SMITSVONK
A Member of DURAG GROUP

Product Overview

Gas Fired Igniters

Pilot Burners

Ignition Lances for Flares, Furnaces and Boilers

DURAG GROUP smart solutions for combustion and environment

Introduction

For more than 65 years Smitsvonk has been making low-tension high-energy ignition and control systems for industrial combustion processes. These electrical and electronic ignition systems are applied world-wide. They are characterized by a high degree of reliability under demanding conditions. Ignition is not effected by dirt, humidity, extreme temperatures or aggressive gases.

History

The company was founded in 1947 by Mr. Wietze Beye Smits. He was the inventor of the High-Energy (Low-Tension) Ignition System.

Before the production of industrial ignition systems started in 1960 Smitsvonk was a laboratory for ignition systems for the automobile industry.

Smitsvonk became a member of DURAG GROUP in 2006.

The Smitsvonk Ignition Principle

Smitsvonk's low tension high energy ignition system is designed to meet the requirements of reliable ignition for many industrial applications.

The system is based upon the principle of a capacitor discharge over a special discharge surface. This surface consists of an isolator with semiconductor properties. The isolator and positive and negative electrodes are integrated into a high temperature resistant spark plug. When a charged capacitor is connected, it will be discharged via the spark plug producing sparks, even under wet or soiled conditions.

Process step by step

1. Charge capacitor
2. Capacitor connected to spark plug through high voltage thyristor
3. As capacitor discharges a current forms across the semi conductor surface of the spark plug
4. The area above the insulator becomes ionised
5. Resulting flame shaped spark forms a plasma. Current from 300–1000 A in 5 to 15 µs

Applications

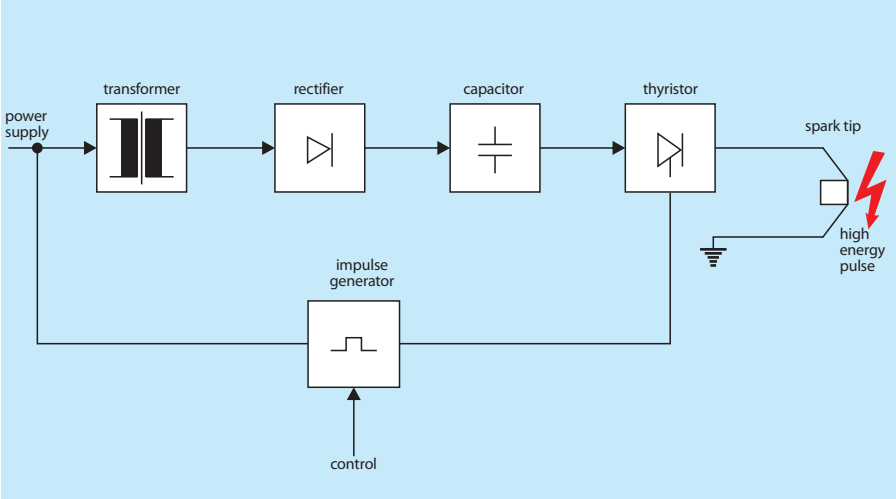
- Ground and elevated flares
- Industrial furnaces and boilers
- Pulverized coal fired power plants
- Portable igniters
- Waste incinerators
- Gas engines/ turbines

This system has the following advantages

- Moisture, dirt, oil and grease do not effect the ignition
- No limitation for cable length
- Low power consumption
- Insensitive to process pressure
- Self cleaning spark plug surface due to flame shaped spark
- Tension is low in comparison to traditional ignition sources
- Easy construction for explosion proof execution

The system comprises:

- A power supply with varying capacities
- Control electronics with variable pulse frequencies
- A thyristor
- A connection cable
- Smitsvonk low tension spark tip

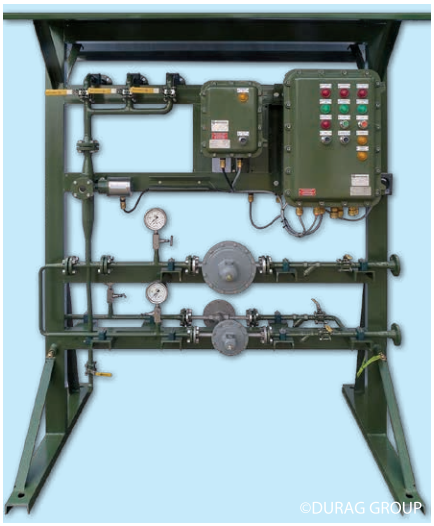


Flare Ignition Systems

Flaring systems in a refinery, petrochemical plant or steel plant ensure the safe and efficient disposal of relieved gases. A flare is expected to operate twenty-four hours a day. The flare system must be in service for several years without a need for maintenance. Therefore proper design and operation are extremely important.

Ignition of the waste gases can be done by pilot burners (flame) or for some applications by ignition lances (spark).

The ignition system must reliably ignite the waste gas of the flare. If the ignition system fails, unburned hydrocarbons and/or toxic gases could be released into the atmosphere.

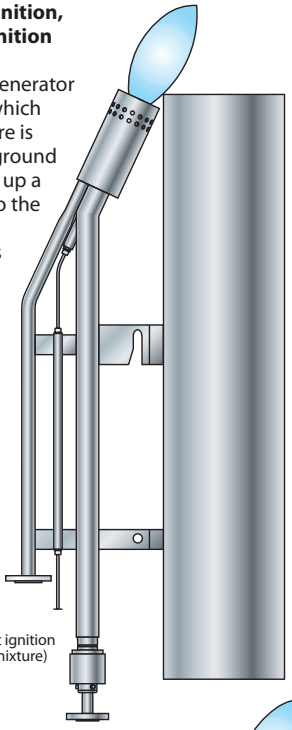


SMITSVONK flame front generator panel with extra high energy ignition

Smitsvonk flare ignition systems

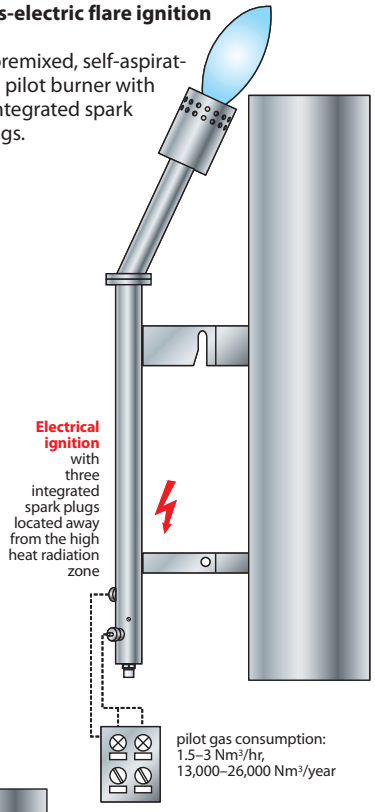
A: Classic flare ignition, flame front ignition

A flame front generator is a system in which a gas/air mixture is introduced at ground level and flows up a one-inch line to the pilot burner. After filling this line with the mixture it is ignited by a spark. The resulting flame travels to the top of the flare where the pilot burner is ignited.

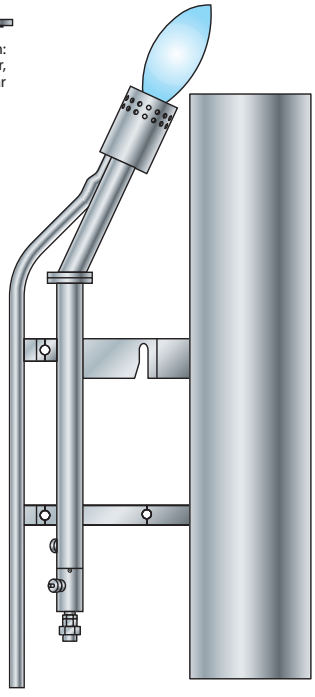


B: Gas-electric flare ignition

A premixed, self-aspirating pilot burner with 3 integrated spark plugs.



C: Combination of A and B



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Pilot Burner

Ignition of waste gas from pipe flares, air and steam assisted flares and ground flares

For most flare systems the pilot burner can not be accessed for service. Maintenance or replacement is not possible while the flare is in operation. To safeguard operation, Smitsvonk's pilots provide reliable ignition and stable burning even under the most difficult climate conditions.

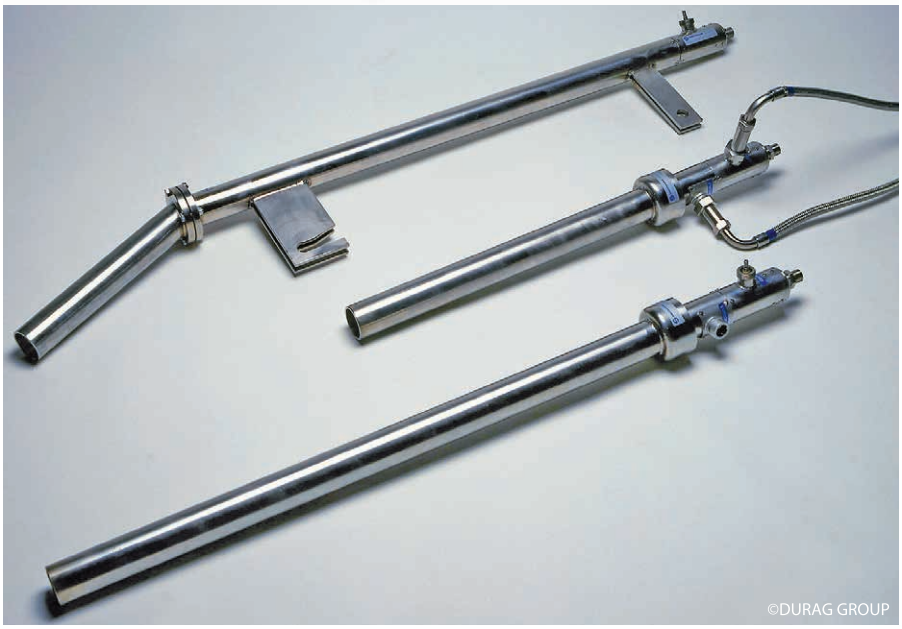
Features

- High energy ignition
- Ignition by three integrated spark plugs
- Long lifetime, longer maintenance intervals
- Insensitive to moisture and dirt
- Complete delivery; cables, junction boxes and ignition unit
- Easy fit cable connectors
- Self-aspirating or forced air supply
- Integrated and protected thermocouple
- Functionally tested to client specifications
- Construction completely out of high temperature-resistant stainless steel

