



Vigilant Series Transfer Switch Technical Bulletin

Vigilant Series.....	3
1.1 VTSC100.....	3
1.1.1 General Notes.....	4
1.1.2 Important 24VDC Application Note.....	4
1.1.3 VTSC100 P/N Replacement Guide	5
1.2 Three Phase system: Utility L-L is down but transfer switch has not transferred to Generator.	6
1.3 Board 5A fuse is blown.....	6
1.4 Board 10A fuse blown.....	6
1.5 Using Transfer Switch with ES52.....	6
1.6 Switch did not transfer (Transfer to Normal or Transfer to Emergency LED is on as expected).....	6

Vigilant Series



1.1 VTSC100



1.1.1 General Notes

There is no feedback to tell the board that it has transferred the contactor successfully. So if board / wiring damage it may indicate success when it has failed to transfer.

The “transfer to emergency” or “transfer to normal” outputs only come on for 3s max to transfer so will see 120VAC voltage at the coils/contactor for maximum of 3s. The limit switch also determines how long the voltage will remain at the coils and if the transfer switch is operating correctly the duration will be very short (under 500 to 1000ms).

1.1.2 Important 24VDC Application Note



For 24VDC systems order the 24VDC board option (check model/serial number of transfer switch). If you have the 12VDC board option, remove the 5 jumpers to convert the board for 24VDC operation. Leaving the jumpers in will damage the board over time.

1.1.3 VTSC100 P/N Replacement Guide

Note: A 12VDC VTSC100 can be converted to a 24VDC board by removing the 5 jumpers on the board.

Transfer Switch Options			Replacement VTSC100	Alternative Replacement***
Amperage	System Voltage**	TDNP option		
Below 400A	120V / 240V	Yes	---	---
		No	240 - X	240 - D
	480VAC	Yes	---	---
		No	---	---
400A	120V / 240V	Yes	240 - D	
		No	240 - X	240 - D
	480VAC	Yes	---	---
		No	480 - X	---
600A and above	120/ 240VAC	Yes	240 - D	---
		No	240 - D	---
	480VAC	Yes	480 - D	---
		No	480 - D	---
* TDNP option only available in 600A and above. ** 480V board can be used in place of 240V board. *** D version board can be used in place of X version board. Turn TDN pot to 0 or will get extra startup delay.				

Note: D version has 4 large relays and 5 pots. X version has 2 large relays and 4 pots.

1.2 Three Phase system: Utility L-L is down but transfer switch has not transferred to Generator.

The Vigilant series transfer switch only senses L-N voltage. It is possible under certain circumstances that Utility can go down but the transfer switch will not transfer to emergency.

Example:

If one leg of the 3 phase voltage goes down (i.e. one L-N is reading fine, other L-N is down) and 240VAC equipment is being used on the load side the L-N that is down will see voltage from the other working L-N via the low resistance of the 240VAC loads. Since the transfer switch senses L-N and not L-L it will not know there has been a failure.

1.3 Board 5A fuse is blown

5A fuse is located on edge of board. It controls the power coming into the board. If this is blown something is wrong with board internally and the board must be replaced.

1.4 Board 10A fuse blown

If the current on the remote start contacts (RSC) is greater than 10A this fuse blows. This protects the RSC from over current. Consider adding a relay to handle the high current and use the RSC to turn on/off the relay.

1.5 Using Transfer Switch with ES52

The ES52 passes crank and fuel current through its remote start contacts (RSC). The VTSC100 has a 10A fuse on the RSC (this fuse is one of two that is not on outside of board). If fuel and crank > 10A then fuse will blow.

1.6 Switch did not transfer (Transfer to Normal or Transfer to Emergency LED is on as expected)

Reason 1: If one or more traces are blown on the board this usually indicates that one or more of the contactor solenoids are damaged (100A or 200A) or the rectifier board is damaged (400A and above). The burn traces may be on the back of the board so the board will have to be removed for inspection.

DO NOT replace with new board until the solenoid or rectifier board problem is addressed. The new board will also be damaged.

Reason 2: The board is damaged from a battery transient. This case will not show burn marks. The symptom would be the transfer to emergency or transfer to normal output did

not pulse for 3s to transfer. There is no feedback to the VTSC100 that tells it that a transfer was successful.