SIEMENS

7541

Range Overview

LMV2…
LMV3...

The LMV2... / LMV3... provides all supervisory functions required for forced draft burners of medium to high capacity operating on a single fuel and – using integrated communication interfaces – affords convenient diagnostics, parameter settings and incorporation on the automation system level.

Integrated in the LMV2... / LMV3... basic unit are:
- The burner control, including gas valve proving
- Electronic fuel / air ratio control with a maximum of 2 actuators
- Optional variable speed drive (VSD) control

Documentation

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

Target groups
- Sales engineers
- Internal staff
- Burner experts

CC1Q7541en
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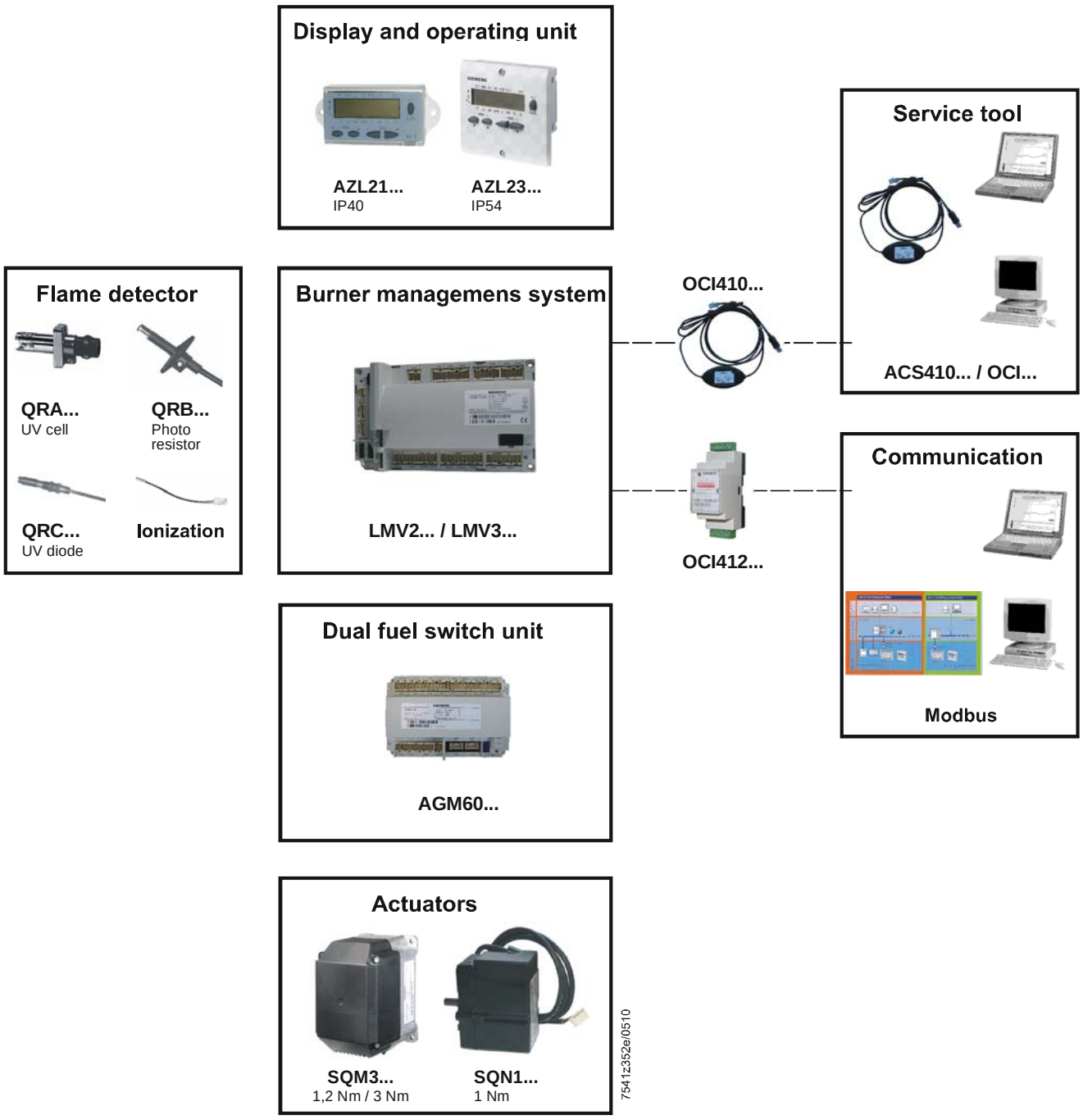
Functions

