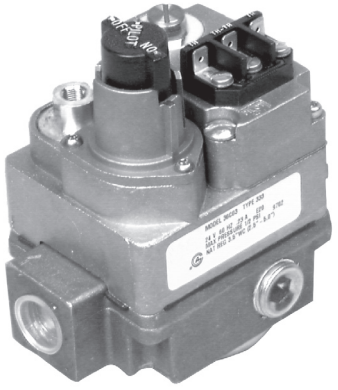


36C Series

36C STANDING PILOT SNAP OPEN, STEP OPEN, HSI, DSI, AND INTERMITTENT IGNITION GAS VALVES

A Wide Range of Replacement Valves for the Professional Installer

SPECIFICATIONS

Electrical Rating . . . . . 0.23 amps
Ambient Operating Range . . . . . -40 to +175°F (-40 to 79°C)
Maximum Pressure Rating . . . . . 1/2 PSI (14.0″ W.C.)
Pilot Gas Connection . . . . . 1/4″ compression fitting
Pressure Tap . . . . . 1/8″ N.P.T.

Pipe Size	1" Pressure Drop Capacity BTU/HR		Rated Range of Regulation BTU/HR	
	STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.	STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.
1/2 X 3/8	100,000	162,000	15,000-100,000	15,000-162,000
1/2 X 1/2	230,000	372,600	30,000-290,000	30,000-469,000
1/2 X 3/4	230,000	372,600	30,000-290,000	30,000-469,000
3/4 X 3/4	280,000	453,600	50,000-400,000	50,000-648,000

TECH
WIRIING
171-174

PARTS AND ACCESSORIES

See end of this section for parts and accessories

SNAP OPEN, SINGLE FUNCTION, STANDING PILOT GAS VALVES

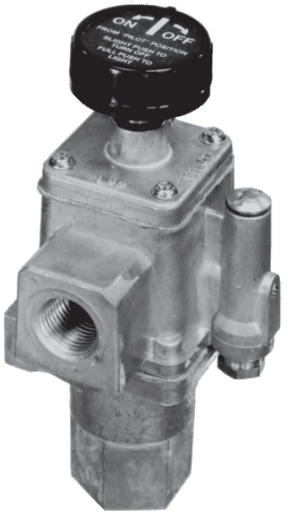
	Model Number	Typical App.	Coil Voltage	Gas Type	Pipe Size	Opening Characteristic	Regulator Setting	Regulator Adjustment Range	Convertible Nat. / LP	LP Conversion Kit Included	Line Interrupter	Flow Direction	Reducer Bushing Kit	Inlet Pressure Tap	Side Taps	Internal Wiring See Figure ①
	36C01-405	Snap Open	24VAC	Natural or LP	3/4 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	No	Str. Thru	Yes	No	No	1
	36C01A-405	Snap Open	120VAC	Natural or LP	3/4 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	No	Str. Thru	Yes	No	No	3
	36C03-300	Standing Pilot	24VAC	Natural or LP	1/2 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	Yes	Str. Thru	Yes	No	No	1
	36C03-333	Standing Pilot	24VAC	Natural or LP	1/2 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	Yes	Str. Thru	Yes	No	Yes	1
	36C03-400	Standing Pilot	24VAC	Natural or LP	3/4 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	Yes	Str. Thru	Yes	No	No	1
Universal	**36C03-433**	Standing Pilot	24VAC	Natural or LP	3/4 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	Yes	Str. Thru	Yes	Yes	Yes	1
	36C03A-410	Standing Pilot	120VAC	Natural or LP	3/4 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	Yes	Str. Thru	Yes	No	No	3
	36C03U-333	Standing Pilot	750mV	Natural or LP	1/2 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	Yes	Str. Thru	Yes	Yes	Yes	2
Universal	**36C03U-433**	Standing Pilot	750mV	Natural or LP	3/4 x 3/4	Fast Open	3.5″	2.5″-5.0″	Yes	Yes	Yes	Str. Thru	Yes	Yes	Yes	2
	36C04U-438	Standing Pilot	750mV	Natural	3/4 x 3/4	Step Open 0.7″	0.7 / 3.5″	2.5″-5.0″	No	No	Yes	Str. Thru	Yes	No	No	2
	36C53-418	Standing Pilot	24VAC	Natural or LP	3/4 x 3/4	Slow Open	3.5″	2.5″-5.0″	Yes	No	Yes	Str. Thru	Yes	No	No	1
🍁	**36C03-258**	Standing Pilot	24VAC	Natural	1/2 x 1/2	Fast Open	3.5″	2.5″-5.0″	No	No	Yes	Str. Thru	No	Yes	No	1

HSI/DSI VALVES

36C74-913	Step Open	24VAC	Natural	3/4 x 3/4	Step	0.9″/3.5″	2.5″-5.0″	No	No	No	Str. Thru	Yes	Yes	No	5
36C94-303	Intermittent Ignition Systems	24VAC	Natural or LP	1/2 x 3/4	Delay Slow	3.5″	2.5″-5.0″ 7.0″-12.0″	Yes	Yes	No	Str. Thru	No	Yes	No	15

① Wiring diagrams – see pages 171-174

🍁 Indicates Canadian Model Number



764-702

764 SERIES THERMOCOUPLE OPERATED GAS PILOT SAFETY/GAS FIREPLACE VALVES

In Line Appliance Control with 100% Shut Off.

FEATURES / SPECIFICATIONS / PART AND ACCESSORIES

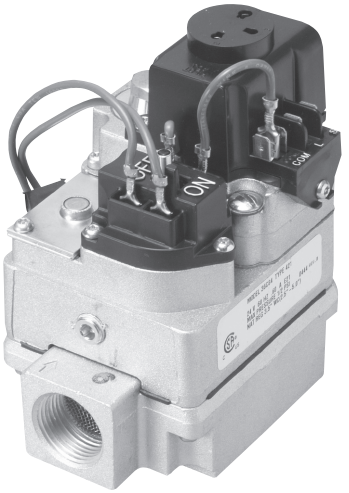
- Redesigned to include 100 PSI protection, inlet screen and inlet pipe stop.
- Optional rear inlet tapped and plugged.
- May be mounted horizontal, vertical and 90° from horizontal (multipoise).

Electrical Rating . . . . . 20 to 30 mV (Thermocouple)
Regulator Adjustment Range . . . . . Non-regulated
Maximum Pressure Rating . . . . . 1/2 PSI (14.0″ W.C.)
Ambient Operating Range . . . . . 32 to 175°F
Swing Radius . . . . . 2.5″
Agency . . . . . C.S.A. approved

- F42-0895 — Replacement knob

Model Number	Coil Voltage	Inlet-Outlet Size	Capacity A.G.A. Standard Gas ①	Electrical Connection
764-702	20 to 30 mV	3/8″ x 3/8″	132,000	Thermocouple
764-742	20 to 30 mV	1/2″ x 1/2″	142,000	Thermocouple

① See page 414 for capacities of other gases



36C84-912

36C CYCLE PILOT GAS VALVES

With Redundant Pilot Solenoid Main Gas Regulator, Integral Gas Pressure Switch and Electrical Connection on the Gas Valve for Mercury Flame Sensor Connection.

SPECIFICATIONS

Electrical Rating . . . . . 0.6 amps
End to End Dimensions . . . . . 3 15/16″
Ambient Operating Range . . . . . -40 to +175°F (-40 to 79°C)
Maximum Pressure Rating . . . . . 1/2 PSI (14.0″ W.C.)
Agency . . . . . C.S.A. approved

Pipe Size	1" Pressure Drop Capacity BTU/HR		Rated Range of Regulation BTU/HR	
	STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.	STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.
1/2 X 3/8	100,000	162,000	15,000-100,000	15,000-162,000
1/2 X 1/2	230,000	372,600	30,000-290,000	30,000-469,000
1/2 X 3/4	230,000	372,600	30,000-290,000	30,000-469,000
3/4 X 3/4	280,000	453,600	50,000-400,000	50,000-648,000

PARTS AND ACCESSORIES

See end of this section for parts and accessories

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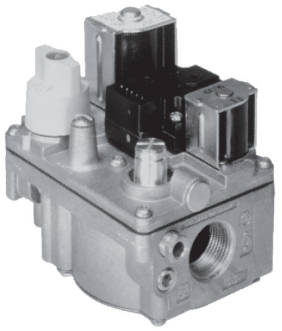
TECHNICAL HELP

Wiring Diagrams . . . . . See pages 171-174

Model Number	Coil Voltage	Gas Type	Pipe Size	Opening Characteristic	Regulator Setting	Regulator Adjustment Range	Convertible Nat. / LP	LP Conversion Kit Included	Line Interrupter	Flow Direction	Reducer Bushing Kit	Inlet Pressure Tap	Side Taps	Internal Wiring See Figure ①
36C84-912	24 VAC	Nat./LP	3/4 x 3/4	Fast Open	3.5″	2.5″–5.0″	Yes	Yes	No	Str. Thru	Yes	Yes	No	7
36C84-913	24 VAC	Nat./LP	3/4 x 3/4	Fast Open	3.5″	2.5″–5.0″	Yes	Yes	No	Str. Thru	Yes	Yes	No	12
36C84-921	24 VAC	Nat./LP	3/4 x 3/4	Fast Open	3.5″	2.5″–5.0″	Yes	Yes	No	Str. Thru	Yes	Yes	No	7
36C84-923	24 VAC	Nat./LP	3/4 x 3/4	Fast Open	3.5″	2.5″–5.0″	No	No	No	Str. Thru	No	Yes	No	14
36C84-926	24 VAC	Natural	3/4 x 3/4	Fast Open	3.5″	2.5″–5.0″	No	No	No	Str. Thru	Yes	No	No	4
36C84-945	24 VAC	Nat./LP	3/4 x 3/4	Fast Open	3.5″	2.5″–5.0″	Yes	Yes	No	Str. Thru	Yes	Yes	No	8
36C94-906	24 VAC	Natural	3/4 x 3/4	Slow Open	3.5″	2.5″–5.0″	No	No	No	Str. Thru	Yes	No	No	7
36C94-907	24 VAC	Nat./LP	3/4 x 3/4	Slow Open	3.5″	2.5″–5.0″	Yes	Yes	No	Str. Thru	Yes	No	No	4

① Wiring diagrams – see pages 171-174

NOTE: -9XX series replaces -4XX series. Knob replaced with an ON-OFF switch.



36E86-302

36E SERIES GAS VALVES

For use with Intermittent Ignition Systems (Proven Pilot, Direct Spark Ignition and Hot Surface Ignition) (36E38 types) and Cycle Pilot Systems (36E86)

FEATURES

- Poppet style manual valve (capable of withstanding high inlet pressures).
- Conical inlet and outlet screens protected from pipe damage.
- Direct acting solenoid valve with high sealing force.
- Controlled gasket clinch between castings to withstand high inlet pressures.
- May be mounted horizontal, vertical and 90° from horizontal.

SPECIFICATIONS

Electrical Rating . . . . . 0.54 amps
Regulator Adjustment Range . . . . . Natural gas, 2.5 to 5.0″ W.C.
L.P. gas, 7.5 to 12.0″ W.C.
Maximum Pressure Rating . . . . . 1/2 PSI (14.0″ W.C.)
Ambient Operating Range . . . . . -40 to +175°F (-40 to +79°C)
Swing Radius . . . . . 3 9/16″
Agency . . . . . C.S.A. approved

Pipe Size	1″ Pressure Drop Capacity BTU/HR		Rated Range of Regulation BTU/HR	
	STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.	STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.
1/2 X 1/2	140,000	226,800	20,000-210,000	25,000-340,000
1/2 X 3/4	140,000	226,800	20,000-210,000	25,000-340,000
1/2 X 3/4	125,000	202,500	20,000-210,000	25,000-340,000

PARTS AND ACCESSORIES

See end of this section for parts and accessories

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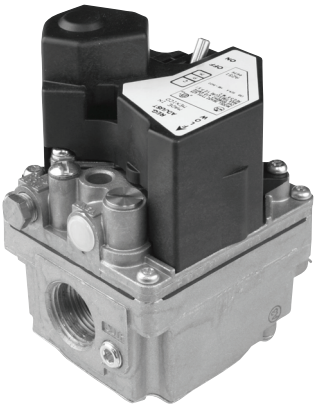
TECHNICAL HELP

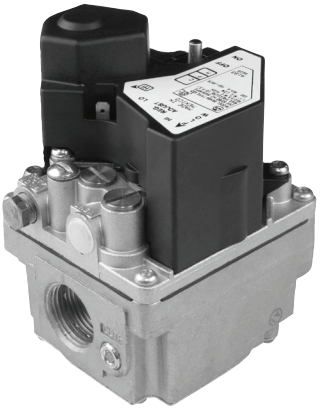
Wiring Diagram . . . . . See page 175

Model Number	Coil Voltage	Inlet-Outlet Size	Electrical Connection (see Fig #)②	Regulator Setting	Opening Characteristic	Gas Type	System Usage	Reducer Bushing Kit	Inlet Pressure Tap	Side Taps
36E38-301 ①	24 VAC, 60 Hz	1/2″ x 3/4″	2	3.5″ W.C.	1.2″ W.C. Step	Natural Only	Proven Pilot, HSI and DSI	Yes	Yes	Yes
36E38-302 ①	24 VAC, 60 Hz	1/2″ x 3/4″	2	10.0″ W.C.	2.5″ W.C. Step	L.P. Only	Proven Pilot, HSI and DSI	Yes	Yes	Yes
36E86-302	24 VAC, 60 Hz	1/2″ x 3/4″	5	3.5″ W.C.	Fast Open No Step	Natural Only	Cycle Pilot	Yes	No	Yes

① Pilot fittings included with valves
② Wiring diagrams see page 175



36H32-423



36H64-463

36H SERIES GAS VALVES

Combination Multi-function Controls for a Wide Range of Applications. The 36H Combination Gas Control Valve is a Versatile Multifunction Control Designed to Meet the Requirements for Use with Intermittent Ignition Systems (Direct Ignition, Proven Pilot, HSI). 36H is our Highest Capacity Combination Gas Valve.

FEATURES

- Adjustable regulator.
- Quiet operation redundant design.
- Inlet/outlet screens.
- Tamper resistant screws.

SPECIFICATIONS

Electrical Rating (36H) . . . . . 0.41 amps (Single stage)
0.54 amps (Two stage)
Ambient Temp. . . . . -40° to 175°F (-40° to 79°C)
Pressure Rating . . . . . 1/2 PSI (14.0" W.C.)
Voltage . . . . . 24 VAC
Frequency. . . . . 50/60 Hz

Pipe Size (36 H)	1″ PD Capacity BTU/HR		Rated Range of Regulation BTU/HR	
	Std. Gas .64 Sp. Gr. (1000 BTU/CU FT)	Std. Gas 1.53 Sp. Gr. (2500 BTU/CU FT)	Std. Gas .64 Sp. Gr. (1000 BTU/CU FT)	Std. Gas 1.53 Sp. Gr. (2500 BTU/CU FT)
3/4″ x 3/4″	300,000	486,000	50,000 to 400,000	81,000 to 648,000
1/2″ x 3/4″	230,000	372,600	30,000 to 290,000	81,000 to 648,000

Valve Stages	Regulator Adjustment Range Nat. Gas
Single	2.5″ to 5.0″
Two-Stage	1.0″-3.5″ Low 2.5″-5.0″ High

PARTS AND ACCESSORIES See end of this section for parts and accessories

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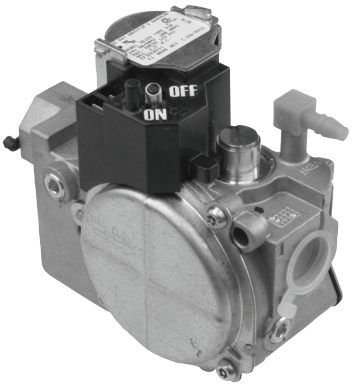
TECHNICAL HELP

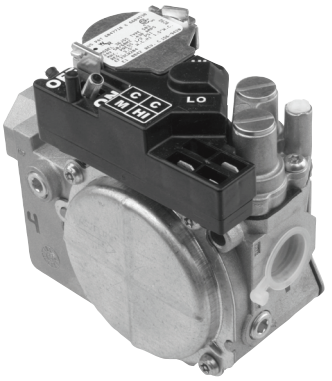
Wiring Diagram. . . . . See page 176

Model Number	Voltage	Type of Gas	Pipe Size	Opening Characteristic	Stages	HSI/DSI	Proven Pilot	Standing Pilot	Intermittent Pilot	Convertible Nat/LP Kit Included	Reducer Bushing Kit	Inlet & Outlet Pressure Tap	Side Taps
36H32-304*	24 Volt	Nat./LP	1/2 x 3/4	Fast	1	Yes	Yes	No	Yes	Yes	Yes	Yes	No
36H32-423*	24 Volt	Nat./LP	3/4 x 3/4	Fast	1	Yes	Yes	No	Yes	Yes	Yes	Yes	No
36H33-412*	24 VAC	Nat./LP	3/4 x 3/4	Slow	1	Yes	Yes	No	Yes	Yes	Yes	Yes	No
36H64-463*	24 VAC	Nat./LP	3/4 x 3/4	Fast	2	Yes	Yes	No	Yes	Yes	Yes	Yes	No
36H65-401*	24 VAC	Nat./LP	3/4 x 3/4	Slow	2	Yes	Yes	No	No	Yes	Yes	Yes	No

* To measure outlet pressure on valves, loosen outlet pressure tap screw one quarter turn and put manometer hose over the top of the outlet pressure tap.

