

LME1 / LME2 / LME4



LME3



LME7

Product Range Overview

LME...

LME are used for the startup and supervision of stage or modulating oil / gas burners in intermittent operation.

Flame supervision takes place via an ionization probe or flame detector QRA with or without ancillary unit AGQ3; yellow-burning flames are supervised with photo resistive detectors QRB1 / QRB3 or yellow-flame detector QRB4, blue-burning flames with blue-flame detector QRC.

- Applications in accordance with EN 267: Forced draft burners for liquid fuels
- Type-tested and approved in accordance with DIN EN 298
- Applications in accordance with EN 676: Automatic forced draft burners for gaseous fuels

Features of the LME:

- Undervoltage detection
- Air pressure supervision with function check of the air pressure switch during startup and operation
- Electrical remote lockout reset facility
- Multicolor indication of fault status messages and operating states
- Limitation of repetitions
- Accurate sequence times thanks to digital signal handling
- Controlled intermittent operation after 24 hours of continuous operation

The present documentation gives an **overview** of the product range.

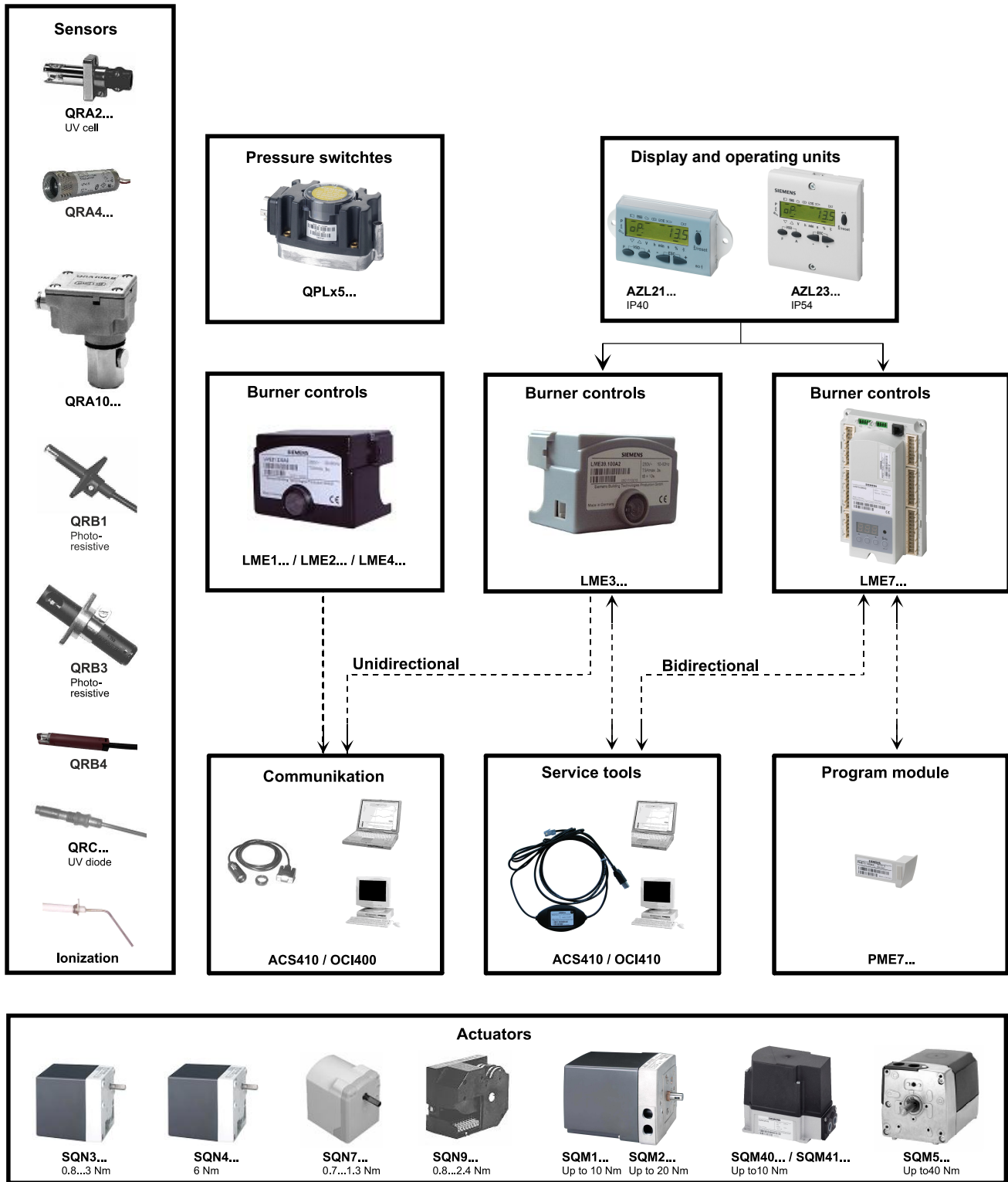
Target groups

- Sales engineers
- Internal staff
- Burner specialists

Functions

	LME11	LME21	LME22	LME23	LME39.1	LME39.4	LME41	LME44	LME7
Basic applications									
Single-stage forced draft burners	•								•
2-stage forced draft burners		•	•	•	•				•
Atmospheric burners, single stage, with / without auxiliary fan						•	•		•
Atmospheric burners, 2 stage, with / without auxiliary fan						•		•	•
Control of ignition valve						•	•	•	•
Air damper control			•	•	•				•
Controlled air damper control									•
Temperature controller in mains supply line	•	•	•	•			•	•	
Temperature controller in control loop					•	•			•
Air pressure supervision with function check of air pressure switch during startup and operation	•	•	•	•	•				•
Status input CPI						•	•	•	•
Modulating burner via PWM fan in the pneumatic ratio control									•
Modulating burner via actuator in the mechanical or pneumatic ratio control									•
General									
Undervoltage detection	•	•	•	•	•	•	•	•	•
Electrical remote lockout reset facility	•	•	•	•	•	•	•	•	•
Multicolor indication of operating state and fault status messages	•	•	•	•	•	•	•	•	•
Accurate sequence times thanks to digital signal handling	•	•	•	•	•	•	•	•	•