LMV26.300A2	LMV27.100A2	LMV36.520A1	LMV37.400A1	LMV37.400A2	LMV37.420A1 (US)	
						Operating modes
●	●	●	●	●	●	- Intermittent operation
		●	●	●	●	- Continuously operation (only with ionization probe, without AGM60...)
						Basic applications, single-fuel operation
●	●	●	●	●	●	- Light oil direct ignition, 2-stage electronic ratio control - Light oil direct ignition, 3-stage electronic ratio control - Light oil direct ignition, electronic modulating ratio control - Gas direct ignition, electronic modulating ratio control - Gas pilot ignition, electronic modulating ratio control - Gas direct ignition, pneumatic modulating ratio control - Gas pilot ignition, pneumatic modulating ratio control - Light oil direct ignition modulating with 2 fuel valves
●		●				- Dual-fuel burner gas / light oil with gas pilot ignition - Dual-fuel burner gas / light oil with gas pilot ignition with 2 fuel valves
						Electronic ratio control
●	●	●	●	●	●	- Stepper motor for air damper - Stepper motor for fuel damper - Separate curve adjustment for air and fuel - Monitoring the actuator positions - Detection of open-circuits of actuators - Adjustment of minimum and maximum setting
●		●	●	●	●	- VSD control speed feedback - Optional automatic speed standardization with VSDs - Separate curve adjustment for VSD
						Flame detectors for intermittent operation
●	●	●	●	●	●	- Ionization probe - UV detector QRA2…, QRA4.U, QRA10… - Photo resistive flame detector QRB…
●	●			●		- Blue-flame detector QRC…
						Flame detectors for continuous operation
		●	●	●	●	- Ionization probe
						Valve proving in connection with gas pressure switch
●	●	●	●	●	●	- Selectable: Before, after or before and after startup - Valve proving can be switched on / off
						External integration of load controller
●	●	●	●	●	●	- Input heat request - Preset burner output via Modbus from building automation
●	●		●	●	●	- Input multistage, shifting multistage, or modulating (3-position signal)
●		●	●	●	●	- 4...20 mA signal input for preset burner output

Functions (cont'd)

LMV26.300A2	LMV27.100A2	LMV36.520A1	LMV37.400A1	LMV37.400A2	LMV37.420A1 (US)	
						Binary inputs / signal loops
●	●	●	●	●	●	- Burner flange - Safety loop - Air pressure switch - Pressure switch gas valve proving - Pressure switch-min-gas / -min-oil - Pressure switch-max-gas / -max-oil or POC contact - Reset / manual lockout - Heat request (priority over all heat sources) - Stage 2, OPEN with 3-position controller - Stage 3, CLOSED with 3-position controller
●		●				- Fuel selection
						Binary outputs
●	●	●	●	●	●	- Fuel valve V1 - Fuel valve V2 - Fuel valve V3 - Extra valve (safety valve SV) - Ignition - Fan - Continuous fan operation - Alarm - Indication of operation
						Analog inputs
●		●	●	●	●	- Preset burner output 4...20 mA
						Analog outputs
●	●	●	●	●	●	- Current burner output DC 0…10 V
●		●	●	●	●	- VSD control DC 0…10 V (alternative to indication of output)
						Meters and counters / statistics functions
●	●	●	●	●	●	- Fuel meter (only as an alternative to VSD control) - Repetition counter - Error history - Cancellation of error history
	●		●	●	●	- Operating hour meter
						Special functions
●	●	●	●	●	●	- Functions and times can be parameterized via AZL2… or PC tool - Reset / manual lockout - Alarm in case of start prevention - Startup without prepurging (to EN 676) - Gas shortage program - Program stop function - Low-fire load shutdown - Continuous fan - Test function for the burner approval – lost of flame test (TÜV test)
		●	●	●	●	- Forced intermittent operation (<24 h) can be deactivated

LMV26.300A2	LMV27.100A2	LMV36.520A1	LMV37.400A1	LMV37.400A2	LMV37.420A1 (US)	
						Communication interfaces
●	●	●	●	●	●	- BCI for AZL2… display or OCI410… interface - Via OCI412.10 interface to RS485 Modbus
						Display
●	●	●	●	●	●	- 7-segment display and operating unit AZL21… - 7-segment display and operating unit AZL23… - Brightness of display can be parameterized
						Dual fuel switch unit
●		●				- Dual fuel switch unit AGM60...