Wiring diagrams – see page 176





36J Series

36J SERIES GAS VALVES

The 36J is a Combination Gas Control Valve Designed for use with Non-Piloted Intermittent Ignition Systems. The Control is Designed to meet Today's Maximum Capacity, Smaller Size and High Efficiency Gas Systems.

FEATURES

- Inlet and outlet screens.
- Quiet redundant.
- Built-in pressure tap.
- Quick-connect terminals (1/4″).

SPECIFICATIONS

Ambient Temperature	-40 to 175°F
Maximum Pressure Rating	1/2″ PSI (14.0″ W.C.)
Capacity (1″ P.D.)	Natural 140,000 Btu/Hr. L.P. 226,800 Btu/Hr.
Electrical Rating	Single stage 24V, 50 / 60Hz at .3A Two stage at .43A
Swing Radius	2.75″
Mounting	Any position
Agency	C.S.A. approved

		1″ Pressure Drop Capacity		Range of Regulation			
		BTU/HR		BTU/HR			
Valve (Stages)	Pipe Size	Std Gas .64 Sp. Gr. (1000 BTU/CU. FT.)	LP Gas 1.53 Sp. Gr. (2500 BTU/FT.)	Std Gas .64 Sp. Gr. (1000 BTU/CU. FT.)	LP Gas 1.53 Sp. Gr. (2500 BTU/FT.)	Adjustment Range (Nat. IN. W.C.)	Adjustment Range (L.P. IN. W.C.)
Single	1/2″ x 1/2″NPT	140,000 BTU/HR	226,800 BTU/HR	40,000-210,000	60,000-340,000	2.5″-5.0″	7.0″-12.0″
Two	1/2″ x 1/2″NPT	140,000 BTU/HR	226,800 BTU/HR	20,000 Low- 210,000 High	32,000 Low- 340,000 High	1.0″-4.0″ Low 2.0″-5.0″ High	4.0″-10.0″ Low 6.0″-12.0″ High

PARTS AND ACCESSORIES

See end of this section for parts and accessories

TECHNICAL HELP

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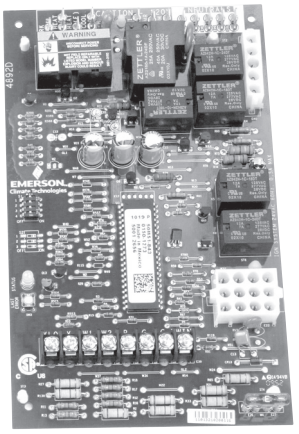
Wiring Diagrams . . . . . See page 177

Model Number	Coil Voltage	Gas Type	Pipe Size	Opening Characteristic	Regulator Setting	Regulator Adjustment Range	Convertible Nat. / LP	LP Conversion Kit Included	Flow Direction	Reducer Bushing Kit	Filter Screen	Inlet Pressure Tap	Outlet Pressure Taps	Internal Wiring See Figure ①
36J22-214*	24 VAC	Natural or LP	1/2 x 1/2	Fast Opening	3.5″	Nat. 2.5″- 5.0″ L.P. 7.0″- 12.0″	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	1
36J24-214*	24 VAC	Natural or LP	1/2 x 1/2	Slow Opening	3.5″	Nat. 2.5″- 5.0″ L.P. 7.0″- 12.0″	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	1
36J54-214*	24 VAC	Natural or LP	1/2 x 1/2	2 Stage Fast Opening	LO 1.5″ HI 3.5″	Nat. 2.5″- 5.0″ L.P. 6.0″- 12.0″	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	2
36J55-214*	24 VAC	Natural or LP	1/2 x 1/2	2 Stage Slow Opening	LO 1.5″ HI 3.5″	Nat. 2.5″- 5.0″ L.P. 6.0″- 12.0″	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	2
36J24-614*	24 VAC	Natural or LP	1/2 x 1/2	2 Stage Slow Opening	3.5″	Nat. 2.5″- 5.0″ L.P. 7.0″- 12.0″	Yes	Yes	90° Bottom Outlet	No	Yes	Yes	Yes	2
36J55-614*	24 VAC	Natural or LP	1/2 x 1/2	2 Stage Slow Opening	3.5″	Nat. 2.5″- 5.0″ L.P. 6.0″- 12.0″	Yes	Yes	90° Bottom Outlet	No	Yes	Yes	Yes	2

* To measure outlet pressure on valves, loosen outlet pressure tap screw one quarter turn and put manometer hose over the top of the outlet pressure tap.

① Wiring diagrams – see page 177



21M51U-843 Kit

Includes:
- Module
- Ignitor Kit

21M51U-843 KIT REPLACES:

White-Rodgers 50M51-242 and 50M61-XXX's Two-Stage HSI Systems with 80V or 120V Ignitors.

FEATURES

- 120 VAC 3-speed PSC (Permanent Split Capacitor) circulator output, two-speed inducer output, 2-stage gas valve output.
- Pushbutton fault history retrieval.
- Furnace status LED – tri-color (green, red and amber).
- Heat fan off delay (dipswitch selectable), fan on delay for cooling.
- Auto second stage delay (dipswitch selectable).
- 120 VAC humidifier output/120 VAC electronic air cleaner output.

SPECIFICATIONS

Electrical Rating:	
Input Voltage	24 VAC, 60 Hz (Class II transformer required)
Nom. Input Current @ 24 VAC	530 mA + MV
Relay Load Ratings:	
Gas Valve Relays	1.5 amps @ 24 VAC, 60 Hz
Inducer Relays	2.2 FLA – 3.5 LRA @ 120 VAC
Circulator Relays	14.5 FLA – 25.0 LRA @ 120 VAC
Humidifier Load	1.0 amp max. @ 120 VAC
Electronic Air Cleaner Load	1.0 amp max. @ 120 VAC
Ignitor Relay	4.0 amps max. @ 132 VAC, 60 Hz
Flame Current Requirements:	
Minimum current to insure flame detection	0.3 µa DC*
Maximum current for non-detection	0.1 µa DC*
Maximum allowable leakage resistance	100 M ohms
*Measured with a DC microameter in the flame probe lead	
Operating Temperature Range	-40° to 175°F (-40 to 80°C)
Humidity Range	5% to 93% relative humidity (non-condensing)
Flame Failure Response Time	2.0 sec. max. @ 60Hz

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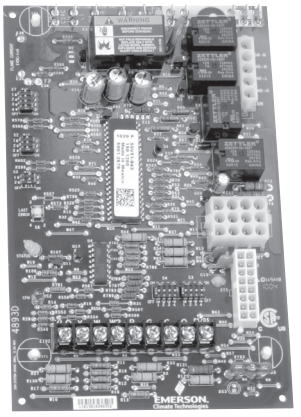
Wiring Diagram/Operation . . . . . See pages 178-188

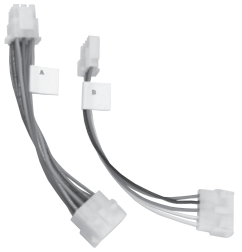
Model Number	Pre-Purge	Ignitor Warm-Up	Retries	Heat Delay to Fan ON	Heat Delay to Fan OFF	Cool Delay to Fan ON	Cool Delay to Fan OFF	Automatic Reset Time
21M51U-843	15	17	2	45	90/120/150/180	5	60	60 minutes

21M51U-843 Cross Reference Application Data			
Module Model Number	**Furnace Model**	**Ignitor**	**Furnace OEM**
18M3401	G60DF(X) or G60UH(X)	21D64-2*	Lennox
20300001	N/A		Goodman
20300003	N/A		
46M9901	G61MP		Lennox
50M51-242	FC9T	Use existing or 21D64-2	Coleman/Evcon/Luxaire/York
50M51-242	FL9T		
50M51-242	PT9A		
50M51-242	PT9B		
50M51-242	PT9C		
50M51-242	PT9D		
50M51-242	GM9T		
50M51-242	FC8T		
50M51-242	FL8T		
50M51-242	LC8T		
50M51-242	LL8T		
50M51-242	PT8A		
50M61-120	G61MPV	21D64-2*	Lennox
50M61-288	N/A		Amana/Goodman
50M61-289	N/A		
50M61-480	50M61-480		White-Rodgers Standard
50M61-495	XL80		American Standard/Trane
50M61-843	N/A		White-Rodgers Standard
83L9301	N/A		Lennox
CNT03077	XL80		Trane
X13650839010	XL80		

Note: Installer may have to modify existing ignitor hole to accommodate the new 21D64-2, with ceramic diameter (.394”).

***21D64-2 Ignitor Note:** In these applications, the existing 80V ignitor must be replaced by the 120V 21D64-2 ignitor.





21V51U-843

Includes:
- Module
- Ignitor Kit
- Wiring Harness

TECH PAGES 178-188

21V51U-843 KIT REPLACES:

White-Rodgers 50V51-XXX's and 50V61-XXX's Two-Stage HSI Systems with 80V or 120V Ignitors.

FEATURES

- 16-pin variable speed circulator output for ECM (Electronically Commutated Motor), dipswitch selectable for OEM applications two-speed inducer output, 2-stage gas valve output
- Pushbutton fault history retrieval.
- Furnace status LED – tri-color (green, red and amber).
- Heat fan off delay (dipswitch selectable), fan on delay for cooling.
- Auto second stage delay (dipswitch selectable).
- 120 VAC humidifier output/120 VAC electronic air cleaner output.

SPECIFICATIONS

Electrical Rating:	
Input Voltage	24 VAC, 60 Hz (Class II transformer required)
Nom. Input Current @ 24 VAC	595 mA + MV
Relay Load Ratings:	
Gas Valve Relays	1.5 amps @ 24 VAC, 60 Hz
Inducer Relays	2.2 FLA – 3.5 LRA @ 120 VAC
Humidifier Load	1.0 amp max. @ 120 VAC
Electronic Air Cleaner Load	1.0 amp max. @ 120 VAC
Ignitor Relay	4.0 amps max. @ 132 VAC, 60 Hz
Flame Current Requirements:	
Minimum current to insure flame detection	0.3 µa DC*
Maximum current for non-detection	0.1 µa DC*
Maximum allowable leakage resistance	100 M ohms
*Measured with a DC microameter in the flame probe lead	
Operating Temperature Range	-40° to 175°F (-40 to 80°C)
Humidity Range	5% to 93% relative humidity (non-condensing)
Flame Failure Response Time	2.0 sec. max. @ 60Hz

TECHNICAL HELP

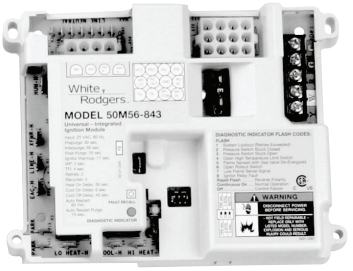
Wiring Diagram/Operation . . . . . See pages 178-188

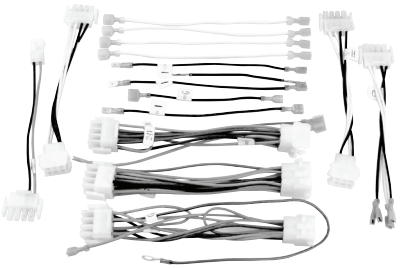
Model Number	Pre-Purge	Ignitor Warm-Up	Retries	Heat Delay to Fan ON	Heat Delay to Fan OFF	Cool Delay to Fan ON	Cool Delay to Fan OFF	Automatic Reset Time
21V51U-843	15	17	2	45	90/120/150/180	5	60	60 minutes

21V51U-843 Cross Reference Application Data				
Module Model Number	**Furnace Model**	**Harness**	**Ignitor**	**Furnace OEM**
18M9901	G60DFV (X) or G60UHV	None required	21D64-2*	Lennox
20300002	N/A			Amana/Goodman
20300004	N/A			
20300006	Same as 50V61-289			
49M5901	G60UHV or G61MPV			Lennox
50V51-243	FC8V, FC9V, FL8V, FL9V, GM8V, GM9V, LC8V, LL8V, LM8V, PV8A, PV9A or PV9B		Use existing or 21D64-2	Coleman/Evcon/Luxaire/York
50V51-243	FL9V	None required		Coleman/Evcon/Luxaire/York
50V51-243	PV9B	None required		Coleman/Evcon/Luxaire/York
50V51-243	GM9V	None required	Use existing or 21D64-2	Coleman/Evcon/Luxaire/York
50V51-243	PV9B	None required		Coleman/Evcon/Luxaire/York
50V51-243	GM8V	None required		Coleman/Evcon/Luxaire/York
50V51-243	LM8V	None required	Use existing or 21D64-2	Coleman/Evcon/Luxaire/York
50V51-243	FC8V	None required		Coleman/Evcon/Luxaire/York
50V51-243	FL8V	None required		Coleman/Evcon/Luxaire/York
50V51-243	LC8V	None required	Use existing or 21D64-2	Coleman/Evcon/Luxaire/York
50V51-243	LL8V	None required		Coleman/Evcon/Luxaire/York
50V51-243	PV8A	None required		Coleman/Evcon/Luxaire/York
50V51-288	N/A	A, B	Use existing or 21D64-2	Amana/Goodman
50V51-289	N/A			
50V51-290	N/A			
50V51-507	XV80 or XV80i	None required	21D64-2*	American Standard/Trane
50V61-120	G60DFV (X) or G60UHV or G61MPV			Lennox
50V61-143	CDX1-75N, CDX1-100N, CDX1-125N, CHX1-75N, CHX1-100N or CHX1-125N			Thermo Pride
50V61-288	N/A			Amana/Goodman
50V61-289	AMV91155DXA			
50V61-289	AMV81155CXA			
50V61-289	ADV80703BXA			
50V61-289	ADV80905CXA			
50V61-289	AMV90453BXA			
50V61-289	AMV90704CXA			
50V61-289	AMV90905DXA			
50V61-289	AMV80703BXA			
50V61-289	AMV80905CXA			
50V61-289	AMV80704BXA			
50V61-289	ADV81155CXA			
50V61-289	AMV80704CXA			
2030006S	Same as 50V61-289			Amana/Goodman
50V61-507	XV80 or XV80i			American Standard/Trane
50V61-480	50V61-480	21V51U-843	Trane	American Standard/Trane
50V61-486	50V61-486	21V51U-843	Trane	American Standard/Trane
B1809925	N/A	A, B	Use existing or 21D64-2	Amana/Goodman
B1809927	N/A			
B1809927S	N/A			
CNT03078	XV80 or XV80i	None required	21D64-2*	American Standard/Trane
D156245P01				
D34142P01				
PCB00106	N/A	A, B	Use existing or 21D64-2	Amana/Goodman
PCB00106S	N/A			
PCBBF106	N/A			
PCBBF106S	N/A			
PCBBF107S	N/A			
X13650840010	XV80 or XV80i	None required	21D64-2*	American Standard/Trane

Note: Installer may have to modify existing ignitor hole to accommodate the new 21D64-2, with ceramic diameter (.394").

***21D64-2 Ignitor Note:** In these applications, the existing 80V ignitor must be replaced by the 120V 21D64-2 ignitor.





50M56U-843

Includes:
- Module
- Ignitor Kit
- Wiring Harness

TECH PAGES 209-212

50M56U-843 KIT REPLACES:

Virtually All White-Rodgers and Competitive Single Stage Carbide and Nitride HSI Systems. Replaces All OEM Models – 80 Volts or 120 Volts Ignitor Applications.
Replaces More Models Than Honeywell S9200U1000.

FEATURES

- 3 Fan Speeds – cool, low heat & high heat speeds.
- Universal nitride ignitor kit – 21D64-2.
- 9 quick-select/quick-connect wiring harnesses.
- Red LED diagnostic flash codes with stored fault recall.
- Low voltage fuse protection, 3A replaceable automotive type.
- Humidifier & Electronic Air Cleaner connections (optional).

