



## Dynon Avionics Product Ordering Guide

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# Introduction

Dynon Avionics offers three flight and engine instrument product lines:

- The SkyView System with 7” and 10” displays
- The D10 Series with 4” displays (EFIS-D6, EFIS-D10A and EMS-D10)
- The D100 Series with 7” displays (EFIS-D60, EFIS-D100, EMS-D120, and FlightDEK-D180)

Plus accessories that work with any of these product lines:

- Pitot Probes
- Engine Monitoring Kits and Sensors
- Autopilot Servos and Mounting Kits

Plus accessories that work only with SkyView:

- Mode-S Transponders

## SkyView System

### General Description

SkyView is an integrated glass panel avionics system. Its capabilities include Primary Flight Display (PFD) information, Engine Monitoring, GPS moving map, two-axis autopilot, transponder, and wide screen high-resolution graphics.

SkyView builds on Dynon’s proven EFIS and EMS capabilities by adding synthetic vision, GPS Navigation, and a high resolution moving map on brilliant, high resolution 7” and 10” displays.

### System Architecture

#### Displays

The SkyView system can be configured with any combination of 7” and 10” displays. SkyView displays include the system software and graphical database. They offer superior resolution and exceptional readability from all cockpit angles and in all lighting. Display brightness is 1200 nits for the 7” display and 1350 nits for the 10” display.

Each SkyView display can be networked with any other display or module in the SkyView system. Multiple displays can be driven by a single ADAHRS module, and all can receive data from the Engine Monitoring Module and GPS Receiver.

#### Terrain Database

The SkyView Displays can contain enough high-resolution terrain data to include a region covering thousands of miles. Users may download any region of the earth to cover their location with plenty of room in every direction. Regional downloads are available for free on the Dynon Website at [www.dynonavionics.com/terrain](http://www.dynonavionics.com/terrain).

## **Battery Backup**

SkyView can be equipped with a separate backup battery for each display in the system. Each backup battery is capable of powering its own display plus all other modules in the SkyView system. (Note, autopilot servos are powered separately.)

When equipped with backup batteries and in the case of an aircraft electrical failure, SkyView operates independently of all aircraft systems except for pitot and static. In the unlikely event of loss of pitot airspeed data, GPS ground speed is automatically substituted for airspeed.

## **ADAHRS Module**

The SkyView Air Data, Attitude, Heading Reference System Module combines Dynon's tested and proven solid-state attitude references with an integral magnetometer in a single package. Because the aft portion of the fuselage - aft of the aft cabin bulkhead - tends to be relatively isolated from magnetic interference, that is the location of choice for the ADAHRS module in most aircraft. This location requires routing pitot, static and optional angle-of-attack tubes to the aft fuselage rather than to the rear of the instrument panel.

## **ARINC-429 Module**

The SV-ARINC-429 makes SkyView compatible with certified GPS receivers, integrating with such radios as the Garmin GNS 430/530. This includes advanced features such as GPS steering, CDI auto-scaling and vertical guidance from WAAS-enabled GPS receivers. This Module also enables the full suite of G430/530 VOR and localizer functionality.

## **Mode-S Transponder**

An integrated Mode-S transponder that saves panel space with control and annunciation appearing on the SkyView displays. The lightweight transponder module can be mounted anywhere in the airplane that is convenient. The SV-XPNDR-261 is for high performance aircraft that can exceed 15,000 feet altitude and/or 175 Knots. These transponders receive TIS Traffic (USA), and the SV-XPNDR-261 will meet the USA and Europe ADS-B Out Mandates. Note: full ADS-B Out compliance requires a connected TSO-C146A GPS (WAAS).

**NOTE ON U.S. COMPLIANCE:** Current FAA plans will only allow the higher power Class 1 transponder to be used as an ADS-B out device in order to meet the 2020 ADS-B Out equipage mandate. For U.S. customers, we therefore generally only recommend the Class 1 SV-XPNDR-261. If you do not plan on using your Dynon transponder as your eventual ADS-B Out device, you may choose either Dynon transponder model.

## **Main Harness**

Each display comes with a D-37 Main Harness. This harness includes a USB connector on 3 foot leads, one NMEA serial connector for GPS input, 4 general purpose serial connections, backup battery connector, audio outputs, four discrete general purpose inputs, a panel dim input/output, primary power and primary ground. The Main Harness can be purchased separately if desired for early installation.

## **Network Connections**

Displays and modules are connected via straight-through 9-pin cables. We recommend the Dynon SkyView Network cables because they have the correct wiring and are made of aircraft quality

Tefzel® wires. The SkyView Network is a true bus, so you can make as many network connections as desired. The autopilot servos can be connected via the SkyView Network cables but require that power and ground connectors be broken out separately to be connected to their own electrical bus circuit-breaker or fuse. A special Autopilot Servo Network wiring kit is available.

Note: A cable is typically required between two Displays, between a Display and an ADAHRS Module, and between a Display and EMS, ARINC, and Servo Modules. Cables listed with the descriptor “1 end with pins only” are shipped with the second connector not attached to the cable for ease of routing, but the connector is included to be fitted with the pins once routing is complete. The SV-NET-HUB is a 5 port hub that allows multiple SkyView Network connections to be easily made.

SkyView systems with multiple displays should also have their Ethernet ports connected together with an Ethernet cable such as the SV-ETHERNET-3CC. The Ethernet connection between SkyView displays is made *in addition* to the 9 pin SkyView Network connections. Dynon Avionics strongly recommends “Low Smoke Zero Halogen” Ethernet cables for use in aircraft. A Low Smoke Zero Halogen Ethernet cable is available from Dynon Avionics (SV-ETHERNET-3CC). Contact Dynon Avionics for additional information if your aircraft has more than two displays.

See the SkyView Installation Guide for more details about SkyView Network and Ethernet connection requirements.

### **Engine Monitoring**

SkyView utilizes a separate Engine Monitoring Module for connection with all engine and fuel system probes. This module is designed to be mounted on the cabin side of the firewall, eliminating the need to run probe wires to the back of the instrument panel. That mounting can be particularly beneficial for rear-engine aircraft.

