SMARTSTART MODULE

An electronic control module that controls the operation of the engine starter system. Improves the safety and security of push-button or key-switch starting systems by providing an interlocked and time limited operation of the engine starter. SmartStart controls standard aviation starter contactors and provides simple integration of control stick switch or panel mounted start switches. SmartStart includes inputs for interlock and arming switches and provides a 1 minute timer for activating the starter contactor and includes an armed LED that indicates when the engine may be started. Helps avoid unintentional activation of the engine starting system.

Description	Part No.	Price
Smartstart Module	11-08499	.
SmartStart Module Kit - Includes: module, wiring harness, and airspeed switch	11-08502	.
Accessories		
Description	**Part No.**	**Price**
Smartstart Wiring Harness	11-08501	.
Airspeed Switch 40 Knot for 2 speed function	11-08665	.

INTELLIGENT POWER STABILIZER

Provides aircraft bus voltage surge and sag protection for the connected electrical equipment. The IPS system allows electronic equipment such as engine monitors, EFIS and GPS's to be operational before and during engine starting. Used with aircraft engine monitors it ensures the pilot can monitor critical engine operating parameters such as oil pressure during the engine starting process. Ensures the connected electronic equipment is provided with a stabilized source of power even when the aircraft battery voltage drops significantly. Features a panel mounted low voltage warning light which may be used to provide a pilot warning when the aircraft bus voltage falls below 12 volts.

4 amp.....P/N 11-08495 .....
8 amp.....P/N 11-08496 .....

INTELLIGENT POWER STABILIZER 24 VOLTS, 5 AMP

The Intelligent Power Stabilizer, IPS, is an electronic power converter for critical electrical equipment found in general aviation aircraft. The IPS system provides aircraft bus voltage surge and sag protection for the connected electrical equipment. The IPS system will operate over an input voltage range from 10 volts to 30 volts and provides a regulated output voltage of 24 volts. The IPS system allows electronic equipment such as engine monitors, EFIS and GPS's and radios to be operational before and during engine starting.....P/N 11-09712 .....

INTELLIGENT LIGHTING CONTROLLER

Designed specifically to operate the lighting circuits used in homebuilt aircraft. Provides control of up to 4 lighting circuits plus dimmable control of up to 3 channels of instrument and cabin lights. The 4 lighting circuits may be used to control landing lights, taxi lights, strobe lights and navigation lights. Each channel is independently powered and controlled. Provides a wig-wag function between two of the lighting circuits. Each dimmable channel may include incandescent or LED lighting up to 1 amp.

Specifications: • Input Voltage: 10-30 volts DC • Output Voltage: 4-Switched circuit rated at 10 amps each, 3 - Dimmed circuits rated 1 amp each • Dimmers: True DC:DC converter with full power filtering and regulated 2-12 volt outputs • Inputs: All switch inputs are low current closures to +voltage • Wig-Wag: 150 cycles/minute between channel 1&2; 1 minute warm-up time • Wiring: Standard 15-pin D-sub connector (male on controller) for connection to switching panel. • Enclosure: Overall dimensions 4.7" x 3.7" x 1.2"; Cast aluminum • Weight: 1.0 lb ..... P/N 11-08497 .....

UNIVERSAL SWITCH-SPDT AIRSPEED KIT

Universal switch airspeed kit (USW-1) includes an ASW-1 airspeed switch and a Universal Switch-SPDT controller. This combination of components allows for the switching of electrical loads up to 10 amps and up to 30 volts based on aircraft speed. The airspeed set point is factory calibrated to 100 knots, however, it may be field adjusted to switch at any speed between 55 and140 knots. Provides both a normally open and a normally closed contact for controlling any electrical load up to 10 amps. The system works with aircraft power systems from 10-30 volts.....P/N 11-08498 .....

TCW SAFETY-TRIM AUTOPILOT SERVO BOOSTER

Designed for standard electric trim servos, the Safety-Trim Intelligent Servo Controller (Safety-Trim) is an electronic speed control system for experimental aircraft. Safety Trim Servo Booster is designed specifically to receive input commands from compatible autopilot systems, such as the Garmin G3X GSA 28 or a traditional DPDT type rocker switch. Safety Trim Servo Booster operates DC electric servo motors up to 10 amps of rate current.

12V .....P/N 11-19271 .....
24V .....P/N 11-19272 .....

