

Introduction

TopKAT™ PLUS configuration for mechanical pumps requires adding an external Bypass Switch (M09680B048) to the existing circuit breaker panel (a switch per dispenser). This must be used in case of system malfunction to enable refueling. The switch is connected to the Line (high voltage cable) and Controller (low voltage wires) to provide indication on bypass state.

Purpose

This document provides instructions to install the TopKAT PLUS Bypass Switch.

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Related Documents

Document Number	Title	GOLD Library
MDE-5013	TopKAT PLUS Installation Manual	Gasboy® Series 1000/Fleetkey & Topkat

Parts List

Item	Description	Part Number	Quantity
1	Bypass Switch	M09680B048	1

Figure 1: Bypass Switch



Terminal Block - Pin-out Connections for Mechanical Pumps

Following table lists the TopKAT PLUS terminal block connections for mechanical pumps.

TopKAT PLUS Terminal Block Mechanical Pump – Connections Definition		
Terminal No.	Signal Name	Functional Description
1	LINE_IN_(115/230V)	Line Connection, TopKAT PLUS power input
2	NEUTRAL_IN_(115/230V)	Neutral Connection, TopKAT PLUS power input
3	GROUND_IN_(115/230V)	Ground Connection, TopKAT PLUS power input
4	LINE_1	Pump control 220/110 VAC input - Nozzle 1
5	LOAD_1	Pump control output - Nozzle 1
6	LINE_2	Pump control 220/110 VAC input - Nozzle 2
7	LOAD_2	Pump control output - Nozzle 2
8	IN_USE_1_A(AC)	Handle Up - In-use signal input - Nozzle 1
9	IN_USE_1_B(RETURN)	Handle Up - AC In-use signal return - Nozzle 1
10	IN_USE_2_A(AC)	Handle Up - In-use signal input - Nozzle 2
11	IN_USE_2_B(RETURN)	Handle Up - AC In-use signal return - Nozzle 2
12	-DC OUT FOR BY-PASS_2	Connection to external Bypass Nozzle 2
13	BY- PASS_2_IN	Connection to external Bypass Nozzle 2
14	PULSER_1	Pulser Input - Nozzle 1
15	PULSER_2	Pulser Input - Nozzle 2
16	+12V_2_P	+12 VDC Output to Pulser - Nozzle 2
17	-DC OUT FOR BY-PASS_1	Connection to external Bypass Nozzle 1
18	BY-PASS_1_IN	Connection to external Bypass Nozzle 1
19	GND_1_P	Nozzle Grounding - Nozzle 1
20	GND_2_P	Nozzle Grounding - Nozzle 2
21	+12V_1_P	+12 VDC Output to Pulser - Nozzle 1