Controlled intermittent operation	•	•	•	•	•	•	•	•	•
Limitation of repetitions	•	•	•	•	•	•	•	•	•
Unit parameter adjustable					•	•			•
Optional: Analog input for load controller setpoint setting									•
Optional: 3 x 7 segment display for faults, operating notifications and parameter display									•
Optional: Program sequence in the separate program module									•
Flame detectors for intermittent operation									
Ionization probe	•	•	•		•	•	•	•	•
UV flame detector QRA with AGQ3 (only for AC 230 V)		•	•		•	•	•	•	
UV flame detector QRA									•
Photo resistive flame detector QRB1 / QRB3									•
Yellow flame detector QRB4									•
Blue-flame detector QRC				•					•
Valve proving system LDU11									
Pressures switch – valve proving		•	•		•				
Communication interfaces									
BCI for AZL2 or OCI410					•	•			•
OCI400 for optical interface	•	•	•	•	•	•	•	•	
OCI410 BCI / USB interface converter					•	•			•
PC Windows software ACS410 for visualization	•	•	•	•	•	•	•	•	•
PC Windows software ACS410 for parameter settings					•	•			•
Display									
7-segment display and operating unit AZL21					•	•			•
7-segment display and operating unit AZL23					•	•			•
3-colored LED, build-in	•	•	•	•	•	•	•	•	•

Product range overview



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Presentation of products

Burner control

LME1 / LME2 / LME4

Gas burner controls for supervision of single- or 2-stage forced draft gas burners and atmospheric burners of small to medium capacity, intermittent operation.



LME3

Parameterized gas burner controls for the supervision of 1- or 2-stage forced draft gas burners and atmospheric burners of small to medium capacity (typically up to 350 kW), in intermittent operation.



LME7

Parameterized burner controls for the supervision of stage or modulating oil / forced draft gas burners and atmospheric burners of medium to large capacity, in intermittent operation. With controlled air damper control.



Program module

PME7

Program module for LME7.
With program sequences for oil or gas burners for LME7 basic unit.



Connection accessories for small burner controls

AGK11 (not for LME39)

Article no.: **BPZ:AGK11**

Plug-in base for connecting small burner controls to the burner plant.



AGK11.6

Article no.: **BPZ:AGK11.6**

Plug-in base (Grey) for connecting LME39 to the burner plant.