The SkyView Engine Monitoring Module connects with all of the standard probes used with our D10/D100 Series instruments and contained in our prepackaged engine probe kits. For those customers upgrading to the SkyView system from our D10/D100 Series EMS devices, the engine probe harness connectors will transfer directly to the SkyView Engine Monitoring Module with minor modifications.

Complete monitoring of up to six CHT and EGT probes is possible with the Engine module. However, a total of 14 J- and K-type temperature probes are supported, so that any combination of 14 CHT and EGT probes may be monitored. This flexibility will allow complete monitoring of at least one cylinder temperature parameter on engines with more than 6 cylinders, such as the popular 9-cylinder M14 radial engine.

### **Navigation Mapping Software**

The SV-MAP-270 Navigation Mapping Software is available for purchase for \$500. Only one SV-MAP-270 purchase is required per airplane, no matter how many SkyView displays it contains.

All SkyView systems have a 30 flight hour free trial of the Navigation Mapping Software that allows you to try it out before you purchase it.

Free aviation and obstacle data for the Navigation Mapping Software is available from Dynon Avionics for US customers only. Customers worldwide can purchase aviation and obstacle data from Jeppesen and PocketFMS.

### **Synthetic Vision Software**

SkyView displays can be purchased with or without a license pre-installed that allows Synthetic Vision to be shown. In order to display Synthetic Vision, each SkyView display must be individually licensed

to display it. If you purchase a SkyView display that does not include the Synthetic Vision Software license, it can be added at any time through the purchase of a SV-SYNVIS-280 SkyView Synthetic Vision Software Certificate (\$100). The SV-D1000/B and SV-D700/B bundles both include Synthetic Vision.

### **VP-X Software License**

Enables interoperability between SkyView and the VP-X system made by Vertical Power, Inc. The VP-X is an electronic circuit breaker system that uses the SkyView display for annunciation. Only one SV-VPX-290 purchase is required per airplane, no matter how many SkyView displays it contains. This license is only usable if a VP-X is installed in the system. Dynon does not sell the VP-X; it is available from Vertical Power and dealers.

## **D10/D100/FlightDEK Series**

### **General Description**

The D10 and D100 Series are comprised of seven integrated avionics products. The EFIS-D6 and EFIS-D10A each contain a full set of primary flight instruments in compact, 4" displays designed for installation or easy retrofit into a standard 3-1/8" instrument hole. The EFIS-D60 and EFIS-D100 are essentially the same as the smaller products - with the same set of features and functions, but with larger 7" displays. Similarly, the EMS-D10 is a complete and versatile engine monitoring system with a 4" display. The EMS-D120 is the 7" display version of the EMS-D10. Finally, the FlightDEK-D180 is a combined EFIS and an EMS in one 7" display package.

### **Super-Bright Screen**

The EFIS-D60, EFIS-D100, EMS-D120, and FlightDEK-D180 all now come standard with super-bright screens.

### **Equipping your Panel**

#### **Single Screen Solutions**

If you are ordering a single EFIS or EMS, choosing the right size for your panel is probably your primary consideration. The price difference between the EFIS-D6 and EFIS-D60 is just \$300, between the EFIS-D10A and EFIS-D100 is just \$200, and the difference between the EMS-D10 and EMS-D120 is just \$300. For the tightest panels, the FlightDEK-D180 is both an EFIS and EMS in one 7" screen.

#### **EFIS and EMS solutions**

For customers with the panel space, the EFIS-D60, EFIS-D100 and EMS-D120 offer impressive 7" displays. For tighter panels, the 4" EFIS-D6, EFIS-D10A and EMS-D10 each will fit in a standard 3-1/8" instrument hole. Also, you can pair our EFIS-D10A and EFIS-D100 with either of our EMSs. If your panel has unique geometry, mix and match an EFIS-D100 with an EMS-D10, or an EFIS-D10A with an EMS-D120. With the Dynon Smart Avionics Bus (DSAB), you'll be able to display EFIS information on your EMS and EMS information on your EFIS, no matter which sizes you choose. (Note: the EFIS-D6 and the EFIS-D60 cannot connect to other instruments.)

## **Ultimate Redundancy**

For customers seeking full primary flight instrument redundancy with engine monitoring capability, you can pair a FlightDEK-D180 with either an EFIS-D100 or EFIS-D10A. Since both the FlightDEK-D180 and second EFIS have their own self contained set of EFIS primary flight instruments, your partial panel emergency scenario is hardly a “partial” at all. And, because DSAB allows the seamless transfer of information across units, the FlightDEK-D180's EMS features can be displayed on either screen (as long as the FlightDEK-D180 is operational).

## **Options for D10/D100 EFIS and FlightDEK-D180 Systems**

### **HS34 HSI Expansion Module**

The HS34 expands Dynon's already popular line of affordable EFIS and EMS instruments. While all of Dynon's D10/D100 Series EFIS instruments include HSI functionality, each instrument offers only a single serial connection for interfacing with GPS and NAV radios. Thus compatibility with those radios is limited.

The HS34 overcomes these constraints by adding ARINC-429, analog, and serial interfaces to cover many popular radios. The addition of an HS34 to an EFIS allows full compatibility with radios such as the Garmin GNS430/530. This includes advanced features IFR pilots demand, such as CDI auto-scaling and full GPSS roll steering and vertical guidance information from WAAS-enabled units. The HS34 eliminates the need to install a conventional CDI/GS head.

The panel-mounted HS34 provides a superior user interface to the HSI as well. By including dedicated knobs and buttons for the barometer, course (OBS), heading and altitude bugs, navigation source, and bearing source, users can quickly access the primary HSI functions without pushing any buttons on the EFIS. Additional functions of the HS34 include auto-dimming of all Dynon equipment, audio output for voice annunciation of various system warnings and alarms, and additional EMS general purpose and contact inputs.

The HS34 is priced at \$650 and can be purchased in either vertical or horizontal configurations. It also requires at least one EFIS or FlightDEK-D180 system to connect to. (Note: the EFIS-D6 and the EFIS-D60 cannot connect to the HS34.)

