PETRO DAVVAR ENERGY

Ignition Systems

Rev E
2021/09/05

If there is a will, there is a way...

Ignition Systems

Introduction To Ignition Cable For Gas Turbine Ignition Systems

Ignition Leads

Petro Davvar Energy designs and manufactures a full range of ignition leads for heavy duty applications in oil & gas field, petrochemicals, refineries, power plants and etc…Our leads are designed and constructed to offer the most effective and efficient conduit between the engine exciter and igniter. Petro Davvar Energy also provides EX certifications with its ignition systems. These designs can be used as configured or repackaged to meet the customer specification.

Ignition Cable

Part For Solar Gas Turbines

Solar P/N: 919340C2
Our P/N:PD-IGC-201001

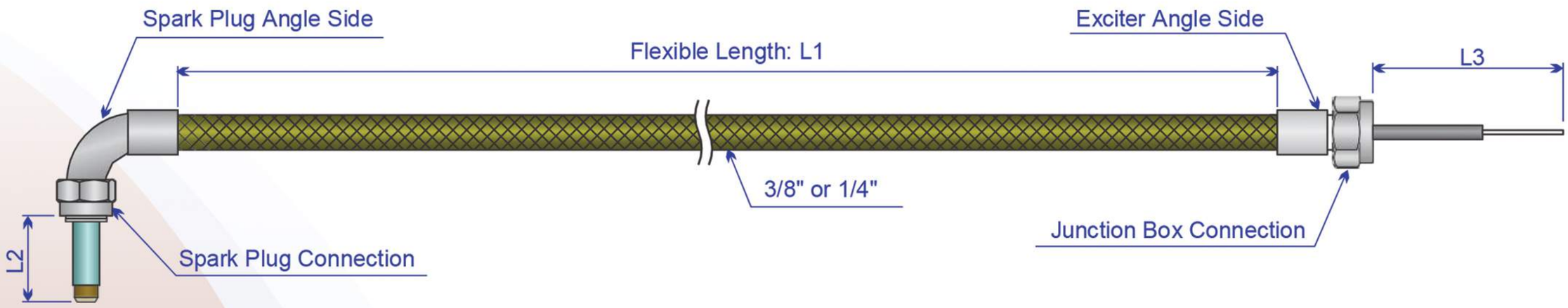
Part for GE Gas Turbines

Our P/N:PD-IGC-604004

Part for Rolls Royce Gas Turbines

Rolls Royce P/N: 2-02j-202-001
P/N: S400401
Our P/N:PD-IGC-302002

Ignition Cable



PD-IGC	Cable Length L_1 (mm)	Spark Plug Angle Side (Note 1)	Exciter Angle Side (Note 1)	Spark Plug Connection Type (Table 1)	Exciter Connection Type (Table 1)	Spark Plug Connection Thread	Exciter Connection Thread	Spark Plug Side Connection Length $L2$ (mm)	Spark Plug Side Connection Length $L3$ (mm)
PD-IGC	5000	01	00	01	03	5/8" BSPP	M18X1.5	30	500

