



Product Catalogue

Ignition Systems and Accessories for GFI 35/48/70/89 Pilot Burner HEI500/600 High Energy Igniter

LAMTEC

Sensors and Systems for Combustion Engineering

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Latest-Generation Ignition Systems.

Presenting the GFI pilot burner series

Pilot burners are required to ensure reliable ignition of main burners in industrial ovens and combustion systems. In the standard version, the GFI series is equipped with an integrated ignition transformer, ionisation electrode and SIL 3-certified, EU-type approved ionisation flame sensor (IFW).

Advantages:

- Fuels: natural gas, LPG, coke gas, refinery gas
- Thermal power up to 3 MW in special design up to 6 MW
- Flame length up to 3 m / 9.84 ft
- Intermittent or continuous operation
- SIL 3-certified
- Protection class IP 65
- Avaliable for hazardous areas

Example GFI 35 / GFI 48:



Version	Flame length with LPG
GFI 35	approx. 320 - 600 mm / 12,6 - 23,62” in
GFI 48	approx. 1.300 mm / 4.26 ft

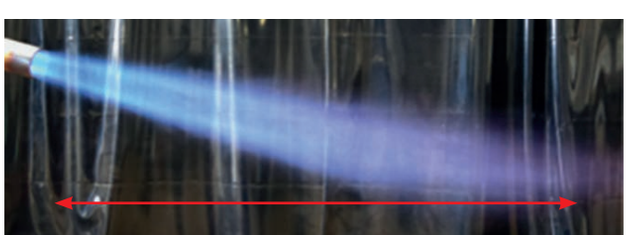


Version	Flame length with natural gas
GFI 48	approx. 750 mm / 29,53” in

Example GFI 70 / GFI 89:



Version	Flame length with propane
GFI 70	approx. 2,000 mm / 6.56 ft
GFI 89	approx. 3,000 mm / 9.84 ft



Version	Flame length with natural gas
GFI 70	approx. 1,200 mm / 3.94 ft
GFI 89	approx. 2,500 mm / 8,20 ft

GFI product range.

- GFI with film display
- GFI without film display



GFI with film display

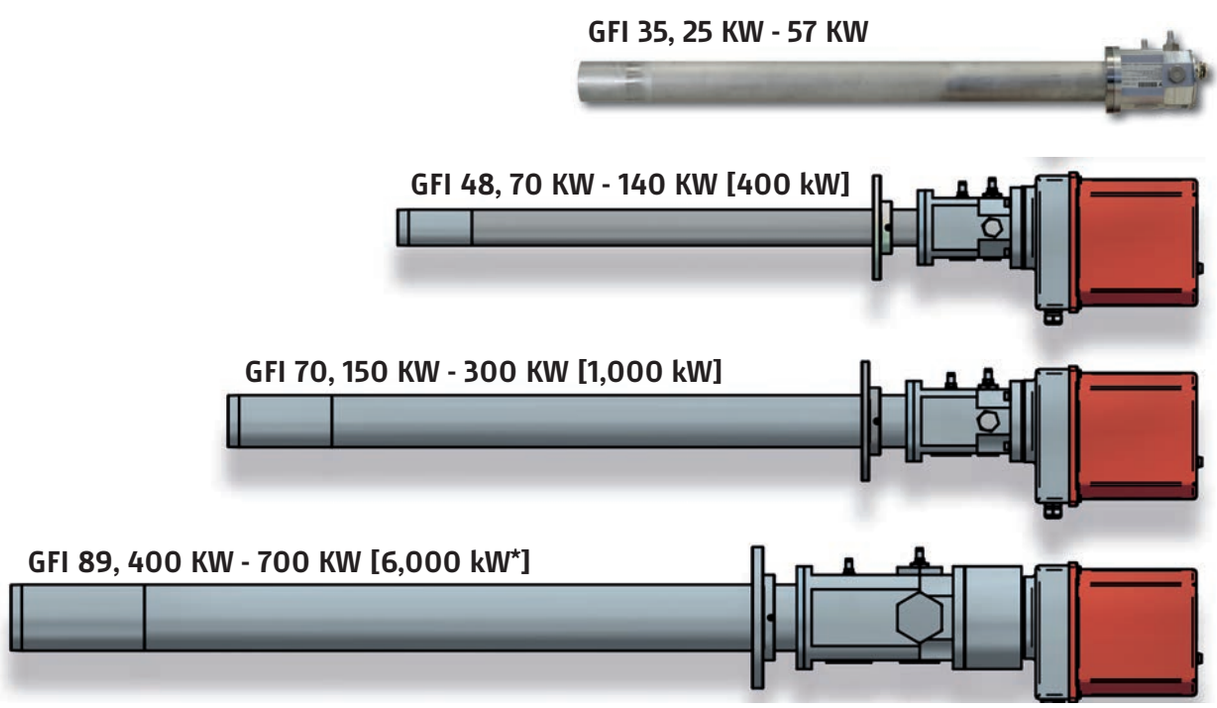


GFI without film display

The GFI product range is used for the following purposes:

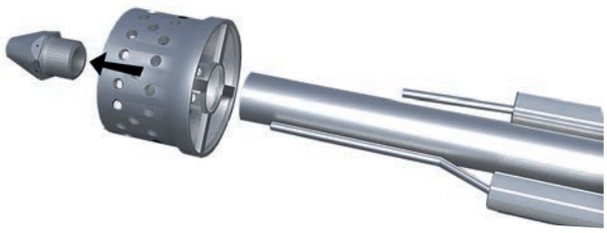
- Preheating the system
- Igniting the main burner
- Supporting the main burner flame

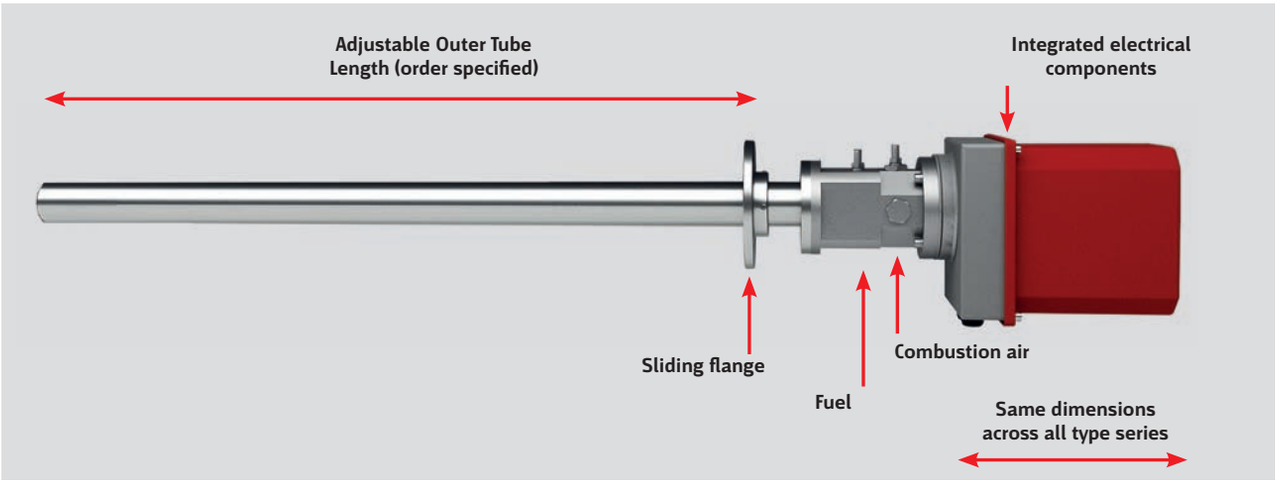
Ignition of the main burner with the aid of natural gas, LPG, coke gas.



* = Up to 3 MW propane or natural gas firing
6 MW, only natural gas firing

The pilot burner operates in accordance with the forced-air and nozzle-mixing principle.





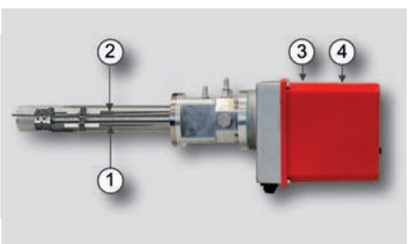
Equipment of GFI35/48/70/89 pilot burner.

Common technical data

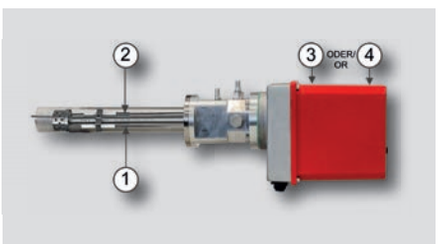
The electrical data are identical for all devices, only the air and gas volume flows differ.

Equipment

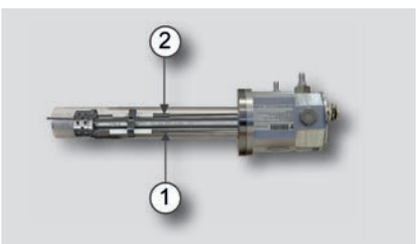
With respect to their electrical equipment, GFI pilot burners **and the external power unit** are available in 3 versions. The versions differ as follows:



Pilot burner version A



Pilot burner versions B



Pilot burner versions C Safe Area or Ex Zone I

Equipment	Version A (standard)	Version B	Version C
1 Ignition electrode	X	X	X
2 Ionisation electrode	X	X[2]	X[2]
3 Spark igniter	X	X	
4 Flame scanner (IFM)[1]	X		
5 Film display	X[2]		

[1] IFM = Ionisation Flame Monitoring

[2] Optional

GFI35 pilot burner for safe area and Ex zone 2.

Technical data

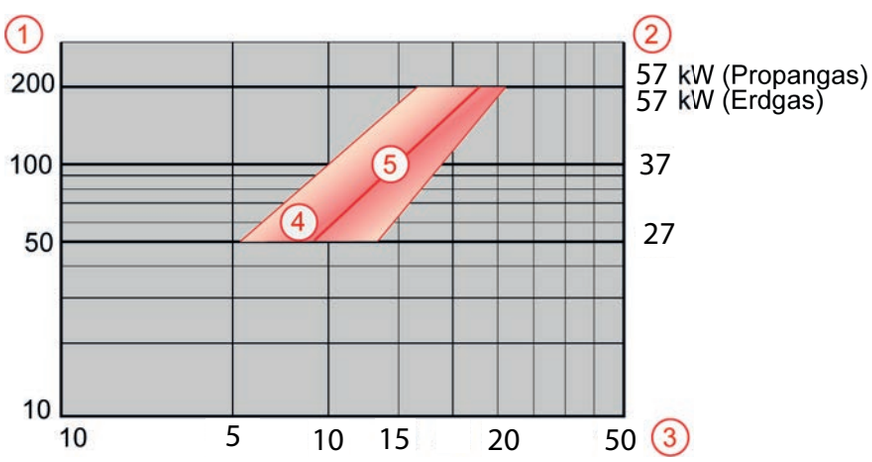


Side view of GFI35 pilot burner design C Safe Area

Order no.	646R0035
Tube diameter	35 mm x 2 mm / 1.38” in x 0.08” in
Mounting flange	Sliding flange (e.g. DN 50, PN 6)
Thermal rating*	27 kW - 57 kW
Flame length	Up to 320 - 600 mm / 12.60” in x 23,62” in
Gas connection	$G^3/_8$“
Gas volume flow	2.6 - 5.8 Nm^3/h
Air connection	$G^3/_4$“
Air volume flow	7.2 - 12.6 Nm^3/h (at 15 mbar) for maximum thermal rating, lower volumetric flow at reduced output, additional air required for superstoichiometric combustion must be provided by the combustion chamber.

