Levels must be in the same units-of-measure.

Displayed Name	Main Right (Probe Type)	Tank Configuration
6 Characters	Select only one: <input type="checkbox"/> Resistive Probe <input type="checkbox"/> E.I. P-300M magnetic probe. <input type="checkbox"/> E.I. P-300C capacitive probe. <input type="checkbox"/> Penny Cap Capacitive Probe (select only one below): <input type="checkbox"/> The Signal Conditioner box provides the signal. <input type="checkbox"/> The signal will come from the probes. <input type="checkbox"/> Other Probe _____ <input type="checkbox"/> Variable Frequency <input type="checkbox"/> Variable Voltage Empty Freq: _____ Empty Voltage: _____ Full Freq: _____ Full Voltage: _____ Powered by: <input type="checkbox"/> Bus Power <input type="checkbox"/> EDC Power	Full Fuel Level: _____ Select only one: <input type="checkbox"/> This tank can be selected to feed the engine. <input type="checkbox"/> Fuel is only transferred from this tank to another.

Displayed Name	Outboard Left (Probe Type)	Tank Configuration
6 Characters	Select only one: <input type="checkbox"/> Resistive Probe <input type="checkbox"/> E.I. P-300M magnetic probe. <input type="checkbox"/> E.I. P-300C capacitive probe. <input type="checkbox"/> Penny Cap Capacitive Probe (select only one below): <input type="checkbox"/> The Signal Conditioner box provides the signal. <input type="checkbox"/> The signal will come from the probes. <input type="checkbox"/> Other Probe _____ <input type="checkbox"/> Variable Frequency <input type="checkbox"/> Variable Voltage Empty Freq: _____ Empty Voltage: _____ Full Freq: _____ Full Voltage: _____ Powered by: <input type="checkbox"/> Bus Power <input type="checkbox"/> EDC Power	Full Fuel Level: _____ Select only one: <input type="checkbox"/> This tank can be selected to feed the engine. <input type="checkbox"/> Fuel is only transferred from this tank to another.

Displayed Name	Outboard Right (Probe Type)	Tank Configuration
6 Characters	Select only one: <input type="checkbox"/> Resistive Probe <input type="checkbox"/> E.I. P-300M magnetic probe. <input type="checkbox"/> E.I. P-300C capacitive probe. <input type="checkbox"/> Penny Cap Capacitive Probe (select only one below): <input type="checkbox"/> The Signal Conditioner box provides the signal. <input type="checkbox"/> The signal will come from the probes. <input type="checkbox"/> Other Probe _____ <input type="checkbox"/> Variable Frequency <input type="checkbox"/> Variable Voltage Empty Freq: _____ Empty Voltage: _____ Full Freq: _____ Full Voltage: _____ Powered by: <input type="checkbox"/> Bus Power <input type="checkbox"/> EDC Power	Full Fuel Level: _____ Select only one: <input type="checkbox"/> This tank can be selected to feed the engine. <input type="checkbox"/> Fuel is only transferred from this tank to another.

Displayed Name	Aux / Tip Left (Probe Type)	Tank Configuration
6 Characters	Select only one: <input type="checkbox"/> Resistive Probe <input type="checkbox"/> E.I. P-300M magnetic probe. <input type="checkbox"/> E.I. P-300C capacitive probe. <input type="checkbox"/> Penny Cap Capacitive Probe (select only one below): <input type="checkbox"/> The Signal Conditioner box provides the signal. <input type="checkbox"/> The signal will come from the probes. <input type="checkbox"/> Other Probe _____ <input type="checkbox"/> Variable Frequency <input type="checkbox"/> Variable Voltage Empty Freq: _____ Empty Voltage: _____ Full Freq: _____ Full Voltage: _____ Powered by: <input type="checkbox"/> Bus Power <input type="checkbox"/> EDC Power	Full Fuel Level: _____ Select only one: <input type="checkbox"/> This tank can be selected to feed the engine. <input type="checkbox"/> Fuel is only transferred from this tank to another.

Displayed Name	Aux / Tip Right (Probe Type)	Tank Configuration
6 Characters	Select only one: <input type="checkbox"/> Resistive Probe <input type="checkbox"/> E.I. P-300M magnetic probe. <input type="checkbox"/> E.I. P-300C capacitive probe. <input type="checkbox"/> Penny Cap Capacitive Probe (select only one below): <input type="checkbox"/> The Signal Conditioner box provides the signal. <input type="checkbox"/> The signal will come from the probes. <input type="checkbox"/> Other Probe _____ <input type="checkbox"/> Variable Frequency <input type="checkbox"/> Variable Voltage Empty Freq: _____ Empty Voltage: _____ Full Freq: _____ Full Voltage: _____ Powered by: <input type="checkbox"/> Bus Power <input type="checkbox"/> EDC Power	Full Fuel Level: _____ Select only one: <input type="checkbox"/> This tank can be selected to feed the engine. <input type="checkbox"/> Fuel is only transferred from this tank to another.

