



Product range overview

LMV5...

The LMV5 burner management system provides all supervisory functions required for forced draft oil or gas burners of medium to high capacity and facilitates modular system extensions via integrated communication interfaces.

Integrated in the LMV5 basic unit are:

- Burner control, including gas valve proving
- Electronic fuel-air ratio control for a maximum of 6 actuators
- Optional PID temperature / pressure controller (load controller)
- Optional VSD module
- Optional O₂ control and an O₂ monitor (with PLL52 and QGO2)

This documentation is a brief overview of the most important functions and components of the product family of the LMV5 burner management systems.

Use

- Residential and nonresidential buildings that use hot water or steam boilers
- Industrial plants
- Direct-fired heat production plant

Target groups

- Sales engineers
- In-house personnel
- Burner manufacturers (OEMs)
- Installers
- Planning engineers
- Plant operators

Based on the following software versions:

LMV50:	V10.30
LMV51:	V05.20
LMV51.3:	V05.20
LMV52.2:	V05.20
LMV52.4:	V10.30
Int. LR module:	V02.10
Int. VSD module:	V01.50
AZL52:	V05.10
PLL52:	V01.50
CC1Q7550en	
06.05.2024	

Functions

	LMV51.0	LMV51.1	LMV51.3	LMV50.3	LMV52.2	LMV52.4
Electronic fuel / air ratio control						
Fuel oil	●	●	●	●	●	●
Fuel gas	●	●	●	●	●	●
Actuator for: Air damper, fuel damper, auxiliary actuator 1	●	●	●	●	●	●
Actuator for: Air damper, fuel damper, auxiliary actuator 3 and VSD			●	●	●	●
Actuator for: Air damper, fuel damper, auxiliary actuator 1, VSD, auxiliary actuator 3 or VSD + auxiliary actuator 3			●	●		
Actuator for: Air damper, fuel damper, auxiliary actuator 1...3 and VSD					●	●
Up to 15 curvepoints per actuator	●	●	●	●	●	●
Linear interpolation between curvepoints	●	●	●	●	●	●
Supervision of actuator positions	●	●	●	●	●	●
Detection of line interruptions of actuators	●	●	●	●	●	●
Pneumatic fuel-air ratio control						
Using an air actuator and a suitable gas control valve, all types of gas-fired fuel trains (modulating operation) can also be operated as pneumatic fuel-air ratio control systems	●	●	●	●	●	●
Fuel trains						
Gas - direct ignition, modulating operation (G)	●	●	●	●	●	●
Gas - with pilot ignition, one pilot valve, modulating operation (Gp1)	●	●	●	●	●	●
Gas - with pilot ignition, 2 pilot valves, modulating operation (Gp2)	●	●	●	●	●	●
Light oil - direct ignition, modulating operation (LO)	●	●	●	●	●	●
Light oil - direct ignition, 1-stage operation (LO)	●	●	●	●	●	●
Light oil - direct ignition, 2-stage operation (LO)	●	●	●	●	●	●
Light oil - direct ignition, 3-stage operation (LO)	●	●	●	●	●	●
Heavy oil - direct ignition, modulating operation (HO)	●	●	●	●	●	●
Heavy oil - direct ignition, 1-stage operation (HO)	●	●	●	●	●	●
Heavy oil - direct ignition, 2-stage operation (HO)	●	●	●	●	●	●
Dual-fuel burner: Any type of gas-fired fuel train (G), (Gp1) or (Gp2) can be arbitrarily combined with an oil-fired fuel train (LO) or (HO)	●	●	●	●	●	●
Dual-fuel burner: Oil-fired fuel trains (LOGp) and (HOGp) are only suited for ignition with a gas pilot and may only be used for a dual-fuel burner when combined with the gas-fired fuel train (Gp2)	●	●	●	●	●	●
Continuous-operation pilot for all pilot fuel trains (Gp1, Gp2, LOGp, HOGp). The pilot valve continues to be controlled in operation together with the main valve.				●	●	●
Skipping of phases 50 and 52 in the case of direct ignition fuel trains (G, LO, HO)	●	●	●	●	●	●
Flame detectors for intermittent operation						
UV flame detector QRA2, QRA4, QRA10 with AGQ1 (only for 230 V versions available)	●	●	●	●	●	●
Photoresistive detector QRB1, QRB3	●	●	●	●	●	●

Functions (cont'd)

