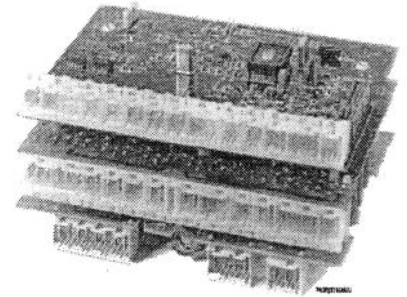




## Gas Burner Controls

with automatic ignition and control functions for intermittent forced draught burner operation

## LGM51...




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Microprocessor-controlled gas burner control for all regulation and control tasks in modern forced draught gas burners in intermittent operation with automatic ignition

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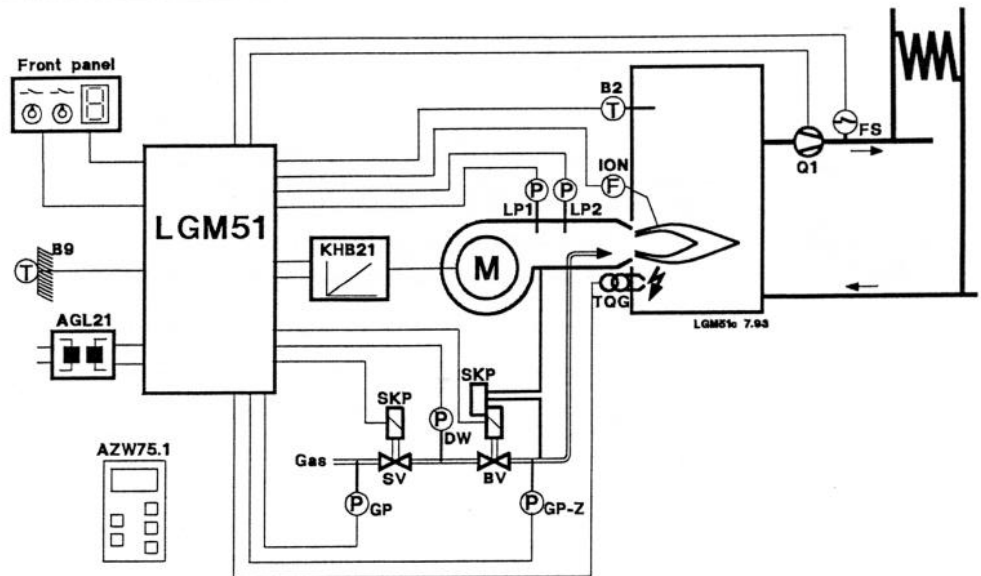
### Main Features

- **High flexibility:**  
All LGM51...-specific burner, controller and system parameters are freely programmable by means of a handheld unit.
  - **Customer-specific parameter settings:**  
Landis & Gyr presets the burner and controller-specific parameters according to prior agreement with the customer.
  - **Approvals:**  
The burner controls are tested and CE-certified in accordance with EN 298.
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### Functions

- Control of fans up to 550 VA via frequency converter
- Automatic intermittent mode after more than 24 h of operation
- Commissioning and controlled shutdown program / program sequence indication
- Flame supervision (ionization)
- Leakage test (no switch-off possible)
- Limit thermostat function (according to DIN 3440)
- Chimney sweep function / TÜV function
- Burner cycle protection / controller stop function
- Pump and diverting valve control (pump overrun, pump kick)
- Frost protection function (boiler)
- Lock-out position indication by means of error code / lock-out position memory
- Weather compensated heating circuit control
- Summer/winter changeover
- Heating circuit and domestic water control by means of PID control algorithm
- Output for the signalling of disturbances
- Output for boiler sequence control
- Input for external load controller

## Basic Diagram



### Legend

B2	Boiler temperature sensor	SKP	Gas valve
FS	Flow switch	DW	Pressure switch
Q1	Heating circulator	Gas	Gas supply
ION	Ionization electrode	SV	Safety shut-off valve
LP..	Air pressure switch	BV	Fuel valve
B9	Outside sensor	GP..	Gas pressure switch
M	Fan motor		
TQG	Ignition transformer		

