

# µP Automatic Burner Control MPA 41xx

Automatic burner control for  
one-stage gas burners

**DUNGS®**  
Combustion Controls

neovità  
nouveau  
new

- Automatic gas burner control for one-stage burners with pilot burner or direct ignition
- Continuous operation
- Configurable program sequence
- Version with or without display
- Two independent flame detectors:  
Ionisation input  
Gate input
- Additional functions by extension modules
- Profibus
- Accessories  
Flame detector  
Ignition transformers  
Parameterisation and service box



## Description

Microprocessor-controlled automatic gas burner control for intermittent and continuous operation of one-stage atmospheric burners or fanned burners. The program sequence and times can be customised by setting software parameters.

## Versions

- MPA 4111 without display
- MPA 4112 with integrated display
- MPA 4122 with metal housing and integrated display

## Application

For one-stage gas burners with or without ignition gas. In particular for industrial thermoprocessing equipment to EN 746-2.

## Approvals

EC type-examination certificate according to the EC Gas Appliances Directive:  
MPA 41xx CE-0085BU 0487

EC type-examination certificate according to the EC Pressure Equipment Directive:  
MPA 41xx CE0036

FM Approved to FM 761  
(not MPA 4122)  
UL Recognized Component per UL 372, UL 1998 and CSA C22.2.  
(not MPA 4122)  
GOST / Rostekhnadzor (not MPA 4122)

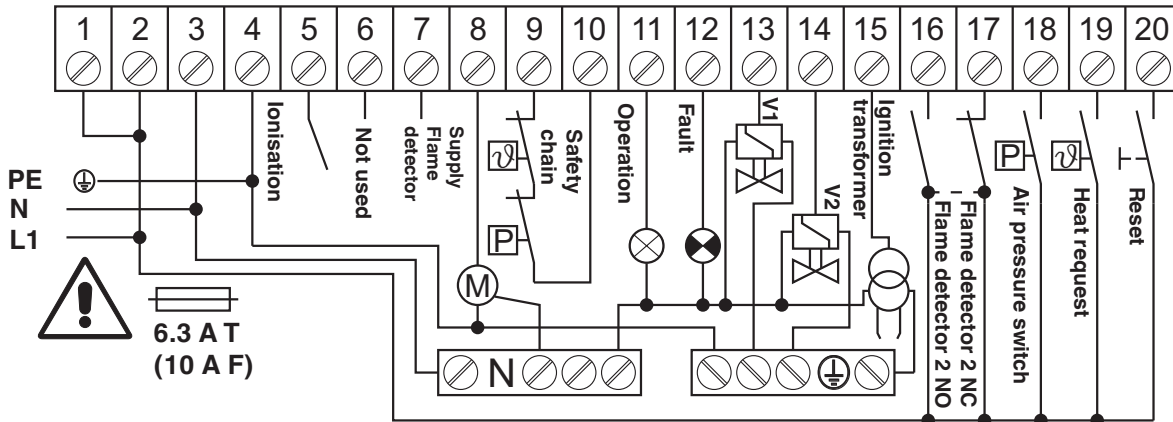
Suitable for applications up to SIL3.  
Meets the requirement according to IEC 61508 (2nd Ed. 2011)  
Certified by TÜV Süd

MPA 41xx automatic gas burners are suitable for all types of one-stage gas burners with and without ignition gas.

The flame is monitored either by means of an ionisation input, gate input or both inputs for burners with two flame detector positions.

- For atmospheric burners and fan burners
- Suitable for continuous operation
- MPA 4112 configuration without laptop/PC via display
- Ionisation and gate inputs as flame detectors
- Extension module for Profibus communication

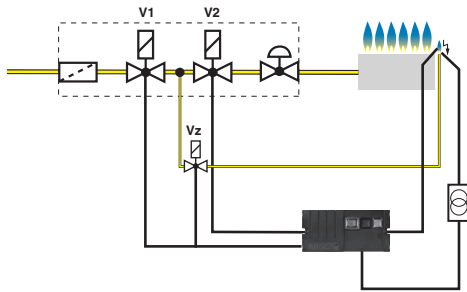
### Wiring scheme



The wires which are used for the connection must be approved for ambient temperatures of minimum 75 °C (167 °F).