Note 1 : Write angle 0 ° with the code 00 and angle 90 ° with the code 01

How to Order

Example: PD-IGC – 5000 – 01 – 00 – 01 – 03 – 5/8" BSPP – M18 X 1.5 – 30 – 500

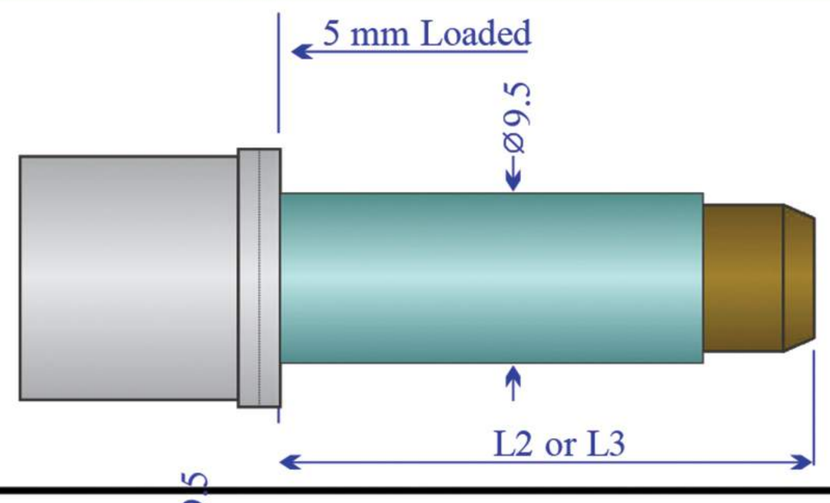
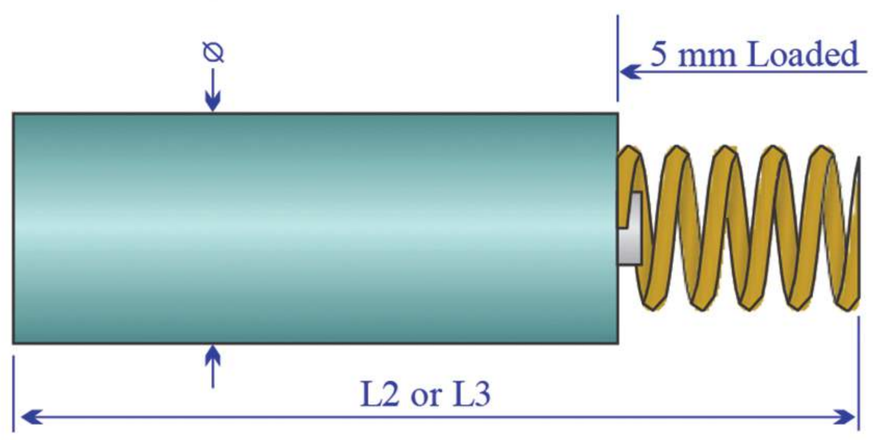
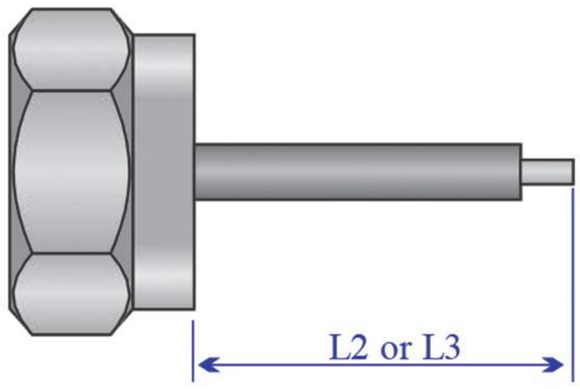
Type	Name	Description
01	Captured Spring	
02	Ttip Spring	
03	Only Lead Wire	

Table1

Igniter

Introduction To Igniters For Gas Turbine Ignition Systems

2.Igniter

Petro davvar energy has produced igniter designs for customers, including marine power plants; oil, gas, and furnaces; oil rig operations; and pumping stations, refineries.Our internal Ceramic Manufacturing capability permits design and manufacture of industry leading Alumina Oxide insulators and Silicon Carbide semiconductors which sets it apart from the competition in product performance, quality and response time. We have both high energy igniters and high voltage igniters.