TCW SAFETY-TRIM SERVO CONTROLLER

An electronic speed control system for standard electric trim servos found on many homebuilt aircraft. It replaces other speed controllers and relay modules with an electronic solution that resolves issues such as run-away trim and failure to operate conditions.

Features: Very simple wiring, no extra parts needed for pilot and co-pilot trim switches • Designed for standard electric trim servos, such as the Ray Allen T2 & T3 series • Short circuit proof, reverse polarity protected • 1 axis, 2 axis models available • For Experimental aircraft only NOT TSO'd • Made in USA -- patented.

Specifications: • Input voltage: 10-30 volts DC • Output voltage: User adjustable 6-12 volts DC 1 amp maximum • Enclosure: Overall dimensions 5.7" x 2.5" x 1.5" • Weight: 6oz.

Description	Part No.	Price
Safety-Trim Single Axis Servo Controller	11-08506	.
Safety-Trim Single Axis, 2 Speed Servo Controller	11-08529	.
Safety-Trim Dual Axis Servo Controller	11-08530	.
Safety-Trim Dual Axis, 2 Speed Servo Controller	11-08531	.
Accessories		
Description	**Part No.**	**Price**
Safety-trim 8 ft wiring harness for single axis controller	11-08532	.
Safety-trim 8 ft wiring harness for dual axis controller	11-08533	.
Airspeed Switch 100 Knot for triggering 2 speed function	11-08534	.

TCW CONTROL VALVE SERVO KIT

Fully proportional linear actuator servo for valves and dampers: Ideal for: Heater flapper doors, Oil cooler control, Alternate air door, Ventilation dampers.

P/N 11-11298 .....

TCW CONTROL VALVE SERVO BUTTERFLY VALVE

Butterfly Valve for oil coolers works with the TCW Control Valve Servo Kit....P/N 11-11299 .....

TCW INTEGRATED BACK UP BATTERY SYSTEM

The Integrated Back-up Battery System provides back-up power to critical electronics such as EFIS, GPS, Navigators, Radios, Autopilots and Engine monitors. The IBBS is an fully automatic system that combines a Li-FE-PO4 battery pack, a smart charger and switching logic in one convenient package. The IBBS provides an engineered solution to enable an endurance bus for critical electrical loads found in today's aircraft. It simplifies wiring and installation of a source of back-up power by integrating all the key elements into a single enclosure. The IBBS system is an FAA approved article produced exclusively by TCW Technologies, LLC under TSO-C179(a). Compliant with DO-311 & DO-160.

3AH.....P/N 11-15479 .....
6AH.....P/N 11-15480 .....

TCW INTEGRATED BATTERY BACKUP SYSTEM FAA CERTIFIED INSTALLATION KITS

The Integrated Battery Back-up System (IBBS) provides an engineered solution to enable an endurance bus for critical loads found in aircraft. The IBBS system provides back-up power to critical electronic loads such as EFIS, GPS, Autopilots and engine monitoring systems.

FAA Certified Installation Kit - 12V .....P/N 11-19274 .....
FAA Certified Installation Kit - 24V .....P/N 11-19275 .....
FAA Certified STC Data Package
With Permission Letter .....P/N 11-19276 .....

TCW INTELLIGENT FLAP CONTROL

Intelligent Flap Controller (IFC) is an electronic controller designed specifically to operate DC motor actuators, particularly the Van's Aircraft series of Flap Actuators used in RV type homebuilt aircraft. IFC connects to the standard up-off-(down) switches commonly used to control flap operation and directly drives a Van's flap actuator. IFC provides Vfe protection by sensing airspeed and preventing flap deployment above a set airspeed. IFC allows for Pilot and Co-pilot flap switches and resolves the possible conflicts if the switches are operated in opposite directions. IFC requires NO flap position sensor and is fully compatible with Safety-Trim servo controllers.....P/N 11-13462 .....

TCW IBBS CHARGER CABLE

This plug-in AC powered charger specifically designed for the IBBS system. This new charger lets you easily recharge and IBBS battery back, keep it topped of over the winter and fast charge it after yearly condition inspections.

12V.....P/N 11-09444 .....
24V.....P/N 11-19273 .....

SEE WWW.AIRCRAFTSPRUCE.COM FOR SPECIFICATIONS ON TCW PRODUCTS.