Pilot Burners

QSZ...
Series 02

ISO 9001

Pilot burners for use with atmospheric gas burners. Suitable for natural gas, town gas and liquefied gas. Supplied factory-assembled and ready for installation, complete with ignition and detector electrode, mounting flange, covering plate, and earthing screw.

The QSZ... pilot burners and this data sheet are intended for use by OEMs that integrate the QSZ... in their products!

Use

Pilot burners QSZ... are special burners designed to provide ignition for atmospheric gas burners. Their flame is supervised by an electronic burner control or a flame safeguard using flame rectification for detection.

There are pilot burner versions for use with natural gas, town gas, propane and butane.

The flame length is determined by the gas pressure and can vary between 60...130 mm. QSZ1... and QSZ2... are so designed that they provide an additional lance type flame which extends from the centre of the supervised flame to a length of 110...180 mm.

Mechanical design

The burner tube, ignition electrode, flame detector electrode and mounting flange are factory-assembled and pre-adjusted. The mounting flange is provided with a hole adjacent to the burner tube which allows the introduction of a venting tube - if necessary - into the combustion chamber; a thread for the securing screw for the venting tube is also provided. If this facility is not required, the covering plate is reversed to cover the venting tube hole.

Special features

- Burner tube soldered to mounting flange (to prevent maladjustments)
- Gas nozzle easily accessible
- Hole of nozzle largely protected against dirt
- Ignition and flame detector electrodes manufactured of heat-resistant Kanthal and insulated from ground by means of special glazed Steatite electrode holders
- The ignition electrode is supplied with a connection nipple for use with a spark plug type connector
- The electrodes are secured against unauthorized readjustments
- The ignition and flame detector electrodes are so adjusted that the ignition spark cannot arc over to the flame detector electrode
- An earthing screw on the mounting flange simplifies earthing of the burner, conforming to local regulations (important for trouble-free flame supervision)

Mounting notes

The mounting position must be selected such that not only ignition of the main flame is ensured, but also trouble-free flame supervision.

Basically, the pilot burner should ignite the main flame from the horizontal plane or at an angle from below. The mounting flange, however, can be positioned horizontally or vertically. When using the vertical position in networks operating at low gas pressures, the detector electrode should immerse into the flame from above to ensure that a flame with a slight upward deflection still hits the electrode sufficiently. By contrast, in networks operating at higher gas pressures, it is of advantage if the electrode is located below the flame so that, for safety reasons, the electrode immerses the flame from below. In the latter case, a temporary reduction in the gas pressure, which reduces the security of ignition of the main flame, will result in the pilot flame bending away from the detector electrode and the burner control going to 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 for the pilot burner is being mixed with the exhaust air of the main burner (lack of oxygen)
– Pilot burner being overheated by radiant heat from the main burner or an unfavourably placed venting flame
– Erratically burning pilot flame which is not sitting firmly on the pilot burner head (gas pressure too high: wrong nozzle)
– Unsteady flame caused by draughts
– Pilot burner soiled (do not use sharp tools to clean the nozzle!)
– Pilot burner not earthed correctly
– Detector electrode displaced in axial direction, bent or maladjusted

Connecting the detector electrode

For the connections of the detector electrode, the minimum ionization current required, etc., please refer to the data sheet of the respective burner control.

Available types

When ordering, please give **full** type reference.

Type of gas	Form of flame	Gas pressure min...max	Nozzle dia. mm	Type reference
Natural gas	With lance flame	15...50 mbar	0.60	QSZ1.060
			0.65	QSZ1.065
			0.70	QSZ1.070
			0.80	**QSZ1.080** [3])
			0.80	**QSZ1.080L** [2])
	Without lance flame	6...50 mbar	0.60	QSZ3.060
			0.70	QSZ3.070
			0.75	QSZ3.075
			0.80	QSZ3.080
Town gas	With lance flame	6...20 mbar	1.1	QSZ2.110 [1])
			1.2	QSZ2.120 [4]) [1])
			1.3	QSZ2.130[1])
			1.4	QSZ2.140[1])
	Without lance flame	4...20 mbar	1.1	QSZ4.110[1])
			1.2	QSZ4.120 [4]) [1])
			1.3	QSZ4.130[1])
			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

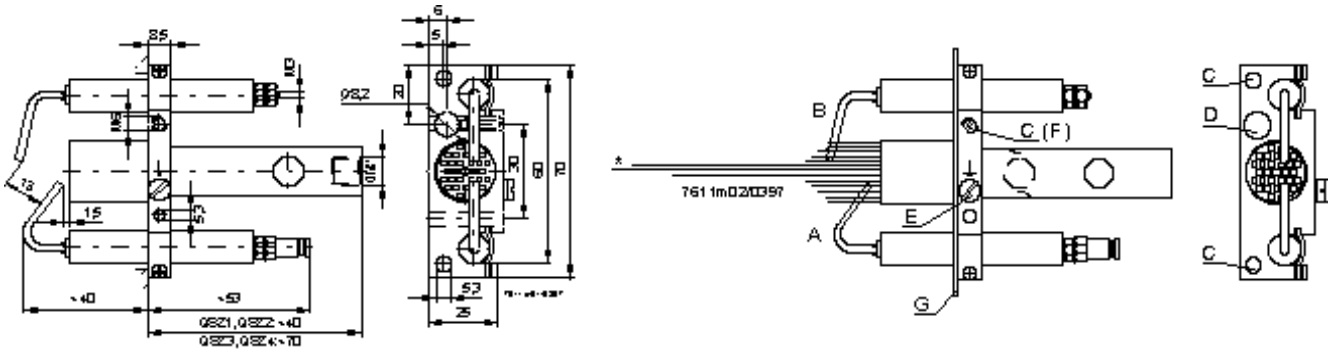
[1]) On request
[2]) Version with extended detector electrode B, drawing on request
[3]) For use with Dutch natural gas containing 14 % N_2
[4]) For general use. It is recommended, however, that practical tests be carried out to determine the ideal nozzle dia., prior to introducing the QSZ... pilot burner into the production line

Weight

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

Dimensions

Dimensions in mm



Legend

A Ignition electrode
B Detector electrode
C Fixing holes
D Locating hole for a venting tube
E Earthing screw
F M6 thread for the fixing screw for the venting tube
G Covering and sealing plate