SPECIFICATIONS

Electrical Rating:	
Input Voltage	25 VAC 50/60 Hz
Max. Input Current	25 VAC: 0.45 amp
Gas Valve Relays	1.5 amp @ 25 VAC 50/60 Hz
Inducer Relay	2.2 FLA–3.5 LRA @ 120 VAC
Circulator Relay	14.5 FLA–25.0 LRA @ 120 VAC
Ignitor Relay	6.0 amp @ 120 VAC 50/60 Hz (resistive)
Flame Current Requirements:	
Minimum current to insure flame detection	1 µa DC*
Maximum current for non-detection	0.1 µa DC*
Maximum allowable leakage resistance	100 M ohms
*Measured with a DC microameter in the flame probe lead	
Operating Temperature Range	-40° to 176°F (-40° to 80°C)
Flame Failure Response Time	2.0 sec

PARTS AND ACCESSORIES

See end of this section for parts and accessories

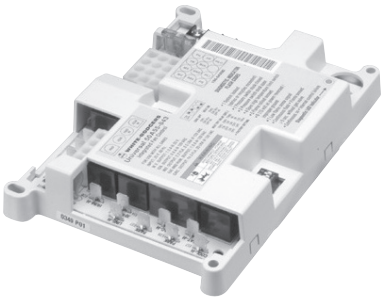
TECHNICAL HELP

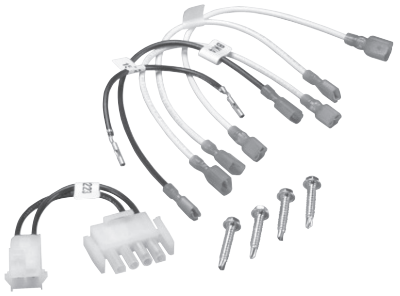
Wiring Diagram . . . . . See pages 209-212

Model Number	Pre-Purge	Ignitor Warm-Up	Retries	Heat Delay to Fan ON	Heat Delay to Fan OFF	Cool Delay to Fan ON	Cool Delay to Fan OFF	Automatic Reset Time
50M56U-843	30	17	2	30	100/150	6	45	60 minutes

50M56U-843 Replaces:

031-00662	1380-699	50A50-473	62-24268-03
031-00662-000	265901	50A50-474	624557
031-00662-700	265902	50A50-475	6245570
031-01250-000	3101250000	50A50-571	624564
031-01250-700	3101973000	50A55143	6245640
031-01266-000	32M88	50A55-143	624591
031-01266-700	32M8801	50A55-241	624591-x
031-01284-000	331-01933-000	50A55-245	624628
031-09166-000	33101972200	50A55-250	624628-0
031-09167-000	331-09167-000	50A55-285	6246310
100925-03	350486	50A55-286	624631-0
1010806	350836	50A55-288	624631A
1012-83-9336AHSC1	41F-5	50A55-289	695-200
1012-83-9337A	50A50-110	50A55-474	69M08
1012-925A	50A50-111	50A55-476	6DT-1
1012-925B	50A50-112	50A55-571	6DT-2
1012-925C	50A50-113	50A55-843	710128A
1012933D	50A50-130	50A56-242	8068561
1012-933D	50A50-131	50A56-243	8068563
10207701	50A50-142	50A65	902378
10207702	50A50-143	50A65-120	902696
102077-02	50A50-205	50A65-121	903106
10207703	50A50-206	50A65-143	99958174
102077-03	50A50-207	50A65-288	99958175
10207704	50A50-208	50A65-289	CNT03740
102077-04	50A50-209	50A65-474	CNT03742
10207706	50A50-210	50A65-475	CNT04664
102077-06	50A50-215	50A65-476	D330927P01
102077-09	50A50-216	50A65-843	D330930P01
10207710	50A50-229	50M56-289	D330934P01
102077-10	50A50-230	50T35-730	D340035P01
10207714	50A50-240	50T35-743	D340354P01
102077-14	50A50-241	50T55-289	D340774P01
10207717	50A50-245	52537074000	D341213P01
102077-17	50A50-285	52537077000	D341396P01
10207719	50A50-286	5253733900	G951ADB1401
102077-19	50A50-288	56L84	G951ADB1401C
10207720	50A50-295	56L8401	G951ADB-1401C
10207720S	50A50-296	61F3	G951ADB1402
10M93	50A50-298	62-22694-xx	G951ADB-1402
10M9301	50A50-405	62-22732-xx	G951ADB-1403
1214201	50A50-406	62-24044-xx	G951AEB-1403
12L6901	50A50-407	62-24045-01	ICM280
1380686	50A50-408	62-24046-01	P03101267001
1380-686	50A50-438	62-24084-82	P031-01267-001
1380698	50A50-471	62-24268-01	X4459
1380699	50A50-472	62-24268-02	X445901





50A55-843 UNIVERSAL SILICON CARBIDE INTEGRATED FURNACE CONTROL

Controls Gas Valve, Ignitor, Blower, Inducer, Humidifier and Air Cleaner. Replaces Most Trane, York, ICP and Amana White-Rodgers models.

FEATURES

- Includes flash code diagnostics.
- Replaces 50A50 and 50A55 controls (consult Integrated Silicon Carbide Module Reference Chart below).
- Fused to protect low voltage system transformers.
- Includes mounting hole template.
- Adjustable blower relay.

SPECIFICATIONS

Input Voltage	25 VAC 50 / 60 Hz
Maximum Input Current @ 25 VAC	0.45 amp
Valve Relay	1.5 amp @ 25 VAC 50 / 60 Hz 0.6 pf
Ignitor Relay	6.0 amp @ 120 VAC 50 / 60 Hz (resistive)
Inducer Relay	2.2 FLA – 3.5 LRA @ 120 VAC
Circulator Relay	14.5 FLA – 25.0 LRA @ 120 VAC
Operating Temperature Range	-40 to +175°F (-40 to +79°C)
Humidity Range	5% to 93% relative humidity (non-condensing)

TECH PAGES 189-197

TECHNICAL HELP

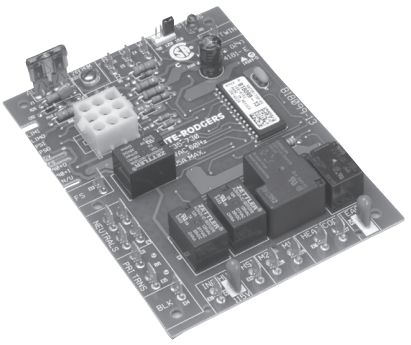
Wiring / configuration / troubleshooting see pages 189-197

Model Number	Pre-purge	Delay Heat		Delay Cool		Auto Reset
		ON	OFF	ON	OFF	
50A55-843	30 sec.	30 / 45	60 / 90 / 120 / 180	5	45 / 90	60 minutes

CROSS REFERENCE

50A55-843 Replaces:

031-00662	1380699	50A50-240	50A55-286
031-00662-000	1380-699	50A50-241	50A55-288
031-00662-700	350486	50A50-245	50A55-438
03101250000	3XA75	50A50-285	50A55-474
031-01250-000	4DG53	50A50-286	50A55-571
031-01250-700	4DG54	50A50-288	50A55-843
031-01266-000	4DG55	50A50-295	52537074000
031-01266-700	4DG56	50A50-296	52537077000
031-01284-000	50A50-110	50A50-298	5253733900
1010806	50A50-111	50A50-405	8068142
10207701	50A50-112	50A50-406	8068561
10207702	50A50-113	50A50-407	8068563
102077-02	50A50-130	50A50-408	99958174
10207703	50A50-131	50A50-438	99958175
102077-03	50A50-142	50A50-471	CNT03740
10207704	50A50-143	50A50-472	D330927P01
102077-04	50A50-205	50A50-473	D330930P01
10207706	50A50-206	50A50-474	D330934P01
102077-09	50A50-207	50A50-475	D340035P01
10207710	50A50-208	50A50-571	D340354P01
10207714	50A50-209	50A55143	D340774P01
10207719	50A50-210	50A55-143	X13120666010
10334901	50A50-215	50A55-241	X445901
1380686	50A50-216	50A55-245	
1380-686	50A50-229	50A55-250	
1380698	50A50-230	50A55-285	



50T35-743

50T35-743 SILICON CARBIDE INTEGRATED FURNACE CONTROL

Controls Gas Valve, Ignitor, Two Speed Blower Motor, Inducer, Humidifier (Both 120v & 24v Input), and Air Cleaner. Replaces OEM Goodman, UTEC and TI Models

FEATURES

- Includes flash code diagnostics.
- Twinning.
- Includes mounting hole template.
- Fused to protect low voltage system transformers.
- Adjustable blower relay.
- 90+ furnace option.

SPECIFICATIONS

Operating Temperature	-40 to 176°F
Humidity Range	95% RH (non-condensing)
Mounting	Plastic standoffs
Electrical Ratings @ 77°F (25°C)	
Input Voltage	20-30 VAC RMS 50 / 60 Hz
Maximum Input Current @ 30 VAC	0.35 amp
Relay Load Ratings	
Valve Relay	1.5 amp @ 30 VAC 50 / 60 Hz 0.6 pf
Ignitor Relay	5.0 amp @ 120 VAC 50 / 60 Hz
Inducer Relay	4.0 FLA-8.0 LRA @ 120 VAC
Circulator Relay	14.5 FLA-25.0 LRA @ 120 VAC
Flame Current Requirements	
Minimum current to insure flame detection	75 uA DC
Maximum current for non-detection	0.10 uA DC
Maximum allowable leakage resistance	100 M ohms
Timing Spec @ 60 Hz	
Flame establishing time	n/a
Flame failure response time	2.0 seconds maximum

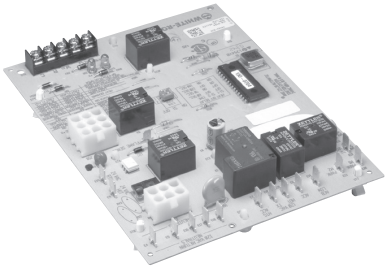
NOTE: At 50 Hz, all timing specifications should be increased by 20%.

Model Number	Prepurge Time	Heat Delay On	Heat Delay Off Sec.	Cool Delay On Sec.	Cool Delay Off Sec.	Post Purge
50T35-743	15 seconds	30	90 / 120 / 150	5	60	25 sec (29 w/ 90+)

CROSS REFERENCE

50T35-743 Replaces:

1012-933D
41F-5
50T35-730
50T35-743
B1809913
CNT04664



50A62-820 NITRIDE IGNITION INTEGRATED FURNACE CONTROL

Controls Gas Valve, Ignitor, Blower, Inducer, Humidifier and Air Cleaner. Replaces Lennox models

FEATURES

- Includes diagnostic indicator flash codes.
- Replaces 50A62-121.
- Remote flame sense.
- OEM test mode.
- Diagnostic LED indicators off during microcomputer self-check.

SPECIFICATIONS

Input Voltage	25 VAC 50 / 60 Hz
Maximum Input Current @ 25 VAC	0.45 amp
Valve Relay	1.5 amp @ 25 VAC 50 / 60 Hz 0.6 pf
Ignitor Relay	6.0 amp @ 120 VAC 50 / 60 Hz (resistive)
Inducer Relay	2.2 FLA – 3.5 LRA @ 120 VAC
Circulator Relay	14.5 FLA – 25.0 LRA @ 120 VAC
Operating Temperature Range	-40 to +175°F (-40 to +79°C)
Humidity Range	5% to 93% relative humidity (non-condensing)

TECH PAGES 198-201

TECHNICAL HELP

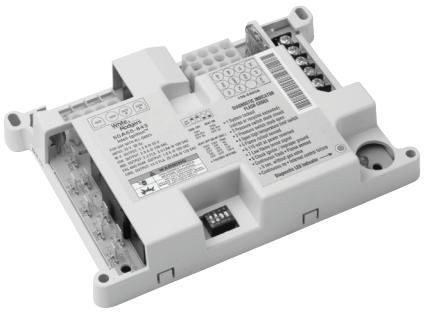
Wiring and configuration. . . . . see pages 198-201

Model Number	Pre-purge	Delay Heat		Delay Cool		Auto Reset
		ON	OFF	ON	OFF	
50A62-820	15	45	60 / 90 / 120 / 180	0	0	60 minutes

CROSS REFERENCE

50A62-820 Replaces:

24L8501
50A62-121
50A62-820
56L8301
97L4801
CNT03741



50A65-843

50A65-843 UNIVERSAL NITRIDE IGNITION INTEGRATED FURNACE CONTROL

Control Gas Valve, Ignitor, Blower, Inducer, Humidifier and Air Cleaner. Replaces OEM, Trane, York, ICP and Amana models.

FEATURES

- Includes diagnostic indicator flash codes.
- Replaces 50A65-120, -143, -288, -474, -475 controls (consult Integrated Nitride Module Reference Chart below).
- Replaceable 3A fuse.
- 60 minute auto reset.
- Single channel flame sense.

SPECIFICATIONS

Input Voltage	25 VAC 50 / 60 Hz
Maximum Input Current @ 25 VAC	0.45 amp
Valve Relay	1.5 amp @ 25 VAC 50 / 60 Hz 0.6 pf
Ignitor Relay	6.0 amp @ 120 VAC 50 / 60 Hz (resistive)
Inducer Relay	2.2 FLA – 3.5 LRA @ 120 VAC
Circulator Relay	14.5 FLA – 25.0 LRA @ 120 VAC
Electronic Air Cleaner and Humidifier	1 A @ 120 VAC
Operating Temperature Range	-40 to +175°F (-40 to +79°C)
Humidity Range	5% to 93% relative humidity (non-condensing)

TECHNICAL HELP

TECH PAGES 202-203

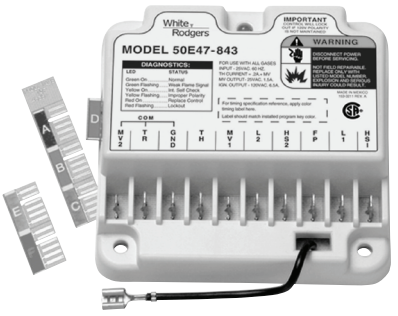
Wiring and configuration . . . . . see pages 202-203

Model Number	Pre-purge	Delay Heat		Delay Cool		Auto Reset
		ON	OFF	ON	OFF	
50A65-843	30 sec.	30 / 45	60 / 90 / 120 / 180	5	45 / 90	60 minutes

CROSS REFERENCE

50A65-843 Replaces:

10207717	50A65-288
10207720	50A65-289
10207720S	50A65-474
10M9301	50A65-475
12L6901	50A65-843
32M8801	56L8401
350836	CNT03742
3XA76	D341213P01
50A65-120	D341396P01
50A65-121	X13120667010
50A65-143	



50E47-843

UNIVERSAL 50E47-843 NON-INTEGRATED HSI IGNITION MODULE

The Universal 50E47-843 Replaces White-Rodgers 50E47 Modules and Many Competitive Silicon Carbide, Non-Integrated Modules. Includes a Complete Module Cross Reference and Program Keys for Fast and Accurate Replacement.

FEATURES

- Program keys for multiple timing selections.
- Tri-colored LED indicator for diagnostics.
- Direct and indirect flame sense compatible.
- Universal design for maximum versatility.

SPECIFICATIONS

Dimensions	4.13″W x 4.13″H x 1.5″D
Electrical rating	Input 18 to 30 VAC, 25 VAC nominal, Max. input current @ 25 VAC; .250mA @ 28 VAC
Relay load settings	Valve relay: 1.5 amps @ 28 VAC, 50 / 60 Hz, .6 pf Ignitor relay: 1.52A, 120 VAC, 50 / 60 Hz resistive
Operating temperature	-40° to +175°F (-40° to +80°C)
Humidity range	95% RH (non-condensing) max.
Mounting	Surface mount or 4″ x 4 junction box
Applications	For use with all gases
Flame current requirements	Min. current to insure flame: 2 µADC Min. current for non-detection: 0.2 µADC Max. allowable leakage resistance: 100 M Ohms
Agency	A.G.A. and C.G.A. design certified

TECH
PAGES
204-207

TECHNICAL HELP

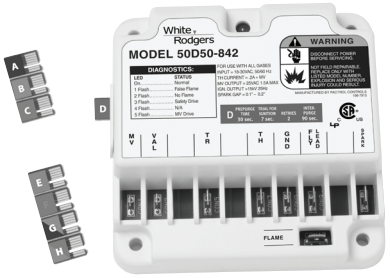
Wiring operation and troubleshooting . . . . . See pages 204-207

Model Number	PROGRAM KEY (COLOR)	TRIAL FOR IGNITION	RETRIES	PREPURGE	IGNITOR WARMUP
50E47-843	A (blue)	4 Sec.	0	30 Sec.	45 Sec.
	B (red)	4 Sec.	2	30 Sec.	45 Sec.
	C (green)	7 Sec.	0	30 Sec.	45 Sec.
	D (violet)	7 Sec.	2	30 Sec.	45 Sec.
	E (orange)	4 Sec.	2	30 Sec.	17 Sec.
	F (yellow)	7 Sec.	2	30 Sec.	17 Sec.

