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36C Series



36C SNAP OPEN, SINGLE FUNCTION, HSI, DSI, AND STANDING PILOT 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		Rated Range of Regulation	
	BTU/HR		BTU/HR	
	AGA STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.	AGA 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

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	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	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	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	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	3/4 X 3/4	Fast Open	3.5"	2.5"-5.0"	Yes	Yes	Yes	Str. Thru	Yes	No	No	1
36C03-433	Standing Pilot	24VAC	Natural	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	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	1/2 X 3/4	Fast Open	3.5"	2.5"-5.0"	Yes	Yes	Yes	Str. Thru	Yes	Yes	Yes	2
36C03U-433	Standing Pilot	750mV	Natural	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
36C12-310	Standing Pilot	24VAC	Natural or LP	1/2 X 3/4	Step Open Nat. 0.8" LP 2.0"	Nat. 3.5" LP 11.0"	Non-Adjustable	Yes	Yes	Yes	Str. Thru	Yes	No	Yes	1
36C21-411	Single Function ON/OFF	24VAC	Natural or LP	3/4 X 3/4	N/A	N/A	No Regulator	N/A	N/A	No	Str. Thru	No	No	Yes	1
36C21U-206	Single Function ON/OFF	750mV	Natural or LP	1/2 X 1/2	N/A	N/A	No Regulator	N/A	N/A	No	Str. Thru	No	No	Yes	2
36C53-418	Standing Pilot	24VAC	Natural	3/4 X 3/4	Slow Open	3.5"	2.5"-5.0"	Yes	No	Yes	Str. Thru	Yes	No	No	1
36C67-188	Standing Pilot	24VAC	Natural	1/2 X 3/8	Step Open	Nat 3.5" LP 11.0"	Non-Adjustable	Yes	Yes	Yes	RAL ②	No	No	Yes	1
36C67-189	Standing Pilot	24VAC	Natural	1/2 X 3/8	Step Open	Nat 3.5" LP 11.0"	Non-Adjustable	Yes	Yes	Yes	RAR ②	No	No	Yes	10
36C01A-201	Snap Open	120VAC	Natural	1/2 X 1/2	Fast Open	6.0"	4.2"-11.0"	No	No	No	Str. Thru	No	Yes	No	3
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

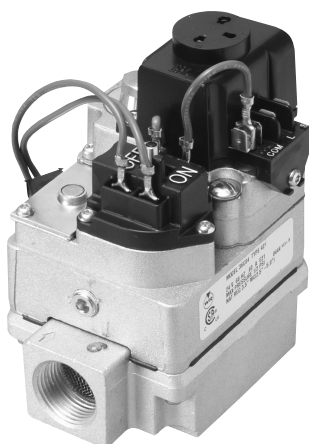
HSI/DSI VALVES

36C74-413	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
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① Wiring diagrams – see pages 250-253

② RAL = Right Angle Left, RAR = Right Angle Right

✱ Indicates Canadian Model Number



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	A.G.A. and C.G.A. design certified

Pipe Size	1" Pressure Drop Capacity		Rated Range of Regulation	
	BTU/HR		BTU/HR	
	AGA STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.	AGA 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



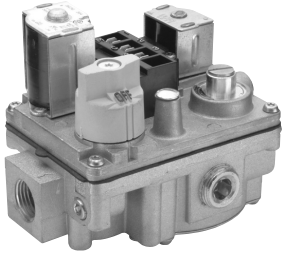
TECHNICAL HELP

Wiring Diagrams See pages 250-253

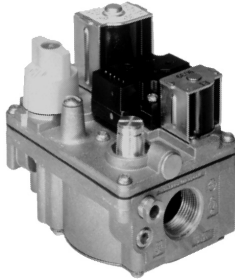
	Model Number	Coil Voltage	Gas Type	Pipe Size	Opening Characteristic	Regulator Setting	Regulator Adjustment Range	Convertible Nat./LP	LP Conversion Kit Included	Line Interrupter	Flow Direction	Reducer Bushing Kit	Inlet Pressure Tap	Side Taps	Internal Wiring See Figure ①
NEW!	36C84-912	24 VAC	Natural	3/4 x 3/4	Fast Open	3.5"	2.5"-5.0"	Yes	Yes	No	Str. Thru	Yes	Yes	No	7
NEW!	36C84-913	24 VAC	Natural	3/4 x 3/4	Fast Open	3.5"	2.5"-5.0"	Yes	Yes	No	Str. Thru	Yes	Yes	No	12
NEW!	36C84-921	24 VAC	Natural	3/4 x 3/4	Fast Open	3.5"	2.5"-5.0"	Yes	Yes	No	Str. Thru	Yes	Yes	No	7
NEW!	36C84-923	24 VAC	Natural	3/4 x 3/4	Fast Open	3.5"	2.5"-5.0"	No	No	No	Str. Thru	No	Yes	No	14
NEW!	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
NEW!	36C84-945	24 VAC	Natural	3/4 x 3/4	Fast Open	3.5"	2.5"-5.0"	Yes	Yes	No	Str. Thru	Yes	Yes	No	8
NEW!	36C87-944	24 VAC	Natural	3/4 x 3/4	Step Open 1.0	1.0"/3.5"	2.5"-5.0"	No	No	No	Str. Thru	Yes	No	No	11
NEW!	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
NEW!	36C94-907	24 VAC	Natural	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 250-253

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



36E36-304



36E86-302

36E REDUNDANT GAS VALVE

Compact Multifunction Valves Designed to Meet the Requirements for use with All Types of Intermittent Ignition Systems (Cycle-Pilot, Proven Pilot, Direct Spark Ignition and Hot Surface Ignition)

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 A.G.A. and C.G.A. design certified

Pipe Size	1" Pressure Drop Capacity		Rated Range of Regulation	
	BTU/HR		BTU/HR	
	AGA STD. NAT GAS 1000 BTU/CU. FT.	LP GAS 2500 BTU/CU. FT.	AGA 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


TECHNICAL HELP

Wiring Diagram. See page 254

UNIVERSAL ELECTRONIC IGNITION GAS VALVES

 Two Models Fit Most Applications

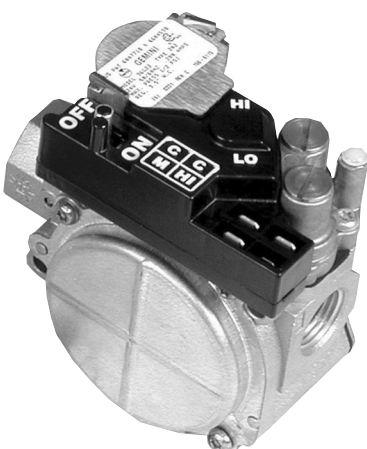
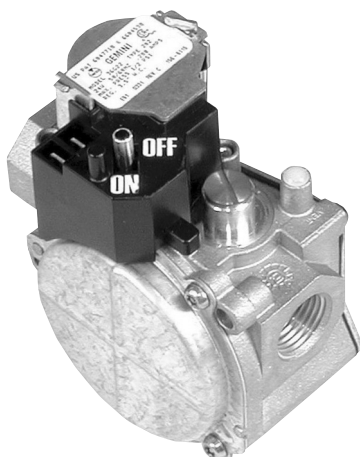
	Model Number	Coil Voltage	Inlet-Outlet Size	Electrical ③ Connection (see Fig #)	Regulator Setting	Step Opening	Gas Type	System Usage	Reducer Bushing Kit	Inlet Pressure Tap	Side Taps
Universal	36E36-304 ①	24 VAC, 60 Hz	1/2" x 3/4"	2	3.5" W.C.	Fast Open, No Step	Natural & L.P.	Proven Pilot, HSI and DSI	Yes	Yes	Yes
Universal	36E98-304	24 VAC, 60 Hz	1/2" x 3/4"	2	3.5" W.C.	Slow Open, No Step	Natural & L.P.	Proven Pilot, HSI and DSI	Yes	Yes	Yes
	36E22-214	24 VAC, 60 Hz	1/2" x 1/2"	1	3.5" W.C.	Fast Open, No Step	Natural	Proven Pilot, HSI and DSI	No	Yes	No
	36E24-214	24 VAC, 60 Hz	1/2" x 1/2"	1	3.5" W.C.	Slow Open, No Step	Natural & L.P.	Proven Pilot, HSI and DSI	No	Yes	No
	36E38-301 ①	24 VAC, 60 Hz	1/2" x 3/4"	2	3.5" W.C.	1.2" W.C.	Natural	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.	L.P.	Proven Pilot, HSI and DSI	Yes	Yes	Yes
	36E52-214	24 VAC, 60 Hz	1/2" x 1/2"	1	3.5" W.C.	Slow Open, No Step	Natural	Proven Pilot, HSI and DSI	Yes	Yes	No
	36E54-214	24 VAC, 60 Hz	1/2" x 1/2"	3	3.5" W.C.	②	Natural	HSI	Yes	Yes	No
	36E86-302	24 VAC, 60 Hz	1/2" x 3/4"	5	3.5" W.C.	Fast Open	Natural	Cycle-Pilot	Yes	No	Yes
	36E93-304	24 VAC, 60 Hz	1/2" x 3/4"	6	3.5" W.C.	Slow Open, No Step	Natural	Proven Pilot with pressure switch	No	Yes	No
	36E96-314	24 VAC, 60 Hz	1/2" x 3/4"	4	3.5" W.C.	②	Natural	HSI and DSI	Yes	Yes	No
✳	36E38-210	24 VAC, 60 Hz	1/2" x 1/2"	2	3.5" W.C.	0.9" W.C. Step	Natural	HSI and DSI	No	Yes	No
✳	36E38-211	24 VAC, 60 Hz	1/2" x 1/2"	2	10.0" W.C.	2.5" W.C. Step	L.P.	HSI and DSI	No	Yes	No

① Pilot fittings included with valves

② Step Opening: Electrically Operated Lo Fire 1.6" W.C.