* At International Standard Atmosphere, ISA: 15 °C / 59 °F, 1013.25 hPa

Adjusting the GFI 35 flame quality and flame stability



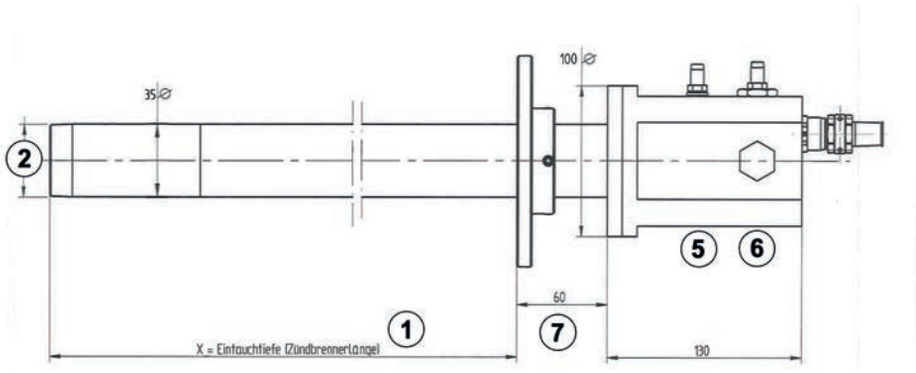
1 **Gas pre-pressure [mbar]**

2 **Thermal power in [kW]**

3 **Air volume flow [m^3/h]**

4 **Stability field in free self-sustaining combustion**

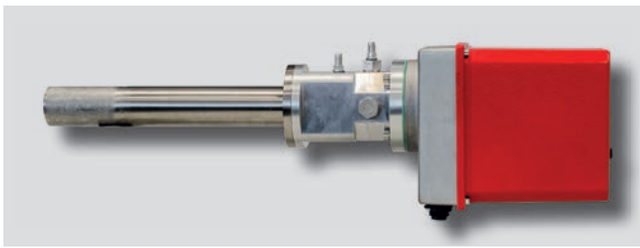
5 **Ideal curve**



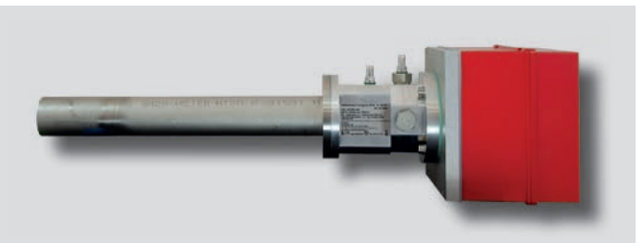
Dimensions of GFI35 pilot burner design Safe Area

GFI48 pilot burner for safe area and Ex zone 2.

Technical data



Side view of GFI48 pilot burner design A/B



Side view of GFI48 pilot burner Ex-Zone 2

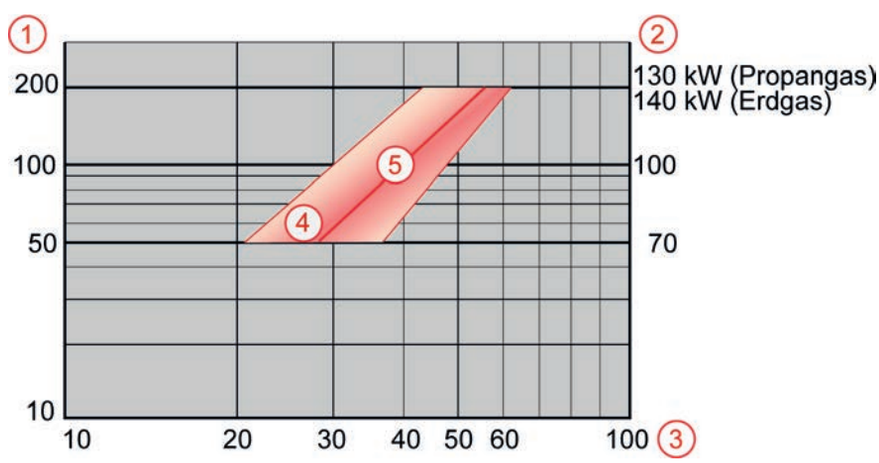


Side view of GFI48 pilot burner design C Safe Area

Order no.	646R0048
Tube diameter	48.3 mm x 2 mm / 1.90” in x 0.08” in
Mounting flange	Sliding flange (e.g. DN 50, PN 6)
Thermal rating*	70 kW - 130 kW (propane) 70 kW - 140 kW (natural gas)
Flame length	Up to 800 mm / 31.5” in
Gas connection	1/2“ BSPP inner threads
Gas volume flow	15 Nm^3/h natural gas (at 200 mbar) 6 Nm^3/h propane (at 200 mbar)
Air connection	1“ BSPP inner threads
Air volume flow	60 Nm^3/h (at 15 mbar) for maximum thermal rating, lower volumetric flow at reduced output, additional air required for superstoichiometric combustion must be provided by the combustion chamber.

* At International Standard Atmosphere, ISA: 15 °C / 59 °F, 1013.25 hPa

Adjusting the GFI 48 flame quality and flame stability



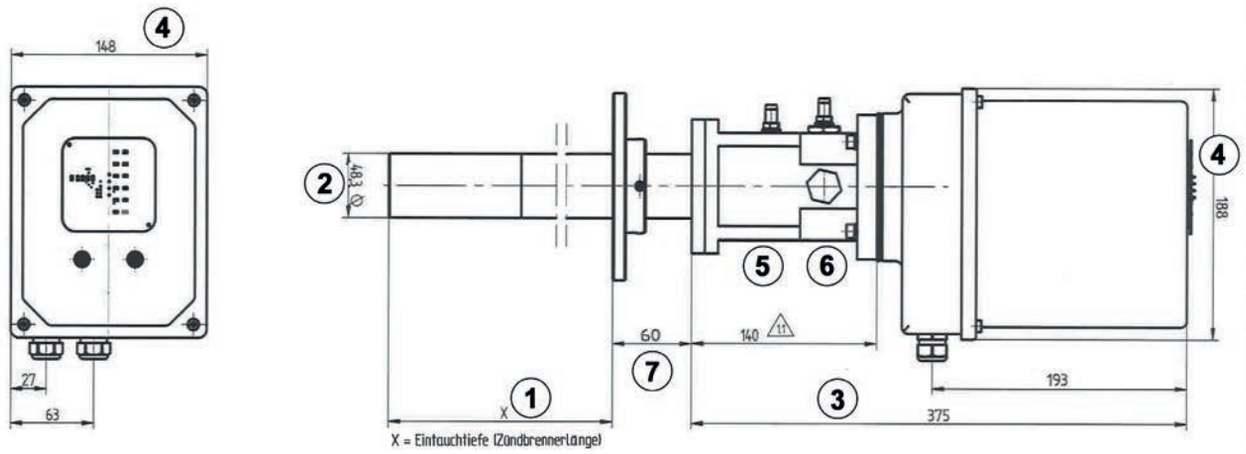
1 **Gas pre-pressure [mbar]**

2 **Thermal power in [kW]**

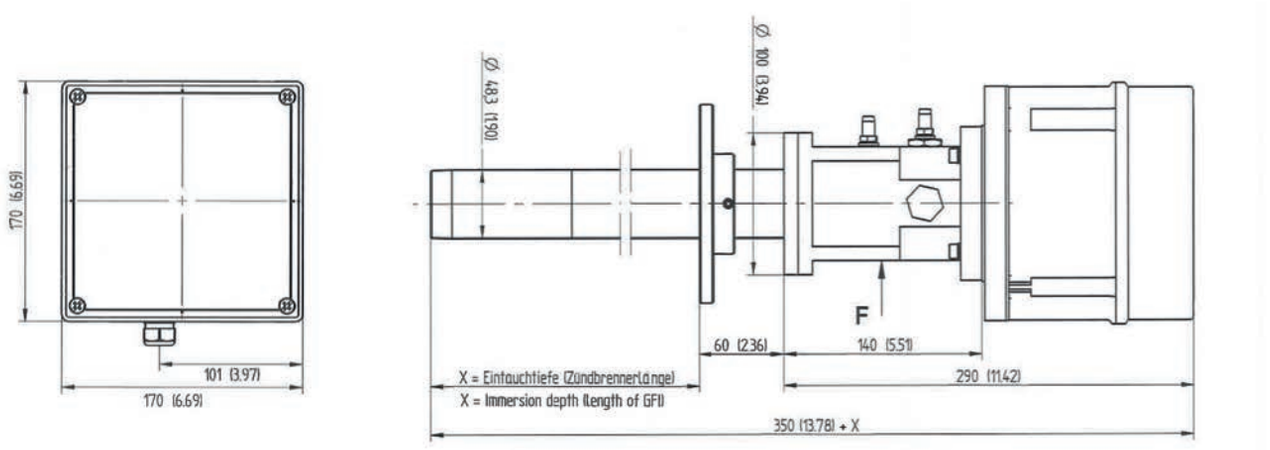
3 **Air volume flow [m^3/h]**

4 **Stability field in free self-sustaining combustion**

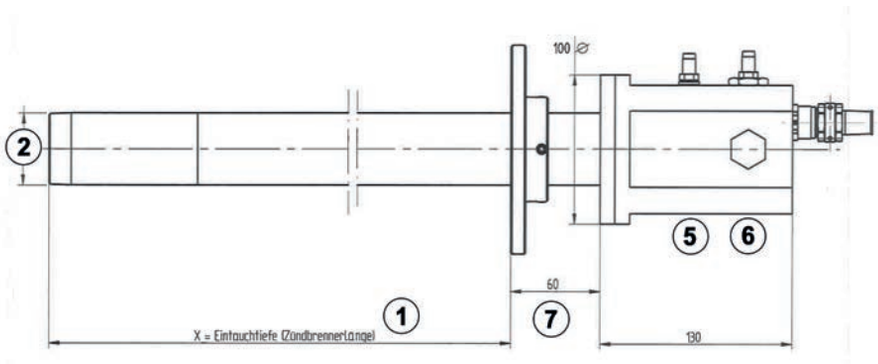
5 **Ideal curve**



Dimensions of GFI48 pilot burner design A/B



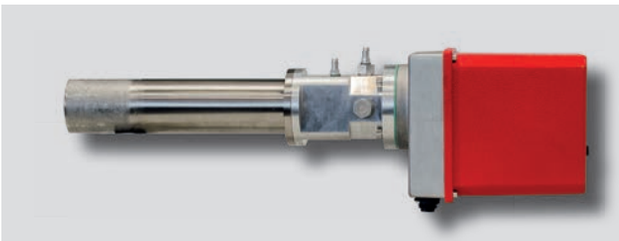
Dimensions of GFI48 pilot burner Ex-Zone 2



Dimensions of GFI48 pilot burner design C Safe Area

GFI70 pilot burner for safe area and Ex zone 2.

