

SERIES 05-16*

24VAC Direct Spark Ignition System

SERIES 05-16ONE*

24VAC Direct Spark Ignition System with 15 Second Cold Start Pre-Purge Option

SERIES 05-16TWO*

24VAC Direct Spark Ignition System with 45 Second Pre-Purge Function

U.S. PATENT NOS. 3,847,533; 3,853,455; and 3,861,854.
Other Patents Pending.

FEATURES

- UL Component Recognized
- 24VAC Operation
- Conforms to ANSI Standards
- Positive Ignition/Proof of Flame
- Fail Safe on Component Malfunction
- Spark Interruption Immediately upon Ignition
- Compatible with Night Setback Thermostats

GENERAL INFORMATION

You save all the gas it takes to keep standing pilots going day in and day out. With the cost of gas going up and energy supplies going down, the balance has tipped toward direct spark ignition.

Fenwal Series 05-16 Direct Spark Ignition System offers an alternative to piloted ignition systems on gas-fired equipment burning natural, manufactured or LP gases at input rates up to 400,000 BTU per hour.

The Series 05-16ONE offers a 15 second cold start pre-purge feature.

The Series 05-16TWO, made primarily for conversion gas burners, incorporates a purge-timing circuit and greater flame sensitivity as required for conversion burners or power burners.

Selected models are compatible with most night setback thermostats. Consult factory for additional information.

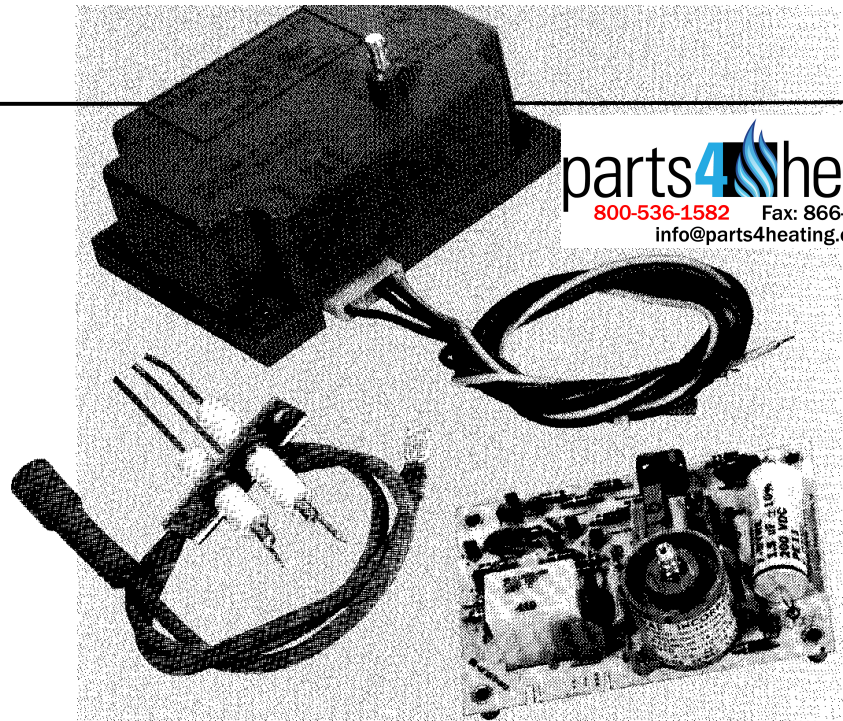
PRINCIPAL OF OPERATION

To ignite the burner, it is necessary only to set the thermostat. The thermostat powers the ignitor to simultaneously provide the ignition spark and open the main burner valve.

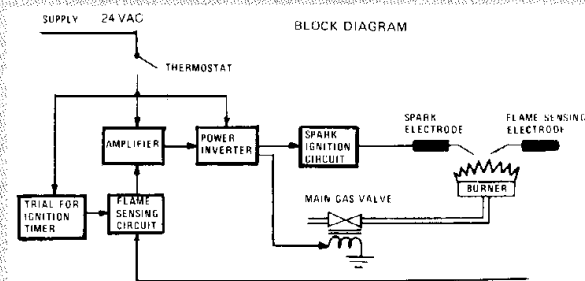
In units incorporating the pre-purge feature, after setting the thermostat, a delay period ensues allowing the combustion chamber to be purged of any residual gas. After the purge cycle, as specified for 05-16ONE or 05-16TWO, the ignitor simultaneously energizes the spark circuit and opens the main burner valve.

As soon as the flame is established, the spark ceases, thus minimizing radio and TV interference.

Electronic flame sensing circuitry in the ignitor detects the presence or absence of main burner flame. If the flame is not established during the Flame Establishing Period, the system de-energizes the gas valve and locks out. If the flame is extinguished during the duty

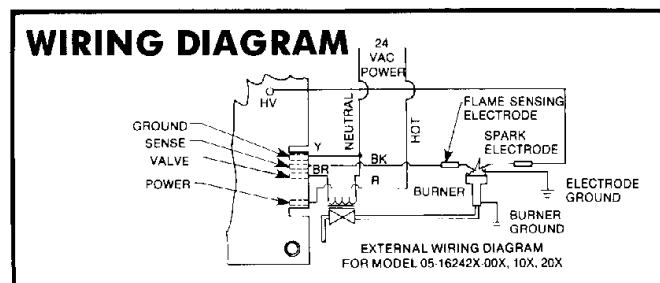


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cycle, the ignitor will provide one immediate re-try for ignition before going into lockout. To reactivate, or re-try for ignition, the ignitor must be reset by turning the thermostat down for 5 seconds and then raising it again to the desired setting.