Figure 2: Single Mechanical Pump

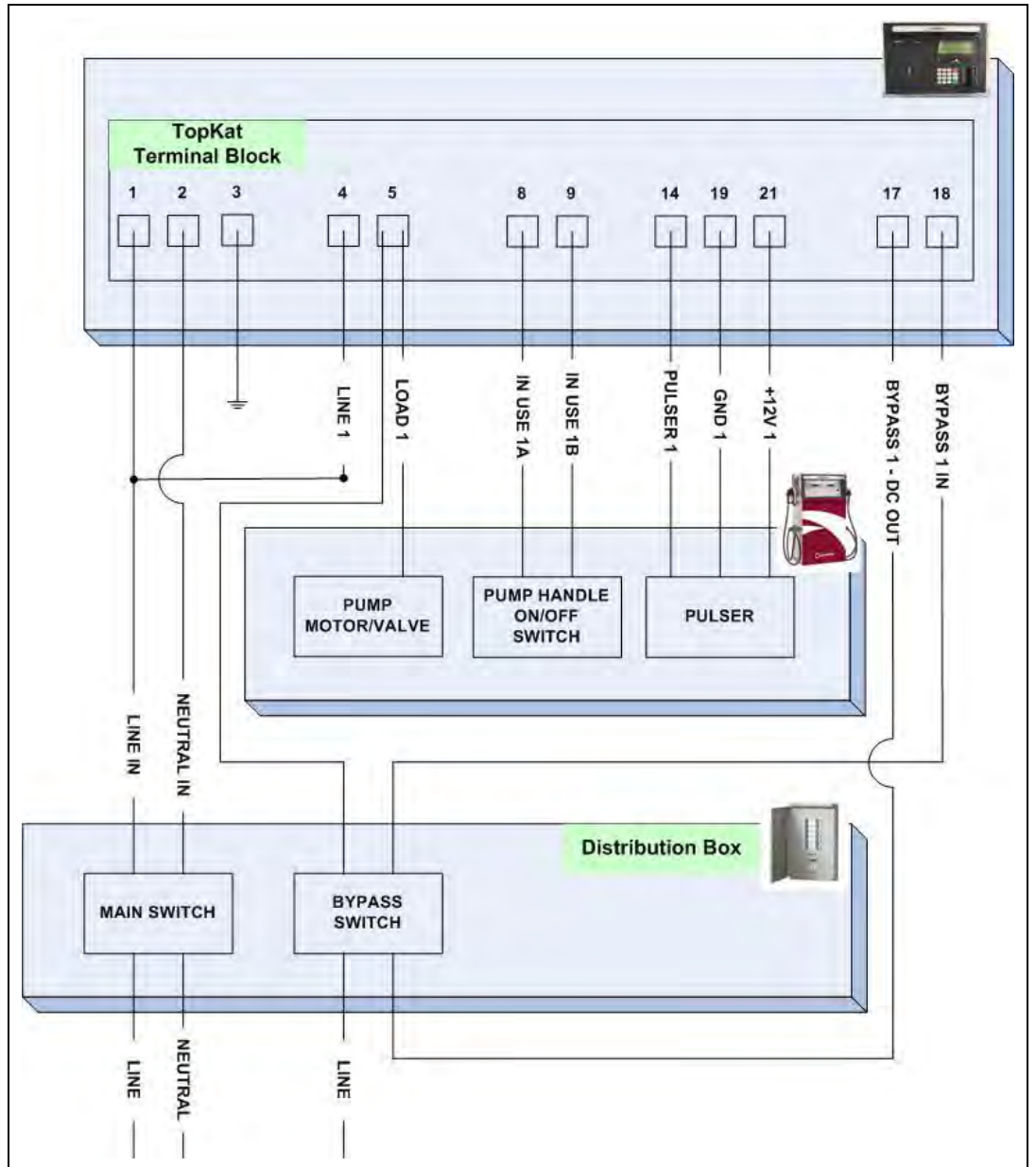
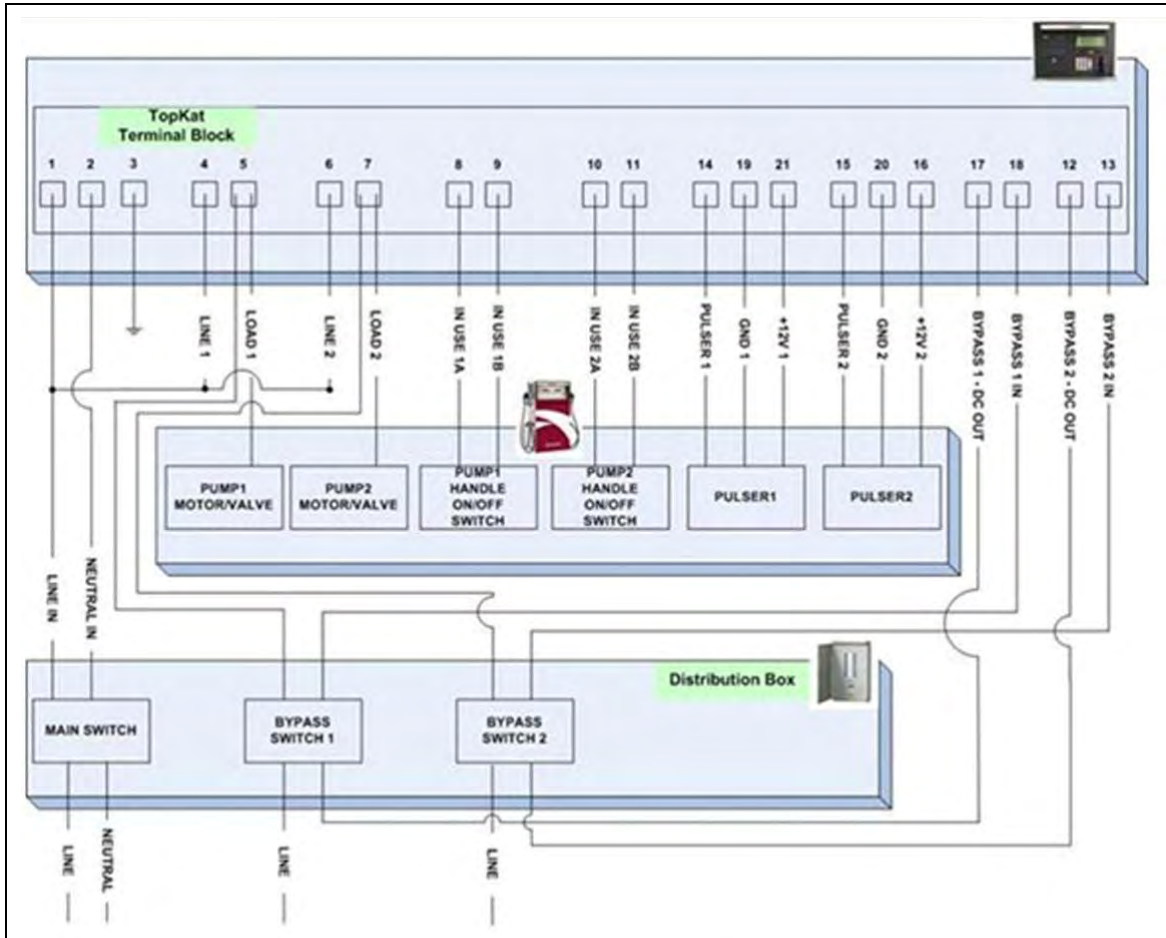