Technical data



Side view of GFI70 pilot burner design A/B



Side view of GFI70 pilot burner Ex-Zone 2

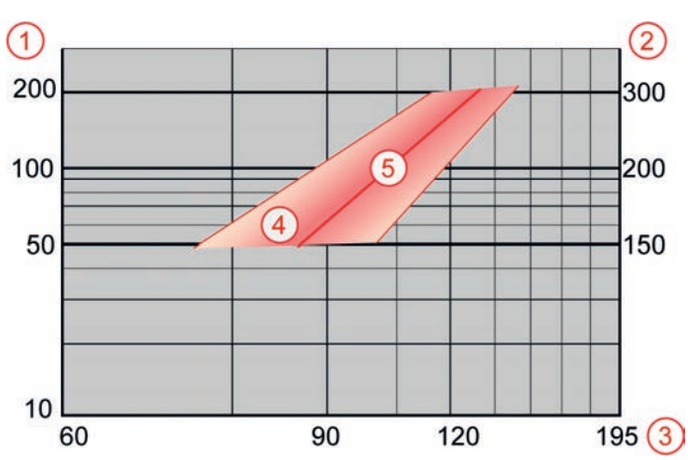


Side view of GFI70 pilot burner design C Safe Area

Order no.	646R0070
Tube diameter	70 mm x 2 mm / 2.76" in x 0.08" in
Mounting flange	Sliding flange (e.g. DN 65, PN 6)
Thermal rating*	150 kW - 300 kW
Flame length	Up to 1,200 mm / 3,94 ft
Gas connection	3/4" BSPP inner threads
Gas volume flow	30 Nm^3/h natural gas (at 200 mbar) 12 Nm^3/h propane (at 200 mbar)
Air connection	1 1/2" BSPP inner threads
Air volume flow	125 Nm^3/h (at 12 mbar) for maximum thermal rating, lower volumetric flow at reduced output, additional air required for superstoichiometric combustion must be provided by the combustion chamber.

* At International Standard Atmosphere, ISA: 15°C / 59 °F, 1013.25hPa

Adjusting the GFI 70 flame quality and flame stability



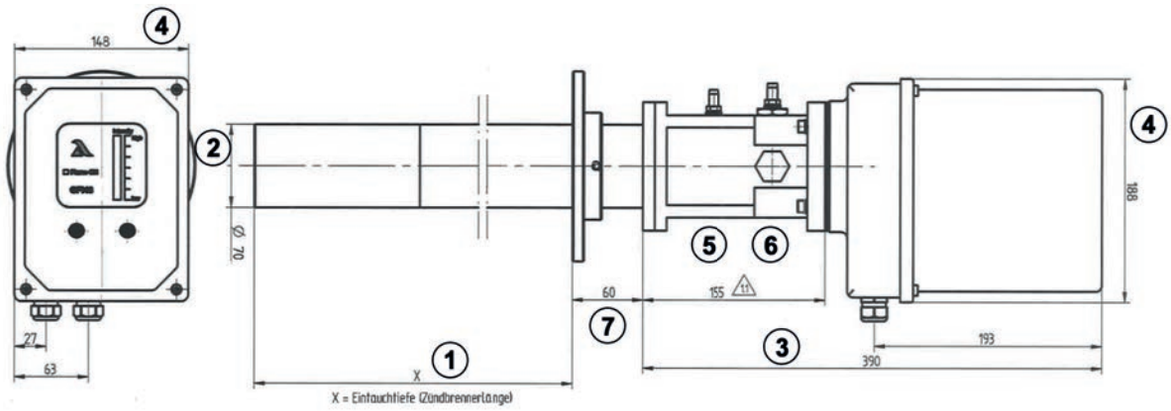
1 Gas pre-pressure [mbar]

2 Thermal power in [kW]

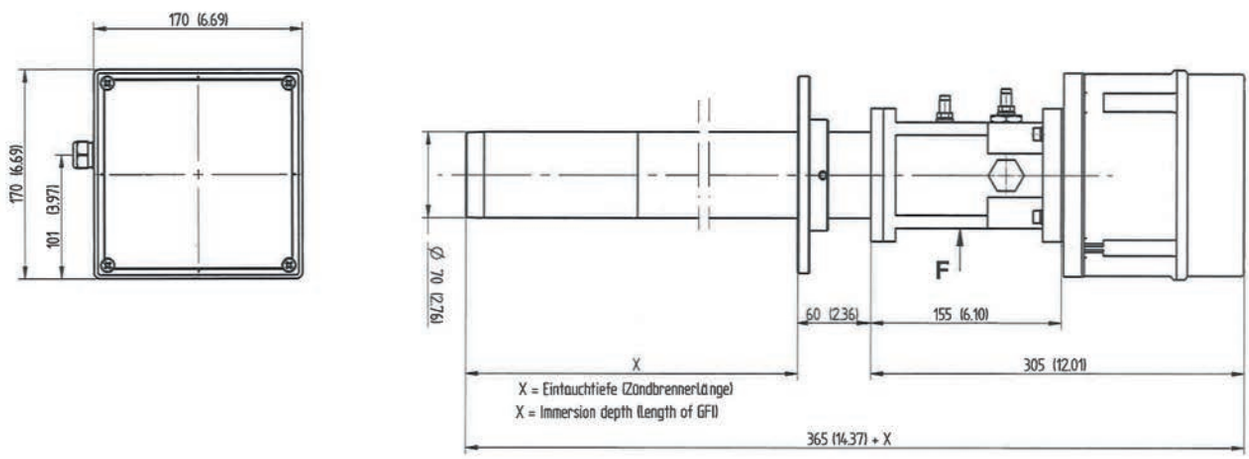
3 Air volume flow [m^3/h]

4 Stability field in free self-sustaining combustion

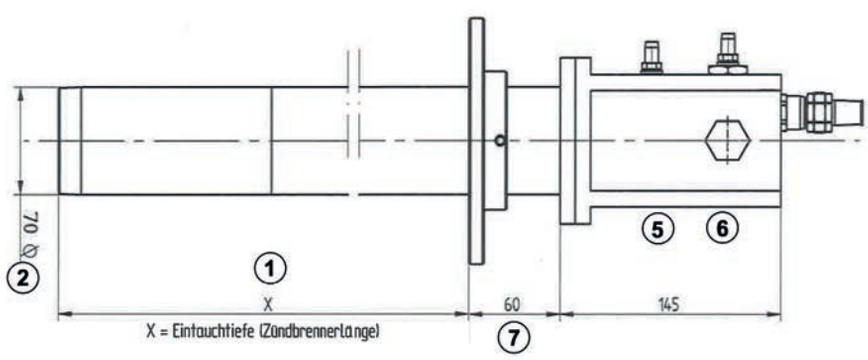
5 Ideal curve



Dimensions of GFI70 pilot burner design A/B



Dimensions of GFI70 pilot burner Ex-Zone 2



Dimensions of GFI70 pilot burner design C Safe Area

GFI89 pilot burner for safe area and Ex zone 2.

Technical data



Side view of GFI89 pilot burner design A/B



Side view of GFI89 pilot burner Ex-Zone 2

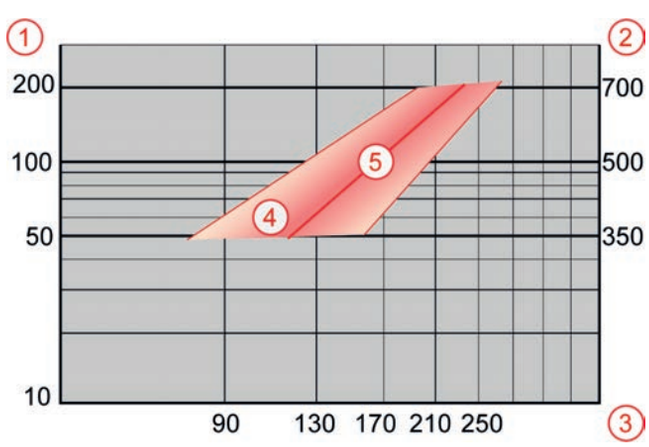


Side view of GFI89 pilot burner design C Safe Area

Order no.	646R0089
Tube diameter	88.9 mm x 2 mm / 3.5” in x 0,08” in
Mounting flange	Sliding flange (e.g. DN 80, PN 6)
Thermal rating*	400 kW - 700 kW
Flame length	Up to 3,000 mm / 9.84 ft
Gas connection	1 1/2“ BSPP inner threads
Gas volume flow	70 Nm^3/h natural gas (at 200 mbar) 28 Nm^3/h propane (at 200 mbar)
Air connection	2“ BSPP inner threads
Air volume flow	250 Nm^3/h (at 15 mbar) for maximum thermal rating, lower volumetric flow at reduced output, additional air required for superstoichiometric combustion must be provided by the combustion chamber.

* At International Standard Atmosphere, ISA: 15°C / 59 °F, 1013.25hPa

Adjusting the GFI 89 flame quality and flame stability



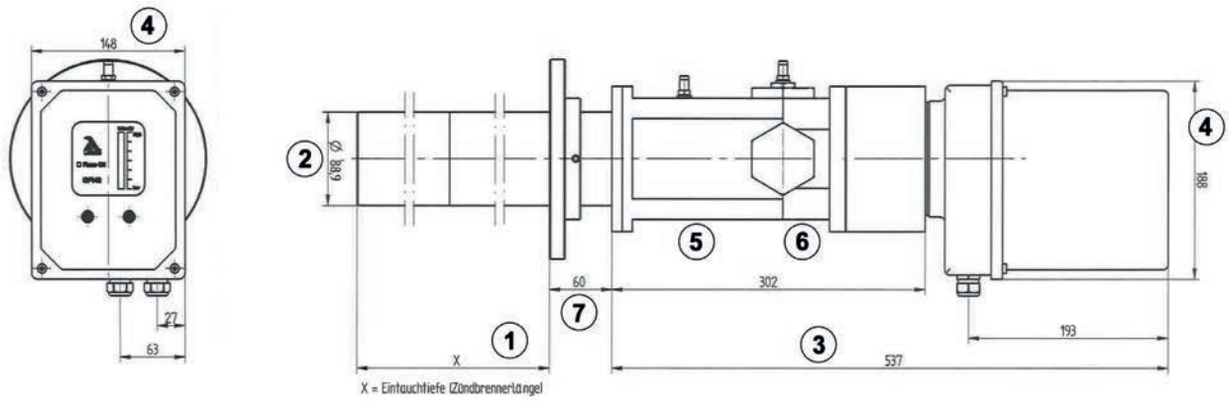
1 Gas pre-pressure [mbar]