CROSS REFERENCE

50E47-843 Replaces:

0050050	50D47-160	50E47-120	50F47-101	780-910	HS780-17NR-312A	HS780-34PL-106A	S89C1004
025-25436-000	50D47-161	50E47-130	50F47-140	832-002	HS780-17PL-106A	HS780-34PL-108A	S89C1012
02525436700	50D47-170	50E47-140	50F47-160	832-005	HS780-17PL-108A	HS780-34PL-304A	S89C1046
025-25436-700	50D47-20	50E47-150	50F47-40	833-002	HS780-17PL-304A	HS780-34PL-306A	S89C1079
1001346	50D47-260	50E47-160	50F47-60	995395	HS780-17PL-306A	HS780-34PL-308A	S89C1087
10376732	50D47-270	50E47-161	50G47-1	99796380	HS780-17PL-308A	HS780-34PR-106A	S89C1103
120-08027	50D47-40	50E47-170	50G47-130	99905232	HS780-17PR-104A	HS780-34PR-108A	S89D1002
1300-4928	50D47-50	50E47-20	50G47-140	C6411102	HS780-17PR-108A	HS780-34PR-304A	S89G1005
1380694	50D47-60	50E47-260	50G47-150	CNT03776	HS780-17PR-306A	HS780-34PR-306A	S89G1013
2076-0184	50D47-70	50E47-30	50G47-160	CNT03794	HS780-34NL-106A	HS780-34PR-308A	S89G1021
350760	50D47-905	50E47-40	50G47-40	HS780-17NL-104A	HS780-34NL-108A	S8610U1000	S89G1047
3591-1306	50D47-915	50E47-50	50G47-60	HS780-17NL-106A	HS780-34NL-304A	S890C1007	S89H1003
3XA74	50D47-925	50E47-560	6279527	HS780-17NL-108A	HS780-34NL-306A	S890D1006	S89H1011
4CZ50	50D47-935	50E47-60	780-780	HS780-17NL-304A	HS780-34NL-308A	S890G1003	S89H1029
4E954	50D47-945	50E47-70	780-783	HS780-17NL-306A	HS780-34NL-312A	S890G1011	S89J1008
4E955	50D47-955	50E47-841	780-784	HS780-17NL-308A	HS780-34NR-104A	S890G1029	X13130437070
4E956	50D47-965	50E47-843	780-785	HS780-17NR-104A	HS780-34NR-106A	S890G1037	X13130437080
50D47-1	50D47-975	50E47-850	780-786	HS780-17NR-106A	HS780-34NR-304A	S890H1002	X324601
50D47-101	50E47-1	50E47-851	780-787	HS780-17NR-108A	HS780-34NR-306A	S890H1010	
50D47-120	50E47-10	50E47-860	780-788	HS780-17NR-304A	HS780-34NR-308A	S890H1028	
50D47-140	50E47-101	50E47-861	780-789	HS780-17NR-306A	HS780-34NR-312A	S8910U	
50D47-150	50E47-110	50E47-870	780-790	HS780-17NR-308A	HS780-34PL-104A	S8910U1000	



50D50-842

UNIVERSAL DIRECT SPARK IGNITION CONTROL FOR ALL GASES

The 50D50-842 is a Microprocessor Based Gas Ignition Control for Heating Appliance Using Either Natural or LP Gas. Proof of Flames is Accomplished. The Unit is Designed as a Direct Spark Ignition Source

FEATURES

- Color LED indicator for diagnostics.
- 1/4″ and 3/16″ quick connect terminals.
- Program keys.
- Damper interface.

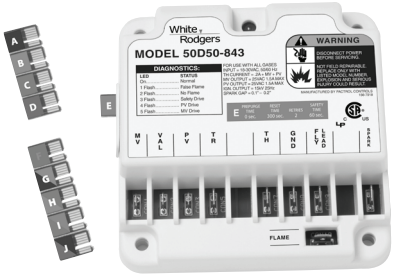
SPECIFICATIONS

Electrical Ratings . . . . . Input 18-30 VAC, 25 VAC nominal
Maximum Input Current @ 25 VAC . . . . 0.2A + MV @ 25°C
Ambient Operating Range . . . . . -40° to +175°F
Flame Establishment Time . . . . . .8 sec
Mounting. . . . . Multipoise
Agency Approvals. . . . . CSA USA / CANADA

TECH PAGE 208

50D50-842 CONFIGURATION OPTIONS (All Times in Seconds)

Model Number	Key	Trial for Ignition	Prepurge	Retries	Interpurge
50D50-842	A	4	0	2	90 sec.
	B	4	30	2	90 sec.
	C	7	0	2	90 sec.
	D	7	30	2	90 sec.
	E	7	0	0	N/A
	F	7	30	0	N/A
	G	11	0	0	N/A
	H	11	30	0	N/A



50D50-843

UNIVERSAL PROVEN PILOT SPARK CONTROL FOR ALL GASES

Microcomputer Based Gas Ignition & Primary Safety Control Designed for Interrupted Spark and Burner Supervision of All Gases Used in Gas Fired Appliance Applications.

FEATURES

- Field service replacement for most Honeywell, Robertshaw, Johnson Controls and UTEC Intermittent Pilot Ignition Controls.
- Provides ignition, proof of ignition and precise timing.
- Works with single rod or dual rod remote sensor.
- Color LED indicator for diagnostics.

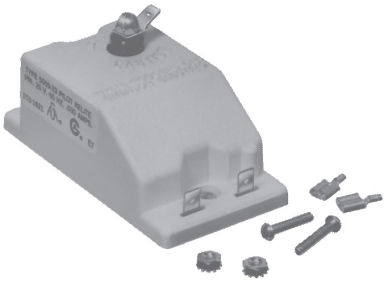
SPECIFICATIONS

Electrical Ratings . . . . . Input 18-30 VAC, 25 VAC nominal
Maximum Input Current @ 25 VAC . . . . 0.2A + MV + PV @ 25°C
Flame Out Recognition Time . . . . . 8 seconds
Ambient Operating Range . . . . . -40° to +176°F (-40° to +80°C)
Dimensions. . . . . 4.13″L x 4.13″W x 1.5″H
Agency Approvals. . . . . CSA USA/CANADA

TECH PAGE 208

50D50-843 CONFIGURATION OPTIONS (All Times in Seconds)

Model Number	Key	Reset Time	Prepurge	Retries	Safety Time
50D50-843	A	300	0	Continuous	90
	B	300	30	Continuous	90
	C	300	0	Continuous	30
	D	300	30	Continuous	30
	E	300	0	2	60
	F	300	30	2	60
	G	300	0	Continuous	15
	H	N/A	30	N/A	Continuous
	I	300	0	Continuous	4
	J	300	30	Continuous	4



5059-23
Pilot Relite Control

PILOT RELITE CONTROLS 5059

Generates Spark Until a Pilot Flame is Sensed

FEATURES

- Generates spark pulse until flame is sensed through spark electrode.
- Begins sparking immediately if flame extinguishes.
- Rugged solid state module design.
- Spark plug or spike output configurations available.

SPECIFICATIONS

Agency . . . . . C.S.A. approved

Model Number	Input Voltage	Electrical Rating	Description
5059-23	24 VAC	0.03 amps	Spark plug and 1/4″ spade connectors
5059-134	24 VAC	0.03 amps	Spike connector

760-56

IGNITION ELECTRODE ASSEMBLIES

Use Type 760-56 to Replace Cycle-Pilot® Ignition Electrodes and Cable Assemblies

Model Number	Description
760-56	24″ lead with slip on bracket. Also includes perforated mounting strap for varying applications

UNIVERSAL NITRIDE IGNITOR UPGRADE KIT

120V Nitride Upgrade Kit for Conversion of Silicon Carbide (Flat or Spiral).

FEATURES

- Robust Ignitor Design - for longer life and fewer callbacks - 3 year warranty
- Nitride Ignitor with 15.5" leads
- "Universal" mounting bracket and screw and ceramic wire nuts

SPECIFICATIONS

Input Voltage. . . . . 102-132 VAC, 60 Hz
Max. Load Current . . . . . 3.0 A @ 132 VAC, 25°C
Timing Rating . . . . . 17 sec. minimum
Load Insulation Temp. Rating. . . . . 250°C

Model Number	Lead Length	Description
21D64-2	15.5"	Kit includes nitride ignitor, power supply module, universal mounting bracket, connection harness and furnace label

See page 56-57 for Ignitor Cross Reference

760-401
Flame Sensor

FLAME SENSOR FOR HOT SURFACE IGNITION (H.S.I.) SYSTEMS

Flame Sensors can be Mounted Remotely on Multiple Burners.

FEATURES

- High quality Alumina ceramic insulator.
- High temperature Kanthal flame rod material that can withstand 1800°F.
- Teflon insulated (250°C rating) lead wire.
- Single screw, plated steel mounting bracket.

SPECIFICATIONS

Agency . . . . . C.S.A approved

Model Number	Lead Length	Electrical Connection
760-401	30"	1/4" female spade terminal
760-802 ①	30"	1/4" female spade terminal

① Exact replacement for O.E.M. model

768A-815 (New)

768A-842

New!

768A-843

768A-844

768A-845

NITRIDE IGNITOR

OEM Replacement for Nitride Ignitors

Manufacturer	OEM #	Suggested Replacement	
		Carbide	Nitride Upgrade
Model Number	Terminal Type	Replace OEM Models	
768A-815	2 terminal AMP receptacle, .083 female sockets	Trane	A341947P01
			768A-015
768A-842	2 terminal AMP receptacle, .093 female sockets	Amana	11111701
			768A-2
			768A-842
768A-843	2 terminal AMP receptacle, .084 female sockets	Thermo Products	380650
			768A-843
			768A-843
768A-844	2 terminal AMP receptacle, .084 female sockets	Lennox Industries	41K5601
			768A-4
			768A-844
		Rheem	62-24134-02
768A-845	2 terminal AMP receptacle, .084 female sockets	Trane	768A-5
			768A-845
			IGN00104
			X13130524010

767A-356

767A-357

767A-361

767A-365

767A-366

767A-369

767A-370

See pages 56-57 for Ignitor Cross Reference

SILICON CARBIDE HOT SURFACE IGNITOR

Highly Reliable Ignition Source

FEATURES

- Multiple mounting styles.
- Works with 15, 17 or 45 second HSI systems.

SPECIFICATIONS

Electrical Rating . . . . . 120 VAC, 60 Hz
Agency . . . . . C.S.A. approved

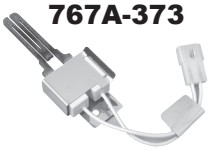
Model Number	Lead Length	Lead Insulation Temp. Rating	Electrical Connection	Ceramic Insulator & Electrical Connections (See Fig.)
767A-356	6″	200°C	Receptacle with .093″ Male Pins	A
767A-357	5.25″	200°C	Receptacle with .093″ Male Pins	B
767A-361	5.25″	200°C	Receptacle with .093″ Male Pins	C
767A-365	5.688″	200°C	1/4″ Female Spade Terminals	D
767A-366	5.313″	200°C	AMP 1-480699-0 Electrical Conn. Receptacle with .093″ Male Pins	E
767A-369	5.5″	200°C	Molex Internally Keyed Connector with .093″ Male Pins	F
767A-370	5.25″	200°C	Receptacle with .093″ Male Pins	G
767A-371	19.125″	200°C	Stripped Ends	H
767A-372	5.25″	200°C	Molex Side Lock Connector with .092″ Male Pins	I
767A-373	5.25″	200°C	Receptacle with .093″ Male Pins	J
767A-374	11″	200°C	Stripped Ends	K
767A-375	1.375″	200°C	1/4″ Female Spade Terminals	L
767A-376	4.5″	200°C	Molex Front Lock Connector with .092″ Male Pins	M
767A-377	4.5″	200°C	Molex Front Lock Connector with .092″ Male Pins	N
767A-378	5.125″	200°C	Electrical Connector matches AMANA #20165702	O
767A-379	7.5″	200°C	Electrical Connector matches YORK #025-33421-000	P
767A-380	6.125″	200°C	Electrical Connector matches ARMSTRONG #44744-2	Q
767A-381	7.5″	200°C	Electrical Connector matches YORK #473-20937-001	P
767A-382	5.25″	200°C	Receptacle with .093″ Male Pins	G
767A-383	5.25″	200°C	Molex Side Lock Connector with .092″ Male Pins	I
767A-384	5.25″	200°C	Receptacle with .093″ Male Pins	J

TECHNICAL HELP

Dimension drawings . . . . . see next page
Ignitor cross reference . . . . . see pages 56-57

767A-371

767A-372



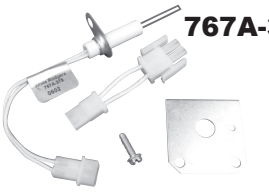
767A-373

767A-374

767A-375

767A-376

767A-377

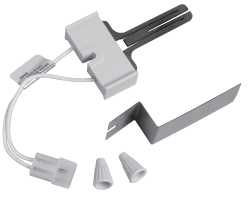


767A-378

767A-379

767A-380

767A-381



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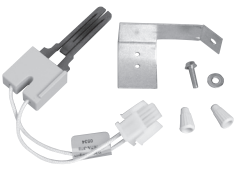

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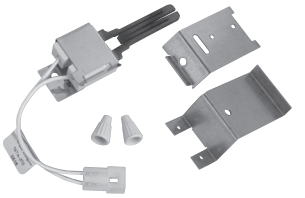
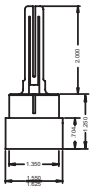


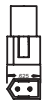
767A-384

A

767A-356



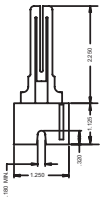
Lead Length 6.0



.093 Dia. Male Pin Terminals

B

767A-357

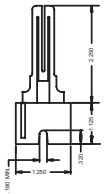


Lead Length 5.25

.093 Dia. Male Pin Terminals

C

767A-361

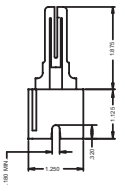


Lead Length 5.25

.093 Dia. Male Pin Terminals

D

767A-365

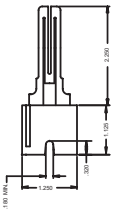


Lead Length 5.688

Uninsulated .250 Female Spade Terminals

E

767A-366

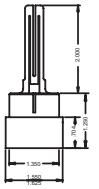


Lead Length 5.313

AMP Type 1-480699-0 .093 Male Pin Terminals

F

767A-369

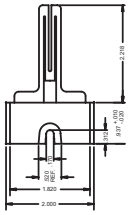


Lead Length 5.50

.093 Dia. Male Pin Terminals

G

767A-370/767A-382

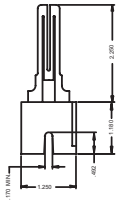


Lead Length 5.25

.093 Dia. Male Pin Terminals

H

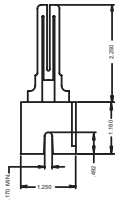
767A-371



Lead Length 19.125

I

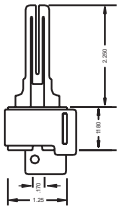
767A-372/767A-384



Lead Length 5.25

J

767A-373/767A-384

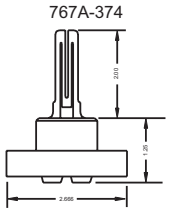


Lead Length 5.25

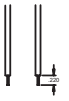
.093 DIA. MALE PIN TERMINALS

K

767A-374

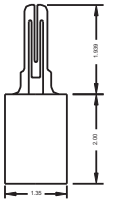


Lead Length 11.00



L

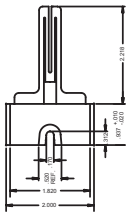
767A-375



Lead Length 1.375

M

767A-376

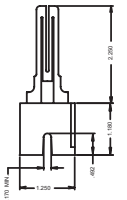


Lead Length 5.00

MOLEX CONNECTOR

N

767A-377

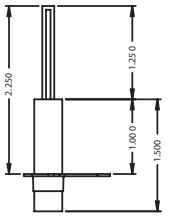


Lead Length 5.25

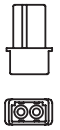
MOLEX CONNECTOR

O

767A-378

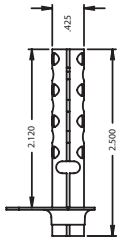


Lead Length 5.125

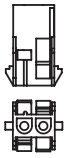


P

767-379/ 767A-381



Lead Length 7.500



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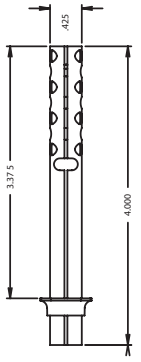
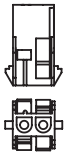
767A-380