Applications

- Ignition of all kind of flares in the (petro) chemical, oil and gas, steel and biogas industry

Heavy duty pilot burner with radiation shield to protect the electrical connections



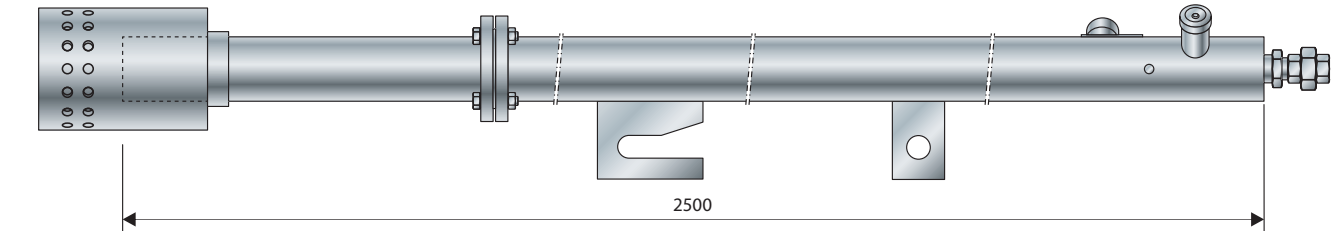
Pilot burners in different lengths and shapes

Common Data			
pipe diameter	2" (60 mm)	**materials**	mainly 310 SST
length	1200, 2326 or 2500 mm	**windcap diameter**	4", option 3"
design	angled or straight	**mounting hooks**	included
air requirement	self-aspirating	**flame detection**	by 6 mm thermocouple type K (T)
gas connection	½" BSPM	**options**	double thermocouple (DT) 2 separate thermocouples (2T)
supply gas	natural gas or propane/ butane refinery gas (max. 40 vol% H_2)		
options	refinery gas, up to 100% H_2 coke gas biogas		

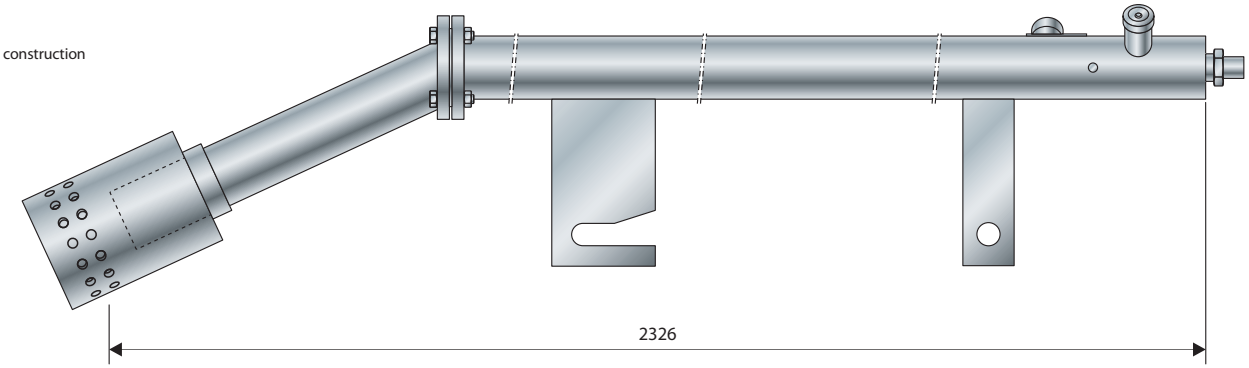
Pilot Burner Selection Table for Small and Medium Size Flares

Model Number	Design	Heat Release based on Natural Gas in kW	Gas Flow in nm^3/hr	Required Pressure	Gas	Ignition	Thermocouple
ST60AF13-2326-360-25-TW **length: 2326 mm** **option for thermocouple:** **ST60AF13-2326-360-25-DTW** **option for extra flame front ignition:** **ST60AF13-2326-360-25-TW-FFG**	angled	10–17	1–1.7	0.5–1.5	natural gas or propane/ butane or refinery gas (max. 40% H_2)	3 integrated spark plugs at flame side 3 spark plugs and extra flame front tube	single double
ST60AF13-1200-TW **length: 1200 mm** **option for thermocouple:** **ST60AF13-1200-DTW**	angled	10–17	1–1.7	0.5–1.5	natural gas or propane/ butane or refinery gas (max. 40% H_2)	3 integrated spark plugs at flame side tube	single double
ST60AF13-2500-360-25-TW **length: 2500 mm** **option for thermocouple:** **ST60AF13-2500-360-25-DTW** **option for extra flame front ignition:** **ST60AF13-2500-360-25-TW-FFG**	straight	10–17	1–1.7	0.5–1.5	natural gas or propane/ butane or refinery gas (max. 40% H_2)	3 integrated spark plugs at flame side 3 spark plugs and extra flame front tube	single double
ST60AF19-2326-360-25-TW **length: 2326 mm** **option for thermocouple:** **ST60AF19-2326-360-25-DTW** **option for extra flame front ignition:** **ST60AF19-2326-360-25-TW-FFG**	angled	15–29	1.5–2.9	0.2–0.8	natural gas or propane/ butane or refinery gas (max. 40% H_2)	3 integrated spark plugs at flame side 3 spark plugs and extra flame front tube	single double
ST60AF19-2500-360-25-TW **length: 2500 mm** **option for thermocouple:** **ST60AF19-2500-360-25-DTW** **option for extra flame front ignition:** **ST60AF19-2500-360-25-TW–FFG**	straight	15–29	1.5–2.9	0.2–0.8	natural gas or propane/ butane or refinery gas (max. 40% H_2)	3 integrated spark plugs at flame side 3 spark plugs and extra flame front tube	single double
for biogas: **ST60BF19-1200-T3** **length: 1200 mm**	straight	4–6 biogas	0.7–0.9	0.07–0.1	bio gas	3 integrated spark plugs at flame side	single
for coke gas: **ST60WF-2326-360-25-TW** **length: 2326 mm**	angled	15–25 coke gas	3–5	0.1–0.3	coke gas 40–60% H_2 rest CO	3 integrated spark plugs at flame side	single
for low pressure: **ST76(60)AF23-2326-360-25-TW** **length: 2326 mm**	angled	15–23	1.5–2.3	40–100 mBarg	natural gas	3 integrated spark plugs at flame side	single

Straight construction



Angled construction



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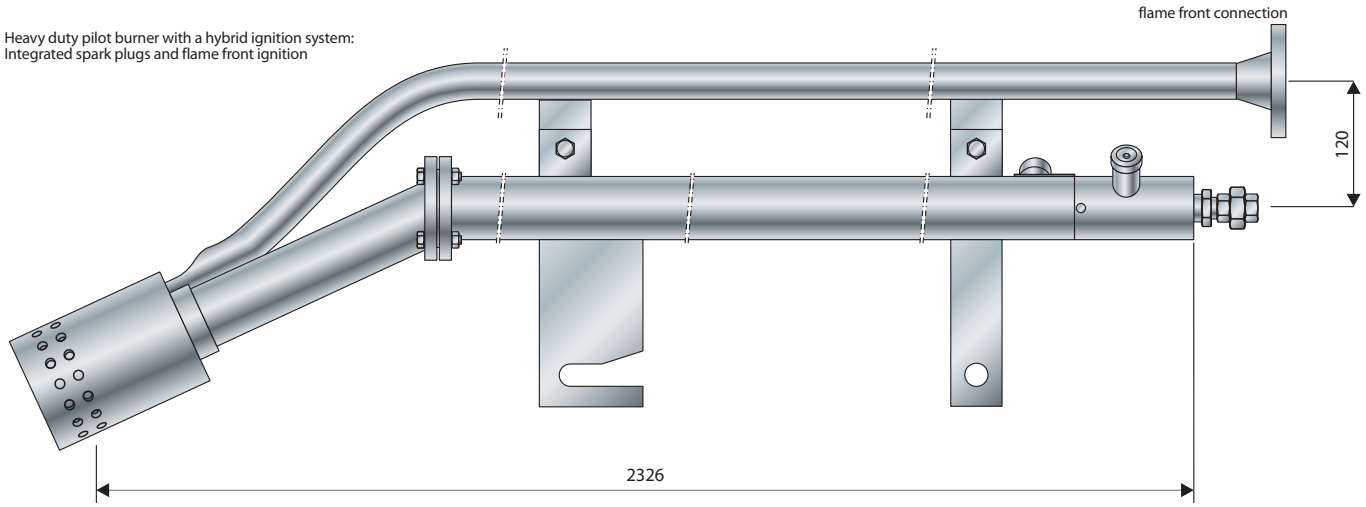
Pilot Burner Selection Table for Large Flares (Heavy Duty Applications)

Model Number	Design	Heat Release based on Natural Gas in kW	Gas Flow in nm^3/hr	Required Pressure	Gas	Ignition	Thermocouple
HD60AF19-2326-360-25-TW length: 2326 mm option for thermocouple: **HD60AF19-2326-360-25-DTW** **HD60AF19-2326-360-25-2TW** option for extra flame front ignition: **HD60AF19-2326-360-25-TW-FFG**	angled	24–30	2.4–3.0	0.5–0.9	natural gas or propane/ butane or refinery gas (max. 10% H_2)	3 integrated spark plugs at 1.8 m from the top 3 spark plugs and extra flame front tube	single double 2 pieces
HD60AF19-2500-360-TW length: 2500 mm option for thermocouple: **HD60AF19-2500-360-DTW** **HD60AF19-2500-360-2TW** option for extra flame front ignition: **HD60AF19-2500-360-TW-FFG**	angled	24–30	2.4–3.0	0.5–0.9	natural gas or propane/ butane or refinery gas (max. 10% H_2)	3 integrated spark plugs at 1.9 m from the top 3 spark plugs and extra flame front tube	single double 2 pieces