Part For Solar Centaure MDG_4000 Gas Turbines

OEM P/N:903316C1
Our P/N: PD-SPG-20330

Part For Rolls Royce Gas Turbine

OEM P/N:2-02j-199-201
Our P/N:PD-SPG-30110

Part for Ruston Gas Turbines

OEM P/N:TA23119
Our P/N: PD-SPG-10220

Part for Hispano Suiza Gas Turbines

OEM P/N: 539646
Our P/N:PD-SPG-70440

Part for Solar Saturn 1200 Gas Turbines

Our P/N:PD-SPG-025500

Igniter Torchs

Part For Siemens SGT-100 Typhoon Gas Turbines

P/N Unison: 9058685-2
P/N Siemens: 6/51009003-1

Part For Siemens SGT-200 Tornado Gas Turbines

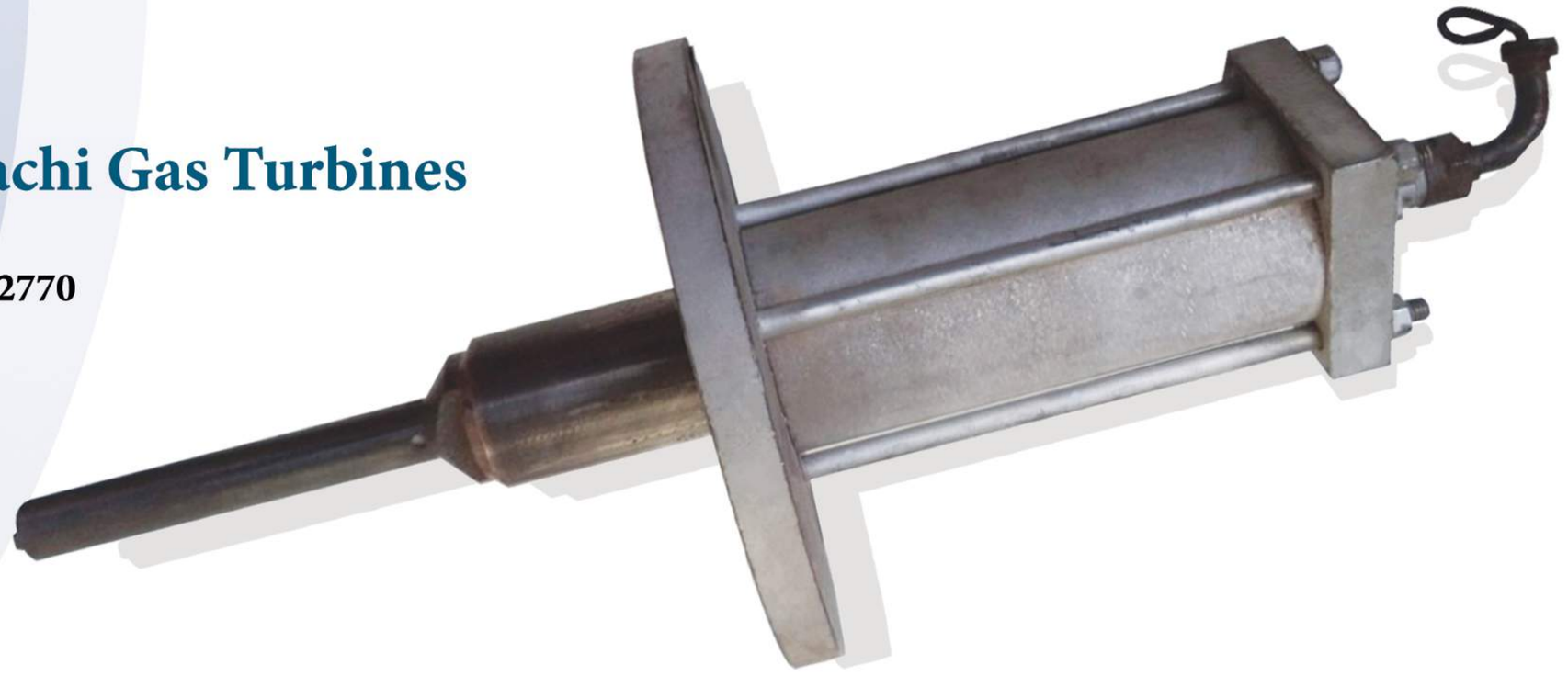
P/N Unison: 9058685-3
P/N Siemens: 64/51009003-2

Part For Siemens SGT-300 Tempest Gas Turbines

P/N Unison: 9058685-5
P/N Siemens: 64/51009003-3

Part for Hitachi Gas Turbines

Our P/N: PD-SPG-02770



Part for Sulzer Gas Turbines

OEM P/N: 00000-4582145
Our P/N: PD-SPG-40660

Exciter

Introduction To Exciter For Gas Turbine Ignition Systems

3. Exciter

Petro Davvar Energy offers traditional spark gap technology in legacy products, Spark Gap design to maximize reliability,efficiency and capability while minimizing weight.

Definitions

Spark : An electric current arc.

