



**Product Manual 26182**  
**(Revision L, 6/2024)**  
Original Instructions



# **STExcite™ Industrial Gas Turbine Ignition System Driver**

**Single Channel Version  
Model STExcite**

**Installation and Operation Manual**



### General Precautions

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment.

Practice all plant and safety instructions and precautions.

Failure to follow instructions can cause personal injury and/or property damage.



### Revisions

This publication may have been revised or updated since this copy was produced. The latest version of most publications is available on the Woodward website.

<http://www.woodward.com>

If your publication is not there, please contact your customer service representative to get the latest copy.



### Proper Use

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.



### Translated Publications

If the cover of this publication states "Translation of the Original Instructions" please note:

The original source of this publication may have been updated since this translation was made. The latest version of most publications is available on the Woodward website.

[www.woodward.com/publications](http://www.woodward.com/publications)

Always compare with the original for technical specifications and for proper and safe installation and operation procedures.

If your publication is not on the Woodward website, please contact your customer service representative to get the latest copy.

**Revisions—** A bold, black line alongside the text identifies changes in this publication since the last revision.

Woodward reserves the right to update any portion of this publication at any time. Information provided by Woodward is believed to be correct and reliable. However, no responsibility is assumed by Woodward unless otherwise expressly undertaken.

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## Warnings and Notices

### Important Definitions



This is the safety alert symbol used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER** - Indicates a hazardous situation, which if not avoided, will result in death or serious injury.
- **WARNING** - Indicates a hazardous situation, which if not avoided, could result in death or serious injury.
- **CAUTION** - Indicates a hazardous situation, which if not avoided, could result in minor or moderate injury.
- **NOTICE** - Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT** - Designates an operating tip or maintenance suggestion.

#### **WARNING**

**Overspeed /  
Overtemperature /  
Overpressure**

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.

#### **WARNING**

**Personal Protective  
Equipment**

The products described in this publication may present risks that could lead to personal injury, loss of life, or property damage. Always wear the appropriate personal protective equipment (PPE) for the job at hand. Equipment that should be considered includes but is not limited to:

- Eye Protection
- Hearing Protection
- Hard Hat
- Gloves
- Safety Boots
- Respirator

Always read the proper Material Safety Data Sheet (MSDS) for any working fluid(s) and comply with recommended safety equipment.

#### **WARNING**

**Start-up**

Be prepared to make an emergency shutdown when starting the engine, turbine, or other type of prime mover, to protect against runaway or overspeed with possible personal injury, loss of life, or property damage.

## Electrostatic Discharge Awareness

### NOTICE

#### Electrostatic Precautions

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts:

- Discharge body static before handling the control (with power to the control turned off, contact a grounded surface, and maintain contact while handling the control).
- Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.
- Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual **82715**, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Follow these precautions when working with or near the control.

1. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
2. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
  - Do not touch any part of the PCB except the edges.
  - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
  - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. After removing the old PCB from the control cabinet, immediately place it in the antistatic protective bag.

### IMPORTANT

External wiring connections for reverse-acting controls are identical to those for direct-acting controls.

## Regulatory Compliance

### European Compliance for CE Marking:

These listings are limited only to those units bearing the CE Marking.

**EMC Directive:** Declared to Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (EMC).

**ATEX – Potentially Explosive Atmospheres Directive:** Directive 2014/34/EU on the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres.  
Zone 2, Category 3, Group IIG  
8408-921, 8408-923 IP5X: Ex nA IIC T4 Gc  
8408-017, 8408-018 IP66: Ex ec IIC T4 Gc

### Other International Compliance

**IECEX (8408-017 and 8408-018 only):** Certified for use in explosive atmospheres per Certificate IECEX CSA 15.0015X  
Ex ec IIC T4 Gc

**KC Korea (8408-017 and 8408-18 only):** Certified for use in explosive atmospheres per KTL Certificate 23-KA4BO-0593X  
Ex ec IIC T4 Gc -20°C ≤ Ta ≤ +55°C  
Applicable Safety Certification Notice No. 2021-2022.  
Installation of explosion proof equipment must comply with KS C IEC 60079-14.  
In relation to maintenance and repair, there is a limit of responsibility of the user and the manufacturer, such as the method and subject.

### North American Compliance:

These listings are limited only to those units bearing the CSA identification.

**CSA (115 Vac versions only):** CSA Listed for Class I, Division 2, Group D, T4A at 55 °C ambient. For use in Canada and the United States. CSA Report 2339380.

### Special Conditions for Safe Use:

Wiring must be in accordance with North American Class I, Division 2, or European or other International Zone 2 Category 3 wiring methods as applicable, and in accordance with the authority having jurisdiction.

Field wiring must be suitable for at least 90°C for operating ambient temperatures expected to exceed 50°C.

Connect ground terminal to earth ground before installing the input power.

Do not connect more than one main power supply to any one fuse or circuit breaker.

Connect ground screw to earth ground (see Figures 1-4 & 1-5) before installing the input power.

8408-921 and 8408-923: Install in a vertical orientation as shown in Figure 1-6 and in a location providing adequate protection against the entry of water.



**SHOCK HAZARD – Do not remove the cover of the STExcite™ while AC power is applied. Hazardous voltages exist within the unit when AC power is applied. Wait 2 minutes after AC power is removed to allow the hazardous voltages to bleed off before opening the cover.**

### Specific Conditions of Use for IECEx and ATEX:

Electrostatic Hazard Present: The risk of electrostatic discharge is reduced by permanent installation of the STExcite, proper connection of the equipotential ground lugs, and care when cleaning. This device must not be cleaned or wiped off/against unless the area is known to be non-hazardous.

The ARP670 connector on the igniter cable assembly must be installed to the STExcite to retain IP66 rating.

Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.