## Type Summary

<b>Management unit</b>	- Gas burner control with automatic ignition	<b>LGM51.00A2500</b>
<b>Accessories</b>	- Ignition module	<b>TQG21.A8</b>
	- Safety transformer in accordance with IEC 742 / VDE 0551	<b>AGL21.A25</b>
	- Frequency converter	<b>KHB21.100A01</b>
	- Outside detector (Ni-1000)	<b>QAC21</b>
	- Boiler temperature sensor (Ni-1000)	<b>QAP21..., QAE21... or QAD21...</b>
	- Handheld unit for programming, commissioning and service	<b>AZW75.1</b>
	- Handheld unit for frequency converter	<b>AZW21.00</b>

## Technical Data

### Unit LGM51...

Mains voltage	AC 230 V +10% / -15%	Mounting position	optional
Mains frequency	50 Hz ±5%	Weight	approx. 0.46 kg
Power consumption (without transformer and loads)	15 VA max.	Identification code according to EN 298	F M L L B N
Degree of protection (without housing)	IP 00	Unit protection fuses according to IEC 127	
- Mandatory after mounting:	IP 40 min.	primary	T4 H 250 (F100)
Permissible ambient temperature:		secondary	T2,5 H 250 (F101)
- Operation	0°...+60°C		T6,3 H 250 (F102)
- Transport and storage	-20°...+70°C		

### Program times LGM51...

Pre-purge time tv	5..51 s
Pre-ignition time tvz	0..5 s
Safety time ts	1.8..5 s
Post-purge time tn	0..51 s

**All times are adjustable with handheld unit AZW75.1!**

### Flame supervision

Required ionization current:		Required insulation resistance of the sensor electrode and wire with respect to the earthed burner parts	> 50 MΩ
- Switching threshold	2.8 μA max.	<b>Lay sensor cable separately and protect against condensation !</b>	
- Typical	1.4 μA		
Reaction time in the event of loss of flame	< 1 s		

### Inputs / outputs

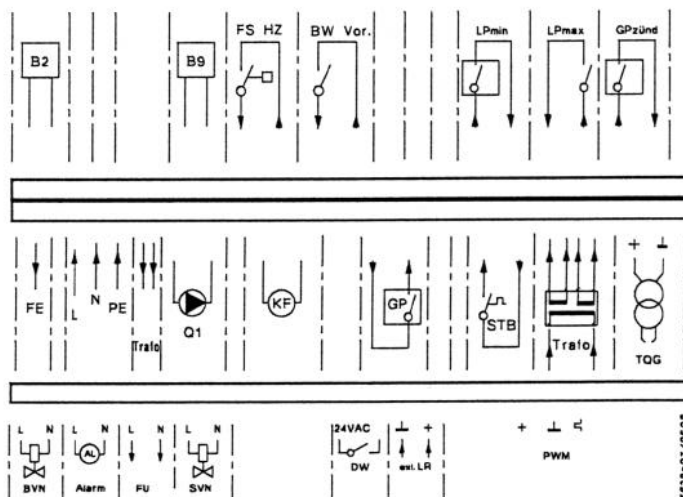
<b>General</b>		<b>Fuel valve (ST45, ST48)</b>	
- Voltage	AC 24 V	- Voltage	AC 230 V +10% / -15%
- Current (typical )	10 mA	- Current load	0.5 A max. each
- Contact material (recommended) silver or silver-nickel		<b>Alarm (ST47)</b>	
<b>Boiler sequence (ST8)</b>		- Voltage	AC 230 V +10% / -15%
- Voltage	AC 230 V +10% / -15%	- Current load	1 A max.
- Current load	0.1 A max.	<b>External load controller</b>	
<b>Heating circulator (ST10)</b>		- Voltage	DC 0...10 V
- Voltage	AC 230 V +10% / -15%	- Current load	
- Current load	0.5 A max.	- Input resistance	112 kΩ
		in case of reversed polarity (not detected)	10 kΩ