2 Thermal power in [kW]

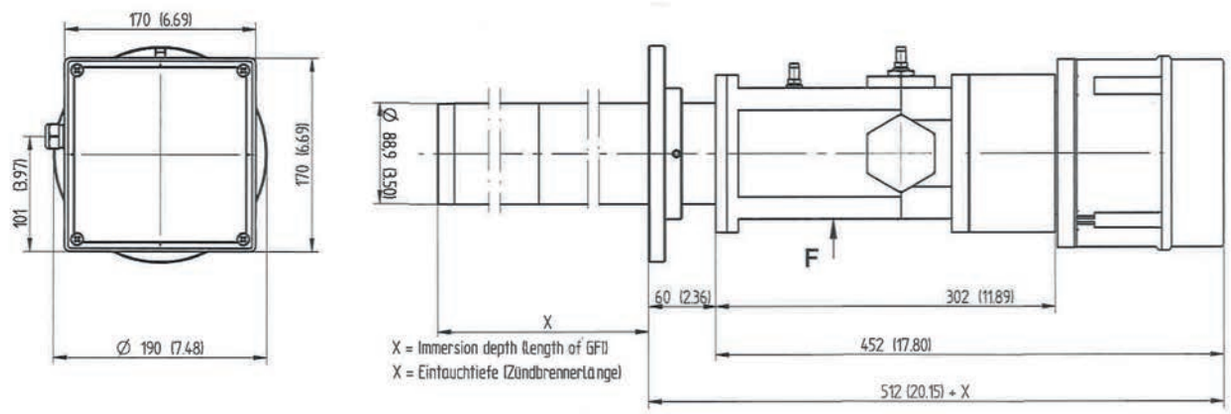
3 Air volume flow [m^3/h]

4 Stability field in free self-sustaining combustion

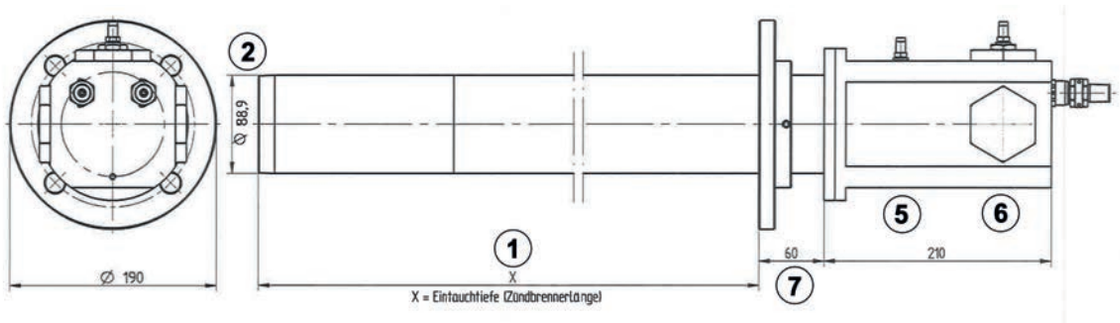
5 Ideal curve



Dimensions of GFI70 pilot burner design A/B



Dimensions of GFI70 pilot burner Ex-Zone 2



Dimensions of GFI89 pilot burner design C Safe Area

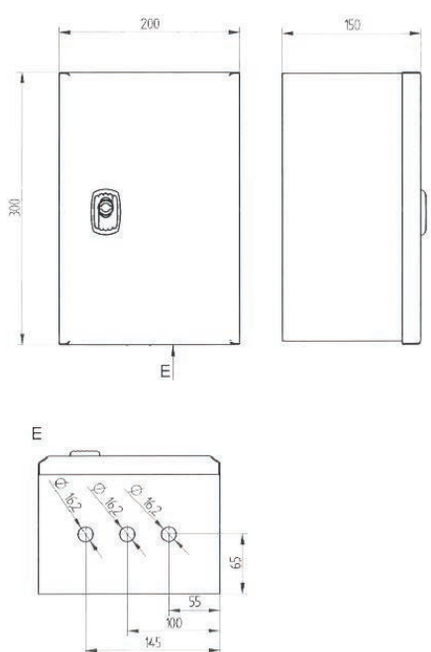
External power unit, safe area.

Technical data



External power unit, safe area

Order no.	646R0500...SAF
Material	Steel, painted RAL7035
Cable lengths	IP66
Temperature range	-20 ... +60 °C / -4 °F ... 140 °F



Dimensions external power unit safe area

External power unit for Ex zone 1.

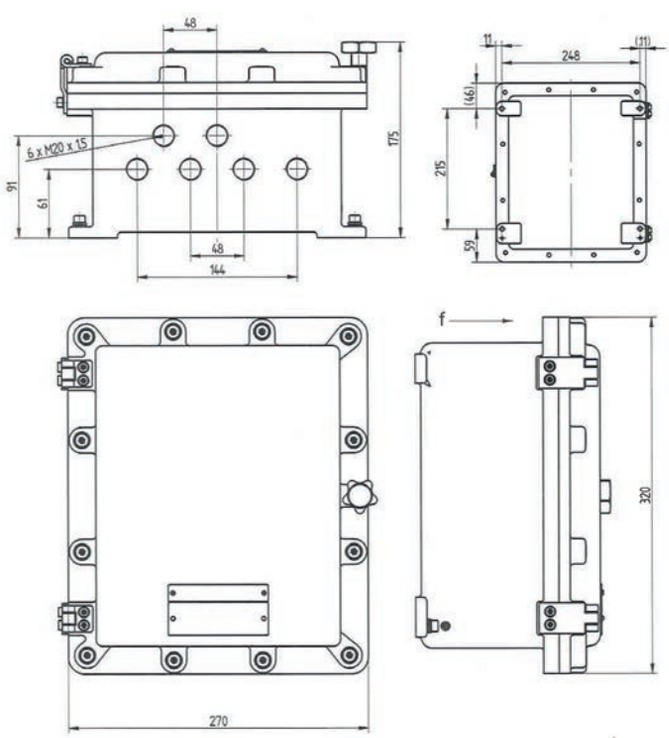
Technical data



External power unit for Ex zone 1

Order no.	646R0500...Ex 1
Explosion protection	II 2 G Ex db IIB + H2 T6/T5 GbII 2 D Ex tb IIIC T80 °C...T95 °C Db
Material	Copper-free aluminium, stainless steel 1.4404/316
Certificates / test certificates Certificate holder Rose Systemtechnik	ITS 15 ATEX 18302X, IECEx ITS 15.0041X
Protection class	IP 66 in accordance with EN 60529
Impact resistance	7 joules in accordance with EN 60079-0
Temperature range	-20 ... +60 °C / -4 °F ... 140 °F

Design	For Ex zone 1 & variant with external power unit
With standard threaded connection	-20 °C ... +80 °C / -4 °F ... 176 °F
With Ex 1 conduit threaded connection	-40 °C ... +80 °C / -40 °F ... 176 °F



Dimensions external power unit for Ex-Zone I

GFI35/48/70/89 pilot burner.

Common technical data

The electrical data are identical for all devices, only the air and gas volume flows differ.

Versions A and B: Power supply voltage connection	
Electrical data	120/230 VAC (within the scope of the EU Gas Appliances Directive), see rating plate mains tolerance according to DIN EN 60730-1
Mains frequency	50/60 Hz
Power consumption	At UN = 230 V: 230 VA ignition transformer, 10 VA flame scanner At UN = 120 V: 192 VA ignition transformer, 10 VA flame scanner
Spark igniter duty cycle	Duty cycle = 16 % on 1 min. (10"on; 50" off) -20 °C < Ta < 60 °C
External device fusing (mandatory)	4 A
Version A and B:integrated flame scanner	
SIL classification level	SIL3
Ionisation input	
Ionisation current	from 1 µADC flame ON
Operating mode	Continuous operation capable
Flame signal output contact	
Contact type	Safety-oriented, floating contact
Contact type	NO, for "flame on", the contact is closed
Level of protection	SKII, base isolation for the status signal
Permissible switching voltage	≤ 230 VAC ≤ 48 VDC
Permissible switching current	Max. 0.5 A cos phi 0.4 min. 10 mA
Contact fusing	0.5 AT (internal, soldered)
Safety time (FFDT)	
Response time in the event of the flame going out	t_v Off configurable via dip switch to 1 s or 3 s (standard 1 s)
Switch-on time	t_v On ≤ 1 s
Measuring shunt	runs mains potential
Transmission ratio of measurement voltage to ionisation current	10 mV (DC) = 1 µA (DC)
Intrinsic error	≤ 2%
Electrical safety	Contact protection by means of protective impedances
Min. impedance of the connected measurement device	1 MΩ

GFI35/48/70/89 pilot burner.

Common technical data

Version B and C: Connection of external flame scanner to the ionisation electrode	
Cable specifications	
Cable type	RG62 coaxial cable
Cable lengths	< 10 m / 32,81 ft
Inner conductor	Solid copper-plated steel wire, uninsulated Ø:
Wire insulation	PE hollow space insulation (helix made from PE strands with PE hose on top) Ø: 3.7 mm / 0,146" in
Shield	Braided from bare Cu wires, 96 % coverage (nominal value)
Outer shell	PVC, black outside diameter: 6.15 ± 0.18 mm / 0,24" in ± 0,0071" in
Conductor resistance	max. 144 Ohm/km / 3281 ft
Operating capacity	max. 43 pF/m (1 kHz)
Rated voltage	0.8 kV (50 Hz)
Test voltage	2 kV
Temperature range	-40 ... +80 °C / -40 °F ... 176 °F (fixed installation)
Version B and C: Power supply voltage connection to the external spark igniter	
Cable specifications	
Cable lengths	Max. 200 m / 656 ft
Cable cross-section	3 x 1.0 mm^2 / 3 x 17 AWG
Insulation	PVC
Temperature range	-40 ... +90 °C / -40 °F ... 194 °F
Version B and C: Connection of external spark igniter to the ignition electrode	
Electrical data	
Ignition voltage to ground	Max. 8 kV (at UN = 230 V) Max. 7 kV (at UN = 120 V) For Ex zone 2: max. 5 kV for both voltage ranges
Cable specifications	
Cable lengths	max. 20 m / 65.62 ft
Cable cross-section	1 x 1.0 mm^2/ 1 x 17 AWG
Insulation	Silicone, red-brown
Temperature range	-60 ... +180 °C / -76 ... 356 °F

Version B and C: Ground cable		
Cable specifications		
Cable lengths	Max. 8 kV (at UN = 230 V) Max. 7 kV (at UN = 120 V) For Ex zone 2: max. 5 kV for both voltage ranges	
Cable specifications		
Cable lengths	Max. 200 m / 656.17 ft	
Cable cross-section	1 x 1.5 mm² / 1 x 15 AWG and/or according to regional regulation	
Operating modes		
Permitted operating modes	Intermittent operation/continuous operation	
Conditions for use		
Relative air humidity	Max. 85 % (non-condensing)	
Environmental conditions		
Operation	permissible temperature range	Safe area: -20 ... +60 °C / -4 ... 140 °F (standard, without display) -40 ... +60 °C / -40 ... 140 °F (special, without display) 0 ... +60 °C / 32 ... 140 °F (with display) Ex zone 1 -20 ... +80 °C / -4 ... 176 °F (with standard threaded connection) -40 ... +80 °C / -40 ... 176 °F (with Ex I conduit threaded connection) Ex zone 2 -20 ... +60 °C / -4 ... 140 °F
Transport	permissible temperature range	-20 ... +60 °C / -4 ... 140 °F
Storage	permissible temperature range	-20 ... +60 °C / -4 ... 140 °F
Protection class	DIN EN 60529	IP65 / NEMA 4 / NEMA 4X