Oil Pressure: Units:

This function uses the PT-100GA Pressure Transducer.

Markings:			
(Low)	Range	(High)	Color
			0 25 Red
			25 90 Green
			100 9999 Red

Oil Temperature: Units:

This function uses the P-120 (5/8"-18) Oil Temp Probe, or select the one you'd prefer:

☐ P-111, 1/8" NPT (w/ 6' cable).

☐ P112, 7/16-20 (w/ 6' cable).

☐ P114, 1/4" NPT (w/ 6' cable).

Markings:			
(Low)	Range	(High)	Color
			0 65 Yellow
			65 200 Green
			200 240 Yellow
			240 9999 Red

TIT: Units:

Markings:			
(Low)	Range	(High)	Color
			0 1650 Green
			1650 9999 Red

Select the probe type:

☐ P-111, 1/8" NPT (w/ 6' cable).

☐ P-112, 7/16-20 (w/ 6' cable).

☐ P-114, 1/4" NPT (w/ 6' cable).

☐ P-110-R, Hose Clamp (w/ 6' cable).

Volts:

The voltage limits are set by E.I. Select one of the following:

☐ 12-Volt System.

☐ 24-Volt System.

Amps:

Measurement of: ☐ Battery Current ☐ Alternator Current

Normally Amps do not have limits specified. A 100 Amp shunt is provided in the kit or the CGR-30P can be connected to the aircraft's existing shunt. To do this the value of the existing shunt must be provided. See www.buy-ei.com and look under VA-1A Downloads for help on determining the value of your existing shunt.

Select one of the following:

- ☐ Use the 100 Amp Shunt--(included with the system).
☐ Use the 300 Amp Shunt--(included with the system).
☐ The aircraft's existing shunt will be used, value is _____ Amps at _____ mV.

Markings:

(Low)	Range (High)	Color	Example
			4.5 5.5 Green

2nd Amps:

Measurement of: ☐ Battery Current ☐ Alternator Current

This function includes the FM-VA-3 module. The EDC-33P has only one channel to monitor current however with the FM-VA-3, when connected to one EDC-33P temperature channel, allows three additional current measurements. If markings are not specified in the POH/AFM, write "No Limits". The CGRs can be connected to the existing shunt. ***If you will using an existing shunt, the shunt value must be provided.*** Select one of the following:

- ☐ Use the 100 Amp Shunt--(included with the system).
☐ Use the 300 Amp Shunt--(included with the system).
☐ The aircraft's existing shunt will be used, value is _____ Amps at _____ mV.
☐ Add the FM-VA-3 to the Kit (if needed).
☐ Add the following number of S-50 Shunts to the kit: _____

Markings:

(Low)	Range (High)	Color	Example
			4.5 5.5 Green

Vacuum Pressure: Units:

If markings are not listed in the POH/AFM, we suggest using Green 4.5 to 5.5. This function uses the PT-05 Diff Pressure Transducer. If the vacuum tube is a hard line, you may need a flare fitting.

[] Add a 1/4," 37° flare fitting to interface to the vacuum pressure transducer.

Markings:

(Low)	Range	(High)	Color	Example
				4.5 5.5 Green

Carb Temp: Units:

If markings are not listed in the POH/AFM, we suggest using blue, 10 to 39°F and green for all other areas. Some very old carburetors do not have the port for the carb temp probe drilled out. This port can be drilled and tapped. The P-128, 1/4"-28 temp probe is used to measure Carb Temp.

Markings:

(Low)	Range	(High)	Color	Example
				-99 10 Green
				10 39 Blue
				39 9999 Green

Hydraulic Pressure: Units:

This function uses the PT-3000S Pressure Transducer (3000 psi max).

Markings:

(Low)	Range	(High)	Color	Example
				1000 2000 Green

Optional Annunciator: This Option Requires 1 EDC Temperature, pressure, or Fuel Level Channel per Annunciator. A voltage interface will be required for each Annunciator. *See EI Price Sheet for more info*

Annunciator Name (7 characters per name, spaces included)	*On-State Voltage level	*ON-State Color	*OFF-State Voltage Level	Example
<input type="text"/>				Boost P, 12Volts, Green, 0 volts
<input type="text"/>				LND LTS, 12V, Green, 0V
<input type="text"/>				STRB LTS, 12V, Green, 0V
<input type="text"/>				
<input type="text"/>				
<input type="text"/>				

* 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).

Induction Air Temperature (IAT): Units:

This function uses the P-128 Temperature Probe.

Markings: Example shows no limits.			
(Low)	Range	(High)	Color
			00 00

Compressor Discharge Temperature (CDT): Units:

This function uses the P-128 Temperature Probe.

Markings: Example shows no limits.			
(Low)	Range	(High)	Color
			00 00

Cabin Pressure: Can only be displayed in InHg.

This function uses the PT-30ABS module.