	LMV51.0	LMV51.1	LMV51.3	LMV50.3	LMV52.2	LMV52.4
Flame detectors for continuous operation						
Ionization probe	●	●	●	●	●	●
Infrared flame detector QRI	●	●	●	●	●	●
UV flame detector QRA7	●	●	●	●	●	●
Separate flame supervision of pilot and main flames						
Input A: For QRI, QRA7 or QRB1/QRB3				●	●	●
Input B: For ionization probe						
Flame supervision via external, safety-oriented flame monitor						
Connection of an external flame safeguard at input X6-01 pin 3 and X6-01 pin 1				●	●	●
Gas valve proving in connection with a gas pressure switch						
Selectable: Before, after or before, and after startup (can be deactivated)	●	●	●	●	●	●
Gas valve proving function with gas pressure switch and supervision of valve closure contact for oil and gas valves						
Input for valve closure contact (X7-03 pin 2)	●	●	●	●	●	●
Digital inputs / signal loops						
Safety loop	●	●	●	●	●	●
Burner flange (component of safety loop)	●	●	●	●	●	●
Air pressure switch (can be deactivated)	●	●	●	●	●	●
Gas pressure switch valve proving or gas and/or oil valve closing contacts (CPI or POC)	●	●	●	●	●	●
Gas pressure switch-min (can be deactivated)	●	●	●	●	●	●
Gas pressure switch-max (can be deactivated)	●	●	●	●	●	●
Oil pressure switch-min (can be deactivated)	●	●	●	●	●	●
Oil pressure switch-max (can be deactivated)	●	●	●	●	●	●
Reset / manual locking	●	●	●	●	●	●
Heat request (ON/OFF)	●	●	●	●	●	●
Stage 2 or OPEN with 3-position controller	●	●	●	●	●	●
Stage 3 or CLOSE with 3-position controller (stage 3 = OPEN and CLOSE)	●	●	●	●	●	●
Fuel selection oil	●	●	●	●	●	●
Fuel selection gas	●	●	●	●	●	●
Heavy oil direct start (can be deactivated)	●	●	●	●	●	●
Start release oil (can be deactivated)	●	●	●	●	●	●
Start release gas or gas and/or oil valve closing contacts (CPI or POC)			●	●	●	●
Fan contactor contact or pressure switch flue gas recirculation (can be deactivated)	●	●	●	●	●	●
Startup stop	●	●	●	●	●	●
Start/Stop in phase 36 for non safety-relevant multi-burner applications						

Functions (cont'd)

	LMV51.0	LMV51.1	LMV51.3	LMV50.3	LMV52.2	LMV52.4
Digital outputs						
Fuel valve 1 oil (V1)	●	●	●	●	●	●
Fuel valve 2 oil (V2)	●	●	●	●	●	●
Fuel valve 3 oil (V3)	●	●	●	●	●	●
Safety valve oil (SV)	●	●	●	●	●	●
Fuel valve 1 gas (V1)	●	●	●	●	●	●
Fuel valve 2 gas (V2)	●	●	●	●	●	●
Fuel valve 3 gas (V3)	●	●	●	●	●	●
Safety valve gas (SV)	●	●	●	●	●	●
Start signal or pressure switch relieve valve	●	●	●	●	●	●
Ignition	●	●	●	●	●	●
Fan or continuous fan operation	●	●	●	●	●	●
Alarm	●	●	●	●	●	●
Indication of oil firing	●	●	●	●	●	●
Indication of gas firing	●	●	●	●	●	●
Oil pump or magnetic clutch	●	●	●	●	●	●
Inputs for connection of external load controllers						
Heat request (ON/OFF), see also <i>Digital inputs</i>	●	●	●	●	●	●
Stage 2 or OPEN with 3-position controller, see also <i>Digital inputs</i>	●	●	●	●	●	●
Stage 3 or CLOSE with 3-position controller (stage 3 = OPEN and CLOSE), see also <i>Digital inputs</i>	●	●	●	●	●	●
Analog signal input for preset output		●	●	●	●	●
Preset output via Modbus (AZL5) of BACS	●	●	●	●	●	●
Internal load controller, connections and functions						
Preset output or preset setpoint DC 0...10 V, DC 2...10 V, 0...20 mA or 4...20 mA		●	●	●	●	●
Setpoint changeover		●	●	●	●	●
Temperature or pressure switch input DC 0...10 V, DC 2...10 V, 0...20 mA or 4...20 mA		●	●	●	●	●
Temperature sensor input Pt100		●	●	●	●	●
Temperature sensor input Pt1000 or LG-Ni1000		●	●	●	●	●
Internal adaptive boiler temperature or boiler pressure control function		●	●	●	●	●
Internal temperature switch function		●	●	●	●	●
Cold start shock protection function		●	●	●	●	●
Analog outputs						
Current burner output 4...20 mA		●	●	●	●	●
Burner output, O2 value, temperature, pressure, flame, power or other adjustable values, 0...20 mA or 4...20 mA		●	●	●	●	●
VSD, connections and functions						
Output: VSD control 0...20 mA or 4...20 mA			●	●	●	●
Output: VSD release contact potential-free			●	●	●	●
Inputs: Feedback of fan motor's current speed, e.g. via accessory set AGG5.31x			●	●	●	●
Input: Alarm message from VSD (DC 12...24 V)			●	●	●	●
Additional air pressure switch for VSD operation is possible			●	●	●	●

Functions (cont'd)