### **Primary Wiring Harness**

Because problems in wiring can be some of the most difficult for the homebuilder to troubleshoot, a majority of our customers choose to order our primary EFIS harness. The harness includes wires for power, ground, EDC-D10A remote compass, PC serial connection (for updating your Dynon product), AOA audio output, DSAB, and more.

This option is highly recommended for the EFIS-D6, EFIS-D10A, EFIS-D60, EFIS-D100, and FlightDEK-D180.

### **Internal Li-Ion Backup Battery**

Installed inside the EFIS or FlightDEK-D180 either at the factory or by you (if ordered after initial instrument purchase), this rechargeable battery provides at least 2 hours (EFIS-D6, EFIS-D10A) or 1.5 hours (EFIS-D60, EFIS-D100 or FlightDEK-D180) of battery backup in the event of aircraft electrical failure. Similar to the batteries in a cell phone or mp3 player, the battery's charge is automatically managed by the EFIS or FlightDEK-D180. This option is not available for the EMS-D10 or EMS-D120.

## EDC-D10A Remote Compass

Though the EFIS-D6 and EFIS-D10A do have a set of internal magnetic sensors, the panel environment is often affected by significant magnetic interference. In many panels it is not possible to calibrate the built-in magnetic compass due to such interference. The EDC-D10A remote compass provides for a compass mounting location free of the most common sources of magnetic interference. It is commonly mounted in a location such as a wing/wingtip or tail of the aircraft. The EDC-D10A is included with the EDC-D6, and is an optional component when ordering the EFIS-D10A.

The EFIS-D60, EFIS-D100 and FlightDEK-D180 do not have internal magnetic sensors. The EDC-D10A comes with each of these systems.

As the EDC-D10A is the signal processor for the EFIS OAT probe (p/n 100433-000), it is a prerequisite for hooking up an OAT to an EFIS-D10A, EFIS-D100 or the FlightDEK-D180. OAT is not available with the EFIS-D6 and EFIS-D60.

### OAT Probe for EFIS (p/n 100433-001) \*

The OAT probe provides real-time outside air temperature and facilitates calculations of density altitude and true airspeed. Additionally, it enables the calculation of winds aloft when an external GPS input is connected to your EFIS or FlightDEK-D180. The probe includes 10' of wire. Because it connects only to the EDC-D10, the remote compass is a requirement when using the OAT. The EFIS-D6 and EFIS-D60 do not support installation of the OAT probe. *See "OAT special note" below for additional information on selecting the right OAT.*

### Encoder Serial-to-Gray Code Converter Module

Dynon's EFISes, FlightDEK-D180 and SkyView can be your transponder's altitude encoder. They output serial data, however, which is not supported by many older transponders. If your transponder can accept serial altitude data (common examples of such transponders include the Garmin GTX 327 and GTX 330), your EFIS/FlightDEK-D180/SkyView can send altitude to it directly. If your transponder requires "gray code" input, you will need to purchase the Encoder Serial-to-Gray Code Converter Module in order to use the EFIS/FlightDEK-D180/SkyView as your altitude encoder.

## Pitot Probes for D10/D100/FlightDEK Series and SkyView

### Angle of Attack/Pitot Probe

When equipped with our AOA/Pitot Probe, your EFIS or SkyView PFD can indicate AOA both visually and audibly (when connected to your intercom or audio panel). The AOA/Pitot has two ports that are used to sense airspeed and angle of attack. It is available in two styles. The normal, "L shaped" under-wing style (part number 100141-000) is used by the vast majority of customers that order the AOA/Pitot Probe. For unique aircraft that require a straight tube "boom" style pitot, order part number 100532-000.

Dynon Avionics does not manufacture or sell pitot tube brackets. Any bracket made for AN5812 style pitot tubes will work. Our installation guides, which can be downloaded off our website at [www.dynonavionics.com](http://www.dynonavionics.com), list particular brackets that are compatible.

The AOA/Pitot probe does not have a built-in static port, nor can it be modified to install one.

## Heated Angle of Attack/Pitot Probe

The heated pitot is mechanically the same as the regular pitot above. The heated pitot includes a ni-chrome heating element that is regulated by a separate pitot heater controller unit supplied with the pitot. The controller actively monitors a temperature sensor embedded within the pitot head and regulates the power to maintain a constant temperature. This not only conserves energy but additionally prolongs the life of the heater. The controller also outputs a signal that can be wired to a warning light in the cockpit to warn the pilot anytime there is a malfunction or that the pitot is turned off.

## Engine Monitoring Kits and Sensor Descriptions

The EMS-D10, EMS-D120, and SkyView System require an appropriate set of engine sensors to perform monitoring functions. The following sensors and packages work with all of our systems.

### EMS Engine Probe Packages

Dynon Avionics has configured probe/harness packages for the most popular engines on the market. Each package includes a set of sensors and harnesses that covers the most commonly monitored parameters, including CHTs, EGTs, oil temp, oil pressure, fuel pressure, amps, and more, depending on the engine. High-quality solid-state Kavlico sensors are used for oil, coolant, and fuel pressures. See Table 1 on the order form for precise engine package contents.

EMS Engine Packages come with both harnesses needed to connect the included probes to the EMS-D10, EMS-D120 and SkyView SV-EMS-220.

### Fuel Flow Transducer

When equipped with the optional Fuel Flow Transducer, your EMS/FlightDEK-D180/SkyView becomes a full fuel computer or totalizer, able to calculate such items as time remaining, gallons remaining, and other useful fuel flow derived information. Because it is a relatively expensive sensor, it is not included with any engine probe package and is sold separately as an option.

### Capacitance to Voltage Converter

These converters allow builders of Vans RV and other aircraft with capacitive plates in their fuel tanks to measure fuel quantity with Dynon's EMS products. One converter is required per tank; a maximum of two are supported. Each is equipped with a BNC connector, making connection to the Vans plates a snap.

### EMS OAT Probe (p/n 100433-000) \*

For engine probe packages that do not include the EMS OAT, it can be added as an individual probe. Includes 10' of wire.

See "\*OAT special note" below for additional information on selecting the right OAT.

### Items not supplied

Dynon Avionics does not supply fuel quantity senders. However, our SkyView, EMSes and FlightDEK-D180 are compatible with any resistive "float" style fuel level sender, or capacitance probes that output a variable voltage between 0-5V DC.