③ Wiring diagrams see page 254

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



36G SERIES GAS VALVES

The Gemini 36G is a Combination Gas Control Valve Designed for use with Non-Piloted Intermittent Ignition Systems. The Gemini 36G Gas 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	2.750
Mounting	Any position
Agency	C.G.A. International

36G Series

Valve (Stages)	Pipe Size	1" Pressure Drop Capacity		Range of Regulation			
		BTU/HR		BTU/HR		Adjustment Range (Nat. IN. W.C.)	Adjustment Range (L.P. IN. W.C.)
		C.S.A. Std Gas .64 Sp. Gr. (1000 BTU/CU. FT.)	LP Gas 1.53 Sp. Gr. (2500 BTU/FT.)	C.S.A. Std Gas .64 Sp. Gr. (1000 BTU/CU. FT.)	LP Gas 1.53 Sp. Gr. (2500 BTU/FT.)		
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

Wiring Diagrams See page 255

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
36G22-214*	24 VAC	Natural	1/2 x 1/2	Fast Opening	3.5"	Nat. 2.5" - 5.0" L.P. 6.0" - 12.0"	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	1
36G24-214*	24 VAC	Natural	1/2 x 1/2	Slow Opening	3.5"	Nat. 2.5" - 5.0" L.P. 6.0" - 12.0"	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	1
36G54-214*	24 VAC	Natural	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
36G55-214*	24 VAC	Natural	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

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

① Wiring diagrams – see page 255



36H32-423 AND 36H64-463

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). The 36H Valve is Our Highest Capacity Combination Gas Valve

FEATURES

- Inlet/outlet screens.
- Ambient temperature rating: -40°F to 175°F.
- Quiet redundant.
- Electrical shut-off.
- Inlet and outlet pressure taps (1/8" N.P.T.).
- Quick-connect terminals (1/4").
- Adjustable regulator.
- CSA approved.

SPECIFICATIONS

Type of Gas	Natural or LP gas (conversion kit included)
Operating Ambient	Temperature: -40° to 175°F
Max. Pressure Rating	14" W.C. (1/2 PSI) max.
Electrical	24 VAC, 50/60 Hz, Single Stage .41 Amps, Two Stage .54 Amps



Model Number	1" PD Capacity BTU/HR		Range of Regulation BTU/HR		Regulator Adjustment Range	
	CSA Std. Gas .64 Sp. Gr. (1000 BTU/CU FT)	CSA Std Gas 1.53 Sp. Gr. (2500 BTU/CU FT)	CSA Std. Gas .64 Sp. Gr. (1000 BTU/CU FT)	CSA Std. Gas 1.53 Sp. Gr. (2500 BTU/CU FT)		
					Nat. Gas	LP Gas
36H32-423					2.5" to 5.0"	4.0" to 9.5"
36H64-463	300,000	486,000	50,000-400,000	81,000-648,000	1.0"-3.5" Low 2.5"-5.0" High	1.0"-3.5" Low 8.0"-12.0" High

Model Number	Coil Voltage	Gas Type	Pipe Size	Opening Characteristic	Regulator Setting	Convertible Nat./LP	LP Conversion Kit Included	Flow Direction	Reducer Bushing Kit	Filter Screens	Inlet Pressure Tap	Outlet Pressure Taps	Internal Wiring (see page)
NEW! 36H32-423	24 VAC	Natural or LP	3/4 X 3/4	Fast Open	3.5"	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	256
NEW! 36H64-463	24 VAC	Natural or LP	3/4 X 3/4	2 Stage Fast Open	LO 1.2" HI 3.5"	Yes	Yes	Str. Thru	Yes	Yes	Yes	Yes	256

CROSS REFERENCE

36H32/36H64 Replaces:

Model Number	Suggested Replacement	Model Number	Suggested Replacement	Model Number	Suggested Replacement	Model Number	Suggested Replacement
1RC52	36H64-463	36C68-327	36H32-423	36C68-472	36H32-423	36C76-411	36H64-463
36C68-200	36H32-423	36C68-330	36H32-423	36C68-473	36H32-423	36C76-412	36H64-463
36C68-202	36H32-423	36C68-400	36H32-423	36C68-477	36H32-423	36C76-417	36H64-463
36C68-205	36H32-423	36C68-403	36H32-423	36C68-601	36H32-423	36C76-420	36H64-463
36C68-209	36H32-423	36C68-404	36H32-423	36C68-602	36H32-423	36C76-445	36H64-463
36C68-212	36H32-423	36C68-405	36H32-423	36C68-606	36H32-423	36C76-459	36H64-463
36C68-217	36H32-423	36C68-415	36H32-423	36C68-607	36H32-423	36C76-463	36H64-463
36C68-218	36H32-423	36C68-418	36H32-423	36C68-806	36H32-423	36C76-467	36H64-463
36C68-243	36H32-423	36C68-419	36H32-423	36C76-205	36H64-463	36D13-208	36H64-463
36C68-261	36H32-423	36C68-423	36H32-423	36C76-210	36H64-463	36D13-405	36H64-463
36C68-262	36H32-423	36C68-434	36H32-423	36C76-214	36H64-463	36D13-208	36H64-463
36C68-266	36H32-423	36C68-441	36H32-423	36C76-225	36H64-463	36H64-463	36H64-463
36C68-301	36H32-423	36C68-442	36H32-423	36C76-227	36H64-463	700-413	36H64-463
36C68-303	36H32-423	36C68-448	36H32-423	36C76-230	36H64-463	700-418	36H32-423
36C68-324	36H32-423	36C68-452	36H32-423	36C76-401	36H64-463	700-420	36H32-423
36C68-325	36H32-423	36C68-457	36H32-423	36C76-406	36H64-463	V845A1109	36H32-423
36C68-326	36H32-423	36C68-464	36H32-423	36C76-407	36H64-463	VR8304M4507	36H32-423
				36C76-408	36H64-463	VR8345M4302	36H32-423



2509-256

“CUSHIONED POWER” SOLENOID VALVES

For use on All Types of Gas Burners

FEATURES

- Resilient-mounted coil, sound-deadening cover, compression spring closing and soft seat construction.
- No direct metal to metal contact to transmit operating sounds.
- 2509 model has pipe plug on each side (upstream) for pressure tap.
- For use with all gases*, see caution note here.
- Two 30" electrical leads.

***CAUTION:** DO NOT USE THESE VALVES ON LP GAS APPLICATIONS EXCEPT WITH A 100% SHUT-OFF SYSTEM.

SPECIFICATIONS

Electrical Rating 24 VAC 60 Hz, 0.4 amps;
120 VAC 60 Hz, 0.1 amps
Agency A.G.A. and C.G.A. certified
Maximum Pressure Rating 1/2 PSI (14.0" W.C.)
Ambient Operating Range -40 to +125°F (-40 to +51°C)

Model Number	Coil Voltage 60 Hz	Inlet-Outlet Size	Capacity A.G.A. Standard Gas ①	Gas Type	Description
2509-254	24 VAC	1/2" x 1/2"	329,000	ALL	Without Plug-In Pilot
2509-256	24 VAC	3/4" x 3/4"	451,000	ALL	Without Plug-In Pilot
2509-258	24 VAC	1" x 1"	687,000	ALL	Without Plug-In Pilot
2509A-254	120 VAC	1/2" x 1/2"	329,000	ALL	Without Plug-In Pilot
2509A-256	120 VAC	3/4" x 3/4"	451,000	ALL	Without Plug-In Pilot
2509A-258	120 VAC	1" x 1"	687,000	ALL	Without Plug-In Pilot

① See page 414 for capacities of other gases



764-702

764 SERIES THERMOCOUPLE OPERATED GAS PILOT SAFETY/GAS FIREPLACE VALVES

Non-Regulated, Safe Lighting, In Line Appliance Control with 100% Shut Off. **Do Not Use on Unvented Applications**

FEATURES

- 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).
- Valves have adjusted pilot pressure and manual shut-off valve.
- Functional replacement for Jade Controls J-100 gas valve.

SPECIFICATIONS

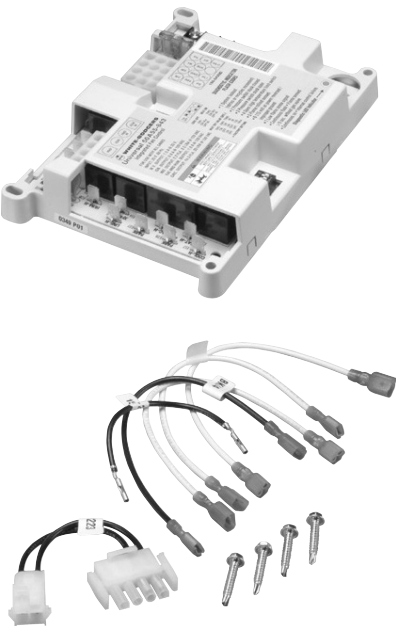
Electrical Rating 20 to 30 mV (Thermocouple)
Regulator Adjustment Range Non-regulated
Maximum Pressure Rating 1/2 PSI (14.0" W.C.)
Ambient Operating Range 32 to 175°F
Swing Radius 2.5"
Agency A.G.A. and C.G.A. design certified

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

- F42-0895 — Replacement knob
- Thermocouples see page 82

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



**50A55-843 UNIVERSAL SILICON CARBIDE
INTEGRATED FURNACE CONTROL**

Controls Gas Valve, Ignitor, Blower, Inducer, Humidifier and Air Cleaner. Replaces All 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)



TECHNICAL HELP

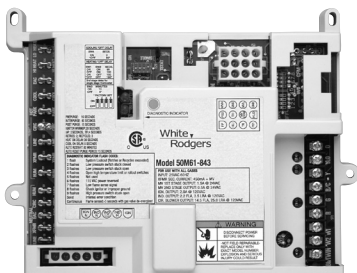
Wiring/configuration/troubleshooting . . see pages 265-267

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:

10207701	50A50-131	50A50-405	50A55-288
10207702	50A50-142	50A50-406	50A55-438
10207703	50A50-205	50A50-407	50A55-474
10207710	50A50-206	50A50-408	50A55-571
031-00662	50A50-207	50A50-438	50A55-843
031-01266000	50A50-209	50A50-471	D330927P01
031-01266-000	50A50-229	50A50-472	D330930P01
12L4201	50A50-240	50A50-473	D330934P01
1380-686	50A50-241	50A50-474	D340035P01
1380-699	50A50-285	50A55-120	D340354P01
50A50-110	50A50-286	50A55-143	D340774P01
50A50-111	50A50-288	50A55-241	
50A50-112	50A50-295	50A55-285	
50A50-113	50A50-296	50A55-286	

**50M61-843**

Universal Replacement Two-Stage Integrated Module with Nitride Ignition. Replaces All White-Rodgers 50M61 Modules and is Designed to Control a Multi-Tapped Induction Circulation Blower

FEATURES

- Replaces most White-Rodgers 50M61 OEM modules.
- Controls multi-tapped induction circulation blower.
- Diagnostic LED indicators.
- Patented adaptive learning for optimum ignition performance.
- Electronic Air Cleaner and Humidifier outputs.