	LMV51.0	LMV51.1	LMV51.3	LMV50.3	LMV52.2	LMV52.4
Meters and counter / statistics functions						
Fuel meter oil (input on the VSD's PBC)			●	●	●	●
Fuel meter gas (input of the VSD's PBC)			●	●	●	●
Hours run meter separately for oil and gas	●	●	●	●	●	●
Startup counter separately for oil/gas	●	●	●	●	●	●
Error message counter	●	●	●	●	●	●
Error history	●	●	●	●	●	●
Life cycle display	●	●	●	●	●	●
Residual oxygen (O2) trim control together with PLL52 and QGO20						
O2 trim control function					●	●
Input for On/Off switching of O2 control					●	●
Specific O2 control functions for Super Low NOx burner (Mesh burner)						●
O2 limit function					●	●
Combustion air and flue gas temperature detection together with PLL52						
Warning when flue gas temperature is too high					●	●
Calculation of technical combustion efficiency factor					●	●
Flue gas feedback function						
With time or temperature threshold			●	●	●	●
Temperature-compensated						●
Other functions						
Alarm with start prevention	●	●	●	●	●	●
Gas shortage program	●	●	●	●	●	●
Program stop function	●	●	●	●	●	●
Forced intermittent operation (can be deactivated)	●	●	●	●	●	●
Partial load shutdown	●	●	●	●	●	●
Continuous fan operation	●	●	●	●	●	●
Temperature limiter		●	●	●	●	●
Cold start thermo shock protection		●	●	●	●	●
Auxiliary actuator (can be deactivated)	●	●	●	●	●	●
Actuators (can be deactivated)	●	●	●	●	●	●
Startup of low-fire position beginning in phase 50	●	●	●	●	●	●
Air pressure switch and flue gas recirculation air pressure switch parameterizable to <i>don't care</i>	●	●	●	●	●	●
Start point operation parameterizable	●	●	●	●	●	●
Long postpurge time (tn3) parameterizable				●		●

Functions (cont'd)

	LMV51.0	LMV51.1	LMV51.3	LMV50.3	LMV52.2	LMV52.4
Display and operating unit AZL5						
Parameter setting and display functions	●	●	●	●	●	●
Storage of fault and error history	●	●	●	●	●	●
Real time clock with backup (e.g. to acquire the points in time faults occur)	●	●	●	●	●	●
Contrast of display (can be set)	●	●	●	●	●	●
User language (can be selected) (several language groups available, each with a maximum of 6 languages)	●	●	●	●	●	●
Shutdown by pressing a combination of buttons	●	●	●	●	●	●
Reset	●	●	●	●	●	●
Parameter backup and restore function	●	●	●	●	●	●
Update of AZL5 software	●	●	●	●	●	●
4 access levels, 3 of them with password protection	●	●	●	●	●	●
Display of technical combustion efficiency factor (if combustion air and flue gas temperature sensors have been connected)					●	●
Communication interface of AZL5						
RS-232 for operation via PC and software ACS450	●	●	●	●	●	●
Modbus, eBus or data output interface for connection to building automation systems or for data output	●	●	●	●	●	●
Industry variant with specific functions						
High-temperature operation - No flame supervision and prepurging if combustion chamber temperature >750 °C - Instead of flame supervision, temperature supervision takes place via an external safety limit thermostat				●		
Repetition parameterizable in the case of <i>no flame at end of safety time 1</i>				●		
Cooling function in standby mode The cooling function is started by a mains voltage signal at input X5-03 Pin 3: - The fan is switched on and is monitored as in the case of <i>continuous purging</i> - The actuators used for the control of air are driven to their postpurge positions.				●		

Burner management system



LMV5...

Service tool



ACS450

Display and operating unit



AZL52...

Actuators



SQM4...



SQM9...

Sensors and detectors

Temperature sensor



FGT-Pt1000



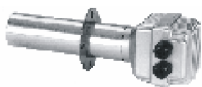
QAE21...

Pressure sensor



QBE2002-P...

O2 sensor



QGO20...

Intermittent operation

Only for AC 230 V: Ionization alternatively with AGQ1...



QRA2...



QRA4...



QRA10...



QRB...

Continuous operation



Ionization



QRA7...



QRI...

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The products in detail

Brenner management system

The LMV5 burner management system is a microprocessor-based burner control with coordinated system components for controlling and monitoring forced draft burners of medium to large capacity.



Overview	Article no.	Product no. (ASN)	Parameter set	Mains voltage
LMV50.3 (industry variant) - with load controller - with VSD operation - with flue gas recirculation function without temperature compensation - with industry-specific functions, such as e.g. high-temperature operation	BPZ:LMV50.320B2	LMV50.320B2	Industry	AC 230 V
LMV51.0 without load controller	BPZ:LMV51.000C2	LMV51.000C2	Europe	AC 230 V
	BPZ:LMV51.040C1	LMV51.040C1	US / Canada	AC 120 V
LMV51.1 with load controller	BPZ:LMV51.100C1	LMV51.100C1	Europe	AC 120 V
	BPZ:LMV51.100C2	LMV51.100C2	Europe	AC 230 V
	BPZ:LMV51.140C1	LMV51.140C1	US / Canada	AC 120 V
LMV51.3 - with load controller - with VSD operation - with flue gas feedback function without temperature compensation	BPZ:LMV51.300B1	LMV51.300B1	Europe	AC 120 V
	BPZ:LMV51.300B2	LMV51.300B2	Europe	AC 230 V
	BPZ:LMV51.340B1	LMV51.340B1	US / Canada	AC 120 V
LMV52.2 - with load controller - with VSD operation - with flue gas feedback function without temperature compensation - with O2 trim control (with PLL52 and QGO20)	BPZ:LMV52.200B1	LMV52.200B1	Europe	AC 120 V
	BPZ:LMV52.200B2	LMV52.200B2	Europe	AC 230 V
	BPZ:LMV52.240B1	LMV52.240B1	US / Canada	AC 120 V
LMV52.4 - with load controller - with VSD operation - with flue gas feedback function, with/without temperature compensation - with O2 trim control (with PLL52 and QGO20) - with specific O2 control functions for Super Low NOx burner (Mesh burner)	BPZ:LMV52.400B2	LMV52.400B2	Europe	AC 230 V
	BPZ:LMV52.440B1	LMV52.440B1	US / Canada	AC 120 V