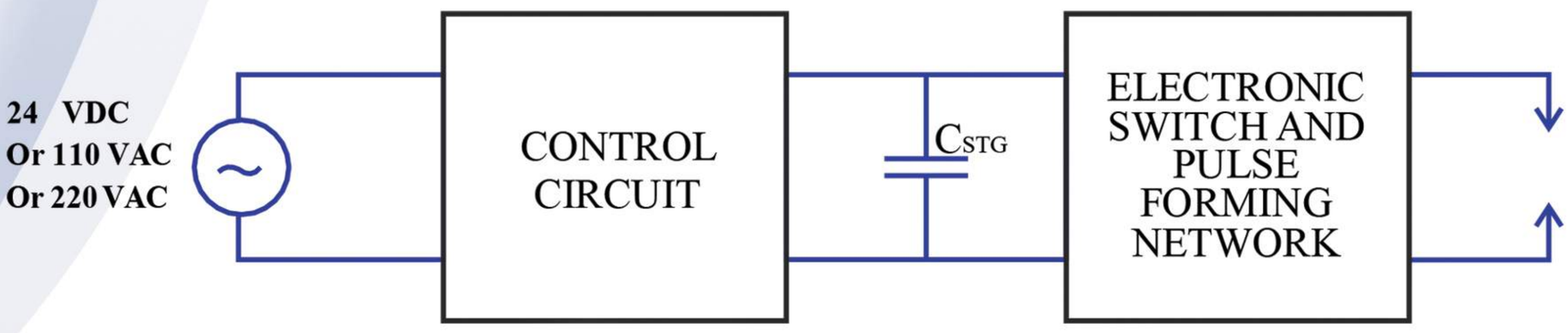
High Energy Ignition : Electric spark ignition system utilizing high energy sparks for direct ignition of hydrocarbon fuels such as gas, diesel, or oil.

High Energy Exciter : An electronic device that stores electric charge and releases it cyclically to an igniter to create high power sparks.

Petro Davvar Energy High Energy Ignition Systems

High Energy Ignition (HEI) systems directly ignite burner fuels by providing short time duration (impulse), high current electrical arcs commonly referred to as sparks. These sparks are generated by abruptly releasing electrical energy (charge) stored in large capacitors. The energy is released through an igniter driver circuit called a pulse forming network to specialized high energy igniters. The result is a high power spark with increased ability to ignite fuels.

Petro Davvar Energy High Energy Ignition Systems are designed to operate in conditions of extreme temperature, moisture, and contamination; creating high power sparks that dependably provide direct spark ignition to a wide range of fuels in a wide range of adverse conditions. The igniter can spark even under water.



High Energy Exciter basic schematic

System Specifications

Description of Equipment

Petro Davvar Energy high energy ignition systems are specifically designed to ignite gas, light oil, and diesel fuels directly while operating in a wide range of environmental conditions.

Installation Instructions

For mounting dimensions, refer to the equipment datasheet. The exciter should be mounted to a firm structure

Exciter

Part for Rolls Royce Gas Turbines Exciter

P/N	Description
Our P/N:PD-HE-30033	Input voltage: 24 VDC Output voltage : 2000VDC Output Energy: 12 Joules Output Frequency :1 to 3 Spark Per Second

High Voltage Nouvopignone Gas Turbines Exciter

P/N	Description
Our P/N:PD-HV-50055	Input voltage : 110-220V AC-50HZ Output voltage: 16000 VAC Output Current: 20 mA

Part for Solar Centaur Gas Turbines Model Gse/Gsc4000 Exciter

P/N	Description
OEM P/N:917560C2 Our P/N:PD-HE-20022	Input voltage: 18-30 VDC Output voltage: 18000 V Output Energy : 2 Joules Output Frequency:8 Spark /Sec

Part for Ruston Gas Turbines Exciter

P/N	Description
OEM P/N:64-51001096 Our P/N:PD-HV-10011	Input voltage: 24 VDC Output voltage : 12000 V Output current: 20 mA

Exciter

Part for Siemens SGT-100 Typhoon Exciter

P/N	Description
P/N Unison: 9060038-88 P/N Siemens: 64/07001417-4	Input voltage: 230 VAC Output voltage: 2000 V Frequency : 50 to 60 HZ Output Frequency:2 to 3 Spark/Sec Energy: 12 Joules

Part for Siemens SGT-200 Tornado Exciter

P/N	Description
P/N Unison: 9060040-1 P/N Siemens: 64/07001393-1	Input voltage: 230 VAC Output voltage: 2000 V Frequency : 50 to 60 HZ Output Frequency:2 to 3 Spark/Sec Energy: 12 Joules