### Example for connection

#### Atmospheric burner with ignition gas output

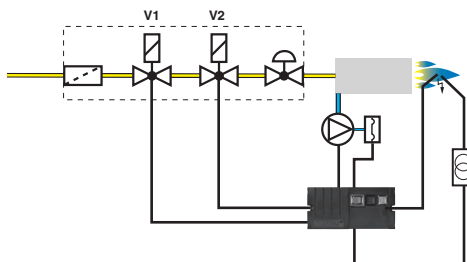


Atmospheric burner with ignition gas output.

After the heat request and an adjustable delay, the ignition is switched on and V1 and Vz are opened.

After the flame has been detected, the main gas flow V2 is opened.

#### Fan burner, direct ignition:



Fan burner, direct ignition of the main gas flame.

After the heat request, the fan is switched on, and the air pressure is checked by the pressure switch. After the pre-aeration time has lapsed, the ignition is switched on, and the two valves V1 and V2 are opened together.

The program sequence and times can be modified on the mounted display (MPA 4112/MPA 4122) to match each application.

A laptop or PC is not required for the modification.

The automatic burners are protected by passwords against unauthorised access.



All settings for the MPA 41xx automatic gas burners can also be made by means of a laptop/PC via MPA Vision Box.

### Display modes

#### Operation display

- Display of the current operating state
- Display of the program state
- Display of bus address

#### Info display

- Display of flame quality
- Display of resettable counters for start-up, operating hours and operating cycles

### Accessories

#### Flame detector

##### FLW 10 IR

IR flame detector for connection to ionisation input. Suitable for intermittent operation.

##### FLW 20 UV

UV flame detector for connection to ionisation input. Suitable for intermittent operation.

##### UV 41/UV 42

UV flame detector for high mechanical load; metallic version. Suitable for intermittent operation.

With shutter module suitable for continuous operation (ab 2012/07)

##### FLW 41 I

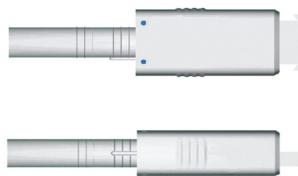
Flame safeguard module for ionisation flame monitoring. The FLW 41I is connected to the second flame guard input of the MPA 41xx.

When equipped with an extension module, for example EM 2/4, suitable for continuous operation.

### Error display

#### Display of the error memory

- Automatic activation of error messages
- Additional information about faults
- Query of the last ten faults



### Parameter display

- Password-protected functional levels for service and OEM parameter settings
- Setting of important parameters such as:

**Pre-purge time**

**Safety time for startup phase**

**Post-purge time**

**Behaviour after flame lift-off**

**Operating modes of V1 and V2**

**Continuous or intermittent**

**operation**

### Communication

#### MPA 41 extension module EM2/4

Additional circuit board and connector set for Profibus DP and Modbus communication.

#### Parameter setting and service

##### MPA 41 parameterisation and service box

Universal support for checking devices in the field; for producing small and medium series.