Table, comparison of GFI models				
	GFI35	**GFI48**	**GFI70**	**GFI89**
Ignition	Ignition of the main burner with the aid of natural gas, LPG, coke gas. Can ignite any type of gas as well as Light Fuel Oil (LFO) or Heavy Fuel Oil (HFO)			
Temperature	Safe area: -20 ... +60 °C / -4 ... 140 °F (standard, without display) -40 ... +60 °C / -40 ... 140 °F (special, without display) 0 ... +60 °C / 32 ... 140 °F (with display) Ex zone 1 -20 ... +80 °C / -4 ... 176 °F (with standard threaded connection) -40 ... +80 °C / -40 ... 176 °F (with Ex I conduit threaded connection) Ex zone 2 -20 ... +60 °C / -4 ... 140 °F			
Area of application	Safe area Ex zone1, Ex zone 2 ATEX, IECEx			
Tube diameter (mm)	35 x 2	48.3 x 2	70 x 2	88.2 x 2
Thermal rating (kW)	27 - 57	Natural gas 70 - 140 // propane 70 - 130	150 - 300	400 - 700
Flame length up to (mm)	320 - 600	800	1,200	3,000
Gas volume flow 200 mbar (Nm³/h)	2.6 - 5.8	Natural gas 15 // propane 6	Natural gas 30 // propane 12	Natural gas 70 // propane 28
Sliding flange DN - PN	50 - 6	50 - 6	65 - 6	80 - 6

Accessories and spare parts for GFI pilot burners

- Thermal jacket for GFI pilot burners
- High-pressure needle valve for GFI pilot burners
- Ball valve for GFI pilot burners
- Double nipple for GFI pilot burners
- Air regulation sleeve for GFI pilot burners
- Manometer for GFI pilot burners
- Feed-through flange with seal and screws
- F130I flame scanner
- Inspection diode for GFI
- Transformer for GFI pilot burners



Thermal jacket for GFI pilot burners



High-pressure needle valve for GFI pilot burners



Ball valve for GFI pilot burners



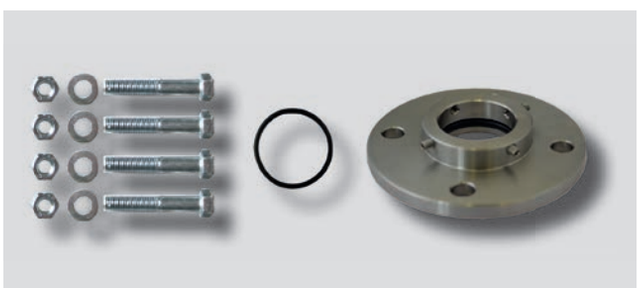
Double nipple for GFI pilot burners



Air regulation sleeve for GFI pilot burners



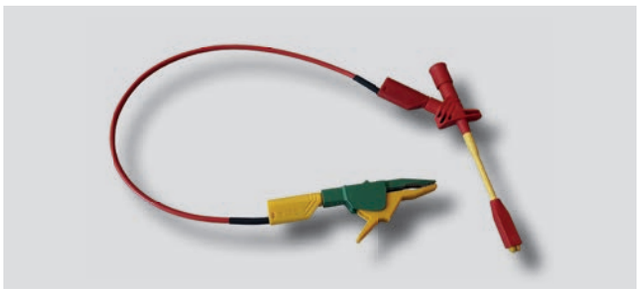
Manometer for GFI pilot burners



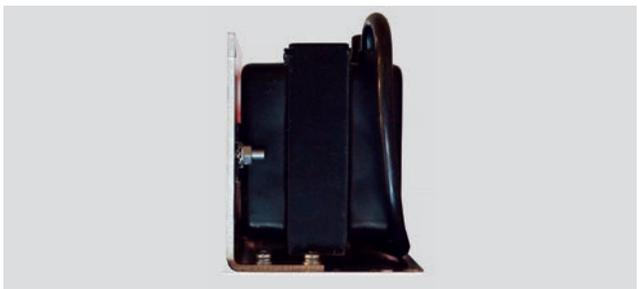
Feed-through flange with seal and screws



F130I flame scanner



Inspection diode for GFI



Transformer for GFI pilot burners

Order information

Spare parts for GFI48

Designation/type	Selection
Ionisation and ignition electrodes with spacer and centring holder for the electrode rods	646R1115
Spacer and centring holder with insulator for the electrode rods	646R1116
Flame stabiliser, material 1.4301/1.4305	646R1100
Nozzle for natural gas	646R1105
Nozzle for propane	646R1106

Spare parts for GFI70

Designation/type	Selection
Ionisation and ignition electrodes with spacer and centring holder for the electrode rods	646R2115
Spacer and centring holder with insulator for the electrode rods	646R2116
Flame stabiliser, material 1.4301/1.4305	646R2100
Nozzle for natural gas	646R2105
Nozzle for propane	646R2106

Spare parts for GFI89

Designation/type	Selection
Ionisation and ignition electrodes with spacer and centring holder for the electrode rods	646R3115
Spacer and centring holder with insulator for the electrode rods	646R3116
Flame stabiliser, material 1.4301/1.4305	646R3100
Nozzle for natural gas	646R3105
Nozzle for propane	646R3106

Spare parts for GFI48/GFI70/GFI89

Designation/type	Selection
Ignition transformer for GFI ignition systems, 230 VAC / 8 kV	646P1040
Ignition transformer for GFI ignition systems, 120 VAC / 8 kV	646P1041
Ionisation flame monitoring (IFM) F130i, SIL3, 230 VAC power supply voltage, for installation on DIN rail, continuous operation, FFTD 1 s	659G1001
Ionisation flame monitoring (IFM) F130i, SIL3, 120 VAC power supply voltage, for installation on DIN rail, continuous operation, FFTD 1 s	659G1002

Sliding flange for GFI48/GFI70/GFI89

Designation/type	Selection
GFI48 sliding flange with O-ring seal and grub screws, DN50 PN6, 1.4571 (4 mounting holes)	646R1151
GFI48 special sliding flange with O-ring seal and grub screws, 1.4571 (2 mounting holes)	646R1152
GFI70 sliding flange with O-ring seal and grub screws, DN65 PN6, 1.4571 (4 mounting holes)	646R2151
GFI89 sliding flange with O-ring seal and grub screws, DN80 PN6, 1.4571 (4 mounting holes)	646R3151

Connection cable for GFI48/GFI70/GFI89

Designation/type	Selection
Connection cable with mating connector for plug connection, length 2 m	646R0150

General accessories for GFI48/GFI70/GFI89

Designation/type	Selection
Double nipple 3", material: 1.4408	646R9001
Double nipple 1" external/external, stainless steel	646R9015
Double nipple R1 1/2" external/external, stainless steel	646R9016
Double nipple R1 3/4" external/external, stainless steel	646R9014
Double nipple R1 2" external/external, stainless steel	646R9017
Hexagon reducing double nipple NPT 3/4" on R 1/2", material: 1.4571	646R9030
Hexagon reducing double nipple NPT 11/4" on R 1", material: 1.4571	646R9031
Reducer, conical R 1/2 A X G 3/4 I MS.nickel-plated	646R9032
Stainless steel manometer 0 ... 160 mbar, housing Ø 63 mm, connection G1/8“ vertical	646R9040
Sliding nipple with O-ring seal and 3" external thread, 1.4301, for GFI48	646R9055
Needle valve 1 1/4" NPT internal thread, material 1.4571	646R9058
Needle valve 3/4" NPT internal thread, material 1.4571	646R9059
Ball valve for gas 1/2" internal/external, with DVGW approval, brass	646R9060
Ball valve for gas 3/4" internal/external, with DVGW approval, brass	646R9061
Ball valve for gas 1 1/2" internal/external, with DVGW approval, brass	646R9062
Ball valve for gas 2" internal/external, with DVGW approval, brass	646R9063
Ball valve (Mini) Ballofix for gas 3/4" internal/external, brass	646R9065
Ball valve (stainless steel) 3" internal/internal with lever, DN80	646R9069
Air regulation sleeve 1" internal/internal, black cast iron	646R9102
Air regulation sleeve 1 1/2" internal/internal, black cast iron	646R9103
Air regulation sleeve 3/4" internal/internal, black cast iron	646R9104
Air regulation sleeve 2" internal/internal, black cast iron	646R9105
Inspection diode for GFI	646R0100

High Energy Igniter.

BASIC HEI500 and High-End HEI600

The non-fuel-based high energy igniter is used for the following applications:

- oil and gas
- petrochemicals
- chemicals

It is used for the following purposes:

- ignition of the main fuel

Application

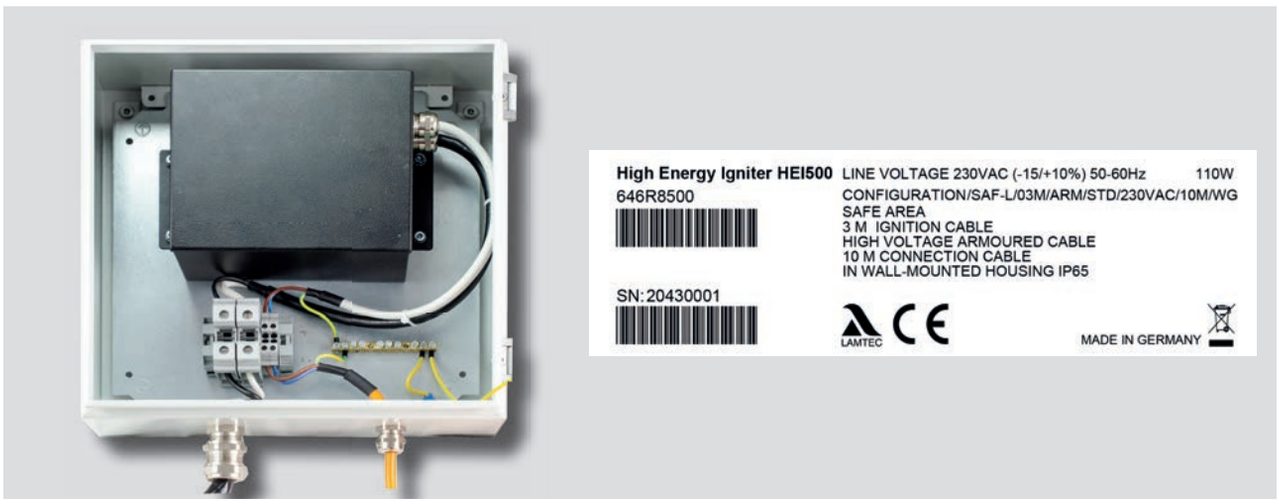
- Ignites liquid and gaseous fuels in burners of all output ranges.
- Compact design: control unit and ignition lance form one unit
- 100% watertight
- Suitable for Class 3 specifically in accordance with NFPA 8501/8502 for electrical ignition devices
- Available for danger areas
- High-intensity sparks even with long ignition lances