Additionally, tachometer transducers are not supplied, but for most engines one is not required. See our installation guides, available at [www.dynonavionics.com](http://www.dynonavionics.com), for details.

## Ordering Parts as Needed

As you build your aircraft, feel free to order any options, accessories, or other items you need before you are ready for your actual instrument. Common items that customers order ahead of time include the Servos, AOA/Pitot, EDC-D10A, and D100 series mounting tray.

Note that the EFIS-D6, EFIS-D60, EFIS-D100, EMS-D120, and FlightDEK-D180 are normally sold as a "system" which includes all of the basic required components. You can elect to order some of the items included in the full "system" ahead of time, and you will not pay extra. Note that the EDC-D10A is required for heading on the EFIS-D100 and FlightDEK-D180.

## \*OAT special note - selecting the right OAT for your configuration

For the SkyView system, the OAT probe is bundled with the ADAHRS module and thus does not need to be ordered separately.

For the D10/D100 Series, there are two OAT probes available from Dynon Avionics.

If you are purchasing a single EFIS-D100 or EFIS-D10A, purchase part number 100433-001 which connects through the EDC-D10A remote magnetometer (optional equipment when purchasing an EFIS-D10A).

If you are purchasing a single EMS-D120 or EMS-D10, use the OAT for the EMS - part number 100433-000.

If purchasing an EFIS AND an EMS, or a FlightDEK-D180, you can use either of the above OAT probes. There are a few things to consider when choosing which one to use. The EMS OAT (100433-000) uses one of three available EMS general purpose inputs. Other things that these inputs can be used for are carb air temperature, coolant pressure, coolant temp, elevator/aileron/rudder trim, flaps position, Rotax CHTs (2), and more. If you would prefer to free up all 3 of these inputs for some of these other sensors, and are configuring your aircraft with an EFIS and EMS or FlightDEK-D180, you can choose to use the EFIS OAT (100433-001), which connects to the EDC-D10A remote compass.

## Autopilot

A Dynon Avionics Autopilot is simply a Dynon Avionics SkyView, EFIS-D10A, EFIS-D100, or FlightDEK-D180 connected to one or two servos to drive the control surfaces. (The EFIS-D6 and EFIS-D60 do not have autopilot capability.) All autopilot servos are compatible with both the D10/D100 Series and the SkyView System EFIS displays.

## Affordability and Redundancy

Adding a pair of servos to a single EFIS for as little as \$1500 provides the most economical two-axis autopilot available.

For those that want redundancy beyond what a single EFIS driving servos offers, consider that the combination of two D10/D100 Series EFIS instruments plus two servos is typically less expensive than a single EFIS (or other flight instruments) and a separate autopilot from competitors. This combination also offers two fully redundant sets of flight instruments.

Note, however, that in a D10/D100/FlightDEK Series dual-EFIS system, only a single EFIS may be configured to control the servos. In the event of an in-flight failure of the primary EFIS, the autopilot will be disabled. The secondary EFIS may be reconfigured to control the servos, but that configuration can only be completed on the ground as it requires re-calibration of the servos.

In a SkyView system with multiple displays, any functioning display will provide Autopilot control of the servos.

## Servos

Dynon Servos are available in a few different sizes and configurations. Maximum torque output for each model is as follows:

SV32: 36 in-lb

SV42: 55 in-lb

The maximum available force will vary by the length of the arm used or diameter of the capstan employed. Standard arm servos and long arm servos (denoted by an "L" suffix) differ only in the length of their output arms. "L" servos allow for slightly more travel in aircraft that require it, but yield a smaller force available at the longer arm attach points. Due to the decrease in available force, long arm servo models should generally only be used in aircraft that require them.

Capstan servos are also available for use in aircraft that utilize cable-driven control surfaces. Capstan servos come with the bridle cable and clamp necessary to be used in aircraft with 1/8" cables. Capstan servo models are denoted with a "C" suffix.

For more detailed data about specific servo models, please see the complete set of servo documentation, which is available at <http://www.dynonavionics.com/docs>.

For servo configurations for various aircraft that are not directly reflected in the Dynon price list, please see [http://wiki.dynonavionics.com/Servo\\_Application\\_Guide](http://wiki.dynonavionics.com/Servo_Application_Guide).

## AP74 Dedicated Autopilot Interface Module

The AP74 Dedicated Autopilot Interface Module is designed for use with the EFIS-D10A, EFIS-D100 and FlightDEK-D180. It adds panel-mounted controls and LED status lights to your autopilot, along with the ability to pre-arm autopilot modes and pre-select heading/track/ altitude targets if desired. Though not required, most customers that are building a new panel will likely want to include an AP74. It is available in both vertical and horizontal form factors, and comes with a mounting tray and connector kit.

Note, the AP74 is not compatible with SkyView systems. Its functionality is encompassed instead in SkyView's enhanced interface, providing two value control knobs and additional menu buttons to provide direct access to all Autopilot modes.

## Mounting Kits

Mounting kits for common aircraft configurations will be developed for popular aircraft types on an ongoing basis and will be added to price list below as they become available. These will typically include any brackets/trays, rod ends, and connection hardware required to install each servo into a specific location on a specific aircraft.

Note that there is a mounting kit that is available for the **RV-4 pitch** axis, since it is the same as the RV-8's. However, there is no roll mounting kit available for the RV-4 and no current plans to produce one.

For aircraft that do not have specific Dynon-provided mounting kits, a generic servo mounting kit is available with rod ends and other servo connection hardware. This generic kit does not include any brackets or trays, however. For full kit contents, see its documentation at <http://www.dynonavionics.com/docs>. Servo mounting locations, bracket/tray fabrication, and servo selections are left to the builder to ultimately determine, though Dynon maintains an informational database and guidelines for choosing servos at [http://wiki.dynonavionics.com/Servo\\_Application\\_Guide](http://wiki.dynonavionics.com/Servo_Application_Guide).

