

56-5965-00

Flight Systems

Replacement for Onan 300-5965

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Description

The 56-5965-00 is an aftermarket ATS controller that provides transfer between a Utility and Generator connection. Sold as two part numbers, 56-5965S-00 and 56-5965L-00, this replacement PCB can mount into all existing OEM cases.

56-5965S-00 for use with Newer Case Styles with **short** buttons (Embossed keys on front panel)

56-5965L-00 for use with Older Case Styles with **long** buttons (Flat keys on front panel)



Case Not Included

Specifications

- Added RS485 Communication for Remote Monitoring
- Added Programmable Engine Exercise Time Duration (1, 5, 10, 15, 20 minutes)
- Programming Mode Easily Accessed with Front Panel Buttons
- Improved protection for transfer relay circuits
- User Serviceable Backup Battery
- Pre/Post Transfer Load Control
- Built-in Programmable Engine Exerciser
- Loaded/Unloaded Test and Engine Exercise
- In-Phase Transfer
- Programmable Time Delays for Transfer and Retransfer
- Standard and Program Transition
- Wide-Input Power Supply (12/24V)



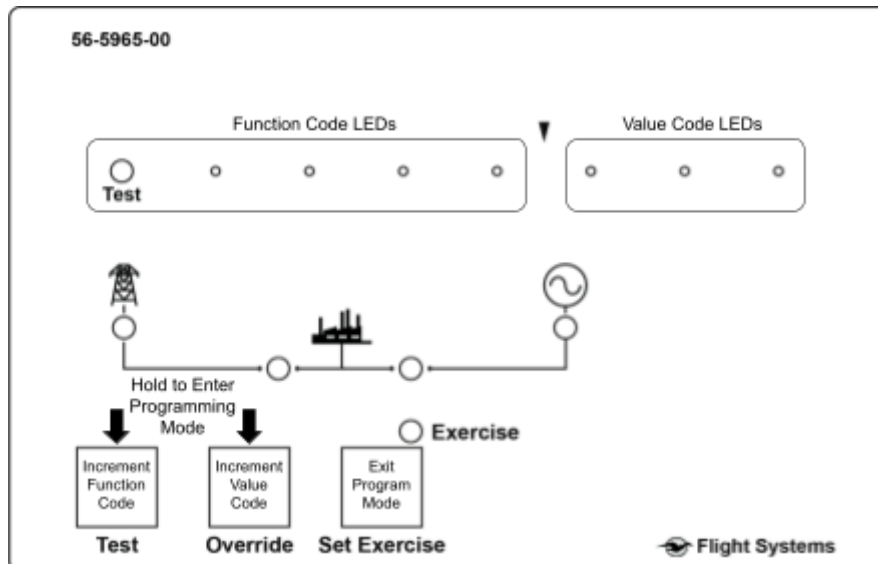
Installation

WARNING!

ATS controls can have dangerous, and possibly lethal voltages present. The controller should only be serviced by a qualified technician.

De-energize the transfer switch and remove the existing controller from the cabinet door. Carefully remove the old PCB from the original case. On older assemblies, take care not to break or shear the six retaining clips holding the back cover on. Verify that the replacement PCB and original PCB have the same style pushbuttons (Long vs. Short). Install the new replacement PCB into the existing case and reinstall the back cover. Reinstall the controller assembly into the cabinet door.

Before re-energizing the transfer switch, enter programming mode by holding the Test and Override buttons simultaneously for 5 seconds. Use the provided chart in this manual to configure the controller for the correct application. Failure to do so can result in damage or improper operation. The Test button increments the Function Code and the Override button increments the Value Code. Press the Set Exercise button to exit Programming Mode. Energize the transfer switch and perform a test transfer to verify proper operation.



Note: In Programming Mode, all transfer switch operations are disabled.



Status LEDs

Utility Power Available

Illuminated when the Utility power source is accepted

Generator Power Available

Illuminated when the Generator power source is accepted

Flashing when the controller fails to acquire Generator power after 2 minutes of being called to start.

Utility Power Connected

Illuminated when the Utility power source is supplying the load.