Display and operating unit
AZL21...
IP40
AZL23...
IP54
Service tool
ACS410... / OCI...
Flame detector
QRA...
UV cell
QRB...
Photo resistor
QRC...
UV diode
Ionization
Burner managemens system
LMV2... / LMV3...
OCI410...
OCI412...
Communication
Modbus
Dual fuel switch unit
AGM60...
Actuators
SQM3...
1,2 Nm / 3 Nm
SQN1...
1 Nm
7541z352e/0510

Burner management system

LMV2… / LMV3...
The basic unit is the actual burner control featuring all-polar input / output terminals. No operating elements. Operation via detached ancillary units for wire-bound communication

Dual fuel switch unit

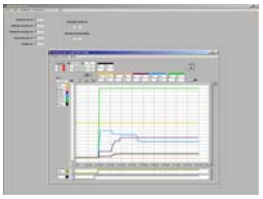
AGM60.1A9
Connected on the LMV26.300A2 basic unit.
Used for switching the valve control or feedback signals of both fuels.
AGM60.4A9
Connected on the LMV36.520A1 basic unit.
Used for switching the valve control or feedback signals of both fuels.

Service tools

OCI410… interface between burner management system and PC
Facilitates viewing, handling and recording setting parameters on site with the help of the ACS410 software package

OCI412.10 Modbus interface
Device serving as an interface between the LMV2... / LMV3… and a Modbus system, such as a building automation and control system (BACS). The Modbus interface is based on the RS-485 standard

ACS410
PC software for parameterization and visualization to the burner management system



Display and operating units

AZL21.00A9
Detached display and operating unit, choice of mounting methods, 8-digit LCD, 5 buttons, BCI for LMV2... / LMV3... system, degree of protection IP40

AZL23.00A9
Detached display and operating unit, choice of mounting methods, 8-digit LCD, 5 buttons, BCI for LMV2... / LMV3... system, degree of protection IP54

AGV50.100
Signal cable for AZL2..., with RJ11 connector, cable length 1 m, pack of 10

AGV50.300
Signal cable for AZL2..., with RJ11 connector, cable length 3 m, pack of 10

Flame detectors

QRA2…
Flame detector for use with Siemens burner controls, for the supervision of gas flames and yellow- / blue-burning oil flames as well as ignition spark checking.
Plastic housing, metalized to prevent static charging caused by the air flow from the fan. For direct mounting on the burner. The detectors can be supplied with or without securing flange and clamp

QRA4.U
Flame detector for use with Siemens burner controls, for the supervision of gas flames and yellow- or blue-burning oil flames as well as for ignition spark proving.

QRA10…
Flame detector for use with Siemens burner controls, for the supervision of gas flames and yellow- / blue-burning oil flames as well as ignition spark checking.
Die-cast aluminium 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.

QRB…
Photo resistive flame detector for use with Siemens burner controls, for the supervision of oil flames in the visible light spectrum.
Especially suited for use with burner controls for small capacity burners

QRC…
Blue-flame detector for use with Siemens burner controls, for the supervision of blue- or yellow-burning oil or gas flames.
Especially suited for use with burner controls for small capacity burners in intermittent operation

Frontal illumination

Lateral illumination

Actuators

SQM33.4…
Rated torque 1.2 Nm (0.8 Nm holding torque when dead), running time 5 s, stepper motor, front mounting, D-type drive shaft

SQM33.5…
Rated torque 3 Nm (2.6 Nm holding torque when dead), running time 5 s, stepper motor, front mounting, D-type drive shaft

SQN1…
Rated torque 1 Nm (0.2 Nm holding torque when dead), running time 5 s, stepper motor, front mounting, D-type drive shaft