Heavy duty pilot burner with a hybrid ignition system:
Integrated spark plugs and flame front ignition



Pilot Burner Inquiry Check List

Customer/ Partner _____ Date _____

Contact _____ Preferred contact by

Project _____ Tel. Email

Location – country _____ _____

Plant Details

Plant type _____

Flare tip type Pipe Flare Steam Assisted Air Assisted
High Pressure (Sonic) Ground Flare Pit Flare

Flare tip manufacturer _____

Flare tip diameter _____ " _____ mm

Total height complete flare stack _____

Drawing of the flare tip available Yes No

Waste gas flow min. _____ max. _____

Waste gas composition _____

Pilot burners: required number _____ Pieces

Pilot burners: ignition method Flame Front High Energy Flame Front and High Energy

Pilot burners gas pressure min. _____ Barg max. _____ Barg

Pilot burners gas Natural gas Propane LPG
Other, gas composition required _____

Distance to flare tip from ignition/ control unit _____

Explosion proof required Yes No

ATEX Zone 1 Zone 2 Gas Group IIC Gas Group IIB

IECEx Zone 1 Zone 2 Gas Group IIC Gas Group IIB

Power supply 230 VAC 115 VAC Other _____

Ignition cable High temperature (775 °C) ignition cable with connector and SST protection hose
12 m 22 m Other length _____

Thermo-couple cable High temperature (775 °C) thermo-couple cable with connector and SST protection hose
12 m 22 m Other length _____

SSt junction box for ignition signals Yes No

SSt junction box for T/C signals Yes No

Low temperature ignition cable _____ m

Low temperature T/C cable _____ m

Flame front generator panel required Yes No

Continuous Electronic Spark Flare Ignition

Features

- No gas consumption; offering considerable savings
- Substantial reduction of investment costs since no gas lines, valves, instrumentation or electrical control system for the pilot burner are needed

Applications

- Coke oven flares
- Pipe flares with hydrogen in the waste gas
- Temporary flares from tank farms

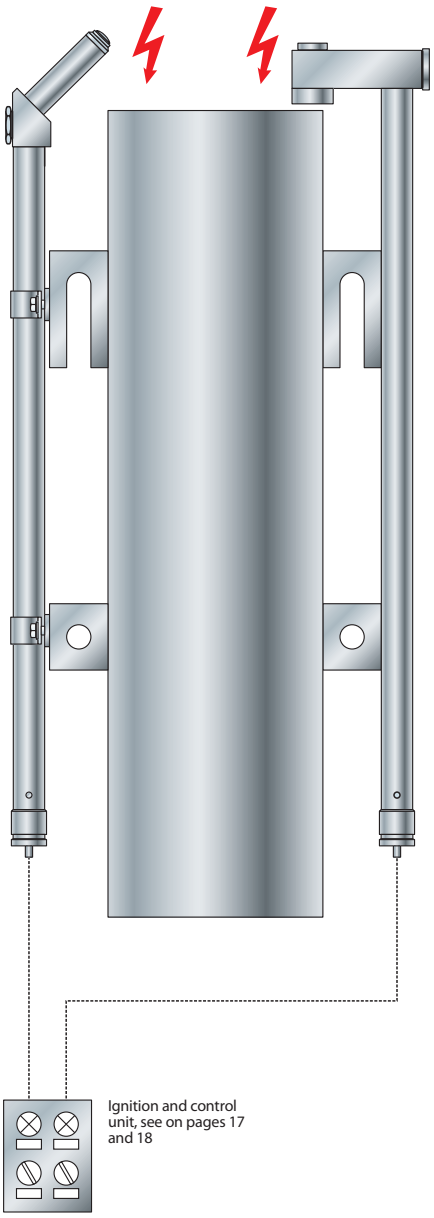
Description

Smitsvonk has decades of experience with direct electric ignition of flare units. A reproducible, high energy, highly reliable spark (described in the literature as "plasma ignition") that is not susceptible to external influences such as moisture and dirt, guarantees the safe ignition and combustion of the residual gas in the flare.

Such direct electric spark ignition may, for example, be used in flares firing coke oven gas and flares where fuel gas containing a minimum of 6% hydrogen is burnt at relatively low flame velocities in the flare head.

In addition, the spark ignition module employed by Smitsvonk offers the decisive advantage of thyristor-controlled circuitry that is not subjected to wear and tear. The ignition system is designed to withstand the long operation and maintenance cycles typical for these types of industries.

The construction of the ignition lance depends on exit velocity, gas composition and the number of operation hours. The number of lances depends on the flare diameter.



Direct spark ignition of a coke oven flare

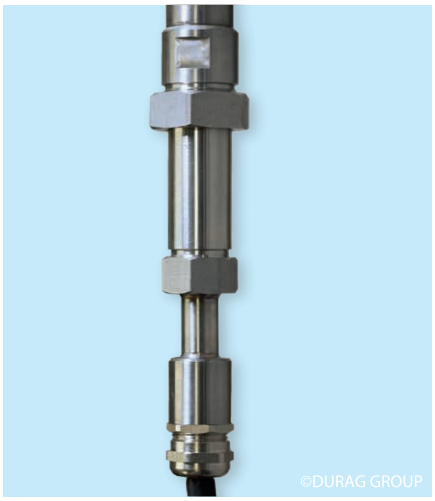
Ignition Lances

Direct ignition of (pilot) burners, flares and other processes

Features

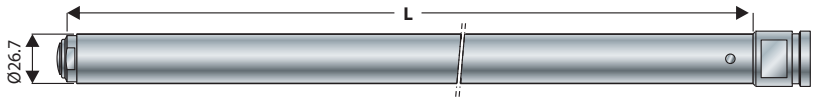
- Built to client specifications
- High temperature resistance
- Long life time
- Easy fit cable connectors
- Insensitive to moisture
- Exchangeable spark plug

Angled (45°) ignition lance

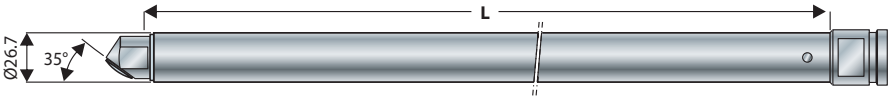


Straight ignition connector

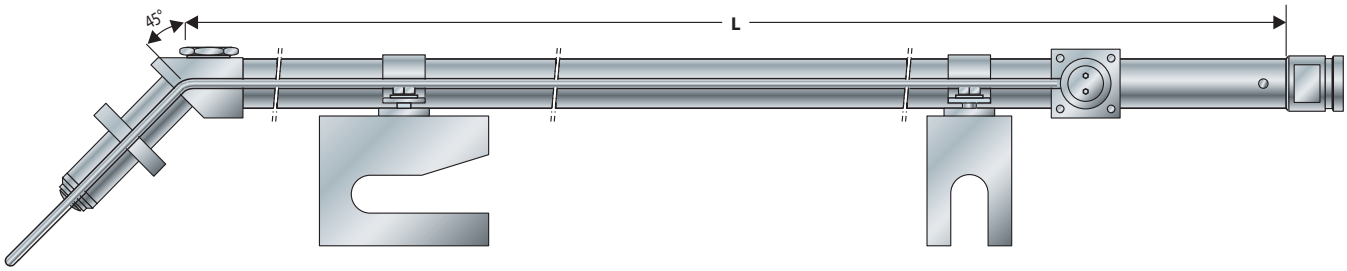
example of a straight ignition lance



example of a straight ignition lance
with angled spark plug



example of an angled ignition lance
with thermocouple and adjustable mounting hooks



Applications

- Burners and flares

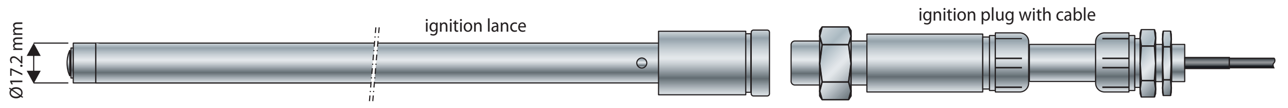
Options

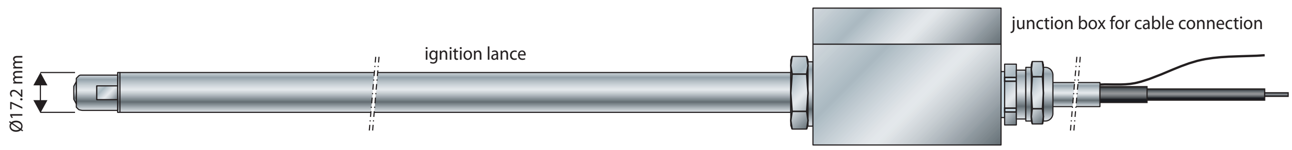
- explosion proof versions
- for thermocouple
- for flexible lances
- for special bent lances
- for angled spark plug

Ignition Lances for Flares			
diameter	**26.7 mm**	**26.7 mm**	**26.7 mm**
type	**26.7T-L-A0-TK1818**	**26.7T-L-A0-TK181835**	**26.7T-LA90-TK1818**
construction	straight	angled spark plug	angled lance 45°
length L	300–1000 mm: multiples of 100 mm, 1000–2000 mm: multiples of 100 mm, 2000–3000 mm: 200 mm intervals	300–1000 mm: multiples of 100 mm, 1000–2000 mm: multiples of 100 mm, 2000–3000 mm: 200 mm intervals	1500, 2000 or 2300 mm
tube material	310 SST	310 SST	310 SST
electrical connection	M30 easy fit connector	M30 easy fit connector	M30 easy fit connector
mounting hooks	option	option	fixed or adjustable
options	- thermocouple - explosion proof - ATEX II 2G Ex e IIC T6/T5	- thermocouple - explosion proof - ATEX II 2G Ex e IIC T6/T5	- thermocouple - explosion proof - ATEX II 2G Ex e IIC T6/T5

Ignition Lances

For burners and processes





Accessories

- High temperature (775 °C) ignition cable with connector and SST protection hose
- High temperature (775 °C) thermocouple cable with connector and SST protection hose
- SST junction box for ignition or thermocouple signal
- Low temperature ignition cable
- Low temperature thermocouple cable
- Ignition and control unit (see on pages 17 and 18)

