

# SYNETEK CONTROLS INC.

## DS3-A: INSTALLATION INSTRUCTIONS



Synetek Controls Inc. Model DS3-A replaces the following 24VAC Direct Spark Ignition controls in commercial laundry dryers. The Model DS3-A is designed for simple installation and long lasting operation while eliminating most nuisance lockouts and providing simple diagnostic indication of failure.

### ADC

128926, 128935, 128937, 801048, 880815, 882627, 883649

### CHANNEL

MARK 10, MARK 14

### FENWAL

35-605942-013, TRITON 2460D 942-013

### JOHNSON CONTROLS

G760BCD-1

### WHITE RODGERS

50D20-150

DS3-A Kit Contents		Tools and Materials Required		DS1071E Rev. B Specifications	
1 - DS1071E-B Control	- DS3-A Kit and Installation	Input Voltage:	24VAC, 60Hz (+10% to -15%)	Ignition Trials:	3 Trials
1 - DS3-A Installation Instructions	Instructions	Current Draw:	.2A burner proven mode .35A ignition mode	Ignition Trial Time:	8 sec.
2 - Mounting Screws	- Slotted Screwdriver or 1/4" Nut Driver	Lockout:	Reset by power interruption of 5 sec.	Prepurge:	1 sec.
1 - Crimp-on High Voltage Lead Terminal	- 5/32" Drill Bit	Temp Range:	-40F to +175F	Interpurge:	30 sec.
1 - Ring Terminal	- Drill Motor - Wire Stripper - Crimping Pliers				

## PRE-INSTALLATION INSTRUCTIONS

### IMPORTANT

Installation should only be attempted by persons trained and qualified to service and repair commercial laundry dryer ignition controls and equipment.

- 1 Read carefully through the DS3-A Installation Instructions before attempting installation.
- 2 Be certain dryer is operating correctly except for failed ignition control. Repair malfunctioning items as required. Installation of the DS3-A will only correct malfunctions created by a failed ignition control.
- 3 Inspect the burner and burner compartment for soot, cracks and corrosion. Clean, repair or replace as necessary.
- 4 Inspect the electrode for cracks in the ceramic insulator, burns on the electrode rod and damage to the high voltage lead. Repair or replace as necessary.

**NOTE: Spark gap must be 1/8" to 1/4"**

**SYNETEK CONTROLS INC.**  
**DS3-A: INSTALLATION INSTRUCTIONS**  
**INSTALLATION PROCEDURE**

**WARNING**

Property Damage, Injury or Death can result from replacing an ignition control not listed in these instructions.

**IMPORTANT**

Turn OFF gas and electrical power before beginning the Installation Procedure.

- 1 Locate the ignition control to be replaced and verify that the model number of the control is listed in these instructions.
- 2 Remove the mounting hardware from the control to be replaced and set the control aside, leaving all wire leads connected.
- 3 Mount the new Model DS1071E control module in place of the old control module using the Mounting Screws supplied in the DS3-A kit. If necessary, drill holes using Drill Motor and 5/32" Drill Bit.
- 4 Disconnect wire leads from control being replaced and connect to the Model DS1071E per control specific wiring instructions in steps 4.1 – 4.4.