## Price List & Order Form

Order Date: \_\_\_\_\_  
 Anticipated Install Date: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Email: \_\_\_\_\_

PO # \_\_\_\_\_  
 Dealer #: \_\_\_\_\_

Billing Address (must match CC):

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Phone \_\_\_\_\_

Shipping Address

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Phone \_\_\_\_\_

### Shipping Options

Pricing for US (lower 48 states) orders only:

For orders under \$400:

<b>UPS Ground</b>	<input type="checkbox"/>	\$10
<b>UPS 3 day</b>	<input type="checkbox"/>	\$20
<b>UPS 2 day</b>	<input type="checkbox"/>	\$30
<b>UPS Overnight</b>	<input type="checkbox"/>	\$45

For all other orders that typically include instruments, autopilot servos, or engine kits:

<b>UPS Ground</b>	<input type="checkbox"/>	max \$25 each large item
<b>UPS 3 day</b>	<input type="checkbox"/>	max \$30 each large item
<b>UPS 2 day</b>	<input type="checkbox"/>	max \$40 each large item
<b>UPS Overnight</b>	<input type="checkbox"/>	max \$60 each large item

All other orders quoted at actual rates:

- UPS International (billed at time of ship)
- UPS 3<sup>rd</sup> Party: Acct No. \_\_\_\_\_
- FedEx 3<sup>rd</sup> Party: Acct No. \_\_\_\_\_
- Personal Pick-up:

Comments or Special Requests

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Submit completed orders to:

Fax: 425-984-1751

Mail: Dynon Avionics 19825 141<sup>st</sup> PI NE, Woodinville, WA 98072

Order submissions only: [orders@dynonavionics.com](mailto:orders@dynonavionics.com) (do not include credit card details over email)

Other sales questions: [sales@dynonavionics.com](mailto:sales@dynonavionics.com)

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### Payment method \*

Visa    MC # \_\_\_\_\_  
 Name on Card: \_\_\_\_\_  
 Expiration: \_\_\_\_\_ CVV: \_\_\_\_\_

Check (US Bank accounts only)

Wire Transfer (required for international orders)

- For most international orders, we are unable to accept credit cards and require payment by wire transfer. A copy of your sales order with instructions for arranging the wire transfer will be sent to you upon receipt of this order form.

## SkyView Products and Prices

### SkyView Displays

<b>10" SkyView Display, bundle</b> (Includes SV-D1000/A 10" Display, SV-HARNESS-D37, and SV-SYNVIS-280 Synthetic Vision)	\$3600	SV-D1000/B
<b>7" SkyView Display, bundle</b> (Includes SV-D700/A 7" Display, SV-HARNESS-D37, and SV-SYNVIS-280 Synthetic Vision)	\$2700	SV-D700/B
10" SkyView Display only (no harness) (Includes SV-SYNVIS-280 Synthetic Vision)	\$3510	SV-D1000/A
7" SkyView Display only (no harness) (Includes SV-SYNVIS-280 Synthetic Vision)	\$2610	SV-D700/A
10" SkyView Display only (no harness or Synthetic Vision)	\$3410	SV-D1000/NSV
7" SkyView Display only (no harness or Synthetic Vision)	\$2510	SV-D700/NSV

### SkyView System Components

First Air Data, Attitude, Heading Reference ADAHRS Module (Includes SV-ADAHRS-200 and SV-OAT-340)	\$1200	SV-ADAHRS-200/A
Additional ADAHRS Module (Includes SV-ADAHRS-201 and SV-OAT-340)	\$800	SV-ADAHRS-201/A
Engine Monitoring Module <b>Note: For engine probe kits and individual engine probes, refer to the EMS section on Page 16</b>	\$600	SV-EMS-220/A
GPS Antenna/Receiver Module	\$200	SV-GPS-250/A
ARINC-429 Interface Module	\$475	SV-ARINC-429
Mode-S Class 1 Transponder (for high performance aircraft) <b>Note: Recommended for all US aircraft</b>	\$2,200	SV-XPNDR-261
Mode-S Class 2 Transponder (for <15,000 feet, <175 Knots)	\$1,800	SV-XPNDR-262
System Backup Battery	\$180	SV-BAT-320
Display Harness with Aircraft Grade Tefzel® Wiring <b>Note: Included with Display Bundles, but available for order separately for pre-build installation.</b>	\$90	SV-HARNESS-D37
Navigation Mapping Software Certificate ( <i>Free trial included with displays</i> )	\$500	SV-MAP-270
Synthetic Vision Software Certificate ( <i>Included with displays unless specified</i> )	\$100	SV-SYNVIS-280
Vertical Power VP-X Software Certificate (Requires a VP-X box available from Vertical Power.)	\$275	SV-VPX-290

### SkyView System Cables and Connectors

Network Hub - SkyView Network Hub with 5 Ports	\$50	SV-NET-HUB
Network Cable – Both ends with connectors, 3' long Aircraft Grade Tefzel® Wiring	\$40	SV-NET-3CC
Network Cable – Both ends with connectors, 6' long Aircraft Grade Tefzel® Wiring,	\$45	SV-NET-6CC
Network Cable – 1end with connector, 1 end with pins only, 10' long Aircraft Grade Tefzel® Wiring	\$50	SV-NET-10CP
Network Cable – 1end with connector, 1 end with pins only, 15' long Aircraft Grade Tefzel® Wiring	\$55	SV-NET-15CP
Network Cable – 1end with connector, 1 end with pins only, 20' long Aircraft Grade Tefzel® Wiring	\$60	SV-NET-20CP
Network Cable – 1end with connector, 1 end with pins only, 25' long Aircraft Grade Tefzel® Wiring	\$65	SV-NET-25CP
Network Cable – 1end with connector, 1 end with pins only, 30' long Aircraft Grade Tefzel® Wiring	\$70	SV-NET-30CP

	Network Splitter Aircraft Grade Tefzel® Wiring, 1' long	\$65	SV-NET-SPL
	Network Autopilot Servo Cable Kit– Includes 20' of Aircraft Grade Tefzel® Wiring for networks, quick disconnect, power, and ground.	\$55	SV-NET-SERVO
	Ethernet Cable - Low Smoke Zero Halogen, Aircraft Grade, 3' long	\$25	SV-ETHERNET-3CC

**For SkyView pitot and autopilot components (servos, mounting kits and trays)** refer to the Pitot and Autopilot Components sections on Page 17. Note that the AP74 optional autopilot control panel is not required and is not compatible with the SkyView system.