Ignition Lances for Burners and Processes			
type	**17.2-L-TP1412N-M25**	**17.2-L-TP1412-JB**	**15-L-TP12-JB**
diameter	17.2 mm	17.2 mm	15 mm
design	straight	straight	straight
length L	200–1000 mm: multiples of 100 mm, 1000–2000 mm: multiples of 100 mm, 2000–3000 mm: 200 mm intervals	200–1000 mm: multiples of 100 mm, 1000–2000 mm: multiples of 100 mm, 2000–3000 mm: 200 mm intervals	200–1000 mm: multiples of 100 mm, 1000–2000 mm: multiples of 100 mm, 2000–3000 mm: 200 mm intervals
tube material	310 SST	310 SST	316 SST
electrical connection	M25 easy fit connector material: 316 SST	junction box material: aluminium	junction box material: aluminium
mounting hooks	option	fixed or adjustable	option
option	- flexible lance - special bent shape - mounting adapter - ATEX II2G EEx dIIC T6 - ATEX II 2G Ex e IIC T6/T5 - M22 ATEX connector - 12 mm and 10 mm diameter - 316 SST Junctionbox	- flexible lance - special bent shape - mounting adapter - ATEX II2G EEx dIIC T6 - ATEX II 2G Ex e IIC T6/T5 - M22 ATEX connector - 12 mm and 10 mm diameter - 316 SST Junctionbox	- flexible lance - special bent shape - mounting adapter - ATEX II2G EEx dIIC T6 - ATEX II 2G Ex e IIC T6/T5 - M22 ATEX connector - 12 mm and 10 mm diameter - 316 SST Junctionbox

Spark Plugs

- All types of low tension high energy spark plugs to replace existing high tension systems
- Standard mechanical connection: M10, M14 and M18

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Gas Fired Igniters
Tube Ø54 mm

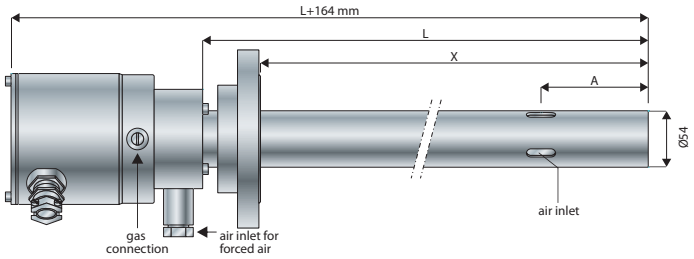
Ignition of main burners in furnaces, boilers, power plants and incinerators

Features and Benefits

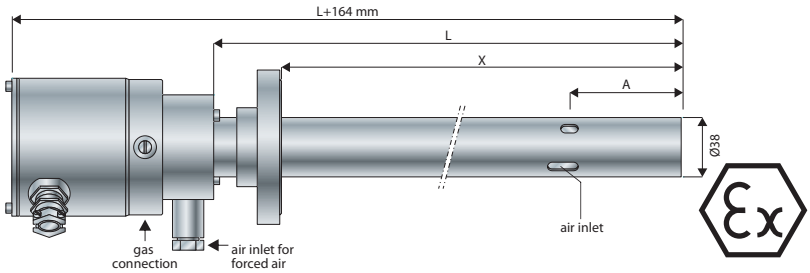
- High energy ignition
- Insensitive to moisture
- Stainless steel construction
- Self-aspirating, forced air supply or combination
- For self-aspirating version no air supply line required
- Insensitive to pressure fluctuations
- Robust design
- For all kind of gases and pressures
- Integrated spark plug(s) and ionisation electrode
- Explosion proof version (ATEX) available

Applications

- Main burners of furnaces, boilers, incinerators and power plants



Self-aspirating Ignition Burner			
type for natural gas	**54AV13JB-L-A-V2E**	**54AV13JB-L-A-V3E**	**54AV13JB-L-A-V5E**
heat release	80–132 kW	115–192 kW	185–305 kW
type for propane	**54PV13JB-L-A-V2E**	**54PV13JB-L-A-V3E**	**54PV13JB-L-A-V5E**
heat release	120–195 kW	170–285 kW	280–458 kW
min. - max. pressure	0.5–1.5 Barg		
length L	400, 500, 600: multiples of 100 mm, from 1000 to 2000 mm: 100 mm intervals, 2000 to 4000 mm: 200 mm intervals		
air inlet A	165, 230 or 400 mm in steps of 10 mm		
connection to main burner	Flange 2½" ANSI 150 LBS RF		
gas connection	½" NPTF		
air conn. for forced draft	½" BSPF		
ignition	by 3 integrated spark plugs		
flame detection	ionisation		
tube material	310 SST		
connection material	316 SST		
electrical connection	General purpose connection housing		
protection	IP66		



Explosion Proof Self-aspirating Ignition Burner			
type for natural gas	**54AV13EXE-L-A-VE**	**54AV13EXE-L-A-V2E**	**54AVD13-L-A-V5E**
heat release	46–75 kW	80–132 kW	185–305 kW
type for propane	**54PV13EXE-L-A-VE**	**54PV13EXE-L-A-V2E**	**54PVD13-L-A-V5E**
heat release	67–109 kW	120–195 kW	280–458 kW
min. - max. pressure	0.5–1.5 Barg		
length L	400, 500, 600: multiples of 100 mm, from 1000 to 2000 mm: 100 mm intervals 2000 to 4000 mm: 200 mm intervals		
air inlet A	165, 230 or 400 mm in steps of 10 mm		
connection to main burner	flange 2½" ANSI 150 LBS RF		
gas connection	½" NPTF	½" NPTF	½" NPTF
air conn. for forced draft	½" BSPF	½" BSPF	½" BSPF
ignition	3 integrated spark plugs		
flame detection	ionisation		
tube material	310 SST		
connection material	316 SST		
electrical connection	explosion proof connection housing		
protection	IP66		
explosion proof	ATEX II 2G Ex e IIC T5/6 DEKRA11ATEX0032 (-40 to 80 °C)		

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Gas Fired Igniters
Tube Ø54 mm

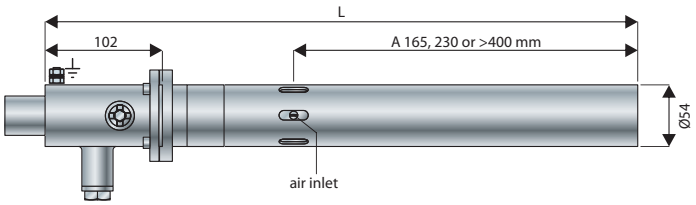
Ignition of main burners in furnaces, boilers, power plants and incinerators

Features and Benefits

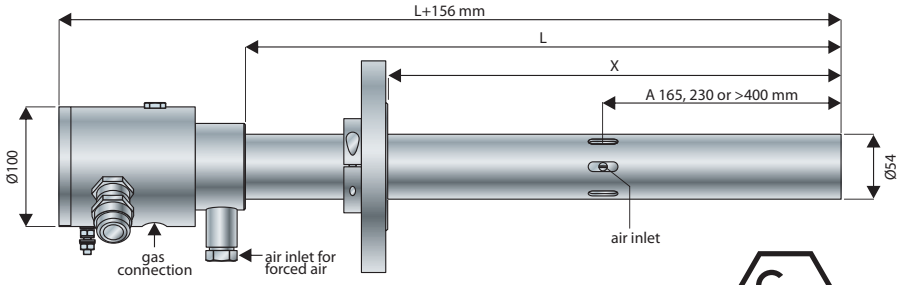
- High energy ignition
- Insensitive to moisture
- Stainless steel construction
- Self-aspirating, forced air supply or combination
- For self-aspirating version no air supply line required
- Insensitive to pressure fluctuations
- Robust design
- For all kind of gases and pressures
- Integrated spark plug(s) and ionisation electrode
- Explosion proof version (ATEX) available

Applications

- Main burners of furnaces, boilers, incinerators and power plants



Self-aspirating Ignition Burner			
type for natural gas	**N54AV13-L-A-V2E**	**N54AV13-L-A-V3E**	**N54AV13-L-A-V5E**
heat release	80–132 kW	115–192 kW	185–305 kW
type for propane	**N54PV13-L-A-V2E**	**N54PV13-L-A-V3E**	**N54PV13-L-A-V5E**
heat release	120–195 kW	170–285 kW	280–458 kW
min. - max. pressure	0.5–1.5 Barg		
length L	400, 500, 600: multiples of 100 mm, from 1000 to 2000 mm: 100 mm intervals, 2000 to 4000 mm: 200 mm intervals		
air inlet A	165, 230 or 400 mm in steps of 10 mm		
connection to main burner	Flange 2½" ANSI 150 LBS RF		
gas connection	½" BSPF	¾" BSPF	¾" BSPF
air conn. for forced draft	½" BSPF	½" BSPF	½" BSPF
ignition	by 3 integrated spark plugs		
flame detection	ionisation		
tube material	310 SST		
connection material	316 SST		
electrical connection	M25 connector for ignitition, M25 connector for ionisation		
protection	IP65		



Explosion Proof Self-aspirating Ignition Burner			
type for natural gas	**54AVD13-L-A-VE**	**54AVD13-L-A-V2E**	**54AVD13-L-A-V5E**
heat release	46–75 kW	80–132 kW	185–305 kW
type for propane	**54PVD13-L-A-VE**	**54PVD13-L-A-V2E**	**54PVD13-L-A-V5E**
heat release	67–109 kW	120–195 kW	280–458 kW
min. - max. pressure	0.5–1.5 Barg		
length L	400, 500, 600: multiples of 100 mm, from 1000 to 2000 mm: 100 mm intervals 2000 to 4000 mm: 200 mm intervals		
air inlet A	165, 230 or 400 mm in steps of 10 mm		
connection to main burner	flange 2½" ANSI 150 LBS RF		
gas connection	½" NPTF	½" NPTF	½" NPTF
air conn. for forced draft	½" BSPF	½" BSPF	½" BSPF
ignition	3 integrated spark plugs		
flame detection	ionisation		
tube material	310 SST		
connection material	316 SST		
electrical connection	explosion proof connection housing		
protection	IP65		
explosion proof	ATEX II 2G EEx D IIC T6 PTB03ATEX1190 /(-20 to 60 °C)		