Flashing when the transfer switch fails to close the Utility power source.

While flashing and accompanied by a solid Generator Power Connected LED, the transfer switch has failed to open the Generator power source.

Generator Power Connected

Illuminated when the Generator power source is supplying the load.

Flashing when the transfer switch fails to close the Generator power source.

While flashing and accompanied by a solid Utility Power Connected LED, the transfer switch has failed to open the Utility power source.

Test

Flashing during an active test period.

Exercise

Illuminated when an active engine exercise cycle is set.

Flashes once per second during an engine exercise cycle.

Factory Defaults

Remove DC Power (P5). Press and hold Override and Set Exercise while applying power to the board. Continue to hold Override and Set Exercise until all indicators illuminate and turn off.



Membrane Pushbuttons

Test

Start or cancel a test period
Increments function value in programming mode

Override

Bypass transfer/retransfer inhibit
Bypass time delays
Clear transfer switch faults

Note: Engine cooldown time delay is bypassable using Override button or external override input on replacement controller.

Set Exercise

Enable or disable engine exerciser

Setting an Exercise Cycle

Hold the set exercise button for 5 seconds until the exercise LED begins flashing. The exercise cycle is set and will occur in 12 hours at the programmed repeat interval for the programmed duration time. For an immediate exercise cycle, press and hold the set exercise button until the exercise LED comes on solid.

Canceling an Exercise Cycle

Hold the set exercise button for 5 seconds. The exercise LED will turn off.

Programming Mode (NEW!)

Press and hold the Test and Override button simultaneously for 5 seconds. The first function code and value code entry should appear on the top eight LEDs. The Test button will increment the function code and the Override button will increment the corresponding value code. Press the Set Exercise button momentarily to exit programming mode.



Connection Description

Connector	Pin #	Function	Notes
P3	1	L3 Generator	75-600VAC
	3	L1 Generator	
	5	L3 Utility	
	7	L2 Utility	
	9	L1 Utility	
P4	1	Earth Ground	Common for Inputs
	2	Remote Override	Connect to P4-1 to Activate
	3	Remote Test	Connect to P4-1 to Activate
	4	External Exercise Clock	Connect to P4-1 to Activate
	5	Transfer Inhibit	Connect to P4-1 to Activate
	6	Retransfer Inhibit	Connect to P4-1 to Activate
	7	Connected to Utility	Connect to P4-1 to Activate
	8	Connected to Generator	Connect to P4-1 to Activate
P5	1	Open Utility	Grounded internally to energize open Utility relay
	2	Close Utility	Grounded internally to energize close Utility relay
	3	Open Generator	Grounded internally to energize open Generator relay
	4	Close Generator	Grounded internally to energize close Generator relay
	5	Elevator Pretransfer	Internally grounded to energize load control
	6	Genset Start Relay	Internal dry contact for engine start (Closed to start)
	7	Genset Start Relay	
	8	Ground Input	8-35VDC
	9	B+ Input	

WARNING!

When installing this aftermarket controller be sure to connect P3 and P5 in the correct positions. Reversing these connections will damage the controller and will not be covered under warranty!