**EXPLOSION HAZARD - Do not apply power to the STExcite™ without first connecting the igniter cable assembly to both the STExcite and to the igniters.**



**In locations where high external humidity and internal temperature variations (e.g., frequent on-off cycles) may cause condensation inside the equipment, the interior should be periodically inspected.**



**EXPLOSION HAZARD – Do not connect or disconnect while circuit is live unless area is known to be non-hazardous. Substitution of components may impair suitability for Class I, Division 2 applications.**



**Ne pas raccorder ni débrancher tant que l'installation est sous tension, sauf en cas l'ambiance est décidément non dangereuse. La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Classe I, Division 2.**

# Chapter 1.

## General Information

The Single Channel STExcite™ control is a high-energy ignition driver that interfaces with a flexible ignition lead and an igniter.

Figure 1-1 illustrates a typical turbine ignition system. The single-channel exciter box is the interface between an intelligent turbine combustion controller and a turbine igniter in the combustion chamber. The exciter converts electrical energy in the form of 115 or 230 VAC into a high-current ignition pulse. The single-channel exciter box is connected to the turbine igniter through a flexible high-voltage lead. The single channel exciter is a “normally on” device that outputs ignition pulses whenever input power is applied through an external exciter relay. The “ON” or “OFF” state of the exciter relay is controlled by the turbine combustion controller.

When input power is applied, the exciter's diagnostic output is energized after passing self-diagnostics. If the single-channel exciter electronics sense a catastrophic fault condition in the output channel, the exciter's diagnostic output de-energizes.