Gas Fired Igniters
Tube Ø48.3 mm

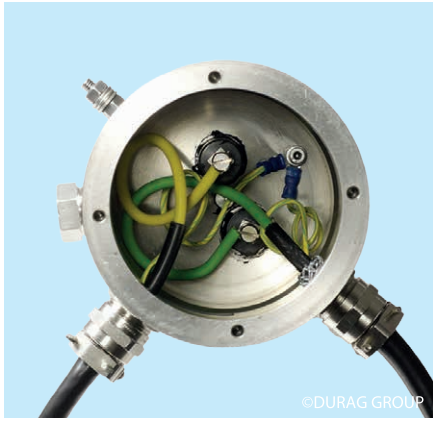
Ignition of main burners in furnaces, boilers, power plants and incinerators

Features and Benefits

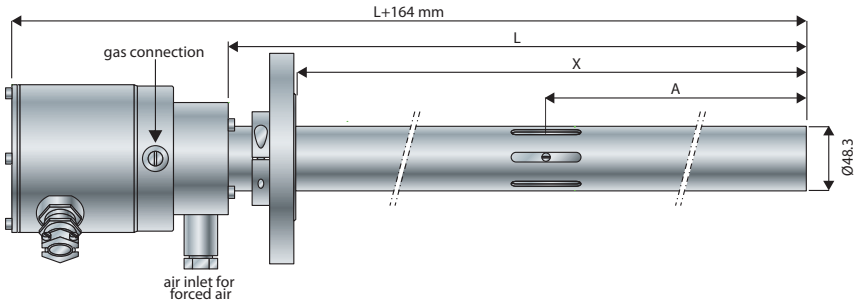
- High energy ignition
- Insensitive to moisture
- Stainless steel construction
- Self-aspirating, forced air supply or combination
- For self-aspirating version no air supply line required
- Insensitive to pressure fluctuations
- Rugged design
- For all kind of gases and pressures
- Integrated spark plugs(s) and ionisation electrode
- Explosion proof version (ATEX) available

Applications

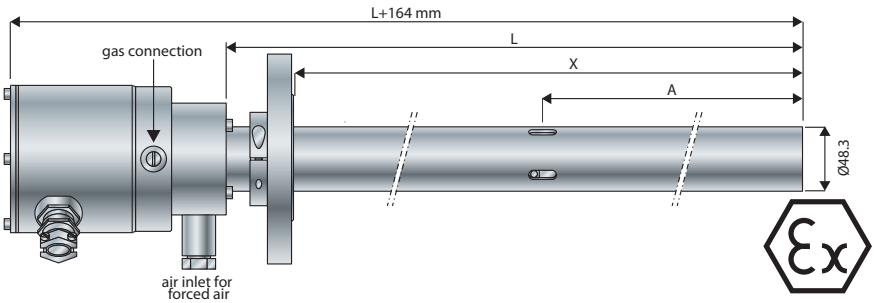
- Main burners of furnaces, boilers, incinerators and power plants



Igniter connection



Self-aspirating Ignition Burner					Biogas
type for natural gas	**L48AV18JB-L-A-V**	**48AV13JB-L-A-V**	**48AV13JB-LA-V2E**	**J48AV13JB-L-A-V4E**	**L48BF18JB-1300-1210-T3**
heat release	17-31 kW	46–75 kW	80–132 kW	150–250 kW	Biogas 65–85 vol% CH4 heat release: 4–5 kW
type for propane	**L48PV18JB-L-A-V**	**48PV13JB-L-A-V**	**48PV13JB-L-A-V2E**	**J48PV13JB-L-A-V4E**	
heat release	22-39 kW	67–109 kW	120–195 kW	226–370 kW	
min. - max. pressure	0,2–0,8 Barg	0.5–1.5 Barg			15–40 mBarg
length L	400, 500, 600: multiples of 100 mm, from 1000 to 2000 mm: 200 mm intervals, 2000, 2500, 3000 mm				
air inlet A	≥300 mm in steps of 10 mm				
connection to main burner	flange 2" ANSI 150 LBS RF				
gas connection	½" NPTF				
air conn. for forced draft	½" BSP				
ignition	integrated spark plug				
flame detection	ionisation				3 mm thermocouple
tube material	310 SST				
connection material	316 SST				
electrical connection	connection housing				
protection	IP66				



Explosion Proof Self-aspirating Ignition Burner				
type for natural gas	**L48AV18EXE-L-A-V**	**48AV13EXE-L-A-VE**	**48AV13EXE-L-A-V2E**	**48AV13EXE-L-A-V4E**
heat release	17-31 kW	46–75 kW	80–132 kW	150–250 kW
type for propane	**L48PV18EXE-L-A-V**	**48PV13EXE-L-A-VE**	**48PVD13-L-A-V2E**	**48PVD13-L-A-V4E**
heat release	22-39 kW	67–109 kW	120–195 kW	226–370 kW
min. - max. pressure	0,2–0,8 Barg	0.5–1.5 Barg		
length L	400, 500, 600: multiples of 100 mm, from 1000 to 2000 mm: 200 mm intervals, 2000, 2500, 3000 mm			
air inlet A	≥300 mm in steps of 10 mm			
connection to main burner	flange 2" ANSI 150 LBS RF			
gas connection	½" NPTF			
air conn. for forced draft	½" BSPF			
ignition	integrated spark plug			
flame detection	ionisation			
tube material	310 SST			
connection material	316 SST			
electrical connection	explosion proof connection housing			
protection	IP66			
explosion proof	ATEX 2G Ex e IIC T5/6 DEKRA11ATEX0032 (-40 to 80 °C)			

Gas Fired Igniters
Tube Ø38 mm

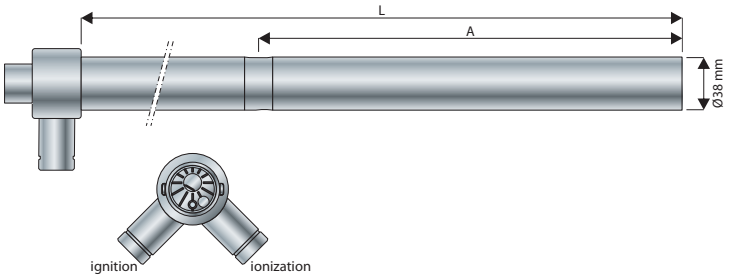
Ignition of main burners in furnaces, boilers, power plants and incinerators

Features and Benefits

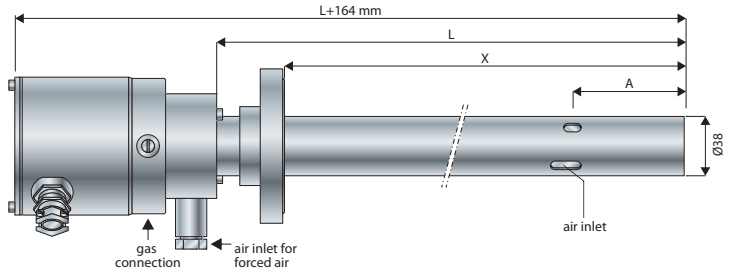
- High energy ignition
- Insensitive to moisture
- Stainless steel construction
- Self-aspirating, forced air supply or combination
- No air supply line required for self-aspirating version
- Insensitive to pressure fluctuations
- Rugged design
- For all kind of gases and pressures
- Integrated spark plug(s) and ionisation electrode
- Explosion proof version (ATEX) available

Applications

- Main burners of furnaces, boilers, incinerators and power plants



Self-aspirating Ignition Burner	
type for natural gas	**38AVS-L-A-VE**
heat release	17–29 kW
type for propane	**38PVS-L-A-VE**
heat release	24–39 kW
min. - max pressure	0.5–1.5 Barg
length L	400, 500 600: multiples of 100 mm from 1000 to 2000: 200 mm intervals 2000, 2500, 3000 mm
air inlet A	≥300 mm in steps of 10 mm
connection to main burner	flange 1½" ANSI 150 LBS RF
gas connection	½" NPTF
air conn., for forced draft	option
ignition	by 1 integrated spark plug
flame detection	ionisation
tube material	310 and 321 SST
connection material	316 SST
electrical connection	M25 connector for ignition, M25 connector for ionisation
protection	IP65



Explosion Proof Self-aspirating Ignition Burner	
type for natural gas	**38AVEXE-L-A-VE**
heat release	17–29 kW
type for propane	**38PVEXE-L-A-VE**
heat release	24–39 kW
min. - max. pressure	0.5–1.5 Barg
length L	400, 500 600: multiples of 100 mm from 1000 to 2000: 200 mm intervals 2000, 2500, 3000 mm
air inlet A	≥ 300 mm in steps of 10 mm
connection to main burner	flange 1½" ANSI 150 LBS RF
gas connection	½" NPTF
air conn., for forced draft	½" BSPF
ignition	integrated spark plug
flame detection	ionisation
tube material	310 and 321 SST
connection material	316 SST
electrical connection	explosion proof connection housing
protection	IP66
explosion proof	ATEX II 2G Ex e IIC T5/6 DEKRA11ATEX0032 (-40 to 80 °C)

Gas Fired Igniter (Ignition Burner) Inquiry Check List

Customer/ Partner	_____	Date	_____
Contact	_____	Preferred contact by	
Project	_____	Tel. Email	
Location – country	_____	_____	