SPECIFICATIONS

Type of Gas	Natural, manufactured
Input Voltage	25 VAC, 50/60 Hz, .45 Amps
Mixed or LP gas	
Gas Valve Relays	1.5 amps @ 25 VAC, 60 Hz, 0.6 pf
Ignitor Triac	2.0 amps @ 120 VAC, 60 Hz (resistive)
Inducer Relays	2.2 FLA – 3.5 LRA @ 120 VAC
Circulator Relays	14.5 FLA – 25.0 LRA @ 120 VAC
Operating Ambient	Temperature: -40 to +175°F
Humidity Range	5% to 93% relative humidity (non-condensing)

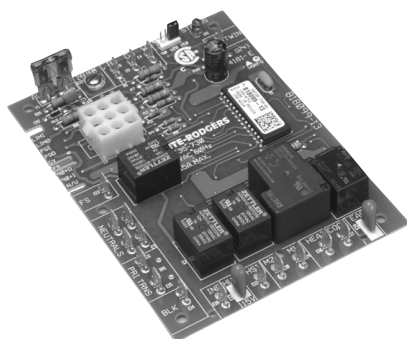
**TECHNICAL HELP**

Wiring and configuration. see pages 283-285

Model Number	Pre-purge	Delay Heat		Delay Cool		Auto Reset
		Fan On	Fan Off	Fan On	Fan Off	
NEW! 50M61-843	15 sec.	45 Sec.	60/90/120/180 Sec.	5 Sec.	2/80 Sec.	60 minutes

CROSS REFERENCE**50M61-843 Replaces:**

50M61-120
50M61-288
50M61-289
50M61-486
50M61-495



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

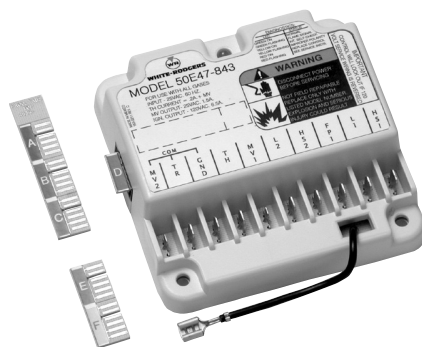
NOTE: At 50 Hz, all timing specifications should be increased by 20%.

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:

Goodman	B1809913
UTEC	1012-933D
Texas Instruments	41F-5
White-Rodgers	50T35-730

**50E47-843****UNIVERSAL 50E47-843 NON-INTEGRATED HSI
IGNITION MODULE**

The Universal 50E47-843 Replaces ALL White-Rodgers 50E47 Modules and Virtually All 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

CROSS REFERENCE**50E47-843 Replaces:**

50D47-140	50E47-40	HS780-17NL-304A	HS780-34NL-308A	S890G 1011
50D47-150	50E47-50	HS780-17NL-306A	HS780-34NL-312A	S890G 1029
50D47-160	50E47-60	HS780-17NL-308A	HS780-34NR-104A	S890G 1037
50D47-161	50E47-70	HS780-17NR-104A	HS780-34NR-106A	S890H 1002
50D47-170	50E47-843	HS780-17NR-106A	HS780-34NR-304A	S890H 1010
50D47-50	50F47-60	HS780-17NR-108A	HS780-34NR-306A	S890H 1028
50D47-60	780-780	HS780-17NR-304A	HS780-34NR-308A	S8910U 1000
50D47-70	780-783	HS780-17NR-306A	HS780-34NR-312A	S89C 1004
50E47-1	780-784	HS780-17NR-308A	HS780-34PL-104A	S89C 1012
50E47-10	780-785	HS780-17NR-312A	HS780-34PL-106A	S89C 1046
50E47-101	780-786	HS780-17PL-106A	HS780-34PL-108A	S89C 1079
50E47-110	780-787	HS780-17PL-108A	HS780-34PL-304A	S89C 1087
50E47-120	780-788	HS780-17PL-304A	HS780-34PL-306A	S89C 1103
50E47-130	780-789	HS780-17PL-306A	HS780-34PL-308A	S89D 1002
50E47-140	780-790	HS780-17PL-308A	HS780-34PR-106A	S89G 1005
50E47-150	780-910	HS780-17PR-104A	HS780-34PR-108A	S89G 1013
50E47-160	832-002	HS780-17PR-108A	HS780-34PR-304A	S89G 1021
50E47-161	832-005	HS780-17PR-306A	HS780-34PR-306A	S89G 1047
50E47-170	833-002	HS780-34NL-106A	HS780-34PR-308A	S89H 1003
50E47-20	HS780-17NL-104A	HS780-34NL-108A	S890C 1007	S89H 1011
50E47-30	HS780-17NL-106A	HS780-34NL-304A	S890D 1006	S89H 1029
	HS780-17NL-108A	HS780-34NL-306A	S890G 1003	S89J 1008

Agency A.G.A. and C.G.A. design certified

TECHNICAL HELP

Wiring operation and troubleshooting. See pages 274-277



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.



767A-356



767A-357



767A-361



767A-365



767A-366



767A-369



767A-370



767A-371



767A-372



767A-373



767A-374



767A-375



767A-376



767A-377



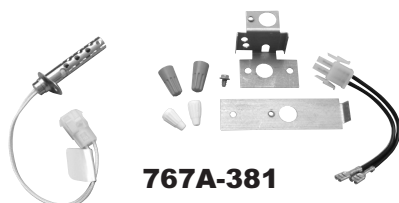
767A-378



767A-379



767A-380



767A-381



767A-382



767A-383



767A-384

SILICON CARBIDE HOT SURFACE IGNITOR

Highly Reliable Ignition Source

FEATURES

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

SPECIFICATIONS

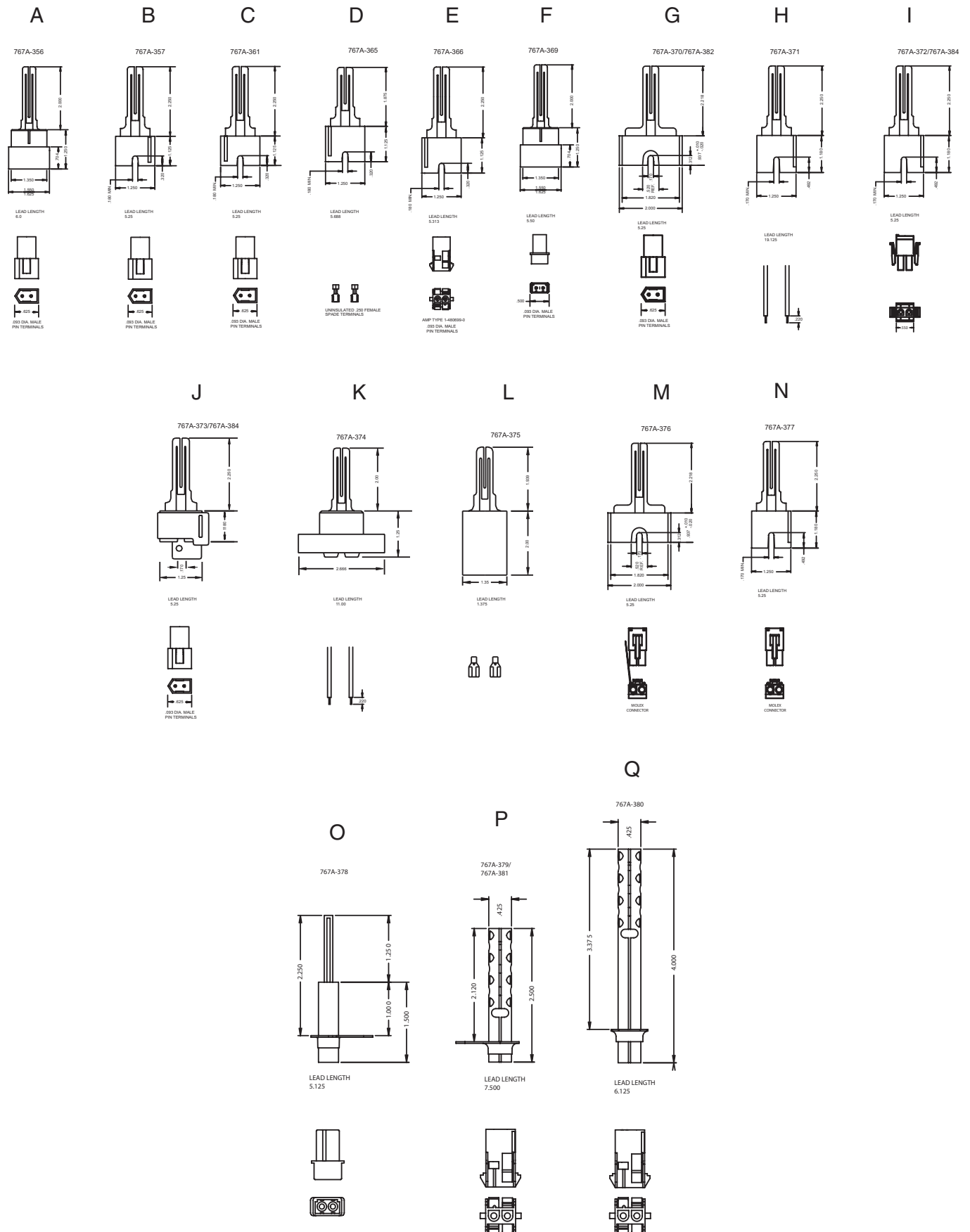
Electrical Rating 120 VAC, 60 Hz
Agency A.G.A. and C.G.A. design certified

Model Number	Lead Length	Lead Insulation Temp. Rating	Electrical Connection	Ceramic Insulator & Electrical Connections (See Fig.)
767A-356	6"	250°C	Receptacle with .093" Male Pins	A
767A-357	5.25"	250°C	Receptacle with .093" Male Pins	B
767A-361	5.25"	250°C	Receptacle with .093" Male Pins	C
767A-365	5.688"	250°C	1/4" Female Spade Terminals	D
767A-366	5.313"	250°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" 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

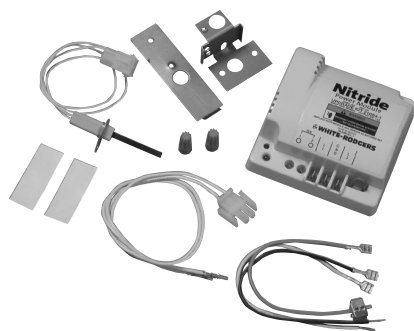
Dimension drawings see next page
Ignitor cross reference see page 72