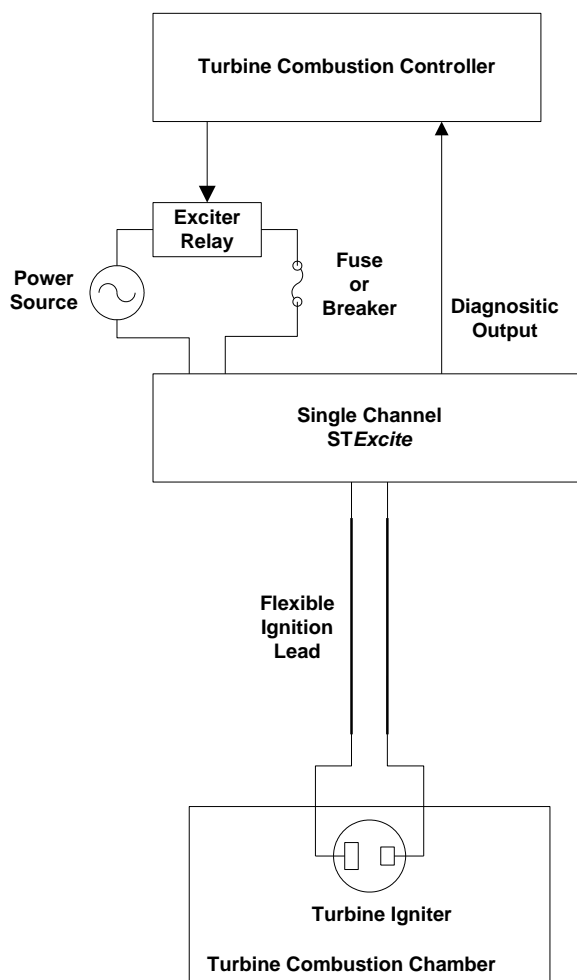


Figure 1-1. Turbine Ignition System



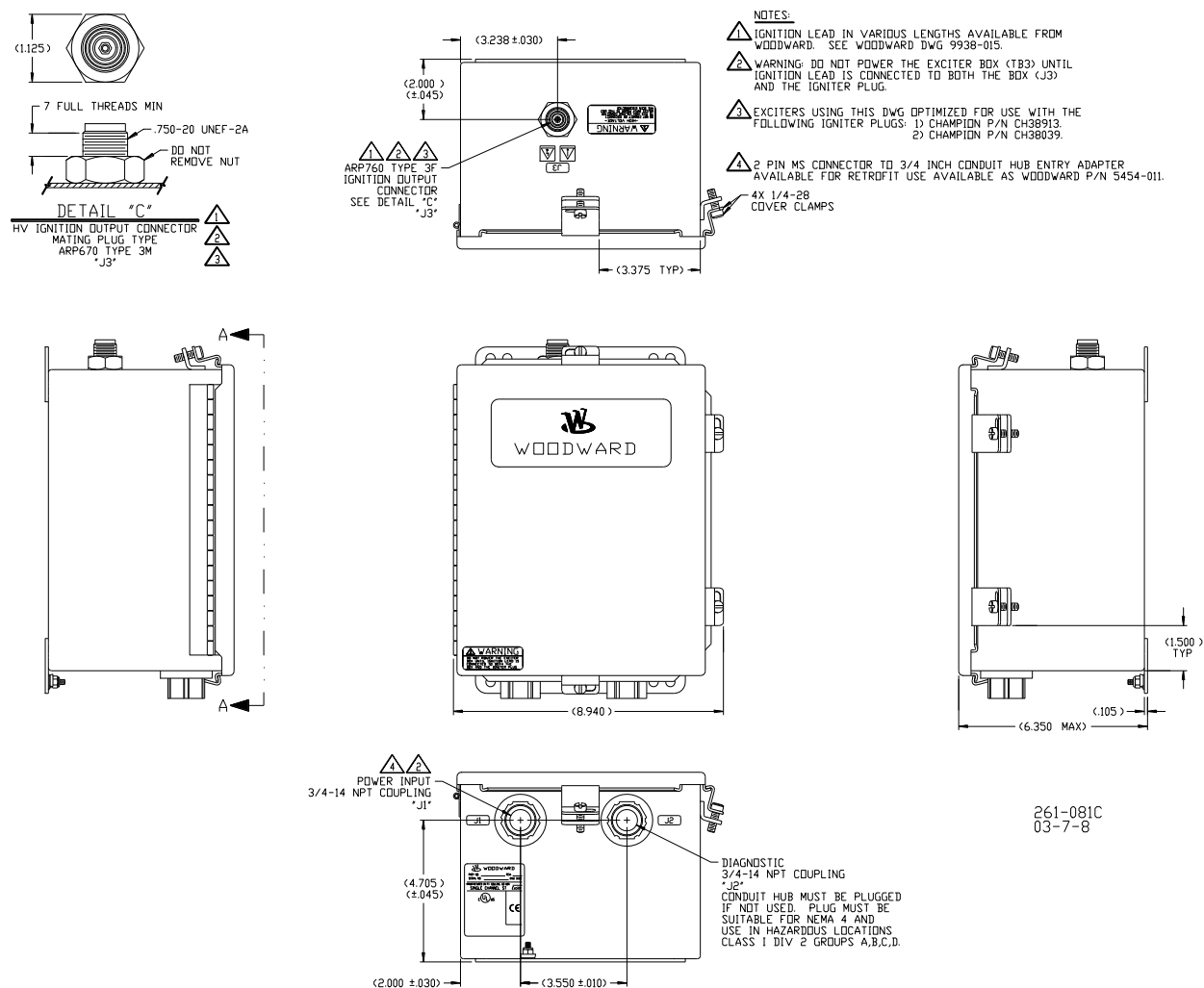


Figure 1-2. Outline Drawing

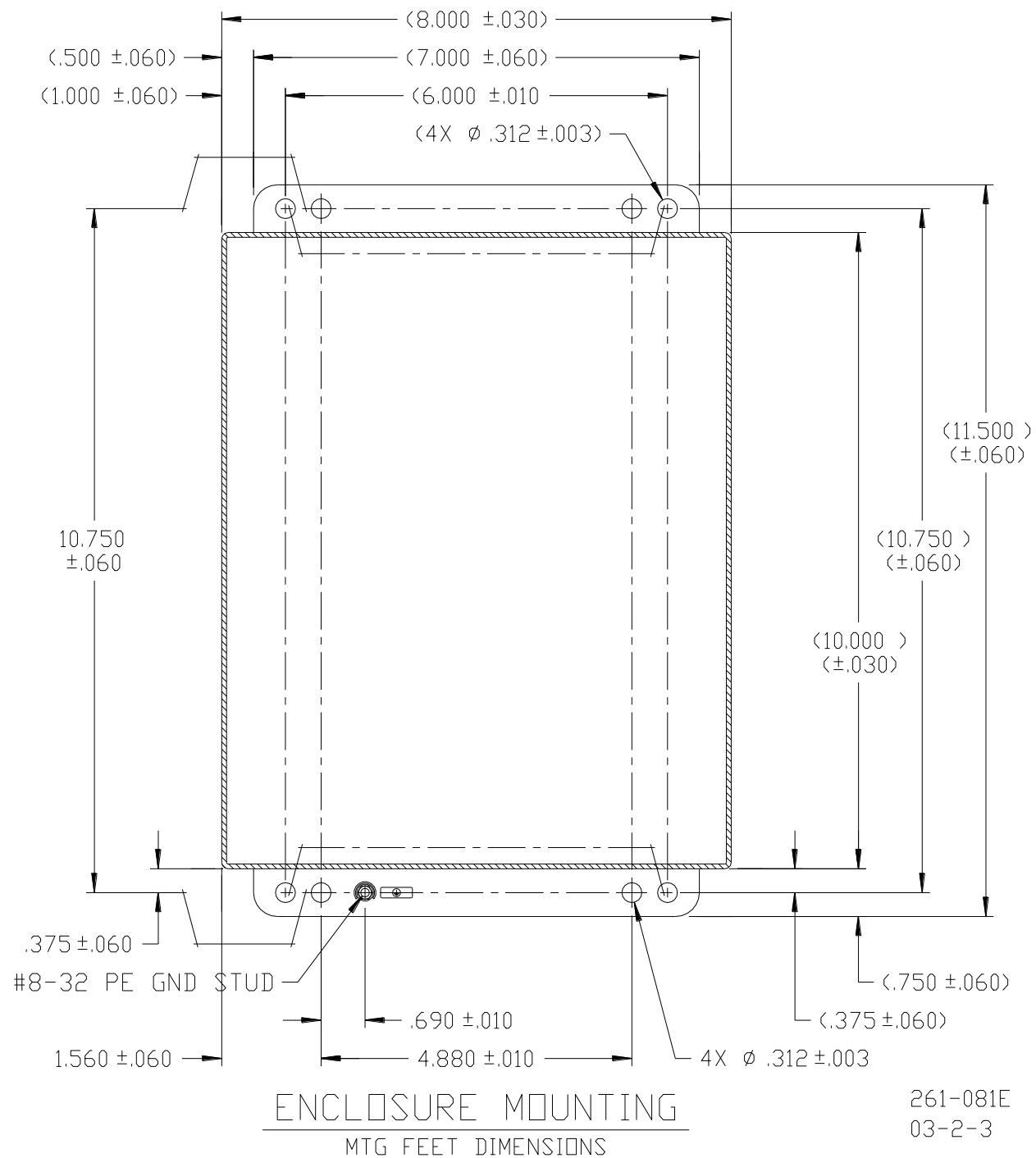


Figure 1-3. Enclosure Mounting

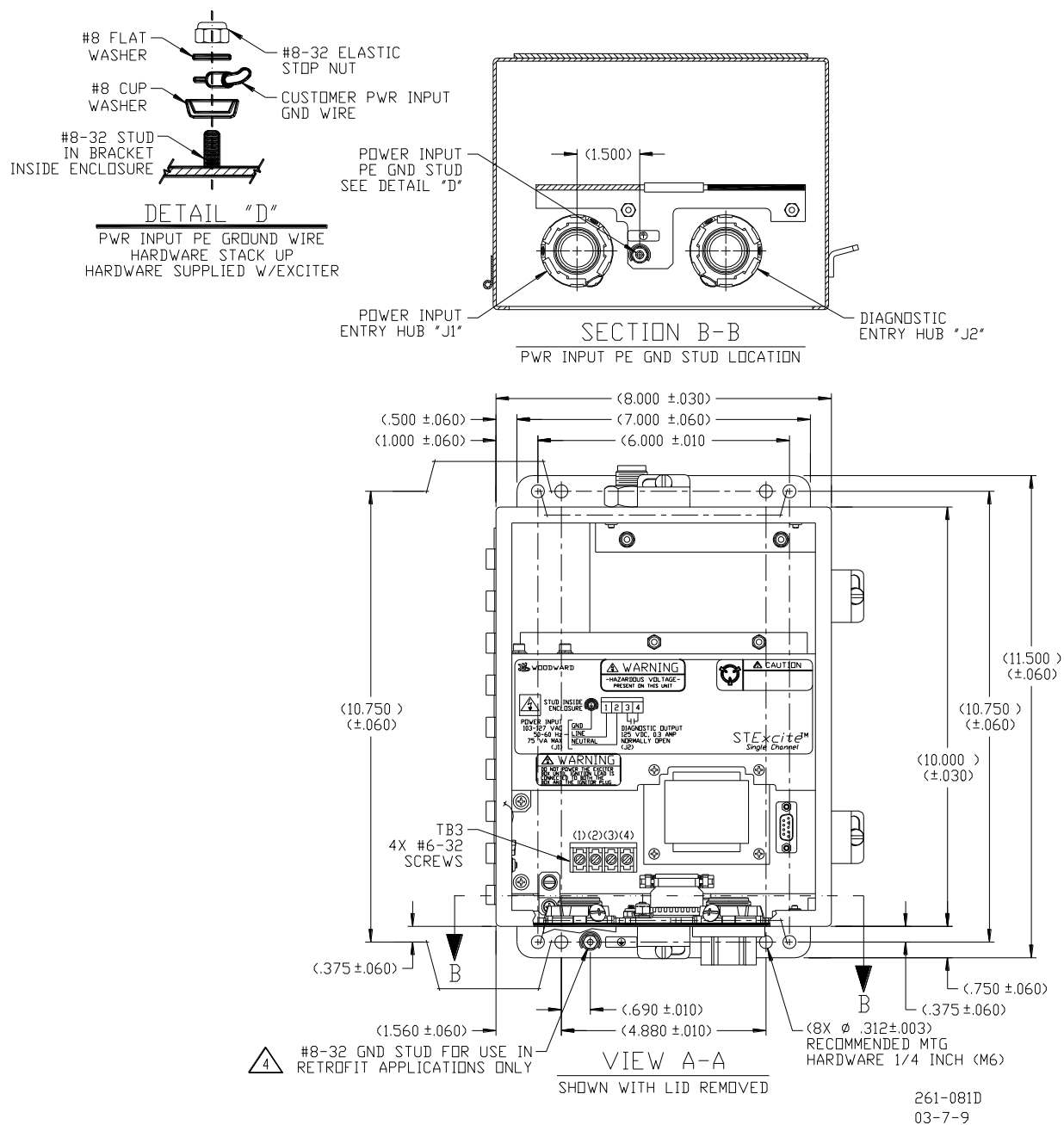
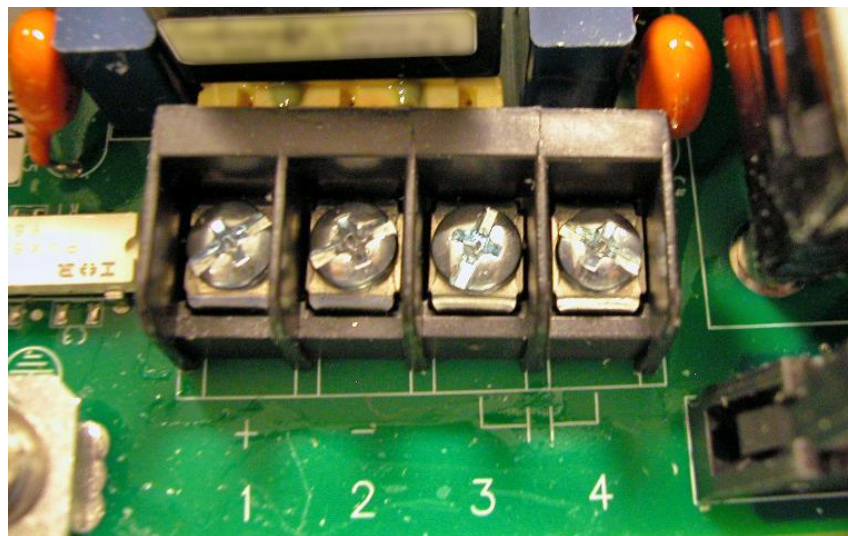
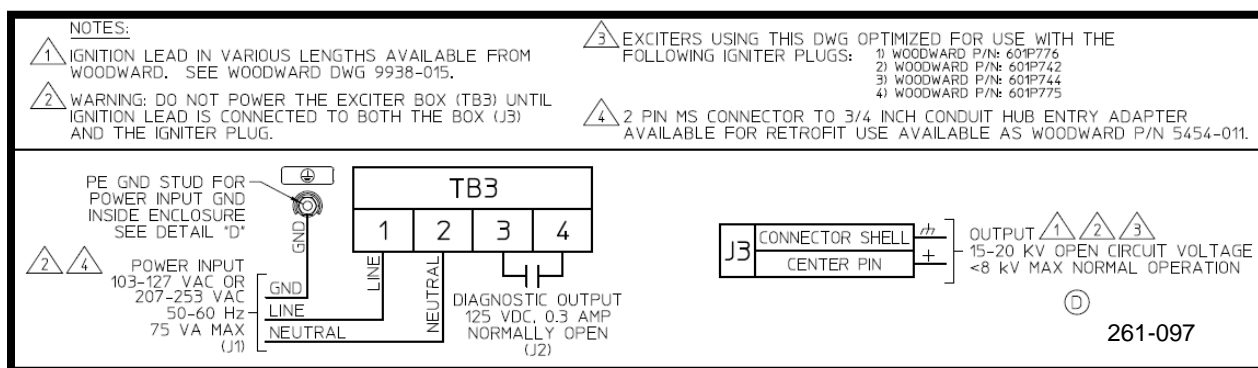


Figure 1-4. Outline Details



TB3 Connector Close-up

Figure 1-5. Control Wiring

**Note:** Input Voltage Range 103–127 Vac for PN 8408-921  
Input Voltage Range 207–253 Vac for PN 8408-923



Figure 1-6. Single Channel STExcite Control Recommended Installation Orientation

## Chapter 2. Installation/Calibration

### Unpacking

Check the shipping container for evidence of mishandling during shipping. Carefully remove the driver from the shipping container. Check the hardware for evidence of damage during shipping. Notify the shipper and Woodward if shipping damage is found.