Function	Function Code	Value Code	Value
TDES (Time Delay Engine Start)	○ ○ ○ ○ ●	○ ○ ○	0 Seconds (Disabled)
		○ ○ ●	0.5 Second
		○ ● ○	1 Second
		○ ● ●	2 Seconds
		● ○ ○	3 Seconds
		● ○ ●	4 Seconds
		● ● ○	6 Seconds
		● ● ●	10 Seconds
TDNE (Time Delay Normal to Emergency)	○ ○ ○ ● ○	○ ○ ○	0 Seconds (Disabled)
		○ ○ ●	1 Second
		○ ● ○	2 Seconds
		○ ● ●	3 Seconds
		● ○ ○	5 Seconds
		● ○ ●	30 Seconds
		● ● ○	120 Seconds
		● ● ●	300 Seconds
TDEN (Time Delay Emergency to Normal)	○ ○ ○ ● ●	○ ○ ○	0 Minutes (Disabled)
		○ ○ ●	0.1 Minutes (For Testing)
		○ ● ○	5 Minutes
		○ ● ●	10 Minutes
		● ○ ○	15 Minutes
		● ○ ●	20 Minutes
		● ● ○	25 Minutes
		● ● ●	30 Minutes
TDEC (Time Delay Engine Cooldown)	○ ○ ● ○ ○	○ ○ ○	0 Minutes (Disabled)
		○ ○ ●	0.1 Minutes (For Testing)
		○ ● ○	5 Minutes
		○ ● ●	10 Minutes
		● ○ ○	15 Minutes
		● ○ ●	20 Minutes
		● ● ○	25 Minutes
		● ● ●	30 Minutes
TDPT (Time Delay Program Transition)	○ ○ ● ○ ●	○ ○ ○	0 Seconds (Disabled)
		○ ○ ●	0.5 Second
		○ ● ○	1 Second
		○ ● ●	2 Seconds
		● ○ ○	3 Seconds
		● ○ ●	4 Seconds
		● ● ○	6 Seconds
		● ● ●	10 Seconds
TDEL (Time Delay Elevator Signal)	○ ○ ● ● ○	○ ○ ○	0 Seconds (Disabled)
		○ ○ ●	1 Second
		○ ● ○	2 Seconds
		○ ● ●	3 Seconds
		● ○ ○	5 Seconds
		● ○ ●	30 Seconds
		● ● ○	120 Seconds
		● ● ●	300 Seconds

Function	Function Code	Value Code	Value
Test With/Without Load	○ ○ ● ● ●	○ ○ ○	Without Load
		○ ○ ●	With Load
External Exercise On/Off	○ ● ○ ○ ○	○ ○ ○	Off
		○ ○ ●	On
Exercise With/Without Load	○ ● ○ ○ ●	○ ○ ○	Without Load
		○ ○ ●	With Load
System Nominal Voltage Table Selection	○ ● ○ ● ○	○ ○ ○	Table 1 ▼
		○ ○ ●	Table 2 ▼
System Nominal Voltage	○ ● ○ ● ●	○ ○ ○	115
		○ ○ ●	120
		○ ● ○	190
		○ ● ●	208
		● ○ ○	220
		● ○ ●	230
		● ● ○	240
		● ● ●	380
		○ ○ ○	400
		○ ○ ●	415
System Nominal Frequency 50/60Hz	○ ● ● ○ ○	○ ○ ○	60Hz
		○ ○ ●	50Hz
Single Phase/Three Phase	○ ● ● ○ ●	○ ○ ○	Three Phase
		○ ○ ●	Single Phase
Utility Undervoltage Pickup	○ ● ● ● ○	○ ○ ○	90%
		○ ○ ●	95%
Utility Undervoltage Dropout	○ ● ● ● ●	○ ○ ○	90%
		○ ○ ●	85%
		○ ● ○	80%
Phase Check On/Off	● ○ ○ ○ ○	○ ○ ○	Off
		○ ○ ●	On
Return to Programmed Transition On/Off	● ○ ○ ○ ●	○ ○ ○	Off
		○ ○ ●	On
Elevator Post-Transfer Delay On/Off	● ○ ○ ● ○	○ ○ ○	Off
		○ ○ ●	On
Exercise Repeat Interval	● ○ ○ ● ●	○ ○ ○	Every 7 Days
		○ ○ ●	Every 14 Days
		○ ● ○	Every 21 Days
		○ ● ●	Every 28 Days
Exercise Duration (New Setting on Aftermarket Control)	● ○ ● ○ ○	○ ○ ○	1 Minute
		○ ○ ●	5 Minutes
		○ ● ○	10 Minutes
		○ ● ●	15 Minutes
		● ○ ○	20 Minutes

Note: Aftermarket controller does not have an **AUTO/CONFIG** switch. Enter Programming Mode by holding the **Test** and **Override** buttons simultaneously for 5 seconds. Press **Set Exercise** to exit Programming Mode. **Test** Increments Function Code. **Override** Increments Value Code

Default Settings in Grey