The products in detail (cont'd)

O2 module

PLL52

CAN bus module for O2 trim control with LMV52, for use with QGO20, inputs for flue gas and combustion air temperature.



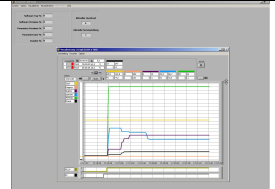
Article no.	Type	Mains voltage
BPZ:PLL52.110A100	PLL52.110A100	AC 120 V
BPZ:PLL52.110A200	PLL52.110A200	AC 230 V

Service tool

ACS450

Article no.: **BPZ:ACS450**

PC tool for convenient programming and burner settings, process visualization, data recording, AZL5, software update AZL5



Display and operating units

AZL52

Detached unit for flush panel mounting, with backlit text display, 4 x 16 characters, 4 buttons, real-time clock, Modbus and eBus interface for connection to BACS, 6 languages.



Article no.	Product no. (ASN)	Country group	Languages
BPZ:AZL52.00B1	AZL52.00B1	Western Europe 1	English (en), German (de), French (fr), Spanish (es), Italian (it), Portuguese (pt)
BPZ:AZL52.01B1	AZL52.01B1	Eastern Europe 1	English (en), Polish (pl), Hungarian (hu), Czech (cs), Croatian (hr), Slovenian (sl)
BPZ:AZL52.02B1	AZL52.02B1	Western Europe 2	English (en), Dutch (nl), Danish (da), Swedish (sv), Norwegian (no), Finnish (fi)
BPZ:AZL52.09B1	AZL52.09B1	Eastern Europe Cyrillic	English (en), Russian (ru), German (de), Bulgarian (bg), Turkish (tr), Romanian (ro)
BPZ:AZL52.40B1	AZL52.40B1	Western Europe 1 (American parameter sets)	English (en), German (de), French (fr), Spanish (es), Italian (it), Portuguese (pt)

The languages for the country groups can be exchanged with an update of ACS450 (without Eastern Europe Cyrillic).

Gateway

OCI460.xx

Cloud gateway for connecting the LMV5 to the ClimatixIC and the integrated interface converter for the Modbus RS-485.



Article no.	Type	Country group
S55666-J401-A100	OCI460.10	ClimatixIC Europe
S55666-J402-A100	OCI460.11	ClimatixIC China

The products in detail (cont'd)

Sensors and detectors

QGO20

O₂ sensors, the QGO20 are used for acquiring the residual oxygen content in flue gases of natural gas or light oil combustion plant. Together with the control unit, the QGO20 monitors and controls the combustion process.



Article no.	Type	Mains voltage
BPZ:QGO20.000D17	QGO20.000D17	120 V AC
BPZ:QGO20.000D27	QGO20.000D27	230 V AC

QRA2

UV flame detectors, the QRA2 are used for the supervision of gas flames, yellow- / blue-burning oil flames and ignition spark proving in connection with LMV5 burner controls. Suitable for intermittent operation.



Article no.	Type	Sensitivity	Accessories include ...	Terminal cover	UV cell for replacement
BPZ:QRA2	QRA2	Normal	---	Black	AGR 4 502 1131 0
BPZ:QRA2(1)	QRA2(1)	Normal	Flange 4 241 8855 0 with clamp 4 199 8806 0	Black	AGR 4 502 1131 0
BPZ:QRA2(2)	QRA2(2)	Normal	Flange 4 241 8898 0 with clamp 4 199 8806 0	Black	AGR 4 502 1131 0
BPZ:QRA2.9	QRA2.9	Normal	---	Black	AGR 4 502 1131 0
BPZ:QRA2M	QRA2M	High	---	Green	AGR 4 502 4065 0
BPZ:QRA2M(1)	QRA2M(1)	High	Flange 4 241 8855 0 with clamp 4 199 8806 0	Green	AGR 4 502 4065 0
BPZ:QRA2M(2)	QRA2M(2)	High	Flange 4 241 8898 0 with clamp 4 199 8806 0	Green	AGR 4 502 4065 0

QRA4

UV flame detector, the QRA4 are used for the supervision of gas flames, yellow- / blue-burning oil flames and ignition spark proving in connection with LMV5 burner controls. Suitable for intermittent operation.



