SIEMENS

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ISO 9001

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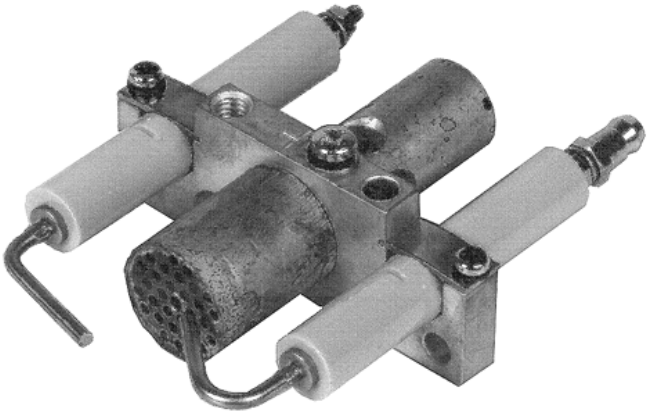


Ignition and Pilot Burners QSZ...

Ignition and pilot burners for use with atmospheric gas burners.
Suitable for natural gas, town gas and liquefied petroleum gas. The ignition and pilot burners come ready assembled for installation, complete with ignition electrode, ionization probe, mounting flange, covering plate and earthing screw.

The QSZ... and this Data Sheet are intended for use by OEMs, which integrate the ignition and pilot burners in their products.

Use

The QSZ... are special burners designed for the ignition of atmospheric gas burners.
Their flame is supervised by an electronic burner control or a flame safeguard using the flame's rectification effect for flame detection.
The QSZ... are available for natural gas, town gas, propane and butane.
The length of the flame is determined by the available gas pressure and can vary between 60 and 130 mm.
QSZ1... and QSZ2... also deliver an additional lance type flame, which extends from the center of the supervised flame to a length ranging from 110 to 180 mm.

Warning notes

To avoid injury to persons, damage to property or the environment, the following warning notes should be observed!

- Before performing any wiring changes in the connection area, completely isolate the burner control from the mains supply (all-polar disconnection)
- Ensure protection against electrical shock hazard by providing adequate protection for the terminals
- Check to ensure that wiring is in an orderly state and that the wires are firmly connected

Mounting notes

- Ensure that the relevant national safety regulations are complied with
- Select the mounting location such that ignition of the main burner and trouble-free supervision of the flame will be ensured
- The pilot burner should ignite the main flame from the horizontal plane or at an angle from below. The burner can be mounted with the mounting flange in the horizontal or vertical position. When using the vertical position in networks operating at low gas pressures, the ionization probe should immerse into the flame from above to ensure that a flame with a slightly upward deflection still hits the probe sufficiently. By contrast, in networks operating at high gas pressures, it is advantageous to locate the probe below the flame so that, for safety reasons, the probe immerses into the flame from below.
  Temporary reduction of the gas pressure will result in the pilot flame bending away from the probe so that the burner control will initiate lockout

- If the ionization current is too small, or if there is no flame signal at all, the reason may be one of the following:
  - Primary air delivered to the ignition and pilot burner is mixed with the flue gases of the main burner (lack of oxygen)
  - Ignition and pilot burner is overheated one to radiant heat from the main burner or one to an unfavorably placed venting flame
  - An erratically burning pilot flame that is not sitting firmly on the burner head (gas pressure too high: wrong nozzle)
  - An unsteady flame caused by drafts
  - Burner is soiled (do not use any hard tools to clean the nozzle!)
  - Burner is not correctly earthed
  - Ionization probe is displaced in the axial direction, bent or not properly adjusted

Installation notes

- Installation work must be carried out by qualified staff

Electrical connection of ionization probe and flame detector

It is important to achieve practically disturbance- and loss-free signal transmission:

- Never run the detector cable together with other cables
  – Line capacitance reduces the magnitude of the flame signal
  – Use a separate cable
- The ionization probe must be protected against electrical shock hazard
- Locate the ionization probe such that the ignition spark cannot arc over to the probe (risk of electrical overloads)
- For the connection of the ionization probe, refer to the Data Sheet of the relevant burner control (observe the minimum ionization current required)

Commissioning notes

Commissioning work must be carried out by qualified staff.

Standards

Conformity to EEC directives

- Electromagnetic compatibility EMC (immunity)	89 / 336 EEC
- Directive for gas-fired appliances	90 / 396 EEC

Service notes

- Maintenance work must be carried out by qualified staff
- Each time a unit has been replaced, check to ensure that wiring is in an orderly state

Disposal notes

Local and currently valid legislation must be observed.

Mechanical design

Burner tube, ignition electrode and ionization probe come ready assembled and pre-adjusted.
A hole adjacent to the burner tube allows a venting tube to be introduced into the combustion chamber. A securing screw is provided.
If not required, the hole can be covered by the covering plate.

Special features of the ignition and pilot burner

- Soldered burner tube (to prevent readjustments)
- Gas nozzle is easily accessible
- Nozzle hole is protected against dirt
- Ignition electrode and ionization probe are made of heat-resistant Kanthal and permanently insulated against ground by means of glazed Steatite electrode holders
- Ignition electrode is supplied with a nipple for use with commercially available spark plug type connectors
- Ignition electrode and ionization probe are secured against unauthorized readjustments
- An earthing screw on the mounting flange facilitates correct earthing of the burner in compliance with regulations (important for trouble-free supervision)

Type summary

When ordering, please give the complete type reference.