SILICON CARBIDE IGNITOR White, White CROSS REFERENCE Rodgers

MANUFACTURER	OEM #	SUGGESTED REPLACEMENT		MANUFACTURER	OEM #	SUGGESTED REPLACEMENT	
		CARBIDE	UPGRADE KIT *			CARBIDE	UPGRADE KIT *
AMANA	10041601	767A-369	None	ROBERTSHAW (cont.)	41-407	767A-376	✓
	20165702	767A-378	None		41-408	767A-372	✓
	B1336102	767A-369	None		41-409	767A-370	✓
	D99182	767A-369	None		41-410	767A-377	✓
AMERICAN APPLIANCE	271B	767A-374	✓		41-411	767A-383	✓
AMERICAN ROAD EQUIP.	201W	767A-371	✓		41-412	767A-373	✓
ARMSTRONG AIR	38322B001	767A-371	✓		41-413	767A-375	✓
	44744-2	767A-380	None		41-414	767A-384	✓
ARCO AIR	1096048	767A-384	✓		41-602	767A-378	None
	1380680	767A-384	✓		41-603	767A-379	None
CARLIN	87197S	767A-375	✓		41-604	767A-380	None
CARRIER CORP.	LH33ZS001A	767A-370	✓		41-605	767A-381	None
	LH33ZS002	767A-370	✓	ROBERTS GORDON	90434300	767A-370	✓
CLAIRE BROTHERS	C-238	767A-371	✓		90436600	767A-371	✓
	C-242	767A-371	✓	SNYDER GENERAL	1380654	767A-370	✓
COLEMAN	1474-051	767A-371	✓		1380672	767A-370	✓
	1474-052	767A-371	✓		1380680	767A-370	✓
COMFORT MAKER	1096048	767A-384	✓	SUPERIOR FIREPLACE	94851	767A-371	✓
COMFORT ZONE	150114-04-01	767A-374	✓	TEMPSTAR	1096048	767A-384	✓
DETROIT RADIENT	201D	767A-361	✓	TRANE	340039P01	767A-371	✓
DMO INDUSTRIES	20834	767A-371	✓		B138196P01	767A-370	✓
DORNBACH FURNACE	271W	767A-371	✓		B144676P01	767A-377	✓
DUCANE	20015201	767A-370	✓		B144676P02	767A-376	✓
ENERCO TECH	10399	767A-371	✓		B340039P01	767A-372	✓
EVCON	1474-051	767A-371	✓		IGN23	767A-371	✓
	1474-052	767A-371	✓		IGN26	767A-370	✓
GOODMAN	B1401009	767A-373	✓		IGN30	767A-370	✓
	B1401018S	767A-373	✓		IGN30	767A-376	✓
HB SMITH	50018	767A-361	✓		IGN34	767A-372	✓
HEIL	1096048	767A-384	✓	TRIANCO-HEATMAKER	2600-359	767A-369	None
HUPP INDUSTRIES	09050	767A-371	✓	VISSMAN	9302-094	767A-361	✓
INTERCITY	1009604	767A-373	✓	WAYNE HOME EQUIPMENT	62821-001	767A-371	✓
	1096048	767A-384	✓		62821-002	767A-371	✓
MAJESTIC	75-92-104	767A-371	✓	WEIL-McLAIN	511-330-139	767A-370	✓
	75-92-105	767A-371	✓		511-330-188	767A-374	✓
METZGER	201N	767A-371	✓		511-330-190	767A-382	✓
	201W	767A-371	✓		511-330-193	767A-370	✓
MOR-FLO	3200580	767A-374	✓	WHITE, LB	120-07549	767A-371	✓
	3200618	767A-371	✓	WHITE-RODGERS	767A-301	767A-361	✓
	3210401	767A-374	✓		767A-303	767A-357	✓
NORDYNE	105141000	767A-371	✓		767A-306	767A-361	✓
	632-0880	767A-371	✓		767A-309	767A-356	None
	632-0770	767A-371	✓		767A-310	767A-365	✓
NORTON	201	767A-370	✓		767A-311	767A-366	✓
	201A	767A-369	None		767A-350	767A-361	✓
	201D	767A-361	✓		767A-353	767A-357	✓
	201J	767A-374	✓		767A-354	767A-361	✓
	201K	767A-371	✓		767A-356	767A-356	None
	201L	767A-371	✓		767A-357	767A-357	✓
	201M	767A-374	✓		767A-361	767A-361	✓
	201N	767A-371	✓		767A-364	767A-366	✓
	201R	767A-371	✓		767A-365	767A-365	✓
	201W	767A-371	✓		767A-366	767A-366	✓
	201Y	767A-374	✓		767A-369	767A-369	None
	271	767A-370	✓		767A-370	767A-370	✓
	271A	767A-369	None		767A-371	767A-371	✓
	271M	767A-374	✓		767A-372	767A-372	✓
	271N	767A-371	✓		767A-373	767A-373	✓
	271NM	767A-384	✓		767A-374	767A-374	✓
	271P	767A-361	✓		767A-375	767A-375	✓
	271W	767A-371	✓		767A-376	767A-376	✓
	271Y	767A-374	✓		767A-377	767A-377	✓
PERFECTION SCHWANK	108803-G1	767A-374	✓		767A-382	767A-382	✓
RAYPAK	600915	767A-370	✓		767A-383	767A-383	✓
RHEEM	62-22441-01	767A-372	✓		767A-384	767A-384	✓
	62-22441-01	767A-371	✓	WILLIAMSON	9050	767A-371	✓
	62-22868-82	767A-383	✓	YORK	025-27766-000	767A-361	✓
ROBERTSHAW	41-401	767A-369	None		025-27774-000	767A-361	✓
	41-402	767A-371	✓		025-29043-000	767A-361	✓
	41-403	767A-370	✓		025-29050-000	767A-361	✓
	41-404	767A-382	✓		025-33421-000	767A-379	None
	41-405	767A-361	✓		473-20937	767A-381	None
	41-406	767A-374	✓				

* Nitride Upgrade Kit 21D64-1 can be used as a replacement unless application is sealed combustion.



21D64-1



**Ignitor Strength
Demonstration**

NITRIDE UPGRADE KIT

Designed to Replace Silicon Carbide Ignitors with Sturdier Nitride Design

FEATURES

- Replaces most silicon carbide ignitors.
- Includes universal ignitor mounting bracket.
- Super tough nitride ignitor construction.
- Easy ignitor replacement.
- 5 year warranty.

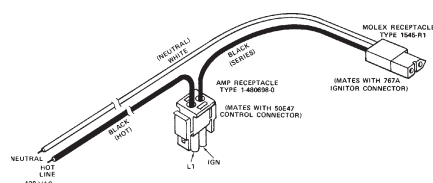
SPECIFICATIONS

Operating Temperature. -40° to +176°F (-40 to +80°C)
Humidity 95% non-condensing
Input Voltage. 120VAC @ 1.2 amps nominal,
7 amps inrush at 50/60 Hz

TECHNICAL HELP

Wiring Diagrams. see pages 257-258

Model Number	Description
21D64-1	Kit includes nitride ignitor, power supply module, universal mounting bracket, connection harness and furnace label



**F115-0100
Harness Connector**

HARNESS CONNECTOR FOR HOT SURFACE IGNITION (H.S.I.) SYSTEMS

The Harness Connects the 767A Ignitor with the 50E47 Ignition Module. Wire and Connectors are Rated at 105°C

Model Number	Lead Lengths		
	Control	Series	Ignition
F115-0100 ①	24"	24"	24"

① If harness lead lengths are not sufficient for application, contact O.E.M. for exact replacement harness



**760-401
Flame Sensor**

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

Flame Sensors can be Mounted Remotely on Multiple Burner or Adjacent to Ignitor on Other Applications

FEATURES

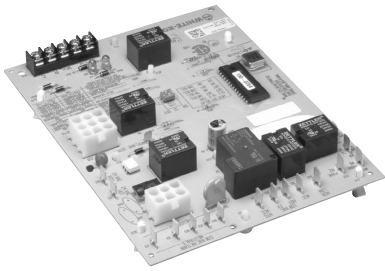
- High quality Alumina ceramic insulator.
- High temperature Kanthal flame rod material that can withstand 1800°F.
- Teflon insulated (250°C rating) lead wire.
- Single screw, plated steel mounting bracket.

SPECIFICATIONS

Agency A.G.A. and C.G.A. design certified

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



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)



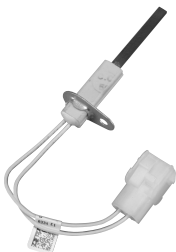
TECHNICAL HELP

Wiring and configuration see pages 268-270

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



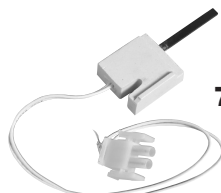
768A-842



768A-843



768A-844



768A-845

NITRIDE IGNITOR

OEM Replacement for Nitride Ignitors

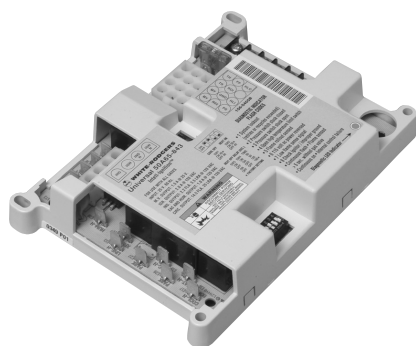
FEATURES

- AMP terminal receptacles with female sockets.
- White teflon coated leads.
- Steatite insulator with or without steel zinc plated mounting tabs.
- 54mm ignitor element length.