Plant Details

Plant type	_____			
Application	Furnace, natural draft	Furnace, forced draft	Boiler	Incinerator
Heater/ furnace draft	min. _____	max. _____		
Ignitor mounting position	Vertical	Horizontal		
Ignitor outer tube diameter	48 mm	54 mm	38 mm	
	other _____			
Total length	_____			
Air sleeves position (A)	_____			
Insert length	_____			
Mounting flange	2" ANSI 150 LBS RF	2 1/2" ANSI 150 LBS RF	Special plate flange	
Drawing of the main burner available	Yes	No		
Explosion proof (ignitor) required	Yes	No		
ATEX	Zone 1	Zone 2	Gas Group IIC	Gas Group IIB
Gas pressure	min. _____ Barg	max. _____ Barg		
Ignitor gas	Natural gas	Propane	LPG	
	Other, gas composition required			
Required heat release	_____ kW			
Required flame length	_____			
Flame detection	Ionisation	By external flame scanner		
Frequency in use	continuously	intermittent		
Combustion air	self aspirating	forced draft		
Will preheated combustion air be fed to the gas fired ignitor	Yes _____ °C	No		
Windbox pressure	min. _____	max. _____		
Ambient air temperature	-20 to 60 °C	-40 to 80 °C	-40 to 70 °C	
Distance to ignition unit	_____			
Power supply ignition unit	230 VAC	115 VAC	Other _____	
Explosion proof required	Yes	No		
ATEX	Zone 1	Zone 2	Gas Group IIC	Gas Group IIB
IECEx	Zone 1	Zone 2	Gas Group IIC	Gas Group IIB

Ignition Units

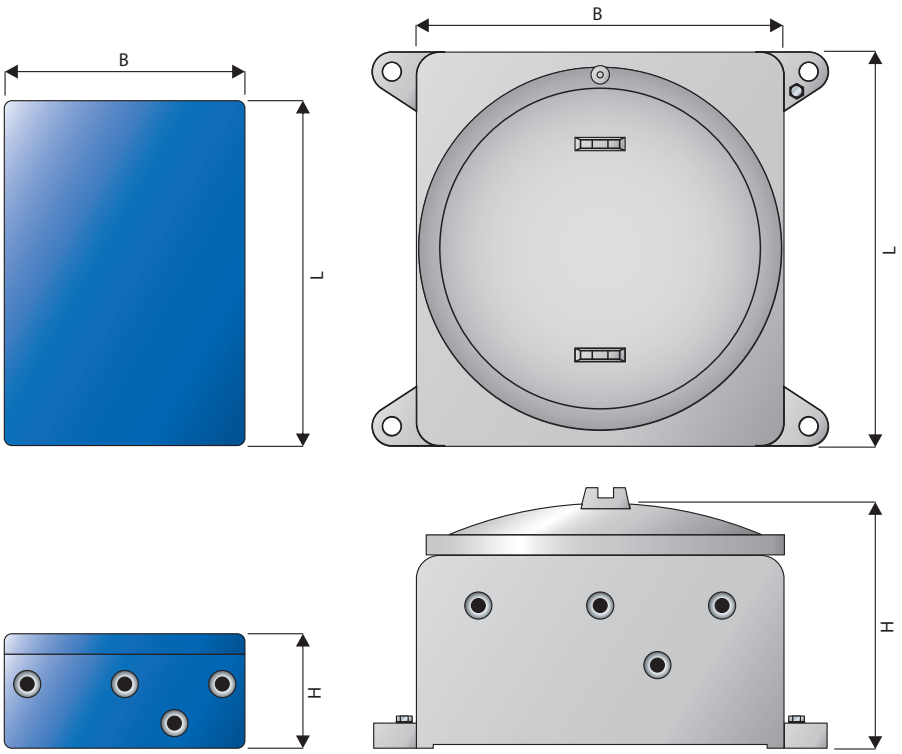
Ignition and burner control for ignition burner, pilots burners, lances and spark plugs

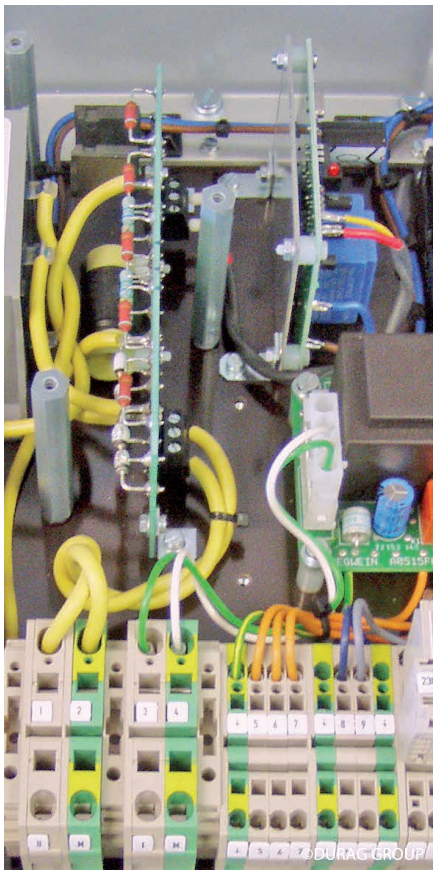
Features and Benefits

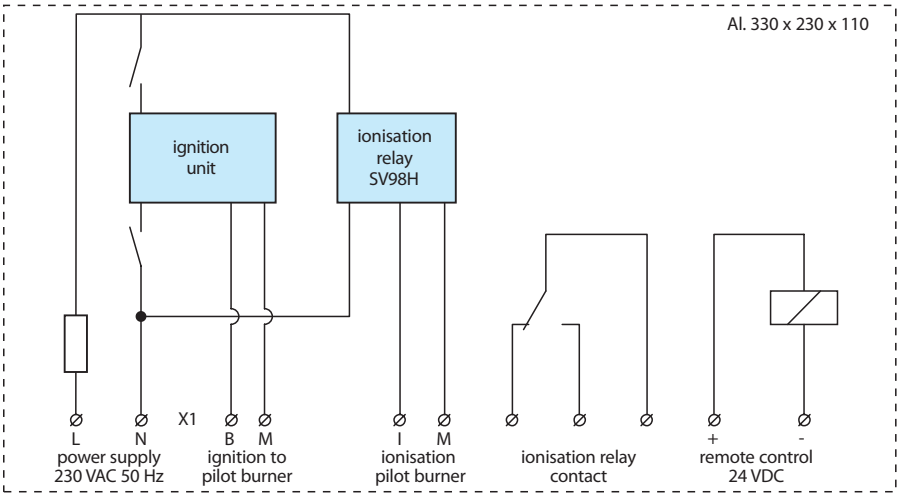
- High energy ignition
- Capacitor discharge with thyristor/ diode
- 100% electronic, no wear
- Wide range of power supply voltages
- Low power consumption
- No limitation for cable length for flare ignition units

Applications

- Furnaces
- Boilers
- Incinerators



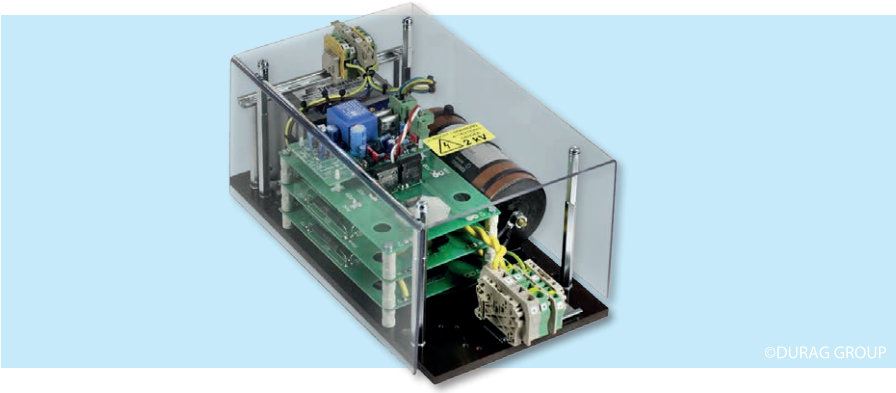


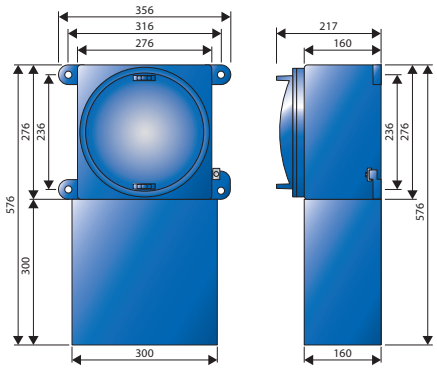


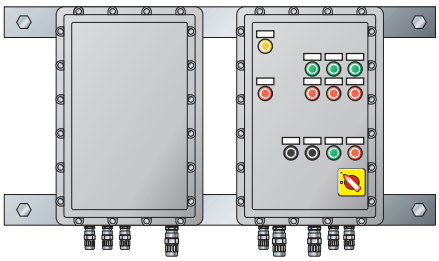
Ignition units for igniters of furnaces, boilers and incinerators		
type	**E-LIGHT-162609**	**E-LIGHT-233311-SV98H-CR**
function	ignition	ignition, flame detection and remote start
spark energy	2 J	2 J
spark voltage	2000 V	2000 V
spark frequency	3 Hz	3 Hz
power supply	90-264 VAC or 24 VAC	230, 115 or 24 VAC 50–60 Hz
power consumption	25 VA	37 VA
housing	aluminum	aluminum
dimensions LxWxH	260 x 160 x 90 mm	230 x 330 x 110 mm
protection	IP66	IP66
remote start relay	n/a	24, 48 VDC, 110 or 230 VAC
flame relay	n/a	ionisation SV98H
max. cable length	100 m	100 m
Explosion proof, same specification only different dimensions		
type	**E-LIGHT-GUB03A**	**E-LIGHT-GUB03A-SV98H-CR**
explosion proof	ATEX II 2G Ex d IIC T6	ATEX II 2G Ex d IIC T6
dimensions LxWxH	280 x 305 x 288 mm	280 x 305 x 288 mm

Ignition Units

Ignition and burner control for ignition burners, pilots burners, lances and spark plugs







Ignition Units for Igniters of Furnaces, Boilers and Incinerators	
type	**BWO(BG) 2/2 SV98H-CR**
function	ignition, flame detection and remote start
design	Ex d housing for ignition unit and relays
	Ex e housing for terminals
spark energy	appr. 8 J
spark voltage	2000 Volt
spark frequency	2 Hz
power supply	230, 115 or 24 VAC 50–60 Hz
power consumption	37 VA
housing	Cast Aluminium (Ex d) - 316 SST Exe
dimensions	605 x 235 x 268 mm
protection	IP66
remote start relay	24 VDC
flame relay	ionisation SV98H
explosion proof	ATEX II 2G Ex de IIC T6