**4.1 Channel MARK10, MARK14**

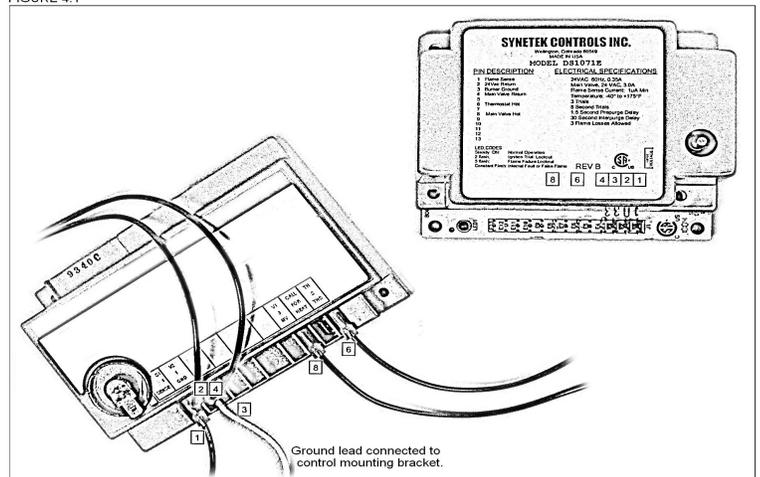
- A. Remove wire lead from Channel control pin "TH" (Thermostat) and connect to DS1071E pin 6 (Thermostat Hot).
- B. Remove wire lead from Channel control pin "MV" (Main Valve) and connect to DS1071E pin 8 (Main Valve Hot).
- C. Remove wire lead from Channel control pin "MVR" (Main Valve Return) and connect to DS1071E pin 4 (Main Valve Return).
- D. Remove wire lead from Channel control pin "N" (Neutral) and connect to DS1071E pin 2 (24VAC Return).
- E. Remove wire lead from Channel Control pin "SENSOR" (Sensor) and connect to DS1071E pin 1 (Flame Sense).

**4.2 Fenwal 35-605941-013, TRITON 2460D 942-013 (ADC 128937, 883649)**

- A. Remove wire lead from Fenwal control pin 2 "TH, THS" (Thermostat) and connect to DS1071E pin 6 (Thermostat Hot).
- B. Remove wire lead from Fenwal control pin 3 "V1, MV" (Main Valve) and connect to DS1071E pin 8 (Main Valve Hot).
- C. Remove wire lead from Fenwal control pin 4 "S1, SENSE" (Sensor) and connect to DS1071E pin 1 (Flame Sense).
- D. Remove chassis grounded wire lead from Fenwal control pin 1 "V2, GND" (Ground/Main Valve Return) and connect to DS1071E pin 3 (Burner Ground).
- E. Remove remaining wire leads from Fenwal control pin 1 "V2, GND" (Ground/Main Valve Return) and connect to DS1071E pin 4 (24VAC Return/Main Valve Return).

See FIGURE 4.1 for steps A-E.

FIGURE 4.1



**NOTE: Pin 2 is an unused ground connection.**

**4.3 Johnson Controls G760BCD-1 (ADC 128926, 128935, 801048)**

- A. Remove the ground wire from the Johnson control pin 5 and the ground terminal block. Cut the 1/4" spade terminal off one end of the removed ground wire, strip using Wire Strippers and crimp on the Ring Terminal supplied in the DS3-A kit using Crimping Pliers.
- B. Connect the remaining spade terminal of the ground wire to pin 3 (Burner Ground) on the DS1071E. Remove the Mounting Screw nearest to pin 3 and place through the Ring Terminal of the ground wire. Reinstall Mounting Screw.

See FIGURE 4.3 for step B.

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## DS3-A: INSTALLATION INSTRUCTIONS (Continued)

- C. Remove remaining wire leads from Johnson control ground terminal block and connect to DS1071E pin 2 and pin 4 (24VAC Return/Main Valve Return).
- D. Remove wire lead from Johnson control pin 2 "THS" (Thermostat) and connect to DS1071E pin 6 (Thermostat Hot).
- E. Remove wire lead from Johnson control pin 3 "M.V." (Main Valve) and connect to DS1071E pin 8 (Main Valve Hot).
- F. Remove wire lead from Johnson control pin 4 "SENSE" (Sensor) and connect to DS1071E pin 1 (Flame Sense).

See FIGURE 4.2 for steps C-F.