### Installation

#### **WARNING**

Due to the hazardous location listings associated with this product, proper wire type and wiring practices are critical to operation.

##### Proper Wiring

#### **CAUTION**

The power supply mains should be properly fused according to the National Electrical Code. The recommended fuse is a European Type T fuse.

##### Power Supply Mains Fuse

#### **CAUTION**

A switch or circuit breaker shall be included in the building installation that is in close proximity to the equipment and within easy reach of the operator and that is clearly marked as the disconnecting device for the equipment.

##### Disconnecting Device

#### **NOTICE**

##### Plant Wiring Diagram Notes

The base plate ground stud is to be connected to the system electrical ground

All wiring shall be rated at 300V minimum and for the temperature that the wiring will be subjected to in the final installation.

#### **IMPORTANT**

Install the Single Channel STExcite™ control in a vertical orientation as shown in Figure 1-6.

1. Mount the Single Channel STExcite control on the turbine according to the turbine manufacturer's production drawings.
2. Attach the ignition lead end to the high energy ignition output ARP760 (see Figure 1-2 for details). Use a tool to fully seat the nut on the lead to the output connector, so it cannot be loosened by hand.
3. Connect the other end of the ignition lead to an igniter installed in the combustion chamber. Route and secure the entire length of the lead to prevent damage and flexing during operation.
4. The ignition lead cable's dynamic bend radius must be at least 38 cm (15 inches).

5. Make sure that a safety ground connection is made through the power connector or through the terminal provided on the enclosure (Figure 1-3). Bonding connections are provided on the enclosure, and it is intended that the installer do the bonding in accordance with paragraph 501.16a of the NEC (USA).

**WARNING**

**SHOCK HAZARD – Do not remove the cover of the STExcite™ while AC power is applied. Hazardous voltages exist within the unit when AC power is applied. Wait 2 minutes after AC power is removed to allow the hazardous voltages to be bled off before opening the cover.**

6. Mount the power and relay conduit from the turbine combustion controller to the hole provided in the box.
7. Connect the diagnostic output lead for the turbine combustion controller to the relay output terminals (Figures 1-4 and 1-5) using 1 mm<sup>2</sup> (18 AWG) wire with ring terminals suitable for #6 screws. Torque terminal screws to 9-12 lb-in.
8. Connect the input power lead from the turbine combustion controller to the power input terminals (Figures 1-4 and 1-5) using 1.5 mm<sup>2</sup> – 2.1 mm<sup>2</sup> (16 AWG – 14 AWG) wire with ring terminals suitable for #6 screws. Torque terminal screws to 9-12 lb-in.
9. Connect earth ground to the PE Ground lug as shown in Figure 1-4. Use a 30 cm long by 13 mm wide (12 inch long, 1/2 inch wide) or shorter flat hollow braid or comparable surface area wire. Use gauge as large as power wires or larger.

## Calibration

This unit requires no setup or calibration.

Table 2-1. Specifications

Input Power	<u>P/N 8408-017:</u> 115V (ac), 60 Hz, 75VA max for CSA North American installations 115V (ac), 50/60Hz, 75VA max for CE(ATEX) and IECEx <u>P/N 8408-921:</u> 115V (ac), 60 Hz, 75VA max for CSA North American installations 115V (ac), 50/60Hz, 75VA max for CE(ATEX) <u>P/N 8408-018:</u> 230V (ac), 50/60Hz, 75VA max for CE(ATEX) and IECEx <u>P/N 8408-923:</u> 230V (ac), 50/60Hz, 75VA max for CE(ATEX)
Input Power Range	103-127V (ac) for the 115V (ac) rated units 207-253V (ac) for the 230V (ac) rated units
Spark Rate	1.8 ±0.1 sparks/second
Output Voltage (open circuit)	15 to 20 kV
Output Voltage (typical igniter)	< 8 kV
Output Energy	2 J minimum with 3.0 m (10 ft) leads 1.5 J minimum with 9.8 m (32 ft) leads
Output Energy Duration	50 µs
Peak Power	50 000 W minimum
Peak Current	1200 A minimum

Ambient Temperature	-20 to +55 °C (-4 to +131 °F)
Ingress Protection	8408-017 and 8408-018: IP66 8408-921 and 8408-923: IP5X
Diagnostic Output	Normally open relay output, 125 VDC, 0.3 A

**IMPORTANT**

The exciter output is intended for use with high tension igniters, coupled via ignition cables having SAE ARP-670 connections. The exciter will mate with a Type 3M connection.

## Igniter Cables

The single channel STExcite control is designed to be used with the following ignition cables:

Table 2-2. Ignition Cable Specifications

<sup>(1)</sup> Standard Item #	<sup>(2)</sup> High Temp Item #	Meters	Feet	Inches
5417-1266	5417-1389	12.00	39.37	472.44 +/- 2.50
-	5417-1405	11.00	36.09	433.07 +/- 2.38
5417-754	5417-1388	9.75	32.00	384.00 +/- 2.00
5417-752	5417-1387	3.66	12.00	144.00 +/- 2.00
5417-753	5417-1386	3.15	10.33	124.00 +/- 2.00

(1) Standard ignition cables are rated for up to 450°F for 200 hours of operation. The insulator tip is manufactured using virgin teflon. Nuts and ferrules are a 416 stainless steel.

(2) High temp ignition cables are rated for up to 450°F continuous use. The insulator tip is manufactured using alumina ceramic. Nuts and ferrules are 304 or 316 stainless steel.