Part for Siemens SGT-300 Tempest Exciter

P/N	Description
P/N Unison: 9060040-2 P/N Siemens: 64/07001393-2	Input voltage: 230 VAC Output voltage: 2000 V Frequency : 50 to 60 HZ Output Frequency:2 to 3 Spark/Sec Energy: 12 Joules

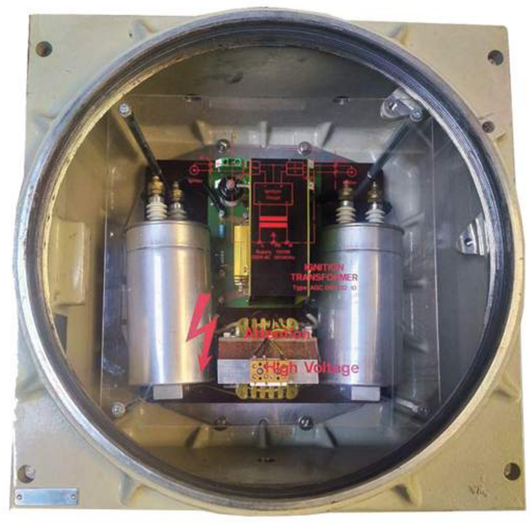
Part for Siemens SGT-400 Cyclone Exciter

P/N	Description
P/N Unison: 9060316-1 P/N Siemens: 64/07001417-1	Input voltage: 24 VAC Output voltage: 2000 V Output Frequency: 1 Spark/Sec Energy: 8 Joules

Exciter

Part for Sulzer Gas Turbines Exciter

P/N	Description
OEM P/N:00000-4582122 Our P/N:PD-HV-40066	Input voltage: 230 VAC Output voltage: 4 KV Output Energy : 16 Joules No. of Channel: 2 Channel



Part for Mitsubishi Gas Turbines Exciter

P/N	Description
OEM P/N: K7301ED Our P/N:PD-HE-90077	Input voltage: 220 VAC Output voltage: 3000 VDC Output Energy : 8 Joules Output Frequency:6 Spark /Sec

High Energy Exciter

How To Order Petro Davvar High Energy Exciter

	Exciter Type Table 1	Input Voltage Table 2	Output Voltage Note1	Output Energy Note2	Output Spark Note 3	No.Of OutPut Channel Note 4	Ex Approal Table 3
PD-şimşek	HE	01	3000	12	3	1	01

How to Order

Example: PD-şimşek-HE-01-3000-12-3-1-01

High Voltage Exciter Unit

How To Order Petro Davvar High Voltage Exciter

	Exciter Type Table 1	Input Voltage Table 2	Output Voltage Note5	Output Current Note 5	Ex Approal Table 3
PD-şimşek	HV	01	3000	10	01