### EFIS-D6, EFIS-D10A, EFIS-D100, and FlightDEK-D180 Products and Prices

Note: EFIS-D100 “Systems” include all of the items listed under the System Components heading below

	<b>EFIS-D6 System, Retail</b> (Includes EFIS-D6, 101222-000; EDC-D10A, 100323-000)	\$1600	101223-000
	<b>EFIS-D10A System, Retail</b> (Includes EFIS-D10A, 100321-000; Mounting Accessories, 100351-000; 7/64 Hex Wrench, 100556-000)	\$2200	100538-000
	<b>EFIS-D60 System with Super-Bright, Retail</b> (Includes EFIS-D60, 101224-000; EDC-D10A, 100323-000; Mounting Tray, 100422-000)	\$1900	101225-000
	<b>EFIS-D100 System with Super-Bright Screen, Retail</b> (Includes EFIS-D100 w/ Super-Bright Screen, 100534-001; EDC-D10A, 100323-000; Mounting Tray, 100422-000; USB-Serial converter, 100512-000)	\$2600	100533-001

#### EFIS System Components

(If you want parts early in your build, the following individual components are available. All items listed below are included in system pricing above, and all are required for proper operation)

	EFIS-D100 with Super-Bright Screen, <b>Instrument only</b> , Retail (Includes Instrument, 100488-001; 7/64 Hex Wrench, 100556-000)	\$2450	100534-001
	D100 Series Mounting Tray (included with all D100 series systems)	\$30	100422-000
	EDC-D10A Remote Compass (included with EFIS-D6, EFIS-D60, EFIS-D100 and FlightDEK-D180 systems)	\$100	100323-000
	USB to Serial Converter (included with EFIS-D100 and FlightDEK-D180 systems)	\$20	100512-000
	<b>For Pitot Probes, see the Pitot Probe section on Page 17.</b>		

#### Upgrades (please call 425-402-0433 for return authorization from Dynon Avionics)

	EFIS-D6 to EFIS-D10A Upgrade	\$800	100322-003
	EFIS-D60 to EFIS-D100 Upgrade	\$800	100322-004
	D100/D120/D180 Super-Bright Screen Upgrade	\$200	100322-002

## FlightDEK-D180 Products and Prices

Note: FlightDEK-D180 “Systems” include all of the items listed under the System Components heading below

<b>FlightDEK-D180 System w/ Super-Bright Screen, Retail</b> (Includes FlightDEK-D180 w/ Super-Bright Screen, 100567-001; EDC-D10A, 100323-000; Mounting Tray, 100422-000; USB-Serial converter, 100512-000)	\$3400	100565-001
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### FlightDEK-D180 System Components

(for builder head start customers; all components below are included in system pricing above; all system components are required for proper operation)

FlightDEK-D180 with Super-Bright Screen, <b>Instrument only</b> , Retail (Includes Instrument, 100564-001; 7/64 Hex Wrench, 100556-000; Accessories Pack, 100446-000)	\$3250	100567-001
D100 Series Mounting Tray (included with all D100 series systems)	\$30	100422-000
EDC-D10A Remote Compass (included with EFIS-D100/FlightDEK-D180 systems)	\$100	100323-000
USB to Serial Converter (included with EFIS-D100 and FlightDEK-D180 systems)	\$20	100512-000
<b>For Pitot Probes, see the Pitot Probe section on Page 17.</b>		

## EFIS-D6, EFIS-D60, EFIS-100, FlightDEK-D180 Options/Accessories

Primary Wiring Harness for EFIS/FlightDEK	\$90	100425-000
Internal Li-Ion Backup Battery	\$130	100096-000
EDC-D10A Remote Compass (included with EFIS-D6, EFIS-D60, EFIS-D100, and FlightDEK-D180 systems)	\$100	100323-000
OAT Probe, connects only directly to EMS/FlightDEK, 10' wire	\$37	100433-000
OAT Probe, connects through EDC-D10A or directly to EMS/FlightDEK, 10' wire	\$65	100433-001
Encoder Converter Module, Serial-to-Gray Code	\$80	100362-000
USB to Serial Converter (included with EFIS-D100 and FlightDEK-D180 systems)	\$20	100512-000
HS34 HSI Expansion Module – Vertical, Retail (Includes HS34 Vertical, 100755-000; HS34 Mounting Bracket, 00758-000; HS34 Connector Kits, 100830-002,100831-000,100831-002; 7/64 Hex Wrench: 100556-000)	\$650	100790-000
HS34 HSI Expansion Module – Horizontal, Retail (Includes HS34 Horizontal, 100755-001; HS34 Mounting Bracket, 00758-000; HS34 Connector Kits, 100830-002,100831-000,100831-002, 7/64 Hex Wrench: 100556-000)	\$650	100790-001
D10 Series Flush Mount Bracket – for EFIS-D10A and EMS-D10	\$20	100024-000
<b>For Pitot Probes, see the Pitot Probe section on Page 17.</b>		
<b>For Engine Sensors, Sensor Kits, and other engine accessories see the Engine Sensor section on Page 15.</b>		

## EMS-D10, EMS-D120 Engine Monitors

Note: EMS-D120 "Systems" include all of the items listed under the System Components heading below

	<b>EMS-D10, Retail</b> (Includes EMS-D10, 100417-000; Accessories Pack, 100446-000; Mounting Accessories, 100351-000)	\$1700	100537-000
	<b>EMS-D120 System with Super-Bright Screen, Retail</b> (Includes EMS-D120 w/Super-Bright Screen, 100584-001; Mounting Tray, 100422-000)	\$2200	100566-001

### EMS-D120 System Components

(If you want parts early in your build, the following individual components are available. All items listed below are included in system pricing above, and all are required for proper operation)

	EMS-D120 with Super-Bright Screen, Instrument only, Retail (Includes Instrument, 100563-001; 7/64 Hex Wrench, 100556-000; Accessories Pack, 100446-000)	\$2170	100584-001
	D100 Series Mounting Tray <i>(included with all D100 series systems)</i>	\$30	100422-000

## Engine Probe Packages, Sensors and Accessories

Note: all of the following EMS options, engine packages and individual sensors are compatible with both the SkyView and the D10/D120/D180 Series systems.