Lead Length 6.125



SILICON CARBIDE / NITRIDE UPGRADE IGNITOR CROSS REFERENCE

White Rodgers

OEM #	Manufacturer	Suggested Replacement	
		Carbide	Nitride or Nitride Upgrade Kit
0230K00001	**Goodman/Janitrol**	767A-382	21D64-2
025-25435-000	**York**	767A-365	21D64-2
025-27766-000	**York**	767A-361	21D64-2
025-27774-000	**York**	767A-361	21D64-2
025-29043-000	**York**	767A-361	21D64-2
025-29050-000	**York**	767A-361	21D64-2
02532625000	**York/Luxaire**	None	21D64-2
025-32625-000	**Evcon Coleman**	None	21D64-2
025-33421-000	**York**	767A-379	
09050	**Williamson, Hupp Industries**	767A-371	21D64-2
10041601	**Amana**	767A-369	
1009604	**Intercity**	767A-373	21D64-2
10399	**Enerco Tech**	767A-371	21D64-2
105141000	**Nordyne**	767A-371	21D64-2
10735003A	**Amana**	767A-371	21D64-2
108803-G1	**Perfection Schwank**	767A-374	21D64-2
1096048	**Arco Air, Comfort Maker, Heil, Inter City, Tempstar**	767A-384	21D64-2
11111701	**Amana**	None	768A-842
120-07549	**LB White**	767A-371	21D64-2
1380654	**Snyder General**	767A-370	21D64-2
1380672	**Snyder General**	767A-370	21D64-2
1380680	**Arco Air**	767A-384	21D64-2
1474-051	**Coleman/Evcon**	767A-371	21D64-2
1474-052	**Coleman/Evcon**	767A-371	21D64-2
150114-04-01	**Comfort Zone**	767A-374	21D64-2
1EFX2	**W. W. Grainger**	None	21D64-2
20015201	**Ducane**	767A-370	21D64-2
201	**Norton**	767A-370	21D64-2
20165702	**Amana**	767A-378	21D64-2
20165703	**Amana**	767A-382	21D64-2
201657-03	**Amana**	767A-382	21D64-2
20165703S	**Amana**	767A-382	21D64-2
201A	**Norton**	767A-369	
201D	**Norton and Detroit Radiant**	767A-361	21D64-2
201J	**Norton**	767A-374	21D64-2
201K	**Norton**	767A-371	21D64-2
201L	**Norton**	767A-371	21D64-2
201M	**Norton**	767A-374	21D64-2
201N	**Norton/Metzger**	767A-371	21D64-2
201R	**Norton**	767A-371	21D64-2
201W	**Norton, American Road Equip, Metzger**	767A-371	21D64-2
201Y	**Norton.**	767A-374	21D64-2
20834	**DMO Industries**	767A-371	21D64-2
21D64-1	**White-Rodgers**	None	21D64-2
21D64-2	**White-Rodgers**	None	21D64-2
2532625000	**Luxaire/Moncrief**	767A-371	21D64-2
2600-359	**Trianco-Heatmaker**	767A-369	
271	**Norton**	767A-370	21D64-2
271A	**Norton**	767A-369	
271B	**American Appliance**	767A-374	21D64-2
271M	**Norton**	767A-374	21D64-2
271N	**Norton**	767A-371	21D64-2
271NM	**Norton**	767A-384	21D64-2
271P	**Norton**	767A-361	21D64-2
271W	**Norton, Dornback Furnace**	767A-371	21D64-2

OEM #	Manufacturer	Suggested Replacement	
		Carbide	Nitride or Nitride Upgrade Kit
271Y	**Norton**	767A-374	21D64-2
3200580	**Mor-Flo**	767A-374	21D64-2
3200618	**Mor-Flo**	767A-371	21D64-2
3210401	**Mor-Flo**	767A-374	21D64-2
340039P01	**Trane**	None	21D64-2
380650	**Thermo Products**	None	768A-843
38322B001	**Armstrong Air**	767A-371	21D64-2
3XA73	**W. W. Grainger**	None	21D64-2
41-401	**Robertshaw**	767A-369	
41-402	**Robertshaw**	767A-371	21D64-2
41-403	**Robertshaw**	767A-370	21D64-2
41-404	**Robertshaw**	767A-382	21D64-2
41-405	**Robertshaw**	767A-361	21D64-2
41-406	**Robertshaw**	767A-374	21D64-2
41-407	**Robertshaw**	767A-376	21D64-2
41-408	**Robertshaw**	767A-372	21D64-2
41-409	**Robertshaw**	767A-370	21D64-2
41-410	**Robertshaw**	767A-377	21D64-2
41-411	**Robertshaw**	767A-383	21D64-2
41-412	**Robertshaw**	767A-373	21D64-2
41-413	**Robertshaw**	767A-375	21D64-2
41-414	**Robertshaw**	767A-384	21D64-2
41-418	**Robertshaw**	None	21D64-2
41-602	**Robertshaw**	767A-378	21D64-2
41-603	**Robertshaw**	767A-379	
41-604	**Robertshaw**	767A-380	
41-605	**Robertshaw**	767A-381	
41K5601	**Lennox Industries**	None	768A-844
50018	**HB Smith**	767A-361	21D64-2
511-330-139	**Weil-Mclain**	767A-370	21D64-2
511-330-188	**Weil-Mclain**	767A-374	21D64-2
511-330-190	**Weil-Mclain**	767A-382	21D64-2
511-330-193	**Weil-Mclain**	767A-370	21D64-2
5E809	**White-Rodgers**	767A-356	
5E810	**White-Rodgers**	767A-357	21D64-2
5E811	**White-Rodgers**	767A-361	
5E812	**Ww Grainger**	767A-365	21D64-2
5E813	**Ww Grainger**	767A-366	21D64-2
5H76032A	**Modine**	None	21D64-2
600915	**Raypak**	767A-370	21D64-2
601	**Amana**	767A-382	21D64-2
62-22441-01	**Rheem**	None	21D64-2
62-22868-02	**Rheem/Ruud**	767A-371	21D64-2
62-22868-82	**Rheem**	767A-383	21D64-2
62-22868-93	**Rheem/Ruud**	767A-371	21D64-2
62-24134-02	**Rheem**	None	768A-844
62821-001	**Wayne Home Equipment**	767A-371	21D64-2
62821-002	**Wayne Home Equipment**	767A-371	21D64-2
632-0770	**Nordyne**	767A-371	21D64-2
632-0880	**Nordyne**	767A-371	21D64-2
75-92-104	**Majestic.**	767A-371	21D64-2
75-92-105	**Majestic.**	767A-371	21D64-2
767A-301	**White-Rodgers**	767A-361	21D64-2
767A-303	**White-Rodgers**	767A-357	21D64-2
767A-306	**White-Rodgers**	767A-361	21D64-2
767A-309	**White-Rodgers**	767A-356	

OEM #	Manufacturer	Suggested Replacement	
		Carbide	Nitride or Nitride Upgrade Kit
767A-310	**White-Rodgers**	767A-365	21D64-2
767A-311	**White-Rodgers**	767A-366	21D64-2
767A-350	**White-Rodgers**	767A-361	21D64-2
767A-353	**White-Rodgers**	767A-357	21D64-2
767A-354	**White-Rodgers**	767A-361	21D64-2
767A-356	**White-Rodgers**	767A-356	
767A-357	**White-Rodgers**	767A-357	21D64-2
767A-361	**White-Rodgers**	767A-361	21D64-2
767A-364	**White-Rodgers**	767A-366	21D64-2
767A-365	**White-Rodgers**	767A-365	21D64-2
767A-366	**White-Rodgers**	767A-366	21D64-2
767A-369	**White-Rodgers**	767A-369	
767A-370	**White-Rodgers**	767A-370	21D64-2
767A-371	**White-Rodgers**	767A-371	21D64-2
767A-372	**White-Rodgers**	767A-372	21D64-2
767A-373	**White-Rodgers**	767A-373	21D64-2
767A-374	**White-Rodgers**	767A-374	21D64-2
767A-375	**White-Rodgers**	767A-375	21D64-2
767A-376	**White-Rodgers**	767A-376	21D64-2
767A-377	**White-Rodgers**	767A-377	21D64-2
767A-378	**White-Rodgers**	767A-378	21D64-2
767A-379	**White-Rodgers**	767A-379	
767A-380	**White-Rodgers**	767A-380	
767A-381	**White-Rodgers**	767A-381	
767A-382	**White-Rodgers**	767A-382	21D64-2
767A-383	**White-Rodgers**	767A-383	21D64-2
767A-384	**White-Rodgers**	767A-384	21D64-2
768A-143	**Thermo Products**	None	768A-843
768A-15	**Trane**	None	768A-815
768A-2	**Amana**	None	768A-842
768A-4	**Lennox Industries**	None	768A-844
768A-5	**Trane**	None	768A-845
768A-815	**White-Rodgers**	None	768A-815
768A-842	**Amana**	None	768A-842
768A-843	**Thermo Products**	None	768A-843
768A-844	**Lennox Industries**	None	768A-844
768A-845	**Trane**	None	768A-845
87197S	**Carlin**	767A-375	21D64-2
902661A	**Nordyne**	None	21D64-2
903110A	**Nordyne**	None	21D64-2
903758	**Nordyne**	None	21D64-2
90434300	**Roberts Gordon**	767A-370	21D64-2
90436600	**Roberts Gordon**	767A-371	21D64-2
91X2201	**Lennox Industries**	None	21D64-2

OEM #	Manufacturer	Suggested Replacement	
		Carbide	Nitride or Nitride Upgrade Kit
9302-094	**Viessman**	767A-361	21D64-2
94851	**Superior Fireplace**	767A-371	21D64-2
99796417	**White-Rodgers**	767A-361	21D64-2
99911563	**White-Rodgers**	767A-365	21D64-2
99911564	**White-Rodgers**	767A-366	21D64-2
A341947P01	**Trane**	None	768A-815
B1336102	**Amana**	767A-369	
B138196P01	**Trane**	767A-370	21D64-2
B1401009	**Goodman**	767A-373	21D64-2
B1401015S	**Goodman/Janitrol**	767A-384	21D64-2
B1401018	**Goodman**	None	21D64-2
B1401018S	**Goodman/Janitrol**	767A-384	21D64-2
B140109S	**Goodman/Janitrol**	767A-384	21D64-2
B144676P01	**Trane**	767A-377	21D64-2
B144676P02	**Trane**	767A-376	21D64-2
B340039P01	**Trane**	767A-372	21D64-2
C-238	**Claire Brothers**	767A-371	21D64-2
C-242	**Claire Brothers**	767A-371	21D64-2
D9918202A	**Amana**	767A-369	
F767A-356	**White-Rodgers**	767A-356	
F767A-357	**White-Rodgers**	767A-357	21D64-2
F767A-361	**White-Rodgers**	767A-361	21D64-2
IGN00023	**Trane**	767A-371	21D64-2
IGN00026	**Trane**	767A-370	21D64-2
IGN00030	**Trane**	767A-376	21D64-2
IGN00034	**Trane**	767A-372	21D64-2
IGN00054	**Trane**	767A-374	21D64-2
IGN00104	**Trane**	None	768A-845
IGN00115	**Trane**	None	21D64-2
IGN00134	**Trane**	None	21D64-2
LH33ZG002	**Carrier/Bryant/Payne**	None	21D64-2
LH33ZS001	**Carrier/Bryant/Payne**	None	21D64-2
LH33ZS001A	**Carrier Corp.**	767A-370	21D64-2
LH33ZS002	**Carrier Corp.**	767A-370	21D64-2
LH33ZS002A	**Carrier/Bryant/Payne**	None	21D64-2
LH33ZS003	**Carrier/Bryant/Payne**	None	21D64-2
LH33ZS003A	**Carrier/Bryant/Payne**	None	21D64-2
LH33ZS004	**Carrier Corp.**	767A-370	21D64-2
Q3200U	**Honeywell**	None	21D64-2
Q3200U1004	**Honeywell**	None	21D64-2
X13120661010	**Trane**	None	21D64-2
X13130524010	**Trane**	None	768A-845
X928101	**Lennox Industries**	None	21D64-2

H06E

UNIVERSAL REPLACEMENT THERMOCOUPLES

Specially Designed for Universal Replacement.
Thermocouples are priced individually, order only in multiples of 10.

FEATURES

- Stainless steel element construction for prolonged thermocouple life.
- Each kit individually enclosed in plastic.
- Universal adapter fittings included with each kit for replacing thermocouple in most types of pilot burners.
- Visible instructions for quick, easy installation.
- Available in a variety of 10-packs in desired thermocouple lengths.
- Standard thermocouple 11 / 32″ double lead thread.
- Replaces Honeywell Q34A, Johnson K19, Robershaw 1980 and White-Rodgers H06E

THERMOCOUPLES

Model Number Standard ①	Description
H06E-18	18″ thermocouple
H06E-30	30″ thermocouple
H06E-36	36″ thermocouple
H06E-48	48″ thermocouple

① Hot junction maximum temperature rating: 1450°F

JUNCTION BOX THERMOCOUPLE WITH ENERGY CUT-OFF (ECO)

Model Number	Description
H06F-36	36″ Coiled Thermocouple

H06E THERMOCOUPLE CROSS REFERENCE

Model Replaced	Suggested Replacement	Model Replaced	Suggested Replacement	Model Replaced	Suggested Replacement	Model Replaced	Suggested Replacement
1155	H06E-48	1980-012	H06E-18	BTU-036	H06E-36	Q340A1090	H06E-36
100240	H06E-18	1980-018	H06E-18	BTU-048	H06E-48	Q340A1108	H06E-48
100243	H06E-36	1980-030	H06E-30	COPR-18	H06E-18	Q340A1132	H06E-18
1466242	H06E-48	1980-036	H06E-36	COPR-30	H06E-30	Q390A1053	H06E-30
6210304	H06E-18	1980-048	H06E-48	COPR-36	H06E-36	Q390A1061	H06E-36
6210306	H06E-30	2E337	H06E-48	COPR-48	H06E-48	Q390A1095	H06E-18
6321820	H06E-18	2E525	H06E-36	GTC-18	H06E-18	Q390A1103	H06E-48
6321840	H06E-30	2E720	H06E-18	GTC-30	H06E-30	RMP-122-00860	H06E-48
6321850	H06E-36	2E721	H06E-30	GTC-36	H06E-36	T-18	H06E-18
6321860	H06E-48	3000MG18	H06E-18	GTC-48	H06E-48	TCP00090	H06E-18
99724217	H06E-36	3000MG30	H06E-30	H06E-18	H06E-18	TCP00092	H06E-30
99795807	H06E-36	3000MG36	H06E-36	H06E-30	H06E-30	TCP00093	H06E-36
52537081000	H06E-36	3000MG48	H06E-48	H06E-36	H06E-36	TCP00094	H06E-48
52537082000	H06E-48	32P7401	H06E-18	H06E-48	H06E-48	TH-1-0	H06E-18
2E141	H06E-30	32P7601	H06E-36	H06E-518	H06E-518	UT 18	H06E-18
2E142	H06E-36	32P7701	H06E-48	H06E-524	H06E-524	UT 30	H06E-30
2E166	H06E-18	511-724-253	H06E-48	H06E-530	H06E-530	UT 36	H06E-36
00-497302-00001	H06E-524	571-724-253	H06E-48	H06E-536	H06E-536	UT 48	H06E-48
07-1009	H06E-18	62-25113-01	H06E-18	H06E-548	H06E-548	X13790173010	H06E-18
099538-01	H06E-18	632-1820	H06E-18	K19AT-18	H06E-18	X13790173030	H06E-30
18T	H06E-18	632-1840	H06E-30	K19AT-30	H06E-30	X13790173040	H06E-36
1970-018	H06E-18	632-1850	H06E-36	K19AT-36	H06E-36	X13790173050	H06E-48
1970-030	H06E-30	632-1860	H06E-48	K19AT-48	H06E-48	Y540A1004	H06E-536
1970-036	H06E-36	BTU-018	H06E-18	Q340A1066	H06E-18		
1970-048	H06E-48	BTU-030	H06E-30	Q340A1082	H06E-30		

G01A-332

G01A-501

750 MILLIVOLT POWER GENERATOR

Provides Power for 750 Millivolt Self-Generation Control Systems

FEATURES

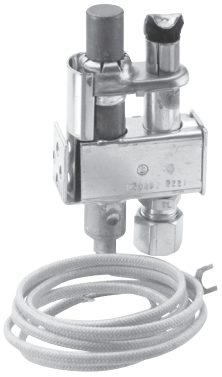
- For replacement of similar screw-in type generators now in field or for use with type E31-12 pilot burner.
- G01A-332 has 36 inch armored cable leads with split-spade terminals.
- PG9 adapter included with each G01A-332. PG9 adapter also offered individually.
- 101934F32 / 101934R32 designed for use with PG9.