Markings:			
(Low)	Range	(High)	Color
			0 18.6 Yellow
			18.6 999.9 Green

Cabin Differential Pressure:

This function uses the PT-05Diff module. Units:

Markings:			
(Low)	Range	(High)	Color
			0 4.0 Green
			4.0 9999 Yellow

Carbon Monoxide: Measured in ppm.

This function requires an available RS232 Port on the CGR. The CO Guardian option is \$495.00. With this option, only one EDC can be connected to the CGR. When placed on the secondary screen, the red and yellow limits will not be annunciated. If markings are not specified in the POH/AFM, we recommend the following limits.

Markings:			
(Low)	Range	(High)	Color
			0 25 Green
			25 75 Yellow
			75 9999 Red

G-Meter:

The G-Meter function provides a real time g-force display on the CGR-30P. The CGR-30P 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 0.3 seconds. The G-Meter option can be used to capture g-forces in slow flight, hard landings, turbulence, hard pull-ups, steep turns, aerobatic maneuvers, stalls or spins. When placed on the secondary screen, the red and yellow limits will not be annunciated.

Markings:			
(Low)	Range	(High)	Color
			-9999 -1.5 Red
			- 1.5 3.8 Green
			3.8 9999 Red

Other Function 1:

Other function as defined in the function section found on page 3.

Markings:			
(Low)	Range	(High)	Color
			0 25 Green
			25 75 Yellow
			75 9999 Red

Other Function 2:

Other function as defined in the function section found on page 3.

Markings:			
(Low)	Range	(High)	Color
			0 25 Green
			25 75 Yellow
			75 9999 Red

Other Function 3:

Other function as defined in the function section found on page 3.

Markings:			
(Low)	Range	(High)	Color
			0 25 Green
			25 75 Yellow
			75 9999 Red

Other Function 4:

Other function as defined in the function section found on page 3.

Markings:			
(Low)	Range	(High)	Color
			0 25 Green
			25 75 Yellow
			75 9999 Red

Other Function 5:

Other function as defined in the function section found on page 3.

Markings:			
(Low)	Range	(High)	Color
			0 25 Green
			25 75 Yellow
			75 9999 Red

Other Function 6:

Other function as defined in the function section found on page 3.

Markings:			
(Low)	Range	(High)	Color
			0 25 Green
			25 75 Yellow
			75 9999 Red

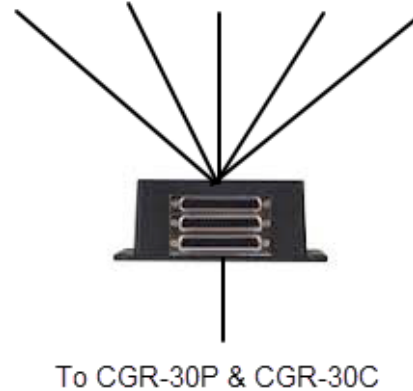
Appendix A: EDC-33P Overview

The EDC-33P (Engine Data Converter, “EDC”) converts all of the engine and aircraft system signals into serial data. This data is transmitted to the CGR display via one wire. The EDC reduces the wire bundle to the instrument panel by over 100 wires.

There are three 37-pin D-sub connectors that interface the EDC to the various probes, transducers and modules. The EDC’s Temperature, Pressure and Fuel Level inputs can be used to monitor voltage outputs from almost any transducer. In this way almost any function can be displayed on the CGR. Up to two EDC’s can be connected to a CGR display. This significantly increases the total number of functions that can be displayed on the CGR.

In most cases the CGR-30C will be connected to an existing EDC-33P that will also be driving a CGR-30P. Make sure you have sufficient channels on the EDC-33P to support all the functions and annunciators you will be displaying on the CGR-30C. The channels available on an EDC are as follows:

RPM, MP, Pressure, Temp, Levels, Flow, etc.



These Channels can be used for various functions or annunciators:

- 17 – Temp Channels: may be used to monitor any voltage or thermocouple.
- 6 – Pressure Channels: may be used to monitor any voltage (very high input impedance) or pressure.
- 4 – Fuel Level Channels: may be used to monitor any voltage.

These Channels are dedicated to specific functions:

- 2 - RPM Channels: Used only to monitor right and left mags.
- 1 - Volt Channel: Used only to monitor volts.
- 1 - Amp Channel: Used only to monitor Amps
- 1- Fuel Flow Channel: Used only to monitor fuel flow.

- * Be sure you have ordered the hardware to support all the functions listed in this document.
- * Check that all range and configuration information is complete and accurate.

**FAILURE TO SIGN THIS DOCUMENT WILL RESULT IN AN
INCOMPLETE FORM AND WILL DELAY YOUR ORDER**

I (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 STC's. When necessary, I have checked with my FAA certified mechanic to ensure all of the data listed above is correct.

I understand there is important safety information in the Installation and Operating Instructions that must be read before installing the CGR-30C or CGR-30P and flying the aircraft.

Completed by: ☐ Owner ☐ Pilot ☐ Technician ☐ Other _____

Completed By Printed Name

Completed By Signature

Date

Hand signature or Encrypted Digital signature required.