All igniter cables listed above utilize SAE ARP-670, type 3M connections on both ends. These are intended to be used with igniters manufactured per SAE ARP-670, type 3F. Torque the igniter cable nuts to 125 +/- 10 inch-lbs. Torque should be applied to the nut only while keeping the rest of the assembly from spinning. Lead assembly should be fully extended and positioned before each end is attached and torqued. The system should not be energized during installation and removal. For installation, igniter end connection should always be performed prior to exciter end connection. For removal, exciter end should always be disconnected prior to igniter end.



## Chapter 3. Operation and System Description

### How to Operate



#### **WARNING**

**EXPLOSION HAZARD** - Do not apply power to the STExcite™ without first connecting both of the igniter cable assemblies to both the STExcite™ and to the igniters.



#### **WARNING**

**EXPLOSION HAZARD** - Do not operate the STExcite™ with the ignition leads shorted to ground. This will cause product damage and can create an explosion hazard.

#### **IMPORTANT**

The single channel industrial gas turbine ignition system driver is not rated for 100% duty cycle operation. The recommended duration of constant ignition firing is 90 seconds followed by 90 seconds of inactivity. If the unit needs to be fired again, the recommended duration of constant ignition firing is 90 seconds followed by 25 minutes of inactivity. The single channel STExcite™ control automatically reduces the number of ignition events per minute after 120 seconds.

With the exciter properly mounted, the fault relay and input AC power connected to the turbine combustion controller, and the output connector connected to igniters using the ignition leads, prepare the turbine for operation following the manufacturer's recommendations. Direct the turbine combustion controller to energize the single channel industrial gas turbine ignition system. After the STExcite control is running, direct the turbine combustion controller to turn on the fuel source. Once the combustors are lit, direct the turbine combustion controller to de-energize the STExcite control.

### Software Information

All software-configurable parameters are preset by the factory. No user-configurable parameters are available.

### Detailed System Description

When power is applied, the power supply converts the input power (115 VAC or 230 VAC) to 24 VDC. The 24 VDC is converted to system voltages. Once these system voltages are available and the unit passes the self-test, the digital signal processor (DSP) closes the fault relay. The DSP then initiates an ignition event.

The DSP monitors the line voltage, the length of time of operation, and internal temperature of the unit to determine if proper operating conditions exist. The unit protects itself by reducing the number of ignition events per minute should adverse conditions occur.

Before input power is applied to the STExcite control, the diagnostic output is in the normally open or de-energized state, indicating that the ignition output is not firing. When nominal input power is applied to the control, the unit energizes the diagnostic output within 0.5 second and fires the ignition output within 1 second. Under nominal operating conditions, the ignition output fires every 555 ms.

Any instrumentation that is monitoring the status of the diagnostic output should take into account whether power has been applied to the STExcite control along with the status of the diagnostic output. When the control is off (no input power applied), the status of the diagnostic output is the same as when a fault has occurred (de-energized state indicates no ignition output firing).

The STExcite control monitors many voltages and events within the system. If the unit detects that the ignition channel has failed or there is an abnormal operating condition that prevents the control from generating a spark, the DSP de-energizes the diagnostic output, alerting the turbine combustion controller of a fault. The DSP also shuts down the ignition output.

The following list summarizes the diagnostic output operation:

- The diagnostic output opens (de-energized) when the STExcite control is NOT powered.
- The diagnostic output closes (energized) within 0.5 second of nominal input power application.
- The diagnostic output remains closed (energized) as long as the STExcite control is powered and firing the ignition output without detecting failures.
- The diagnostic output opens (de-energized) when the exciter detects a critical fault and stops firing.

If the diagnostic output is open (de-energized) the following may be true:

- Input power has not been applied to the STExcite control (input power relay not energized, input power cable fault, input power relay fault, etc.)
- The input power is less than 80 VAC or greater than 144 VAC for P/N 8408-921 or the input power is less than 160 VAC or greater than 288 VAC for P/N 8408-923.
- There is an ignition lead fault or absence of the ignition lead.
- There is an igniter fault or absence of the igniter.
- The unit has an internal failure that prevents it from generating a spark.

## Chapter 4. Troubleshooting

### **WARNING**

Do not remove the cover of this unit with AC power applied. Hazardous voltages exist within the unit when AC power is applied. Wait 2 minutes after AC power is removed to allow the hazardous voltages to be bled off before opening the cover.

### **WARNING**

Installation and repair should only be attempted by properly trained personnel. Hazardous voltages are present within this unit once AC power has been applied. Failure to observe these warnings could lead to injury or death.

- Remove AC power at circuit breaker.
- Wait 2 minutes for the unit to discharge and become safe.
- Verify that the ignition lead connection is correct.
- Verify that the fault relay connection is correct.
- Verify that the AC power connection is correct.
- Apply AC power to unit.
- If unit does not function correctly with all connections verified as correct, contact Woodward.

## Chapter 5.

# Product Support and Service Options

### Product Support Options

If you are experiencing problems with the installation, or unsatisfactory performance of a Woodward product, the following options are available:

- Consult the troubleshooting guide in the manual.
- Contact the manufacturer or packager of your system.
- Contact the Woodward Full Service Distributor serving your area.
- Contact Woodward technical assistance (see “How to Contact Woodward” later in this chapter) and discuss your problem. In many cases, your problem can be resolved over the phone. If not, you can select which course of action to pursue based on the available services listed in this chapter.

**OEM or Packager Support:** Many Woodward controls and control devices are installed into the equipment system and programmed by an Original Equipment Manufacturer (OEM) or Equipment Packager at their factory. In some cases, the programming is password-protected by the OEM or packager, and they are the best source for product service and support. Warranty service for Woodward products shipped with an equipment system should also be handled through the OEM or Packager. Please review your equipment system documentation for details.