SPECIFICATIONS

Electrical Rating 80V, Frequency 50/60Hz, Wattage 92 watts

Model Number	W/R OEM Number	OEM Part Number	Description	Terminal Type
768A-842	768A-2	Amana 11111701	Nitride Ignitor	2 terminal AMP receptacle, .093 female sockets
768A-843	768A-143	Thermo Products 768A-143	Nitride Ignitor	2 terminal AMP receptacle, .084 female sockets
768A-844	768A-4	Lennox 41K5601	Nitride Ignitor	2 terminal AMP receptacle, .084 female sockets
768A-845	768A-5	Trane B340970P01	Nitride Ignitor	2 terminal AMP receptacle, .084 female sockets



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

Wiring and configuration. see pages 271-273

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:

10M9301
32M8801
50A65-120
50A65-143
50A65-288
50A65-474
50A65-475
50A65-843
56L8401
D341213P01
D341396P01



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.
- Program keys.
- 1/4" and 3/16" quick connect terminals.
- 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 Time8 sec
Mounting Multipoise
Agency Approvals CSA USA/CANADA

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

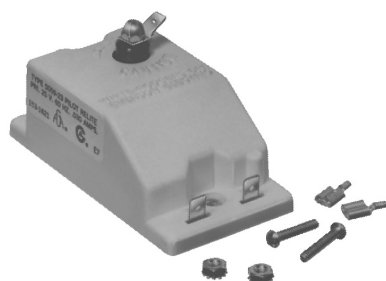
50D50-843 CONFIGURATION OPTIONS (All Times in Seconds)

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

CROSS REFERENCE

50D50-843 Replaces:

Honeywell S8610U
Johnson Controls G779
Robertshaw 780-715



5059-23
Pilot Relite Control

PILOT RELITE CONTROLS 5059 AND 5059A

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.
- Available in 24 and 120 volt input.
- Spark plug or spike output configurations available.

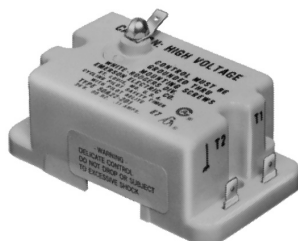
SPECIFICATIONS

Agency A.G.A. design certified and C.G.A. certified

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
5059A-21	120 VAC	0.04 amps	Spark plug and 1/4" spade connectors
5059-25	24 VAC	0.03 amps	Spark plug and 1/4" spade connectors



50A22-4



50A22-201

COMBINATION RELITE CONTROL AND LOCKOUT TIMER: MODEL 50A22

Combines in One Enclosure the Functions of a 5059 Type and 5022 Control

FEATURES

- Includes all the features of a 5059 Relite Control.
- Lockout timer opens circuit if flame is not sensed in ignition period.
- Replaces previous 5022 timers.

SPECIFICATIONS

Agency A.G.A. design certified and C.G.A. certified

Model Number	Input Voltage	Electrical Rating	Description
50A22-4	24 VAC	0.11 amps	5 wire edge connector
50A22-21	24 VAC	0.11 amps	6 male spade connections, 1/4"
50A22-201	24 VAC	0.11 amps	5 wire edge connector used with edge connect gas valves. Spark plug or 1/4" spade connectors



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
760-310	Same as 760-56 except with universal mounting bracket



668-401



668-451

668 SERIES KWIK-SENSOR CAD CELL RELAYS

Replaces Intermittent Ignition Kwik-Sensor CAD Cell Relays on Oil Burner Systems with 15, 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
668-430	45 seconds	2 or 3-Wire ①	0.4A	Yes	Yes	No	F①-B
668-451 ②	45 seconds	2-Wire	0.4A	No	No	40VA	C-W
668-501	30 seconds	2-Wire	0.4A	No	No	No	No
668-601	15 seconds	2-Wire	0.4A	No	No	No	No
668-515	30 seconds	2 or 3-Wire	0.4A	Yes	Yes	No	No

① 3-wire series 10.
② 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.
F145-0825	Replacement flame detector with 4 separate brackets. 30" leads. With instruction sheet.
956-35	Straight bracket, 65" leads.

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



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. certified, A.G.A. design certified & C.G.A. certified
Dimensions	2 ³ / ₄ " H x 2 ¹ / ₁₆ " W x 1 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	U.L. recognized, A.G.A. design certified and C.G.A. certified

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



3049-64

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.



3094-118

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 A.G.A. design certified and C.G.A. certified
Maximum temperature 1450°F at bulb tip

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
3049-3	26"	A	#5	—
3049-4	33"	A	#2	—
3049-5	48"	B	#3	Stud mount bulb
3049-15	33"	A	#7	—
3049-18	33"	D	#7	—
3049-41	48"	B	#4	—
3049-64 ①	48"	D	#19	Replaces bulb styles #9 or #13
3049-115 ①	48"	D	#20	Replaces bulb styles #17 or #18
3094-118	48"	C	#13	Replaces 3094-102
3094-123	30"	G	#9	Includes additional 1/4" spade terminal for fan delay relay
3098-134 ①	48"	E	#19	Replaces bulb styles #9 or #13
3098-156 ①	48"	E	#20	Replaces bulb styles #17 or #18
3098-522	30"	E	#17	Make before break switch

① Includes adapter fittings.

MERCURY FLAME DETECTORS

Exact Replacement Flame Detectors for Infrared Heaters and Similar Applications

FEATURES

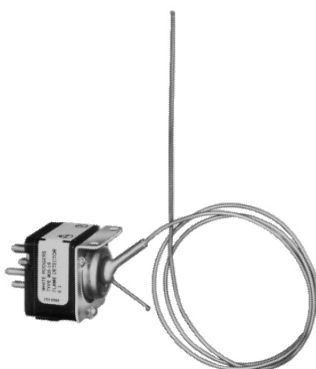
- For monitoring the ignition process during the entire "ON" cycle of the heater.
- In the event of ignition failure or flame failure, flame detector causes safety switch relay to operate to close gas valve.
- Type 905 has snap-acting switch operation.

SPECIFICATIONS

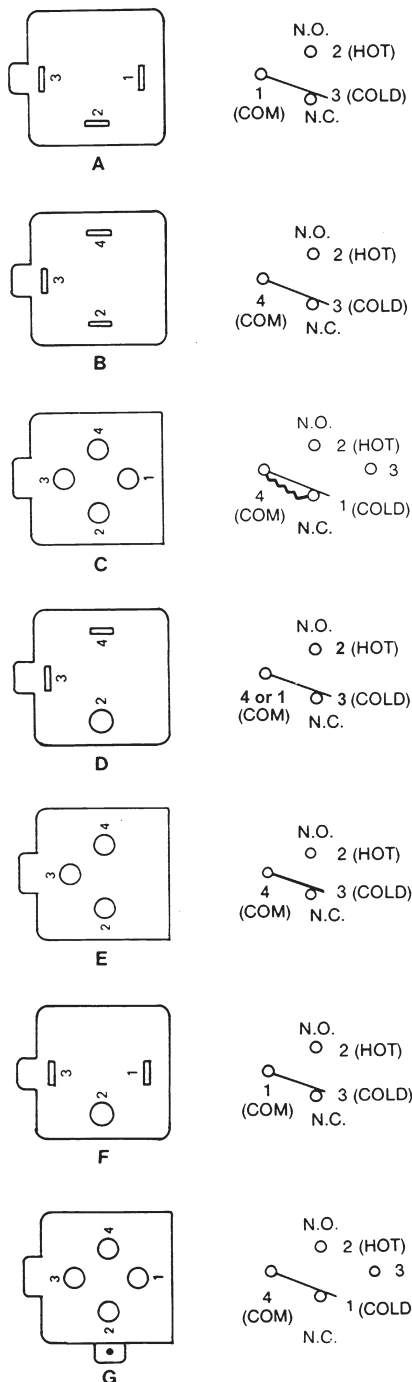
Agency U.L. recognized

Model Number	Previous Type	Electrical Connections	Switch Action	Capillary Length	Electrical Ratings-Pilot Duty Only		
					120 VAC	240 VAC	30 VAC
905-20 ①	905-7	Plug-in	SPDT	42"	125 VA	125 VA	30 VA

① Capillary type with flame-sprayed bulb to prevent hydrogen penetration.



Plug-In Types

**TERMINAL PANELS
CONFIGURATIONS****TYPES WITH SPADE TERMINALS**

O.E.M. Number	Original Capillary Length	Original Panel Types ^②	Suggested Replacement Type Number
3049-1	30 or 48"	A	3049-5
3049-3	26"	A	3049-3
3049-4	33"	A	3049-4
3049-5	48"	B	3049-5
3049-6	12"	B	3049-5
3049-7	24"	B	3049-5
3049-11	24"	B	None ^①
3049-15	33"	A	3049-15
3049-18	30 or 33"	D	3049-18
3049-20	42"	B	None ^①
3049-29	20"	B	3049-4
3049-31	12"	B	None
3049-32	12"	B	None
3049-33	24"	B	None
3049-36	48"	B	3049-5
3049-37	30"	B	3049-5
3049-41	24 or 48"	B	3049-41
3049-49	42"	B	3049-64
3049-52	30"	B, D	3049-115
3049-54	30"	B	3049-115
3049-55	30"	A, D	3049-115
3049-58	30"	B	3049-64

O.E.M. Number	Original Capillary Length	Original Panel Types ^②	Suggested Replacement Type Number
3049-59	30"	B	None ^①
3049-61	24"	B	3049-64
3049-62	18"	B	None ^①
3049-64	48"	D	3049-64
3049-66	30"	B	3049-115
3049-68	30"	B	3049-115
3049-70	30"	B	None ^①
3049-71	30"	B	3049-4
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 Types ^②	Suggested Replacement Type Number
3094-102	30"	C ③	3094-118
3094-111	30"	C ③	None ^①
3094-118	48"	C ③	3094-118
3094-122	30"	C ③	None ^①
3094-123	30"	G	3094-123
3094-127	48"	C ③	3094-118
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 Types ^②	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	3098-522
3098-536	30"	E	None ^①

① Consult the O.E.M. for replacement type number

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 features 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

**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.

THERMOCOUPLES

Model Number Standard ①	Description
H06E-18	18" thermocouple
H06E-24	24" thermocouple
H06E-30	30" thermocouple
H06E-36	36" thermocouple
H06E-48	48" thermocouple
H06E-72	72" thermocouple

① Hot junction maximum temperature rating: 1450°F

BULK PACK THERMOCOUPLES

- 100 coiled thermocouples in 5 plastic bags.
- Includes 100 C-4 clips and 100 fittings.
- 100 piece minimum order.