AGK66

Article no.: **BPZ:AGK66**

Cable holder for use with AGK11 plug-in base.



AGK65

Article no.: **BPZ:AGK65**

Cable holder for use with AGK11 plug-in base.



Connector sets for LME7

AGG3.710

Article no.: **BPZ:AGG3.710**

- Connector set complete for LME7
- RAST5 and RAST3.5
- Single packs

Example: X5-03



AGG3.720

Article no.: **BPZ:AGG3.720**

- 10 standard connector sets complete for LME7
- RAST5 and RAST3.5
- Single packs
- The several connectors are delivered into bags to 10 pieces each as a unit

AGG9.xxx

The individual connectors are supplied in packaging units of 200 pieces each.

Example:



Article no.	Type	Type of connector	Terminal
BPZ:AGG9.201	AGG9.201	RAST5	X2-09B
BPZ:AGG9.203	AGG9.203	RAST5	X3-02
BPZ:AGG9.209	AGG9.209	RAST5	X10-06
BPZ:AGG9.301	AGG9.301	RAST5	X2-01
BPZ:AGG9.302	AGG9.302	RAST5	X2-03
BPZ:AGG9.304	AGG9.304	RAST5	X4-02
BPZ:AGG9.306	AGG9.306	RAST5	X5-01
BPZ:AGG9.309	AGG9.309	RAST5	X6-03
BPZ:AGG9.310	AGG9.310	RAST5	X7-01
BPZ:AGG9.311	AGG9.311	RAST5	X7-02
BPZ:AGG9.313	AGG9.313	RAST5	X9-04
BPZ:AGG9.401	AGG9.401	RAST5	X2-02
BPZ:AGG9.403	AGG9.403	RAST5	X5-03
BPZ:AGG9.405	AGG9.405	RAST5	X7-04
BPZ:AGG9.501	AGG9.501	RAST5	X3-04
BPZ:AGG9.504	AGG9.504	RAST5	X10-05
BPZ:AGG9.601	AGG9.601	RAST5	X2-09A
BPZ:AGG9.822	AGG9.822	RAST3,5	2-pole
BPZ:AGG9.831	AGG9.831	RAST3,5	3-pole
BPZ:AGG9.841	AGG9.841	RAST3,5	4-pole

Presentation of products (cont'd)

Flame detectors

QRA2

Flame detector for use with Siemens burner controls, for the supervision of gas flames, yellow- / blue-burning oil flames and for ignition spark proving.

Plastic insulated housing, metalized to prevent static charging caused by the air flow from the fan. For direct mounting on the burner.

Delivery optional with / without flange and clamp.



QRA4

Flame detector for use with Siemens burner controls, for the supervision of gas flames, yellow- / blue-burning oil flames and for ignition spark proving.



QRA10

Flame detector for use with Siemens burner controls, for supervision of gas flames, yellow- / blue-burning oil flames and for ignition spark proving.

Die-cast aluminum housing with a 1 in. mounting coupling and connection facility for cooling air. The housing of this detector has a bayonet fitting which allows it to be secured either directly to the 1 in. mounting coupling or to the AGG06. The 1 in. mounting coupling can be screwed to a viewing tube or to the AGG07. The Pg cable gland can be removed and replaced, if some other detector cable shall be used.



QRB1

Photo resistive detector for use with Siemens burner controls, for the supervision of oil flames in the visible light spectrum.

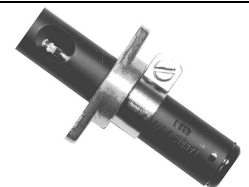
The QRB1 are used primarily in connection with burner controls for burners of small capacity.



QRB3

Photo resistive detector for use with Siemens burner controls, for the supervision of oil flames in the visible light spectrum.

The QRB3 are used primarily in connection with burner controls for burners of small capacity.



QRB4

Yellow-flame detector for use with Siemens burner controls, for the supervision of oil flames in the visible light spectrum.

The QRB4 is used in connection with oil burner controls in intermittent operation.



QRC

Blue-flame detector for use with Siemens burner controls, for the supervision of blue- and yellow-burning oil or gas flames.

QRC is used especially in connection with burner controls for burners of small capacity.