**Woodward Business Partner Support:** Woodward works with and supports a global network of independent business partners whose mission is to serve the users of Woodward controls, as described here:

- A **Full Service Distributor** has the primary responsibility for sales, service, system integration solutions, technical desk support, and aftermarket marketing of standard Woodward products within a specific geographic area and market segment.
- An **Authorized Independent Service Facility (AISF)** provides authorized service that includes repairs, repair parts, and warranty service on Woodward's behalf. Service (not new unit sales) is an AISF's primary mission.

A current list of Woodward Business Partners is available at [www.woodward.com/local-partner](http://www.woodward.com/local-partner)

### Product Service Options

The following factory options for servicing Woodward products are available through your local Full-Service Distributor or the OEM or Packager of the equipment system, based on the standard Woodward Product and Service Warranty (5-01-1205) that is in effect at the time the product is originally shipped from Woodward, or a service is performed:

- Replacement/Exchange (24-hour service)
- Flat Rate Repair
- Flat Rate Remanufacture

**Replacement/Exchange:** Replacement/Exchange is a premium program designed for the user who needs immediate service. It allows you to request and receive a like-new replacement unit in minimum time (usually within 24 hours of the request), providing a suitable unit is available at the time of the request, thereby minimizing costly downtime. This is a flat-rate program and includes the full standard Woodward product warranty (Woodward Product and Service Warranty 5-01-1205).

This option allows you to call your Full-Service Distributor in the event of an unexpected outage, or in advance of a scheduled outage, to request a replacement control unit. If the unit is available at the time of the call, it can usually be shipped out within 24 hours. You replace your field control unit with the like-new replacement and return the field unit to the Full-Service Distributor.

Charges for the Replacement/Exchange service are based on a flat rate plus shipping expenses. You are invoiced the flat rate replacement/exchange charge plus a core charge at the time the replacement unit is shipped. If the core (field unit) is returned within 60 days, a credit for the core charge will be issued.

**Flat Rate Repair:** Flat Rate Repair is available for the majority of standard products in the field. This program offers you repair service for your products with the advantage of knowing in advance what the cost will be. All repair work carries the standard Woodward service warranty (Woodward Product and Service Warranty 5-01-1205) on replaced parts and labor.

**Flat Rate Remanufacture:** Flat Rate Remanufacture is very similar to the Flat Rate Repair option with the exception that the unit will be returned to you in "like-new" condition and carry with it the full standard Woodward product warranty (Woodward Product and Service Warranty 5-01-1205). This option is applicable to mechanical products only.

## Returning Equipment for Repair

If a control (or any part of an electronic control) is to be returned for repair, please contact your Full-Service Distributor in advance to obtain Return Authorization and shipping instructions.

When shipping the item(s), attach a tag with the following information:

- Return authorization number
- Name and location where the control is installed
- Name and phone number of contact person
- Complete Woodward part number(s) and serial number(s)
- Description of the problem
- Instructions describing the desired type of repair

## Packing a Control

Use the following materials when returning a complete control:

- Protective caps on any connectors
- Antistatic protective bags on all electronic modules
- Packing materials that will not damage the surface of the unit
- At least 100 mm (4 inches) of tightly packed, industry-approved packing material
- A packing carton with double walls
- A strong tape around the outside of the carton for increased strength

### NOTICE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

## Replacement Parts

When ordering replacement parts for controls, include the following information:

- The part number(s) (XXXX-XXXX) that is on the enclosure nameplate
- The unit serial number, which is also on the nameplate

## Engineering Services

Woodward offers various Engineering Services for our products. For these services, you can contact us by telephone, by email, or through the Woodward website.

- Technical Support
- Product Training
- Field Service

**Technical Support** is available from your equipment system supplier, your local Full-Service Distributor, or from many of Woodward's worldwide locations, depending upon the product and application. This service can assist you with technical questions or problem solving during the normal business hours of the Woodward location you contact. Emergency assistance is also available during non-business hours by phoning Woodward and stating the urgency of your problem.

**Product Training** is available as standard classes at many of our worldwide locations. We also offer customized classes, which can be tailored to your needs and can be held at one of our locations or at your site. This training, conducted by experienced personnel, will assure that you will be able to maintain system reliability and availability.

**Field Service** engineering on-site support is available, depending on the product and location, from many of our worldwide locations or from one of our Full-Service Distributors. The field engineers are experienced both on Woodward products as well as on much of the non-Woodward equipment with which our products interface.

For information on these services, please contact one of the Full-Service Distributors listed at [www.woodward.com/local-partner](http://www.woodward.com/local-partner).

## Contacting Woodward's Support Organization

For the name of your nearest Woodward Full-Service Distributor or service facility, please consult our worldwide directory at <https://www.woodward.com/support>, which also contains the most current product support and contact information.

You can also contact the Woodward Customer Service Department at one of the following Woodward facilities to obtain the address and phone number of the nearest facility at which you can obtain information and service.

### Products Used in Electrical Power Systems

<u>Facility</u>	<u>Phone Number</u>
Brazil -----	+55 (19) 3708 4800
China -----	+86 (512) 8818 5515
Germany:-----	+49 (711) 78954-510
India -----	+91 (124) 4399500
Japan-----	+81 (43) 213-2191
Korea-----	+82 (32) 422-5551
Poland -----	+48 (12) 295 13 00
United States-----	+1 (970) 482-5811

### Products Used in Engine Systems

<u>Facility</u>	<u>Phone Number</u>
Brazil -----	+55 (19) 3708 4800
China -----	+86 (512) 8818 5515
Germany -----	+49 (711) 78954-510
India -----	+91 (124) 4399500
Japan-----	+81 (43) 213-2191
Korea-----	+ 82 (32) 422-5551
The Netherlands--	+31 (23) 5661111
United States-----	+1 (970) 482-5811

### Products Used in Industrial Turbomachinery Systems

<u>Facility</u>	<u>Phone Number</u>
Brazil -----	+55 (19) 3708 4800
China -----	+86 (512) 8818 5515
India -----	+91 (124) 4399500
Japan-----	+81 (43) 213-2191
Korea-----	+ 82 (32) 422-5551
The Netherlands--	+31 (23) 5661111
Poland -----	+48 (12) 295 13 00
United States-----	+1 (970) 482-5811