Model Number	Description
H06E-518	18" Coiled Thermocouple
H06E-524	24" Coiled Thermocouple
H06E-530	30" Coiled Thermocouple
H06E-536	36" Coiled Thermocouple
H06E-548	48" Coiled Thermocouple

**JUNCTION BOX THERMOCOUPLES
WITH ENERGY CUT-OFF (ECO)**

Model Number	Description
H06F-24	24" Coiled Thermocouple
H06F-36	36" Coiled Thermocouple

CROSS REFERENCE**H06E Replaces:**

White-Rodgers	Honeywell	Johnson	Robertshaw
H06E	Q340A	K19	1980



G01A-332



**101934
Replacement Cartridge**
(F Spade Clip)

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	Connector Type
101934F32	750	32		X		F Spade Clip
101934R32	750	32	X			R Bushing
G01A-332	750	36		X	X	F Spade Clip
G01A-512	750	36	X		X	F Spade Clip
G01A-518	750	18	X		X	F Spade Clip



G251 250 MILLIVOLT PILOT GENERATORS

250mV Generator Designed for Single Function or Combination Gas Valves

FEATURES

- For single function gas valves (B60Y84).
- For combination gas valves (B67).
- For thermomagnetic safety valves (MR2YA) relays.

SPECIFICATIONS

Output 250 millivolts nominal, open circuit
Connector F Spade Clip or R Bushing
Lead Length 13" to 16" – Fiberglass leads
Agency IAS certified

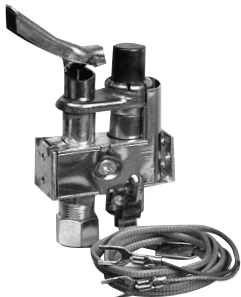
Model Number	Lead Length (inches)	Connector Type
G251F36S ①	36	F Spade Clip
G251R36S ①	36	R Bushing
G251R13V ②	13	
G251R32V ②	32	

① Retaining clip is included. May be used with ITT GC 26T Pilot Burner

② Special for range controls



PG9ADZ102



PG9A38JTL24



PG9A28JTL24

PG9 PILOT GENERATORS

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

FEATURES

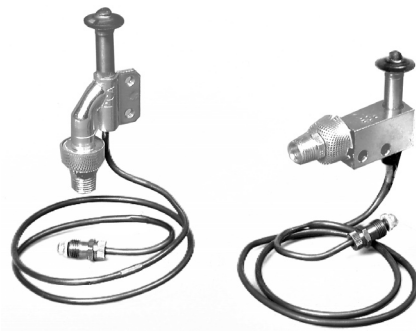
- Single blue flame burner for quiet operation and maximum flame stability.
- “Snorkel” primary air path incinerates dust eliminating linting problems.
- All models provided with orifice base fittings for Natural and LP.
- Flame ring surrounding generator ensures high output and extended generator life.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

SPECIFICATIONS

Output Voltage	750 millivolts nominal, open circuit
Leads	Standard: 2-wire, 32" with F spade clip type connections (see also Part #101934 replacement generator cartridges)
Base Fittings	Straight type for 1/4" O.D. tubing, compression nut included (see Base Fittings, 101094/5 next page)
Orifice	All models come equipped with a screw base orifice suitable for use with natural gas. Optional orifices are available for other combustion gas applications (see Base Fittings, 101094/5 next page)
Agency	IAS certified

Model Number	Head Type	Porting	Orifice ②
PG9A27JTL22 ①	Channel Type	90° right & 90° left, 3/4" head width	.022
PG9A28JTL24 ①	Channel Type	90° right & 90° left, 2 3/16" head width	.024
PG9A37JTL22 ①	Channel Type	180°, 0.32" length	.022
PG9A38JTL24 ①	Channel Type	180°, 0.87" length	.024
PG9A41JTL20 ①	Cobra	90° left	.020
PG9A42JTL20 ①	Cobra	90° right	.020
PG9ADZ102	Channel Type	180°, 0.87" length	.024

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



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



101094/101095 Base Fittings
(Clockwise from bottom left corner:
101094HA, 101094HD, 101095HA)

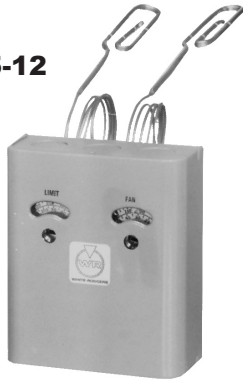
101094/101095 BASE FITTINGS

Series 101094 and 101095 Base Fittings are for use With PC Pilot Couples, PG9 or PG1 Pilot Generators, and 26T Pilot Burners

Model Number	Application	Gas	Replaces	Orifice
ANGLE TYPE				
101094HD010	PG9	LPG	101094GD	.010
101094HD013	PG1, PG9	LPG	101094GD	.013
101094HD020	PG1	Natural	101094GD	.020
	PG9	Mixed	101094GD	.020

Model Number	Application	Gas	Orifice
STRAIGHT TYPE			
101095HA010	PG9	LPG	.010
101095HA011	PG1	LPG	.011
101095HE011	26T	LPG	.011

5A75-12



DUAL FAN AND LIMIT CONTROLS

Regulates Fan or Blower Operation and Acts as a High Limit Safety Control

FEATURES

- Specially designed hydraulic action element can be bent to any position.
- Limit switch is equipped with U.L. approved adjustable stop.
- Temperature dial calibrated in °F and °C can be adjusted through cover.
- Easy to set cut-in and cut-out indicators on adjustable differential.
- Replaces discontinued Honeywell L4017B1194 (-5) and L4017B1196 (-12).

SPECIFICATIONS

Dimensions 5³/₈" H x 4³/₈" W x 1⁷/₈" D
 Finish Grey
 Agency U.L. recognized and C.S.A. certified

Model Number	Range	Differential	Element Length	Switch Action	Full Electrical Rating	Motor Rating (Full Load)		Valves and Relays	
						120 VAC	240 VAC	24 VAC	0.3-12v DC
5A75-5	Fan 70 to 150°F (21 to 65°C)	Adj. 15 to 55°F (-8 to 30°C)	9"	Close on Rise	HT See page 416	14.0A	7.0A	5.6A	—
	Limit 100 to 250°F (38 to 121°C)	Fixed 20°F (11°C)		Open on Rise	HTV See page 416	10.0A	6.0A	6.0A	1.0A
5A75-12	Fan 70 to 150°F (21 to 65°C)	Adj. 15 to 55°F (-8 to 30°C)	9" with 60" capillary	Close on Rise	HT See page 416	14.0A	7.0A	5.6A	—
	Limit 100 to 250°F (38 to 121°C)	Fixed 20°F (11°C)		Open on Rise	HTV See page 416	10.0A	6.0A	6.0A	1.0A



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

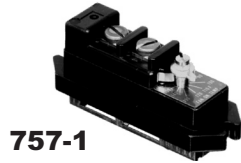
- Hydraulic action element – Unaffected by vibration.
- Switch case mounts in any position – No leveling required. Includes bulb mounting clip.
- High electrical rating permits operation of most equipment without use of relays or motor starters.
- Dustproof steel case – Dial visible and can be adjusted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

SPECIFICATIONS

Dimensions 5³/₄" H x 2⁵/₁₆" W x 2⁹/₁₆" D
 Finish Grey
 Agency U.L. listed and C.S.A. certified

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 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.



757-1



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 757 & 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	
757-1	Fan	70 to 160°F ① (21 to 71°C)	Fixed 25°F (14°C)	Close on Rise	8.0 A	4.0 A	125 VA
758-1	Limit	110 to 200°F ② (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 ③ (15 to 49°C)	Fixed 10°F (6°C)	Close on Rise	9.0 A	—	—

① Cut-in setting (cut-out is cut-in setting minus the differential)

② Cut-out setting (cut-in is cut-out setting minus the differential)

③ Thermal limiter opens at 183°F (84°C)



416-4

SINGLE FAN OR LIMIT CONTROL

Starts and Stops Fan Operation and the 416-4 Provides Positive Reliable High Limit Protection on Warm Air Furnaces

FEATURES

- Specially designed hydraulic action element can be bent to any position.
- Temperature dial calibrated in °F and °C and can be adjusted through cover.
- Easy to set cut-in and cut-out indicators on adjustable differential.
- Dustproof steel case has top and bottom knockouts.
- SPDT for use as fan or limit, also as fan "selector" on 2-speed blower application

SPECIFICATIONS

Dimensions 5 3/8" H x 2 5/16" W x 1 7/8" D

Finish Grey

Agency U.L. listed and C.S.A. certified

Model Number	Range	Differential	Length	Switch Action	Full Electrical Rating	Motor Rating (Full Load)		Valves & Relays
						120 VAC	240 VAC	24 VAC
416-4 ① ②	100 to 350°F (38 to 177°C)	Fixed 20°F (11°C)	9"	SPDT	HH See page 416	7.4A	3.7A	2.9A

① Includes a standoff bracket for high temperature mounting.

② U.L. approved adjustable dial stop, factory set at 250°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

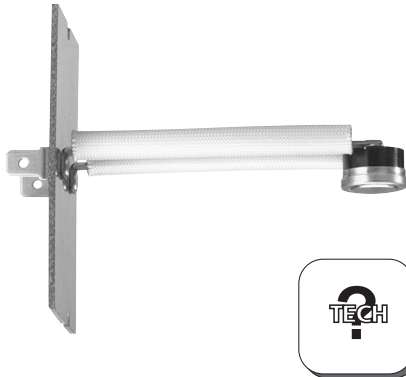
FEATURES

- 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. certified
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"	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
5D51-78	11"									



BOARD MOUNT LIMIT CONTROLS

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

FEATURES

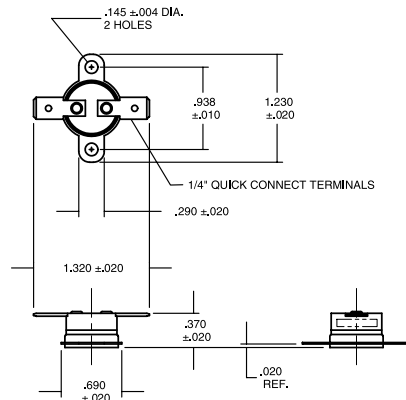
- Proven reliability in a compact, versatile, cost-effective design.
- Provides high-speed contact separation.
- OEM replacement for competitive models.