Frontal illumination:



Lateral illumination:



Presentation of products (cont'd)

Service tools

OCI400

Article no.: **BPZ:OCI400**

Optical interface between burner control and PC.

Facilitates viewing and recording setting parameters on site in connection with the ACS410 software.



OCI410

Article no.: **BPZ:OCI410**

BC interface module between burner control and PC.

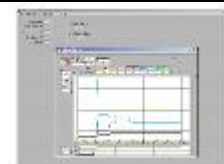
Facilitates viewing, handling and recording setting parameters on site in connection with the ACS410 software.



ACS410

Article no.: **BPZ:ACS410**

PC software for setting the parameters and for visualizing the burner controls.



Actuators

SQN3 / SQN4

Electromotoric actuators for use with air dampers and control valves of oil or gas burners of small to medium capacity.

- Impact-proof and heat-resistant plastic housing
- Screw terminals for the electrical connections
- Maintenance-free gear train, which can be disengaged
- Internal and external position indication
- Easy-to-adjust end and auxiliary switches for setting the switching points

Holding torque:

- SQN3 0.8...3 Nm
- SQN4 6 Nm

Running time:

- SQN3 4.5...30 s
- SQN4 120 s

Direction of rotation:

- SQN30 counterclockwise
- SQN31 / SQN41 clockwise



SQN7

Electromotoric actuators for air dampers and control valves of oil and gas burners of small to medium capacity.

- Impact-proof and heat-resistant plastic housings
- Screw terminals for the electrical connections
- Maintenance-free gear train, which can be disengaged
- Internal position indication
- Easy-to-adjust end and auxiliary switches for adjusting the switching points
- Integrated electronic circuits
- With synchronous motor

Holding torque:

- SQN70 / SQN71 / SQN75 0.7...1.3 Nm
- SQN74 0.7 Nm

Running time:

- SQN70 / SQN71 / SQN75 4...30 s
- SQN74 4 s

Direction of rotation:

- SQN70 / SQN74 counterclockwise
- SQN71 / SQN75 clockwise



Actuators

SQN9

Electromotoric actuators for air dampers and control valves of oil and gas burners of small to medium capacity.

- Impact-proof and heat-resistant plastic housings
- Screw terminals for the electrical connections
- Maintenance-free gear train, which can be disengaged
- Internal position indication
- Easy-to-adjust end and auxiliary switches for adjusting the switching points
- Integrated electronic circuits

Holding torque: 0.8...2.4 Nm

Running time: 4...24 s

Direction of rotation:

- SQN90 counterclockwise
- SQN91 clockwise



SQM1 / SQM2

The reversible electromotoric actuators SQM range are for use in connection with controllers or switching devices equipped with changeover contacts.

Holding torque:

- SQM1 4...15 Nm
- SQM2 12 Nm

Running time:

- SQM1 14...100 s
- SQM2 29...66 s

Direction of rotation: clockwise or counterclockwise rotation



SQM40 / SQM41

The actuators are suited for driving flow control valves, butterfly valves, dampers or for use on other applications that require rotary motion. Areas of application are oil and gas burners of medium to larger capacity as well as thermal process plants.

Holding torque: Up to 10 Nm

Running time: 15 s and 30 s

Direction of rotation: clockwise or counterclockwise rotation



Presentation of products (cont'd)

Actuators

SQM5

The reversible electromotoric actuators SQM5 are used to drive air or gas dampers of oil and gas burners of medium to large capacity

- With 1 or 2 drive shaft ends; drive shafts can be exchanged and are available as separate items
- Can be equipped with electronic modules for control and position feedback via steady signals
- Internal and external position indication
- Drive shaft and cam shaft can be separately disengaged
- Choice of UL-listed types for use in the U.S. and Canada
- Supplementary Data Sheets, refer to N7921 and N7922



Holding torque:

- SQM50 10...15 Nm
- SQM53 / SQM54 20...25 Nm
- SQM56 30...40 Nm

Running time:

- SQM50 10...87 s
- SQM53 30...43 s
- SQM54 30...65 s
- SQM56 60...87 s

Direction of rotation: Facing the gear train side:
counterclockwise or clockwise
(selectable)

Delivery: counterclockwise

Display and operating units

AZL21.00A9

Article no.: **BPZ:AZL21.00A9**

Display and operating unit, detached, choice of mounting methods, 8-digit LCD, 5 buttons, BCI for LME39 / LME7, degree of protection IP40.