Article no.	Type	Sensitivity
BPZ:QRA4.U	QRA4.U	Normal
BPZ:QRA4M.U	QRA4M.U	High

The products in detail (cont'd)

Sensors and detectors

QRA7

UV flame detectors, the QRA7 are used for the supervision of gas flames, yellow- / blue-burning oil flames and ignition spark proving in connection with LMV5 burner controls. Suitable for continuous operation.



Article no.	Type	Sensitivity	Detector tube length	Mains voltage	UV cell for replacement
BPZ:QRA73.A27	QRA73.A27	normal	125 mm	230 V AC	AGR 4 502 4065 0
BPZ:QRA73.A17	QRA73.A17	normal	125 mm	120 V AC	AGR 4 502 4065 0
BPZ:QRA75.A27	QRA75.A27	normal	69 mm	230 V AC	AGR 4 502 4065 0
BPZ:QRA75.A17	QRA75.A17	normal	69 mm	120 V AC	AGR 4 502 4065 0

AGM23

Article no.: **BPZ:AGM23**

- QRA7 connecting cable
- 2 m with connector
- Europe



AGM23U

Article no.: **BPZ:AGM23U**

- QRA7 connecting cable
- 4 m with connector
- US



QRA10

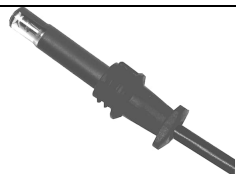
UV flame detectors, the QRA10 are used for the supervision of gas flames, yellow- / blue-burning oil flames and ignition spark proving in connection with LMV5 burner controls. Suitable for intermittent operation.



Article no.	Type	Sensitivity	UV cell for replacement
BPZ:QRA10.C	QRA10.C	Normal	AGR 4 502 1131 0
BPZ:QRA10M.C	QRA10M.C	High	AGR 4 502 4065 0

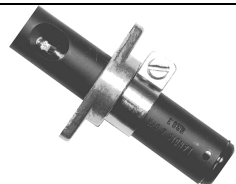
QRB1

Photoresistive flame detectors for the supervision of yellow-burning oil flames in connection with LMV5 burner controls, suited for frontal or lateral (90°) illumination. Suitable for intermittent operation.



QRB3

Photoresistive flame detectors; the QRB3 are used for the supervision of yellow-burning oil flames in connection with LMV5 burner controls, suited for frontal or lateral (90°) illumination. Suitable for intermittent operation.



Article no.	Type	Flange	Clamp	Feature	Sensitivity
BPZ:QRB3	QRB3	---	---	Protective tube	Normal
BPZ:QRB3(1)	QRB3(1)	•	•	Protective tube	Normal
BPZ:QRB3S	QRB3S	---	---	Protective tube	High
BPZ:QRB3S(1)	QRB3S(1)	•	•	Protective tube	High

The products in detail (cont'd)

Sensors and detectors

QRI

Infrared flame detectors, universal detectors for oil and gas flames, with integrated flame signal amplifier and prefabricated connecting cable of 180 cm.
Suitable for continuous operation.



Article no.	Type	Illumination	Cable length (L)	Cable end	Accessories include ...
BPZ:QRI2A2.B180B	QRI2A2.B180B	Frontal illumination	180 cm	Stripped	---
BPZ:QRI2B2.B180B	QRI2B2.B180B	Lateral illumination	180 cm	Stripped	---
BPZ:QRI2B2.B180B1	QRI2B2.B180B1	Lateral illumination	180 cm	Stripped	4 241 8855 0 Flange with radius and clamp

QAE21

Immersion temperature sensors, passive sensor for acquiring the water temperature in pipes and vessels.



FGT-PT1000

Flue gas temperature sensor for acquiring the flue gas temperature in heating plant.



QBE2003-P...

Pressure sensors, for acquiring static and dynamic positive pressures in heating, ventilation or air conditioning plants, particularly in hydraulic and pneumatic systems using liquid or gaseous media (steam applications).



Actuators

SQM45 / SQM48

Actuator, activation and feedback via CAN bus, stepper motor, front mounting



Article no.	Type	Shaft no.	Running time for 90° (min.)	Nominal output torque (max.)	Holding torque (max.)	Bearing radial force (max.)
S55451-D201-A100	SQM45.291B9	1	10	3	1,5	190
S55451-D202-A100	SQM45.295B9	5	10	3	1,5	190
S55451-D301-A100	SQM48.497B9	7	30	20	20	420
S55451-D302-A100	SQM48.697B9	7	60	35	35	800

SQM9

Actuator, running time 30...120 s, control and feedback signal via CAN bus, stepper motor, front mounting, groove for parallel key.