External steel housing High-energy igniters HEI600 and HEI500

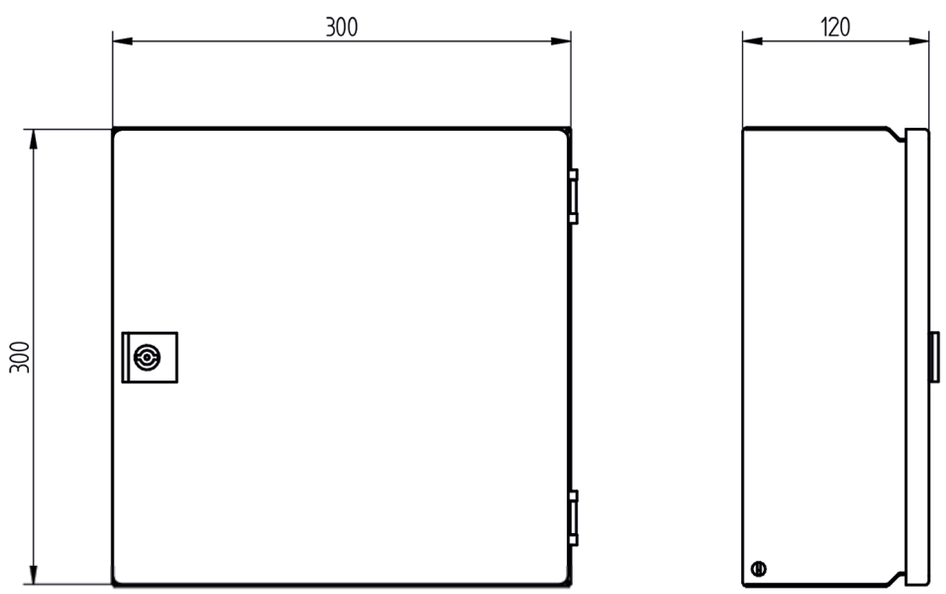
BASIC HEI500.

Technical data



External steel housing inside view High-energy igniter HEI500

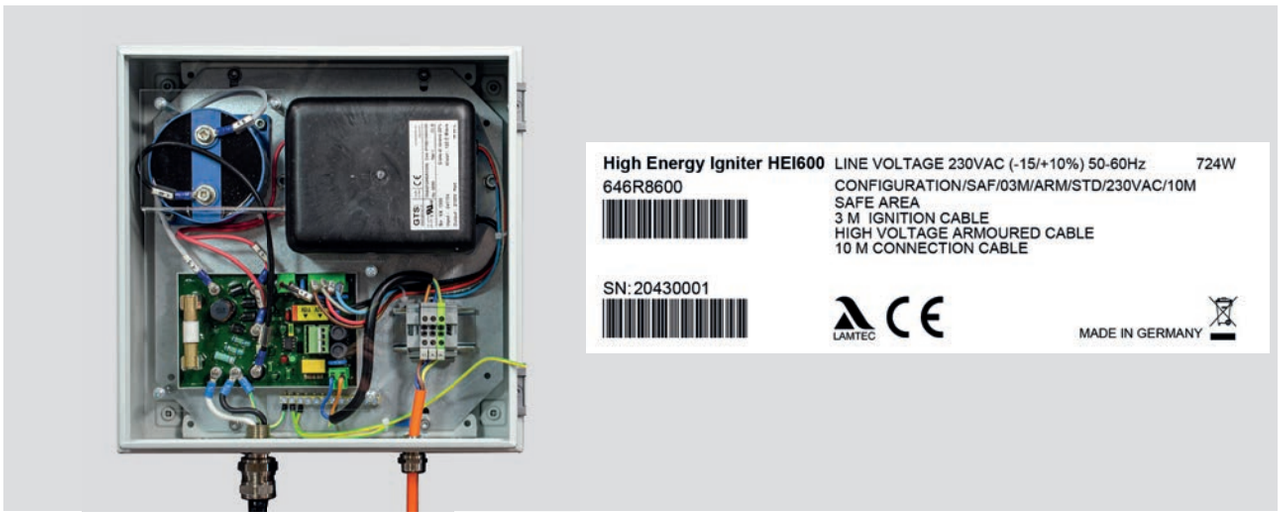
Order no.	646R8500
Ignition power	18 joules
Ignition frequency	2 Hz
Power supply voltage	115/230 VAC 50 Hz (60 Hz on request)
Ambient temperature	-40 °C ... +60 °C / -40 ... 140 °F
Input power	110 W (at 2 sparks per second)
Explosion protection	Ex zone II available for electrical power unit
Protection class	IP65



Dimensions of the external steel housing HEI500

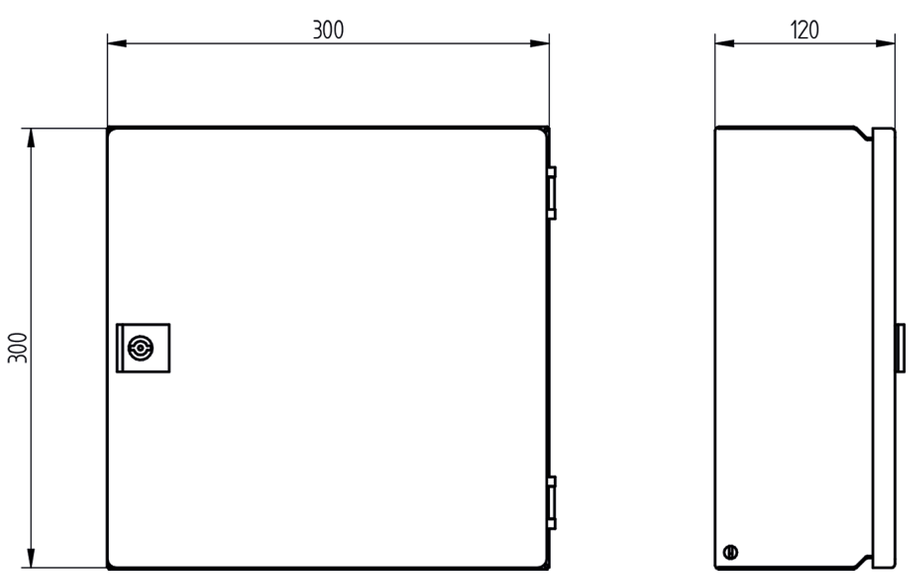
High-End HEI600.

Technical data



External steel housing inside view High-energy igniter HEI600

Order no.	646R8600
Ignition power	10 joules
Ignition frequency	26 Hz
Power supply voltage	115/230 VAC 50 Hz (60 Hz on request)
Ambient temperature	-40 °C ... +60 °C / -40 ... 140 °F
Input power	724 W (at 26 sparks per second)
Explosion protection	Ex zone II available for electrical power unit
Protection class	IP65/66



Dimensions of the external steel housing HEI600

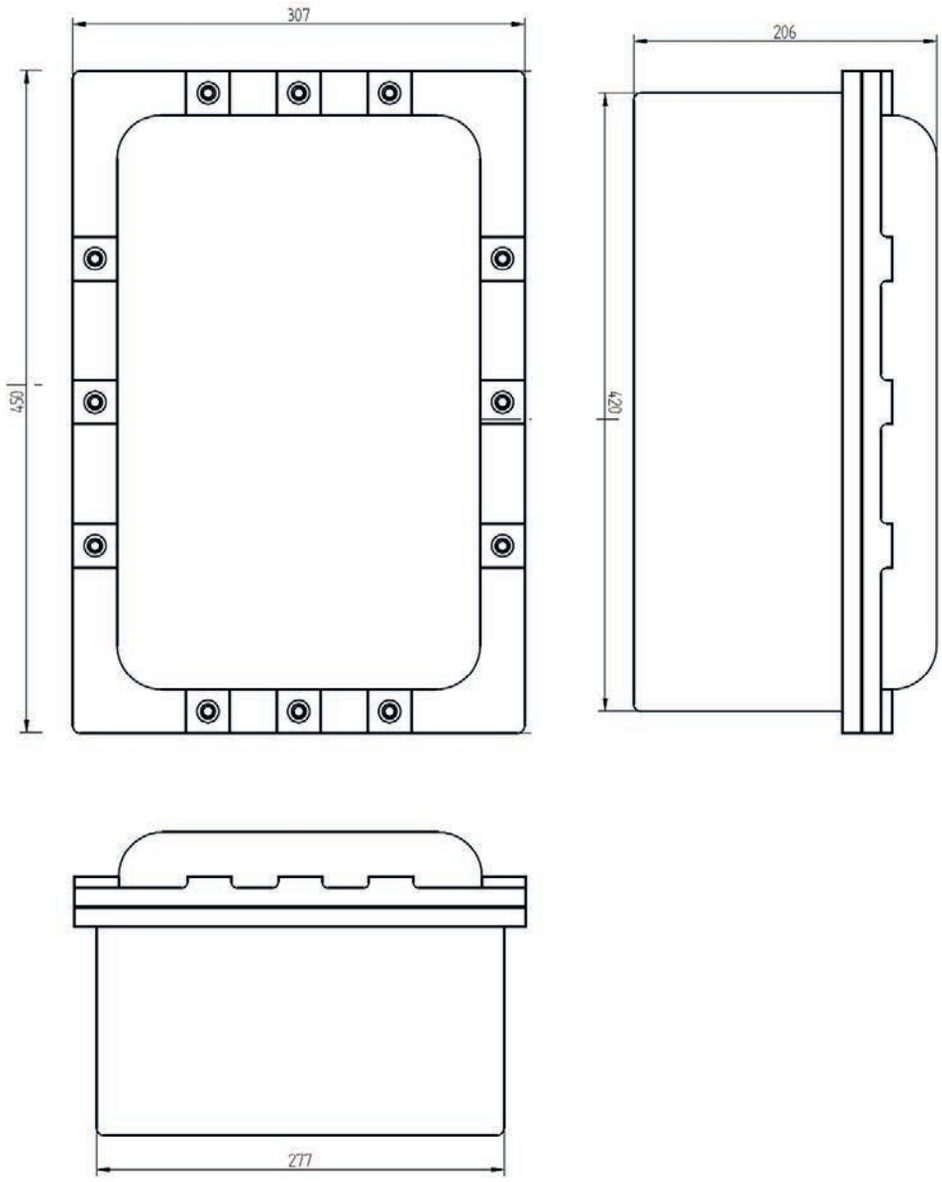
High-End HEI600 Ex zone 2.