Ignition Units for Pilot Burners of Flares (longer distance) Common Data		
function	ignition and flame detection for pilot burner(s) or ignition lance(s)	
power supply	230, 115 or 24 VAC 50–60 Hz, option: for DC or battery back-up	
ignition	100% electronic, type SVECU	
spark energy	SVECU: 9 or 18 J	E-SPARK: 4 J
spark voltage	SVECU: 3000 V	E-SPARK: 2000 V
spark frequency	0,5 or 2 Hz depending on type pilot burner or lance	
flame detection	thermocouple relay type K	
control	by small PLC	
enclosure	IP66 general purpose or explosion proof (ATEX), option: explosion proof for IIC	
material	painted steel for IP66 enclosure, cast aluminium for ex-proof enclosure option: SST enclosure	
LED signal lamps	yellow power on, green for pilot on, red for pilot off, red for ignition failure	
switches	main power isolator, start, stop, reset and lamp test	
contacts	pilot on/off, ignition failure option for 4–20 mA	

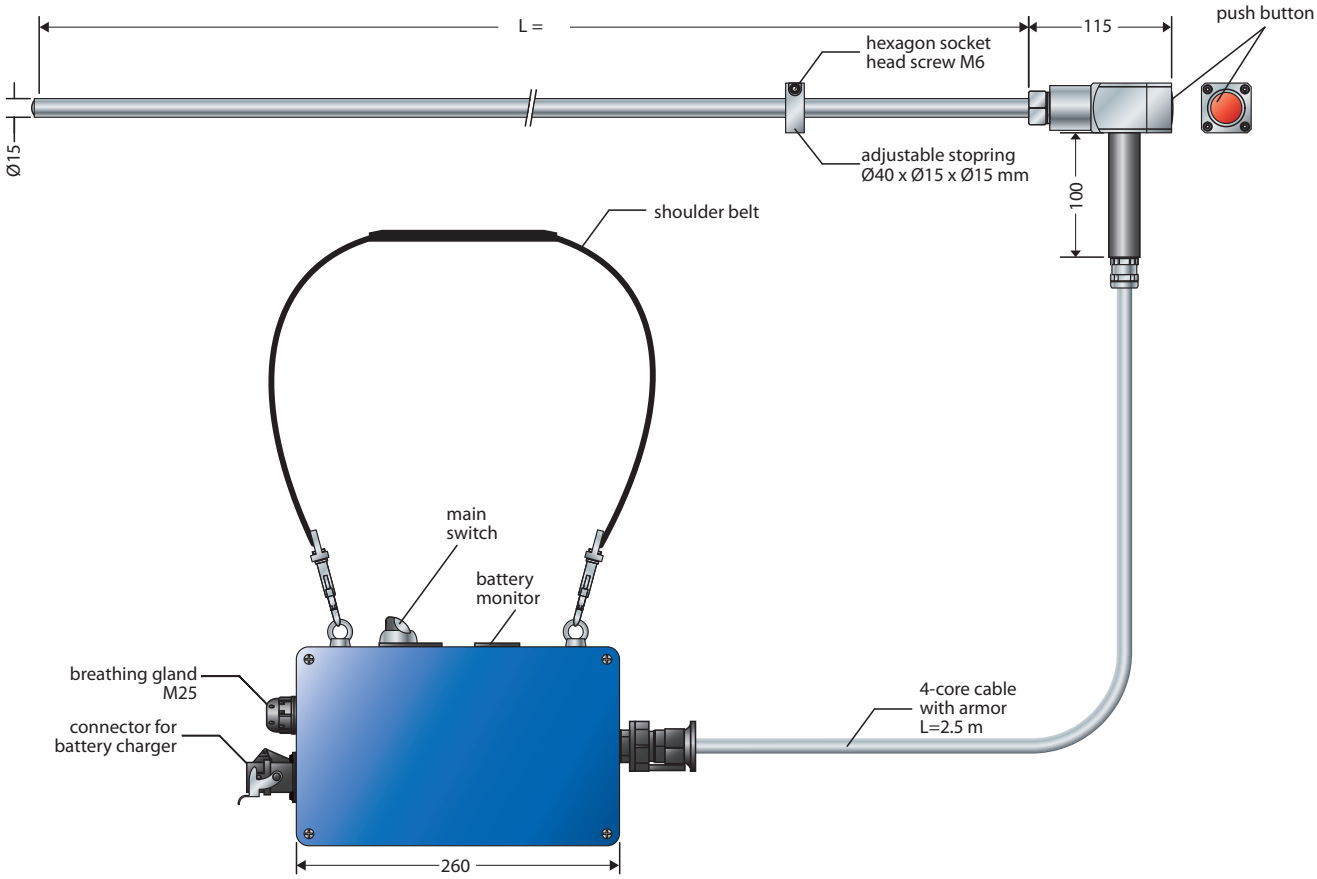
	for one pilot burner	for two pilot burners	for three pilot burners
type	**SVECU X/2-EJB5-H4D4ST-L-CR**	**2 SVECU X/2-2EJB5-H4D6S2T-L-CR**	**3 SVECU X/2-2EJB5-H4D8S3T-L-CR**
construction	1 Ex d housing	2 Ex d housings	2 Ex d housings
number of ignition units	1	2	3
max. distance	250 m	250 m	250 m
option for	500 m	500 m	500 m option: for more pilot burners

	for one pilot burner	for two pilot burners	for three pilot burners
type	**E-SPARK X/2-EJB5-H4D4ST-L-CR**	**E-SPARK X/2-2EJB5-H4D6S2T-L-CR**	**E-SPARK X/2-2EJB5-H4D8S3T-L-CR**
construction	1 Ex d housing	2 Ex d housings	2 Ex d housings
number of ignition units	1	2	3
max. distance	70 m	70 m	70 m

Portable Ignition Units

Lightweight, battery operated ignition unit

Schematic



Portable Ignition Units	
type	SPI
ignition type	high energy
spark frequency	3 Hz
battery type	reloadable 12 V
battery capacity	3.2 AH (suitable for 3 hours of continuous operation)
protection class	IP65
housing material	aluminum
total weight (L=1000 mm)	6 kg
battery charger power supply	220–240 VAC
power consumption	17 W
loading time	300 min

Semi Portable Ignition Unit

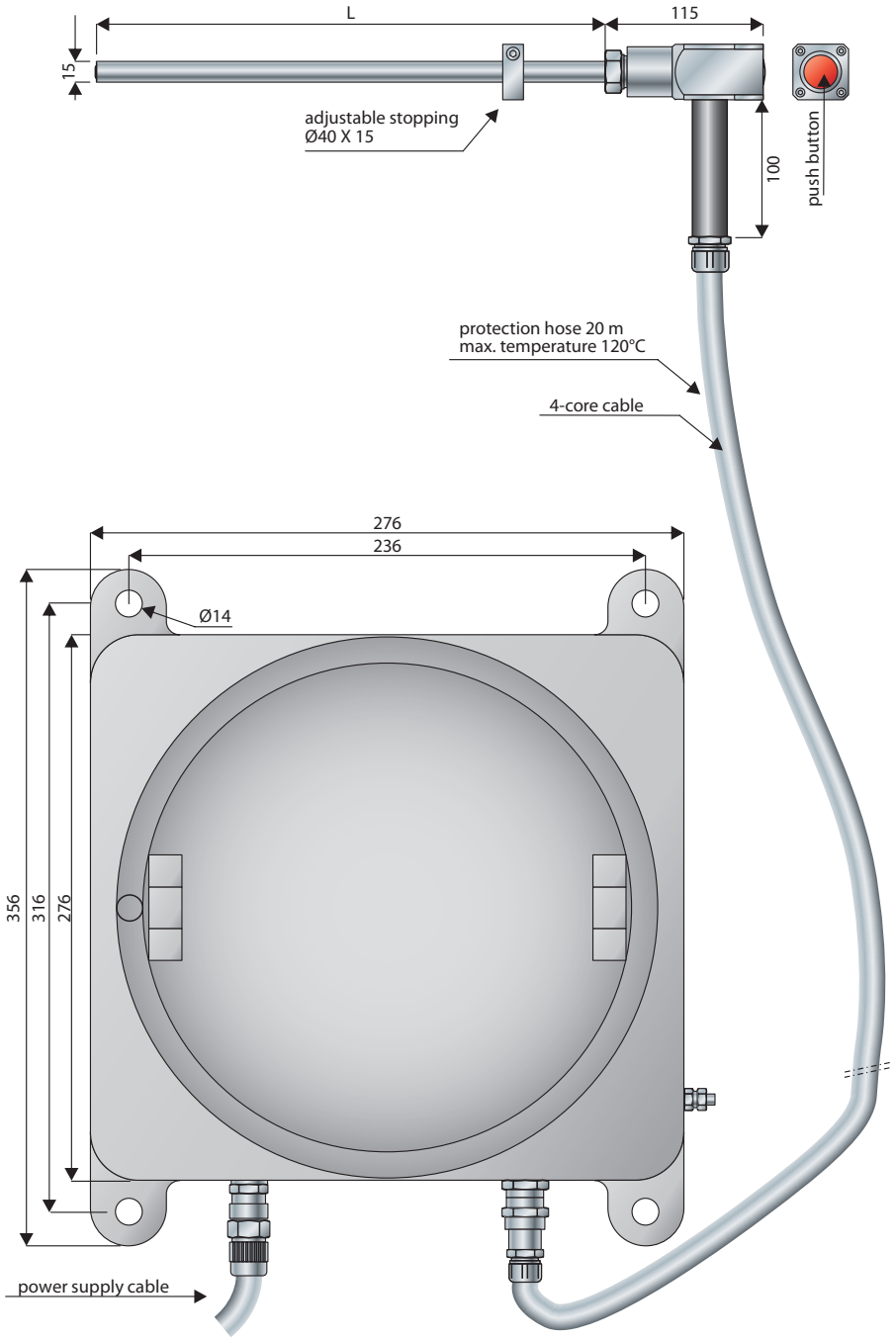
Explosion proof ignition unit with ignition lance to ignite main burner in furnaces or boilers. Ignition can be controlled by a remote switch