FIGURE 4.2

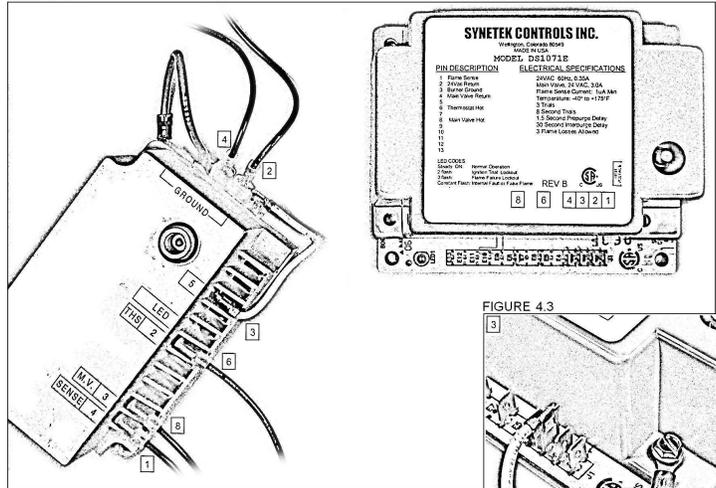
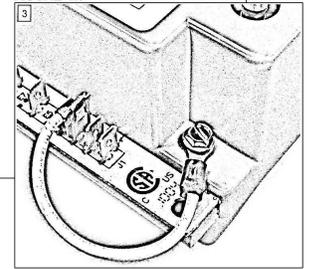


FIGURE 4.3

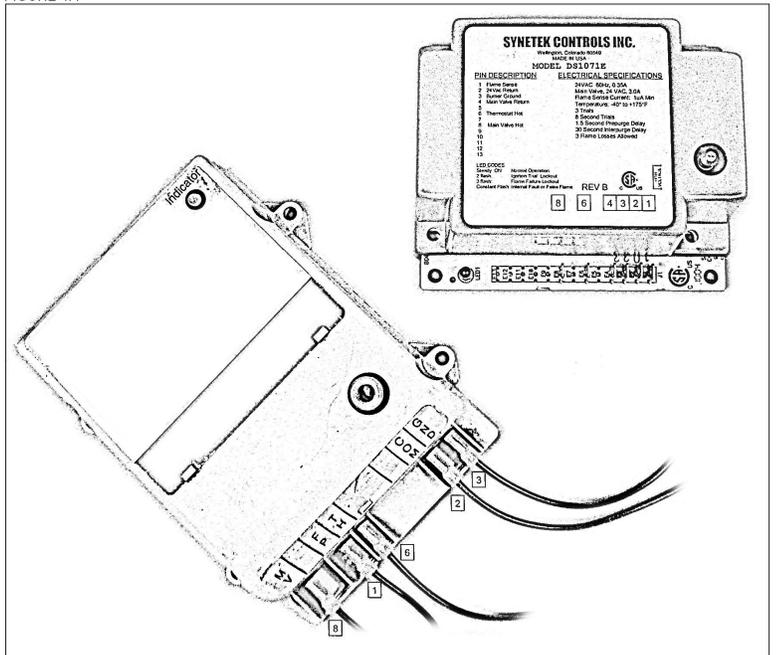


### 4.4 White Rodgers 50D20-150 (ADC 880815, 882627)

- A. Remove wire lead from White Rodgers control pin "GND" (Ground) and connect to DS1071E pin 3 (Burner Ground).
- B. Remove wire lead from White Rodgers control pin "COM" (Common) and connect to DS1071E pin 2 (24VAC Return).
- C. Remove wire lead from White Rodgers control pin "TH" (Thermostat) and connect to DS1071E pin 6 (Thermostat Hot).
- D. Remove wire lead from White Rodgers control pin "FP" (Flame Probe) and connect to DS1071E pin 1 (Flame Sense).
- E. Remove wire lead from White Rodgers control pin "MV" (Main Valve) and connect to DS1071E pin 8 (Main Valve Hot).

See FIGURE 4.4 for steps A-E.