### EMS Options

	Fuel Flow Transducer, 1/4" Female NPT, EI FT-60, .6-70+ GPH	\$200	100403-003
	USB to Serial Converter <i>(included with EFIS-D100 and FlightDEK-D180 systems)</i>	\$20	100512-000
	Capacitance to Voltage Converter for Vans Capacitive Plates	\$50	100654-000
	OAT Probe, connects only directly to EMS/FlightDEK, 10' wire	\$37	100433-000
	D10 Series Flush Mount Bracket – for EFIS-D10A and EMS-D10	\$20	100024-000

### EMS Engine Packages - for use with SkyView, EMS-D10, EMS-D100 and FlightDEK-D180

(includes sensors & harnesses as described in Table 1.)

	EMSKIT-L4C (Kavlico) Lycoming/Continental/Superior, 4 Cylinder, Carbureted	\$700	101711-000
	EMSKIT-L4F (Kavlico) Lycoming/Continental/Superior, 4 Cylinder, Fuel Injected	\$680	101711-003
	EMSKIT-L6C (Kavlico) Lycoming/Continental/Superior, 6 Cylinder, Carbureted	\$850	101711-001
	EMSKIT-L6F (Kavlico) Lycoming/Continental/Superior, 6 Cylinder, Fuel Injected	\$830	101711-004
	EMSKIT-RTX (Kavlico) Rotax 912	\$345	101711-002
	EMSKIT-J22 (Kavlico) Jabiru 2200	\$480	101711-005
	EMSKIT-J33 (Kavlico) Jabiru 3300	\$600	101711-006

### Individual EMS Sensors

EGT, Hose Clamp, 0.75-1.25", Rotax	\$36	100405-001
EGT, Hose Clamp, 1.00-1.75", Jabiru	\$36	100405-002
EGT, Hose Clamp, 1.00-2.25", Lycoming/Continental/Superior	\$36	100405-000
CHT, Bayonet 3/8-24 UNF, Lycoming/Continental/Superior	\$38	100404-000
CHT, Ring Terminal, 12mm, Jabiru	\$25	100578-000
MAP, 1/8" hose, 0-60 In Hg	\$65	100434-000
Oil/Coolant Temp, 5/8-18 UNF, Lycoming/Continental/Superior	\$20	100409-001
Oil/Coolant Temp, 1/8-27 NPT, Continental 0-200	\$20	100409-000
Gravity Feed Fuel/Fluid Pressure Sender-Kavlico, 1/8-27 NPT, 5 PSI	\$85	101715-000
Carbureted Fuel/Fluid Pressure Sender-Kavlico, 1/8-27 NPT, 15 PSI	\$85	101690-000
Fuel Injected Fuel/Coolant/Fluid Pressure Sender-Kavlico, 1/8-27 NPT, 50 PSI	\$85	101716-000
Oil/Fluid Pressure Sender-Kavlico, 1/8-27 NPT, 150 PSI	\$85	101693-000
Fuel Flow Transducer, 1/4" Female NPT, EI FT-60, .6-70+ GPH	\$200	100403-003
OAT Probe, connects only directly to EMS/FlightDEK, 10' wire	\$37	100433-000
Carburetor Air Temperature, 1/4-28 UNF, -50° to 150°F	\$37	100468-000
Amps Shunt, 0 – 60 Amps	\$15	100412-000

### Individual EMS Harnesses/Wiring

EGT Wire Harness, Rotax, 2 Cylinder, 6' long, for EMS/FlightDEK	\$50	100399-004
EGT/CHT Wire Harness, 4 Cylinder, 6' long, for EMS/FlightDEK	\$75	100399-001
EGT/CHT Wire Harness, 6 Cylinder, 6' long, for EMS/FlightDEK	\$90	100399-002
Engine Sensor Main Wire Harness, 6' long, for EMS/FlightDEK	\$90	100399-000
EGT Extension Wire, Type K Thermocouple	\$1/Ft	100436-001
CHT Extension Wire, Type J Thermocouple	\$1/Ft	100436-000

Engine Sensors, Harnesses & Packages Table 1		Unit Price \$	EMSKIT-L4C	EMSKIT-L4F	EMSKIT-L6C	EMSKIT-L6F	EMSKIT-RTX	EMSKIT-J22	EMSKIT-J33
<b>Engine Sensors</b>									
100405-001	EGT, 0.75-1.25" Hose Clamp	36					2		
100405-002	EGT, 1.00-1.75" Hose Clamp	36						4	6
100405-000	EGT, 1.00-2.25" Hose Clamp	36	4	4	6	6			
100404-000	CHT, Adjustable Bayonet, 3/8-24 UNF	38	4	4	6	6			
100578-000	CHT, Ring Terminal, 12 mm	25						4	6
100434-000	Manifold Pressure, 0 – 60" Hg, 1/8" hose	65	1	1	1	1	1		
101693-000	Oil Pressure Kavlico, 1/8-27 NPT, 150 PSI	85	1	1	1	1			
100409-001	Oil Temperature, 5/8-18 UNF, 100-240°F	20	1	1	1	1			
101690-000	Carbureted Fuel Pressure-Kavlico, 1/8-27 NPT, 15 PSI	85	1		1		1	1	1
101716-000	Injected Fuel Pressure-Kavlico, 1/8-27 NPT, 50 PSI	85		1		1			
100468-000	Carburetor Air Temperature, 1/4-28 UNF, -50° to 150°F	37	1		1				
100412-000	Amps Shunt, 0-60 Amps	15	1	1	1	1	1	1	1
100403-003	Fuel Flow Transducer, 1/4" Female NPT, EI FT-60, .6-70+ GPH	200							

<b>TABLE 1, continued</b>									
<b>Engine Wiring Harnesses &amp; Extension Wiring</b>									
100399-004	EGT, 2 cylinder, 6' long	50						1	
100399-001	EGT/CHT, 4 cylinder, 6' long harness	75	1	1					1
100399-002	EGT/CHT, 6 cylinder, 6' long harness	90			1	1			1
100399-000	Engine Sensor Main Wire Harness, 6' long	90	1	1	1	1	1	1	1
100436-001	EGT Extension Wire, Type K Thermocouple	\$1/Ft							
100436-000	CHT Extension Wire, Type J Thermocouple	\$1/Ft							
	<b>See Notes:</b>		D	C,D			A	B	B

**Notes:**

- A. Uses CHTs, Oil Temperature, Oil Pressure, and RPM sensors supplied with engine
- B. Uses Oil Pressure and Oil Temperature sensors supplied with engine
- C. UL Power engines are compatible with the EMSKIT-L4F package
- D. Some Continental O-200 engines are not ported for the bayonet CHT probes sold by Dynon. Spark plug ring terminal CHTs probes can be used alternatively. Note that Dynon does not carry a ring terminal CHT probe sized for the O-200.