750 MV

Model Number	MV Output	Length	Fiberglass Cable Leads	Armored Cable Leads	PG9 Adapter	Clip	Connector Type
101934R32	750	32	X				R Bushing
G01A-332	750	36		X	X	X	F Spade Terminal
G01A-502	750	36		X		X	F Spade Terminal
G01A-512	750	36	X		X	X	F Spade Terminal
G01A-132	750	36		X	X	X	F Spade Terminal

750 MV

Model Number	MV Output	Length	Fiberglass Cable Leads	Connector Type
101934F32	750	32	X	F Spade Terminal
G01A-501	750	36	X	F Spade Terminal



PG9A41JT20

PG9 PILOT GENERATORS

Provides a Pilot Flame for Igniting Gas Burners while Generating Millivolt Output to Operate Gas Valves and Relays

FEATURES

- Single blue flame burner for quiet operation and maximum flame stability.
- “Snorkel” primary air path incinerates dust eliminating linting problems.
- All models provided with orifice base fittings for Natural and LP.
- Flame ring surrounding generator ensures high output and extended generator life.
- High temperature stainless steel generator cover.

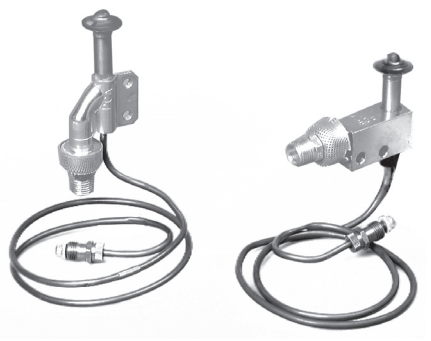
SPECIFICATIONS

Output Voltage . . . . . 750 millivolts nominal, open circuit
Agency . . . . . IAS certified

Model Number	Head Type	Porting	Orifice ②
PG9A27JTL22 ①	Channel Type	90° right & 90° left, 3/4″ head width	.022
PG9A41JTL20 ①	Cobra	90° left	.020
PG9A42JTL20 ①	Cobra	90° right	.020

① Universal replacement includes extra base fitting for LP gas application (less ferrule and nut)
② Suitable for use with natural gas. See base fittings, part no. 101094/101095 (next page) for other available orifices

Indicates Canadian Model Number: call 1-800-305-6953 to order



PC Universal Pilot Couples
Vertical (PCA) and Horizontal (PCB)

PC UNIVERSAL PILOT COUPLE

Universal Replacement, Modified 4-Port Pilot Burner / Thermocouple Combination

FEATURES

- Reliable ignition of gas burners.
- Stable flame pattern virtually unaffected by drafts and pressure variations.
- G bushing connector for single thermocouple thermopilot valves and relays.
- Vertical or horizontal inlet tubing connection available.
- Long life stainless steel casing, inlet filter screen, and orifices for natural or LP.

SPECIFICATIONS

Output . . . . . 13 millivolts nominal, open circuit
Port . . . . . 50 (universal replacement)
Connector . . . . . G Bushing
Base Orifice Fitting . . . . . 1/4″ tube, external thread, straight
Mounting . . . . . Horizontal or vertical
Gas Consumption . . . . . 500 Btu/hr, approximately
Agency . . . . . IAS certified

Model Number	Inlet	Lead
PCA50L14L48	Vertical	48″
PCB50L14L48	Horizontal	48″

Gas Type	Orifice
Natural and Mixed	TL .014
L.P.G.	TL .010

3046-5

MERCURY FLAME SENSORS

Prevent Gas Flow to Main Burner if Pilot Flame is Not Burning or is Insufficient to Properly Ignite Main Burner

FEATURES

- These sensors combine a rugged Snap-Action switch and powerful mercury actuated thermal element.
- May be used with natural, manufactured or mixed gases and with LP gases where means are provided for obtaining automatic pilot gas shut-off.
- Switch may be conveniently mounted in any position.
- Cover is easily removed, making switch terminals readily accessible.
- No button to depress – Sensors are recycling type which require relighting or possible restoration of proper gas pressure to return to operation.

SPECIFICATIONS

Timing . . . . . Contacts close approximately 60 seconds after pilot is ignited; open approximately 40 seconds after flame is extinguished

Agency . . . . . U.L. recognized and C.S.A. approved

Dimension. . . . . $2\frac{3}{4}$″H x $2\frac{1}{16}$″ W x $1\frac{7}{8}$″D

Model Number	Element Length	Electrical Rating		
		120 VAC	240 VAC	30 VAC
3046-5	48″	125 VA	125 VA	90 VA

30A46-5

PLUG-IN TYPE MERCURY FLAME SENSORS

Designed for use with White-Rodgers Diaphragm, “Cushioned Power” or “Silent Knight” Gas Valves having Plug-In Receptacle

FEATURES

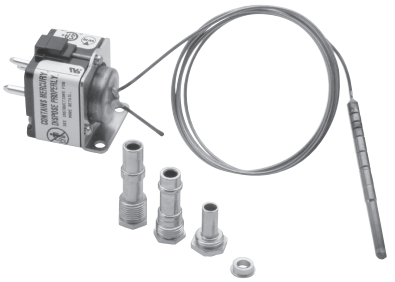
- Plug-in feature requires no additional electrical connections or mounting devices.
- Sensor combines a rugged Snap-Action SPDT switch and powerful mercury actuated thermal element.
- May be used with natural, manufactured or mixed gases and with LP gases where means are provided for obtaining automatic pilot gas shut-off.
- No button to depress – Sensors are recycling type which require relighting or possible restoration of proper gas pressure to return to operation.
- The SPDT switch can energize ignitor circuit to relight pilot (as with roof top units).

SPECIFICATIONS

Timing . . . . . Contacts close approximately 60 seconds after pilot is ignited; open approximately 40 seconds after flame is extinguished

Agency . . . . . C.S.A. approved

Model Number	Element Length	Electrical Rating			Comments
		120 VAC	240 VAC	30 VAC	
30A46-5	48″	125 VA	125 VA	90 VA	stud mount element
30A46-105	12″	125 VA	125 VA	90 VA	sleeve over element, no stud mount



3098-134

MERCURY FLAME SENSORS

For Proving Pilot Flame and Controlling Main Valve in Cycle Pilot Applications

FEATURES

- Bulb styles are designed to fit with various OEM applications.
- See Cross Reference to OEM control type numbers on next page.
- Adapter fittings to allow use of these mercury flame sensors with competitive burners are packed with controls identified with ①.

SPECIFICATIONS

Agency . . . . . C.S.A. approved
Maximum temperature . . . . . 1450°F at bulb tip

CONTRACTOR TIP: Mercury flame sensors can only be replaced by cross referencing the original mercury flame sensor model number. They can not be replaced by gas valve model number. See next page.

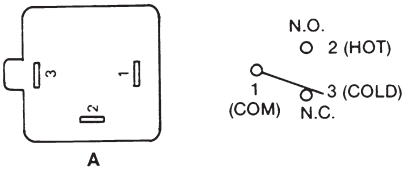
ELECTRICAL RATINGS

Model Number	30VAC	120VAC	240VAC
3098-522	30VA	125VA	125VA
All others listed	3A	1A	0.5A

Model Number	Element Length	Panel Type	Bulb Style	Description
3049-115 ①	48″	D	#20	Replaces bulb styles #17 or #18
3098-134 ①	48″	E	#19	Replaces bulb styles #9 or #13
3098-156 ①	48″	E	#20	Replaces bulb styles #17 or #18

① Includes adapter fittings.

TERMINAL PANELS CONFIGURATIONS



TYPES WITH SPADE TERMINALS

O.E.M. Number	Original Capillary Length	Original Panel Types②	Suggested Replacement
3049-1	30 or 48″	A	None
3049-3	26″	A	None
3049-4	33″	A	None
3049-5	48″	B	None
3049-6	12″	B	None
3049-7	24″	B	None
3049-11	24″	B	None ①
3049-15	33″	A	None
3049-18	30 or 33″	D	None
3049-20	42″	B	None ①
3049-29	20″	B	None
3049-31	12″	B	None
3049-32	12″	B	None
3049-33	24″	B	None
3049-36	48″	B	None
3049-37	30″	B	None
3049-41	24 or 48″	B	None
3049-49	42″	B	None
3049-52	30″	B, D	3049-115
3049-54	30″	B	3049-115
3049-55	30″	A, D	3049-115
3049-58	30″	B	None

O.E.M. Number	Original Capillary Length	Original Panel Types②	Suggested Replacement
3049-59	30″	B	None ①
3049-61	24″	B	None
3049-62	18″	B	None ①
3049-64	48″	D	None
3049-66	30″	B	3049-115
3049-68	30″	B	3049-115
3049-70	30″	B	None ①
3049-71	30″	B	None
3049-72	30″	E	None ①
3049-101	24″	B	None ①
3049-105	42″	B	3049-115
3049-106	24″	D	3049-115
3049-107	12″	B, D	3049-115
3049-111	24″	B, D	3049-115
3049-112	18″	B, D	3049-115
3049-114	30″	D	3049-115
3049-115	48″	D	3049-115
3049-119	24″	B	3049-115
3049-120	30″	B	3049-115
3049-121	18 or 42″	B	3049-115
3049-537	30″	B	None ①
3049-561	24″	B	None ①

PLUG-IN TYPES

O.E.M. Number	Original Capillary Length	Original Panel Types②	Suggested Replacement Type Number
3094-102	30″	C ③	None
3094-111	30″	C ③	None ①
3094-118	48″	C ③	None
3094-122	30″	C ③	None ①
3094-123	30″	G	None
3094-127	48″	C ③	None
3094-131	22″	C ③	None ①
3098-111	30″	E	3098-134
3098-117	24″	E	None ①
3098-120	30″	E	None ①
3098-122	30″	E	3098-156
3098-126	30″	E	3098-156
3098-127	24″	E	3098-156
3098-130	24″	E	3098-156
3098-131	30″	E	3098-156
3098-134	48″	E	3098-134
3098-135	48″	E	None ①
3098-136	30″	E	3098-134
3098-137	12″	E	None ①
3098-139	36″	E	None ①

O.E.M. Number	Original Capillary Length	Original Panel Types②	Suggested Replacement Type Number
3098-141	48″	E	3098-134
3098-142	30″	E	3098-156
3098-143	36″	E	3098-156
3098-147	18″	E	3098-134
3098-148	48″	E	None ①
3098-149	24 or 42″	E	3098-156
3098-151	26 or 33″	E	None ①
3098-153	24″	E	3098-156
3098-156	48″	E	3098-156
3098-161	24 or 30″	E	3098-134
3098-165	48″	E	3098-134
3098-168	48″	E	3098-156
3098-169	27″	E	3098-134
3098-171	30 or 42″	E	3098-156
3094-174	36″	E	3098-156
3098-175	18″	E	3098-156
3098-177	24″	E	None ①
3098-178	30″	E	None ①
3098-182	24 or 42″	E	3098-156
3098-183	12″	E	None ①
3098-184	42″	E	3098-134
3098-522	30″	E	None
3098-536	30″	E	None ①

① Consult the O.E.M. for replacement or retrofit.
② Suggested replacement type may have different panel configuration. Some controls experienced modification. Determine proper wiring with the aid of panel diagrams A through G.
③ Note: Panel type C featured an Electrical Quick Shut-Off Resistor (see diagram)

CONTRACTOR TIP: Mercury flame sensors can only be replaced by cross referencing the original mercury flame sensor model number. They can not be replaced by gas valve model number.

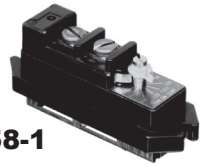
30A46-5

FLAME SENSORS

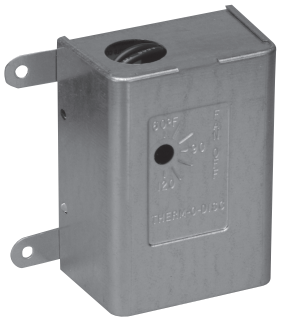
FLAME SENSORS

Model Number	Type Gas	Valve Type	Terminations	Cap Length	Comments
3046-5	Natural ③	①	Screw	48″	Recycling
30A46-5	Natural ③	②	Plug-in	48″	Recycling

① Screw terminals inside cover switch-case for use with any standard 24 / 120 / 240 VAC solenoid or diaphragm gas valve
② Plug-in switch-case for use with White-Rodgers “Silent Knight” (25G01 series) and “Cushioned Power” (25D46 series) solenoid valves
③ Types 3046-5 and 30A46-5 can be used on LP gases only if an external means for automatic pilot gas shut-off is provided



758-1



775-1

FLUSH MOUNT FAN OR LIMIT CONTROLS / ATTIC FAN CONTROL

Ideal for Replacement of Similar Type Controls

FEATURES

- For use where space is limited.
- Small bimetal sensing element.
- Snap-Action switch.
- Fan control has adjustable range with direct reading temperature dial.
- **758** has adjustable limit setting.

SPECIFICATIONS

Dimensions for 758. . . . . 1″H x 3″W x 1 1/4″D
Dimensions for 775. . . . . 2.8″H x 3.59″W x 2.02″D

Model Number	Description	Range	Differential	Switch Action	Motor Rating – Full Load		Pilot Duty
					120 VAC	240 VAC	
758-1	Limit	110 to 200°F ① (43 to 93°C)	Fixed 25°F (14°C)	Open on Rise	8.0 A	4.0 A	125 VA
775-1	Attic Fan Control with Thermal Limiter	60 to 120°F ② (15 to 49°C)	Fixed 10°F (6°C)	Close on Rise	9.0 A	—	—

① Cut-out setting (cut-in is cut-out setting minus the differential)
② Thermal limiter opens at 183°F (84°C)

230-22

TEMPERATURE CONTROLS FOR HEATING

Provide Regulation of Duct Temperatures in Conjunction with Air Handling Units or Control of Circulator for Indoor-Outdoor Regulation from a Remote Point

FEATURES

- Hydraulic action element – Unaffected by vibration.
- Switch case mounts in any position – No leveling required. Includes bulb mounting clip.
- High electrical rating permits operation of most equipment without use of relays or motor starters.
- Dustproof steel case – Dial visible and can be adjusted through cover. Case has knockouts on top and bottom.
- Temperature dial graduated in °F and °C.

SPECIFICATIONS

Dimensions. . . . . 5 3/4″H x 2 5/16″ W x 2 9/16″D
Finish . . . . . Grey
Agency . . . . . U.L. listed and C.S.A. approved

Model Number	Range	Differential	Capillary Length	Bulb Size	Switch Action	Full Electrical Rating	Motor Rating (Full Load)		Resistive (Non-inductive)	
							120 VAC	240 VAC	120 VAC	240 VAC
230-22 ①	20 to 120°F (-6 to +49°C)	Adj. 4 to 30°F (2.2 to 17°C)	8 ft.	6 1/4 x 3/8″	Open on Rise	FG See page 416	14.0A	7.0A	25.0A	22.0A

① U.L. approved adjustable dial stop, factory set at 90°F maximum.

5D51-35

FAN AND LIMIT CONTROLS FOR UNIVERSAL REPLACEMENT

Single Element Type for Applications with Narrow Space Limitations. Regulates Fan or Blower Operation & Acts as High Limit Safety Control

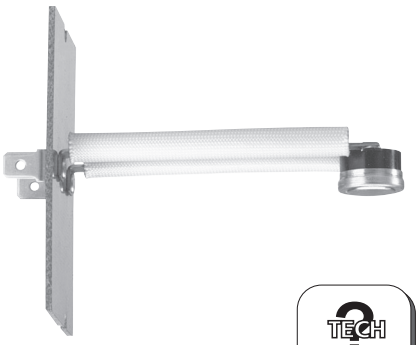
FEATURES

- Slotted mounting holes for easy installation.
- Long terminal screws for wiring — Junctions can be made on terminal block.
- Dial has individual pointers for fan cut-in and cut-out settings.
- Removable solid copper jumper between fan and limit switches.
- Summer fan switch for ventilation without changing control settings. Has same fan and limit switch mechanism.

SPECIFICATIONS

Agency . . . . . U.L. recognized and C.S.A. approved
Dimensions. . . . . 2.9″W x 4.3″H x 1.6″D

Model Number	Element Length	Description	Range	Differential	Switch Action	Full Electrical Rating	Motor Rating (Full Load)		Valves and Relays	
							120 VAC	240 VAC	24 VAC	0.3-12v DC
5D51-35	5″	Fan	50 to 265°F (10 to 129°C)	Adjustable 15°F minimum	Close on Rise	HT See page 416	14.0A	7.0A	5.6A	—
5D51-90	8″									
5D51-78	11″	Limit	100 to 300°F (38 to 149°C)	Fixed 25°F	Open on Rise	HTV See page 416	10.0A	6.0A	6.0A	1.0A



BOARD MOUNT LIMIT CONTROLS

1/2″ Bimetal Disc with Ranges for Your System Needs

FEATURES

- Proven reliability in a compact, versatile, cost-effective design.
- Provides high-speed contact separation.
- OEM replacement for competitive models.