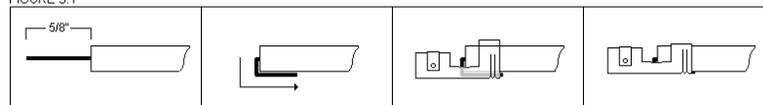
FIGURE 4.4



- 5 Remove high voltage lead from the old control module and connect to the DS1071E high voltage terminal. If necessary, strip high voltage lead end and crimp on High-Voltage Lead Terminal supplied in DS3-A kit.

See FIGURE 5.1 for step 5.

FIGURE 5.1



- 6 If you are satisfied that the previous steps are correct and complete, go to CHECK OUT SEQUENCE.

## CHECK OUT SEQUENCE

**NOTE: Leave gas supply turned OFF until prompted in step 3.**

- 1 Turn ON power to the dryer (gas supply OFF) and start the dryer cycle. Observe the following:
  - 1.1 Green diagnostic LED is on.
  - 1.2 2-3 seconds after tumbler starts, the high voltage spark starts.
  - 1.3 Sparking continues for 8 seconds.
  - 1.4 Sparking pauses for 30 seconds.
  - 1.5 Sparking starts and continues for 8 seconds.
  - 1.6 Sparking pauses for 30 seconds.
  - 1.7 Sparking starts and continues for 8 seconds.
  - 1.8 Spark stops and DS1071E goes into lockout mode. Green diagnostic LED will flash 2 times.
- 2 Reset DS1071E lockout mode by opening dryer door until LED stops flashing. Close dryer door and observe sequence in step 1 again. If you are satisfied that the previous steps are correct and complete, continue to step 3.
- 3 Turn ON the gas supply to the dryer.

### WARNING

If you smell gas, immediately turn the gas supply OFF and repair to gas leak. DO NOT continue the CHECK OUT PROCEDURE until the gas leak has been repaired.

- 4 Start the dryer and observe the following:
  - 4.1 Green diagnostic LED is on.
  - 4.2 DS1071E starts the ignition spark in 2-3 seconds and flame is established within a few seconds.
  - 4.3 Spark stops after flame is established.
  - 4.4 Main burner flame shuts off after thermostat is satisfied and reignites when temperature drops.

## TROUBLESHOOTING

Problem	Solution
<i>No ignition spark. LED is OFF.</i>	No power to the control. Be sure the accumulator has time on it, the door switch is closed and the thermostat is calling for heat. Check thermostat, airflow switch and high limit switch. Repair or replace as necessary.
<i>No main burner flame LED is flashing 2 times.</i>	Control is in safety lockout. Reset by opening door till dryer stops. Restart dryer.
<i>Main burner lights for 8 seconds or less then goes out. LED is flashing 2 times after 3 spark cycles.</i>	Controls is not sensing flame has been established. Check spark probe alignment, probe should be in the flame and the flame should be resting on the surface of the burner. Clean spark probe, burner, air intake and exhaust if necessary.
<i>Ignition sparks but does not light the burner. LED is flashing 2 time after 3 spark cycles.</i>	Check that the spark is arching across the spark gap. Check for cracks in the ceramic insulator of the electrode and for shorts from the high voltage lead the the chassis of the dryer. Verify the integrity of the the wiring to the gas valve. Repair or replace as necessary.
<i>High voltage lead or flame sensor lead is burnt at the connector.</i>	Check the lint screen, ducting, and fan. Clean, repair or replace as necessary. Check the airflow switch for correct operation. Repair or replace as necessary.

## NOTES

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## WARRANTY

Synetek Controls Inc. guarantees to the first retail purchaser that, should the control be defective within 24 months of manufacturing, due to manufacturing defects, Synetek Controls Inc. will repair or replace the defective control. Synetek Controls Inc. is not responsible for equipment down time, labor costs or any other expenses associated with the failure of our controls.

## SYNETEK CONTROLS INC.

Wellington, CO 80549

Tel: (970) 568-7880 FAX: (970) 569-9460

[www.synetek.us](http://www.synetek.us)