SIEMENS

7130

Oil Burner Controls

LMO14...
LMO24...
LMO44...

Microcontroller-based oil burner controls for the startup, supervision and control of forced draft oil burners in intermittent operation. Maximum oil throughput up to 30 kg/h, also above 30 kg/h on some versions.

The LMO14, LMO24, LMO44 and this Data Sheet are intended for use by OEMs which integrate the burner controls in their products.

Use, features

Use

The LMO are designed for the startup and supervision of 1- or 2-stage forced draft oil burners in intermittent operation. Yellow-burning flames are supervised with photo resistive detectors QRB1 / QRB3 or yellow flame detector QRB4, blue-burning flames with blue flame detector QRC1. In terms of housing dimensions, electrical connections and flame detectors, the LMO are identical with the LOA oil burner controls.

- Applications in accordance with EN 267: Automatic forced draft burners for liquid fuels
- Type-tested and approved in accordance with DIN EN 298

Features

- LMO44 for use with stationary direct-fired air heaters
- Undervoltage detection
- Electrical remote reset
- Bridging contact for oil preheater
- Monitoring of time for oil preheater
- Accurate and reproducible control sequence thanks to digital signal handling
- Controlled intermittent operation after 24 hours of continuous operation
- Restart limitation
- Multicolor indication of fault status and operational status messages

Supplementary documentation

Product type	Type of documentation	Documentation number
LMO	Environmental declaration	E7130 *)
ACS410	Software documentation	J7352
OCI400	Data sheet	N7614
QRB1 / QRB3	Data sheet	N7714
QRB4	Data sheet	N7720
QRC1	Data sheet	N7716

*) On request

Warning notes

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

Do not open, interfere with or modify the unit!

- All activities (mounting, installation and service work, etc.) must be performed by qualified staff
- 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 electric shock hazard by providing adequate protection for the burner control's connection terminals. If this is not observed, there is 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 and make the safety checks as described in «Commissioning notes». If not observed, there is a risk of impairment of safety functions and of electric shock hazard
- Press the lockout reset button / operation button or the AGK20 lockout reset button extension only manually (applying a force of no more than 10 N) without using any tools or pointed objects. If not observed, there is a risk of impairment of safety functions and of electric shock hazard
- Fall or shock can adversely affect the safety functions. Such units must not be put into operation, even if they do not exhibit any damage. If not observed, there is a risk of impairment of safety functions and of electric shock hazard
- Risk of damage to the switching contacts!
  If the external primary fuse (Si) is blown due to overload or short-circuit at the terminals, the LMO must be replaced.

- When replacing LOA26 or LOA36, any ARK21 remote lockout reset module or similar modules fitted in the burner or boiler must be removed.
  If this is not observed, there is a risk of loss of safety functions and a risk of electric shock

Mounting notes

Ensure that the relevant national safety regulations are complied with.

Installation notes

- Always run the high-voltage ignition cables separately while observing the greatest possible distances to the unit and to other cables
- Install switches, fuses, earthing, etc., in compliance with local regulations
- Risk of damage to the switching contacts!
  If the external primary fuse (Si) is blown due to overload or short-circuit at the terminals, the LMO must be replaced.
- Ensure that the maximum permissible amperages will not be exceeded (refer to «Technical data»)
- Do not feed external mains voltage to the control outputs of the unit. When testing the components controlled by the burner control (fuel valves, etc.), the LMO may never be plugged in
- Do not mix up live and neutral conductors

Electrical connection of the 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 maximum permissible lengths of the detector cables (refer to «Technical data»)
- Earth the burner in compliance with the relevant regulations; earthing the boiler alone does not suffice

Commissioning notes

When commissioning the plant or when doing maintenance work, make the following safety checks:

	Safety check	Anticipated response
a)	Burner startup with flame detector darkened	Non-alterable lockout at the end of the safety time (TSA)
b)	Burner startup with flame detector exposed to extraneous light	Non-alterable lockout within 40 seconds
c)	Burner operation with simulated loss of flame; for that purpose, darken the flame detector during operation and maintain that state	Restart followed by the non-volatile lockout at the end of safety time (TSA)

Standards and certificates

Applied directives:

- Low-voltage directive 2014/35/EC
- Directive for pressure devices 2014/68/EC
- Electromagnetic compatibility EMC (immunity) *) 2014/30/EC

*) The compliance with EMC emission requirements must be checked after the burner control is installed in equipment

Compliance with the regulations of the applied directives is verified by the adherence to the following standards / regulations:

- Automatic burner control systems for burners and appliances burning gaseous or liquid fuels DIN EN 298
- Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — General requirements DIN EN 13611
- Automatic electrical controls for household and similar use Part 2-5: Particular requirements for automatic electrical burner control systems DIN EN 60730-2-5

The relevant valid edition of the standards can be found in the declaration of conformity!

Note on **DIN EN 60335-2-102**
Household and similar electrical appliances - Safety
Part 2-102:
Particular requirements for gas, oil, and solid-fuel burning appliances having electrical connections. The electrical connections of the LMO and the AGK11 comply with the requirements of EN 60335-2-102.

EAC Conformity mark (Eurasian Conformity mark)

UKCA conformity mark (UK compliance)

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

Service notes

The service adapters can only be used for a short time. They may only be used in supervised operation by qualified staff.