Features

- Explosion proof ignition unit
- High energy ignition
- Operation controlled by remote switch
- Easy to handle

Application

- Direct spark ignition for industrial burners in absence of fixed igniters



Semi Portable Ignition Unit	
ignition	high Energy
spark energy	2 J
spark voltage	2 kV
spark frequency	3 Hz
power supply	90 - 264 VAC or 24 VAC
power consumption	37 VA
protection class	IP66
explosion proof	ATEX II 2G Ex d IIC T6
housing material	aluminum
lance material	316 SST
handgrip material	aluminum
lance diameter	15 mm
lance length L	500–2000 mm, in steps of 100 mm
option	bent lance

Mobile Ignition Units

Ignition of main burners at places where a fixed pilot burner or igniter is not available and a spark is insufficient to ignite the main burner

Features

- High energy ignition unit
- Insensitive to moisture and dirt
- Self-aspirating SST igniter
- Available for different gases and pressures

Application

- Furnaces
- Boilers
- Ground flares

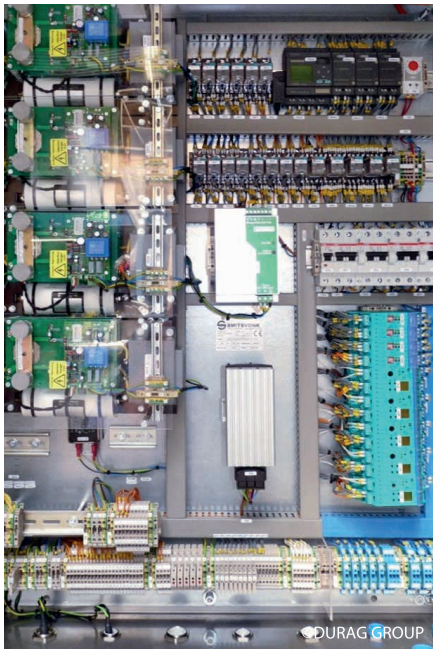
2-wheeled trolly

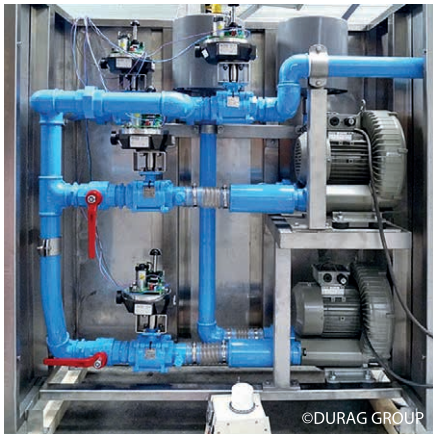
4-wheeled trolly

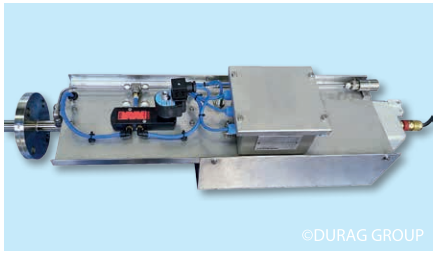
Mobile Ignition Units	
2-wheeled trolly	**4-wheeled trolly**
consisting of:	consisting of:
self-aspirating igniter type 7 diameter: 38 mm length: 1000 mm (other lengths possible) capacity: 20 kW gas: propane igniter materials: 316 and 321 SST	self-aspirating igniter type 51 diameter: 48 and 51 mm length: 1000 mm (other lengths possible) capacity: 180–350 kW gas: propane igniter materials: 310 and 316 SST
explosion proof (ATEX 3G IIB) high energy ignition unit	explosion proof (ATEX 2G IIC) high energy ignition unit
explosion proof switch	explosion proof switch
explosion proof solenoid valve	explosion proof solenoid valve
pressure reducer with downstream pressure gauge	pressure reducer with downstream pressure gauge
2 reels, including all cabling and gas hose	2 reels, including all cabling and gas hose
11 m gas hose and ignition cable	11 m gas hose and ignition cable
25 m power supply cable	25 m for power supply cable
suitable for 24, 120 or 230 VAC	suitable for 24, 120 or 230 VAC
IP66 enclosure for instruments	IP66 enclosure for instruments
not included: gas bottles	not included: gas bottles
options: - igniter diameter 25 mm (not for natural gas) - ionisation flame detection - LPG, butane, natural gas or refinery gas	options: - wall mounted version with longer cable lengths - ionisation flame detection - LPG, butane, natural gas or refinery gas

Complete Systems Skids Engineered Products

- Small (biogas) flares
- Gas and air control skids according to EN746
- Blower skids for combustion air
- Pneumatic retraction units
- Control units with PLC's acc. to ATEX or IECEx certification

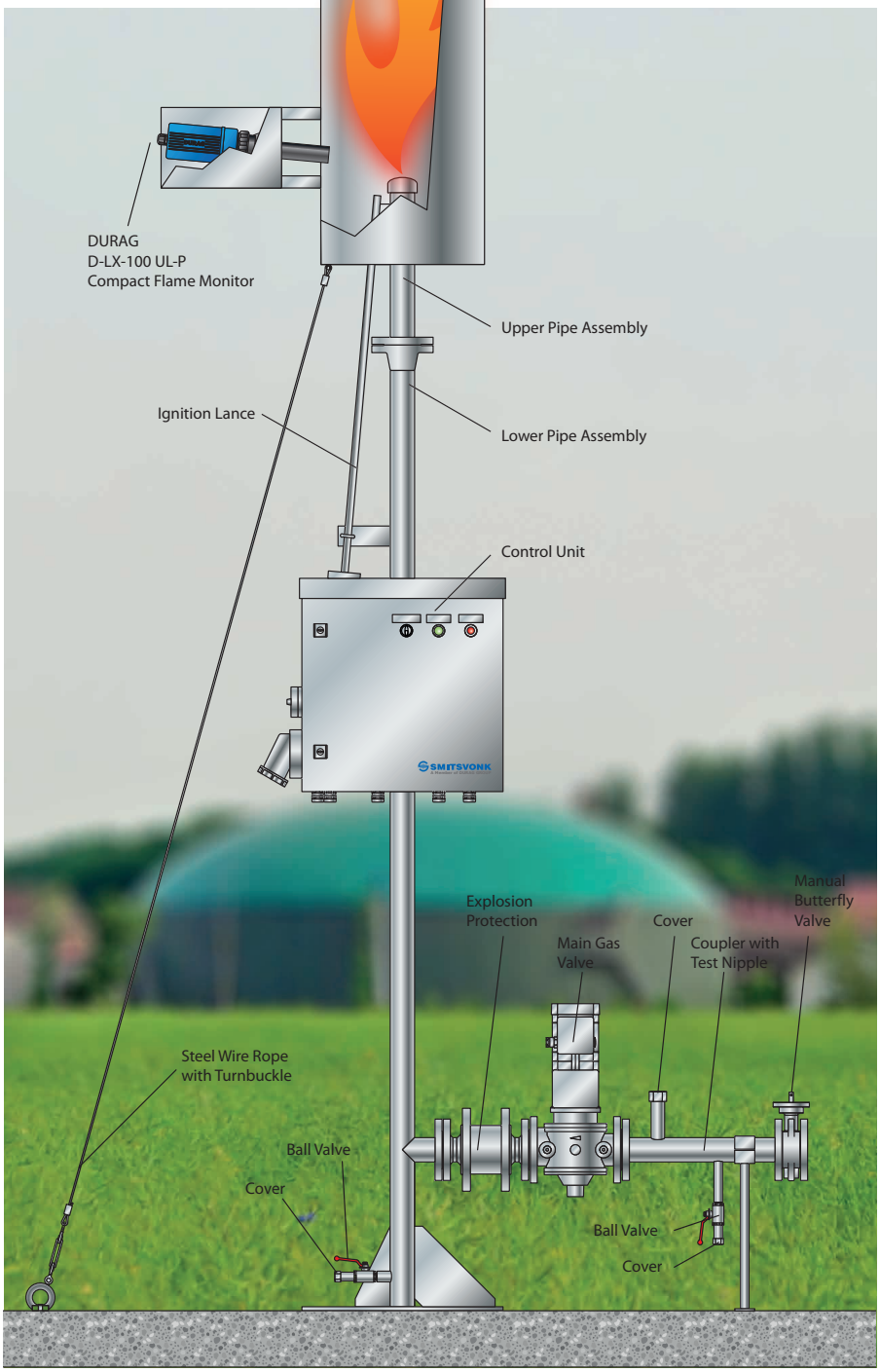






Biogas Flares

- Type Half open, emergency
- Pressure: 3 mbarg or 35 mbarg
- Capacity:
  - DN50 – 60 nm^3/hr
  - DN65 – 80 nm^3/hr
  - DN80 – 125 nm^3/hr
  - DN100 – 250 nm^3/hr



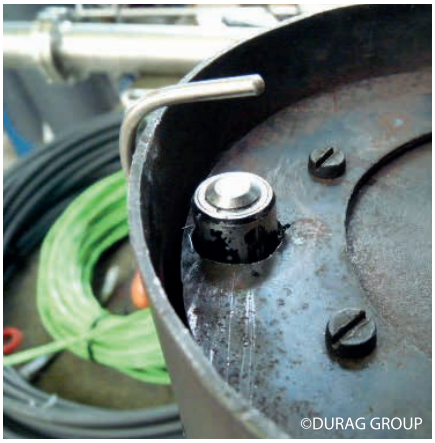
Gas Flares for Events, Shows and Memorials

The high quality and safety of Smitsvonk pro-ducts also allows applications outside the industry. Fire keeps people in suspense, appeals to the senses and evokes emotion.

Big events or shows are often spectacularly designed and staged with fire. The high safety standards at public events require careful planning, sophisticated technology and the corresponding know-how. Smitsvonk has decades of experience in the ignition and use of torches with thousands of installations around the world.

Our products are designed for extreme conditions. They run at high temperature fluctuations, humidity and high soil load 24-hour around-the-clock – ideal also for safe use in public places.

Do you have a fiery idea for your next spectacular show? Contact us!



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