Technical data



High energy igniter HEI600 Ex-Zone 2

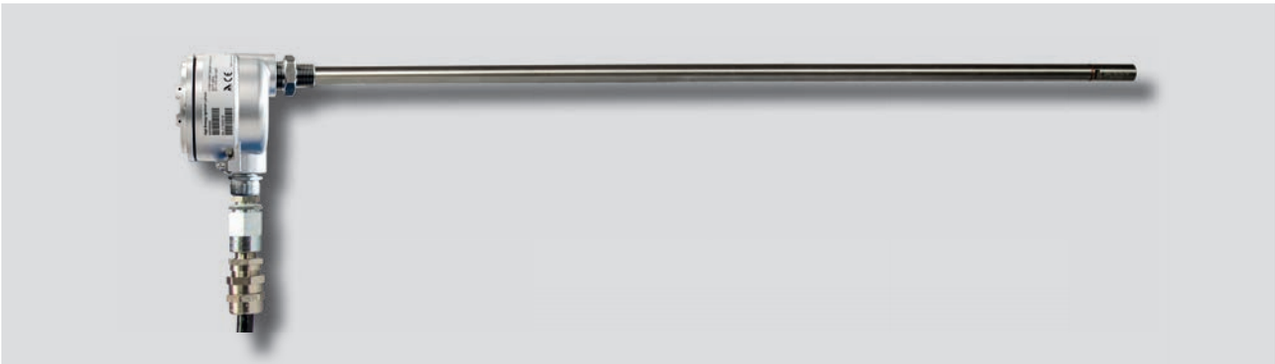
Order no.	646R8xxx
ATEX marking	II3G Ex db IIB+H2 T4 Gc
Ambient temperature	-20 °C ≤ Ta ≤ +60 °C / -40 ... 140 °F
Cross-section of the equipotential bonding conductor on both housings	4 mm² / 11 AWG
Protection class	IP65



Dimensions Ex-housing Zone 2

High-energy ignition lance.

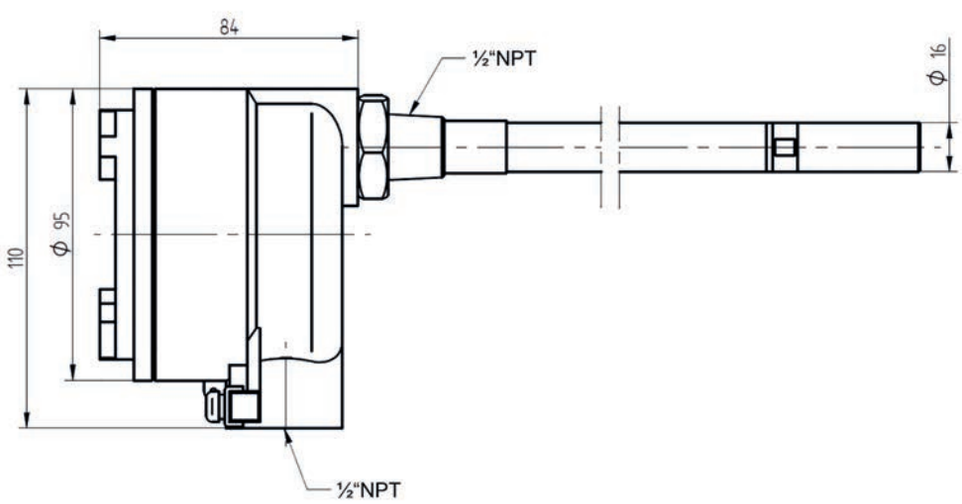
Technical data



Lance of the high energy igniter

Order no.	646R8550
Housing dimensions	See dimensional drawing
Available length	Up to 13 m* / 42,65 ft , minimum length: 300 mm / 11,81" in
Material of junction box	Aluminium (standard) Stainless steel (special)
Connection	2-wire Cross-section of the grounding cable: at least 1 x 1.5 mm² / 1 x 15 AWG
Max. counter-pressure from the combustion chamber	Standard: 1 bar Special: 9 bar
Max. permissible constant temperature at ignition tip	Standard: 720 °C / 1328 °F Special: 1000 °C / 1832 °F
Ambient temperature	-20 ... +60 °C / -4 °F ... 140 °F -40 °C / 104 °F optional
Protection class	IP65

* With excess lengths, the sections are partly rigid, partly flexible

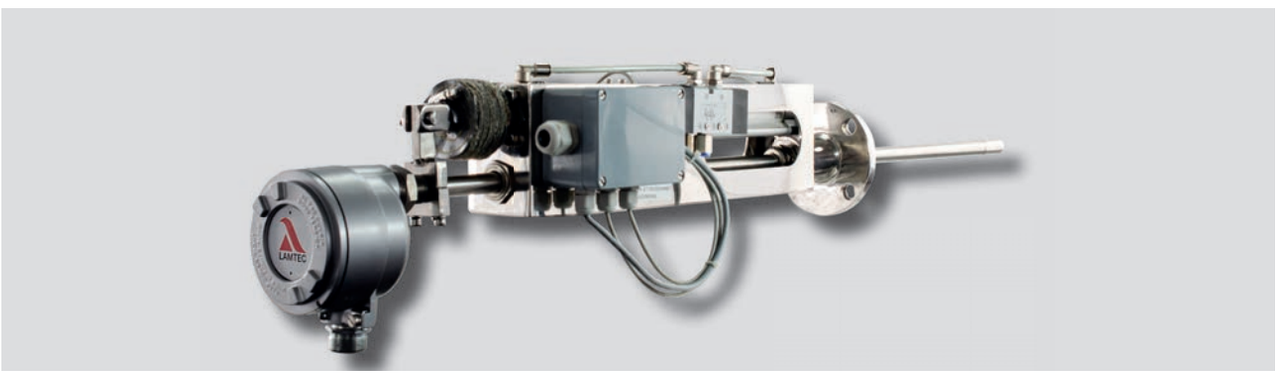


Dimensions of the ignition lance with aluminium connection box

Pneumatic retraction unit, safe area.

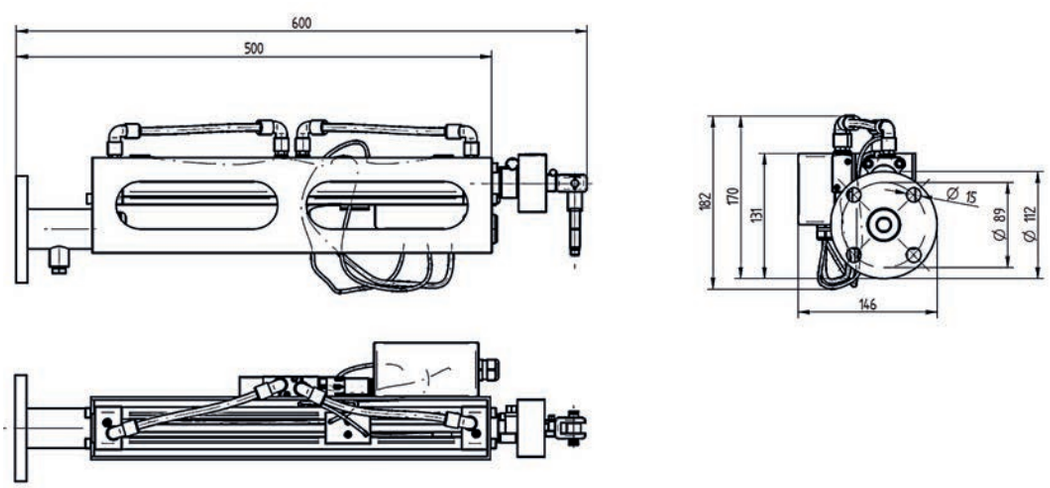
Use of the pneumatic retraction unit

- Ignition lance is constantly exposed to over 600 °C / 1,112 °F
- The ignition tip is exposed to a constant temperature of over 720 °C / 1328 °F (standard ignition tip)
- The ignition tip is exposed to a constant temperature of over 1000 °C / 1832 °F (special ignition tip)
- High degree of pollution in the combustion process



Pneumatic Retraction Unit for Safe Area

Order no.	646R8581 Safe Area
Housing dimensions	See dimensional drawing
Material	Cylinder: aluminium Junction box: fibreglass reinforced polyester (GRP)
Power supply	115 VAC, 230 VAC, 24 VDC
Max. possible equipment	5/3 directional control valve, magnetic switch, 2 limit switches, 2 final dampers
Stroke	320 mm / 12,60" in, 400 mm / 15,75" in , 500 mm / 19,69" in, 600 mm / 23,62" in
Ambient temperature	-5 ... +60 °C / 23 ... 140 °F
Protection class	IP65

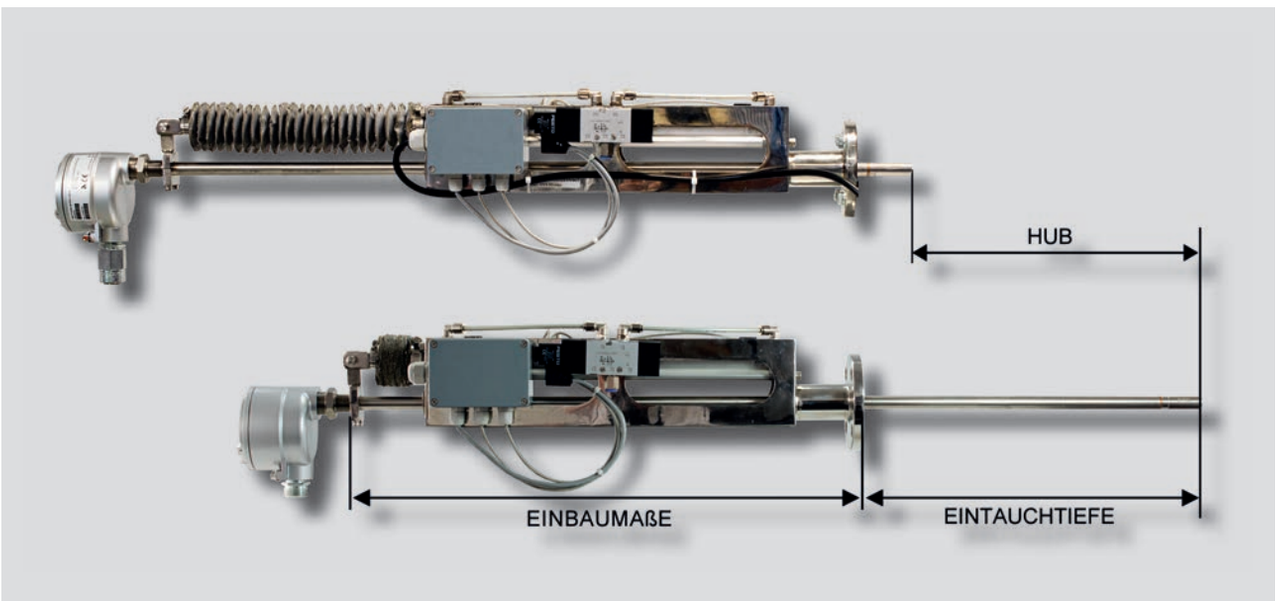


Dimensions Retraction Unit Safe Area

Pneumatic retraction unit, safe area.