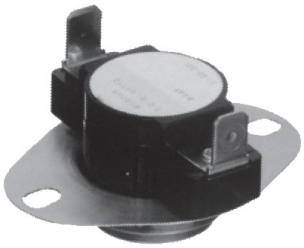
TECHNICAL HELP

Dimension drawings and specifications . . . . . See pages 214-216

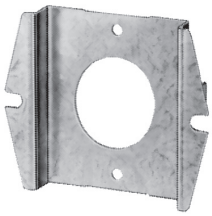
TECH PAGES 214-216

Model Number	Figure (pages 214-216)	Construction (pages 214-216)	Opens/ Closes (°F)	Length (in inches)	TOD Type	TOD Style
3L09-1	1		140/100	1.87	36T	612700
3L09-2	1		170/130	1.87	36T	612708
3L09-3	2	A	140/110	3.12	36T	612701
3L09-4	2	C	150/130	3.12	36T	612703
3L09-5	2	C	160/140	3.12	36T	612706
3L09-6	2	B	170/130	3.12	36T	612710
3L09-7	2	A	175/145	3.12	36T	612711
3L09-8	2	B	180/140	3.12	36T	612714
3L09-9	2	C	190/170	3.12	36T	612715
3L09-10	2	B	200/160	3.12	36T	612718
3L09-11	2	B	210/170	3.12	36T	612719
3L09-12	2	B	220/180	3.12	36T	612722
3L09-13	2	A	240/210	3.12	36T	612723
3L09-14	2	B	250/210	3.12	36T	612725

Model Number	Figure (pages 214-216)	Construction (pages 214-216)	Opens/ Closes (°F)	Length (in inches)	TOD Type	TOD Style
3L09-15	2	A	260/230	3.12	36T	612727
3L09-16	3	A	150/130	3.12	36T	612704
3L09-17	3	A	250/225	3.12	36T	612726
3L09-18	3	B	155/125	7.12	36T	612705
3L09-19	3	B	175/145	7.12	36T	612712
3L09-20	3	B	240/210	7.12	36T	612724
3L09-22	4	A	160/140	3.12	36T	612707
3L09-23	4	A	170/150	3.12	36T	612709
3L09-24	4	B	190/170	3.12	36T	612716
3L09-25	4	B	200/180	3.12	36T	612717
3L09-26	5		180/160	1.87	36T	612713
3L09-27	5		220/200	1.87	36T	612721
3L09-28	6		210/180	3.12	36T	612720



3F01-140



F6-1798 (1 per pack)

SNAP DISC FAN CONTROLS

For Regulation of Fan or Blower Control

FEATURES

- Designed for quick on-job replacement.
- Easy to remember type numbers — “L” for Limit — “F” for Fan.
- Last three numbers indicate cut-out temperatures on limits and cut-in temperatures on fan controls.
- Mounting holes match standard ¾″ snap discs.
- Tab-to-screw terminal adapters furnished.

SPECIFICATIONS

Maximum ambient . . . . . 350°F

ELECTRICAL RATINGS

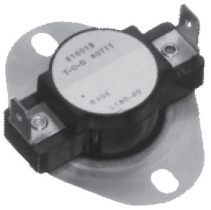
Model	Motor Rating (Full Load)		Resistive (Non-Inductive)		Pilot Duty
	120VAC	240VAC	120/240VAC	277VAC	120/240/277VAC
3F01, 3F02	10.0A	5.0A	25.0A	21.6A	125 VA

PARTS AND ACCESSORIES

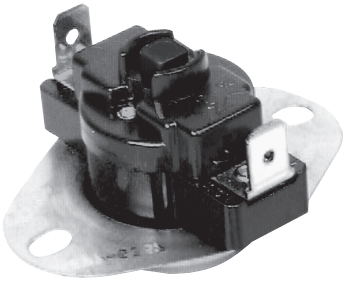
- F6-1798 Adapter plates (Order separately) — 1 per pack

FAN CONTROLS

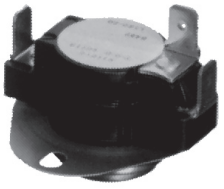
Model Number	Fixed Temperature Settings		Switch Action	Therm-O-Disc	
	Cut-in	Cut-out		Style	Type
3F01-110	110°F (43°C)	90°F (32°C)	Close on Rise	60T12	610044
3F01-120	120°F (49°C)	110°F (43°C)	Close on Rise	60T12	610046
3F01-130	130°F (54°C)	115°F (46°C)	Close on Rise	60T12	610047
3F01-140	140°F (60°C)	120°F (49°C)	Close on Rise	60T12	610049
3F01-150	150°F (66°C)	130°F (54°C)	Close on Rise	60T12	610050
3F01-160	160°F (71°C)	140°F (60°C)	Close on Rise	60T12	610064
3F01-180	180°F (82°C)	160°F (71°C)	Close on Rise	60T12	610065
3F01-200	200°F (93°C)	180°F (82°C)	Close on Rise	60T12	610066
3F01-350	350°F (177°C)	320°F (160°C)	Close on Rise	60T12	610067



3L01-180



3L02-190



3L03-140

SNAP DISC FAN OR LIMIT CONTROLS

For Regulation of Fan, Blower or High Limit Safety Control

SPECIFICATIONS

ELECTRICAL RATINGS

Electrical Rating (AC) for Model Numbers	Motor Rating (Full Load)		Resistive (Non-Inductive)		Pilot Duty
	120VAC	240VAC	120/240VAC	277VAC	120/240/277VAC
3L01	10.0A	5.0A	25.0A	21.6A	125 VA
3L02	10.0A	5.0A	25.0A	21.6A	125 VA
3L03: 1 & 2 Close on Rise	5.8A	2.9A	—	—	125 VA
3L03: 1 & 3 Open on Rise	10.0A	5.0A	25.0A	21.6A	125 VA

LIMIT CONTROLS

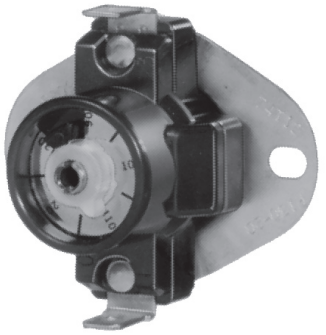
Model Number	Fixed Temperature Settings		Switch Action	Therm-O-Disc	
	Cut-in	Cut-out		Style	Type
3L01-120	110°F (43°C)	120°F (49°C)	Open on Rise	60T11	610000
3L01-130	115°F (46°C)	130°F (54°C)	Open on Rise	60T11	610002
3L01-140	100°F (38°C)	140°F (60°C)	Open on Rise	60T11	610006
3L01-150	110°F (43°C)	150°F (66°C)	Open on Rise	60T11	610009
3L01-165	125°F (52°C)	165°F (74°C)	Open on Rise	60T11	610069
3L01-170	130°F (54°C)	170°F (77°C)	Open on Rise	60T11	610012
3L01-180	140°F (60°C)	180°F (82°C)	Open on Rise	60T11	610013
3L01-190	150°F (66°C)	190°F (88°C)	Open on Rise	60T11	610015
3L01-200	160°F (71°C)	200°F (93°C)	Open on Rise	60T11	610016
3L01-230	190°F (88°C)	230°F (110°C)	Open on Rise	60T11	610021
3L01-250	210°F (99°C)	250°F (121°C)	Open on Rise	60T11	610023
3L01-300	250°F (121°C)	300°F (149°C)	Open on Rise	60T11	610026
3L01-350	310°F (154°C)	350°F (177°C)	Open on Rise	60T11	610068

LIMIT CONTROLS — MANUAL RESET

Model Number	Fixed Temperature Settings		Switch Action	Therm-O-Disc	
	Cut-in	Cut-out		Style	Type
3L02-160	Manual Reset	160°F (71°C)	Open on Rise	60T15	330534
3L02-170		170°F (77°C)	Open on Rise	60T15	330535
3L02-180		180°F (82°C)	Open on Rise	60T15	330536
3L02-190		190°F (88°C)	Open on Rise	60T15	330537
3L02-200		200°F (93°C)	Open on Rise	60T15	330538

SPDT CONTROLS

Model Number	Fixed Temperature Settings				Switch Action	Therm-O-Disc	
	Terminal 1 & 3		Terminal 1 & 2				
	Cut-in	Cut-out	Cut-in	Cut-out		Style	Type
3L03-140	140°F (60°C)	120°F (49°C)	190°F (88°C)	170°F (77°C)	SPDT	60T13	611015
3L03-190	190°F (88°C)	170°F (77°C)	140°F (60°C)	120°F (49°C)	SPDT	60T13	611014



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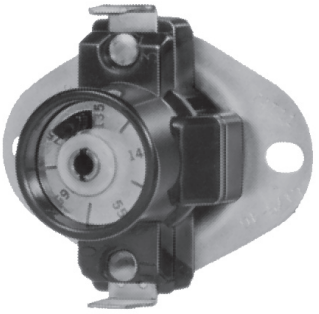

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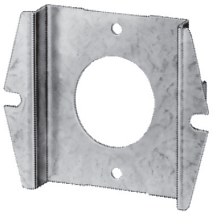


F6-1798 (1 per pack)

ADJUSTABLE SNAP DISC FAN & LIMIT CONTROLS

Adjustable Snap Disc Thermostat Allows You to Set the Temperature Set Point to Match Your Specific Needs Which Simplifies Inventory

FEATURES

- ¼″ quick connect terminals are standard.
- Reduces inventory while providing coverage for a wide range of temperature applications.
- Replaces the majority of fixed disc thermostats now on heating equipment and various appliances.
- 2 adjustable fan control models replace 7 fixed snap disc models.
- 5 adjustable limit control models replace 10 fixed snap disc models.

SPECIFICATIONS

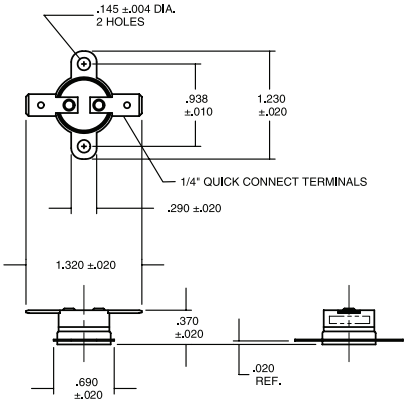
ELECTRICAL RATINGS

VAC	Resistive (Non-Inductive)	Motor Rating (Inductive)		Pilot Duty
		Full Load	Locked Rotor	
120	25.0A	14.0A	72.0A	125 VA
240	25.0A	10.0A	60.0A	125 VA

PARTS AND ACCESSORIES

- F6-1798 Adapter plates (Order separately) — 1 per pack

Model Number	Temperature Range	Differential	Switch Action	Function	Accessories	Therm-O-Disc	
						Style	Type
3F05-1	90 to 130°F	20°F	SPST	Fan Controls (Close on Rise)	Includes thermostat and tab-to-screw terminals.	74T12	310708
3F05-2	140 to 180°F	20°F	SPST			74T12	310709
3L05-1	135 to 175°F	40°F	SPST	Limit Controls (Open on Rise)		74T11	310710
3L05-2	175 to 215°F	40°F	SPST			74T11	310711
3L05-3	210 to 250°F	40°F	SPST			74T11	310712
3L05-10	135 to 175°F	20°F	SPST			74T11	310724
3L05-13	250 to 290°F	40°F	SPST			74T11	310730



3L11 / 3F11 SERIES
1/2″ BIMETAL DISC THERMOSTATS

22 New Bimetal Disc Thermostats for Appliance and HVAC

FEATURES

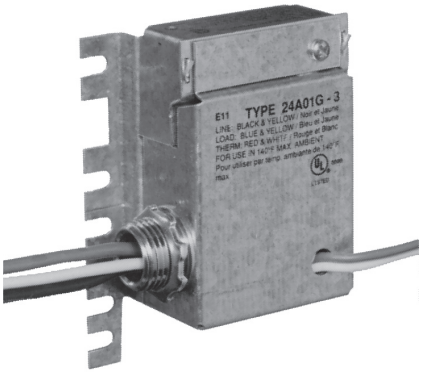
- Loose ring, stainless steel mounting brackets.
- 1/4″ quick connect terminations.
- Automatic reset.
- Aluminum disc cup.

SPECIFICATIONS

Single pole, single throw
Available in either open or close on temperature rise
Electrical Ratings

Resistive	15A @ 120VAC, 10A @ 240VAC
Inductive	3.0FLA, 12.0LRA @ 120VAC; 1.5FLA, 6.0LRA @ 240 VAC
Pilot Duty	125VA
Dimensions	Length (1.23″), case width (1.32″), height (.37″)
Weight	0.2 oz.
Agency	UL Recognized File #E19279 CSA Certified File #LR19988 VDE Lic. 81669

Model Number	Description	Temperature °F / °C	Differential °F / °C	Therm-O-Disc Type	Therm-O-Disc Style
3L11-60	Open on rise	55 to 65 (°F), 13 to 18 (°C)	20 (°F), 12 (°C)	36T21	10842
3L11-85	Open on rise	80 to 90 (°F), 27 to 32 (°C)	15 (°F), 8 (°C)	36T21	10843
3F11-100	Close on rise	93 to 107 (°F), 34 to 42 (°C)	30 (°F), 17 (°C)	36T22	10844
3L11-110	Open on rise	105 to 115 (°F), 41 to 46 (°C)	30 (°F), 17 (°C)	36T21	10845
3L11-120	Open on rise	115 to 125 (°F), 46 to 52 (°C)	30 (°F), 17 (°C)	36T21	10846
3F11-120	Close on rise	113 to 127 (°F), 45 to 53 (°C)	30 (°F), 17 (°C)	36T22	10847
3L11-140	Open on rise	135 to 145 (°F), 57 to 63 (°C)	30 (°F), 17 (°C)	36T21	10848
3F11-140	Close on rise	133 to 147 (°F), 56 to 64 (°C)	30 (°F), 17 (°C)	36T22	10849
3L11-150	Open on rise	145 to 155 (°F), 63 to 68 (°C)	30 (°F), 17 (°C)	36T21	10850
3L11-160	Open on rise	155 to 165 (°F), 68 to 74 (°C)	30 (°F), 17 (°C)	36T21	10851
3L11-170	Open on rise	165 to 175 (°F), 74 to 79 (°C)	30 (°F), 17 (°C)	36T21	10852
3F11-170	Close on rise	162 to 178 (°F), 72 to 81 (°C)	30 (°F), 17 (°C)	36T22	10853
3L11-175	Open on rise	170 to 180 (°F), 77 to 82 (°C)	15 (°F), 8 (°C)	36T21	10854
3L11-180	Open on rise	175 to 185 (°F), 79 to 85 (°C)	30 (°F), 17 (°C)	36T21	10855
3F11-180	Close on rise	172 to 188 (°F), 78 to 87 (°C)	30 (°F), 17 (°C)	36T22	10856
3L11-190	Open on rise	185 to 195 (°F), 85 to 91 (°C)	30 (°F), 17 (°C)	36T21	10857
3L11-210	Open on rise	204 to 216 (°F), 96 to 102 (°C)	30 (°F), 17 (°C)	36T21	10858
3L11-220	Open on rise	214 to 226 (°F), 101 to 108 (°C)	30 (°F), 17 (°C)	36T21	10859
3F11-225	Close on rise	217 to 232 (°F), 103 to 111 (°C)	30 (°F), 17 (°C)	36T22	10860
3L11-230	Open on rise	224 to 236 (°F), 107 to 113 (°C)	30 (°F), 17 (°C)	36T21	10861
3F11-240	Close on rise	229 to 251 (°F), 109 to 122 (°C)	100 (°F), 56 (°C)	36T22	10862
3L11-250	Open on rise	224 to 256 (°F), 118 to 124(°C)	30 (°F), 17 (°C)	36T21	10863
3L11-325	Open on rise	315 to 335 (°F), 157 to 169 (°C)	50 (°F), 28 (°C)	36T21	10864



24A01G-3

24A06G-1

LEVEL-TEMP LOW VOLTAGE CONTROL SYSTEMS FOR ELECTRIC HEAT

Provides Silent Operation and Narrow Differential Control for Heating or Cooling Installations for use with a 2-Wire 24 Volt Thermostat

FEATURES

- Level-Temp allows low voltage 2-wire thermostat to control line voltage loads such as baseboard heaters.
- Conduit hub or screw mounting.
- Ideal for all types of electrical heat.
- Non-critical mounting angle. Universal break-off mounting tabs.
- Dual Level-Temp capable of controlling two separate loads.