TECHNICAL HELP

Dimension drawings and specifications See pages 287-289

Model Number	Figure (pages 287-289)	Construction (pages 287-289)	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	180/160	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 287-289)	Construction (pages 287-289)	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
3L09-21	4	A	150/130	3.12	36T	612702
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



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

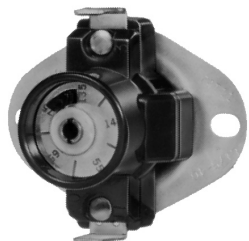
CSA Certified File #LR19988

VDE Lic. 81669

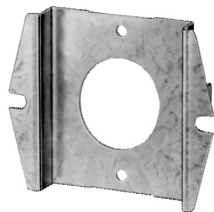
Model Number	Description	Temperature °F/°C	Differential °F/°C	Therm-O-Disc Type	Therm-O-Disc Style
3L11-60	Open on rise	55 to 65 (°F), 13 to 18 (°C)	20 (°F), 12 (°C)	36T21	10842
3L11-85	Open on rise	80 to 90 (°F), 27 to 32 (°C)	15 (°F), 8 (°C)	36T21	10843
3F11-100	Close on rise	93 to 107 (°F), 34 to 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



3F05-1



3L05-1



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

- 1/4" 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

**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 3/4" 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 (32°C)	Close on Rise	60T12	610047
3F01-140	140°F (60°C)	120°F (32°C)	Close on Rise	60T12	610049
3F01-150	150°F (66°C)	130°F (32°C)	Close on Rise	60T12	610050
3F01-160	160°F (71°C)	140°F (32°C)	Close on Rise	60T12	610064
3F01-180	180°F (82°C)	160°F (32°C)	Close on Rise	60T12	610065
3F01-200	200°F (93°C)	180°F (32°C)	Close on Rise	60T12	610066
3F01-350	350°F (177°C)	320°F (32°C)	Close on Rise	60T12	610067

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	
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

3L01-180

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
3L02-250		250°F (121°C)	Open on Rise	60TX15	611240
3L02-300		300°F (149°C)	Open on Rise	60TX15	611239

SPDT CONTROLS

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

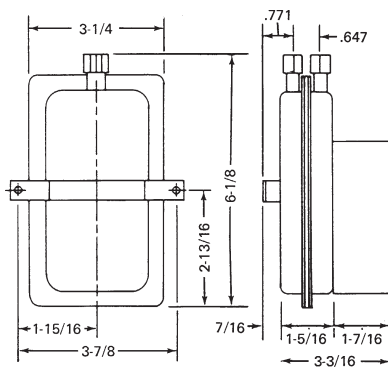
3L03-140

DUAL PURPOSE AIR SWITCH

White
Rodgers



770-1



DUAL PURPOSE AIR SWITCH

Responds to Positive, Negative or Differential Air Pressure

FEATURES

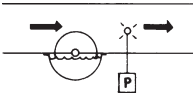
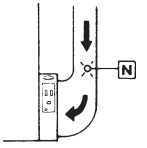
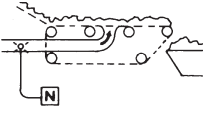
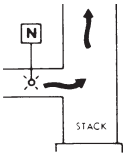
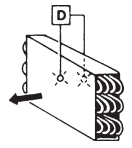
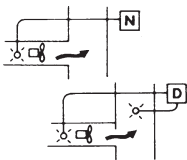
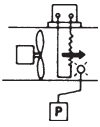
- Design eliminates “fluttering” or malfunction due to shock or vibration normally encountered with “sail switches.”
- Wide operating range.
- Furnished with one 12” piece 1/4” O.D. flexible tubing, nuts and ferrules.
- Can be mounted in any position except upside down.
- Enclosed diaphragm.

SPECIFICATIONS

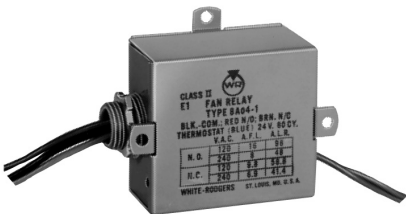
Ambient Temperature – 40 to + 180°F
Maximum Pressure 1/2 PSI
Agency U.L. listed and C.S.A. certified
1/2 HP @ 125 VAC

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



8A04-1

SPDT FAN RELAYS

For 24V AC Control of Blowers and Other Line Voltage Loads on Heating, Cooling or Heating/Cooling Systems where 24V Power Supply is Already Available

FEATURES

- Compact size — 1/2" conduit hub permits mounting to standard junction box.
- Provisions for mounting to flat surface.
- Permits control of single or two speed fan motor.
- 5 color coded, end stripped leads for easy wiring.

SPECIFICATIONS

Dimensions 2 11/16" H x 2 15/16" W x 1 1/2" D
Finish Grey
Mounting Mounting tabs or 1/2" conduit hub
Agency U.L. listed and C.S.A. certified

Model Number	Coil Input Voltage	Switch Action	Coil Current	Contact Ratings			
				N.O. (Black-Red)		N.C. (Black-Brown)	
				120 VAC	240 VAC	120 VAC	240 VAC
8A04-1	24 VAC, 60 Hz	SPDT	0.28A	16.0 FLA/96.0 LRA	8.0 FLA/48.0 LRA	9.8 FLA/58.8 LRA	6.9 FLA/41.4 LRA
8A04A-1	120 VAC, 60 Hz	SPDT	0.28A	16.0 FLA/96.0 LRA	8.0 FLA/48.0 LRA	9.8 FLA/58.8 LRA	6.9 FLA/41.4 LRA

RELAY/TRANSFORMER COMBINATIONS

DPST Relay Models Enclosed with a Transformer Capable of Powering External Loads up to 35VA. Ideal for use on Boilers Without Domestic Coil. Equally Adaptable for Zoned and Unzoned Systems

FEATURES

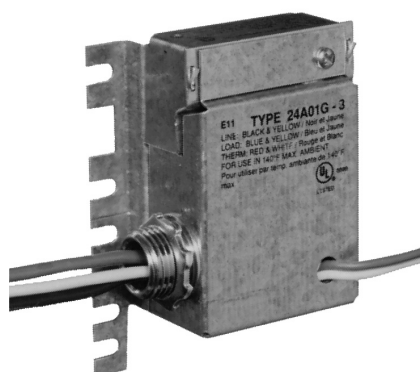
- Low voltage screw terminals — color coded, end stripped line voltage leads.
- Internal transformer can power up to 35VA external loads.
- Mounts to 4" x 4" junction box.
- Dustproof steel case.

SPECIFICATIONS

Dimensions 4 1/4" H x 2 3/4" W x 2 3/4" D
Finish Grey
Mounting To 4" x 4" junction box
Transformer 35 VA maximum connected external load
Agency U.L. recognized and C.S.A. certified

Model Number	Input Voltage	Switch Action	Thermostat Current	Contact Ratings			
				Motor Rating		Valves & Relays	
				120 VAC		Terminals V1 & V2	
				Full Load	Locked Rotor	30 VAC	0.3-12v DC
8A05A-4	120 VAC, 60 Hz	DPST	0.28A	10.0A/16.0A	60.0A/96.0A	—	—
8A05A-101	120 VAC, 60 Hz	DPST	0.13A	8.0A/14.0A	48.0/84.0A	—	—

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



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 ⁷ / ₈ " H x 4 ¹ / ₂ " W x 2 ⁷ / ₁₆ " D
Dimensions Model 24A06	3 ¹³ / ₁₆ " H x 4 ¹³ / ₁₆ " W x 2 ¹ / ₈ " D
Dimensions Model 24A07	1 ⁷ / ₈ " H x 4 ⁹ / ₁₆ " W x 1 ²⁹ / ₃₂ " D

Single Level Temp

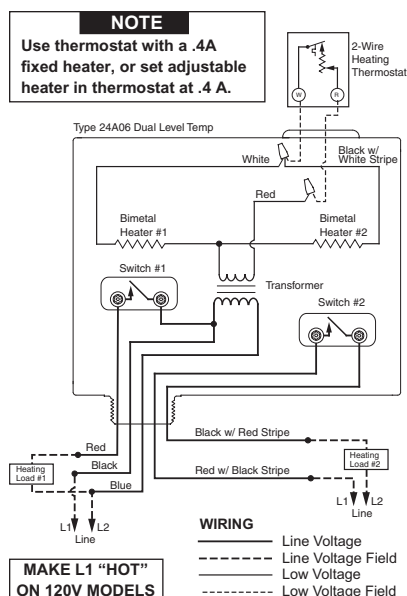
Switch Action	SPST normally open
Average Time Delay	45 seconds
Lead length	18 inches
Ambient temperature range	-20 to +140°F

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. certified. Design complies with U.L. 873 T.I.R.E. standard (Temperature Indicating & Regulating Equipment)

TECHNICAL HELP

Wiring and Dimension Drawing, 24A01/24A05 page 286



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
24A05Z-1	277 VAC/60 Hz	0.2A	22A, 6000W, 277v	—	—
24A07E-1 ①	208 VAC/60 Hz	0.2A	25A, 5200W, 208v	12A, 208v	72A, 208v
24A07G-1 ②	240 VAC/60 Hz	0.2A	25A, 6000W, 240v	12A, 240v	72A, 240v

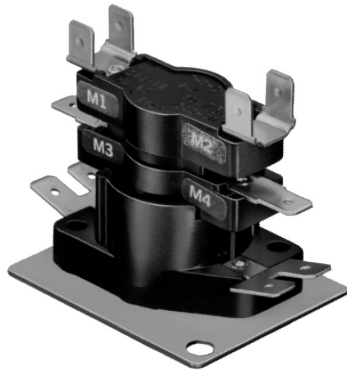
- ① Same as 24A05E-1, except without enclosure (U.L. recognized only)
 ② Same as 24A01G-3, except without enclosure (U.L. recognized only)

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



24A34-3

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 F₁- F₂ instead of M₁- M₂
- 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 M₁/M₂ contacts of the second or third sequencer.
All M₁/M₂ contacts are wired to the blower motor so that any sequencer that is energized will

MODEL 24A34 ELECTRIC HEAT SEQUENCERS

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

FEATURES

- Replaces Honeywell, MARS, TOD, GEMLINE, Klaxon (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

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	–
24A34-14 ①②	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



24A54-2

MODEL 24A50 ELECTRIC HEAT SEQUENCERS

Provide Highly Versatile Circuitry on Electric Furnaces, Duct Heaters, Heat Pump, Auxiliary Heaters and Other Electric Heating Equipment

FEATURES

- Complete line with fewest number of components for maximum economy.
- Multi-poise mounting.
- Staging capability.
- Easily accessible dual tab terminals.
- Ambient compensated.
- Quiet, snap-acting "E-Blade" main switches.