Installation dimensions and stroke

The end-of-stroke attenuation can be adjusted by means of the adjusting screws on the cylinder.



Pneumatic Retraction Unit 646R8581 Stroke and mounting dimensions

Stroke	Installation dimensions
320 mm / 12,60” in	600 mm / 23,62” in
400 mm / 15,75” in	680 mm / 26,77” in
500 mm / 19,69” in	780 mm / 30,71” in
600 mm/ 23,62” in	880 mm / 34,65” in

We recommend allowing a further 20 mm / 0,79” in for adjustment.
The ignition lance must never be shorter than the installation dimension of the retraction unit.

Example, information provided by the customer:

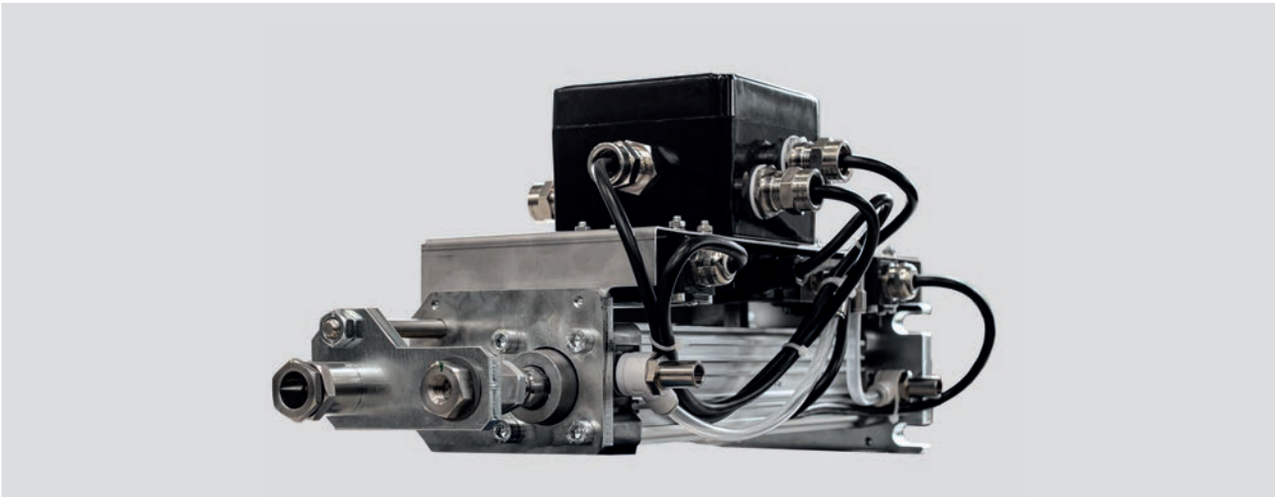
Lance =1000 mm / 39,37” in
Stroke = 320 mm / 12,60” in

Solution:
1000 mm + 600 mm + 320 mm + (20 mm) = 1940 mm

Customer receives the lance with a length of 1940 mm / 76,38” in!

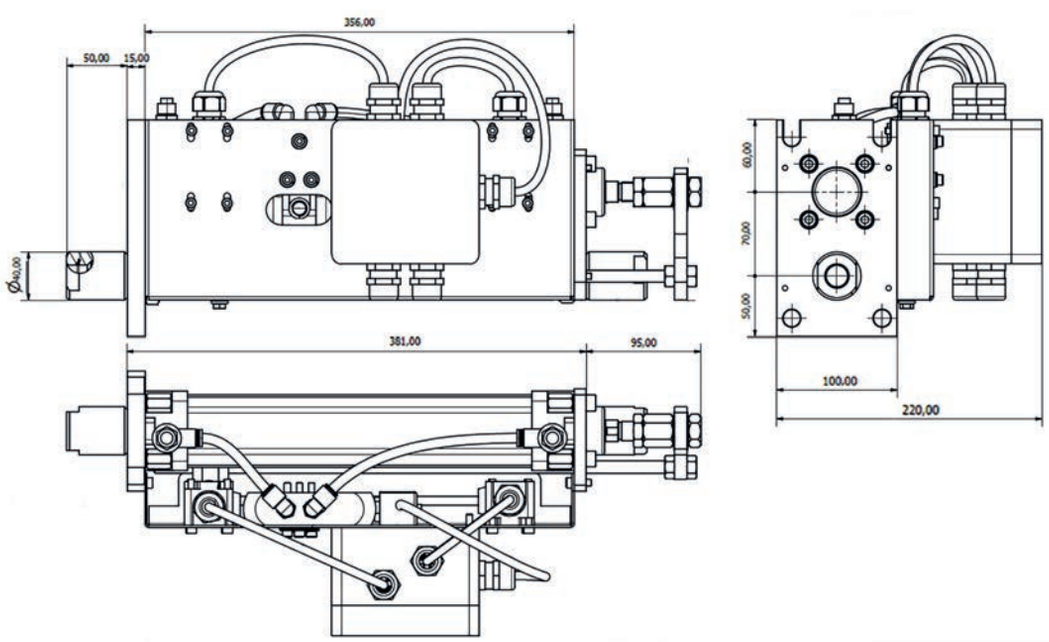
Pneumatic retraction unit Ex zone 2.

Technical data



Pneumatic Retraction Unit Ex Area II

Order no.	646R8580 Ex Zone II
Housing dimensions	See dimensional drawing
Material	Cylinder: aluminium Junction box: fibreglass reinforced polyester (GRP)
Power supply	115 VAC, 230 VAC, 24 VDC
Max. possible equipment	5/3 directional control valve, magnetic switch, 2 limit switches, 2 final dampers
Stroke	320 mm / 12,60” in, 400 mm / 15,75” in , 500 mm / 19,69” in, 600 mm / 23,62” in
Ambient temperature	-5 ... +60 °C / 23 ... 140 °F
Protection class	IP65

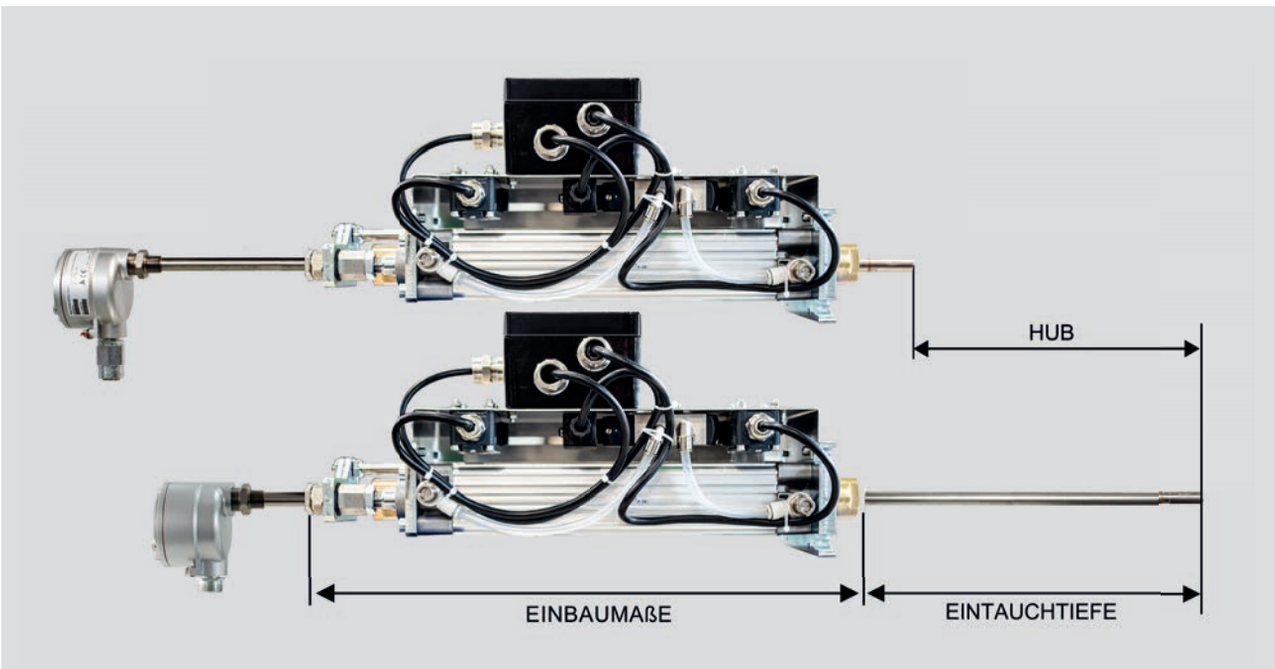


Dimensions Retraction Unit Ex Area II

Pneumatic retraction unit Ex zone 2.

Installation dimensions and stroke

The end-of-stroke attenuation can be adjusted by means of the adjusting screws on the cylinder.



Pneumatic Retraction Unit 646R8580 Stroke and mounting dimensions

Stroke	Installation dimensions
300 mm / 11,81” in	540 mm / 21,26” in

We recommend allowing a further 20 mm / 0,79” for adjustment.
The ignition lance must never be shorter than the installation dimension of the retraction unit.

Example, information provided by the customer:

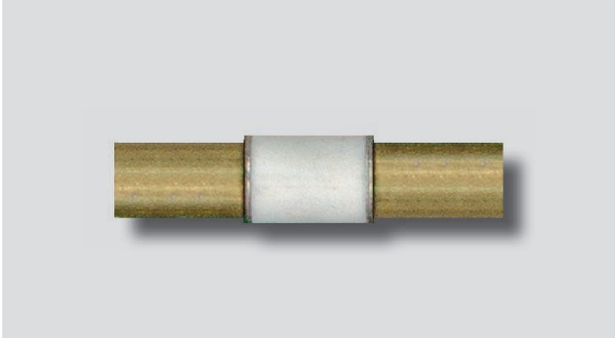
Lance = 1000 mm / 39,37” in

Solution:
1000 mm + 540 mm + 300 mm + (20 mm) = 1860 mm

Customer receives the lance with a length of 1860 mm/ 73,23” in!



Ignition tip ST/HT



Spark gap

High energy igniters, spare parts

Designation/type	Selection
Ignition tip, high energy igniter	646R8570
Ignition tip, high energy igniter HT	646R8571
Spark gap	646R8590

High energy igniters, accessories

Designation/type	Selection
Pneumatic retraction unit for the Ex zone	646R8580
Pneumatic retraction unit for the safe area	646R8581

Table, comparison of high energy igniters		
	HEI500	**HEI600**
Energy [J]	18	10
Sparks/sec. (frequency) [Hz]	2	26
Ignition power/ sec. (max) [J]	36	260
Power supply	115/230 VAC 50 Hz (60 on request)	115/230 VAC 50 Hz (60 on request)
Ambient temperature	-20 ... +60 °C / -4 °F ... 140 °F	-20 ... + 60 °C / -4 °F ... 140 °F
Explosion protection	IP65 safe area	IP65/66 safe area
Fuels	Gas without moisture and contamination as LPG or LNG	All types of gas, LFO, HFO up to No. 6 Bunker C (HFO analysis required)

Notes.

Notes.

Notes.

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