How to Order

Example: PD-şimşek-HE-01-3000-12-3-1-01

He: High Energy InPut
Hv: High Voltage OutPut

Table1

Input	Code
18 ~ 30 VDC	01
110 VDC	02
180 ~ 240 VAC	03

Table2

With Ex Box	01
Not Ex Box	00

Table3

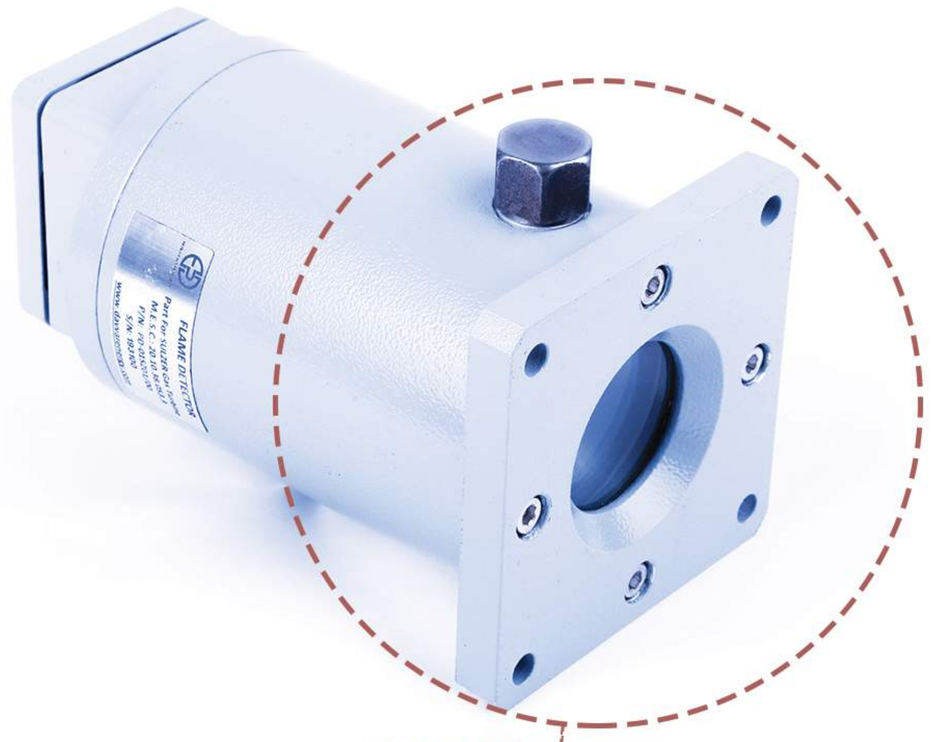
Note 1: Output Voltage Should be Between 1200 To 3000 V For example Write 2000 For 2000 Volt.
Note 2: Output Voltage Can be between 2 To 16 Joules, for example For 16 Joules Write 16 in This Field.
Note 3: No of spark is between 1 spark/sec to 6 spark/sec for example write 3 for 3 spark per second.
Note 4: No of output channel is between 1 to 6. write 2 for 2 channel unit. default for channel is 1 channel, if not please specify.
Note 5: Output Voltage Should be Between 5 KV To 15 KV For example Write 2000 For 2000 Volt.
Note 6: Output Current Should be Between 10 To 50 mA For example Write 10 For 10 mA.

Flame Detector For Gas Turbine And Flares

4. Flame Detector

Petro davvar energy pajohan also produces flame detectors for gas turbines with IR, UV sensors.
Another important component of the combustion chamber of gas turbines is flame detector and its main task is to monitor the presence or absence of flame. if the flame in the combustion chamber decreases from the flame detector's sight level or disappears, it sends the fuel shut-off command to the fuel control valve, To prevent fuel congestion and explosion.
Petro davvar Energy pajouhan Company, has succeeded in manufacturing and successfully installing the Sulzer gas turbine flame detector.

P/N	Description
OEM P/N:0000-10482621 Our P/N:PD-01SZ01/00	Power: 24 VDC Wave Length : 190-280 nm Working Temperature:-20 ~ 85 ºC



3D VIEW

VIEW1

VIEW2

VIEW3

Explotion Proof Certificate

TEST REPORT

Project No.: *H1-40003*

Equipment Under Test: *Flame detector*

Manufacture	*: Petro Davvar Energy*
Model	*: PD-01SZ01/00*
Ingress Protection	*: 65*
Type of protection	*: db*
Gas group	*: IIA*
Temperature class	*: T6*
Ambient temperature	*: -20°C to +40°C*
EPL	*: Gb*
Category	*: 2G*

Tested according to: EN 60079-0:2012/A11:2013, EN 60079-1:2014

Applicant: *Petro Davvar Energy*

No. Pages	*58*
Issue date	*28-August-2018*

Prepared by: Test Engineer
B.Hamidifard

Verified by: Technical Manager
S. Jamshidi

Approved by:

Chief executive officer
S. M. Mirsadri

E.P.I.L.
Technical Department
ISO IEC 17025
Accredited Lab

Office: Unit 6, No. 5, Corner of Rezvan St., South Shiraz Ave. Shahid Hemmat Expressway Tehran - Iran Zip Code:1436954817
Tel: (+9821) 88058974-5, (+9821) 88629880-2 Fax: (+9821) 88058976
Lab.: Kavosh Research City, Supa Blv.,8th km. Karaj-Qazvin,Freeway, Iran.
Tel: (+9826) 92108380-7 Telefax: (+9826) 92108385
info@eepil.com www.eepil.com

PETRO DAVVAR ENERGY

If there is a will, there is a way...

www.davvarenergy.com

info@davvarenergy.com

+98 21 66578268

+98 21 66578375

Unit 13,4th Floor, 431 Building, Azadi Street, Tehran, Iran