### Permissible line lengths/ cross sections

Within the boiler casing		Outside the boiler casing	
generally	< 3 m / ≥ 0.75 mm <sup>2</sup>	generally	< 40 m / ≥ 1.5 mm <sup>2</sup>
- Flat cable to the operating module	< 0.6 m		
- Ignition cable TQG21... to ignition electrode	< 0.6 m		

## Connection Possibilities

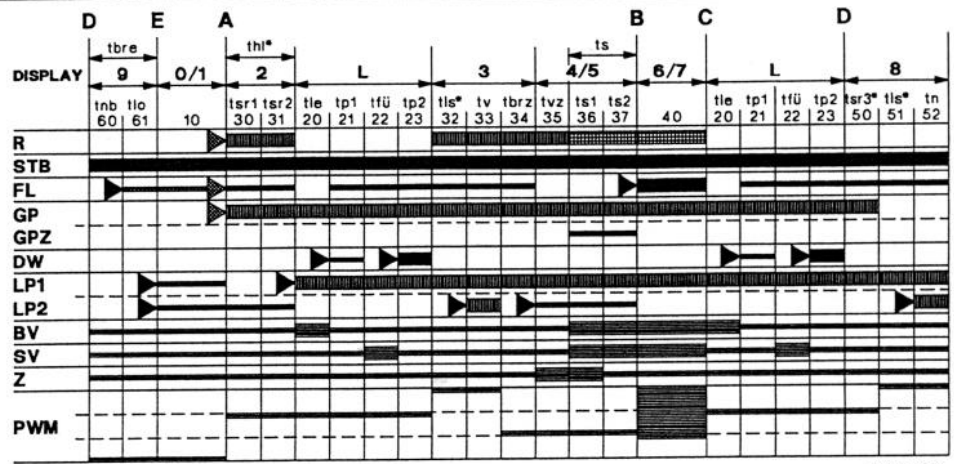
**Observe product information P7628 before putting into operation!**



### Legend

B2	Boiler temperature sensor	KF	Boiler sequence
B9	Outside sensor	STB	Safety temperature limiter
FS HZ	Flow switch heating circuit	Trafo	Mains transformer connections
BW Vor	Domestic water priority	BVN	Fuel valve
LP...	Air pressure switch	Alarm	Alarm output
GP...	Gas pressure switch	FU	Frequency converter - control loop
FE	Flame supervision	SVN	Safety shut-off valve
L, N, PE	Phase, neutral conductor and protective earth	DW	Pressure switch
Q1	Heating circulator	ext. LR	External load controller
		PWM	PWM signal to frequency converter

# Sequence Diagram



7626d01/9606

## Legend

- |      |                                  |         |                                   |
|------|----------------------------------|---------|-----------------------------------|
|      | Required signals                 | Display | Displayed program phase           |
|      | Inadmissible signals             | R       | Heat demand by controller         |
|      | Transition criterion             | STB     | Safety temperature limiter        |
| A    | Controller start                 | FL      | Flame signal                      |
| B    | Operating position of the burner | GP      | Gas pressure switch 1             |
| C    | Controller shutdown              | GPZ     | Gas pressure switch 2             |
| D    | End of shutdown                  | DW      | Pressure switch                   |
| E    | End of home run                  | LP...   | Air pressure switch 1/2           |
| 9    | Home run                         | BV      | Fuel valve                        |
| 0/1  | Standby                          | SV      | Safety shut-off valve             |
| 2..5 | Start-up                         | Z       | Ignition                          |
| 6/7  | Operation                        | PWM     | PWM-signal to frequency converter |
| 8    | Shutdown                         |         |                                   |
| t... | Times see "Technical Data"       |         |                                   |

## Dimensions

Dimensions in mm

