ASCO 300 Group 1 New Features

Wide-Range Universal Power Supply *(New feature vs. old version replacement)*
This aftermarket replacement for the ASCO Group 1 controller eliminates the need for pre-programmed voltage configurations. This new controller is field programmable for almost every voltage configuration found on the original (120, 208, 220, 240, 380, 480, 600). Field programming is accomplished with a four position DIP switch on the controller to configure voltage selection (Position 4 is currently reserved for future use). The internal power supply can operate from a range of 90-700VAC without the need for hardware reconfiguration. The on-board 9V backup battery has also been removed and replaced with a capacitor backup supply capable of keeping the main board and any accessory boards energized for up to 3 minutes.

Voltage Programming Chart

SW4 VOLTAGE PROGRAMMING			
1	**2**	**3**	**SYSTEM VOLTAGE (PART #)**
OFF	OFF	OFF	120VAC (001)
ON	OFF	OFF	208VAC (002)
OFF	ON	OFF	220VAC (008)
ON	ON	OFF	240VAC (003)
OFF	OFF	ON	380VAC (004)
ON	OFF	ON	480VAC (006)
OFF	ON	ON	600VAC (007)

Communications
The standard DB9 connector has been replaced with terminals Y, Z, B, A, 24, and GND. This is a direct connection for full duplex RS485 communications. The 72A communications module is not required for use with ASCOBUSII.

In addition to eliminating the need for the 72A communications module, the option for half duplex RS485 communication has been added by moving jumper J4 to the half position. This allows standard Modbus communications with the Flight Systems M327V2 modem. The M327V2 modem provides the connection necessary to access your new controller remotely via our online interface as well as send notifications via text and email.

Switch Protection
An optional pulsed / protection feature has been added by setting SW3 - 3 (COMM.) to closed. During transfer, K1 or K2 will activate for a period of 500ms while monitoring switch position and determining if a transfer was successful. To prevent damage to the ATS and controller in the event of switch failure, the controller will rest for a period of 1 second before retrying. The controller will retry three times before going into a fault condition.

Diagnostic Indicators

Diagnostic indicators have been added to aid in troubleshooting. Note that a fault condition will not lock out the controller from normal operation in any way. If a fault condition is recorded it will display the nature of the fault until the next successful transfer. For example, if the controller detects a failure to acquire emergency power, the fault will be displayed until the next time the generator produces a valid voltage and frequency. It is recommended that you run a transfer test to clear a fault condition. A fault condition will also display an additional indicator to indicate the cause. A reset button has been added to the board and can also be used to clear a fault condition.

|	
BACKUP PWR OK	**SOLID** - Backup power supply fully charged.
EMERG.>NORMAL	**SOLID** - Normal source available.
	FLASHING - Time delay before retransfer active.
NORMAL>EMERG.	**SOLID** - Emergency source available.
	FLASHING - Time delay before transfer active.
COOL DOWN	**SOLID** - Cool down cycle is active.
FAULT	**SOLID** - A fault condition was detected.
	FLASHING (1s) EMERG.>NORMAL - Failure to transfer to normal.
	FLASHING (1s) NORMAL>EMERG. - Failure to transfer to emergency.
	FLASHING (.5s) NORMAL>EMERG. - Failure to acquire emergency.
24VDC	**SOLID** - Internal 24VDC supply operational
	OFF - Indicates short circuit condition on keypad ribbon or supply failure
5VDC	**SOLID** - Internal 5VDC supply operational
	OFF - Indicates short circuit condition on keypad ribbon or supply failure

Firmware Updates

Updates can be done in the field by downloading the most recent firmware for your controller. To update the firmware, go to www.flightsystems.com and download the update utility. Instructions as well as release notes are included. You will need a USB to RS485 converter to load the firmware update.

Factory Dip Switch Settings (Settings must be copied from original to act as drop-in replacement)
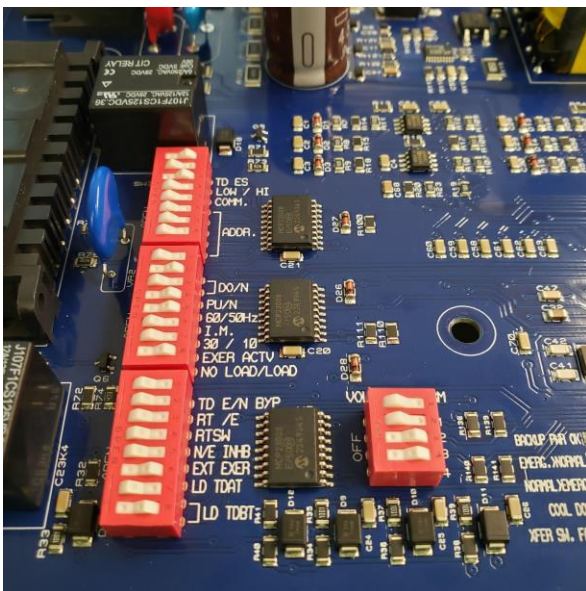
SW3 (Top)	SW1 (Middle)	SW2 (Bottom)
1 = OPEN	1 = CLOSED	1 = CLOSED
2 = CLOSED	2 = OPEN	2 = CLOSED
3 = OPEN	3 = CLOSED	3 = CLOSED
4 = CLOSED	4 = OPEN	4 = CLOSED
5 = CLOSED	5 = OPEN	5 = CLOSED
6 = CLOSED	6 = CLOSED	6 = OPEN
7 = CLOSED	7 = CLOSED	7 = CLOSED
8 = CLOSED	8 = OPEN	8 = OPEN

SW4 (240V Configuration)

1 = ON	2 = ON	3 = OFF	4 = OFF