## Technical Assistance

If you need to contact technical assistance, you will need to provide the following information. Please write it down here before contacting the Engine OEM, the Packager, a Woodward Business Partner, or the Woodward factory:

### General

Your Name \_\_\_\_\_

Site Location \_\_\_\_\_

Phone Number \_\_\_\_\_

Fax Number \_\_\_\_\_

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### Prime Mover Information

Manufacturer \_\_\_\_\_

Turbine Model Number \_\_\_\_\_

Type of Fuel (gas, steam, etc.) \_\_\_\_\_

Power Output Rating \_\_\_\_\_

Application (power generation, marine,  
etc.) \_\_\_\_\_

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### Control/Governor Information

#### Control/Governor #1

Woodward Part Number & Rev. Letter \_\_\_\_\_

Control Description or Governor Type \_\_\_\_\_

Serial Number \_\_\_\_\_

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#### Control/Governor #2

Woodward Part Number & Rev. Letter \_\_\_\_\_

Control Description or Governor Type \_\_\_\_\_

Serial Number \_\_\_\_\_

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#### Control/Governor #3

Woodward Part Number & Rev. Letter \_\_\_\_\_

Control Description or Governor Type \_\_\_\_\_

Serial Number \_\_\_\_\_

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### Symptoms

Description \_\_\_\_\_

*If you have an electronic or programmable control, please have the adjustment setting positions or the menu settings written down and with you at the time of the call.*

## Revision History

### Changes in Revision L—

- Updated Regulatory Compliance section
- Updated Korean Certification details
- Updated Declarations

### Changes in Revision K—

- Added Low Voltage Directive to Regulatory Compliance section
- Added new content including Igniter Cables section to Pg. 14
- Replaced Declarations

### Changes in Revision J—

- Added IECEx information and IP66 rating of 8408-017
- Added Declaration of Conformity Statement
- Replaced DoC


### Changes in Revision H—

- Updated IECEx and ATEX information
- Updated both DoCs
- Added statement about tightening output connector
- Added torque for terminal block screws
- Updated range of wire for field and PE connections




# Declarations

## EU DECLARATION OF CONFORMITY


**EU DoC No.:** 00262-04-EU-02-01  
**Manufacturer's Name:** WOODWARD INC.  
**Manufacturer's Contact Address:** 1041 Woodward Way  
 Fort Collins, CO 80524 USA  
**Model Name(s)/Number(s):** STExcite™ Single Channel Exciter 8408-921 and 8408-923; (IP5X)  
**The object of the declaration described above is in conformity with the following relevant Union harmonization legislation:** Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres  
 Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (EMC)  
**Markings in addition to CE marking:**  II 3 G, Ex nA IIC T4 Gc  
**Applicable Standards:**  
**ATEX:** EN60079-0:2012: Electrical apparatus for explosive gas atmospheres – Part 0: General requirements  
 EN60079-15:2010: Electrical apparatus for explosive gas atmospheres – Part 15: Type of protection “n”  
**EMC:** EN61000-6-2, (2005): EMC Part 6-2: Generic Standards - Immunity for Industrial Environments  
 EN61000-6-4, (2011): EMC Part 6-4: Generic Standards - Emissions for Industrial Environments  
 Woodward EMC Conformity Assessment 00262-04-EU-EMC-06-01/02

This declaration of conformity is issued under the sole responsibility of the manufacturer  
 We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

### MANUFACTURER

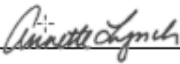
  
**Signature**  
**Annette Lynch**  
**Full Name**  
**Engineering Manager**  
**Position**  
**Woodward, Fort Collins, CO, USA**  
**Place**  
**25 April 2023**  
**Date**

<b>EU DECLARATION OF CONFORMITY</b>
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**EU DoC No.:** 00262-04-EU-02-02  
**Manufacturer's Name:** WOODWARD INC.  
**Manufacturer's Contact Address:** 1041 Woodward Way  
 Fort Collins, CO 80524 USA  
**Model Name(s)/Number(s):** STExcite™ Single and Dual Channel Exciter  
 Woodward Item Numbers 8408-017, 8408-018, 8408-9000; (IP66)  
**The object of the declaration described above is in conformity with the following relevant Union harmonization legislation:** Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres  
 Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (EMC)  
**Markings in addition to CE marking:**  II 3 G, Ex ec IIC, T4 Gc  
**Applicable Standards:**  
**ATEX:** EN60079-0:2018: Explosive atmospheres – Part 0: General requirements  
 EN60079-7:2015/A1:2018: Explosive atmospheres – Part 7: Equipment protection by increased safety “e”  
**EMC:** EN61000-6-2, (2005): EMC Part 6-2: Generic Standards - Immunity for Industrial Environments  
 EN61000-6-4, (2011): EMC Part 6-4: Generic Standards - Emissions for Industrial Environments  
 Woodward EMC Conformity Assessment: 00262-04-EU-EMC-06-01/02

This declaration of conformity is issued under the sole responsibility of the manufacturer  
 We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

**MANUFACTURER**

  
 \_\_\_\_\_  
**Signature**  
 \_\_\_\_\_  
**Annette Lynch**  
 \_\_\_\_\_  
**Full Name**  
 \_\_\_\_\_  
**Engineering Manager**  
 \_\_\_\_\_  
**Position**  
 \_\_\_\_\_  
**Woodward, Fort Collins, CO, USA**  
 \_\_\_\_\_  
**Place**  
 \_\_\_\_\_  
**25 April 2023**  
 \_\_\_\_\_  
**Date**

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We appreciate your comments about the content of our publications.

Send comments to: [industrial.support@woodward.com](mailto:industrial.support@woodward.com)

Please reference publication **26182**.



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Email and Website—[www.woodward.com](http://www.woodward.com)

Woodward has company-owned plants, subsidiaries, and branches, as well as authorized distributors and other authorized service and sales facilities throughout the world.

Complete address / phone / fax / email information for all locations is available on our website.