### Pitot Probes

**Note:** all of the following Pitot Probes are compatible with both the SkyView and the D10/D100 Series systems.

Mounting brackets for the standard L-shaped Pitot Probe can be obtained through most aviation parts suppliers.

	AOA/Pitot Probe, unheated	\$200	100141-000
	AOA/Pitot Probe, heated, 12V only, with controller	\$450	100667-000
	AOA/Pitot Boom Probe, unheated	\$200	100532-000

### Autopilot Components

The Dynon Avionics Autopilot requires one of the following EFIS display devices:

- EFIS-D10A
- EFIS-D100
- FlightDEK-D180
- SkyView SV-D700 with SV-ADAHRS-200
- SlyView SV-D1000 with SV-ADAHRS-200

**Note:** all of the following autopilot components except the AP74 Dedicated Autopilot Interface Module are compatible with both the SkyView and the D10/D100 Series systems.

To aid in determining proper servo configurations, please review [http://wiki.dynonavionics.com/Servo\\_Application\\_Guide](http://wiki.dynonavionics.com/Servo_Application_Guide) BEFORE ordering.

Airplane Type (REQUIRED): \_\_\_\_\_

#### Servo + Mounting Kit Packages

	RV-6 Roll Servo + Mounting Kit Package (Includes Servo Mounting Kit - RV-6 Roll (fuselage): 101020-001, SV32L (long output arm), Retail: 100854-001)	\$825	101098-001
	RV-7/8 Roll Servo + Mounting Kit Package (Includes Servo Mounting Kit - RV-7/8/10 Roll (right wing): 101020-003, SV32 (standard output arm), Retail: 100854-000)	\$825	101098-002
	RV-9 Roll Servo + Mounting Kit Package (Includes Servo Mounting Kit - RV-9 Roll (right wing): 101020-004, SV32 (standard output arm), Retail: 100854-000)	\$825	101098-003

	RV-6/7/9 Pitch Servo + Mounting Kit Package (Includes Servo Mounting Kit - RV-6/7/9 Pitch: 101020-005, SV32 (standard output arm), Retail: 100854-000)	\$825	101098-004
	RV-4/8 Pitch Servo + Mounting Kit Package <sup>†</sup> (Includes Servo Mounting Kit - RV-4/8 Pitch: 101020-002, SV32 (standard output arm), Retail: 100854-000)	\$825	101098-005
	RV-10 Roll Servo + Mounting Kit Package (Includes Servo Mounting Kit - RV-7/8/10 Roll (right wing): 101020-003, SV42 (standard output arm), Retail: 101058-000)	\$825	101098-006
	RV-10 Pitch Servo (torque-enhancing linear actuator) + Mounting Kit Package (Includes Servo Mounting Kit - RV-10 Pitch: 101020-007, SV42T (linear actuator), Retail: 101058-003)	\$825	101098-008

<sup>†</sup> This kit fits both the newer and older RV-8 Fuselage Kits.

### Servos

	SV32 (standard output arm), Retail (Includes SV32: 100754-000, Limiting Bracket Kit: 101025-000)	\$750	100854-000
	SV32L (long output arm), Retail (Includes SV32L, 100754-001; Limiting Bracket Kit: 101025-000)	\$750	100854-001
	SV32C (capstan), Retail (Incl. SV32C, 100754-002; Capstan Accessory Kit, 101116-000)	\$750	100854-002
	SV42 (standard output arm), Retail (Includes SV42, 101008-000; Limiting Bracket Kit, 101025-000)	\$750	101058-000
	SV42C (capstan), Retail (Incl. SV42C, 101008-002; Capstan Accessory Kit, 101116-000)	\$750	101058-002
	SV52 (standard output arm), Retail (Includes SV52, 101021-000; Limiting Bracket Kit, 101025-000)	\$750	101059-000
	SV52C (capstan), Retail (Incl. SV52C, 101021-002; Capstan Accessory Kit, 101116-000)	\$750	101059-002

### AP74 Dedicated Autopilot Interface Module

Note: for use only with D10/D100 Series EFIS systems

	AP74 Dedicated Autopilot Interface Module – Vertical, Retail (Includes AP74 Vertical, 100756-000; AP74 Mounting Tray, 101049-000; AP74 Connector Kit, 100831-004; 7/64 Hex Wrench, 100556-000)	\$450	100852-000
	AP74 Dedicated Autopilot Interface Module – Horizontal, Retail (Includes AP74 Horizontal, 100756-001; AP74 Mounting Tray, 101049-000; AP74 Connector Kit, 100831-004; 7/64 Hex Wrench, 100556-000)	\$450	100852-001

### Servo Mounting Kits

	Servo Mounting Kit - Generic (push-pull)	\$25	101020-000
	Servo Mounting Kit - RV-6 Roll (fuselage)	\$75	101020-001
	Servo Mounting Kit - RV-7/8/10 Roll (right wing)	\$75	101020-003
	Servo Mounting Kit - RV-9 Roll (right wing)	\$75	101020-004
	Servo Mounting Kit - RV-4/8 Pitch <sup>†</sup>	\$75	101020-002
	Servo Mounting Kit - RV-6/7/9 Pitch	\$75	101020-005
	Servo Mounting Kit - RV-10 Pitch (for use w/SV42T)	\$75	101020-007

<sup>†</sup> This kit fits both the newer and older RV-8 Fuselage Kits.