AZL23.00A9

Article no.: **BPZ:AZL23.00A9**

Display and operating unit, detached, choice of mounting methods, 8-digit LCD, 5 buttons, BCI for LME39 / LME7, degree of protection IP54.



7-segment display (optional)

Built-in in the LME7 and 3 other buttons for operation in connection with 3 x 7-segment display.

Presentation of products (cont'd)

Accessories

AGK20

Article no.: **BPZ:AGK20**

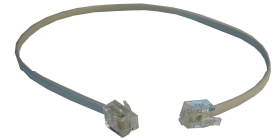
Extension of lockout reset button.



AGV50.100

Article no.: **BPZ:AGV50.100**

Signal cable for AZL2, with RJ11 connector, cable length 1 m, pack of 10.



AGV50.300

Article no.: **BPZ:AGV50.300**

Signal cable for AZL2, with RJ11 connector, cable length 3 m, pack of 10.

ARC466890660

Article no.: **BPZ:ARC466890660**

RC unit for ionization current supervision in networks with non-earthed neutral conductor.



AGK25

Article no.: **BPZ:AGK25**

PTC resistor (AC 230 V) as a burden for terminal 3 (for burners without fan motor, such as atmospheric gas burners).



AGQ3

Ancillary unit for UV supervision, can be fitted under the plug-in base.

AGQ3.1A27: Cable length 500 mm

Article no.: **BPZ:AGQ3.1A27**

AGQ3.2A27: Cable length 300 mm

Article no.: **BPZ:AGQ3.2A27**



KF8872 (not for LME39)

Article no.: **BPZ:KF8872**

Service adapter for checking the functions of burner controls on the plant. Function checks via control lamps. Detector current measurements via 4 mm dia. jacks.



Note!

When there is no load on the output terminals, the respective control lamp might light up.

LDU11 (only LME22 and LME39.1)

The valve proving system for monitoring the leakage of the shutoff valves for gas burners and gas devices.

In the event of inadmissible leakage, the system prevents the burner from starting up.

See Data Sheet N7696.



QPLx5

The pressure switches are used for monitoring gas or air pressures. When the pressure falls below or exceeds the adjusted switching point, the respective electrical circuit will be opened or changes over.



Available documentation

Type reference (ASN)	Title	Documentation no.
ACS410	Software	CC1J7352
AGG3	Connection set	C7105 (74 319 0642 0)
AGG9	Connection set	---
AGK11	Plug-in base	CC1N7201
AGK20	Extension of lockout reset button	---
AGK25	PTC resistor	---
AGK65	Cable holder	CC1N7201
AGK66	Cable holder	CC1N7201
AGQ3	Ancillary unit	---
AGV50.100	Signal cable	---
AGV50.300	Signal cable	---
ARC466890660	RC unit	---
AZL21	Display and operating units	CC1N7542
AZL23	Display and operating units	CC1N7542
KF8872	Service adapter	---
LDU11	Valve proving system	CC1N7696
LME11	Burner control	CC1N7101
LME21	Burner control	CC1N7101
LME23	Burner control	CC1N7101
LME39	Burner control	CC1N7106
LME41	Burner control	CC1N7101
LME44	Burner control	CC1N7101
LME7	Burner control	CC1P7105
OCI400	Optical interface	CC1N7614
OCI410	BC interface module	CC1N7615
PME7	Program module	CC1P7105
QPLx5	Pressure switch	CC1N7221
QRA2	Flame detector	CC1N7712
QRA4	Flame detector	CC1N7711
QRA10	Flame detector	CC1N7712
QRB1	Photo resistive flame detector	CC1N7716
QRB3	Photo resistive flame detector	CC1N7716
QRB4	Yellow flame detector	CC1N7720
QRC	Blue flame detector	CC1N7714
SQN3	Actuators	CC1N7808
SQN4	Actuators	CC1N7808
SQN7	Actuators	CC1N7804
SQN9	Actuators	CC1N7806
SQM1	Actuators	CC1N7812
SQM2	Actuators	CC1N7812
SQM40 / SQM41	Actuators	CC1N7817
SQM5	Actuators	CC1N7815