Connector sets

AGG3.110
Set of 50 standard connectors for gas / oil applications

AGG3.111
Standard connector set for gas / oil applications, single pack

Example: X5-03

AGG3.120
Set of 50 extension connectors (complementing the AGG3.11…, all connector versions are covered)

AGG3.121
Extension connector set (complementing the AGG3.11…, all connector versions are covered), single pack

AGG3.131
Complete connector set RAST2.5 / RAST3.5 / RAST5 for gas / oil applications, single pack

Example: X5-02

AGG3.132
Complete connector set RAST2.5 / RAST3.5 / RAST5 for gas- / oil applications, pack of 10

AGG3.151
Connector set for AGM60.1A9 (Europe), RAST5, single pack

Example X5-03

AGG3.152
Connector set for AGM60.1A9 (Europe), RAST5, set of 10 AGM60.4A1

AGG3.161
Connector set for AGM60.4A9 (US), RAST5, single pack

Example X5-03

AGG3.162
Connector set for AGM60.4A9 (US), RAST5, set of 10 AGM60.4A9

Accessories

KF8895
Test case for LMV2...- / LMV3... system

KF8894.3A...
Demo case for LMV2... / LMV3... system
With integrated basic unit LMV27.200A2, 2 actuators SQN1…, display and operation unit AZL23.00A9 and Modbus interface OCI412.10

AGV8894.01
Connecting cables for test case (KF8895), consisting of connecting cable X1 for mains potential and connecting cable X2 for low-voltage
→ Both cables in one package

X1

X2

AGG5.310
Accessories set speed control, for burner management systems, composed of sensor disk ∅ 50, sensor and mounting set

Cable

AGV8894.01
Connecting cable set for test case (KF8895)
Composed of connecting cable X1 for main potential and connecting cable X2 for low voltage
→ Both cable in one package

X1

X2

AGV50.100
Signal cable for AZL2..., with RJ11 connector, length 1 m, pack of 10

AGV50.300
Signal cable for AZL2..., with RJ11 connector, length 3 m, pack of 10

AGV60.50
Connecting cable between LMV26... and AGM60...
cable length 0.5 m

AGV61.100
Connecting cable between LMV36... and AGM60.1A9 (US), cable length 1 m

Available documentation

Type reference	Designation	Documentation
ACS410	Software	CC1J7352
AGG3.110	Connector set	C7541 (74 319 0515 0)
AGG3.111	Connector set	C7541 (74 319 0515 0)
AGG3.120	Connector set	C7541 (74 319 0515 0)
AGG3.121	Connector set	C7541 (74 319 0515 0)
AGG3.131	Connector set	C7541 (74 319 0637 0)
AGG3.132	Connector set	C7541 (74 319 0637 0)
AGG3.151	Connector set	C7547 (74 319 0670 0)
AGG3.152	Connector set	C7547 (74 319 0670 0)
AGG3.161	Connector set	C7547 (74 319 0671 0)
AGG3.162	Connector set	C7547 (74 319 0671 0)
AGG5.310	Accessories set speed control	M7550.1 (74 319 9322 0)
AGM60.1A9	Dual fuel switch unit	CC1P7547
AGM60.4A9	Dual fuel switch unit	CC1P7544
AGV50.100	Signal cable	---
AGV50.300	Signal cable	---
AGV60.50	Connecting cable	---
AGV61.100	Connecting cable	---
AGV8894.01	Connecting cable	CC1U7993
AZL21…	Display and operating units	CC1N7542
AZL23…	Display and operating units	CC1N7542
KF8894.3A...	Demo case	CC1U7995
KF8895	Test case	CC1U7993
LMV26.3…	Burner management system	CC1P7547
LMV27.100…	Burner management system	CC1P7541
LMV36.520…	Burner management system	CC1P7544
LMV37.4...	Burner management system	CC1P7546
OCI410…	Interface	CC1N7616
OCI412.10	Interface	CC1N7615
QRA2…	Flame detectors	CC1N7712
QRA4.U	Flame detectors	CC1N7711
QRA10…	Flame detectors	CC1N7712
QRB…	Photo resistive flame detectors	CC1N7714
QRC…	Blue-flame detectors	CC1N7716
SQM33.4…	Actuators	CC1N7813
SQM33.5…	Actuators	CC1N7813
SQN1…	Actuators	CC1N7803