SPECIFICATIONS

Ambient Temperature Rating -20 to +165°F (-29 to +74°C)

Terminals	Dual 1/4" male quick connects
-----------------	-------------------------------

Main Switches (available with): One, two or three SPST switches

Auxiliary Switches. Low voltage – SPST to pull in additional sequencers

Bimetal Heater Input – 24 VAC, 60 Hz
Current draw – .16 Amps

ELECTRICAL RATINGS – SINGLE LOAD CONTACT RATINGS

VAC	Resistive (Non-Inductive)		Motor Ratings (Inductive)		Pilot Duty
	Watts	Amps	Full Load	Locked Rotor	
120	3000	25.0	16.0A	96.0A	—
240	6000	25.0	12.0A	72.0A	—
277	6000	22.0	—	—	—
600	6000	10.0	4.0A	24.0A	750VA

COMBINED LOAD RATING (ALL MODELS)

Model Number	Number of Switches	APPROXIMATE TIMING (SECONDS)							
		ON Times				OFF Times			
		Main SW1	Main SW2	Main SW3	Aux. SW	Main SW1	Main SW2	Main SW3	Aux. SW
24A51-1	1 Main	35	—	—	—	30	—	—	—
24A51-6	1 Main	18	—	—	—	93	—	—	—
24A51-10	1 Main	45	—	—	—	23	—	—	—
24A52-1	2 Main	35	35	—	—	30	30	—	—
24A52-6	2 Main	18	18	—	—	93	93	—	—
24A52-101	2 Main	18	18	—	—	93	40	—	—
24A52-109	2 Main	35	45	—	—	38	28	—	—
24A53-1	3 Main	18	18	18	—	93	93	60	—
24A53-101	3 Main	18	35	40	—	93	63	58	—
24A54-2	1 Main + 1 Aux.	35	—	—	40	35	—	—	23
24A55-1	2 Main + 1 Aux.	35	35	—	35	30	30	—	28
24A55-101	2 Main + 1 Aux.	18	18	—	18	93	60	—	55
24A55-106	2 Main + 1 Aux.	35	45	—	45	38	28	—	23
24A56-1	3 Main + 1 Aux.	18	18	18	18	93	93	60	55
24A56-101	3 Main + 1 Aux.	18	35	40	40	93	63	58	53



CAST IRON SHEAVES

Single Groove for "4L" and "A" Belts

FEATURES

- Sheaves are equipped with square head set screws and have no keyseat.
- Ideal small drives for attic fans, furnace blowers, air conditioning units or any light applications.
- Individually packaged.

M05P-10

Model Number	Bore Size	Diameter	
		Outside Diameter	Pitch
M05P-10	5/8"	4.93"	5"
M05P-12	3/4"	4.93"	5"
M05P-16	1"	4.93"	5"
M06P-10	5/8"	5.93"	6"
M06P-12	3/4"	5.93"	6"
M06P-16	1"	5.93"	6"
M07P-10	5/8"	6.93"	7"
M07P-12	3/4"	6.93"	7"
M07P-16	1"	6.93"	7"

Model Number	Bore Size	Diameter	
		Outside Diameter	Pitch
M08P-10	5/8"	7.93"	8"
M08P-12	3/4"	7.93"	8"
M08P-16	1"	7.93"	8"
M09P-12	3/4"	8.93"	9"
M09P-16	1"	8.93"	9"
M10P-12	3/4"	9.93"	10"
M10P-16	1"	9.93"	10"
M12P-12	3/4"	11.93"	12"
M12P-16	1"	11.93"	12"



CAST IRON SHEAVES – VARIABLE PITCH

Single Groove Variable Pitch for "3L", "4L" and "5L" Belts

FEATURES

- All sheaves are fitted with hollow head set screws.
- Any standard single groove sheave can be used as a companion sheave.
- Made of close grain cast iron with a lacquer finish and is individually packaged.
- Accurately machined and balanced.

M34V-08

Model Number	Bore Size	Outside Diameter	Pitch Range "4L"
M25V-08	1/2"	2.5"	—
M25V-10	5/8"	2.5"	—
M30V-08	1/2"	2.87"	—
M30V-10	5/8"	2.87"	—
M34V-08	1/2"	3.15"	1.9 to 2.9"
M34V-10	5/8"	3.15"	1.9 to 2.9"
M34V-12	3/4"	3.15"	1.9 to 2.9"
M40V-08	1/2"	3.75"	2.4 to 3.4"
M40V-10	5/8"	3.75"	2.4 to 3.4"
M40V-12	3/4"	3.75"	2.4 to 3.4"

Model Number	Bore Size	Outside Diameter	Pitch Range "4L"
M40V-14	7/8"	3.75"	2.4 to 3.4"
M44V-08	1/2"	4.15"	2.8 to 3.8"
M44V-10	5/8"	4.15"	2.8 to 3.8"
M44V-12	3/4"	4.15"	2.8 to 3.8"
M44V-14	7/8"	4.15"	2.8 to 3.8"
M50W-10	5/8"	4.75"	3.4 to 4.4"
M50W-12	3/4"	4.75"	3.4 to 4.4"
M50W-14	7/8"	4.75"	3.4 to 4.4"
M50W-18	1 1/8"	4.75"	3.4 to 4.4"

VARIABLE PITCH PULLEY (CAST IRON ONLY)

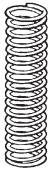
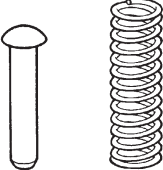
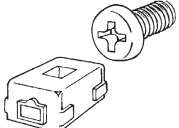
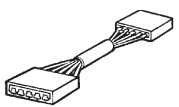
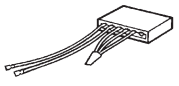
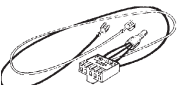
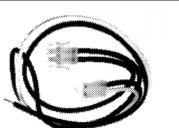
White-Rodgers Model Number	Lau Type Number	White-Rodgers Model Number	Lau Type Number	White-Rodgers Model Number	Lau Type Number	White-Rodgers Model Number	Lau Type Number
M34V-08	270-069-01	M34V-10	270-072-01	M44V-08	270-089-17	M44V-10	270-089-12

SHEAVE INTERCHANGE CHART

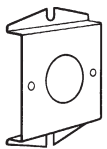
Model Number	Browning	Maurey	Congress	Lau
M05P-10	AL54X5/8	OC50	CA500	38-2507-01
M05P-12	AL54X3/4	OC50	CA500	38-2213-01
M05P-16	AL54X1	OC50	CA500	38-2615-01
M06P-10	AL64X5/8	OC60	CA600	38-2508-01
M06P-12	AL64X3/4	OC60	CA600	38-2214-01
M06P-16	AL64X1	OC60	CA600	38-2446-01
M07P-10	AL74X5/8	OC70	CA700	38-2509-01
M07P-12	AL74X3/4	OC70	CA700	38-2215-01
M07P-16	AL74X1	OC70	CA700	38-2216-01
M08P-10	AL84X5/8	OC80	CA800	38-2510-01
M08P-12	AL84X3/4	OC80	CA800	38-2217-01
M08P-16	AL84X1	OC80	CA800	38-2218-01
M09P-12	AL94X3/4	OC90	CA900	38-2219-01
M09P-16	AL94X1	OC90	CA900	38-2220-01
M10P-12	AL104X3/4	OC100	CA1000	38-2221-01
M10P-16	AL104X1	OC100	CA1000	38-2222-01

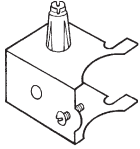
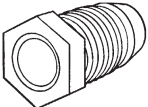
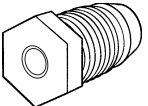
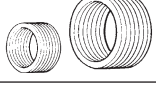
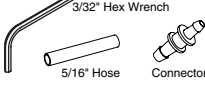
Model Number	Browning	Maurey	Congress	Lau
M25V-08	1VL25X1/2	8250	—	—
M25V-10	1VL25X5/8	8250	—	—
M30V-08	1VL30X1/2	—	—	—
M30V-10	1VL30X5/8	—	—	—
M34V-08	1VL34X1/2	8325	VP325	270-069-01
M34V-10	1VL34X5/8	8325	VP325	270-072-01
M34V-12	1VL34X3/4	8325	VP325	—
M40V-08	1VL40X1/2	8350	VP350	—
M40V-10	1VL40X5/8	8350	VP350	—
M40V-12	1VL40X3/4	8350	VP350	—
M40V-14	1VL40X7/8	8350	—	—
M44V-08	1VL44X1/2	8400	VP400	270-089-17
M44V-10	1VL44X5/8	8400	VP400	270-089-12
M44V-12	1VL44X3/4	8400	VP400	—
M44V-14	1VL44X7/8	8400	—	—
M50W-10	1VP50X5/8	8450	VP450	—
M50W-12	1VP50X3/4	8450	VP450	—
M50W-14	1VP50X7/8	8450	VP450	—
M50W-18	1VP50X1 1/8	8450	VP450	—

COMBINATION GAS MANIFOLD VALVES – 3600 SERIES

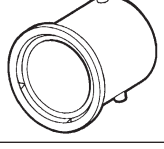
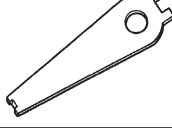
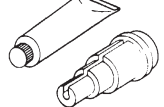
Item Number	Model Number	Description
	F92-0656	L.P. to natural gas conversion kit for 36C, 36D, 36E, 36F and 36G gas valves with regulation range of 2.5 to 5" W.C.
	F92-0659	Natural to regulated L.P. gas conversion kit for 36C, 36D, 36E, 36F and 36G gas valves with regulation range of 7.5 to 12.0" W.C.
	F92-0737	Natural to unregulated L.P. gas conversion kit for 36C gas valves.
	F92-0866	Conversion kit for 36C gas valves with regulation range of 4.2 to 11.0" W.C.
	F92-0773	Adapter bracket for remote rod adjustment of A-cock on older 36C type gas valves. Not for new style knob pictured in this catalog.
	F115-0059	36" replacement harness assembly for connection of 50A22-201 to 36C84-426 in the 21D18-5 Cycle-Pilot® retrofit kit or to 36C84-436 in the 21D18-15.
	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.
	F69-1988	Brass compression fitting adapter for 1/8" pilot line connections. 7/16"-24 thread.
	F92-0514	Reducer bushings for 36C and 36E gas valves. Contains one 3/4" x 1/2" N.P.T. and one 3/8" x 1/2" N.P.T.
	F92-1003	Adapter kit for the 36G 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.
	F85-0003	Wrench for tamper resistant screws found on temperature dials.
	F145-0163	Heat transfer compound.
	F145-0650	Well adaptor and heat transfer compound.