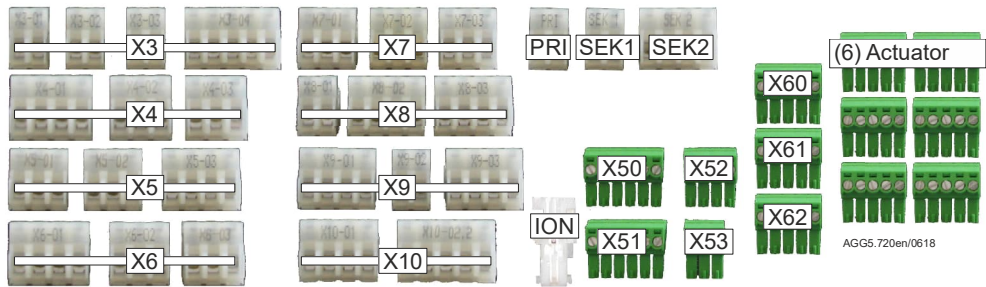
Article no.	Type	Running time (min.) for 90°	Nominal output torque (max.)	Holding torque (max.)	Radial force perpendicular to the drive shaft (max.)	Axial force in the drive shaft axis (max.)
		s	Nm	Nm	N	N
BPZ:SQM91.391A9	SQM91.391A9	30	60	60	1300	1000

Connector sets

AGG5.720

Article no.: **BPZ:AGG5.720**

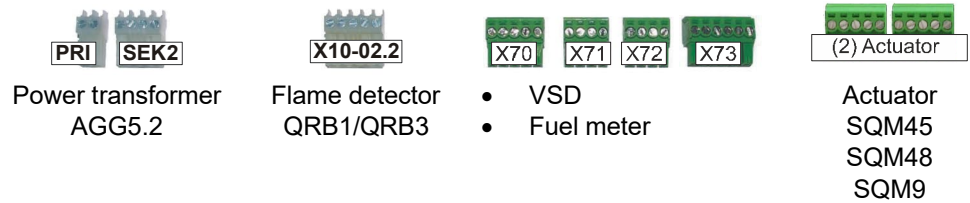
Standard connector set LMV5 for gas/oil applications with up to 3 actuators.



AGG5.721

Article no.: **BPZ:AGG5.721**

Extension connector set LMV5 (complementing AGG5.720, all connection options covered).



Connector sets

AGG9.xxx

The individual connectors are delivered in packages of up to 200 units each.

Example:



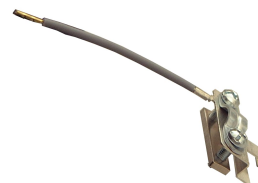
Article no.	Type	Type of plug	Terminal
BPZ:AGG9.202	AGG9.202	RAST5	X3-01
BPZ:AGG9.203	AGG9.203	RAST5	X3-02
BPZ:AGG9.204	AGG9.204	RAST5	X3-03
BPZ:AGG9.205	AGG9.205	RAST5	X8-01
BPZ:AGG9.207	AGG9.207	RAST5	X9-02
BPZ:AGG9.208	AGG9.208	RAST5	X10-03
BPZ:AGG9.218	AGG9.218	RAST5	Primary I
BPZ:AGG9.219	AGG9.219	RAST5	Secondary I
BPZ:AGG9.304	AGG9.304	RAST5	X4-02
BPZ:AGG9.305	AGG9.305	RAST5	X4-03
BPZ:AGG9.306	AGG9.306	RAST5	X5-01
BPZ:AGG9.307	AGG9.307	RAST5	X5-02
BPZ:AGG9.308	AGG9.308	RAST5	X6-02
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:AGG9.312	AGG9.312	RAST5	X7-03
BPZ:AGG9.402	AGG9.402	RAST5	X4-01
BPZ:AGG9.403	AGG9.403	RAST5	X5-03
BPZ:AGG9.404	AGG9.404	RAST5	X6-01
BPZ:AGG9.406	AGG9.406	RAST5	X8-02
BPZ:AGG9.407	AGG9.407	RAST5	X8-03
BPZ:AGG9.408	AGG9.408	RAST5	X9-01
BPZ:AGG9.409	AGG9.409	RAST5	X9-03
BPZ:AGG9.410	AGG9.410	RAST5	X10-01
BPZ:AGG9.417	AGG9.417	RAST5	Secondary II
BPZ:AGG9.501	AGG9.501	RAST5	X3-04
BPZ:AGG9.502	AGG9.502	RAST5	X10-02 pin 1
BPZ:AGG9.503	AGG9.503	RAST5	X10-02 pin 2
BPZ:AGG9.831	AGG9.831	RAST3.5	3-pole
BPZ:AGG9.841	AGG9.841	RAST3.5	4-pole
BPZ:AGG9.853	AGG9.853	RAST3.5	5-pole
BPZ:AGG9.861	AGG9.861	RAST3.5	6-pole

Accessories

AGG5.110

Article no.: **BPZ:AGG5.110**

CAN bus connection shield, angled, for connecting the CAN bus to the basic unit.



AGG5.2x0

- Mains transformer
- For CAN bus users
- Performance data adapted specifically to the LMV5
- 117 VA



Article no.	Type	Mains voltage
BPZ:AGG5.210	AGG5.210	AC 120 V
BPZ:AGG5.220	AGG5.220	AC 230 V

AGG5.31x

Speed sensor kit for LMV51.2 and LMV52 systems, consisting of sensor disk 50 mm dia., sensor and mounting kit.



