

Ignition and Pilot Burners

QSZ...

**Ignition and pilot burners for use with atmospheric gas burners.
Suitable for natural gas and town 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 ionization.

The QSZ... are for natural gas and town gas.

The length of the flame is determined by the available gas pressure and can vary between 60 and 130 mm.

QSZ1... 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.



Note!
Do not use for new designs.

Warning notes



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

- All activities (mounting, installation and service work, etc.) must be performed by qualified staff. If not observed, there is a risk of impairment of safety functions and of electric shock hazard
- Before making any wiring changes in the connection area, completely isolate the plant from mains supply (all-polar disconnection). Ensure that the plant cannot be inadvertently switched on again and that it is indeed dead. If not observed, there is a risk of electric shock hazard
- Ensure protection against electrical shock hazard by providing adequate protection for the terminals. If not observed, there will be a risk of electric shock.
- Each time work has been carried out (mounting, installation, service work, etc.), check to ensure that wiring is in an orderly state. If not observed, there is a risk of impairment of safety functions and of electric shock hazard

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

Electrical connection of flame detectors

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
- Observe the permissible length of the detector cables (refer to according «Technical data» of according burner control)
- The ionization probe must be protected against electrical shock hazard
- Locate the ignition electrode and the ionization probe such that the ignition spark cannot arc over to the probe (risk of electrical overloads) and a interference of the ionization supervision of the ignition spark is avoided
- Insulation resistance
 - Must be a minimum of 50 MΩ between ionization probe and ground
 - Soiled detector holders reduce the insulation resistance, thus supporting creepage currents
- Earth the burner in compliance with the relevant regulations; earthing the boiler alone does not suffice
- Decisive for the electrical connection of ionization probe are the data in the Data Sheet of the relevant burner control (e.g. the minimal required ionization current etc.)

Standards and certificates



EAC Conformity mark (Eurasian Conformity mark)



ISO 9001:2008
ISO 14001:2004
OHSAS 18001:2007



China RoHS
Hazardous substances table:
<http://www.siemens.com/download?A6V10883536>

Disposal notes



Local and currently valid legislation must be observed.

Mechanical design

Burner tube, ignition electrode and ionization probe come ready assembled and preadjusted.

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 flame supervision)

Type summary

When ordering, please give the complete type reference.

Type of gas	Type of flame	Operating pressure min...max.	Nozzle dia. mm	Type reference	Article no.
Natural gas	With lance flame	15...50 mbar	0,75	QSZ1.075	BPZ:QSZ1.075
	With lance flame	15...50 mbar	0.8	QSZ1.080DD	BPZ:QSZ1.080DD
	With lance flame	15...50 mbar	0.8	QSZ1.080L 1)	BPZ:QSZ1.080L 1)
	Without lance flame	6...50 mbar	0.7	QSZ3.065	BPZ:QSZ3.065

1) Version with extended ionization probe «B» (drawing on demand)

Technical data

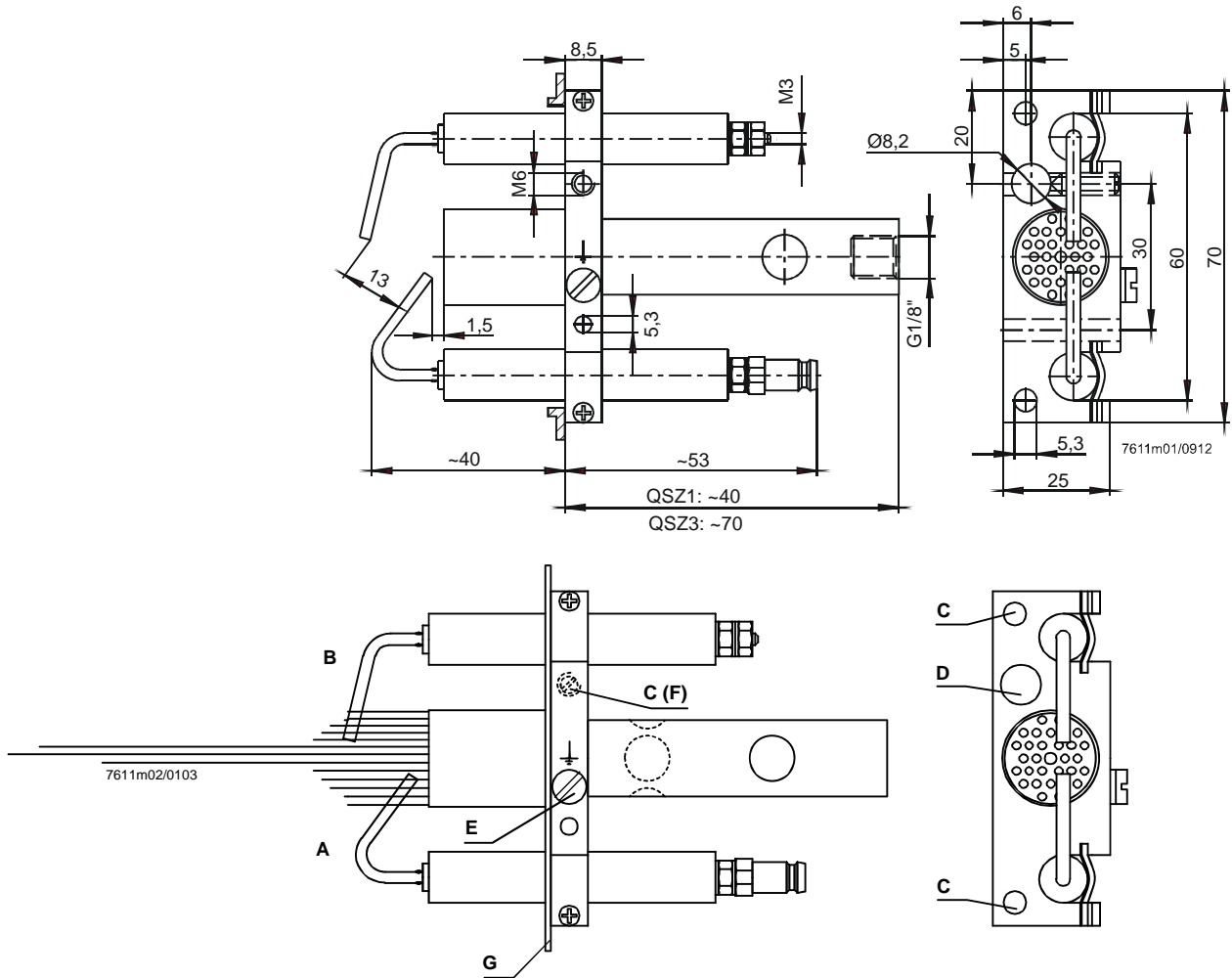
General unit data	Weight	
	QSZ1...	approx. 170 g
	QSZ3...	approx. 190 g
Environmental conditions	Storage	DIN EN 60721-3-1
	Climatic conditions	class 1K3
	Mechanical conditions	class 1M2
	Temperature range	-20...+60 °C
	Humidity	< 95 % r.h.
	Transport	DIN EN 60 721-3-2
	Climatic conditions	class 2K2
	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.
Installation altitude	Max. 2,000 m above sea level	



Caution!
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