NOTICE: An annual inspection and test, conducted prior to the start of the heating season by qualified gas service personnel, is required to verify that the automatic gas ignition system, all associated components (i.e., fan and limit switches), and the appliance combustion chamber components operate according to the manufacturer's specifications. Components that have been physically damaged or that otherwise fail to perform their function according to specification must be replaced immediately to avoid creating a fire, explosive, and/or toxic hazards that can result in property damage, personal injury, or even death.



CAUTION: Fenwal Series 05-16 direct spark ignition systems are designed for use only on new products by original equipment manufacturers of gas fired appliances. They may be used only as such, or as an exact replacement for an existing Fenwal spark ignitor. Any substitution or application must be expressly approved by Fenwal or the manufacturer of the equipment. Improper substitutions or applications may result in malfunction of equipment such as loss of flame sensing safety circuit creating an explosive atmosphere or otherwise resulting in a hazardous condition which could cause personal injury or death.

*Design is certified by A.G.A. to ANS Z21.20 Automatic Ignition Systems



SPECIFICATIONS

IGNITION CONTROLS	05-16	05-16ONE	05-16TWO
With case	05-162426-00X	05-162426-10X	05-162426-20X
Without case	05-162425-00X	05-162425-10X	05-162425-20X
PRE-PURGE DELAY TIME:	No delay	7.0 seconds minimum 15.0 seconds typical	30.0 seconds minimum 45.0 seconds typical
TRIAL FOR IGNITION (Flame Establishing Period and/or Lockout Time) Nominal:	05-16242X-X00 05-16242X-X01 05-16242X-X02 05-16242X-X03 05-16242X-X05 05-16242X-X06	3.3 seconds 4.7 seconds 5.6 seconds 6.8 seconds 10.0 seconds 12.0 seconds	
IGNITION MEANS:	Interrupted		
FLAME FAILURE RE-IGNITION TIME:	Less than .8 seconds		
INPUT VOLTAGE:	24VAC, 60Hz.	Operating range 20 to 28VAC	
INPUT CURRENT DRAIN:	90mA	Ignitor current drain only. (300mA momentary during ignition.) Does not include valve power.	
AMBIENT RANGE:	- 40 to 150°F.		
MOISTURE RESISTANCE:	to 90% humidity	Control is moistureproof but not waterproof and must be protected against direct exposure to water.	
TYPES OF GAS:	Natural, LP, Manufactured		
VALVE RELAY CONTACT RATING:	1.0A continuous @ 24VAC		
ELECTRODE	05-100000-411 (Typical)	Spark Gap .125 ± .031". Second insulated probe for flame sensing. Quick connect terminals for lead wire connections. Other terminations and configurations available. Consult factory.	

LEAD WIRES & CONNECTORS

HIGH VOLTAGE ASSEMBLY:	05-127328-0XX**	5mm stranded silicone insulated wire rated at 200°C supplied with ¼" quick connect and spark plug-type terminals. (Wire rated at 250°C available.) Designate length in last two digits of catalog number. Max. length, 48". Assembled.
LOW VOLTAGE ASSEMBLY:	05-127324-4XX**	6-pin plastic edge connector with four lead wires for input power, valve, ground (rated 105°C) and flame sensing (rated 200°C) Assembled.
INSULATOR BOOT:	(straight) (90°)	05-115548-000 05-115548-001 Provides electrical and environmental protection of electrode high voltage terminal.

Specifications subject to change without notice

HOW TO ORDER

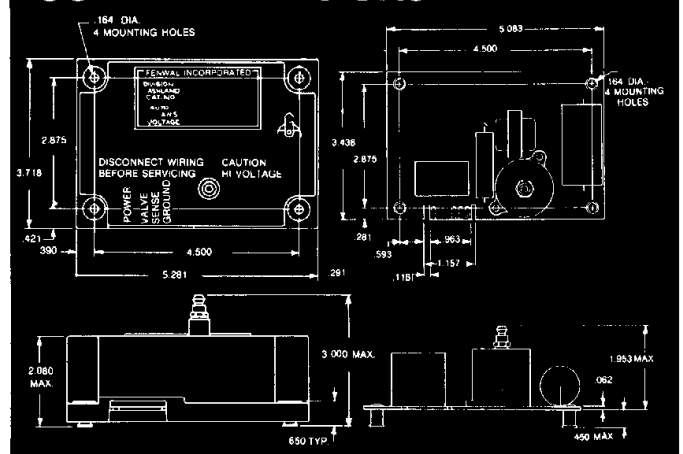
1. Select control unit by catalog number from Specifications section above. Select desired trial for ignition period by adding appropriate three digit suffix. EX: 05-162426-003 = Control Module with case and 6.8 second trial for ignition period.

2. Standard electrode assembly is catalog number 05-100000-411. For other probe configurations, consult factory.

**3. Order High and Low Voltage Cable Assemblies by catalog number. Designate length of lead wires, in inches, in last two digits. EX: 05-127328-024 = High Voltage Cable Assembly, with terminals, 24" long.

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OUTLINE DIMENSIONS



The information herein is to assist in determining whether this product is suitable for a given application. This information does not purport to cover all the details or variations in the equipment described, nor does it provide for every possible contingency to be met in connection with installation, operation, and maintenance. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. All specifications subject to change without notice. NOTHING HEREIN SHALL CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.