Type of gas	Type of flame	Gas pressure min...max.	Nozzle dia. in mm	Type reference
Natural gas	With lance flame	15...50 mbar	0.7	QSZ1.070
	With lance flame	15...50 mbar	0.8	QSZ1.080 ³)
	With lance flame	15...50 mbar	0.8	QSZ1.080DD
	With lance flame	15...50 mbar	0.8	QSZ1.080L ²)
	Without lance flame	6...50 mbar	0.7	QSZ3.065
Town gas	With lance flame	6...20 mbar	1.1	QSZ2.110 ¹)
	With lance flame	6...20 mbar	1.2	QSZ2.120 ⁴) ¹)
	With lance flame	6...20 mbar	1.3	QSZ2.130 ¹)
	With lance flame	6...20 mbar	1.4	QSZ2.140 ¹)
	Without lance flame	4...20 mbar	1.1	QSZ4.110 ¹)
	Without lance flame	4...20 mbar	1.2	QSZ4.120 ⁴) ¹)
	Without lance flame	4...20 mbar	1.3	QSZ4.130 ¹)
	Without lance flame	4...20 mbar	1.4	QSZ4.140 ¹)
Propane, butane	With lance flame	30...100 mbar	0.5	QSZ1.050
	Without lance flame	12...100 mbar	0.5	QSZ3.050

¹) On demand
²) Version with extended ionization probe «B» (drawing on demand)
³) For use with Dutch natural gas containing 14 % N_2
⁴) For general use. Prior to introducing the QSZ… to the production line for use with atmospheric gas burners, it is recommended that field tests be carried out to determine the ideal diameter of the nozzle

Technical data

General unit data

Weight	
QSZ1...	approx. 170 g
QSZ2...	approx. 170 g
QSZ3...	approx. 190 g
QSZ4...	approx. 190 g

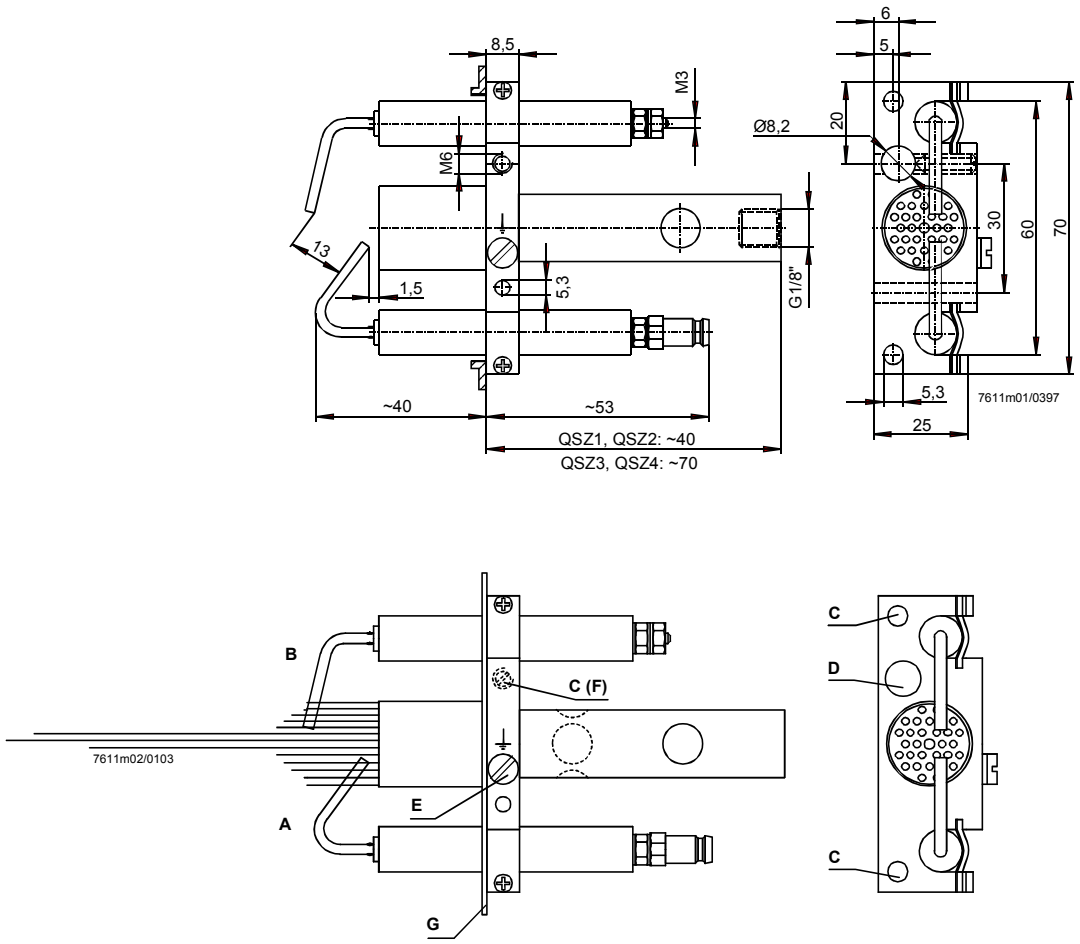
Environmental conditions

Transport	DIN EN 60 721-3-2
Climatic conditions	class 2K2
Mechanical conditions	class 2M2
Temperature range	-40...+60 °C
Humidity	< 95 % r.h.
Operation	DIN EN 60 721-3-3
Climatic conditions	class 3K5
Mechanical conditions	class 3M2
Temperature range	-20...+60 °C
Humidity	< 95 % r.h.

⚠ **Condensation, formation of ice and ingress of water are not permitted!**

Dimensions

Dimensions in mm



Legend

A	Ignition electrode
B	Ionization probe
C	Fixing holes
D	Hole for venting tube to flare control gas
E	Earthing screw
F	Thread M6 for the fixing screw of the venting tube
G	Covering and sealing plate

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