SPECIFICATIONS

Dimensions Models 24A01 / 05 . . . . . $1\frac{7}{8}$″H x $4\frac{1}{2}$″W x $2\frac{7}{16}$″D
Dimensions Model 24A06. . . . . $3\frac{13}{16}$″H x $4\frac{13}{16}$″W x $2\frac{1}{8}$″D
Dimensions Model 24A07. . . . . $1\frac{7}{8}$″H x $4\frac{9}{16}$″W x $1\frac{29}{32}$″D

Single Level Temp

Switch Action . . . . . SPST normally open
Average Time Delay . . . . . 45 seconds
Lead length. . . . . 18 inches
Ambient temperature range . . . . . -20 to +120°F

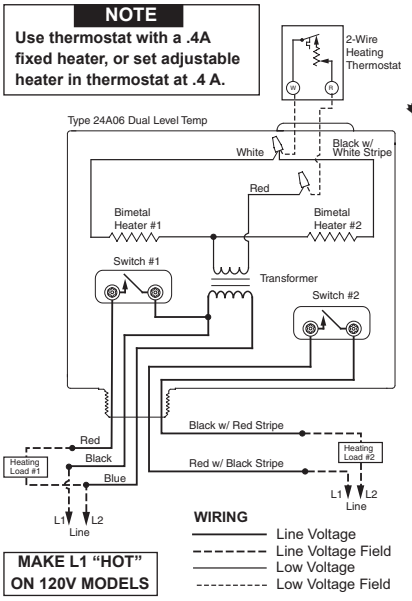
Dual Level Temp

Switch Action . . . . . Two independent: SPST normally open
Average Time Delay . . . . . 45 seconds
Lead length. . . . . 18 inches
Ambient temperature range . . . . . -20 to +120°F
Agency . . . . . U.L. listed and C.S.A. approved. Design complies with U.L. 873 T.I.R.E. standard (Temperature Indicating & Regulating Equipment)

TECHNICAL HELP

Wiring and Dimension Drawing, 24A01 / 24A05 . . . page 213

NOTE
Use thermostat with a .4A fixed heater, or set adjustable heater in thermostat at .4 A.



Using Two-wire Heating Thermostat to Operate Two Separate Heating Loads

SINGLE LEVEL TEMPS – Normally Open

Model Number	Input Voltage / Frequency	Thermostat Current	A.C. Resistive (Non-inductive)	A.C. Motor Rating (Inductive)	
				Full Load	Locked Rotor
24A01G-3	240 VAC / 60 Hz	0.2A	25A, 6000W, 240v	12A, 240v	72A, 240v
24A01Z-10	347 VAC / 60 Hz	0.2A	17A, 5900W, 347v	–	–
24A05A-1	120 VAC / 60 Hz	0.2A	25A, 3000W, 120v	16A, 120v	96A, 120v
24A05E-1	208 VAC / 60 Hz	0.2A	22A, 5200W, 208v	12A, 208v	72A, 208v

DUAL LEVEL TEMPS – Controls Two Independent Loads – Normally Open

Model Number	Input Voltage / Frequency	Thermostat Current	A.C. Resistive ① (Non-inductive)	A.C. Motor Rating (Inductive)	
				Full Load	Locked Rotor
24A06G-1	240 VAC / 60 Hz	0.2A per switch	25A, 6000W, 240v	12A, 240v	72A, 240v

① Electrical ratings apply to each switch load

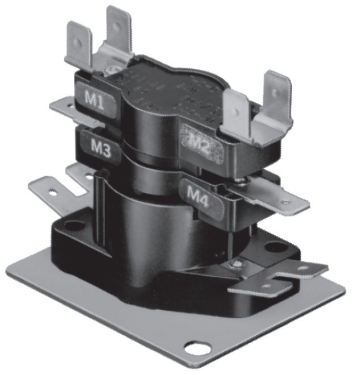
NOTE: Delay approximately 30 seconds opening and 60 seconds closing

REPLACES HONEYWELL R841 SERIES

Indicates Canadian Model Number: call 1-800-305-6953 to order

MODEL 24A34 ELECTRIC HEAT SEQUENCERS

Direct Replacement for Most Fan / Heat Sequencing Functions.
Terminal Markings are Equivalent to Competitive Types



24A34-3

FEATURES

- Replaces Honeywell, MARS, TOD, GEMLINE, Klixon (Texas Instruments).
- 24V input control.
- Multi-poise mounting.
- Any contacts (except M1 & M2) can be used as auxiliary contacts.
- Double quick-connect terminals for combination loads.

SPECIFICATIONS

Ambient Temperature Rating . . . . . -50 to +165°F
Agency . . . . . U.L. component recognized

ELECTRICAL RATINGS – SINGLE LOAD CONTACT RATINGS (ALL MODELS)

VAC	Resistive (Non-Inductive)		Motor Ratings (Inductive)		Pilot Duty
	Watts	Amps	Full Load	Locked Rotor	
120	3000	25.0	14.0A	72.0A	125 VA
240	6000	25.0	7.0A	42.0A	125 VA
480	6000	12.5	–	–	480 VA

COMBINED LOAD RATING TABLE (ALL MODELS)

30A @ 240 VAC – TOTAL,
23A Non-Inductive + 7 FLA / 42 LRA Inductive,
ON Time: Elapsed time to make contacts after heater is energized (min. to max.)
OFF Time: Elapsed time to break contacts after heater is de-energized (min. to max.)

TABLE NOTES:
① M1-M2 and M3-M4 are always first switches to turn ON and last to turn OFF. All other switches are random ON and random OFF
② 24A34-14 Switch contacts designated F_1 - F_2 instead of M_1 - M_2
③ 24A34-28 is 2 pole double throw
♦ These contacts switch simultaneously

NOTE: Underwriters Laboratories requires a fan interlock circuit to insure the blower remains operating whenever more than one sequencer is used. The fan interlock should be the M_1 / M_2 contacts of the second or third sequencer.
All M_1 / M_2 contacts are wired to the blower motor so that any sequencer that is energized will keep the blower ON.

Model Number	Timings	Switches	Timings – ON					Timings – OFF				
			M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10
24A34-1	1	1	1-20	–	–	–	–	40-110	–	–	–	–
24A34-2	1	1	–	–	30-90	–	–	–	–	1-30	–	–
24A34-3 ①	1	2	1-20 ♦	1-20	–	–	–	40-110 ♦	40-110	–	–	–
24A34-4	1	2	–	–	30-90 ♦	30-90	–	–	–	1-30 ♦	1-30	–
24A34-5 ①	2	3	1-110 ♦	1-110	1-110	–	–	1-110 ♦	1-110	1-110	–	–
24A34-6 ①	2	4	1-110 ♦	1-110	1-110 ♦	1-110	–	1-110 ♦	1-110	1-110 ♦	1-110	–
24A34-14①②	4	5	1-160 ♦	1-160	1-160	1-160	1-160	1-160 ♦	1-160	1-160	1-160	1-160
24A34-21	1	1	1-20	–	–	–	–	1-50	–	–	–	–
24A34-22	1	1	15-45	–	–	–	–	1-30	–	–	–	–
24A34-23	1	1	25-55	–	–	–	–	15-45	–	–	–	–
24A34-24	1	1	30-75	–	–	–	–	1-40	–	–	–	–
24A34-25	1	1	40-90	–	–	–	–	1-30	–	–	–	–
24A34-26	2	2	1-20	30-90	–	–	–	40-90	1-30	–	–	–
24A34-27	2	2	1-160	1-160	–	–	–	1-160	1-160	–	–	–
24A34-28 ③	2	2	1-160	1-160	–	–	–	1-160	1-160	–	–	–
24A34-29	1	1	15-35	–	–	–	–	25-55	–	–	–	–
24A34-36	2	2	1-20	30-45	–	–	–	45-110	1-30	–	–	–
24A34-37	1	1	1-110	–	–	–	–	1-110	–	–	–	–

24A34-15 HEAT PUMP CONTROL

FEATURES

- Used in heat pump air handler applications.
- Provides a delay off to the blower motor in cooling mode.
- Single pole double throw.

Model Number	Timings	Switches	Timings	
			ON 1-3	OFF 1-3
24A34-15	1	1	1-60	75-95

ELECTRICAL RATINGS – NORMALLY OPEN CONTACTS 1-3

VAC	Resistive (Non-Inductive)		Motor Ratings (Inductive)		Pilot Duty
	Watts	Amps	Full Load	Locked Rotor	
120	3000	25.0	14.0A	72.0A	125 VA
240	6000	25.0	7.0A	42.0A	125 VA

ELECTRICAL RATINGS – NORMALLY CLOSED CONTACTS 1-2

VAC	Resistive (Non-Inductive)		Pilot Duty
	Watts	Amps	
120	1200	10.0	125 VA
240	1200	5.0	125 VA

Indicates Canadian Model Number: call 1-800-305-6953 to order

770-1

DUAL PURPOSE AIR SWITCH

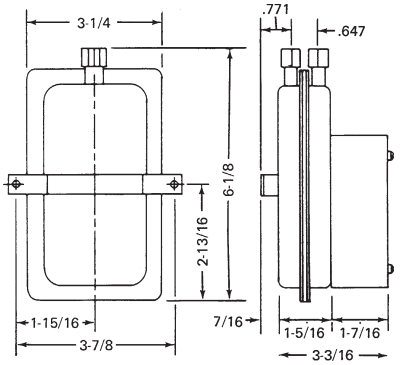
Responds to Positive, Negative or Differential Air Pressure

FEATURES

- Design eliminates “fluttering” or malfunction due to shock or vibration normally encountered with “sail switches.”
- Wide operating range.
- Furnished with one 12″ piece 1/4″ O.D. flexible tubing, nuts and ferrules.
- Can be mounted in any position except upside down.
- Enclosed diaphragm.

SPECIFICATIONS

Ambient Temperature . . . . . -40 to +180°F
Maximum Pressure. . . . . 1/2 PSI
Agency . . . . . U.L. listed and C.S.A. approved
1/2 HP @ 125 VAC

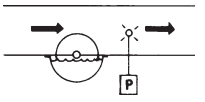


Model Number	Adjustable Operating Range	Switch Action	Electrical Ratings			
			Resistive (Non-Inductive)			
			120 VAC	240 VAC	277 VAC	125-277 VAC
770-1	0.05 to 12.0 W.C.	SPDT	15.0A	15.0A	15.0A	300 VA
770-3	0.05 to 12.0 W.C.	SPDT	15.0A	15.0A	15.0A	300 VA

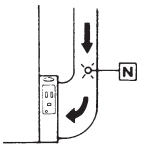
AIR SWITCH APPLICATIONS

LEGEND

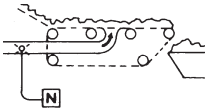
[N] Negative Pressure
[D] Pressure Differential
[P] Positive Pressure
Pressure Sample Line



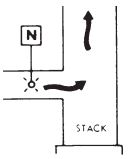
POWER HUMIDIFIERS
Switch permits unit to operate whenever there is proper air movement.



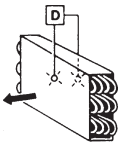
ELECTRONIC AIR CLEANERS
Switch permits power to cleaner whenever blower of system is operating.



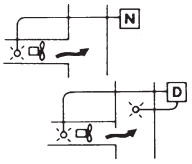
PROCESS DRYING
Switch monitors negative pressure to stop conveyor or process and provides alarm signal on fan failure. Ideal for bulk chemicals, food processing, grain drying.



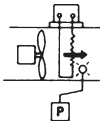
NATURAL DRAFT BURNERS
Switch signals insufficient draft, provides safety limit to stop firing on lack of draft, starts again on sufficient draft.



REFRIGERATION EQUIPMENT
Switch responds to pressure drop across refrigeration coils to signal alarm condition or automatically initiate or terminate defrost cycle.



INDUCED DRAFT BURNERS
Proves operation of I.D. fan by sampling draft or air flow. Shuts off firing equipment on fan failure.



DUCT STRIP HEATERS
Switch proves air movement across heaters by positive pressure to prevent burn-out on insufficient air flow.

Indicates Canadian Model Number: call 1-800-305-6953 to order

668-401

668-451

668 SERIES KWIK-SENSOR CAD CELL RELAYS

Replaces Intermittent Ignition Kwik-Sensor CAD Cell Relays on Oil Burner Systems with 30 or 45 Second Safety Timing. Certain Types have Unique Signal-Lite Feature which Glows Whenever Safety Lock-Out Occurs

FEATURES

- Grey metal enclosure.
- Line voltage safety switch eliminates burner run-on in event motor relay contacts weld closed.
- Solid state flame detection circuitry is not affected by vibration or high or low ambient temperatures. Suitable for use from – 40 to 150°F (– 40 to 66°C)
- Recycles upon momentary flame failure or power interruption.

SPECIFICATIONS

Input Voltage	120 VAC, 60 Hz
Control Voltage	24 VAC
Motor Relay Contacts Rating	Full 10 FLA, 60 LRA, 120 VAC
Ignition Transformer Rating	360 VA (3.0A)
Mounting	10″ useable leads, mounts to 4 x 4″ junction box

Model Number	Safety Timing	Thermostat Type	Thermostat Anticipator Setting	Safety Lock-Out Lamp	Manual Lock-Out Lever	Integral Transformer	Time Start Fan Switch
668-401	45 seconds	2-Wire	0.4A	No	No	No	No
668-451 ①	45 seconds	2-Wire	0.4A	No	No	40VA	C-W
668-515	30 seconds	2 or 3-Wire	0.4A	Yes	Yes	No	No

① Models with external transformer have safety switch contacts in motor relay (low voltage) circuit.

956-154

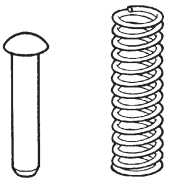
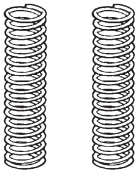
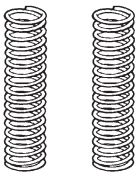
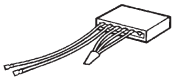
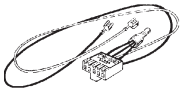
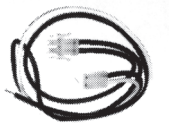
FLAME DETECTORS

Solid State Electronic Flame Detector which Utilizes Light Intensity to Sense the Presence of a Flame in Oil Burning Heating Equipment

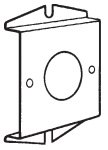
Model Number	Description
956-1	Standard flame detector with straight bracket. 48½″ leads.
956-154	Universal flame detector with 6 brackets. 60″ leads.

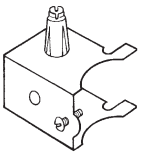
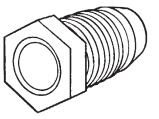
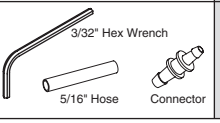
Indicates Canadian Model Number: call 1-800-305-6953 to order

COMBINATION GAS MANIFOLD VALVES – 3600 SERIES

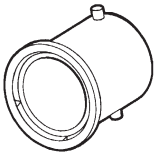
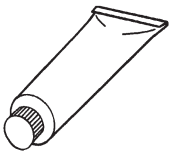
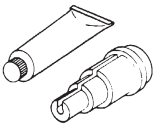
Item Number	Model Number	Description
	**F92-0656**	L.P. to natural gas conversion kit for 36C, 36D, 36E, 36F and 36G gas valves with regulation range of 2.5 to 5″ W.C.
	**F92-0659**	Natural to regulated L.P. gas conversion kit for 36C, 36D, 36E, 36F and 36G gas valves with regulation range of 7.5 to 12.0″ W.C.
	**F92-0737**	Natural to unregulated L.P. gas conversion kit for 36C gas valves.
	**F92-1008**	**NEW**-natural to regulated L.P. gas conversion kit for use on two stage 36G, H, J valves. Regulation range 4.0” to 10.0” W.C. low fi re, 6.0” to 12.0” W.C. high fire.
	**F92-1011**	**NEW**-regulated L.P. to natural gas conversion kit for use on two stage 36G, H, J valves. Regulation range 1.0” to 4.0” W.C. low fire, 2.0” to 5.0” W.C. high fire.
	**F115-0064**	36″ replacement harness assembly for connection of 5059-23 to 36C84-426 in the 21D18-3 Cycle-Pilot® retrofit kit.
	**F115-0087**	36″ replacement harness assembly for connection of 5059-23 to 36E86-302 in the 21D18-14 Cycle-Pilot® retrofit kit.
	**F115-0100**	Harness assembly for HSI systems with 36E gas valves; connects the 767A ignitor with the 50E47 or the 50F47 ignition module.

FAN OR LIMITS — 300 SERIES

Item Number	Model Number	Description
	**F6-1798**	Mounting adapter for 3F01 / 3L01 / 3L02 / 3F02 / 3L03 / 3F05 / 3L05 series controls.

Item Number	Model Number	Description
	**F6-1794**	Bracket for Bryant pilots when retrofitting with Cycle-Pilot®.
	**F69-0727**	1/4″ brass compression fitting for pilot line connections.
	**F92-1003**	Adapter kit for the 36G / 36J gas valves. Kit includes: connector (5/16″ to 1/4″ hose barb), tube (5/16″ O.D.) and hex wrench (3/32″).

OIL CONTROLS, 764 KNOB & RELAYS 600–700–800 SERIES

Item Number	Model Number	Description
	**F42-0895**	Replacement Knob for 764 series valve.
	**F63-0485**	Cad cell for old style flame detector.
	**F145-0163**	Heat transfer compound.
	**F145-0650**	Well adaptor and heat transfer compound.

Indicates Canadian Model Number: call 1-800-305-6953 to order