Article no.	Type	Sensor disk
BPZ:AGG5.310	AGG5.310	Ø 50 mm
BPZ:AGG5.315	AGG5.315	Ø 70 mm

AGO20

Flue gas collector, accessory for O2 sensor QGO20 for use with LMV52 systems.



Article no.	Type	For chimney Ø
BZP:AGO20.001A	AGO20.001A	Up to 400 mm
BZP:AGO20.002A	AGO20.002A	Over 400 mm

AGQ1

- UV adapter
- Ancillary unit for UV supervision
- Only in connection with QRA2 / QRA4 / QRA10



Article no.	Type	Cable length, 4-wire (mm)	Cable length, 2-wire (mm)
BPZ:AGQ1.2A27	AGQ1.2A27	295 ±10	300 ±10
BPZ:AGQ1.3A27	AGQ1.3A27	700 ±10	1230 ±10

Accessories (cont'd)

Cables

AGG5.6x1

- CAN bus connecting cable between LMV5 and system components
- Shielded 5-core cable
- Length 100 m



Note!

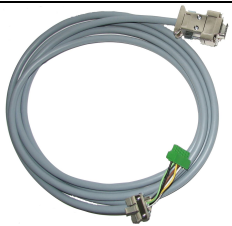
Only the connecting cables specified for the LMV5 bus system may be used!

Article no.	Type	Supply lines
BPZ:AGG5.631	AGG5.631	2 x 0.5 mm ²
BPZ:AGG5.641	AGG5.641	2 x 1.25 mm ²

AGG5.635

Article no.: **BPZ:AGG5.635**

CAN bus connection cable between basic unit and AZL5, complete with RAST3.5 plug and Sub-D plug (straight), cable length 3 m.



AGG5.812

Article no.: **BPZ:AGG5.812**

Separable cable entry, single pack, minimum order quantity of 50 units



Transformer

A5Q20002669

Article no.: **BPZ:A5Q20002669**

Transformer (V 19734) to increase ionization voltage for AC 120 V devices



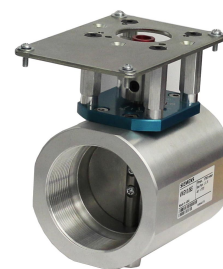
Flow control valve

VKG

Flow control valve in 2 designs.

For use in combustion plants as a gas flow controlling element or air flow controlling element with increased requirements such as:

- Increase in volume flow over the rotation angle 0...90°
- Low start flow rate
- Large modulation range > 1:25
- High numbers of repositions



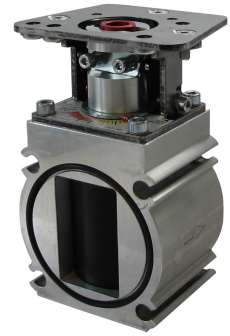
Article no.	Type	Nominal size of the built-in damper	Housing size	Connections
S55592-G301-A100	VKG10.032	Open position	DN 32	1 1/4"
S55592-G302-A100	VKG10.040	Open position	DN 40	1 1/2"
S55592-G303-A100	VKG10.050	Open position	DN 50	2"
S55592-G304-A100	VKG10.065	Open position	DN 65	2 1/2"
S55592-G305-A100	VKG10.080	Open position	DN 80	3"

Article no.	Type	Nominal size of the built-in damper	Housing size	Connections
S55592-G306-A100	VKG20.032	Middle position	DN 32	1 1/4"
S55592-G307-A100	VKG20.040	Middle position	DN 40	1 1/2"
S55592-G308-A100	VKG20.050	Middle position	DN 50	2"
S55592-G309-A100	VKG20.065	Middle position	DN 65	2 1/2"
S55592-G310-A100	VKG20.080	Middle position	DN 80	3"

Proportional controlling element

VKP

Proportional controlling element for mounting between threaded flanges in gas trains.



Article no.	Type	Housing size	Nominal size of the built-in rotary cylinder	Available flange sizes AGF10
BPZ:VKP40.15	VKP40.15	DN 40	15	1/2"
BPZ:VKP40.20	VKP40.20	DN 40	20	3/4"
BPZ:VKP40.25	VKP40.25	DN 40	25	1"
BPZ:VKP40.32	VKP40.32	DN 40	32	1 1/4"
BPZ:VKP40.40	VKP40.40	DN 40	40	1 1/2"
BPZ:VKP40.50	VKP40.50	DN 40	50	2"
BPZ:VKP40.50H	VKP40.50H	DN 40	50 H	2"
BPZ:VKP40.50S	VKP40.50S	DN 40	50 S	2"

Mounting plate

ASK33.1

Article no.: **BPZ:ASK33.1**

For mounting actuator SQM45.295B9 (D shaft) on the VKP40 proportional controlling element.



Note!

The required screws (3x M5 countersunk screws and 4x M5 screws) are included in the packaging for the ASK33.1.