Figure 3: Twin Mechanical Pump



Manual Override Feature

The Bypass Switch is also connected to the MPI-C (low voltage DC), that triggers the proper LED on the board and lets the system know that the pump was put in bypass and also triggers the proper alarm in the controller.

Event Viewer will show an event of pump switched to bypass (with relevant pump number). Controller will show yellow triangle over the pump and communication error will be created. Also, device status will show the relevant pump disconnected.

Manual Override Test - Optional

On completion of the system wiring, the pumps and/or dispensers must be tested to verify if the AC wiring is correct. Following steps indicate the proper procedure for testing and the expecting results. If any of these tests fail, the wiring must be corrected and the test must be performed again.

- 1 Place all the override switches in OFF position.
- 2 Turn on the breakers for all the pumps/dispensers and system.
- 3 Locate the override switch(s) and place the override switch for hose 1 in the Manual (up) position.
- 4 Turn on hose 1. After completing reset, the hose must be able to dispense the product.
- 5 Turn on all other hoses. No other hoses besides 1 must activate.
- 6 Turn off all hoses.
- 7 Place the override switch for hose 1 in OFF position.
- 8 Repeat steps 3 to 7 for all remaining hoses.

Issues, Observation, and Suggestions

Following observation and suggestions have been made from reviewing the documentation and field installation drawings from Orpak™ for the optional Manual Override feature for the TopKAT PLUS mechanical system.

Issues	Observation	Suggestions
Override/Bypass Switch is recommended and shown to be located in the circuit breaker/sub panel.	Due to location and distance of the circuit breaker panel, and the requirement to run the AC and DC in two separate conduits.	<ul style="list-style-type: none"> • Place the Bypass Switch in a secured explosion/weather proof enclosure on or near the TopKAT PLUS or fuel island following the National Electrical Code (NEC) regulations, 18-inch off the ground and 18-inch from a pump. Two conduits must run to the enclosure. • For kiosk located on or near the fuel island, suggested applications can be installed and located in the pedestal, above the 18-inch barrier plate of the TopKAT PLUS.
The double pole switch contains high AC voltage switch on one pole and low DC voltage switch on the other pole.	It is not suggested or recommended to have low voltage DC around or near high voltage AC of the circuit breaker panel which may/will place noise on the low voltage line that may/will effect the operation of the bypass feature not to function properly.	

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