#### MPA Vision Box

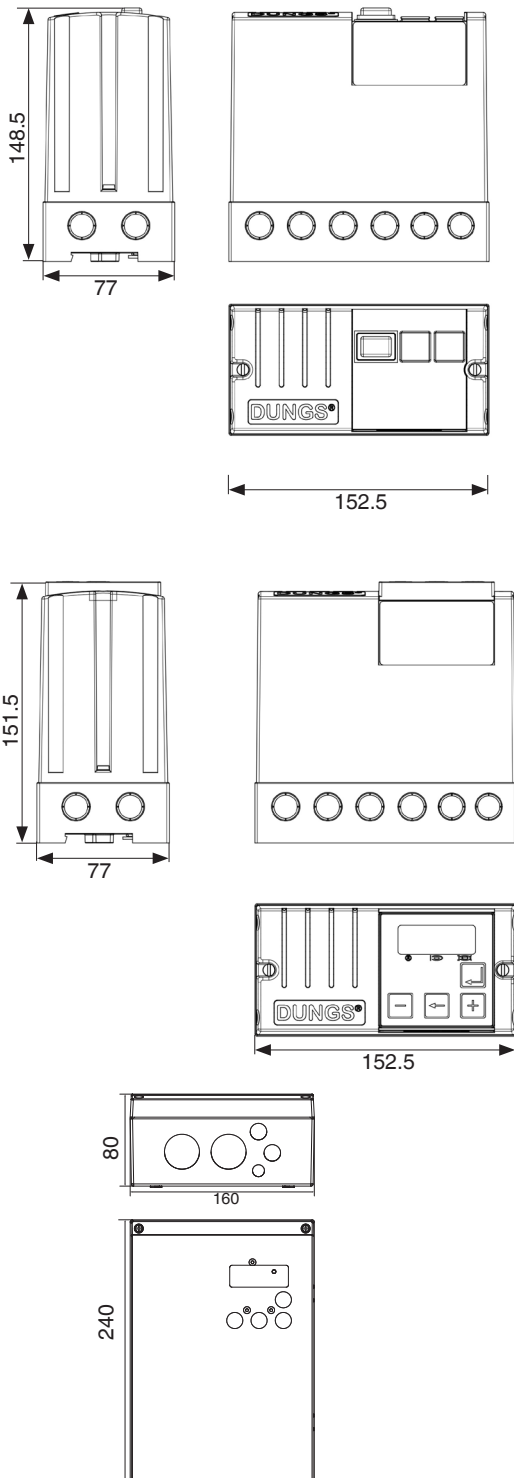
In addition to MPA41 parameterisation and service box for setting parameters via a PC/laptop.

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**Dimensions [mm]**



**Technical Data**

Rated voltage (depending on the model)	115 VAC -15 % ... +10 % 230 VAC -15 % ... +10 %
Frequency	50 Hz...60 Hz
Power consumption	max. 10 VA
Fuse	max. 6.3 A slow-blow or 10 A fast-blow
Ready signal	max. 1 A
Fault signal	max. 1 A
Gas valves	max. 2 A
Fan	max. 1 A
Ignition	max. 1 A
Flame detector supply	230 VAC / 10 mA
Flame detector ionisation current / operation	ionisation 10-20 µA
Shutdown sensitivity	1,2 µA
Short-circuit current limit	approx. 280 µA
Unlocking due to fault	Pushbuttons and remote unlocking
Type of protection	MPA4111 / IP 42 MPA4112 / IP 54 MPA 4122 / IP 65
Ambient temperature	-40 °C - +70 °C -20 °C - +60 °C (UL approval)
Weight	0.82 kg

**Ordering data**

MPA 4111/230 VAC	Order No. 259 058
MPA 4111/115 VAC	Order No. 259 062
MPA 4112/230 VAC	Order No. 259 066
MPA 4112/115 VAC	Order No. 259 070
MPA 4122/230 VAC	Order No. 258 290
MPA 4122/115 VAC	Order No. 258 291

Extension module  
EM2/4 MPA 411x  
Profibus DP,  
Modbus + Shutter

Order No. 257 960

EM2/4 MPA 412x  
Profibus DP,  
Modbus, Shutter

Artikel-Nr. 257 961

Flame detector  
FLW 10 IR  
FLW 20 UV  
UV 41  
FLW 41 I  
UV 42  
UV 4x-EM 1/1 (Shutter)

Order No. 255 216  
Order No. 250 733  
Order No. 256 692  
Order No. 258 396  
Order No. 258 385  
Artikel-Nr. 259 361  
(ab 2012/07)

Subject to technical modification in the interest of technical progress.



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