Butterfly valve

VKF1x

Butterfly valves designed in intermediate flange design, for mounting into gas trains

- Valve either metallically tight or penetrable
- DN32...DN200
- Effective rotation angle 5...85°
- Suitable for gases in the I...III range, air and flue gas up to 180 °C
- Including coupling for D-shaft Ø10 mm and ASK33.1 mounting plate
- The option is available to install the butterfly valve in the next nominal size up to ensure it is positioned more securely
- Installation in ISO 7005 and ANSI flange connections



Article no.	Type	DN [mm]	Leakage rate where $\Delta p = 0.5$ kPa air
S55592-G101-A100	VKF10.032	32 + 40	<2%
S55592-G102-A100	VKF10.040	40 + 50	<2%
S55592-G103-A100	VKF10.050	50 + 65	<2%
S55592-G104-A100	VKF10.065	65 + 80	<2%
S55592-G105-A100	VKF10.080	80 + 100	<2%
S55592-G106-A100	VKF10.100	100 + 125	<2%
S55592-G107-A100	VKF10.125	125 + 150	<2%
S55592-G108-A100	VKF10.150	150 + 200	<2%
S55592-G109-A100	VKF10.200	200	<2%

Article no.	Type	DN [mm]	Leakage rate where $\Delta p = 0.5$ kPa air
S55592-G110-A100	VKF11.032	32 + 40	<0.5%
S55592-G111-A100	VKF11.040	40 + 50	<0.5%
S55592-G112-A100	VKF11.050	50 + 65	<0.5%
S55592-G113-A100	VKF11.065	65 + 80	<0.5%
S55592-G114-A100	VKF11.080	80 + 100	<0.5%
S55592-G115-A100	VKF11.100	100 + 125	<0.5%
S55592-G116-A100	VKF11.125	125 + 150	<0.5%
S55592-G117-A100	VKF11.150	150 + 200	<0.5%
S55592-G118-A100	VKF11.200	200	<0.5%

Legend

DN Nominal diameter

Available documentation

Product no. (ASN)	Description	Documentation no.
A5Q20002669	Ionization current supervision for AC 120 V automatic units	CC1A7541.2
ACS450	PC tool, software	CC1J7550
AGG5.110	CAN bus connection shield	CC1P7550
AGG5.210	Mains transformer	CC1P7550
AGG5.220	Mains transformer	CC1P7550
AGG5.310	Acquisition of speed signal sensor disk 50 mm	CC1P7550
AGG5.315	Acquisition of speed signal sensor disk 70 mm	CC1P7550
AGG5.631	CAN bus connecting cable	CC1P7550
AGG5.635	CAN bus connecting cable	CC1P7550
AGG5.641	CAN bus connecting cable	CC1P7550
AGG5.720	Standard connector set	CC1P7550
AGG5.721	Extended connector set	CC1P7550
AGM23	QRA7 connecting cable, European version	CC1N7712
AGM23U	QRA7 connecting cable, US version	CC1N7712
AGO20	Flue gas collectors	CC1N7842
AGQ1.2	UV adapter	CC1P7550
AGQ1.3	UV adapter	CC1P7550
ASK33.1	Mounting plate (refer to the data sheet of the relevant type of actuator)	---
AZL52	Display and operating units	
	AZL52 Modbus User Manual	CC1A7550
	LMV52 User Documentation	CC1A7550.5
	AZL52 / LMV50.3 User Manual heating expert	CC1U7550.4
	AZL52 / LMV50.3 User Manual end user	CC1U7550.5
	AZL52 / LMV51 User Manual heating expert	CC1U7550
	AZL52 / LMV51 User Manual end user	CC1U7550.1
	AZL52 / LMV52 User Manual end user	CC1U7550.2
	AZL52 / LMV52 User Manual heating expert	CC1U7550.3
	Communication via Modbus with S7	CC1J7553
	Communication via Modbus with S7-1200	CC1J7556
FGT-Pt1000	Flue gas temperature sensor	CE1N1846
LMV5	Burner management system	
	Setting and error lists	CC1I7550
	Data Sheet	CC1N7550
	Basic Documentation	CC1P7550
	Product range	CC1Q7550
	Installation basics	CC1J7550.1
OCI460.xx	Gateway	CC1N7600
QAE21	Immersion temperature sensors	CE1N1781
QBE2003-P	Pressure sensors	A6V10432494
QGO20	O2 sensors	
	Data Sheet	CC1N7842

Product no. (ASN)	Description	Documentation no.
	Basic Documentation	CC1P7842
QRA2	UV flame detectors	CC1N7712
QRA4	UV flame detector	CC1N7711
QRA7	UV flame detectors	CC1N7712
QRA10	UV flame detectors	CC1N7712
QRB1	Photoresistive flame detectors	CC1N7714
QRB3	Photoresistive flame detectors	CC1N7714
QRI2	Infrared flame detectors	CC1N7719
PLL52	CAN bus modules	CC1P7550
SQM4	Actuators	CC1N7814
SQM9	Actuators	CC1N7818
VKF1x	Butterfly valves	CC1N7673
VKG	Flow control valve	CC1N7652
VKP	Proportional controlling element	CC1N7646