



Electronic Ignition Module

TQO31A27

Electronic ignition module for use with oil or gas burners operating with single- or double-pole ignition.

The TQO31A27 and this Data Sheet are intended for use by OEMs which integrate the ignition module in their products.

Design

The TQO31A27 is an electronic ignition module of compact design with high sparking power. Ignition spark generation is optimized to meet the specific requirements of forced draft oil and gas burners. Integrated suppression elements ensure low interference voltages below the standard limits. A wide voltage range assures reliable high-voltage generation even in the case of unfavorable operating conditions. The housing is made of impact-proof and heat-resistant plastic. The fixing holes and compact design enable the ignition module to be accommodated under the burner control's plug-in base. The TQO31A27 is embedded in synthetic resin. The primary and secondary terminals are of plug-in design.

The electronic ignition module is designed for use with the following types of burner controls: LGA..., LGB..., LGD1..., LMG..., LOA..., and LMO...

- i** The high-voltage ignition cable is supplied by the burner manufacturer.

Warning notes



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

- ⚡ The ignition module generates high-voltage which, if improperly applied, can lead to insulation failure that can cause fire and damage to persons!**

Do not open, interfere with or modify the module!

- Before performing any wiring changes in the connection area of the TQO31A27 – especially on the high-voltage side – completely isolate the module from the mains supply (all-polar disconnection)
- Ensure protection against electric shock hazard by providing adequate protection for the connection terminals
- Check to ensure that wiring is in an orderly state
- Fall or shock can adversely affect the safety functions. Such units may not be put into operation even if they do not exhibit any damage

Mounting notes

- Ensure that the relevant national safety regulation are complied with
- Mounting work must be carried out by qualified staff
- Protection against electric shock hazard must be ensured through the way the module is mounted. The parts carrying high-voltage should be protected against dirt and humidity to ensure sufficient sparking power. Insulate the ignition module adequately against non-earthed external, exposed parts
- Locate the ignition electrode and ionization probe such that the ignition spark cannot arc over to the ionization probe (risk of electric overloads on the connected burner control)

Installation notes

- Installation work must be carried out by qualified staff
- The connection of the earthing lug to burner ground must be firm and electrically conducting

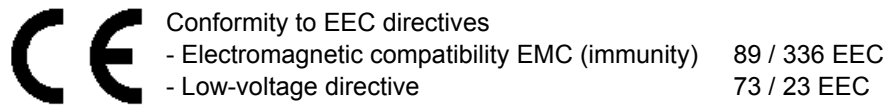
Electrical connection of the high-voltage ignition cables

- Run the high-voltage ignition cables
 - always separately while observing the greatest possible distance to the unit and to other cables
 - as short as possible, avoiding loops and sharp bends
- Always use suitable high-voltage ignition cable
 - For example: Silicon or TPE cables having
 - an outside diameter of min. 5 mm
 - a dielectric strength of at least 40 kV
 - Not suited are PVC, PTFE, or EVA (Radox) cables.

Commissioning notes

- Commissioning and maintenance work must be carried out by qualified staff
- Prior to commissioning the plant, check to ensure that wiring is in an orderly state
- High-frequency equipment places special requirements on high-voltage ignition cables and electrodes. Always use special high-voltage ignition cables and electrodes that are suited for this type of ignition equipment
- An important prerequisite for ensuring operating safety is the correct sizing and adjustment of the spark gap. Adjust it such that safe ignition is ensured under all permissible operating conditions
- The location of the ignition module, the high-voltage ignition cables and the spark gap on the burner have a considerable impact on the generation of electromagnetic disturbances. The notes relating to the laying of high-voltage ignition cables and adequate earthing of both the module and burner should be observed
- In the case of frequent burner startup repetitions and short on times, ensure that the ignition module's permissible on time will not be exceeded

Norms and certificates



ISO 9001: 2000
Cert. 00739



ISO 14001: 1996
Cert. 38233

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 and make the safety check as described in «Commissioning notes»

Disposal



The ignition module contains electric and electronic components and may not be disposed of together with household waste.
Local and currently valid legislation must be observed.

Ordering

Electronic ignition module **TQ031A27**
(Without accessories)

When ordering, please give the complete type reference.

Accessories



Mains cable, 25 cm long, with ferrules **AGV31.001**

Mains cable, 50 cm long, with ferrules **AGV31.002**

Mains cable, 120 cm long, with ferrules **AGV31.003**

Insulating plug for single-pole operation **AGB2.001**

Technical data

General unit data

Rated data, primary side

Operating voltage	AC 230 V
Voltage range	AC 220 V –15 %...AC 230 V +10 %
Mains frequency	50...60 Hz ±5 %
Primary current	0.25 A
Power rating	60 VA
Power factor cos φ	> 0.6
Discharge current to ground, to DIN EN 50165	< 1.2 mA

Leakage current against ground	</- 5 mA to DIN EN 50 165
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Terminals on the primary side	double-pole, quick connectors 2.8 x 0.8 mm
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Safety class	I
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Rated data, secondary side, at AC 230 V / 50 Hz

High-voltage output	2 x 7.5 kV ampl. or 1 x 15 kV ampl.
Ignition current	40 mA (rms)
Ignition frequency	16 kHz ±4 kHz
Spark energy (double-pole operation)	500 mJ
On time	33 % in 3 min at 35 °C 20 % in 3 min at 60 °C
No-load operation	max. 30 s
High-voltage terminal	round connector, 4 mm
Spacing of electrodes	2.5...5 mm

Interference suppression / immunity

Network disturbances	to DIN EN 61000-3-2 / DIN EN 61000-3-3
Immunity	to DIN EN 50165 / EN 61000-4-6 / EN 61000-4-3, degree of severity 3

Limit values

Operating voltage	min. AC 187 V (reduced sparking power) max. AC 265 V
On time at AC 265 V and 60 °C	14 % in 3 min

Miscellaneous

Degree of protection	IP 40 (with connectors plugged in)
Earthing	with earthing lug, 4.2 mm dia.
Weight	approx. 265 g
Tightening torque for fixing screws	1.2...1.5 Nm (locking paint recommended)

Environmental conditions

Transport

DIN EN 60 721-3-2	
Climatic conditions	class 2K2
Mechanical conditions	class 2M2
Temperature range	-25...+60 °C
Humidity	< 95 % r.h.

Operation

DIN EN 60 721-3-3	
Climatic conditions	class 3K5
Mechanical conditions	class 3M3
Temperature range	-10...+60 °C
Humidity	< 95 % r.h.



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

Dimensions

Dimensions in mm

