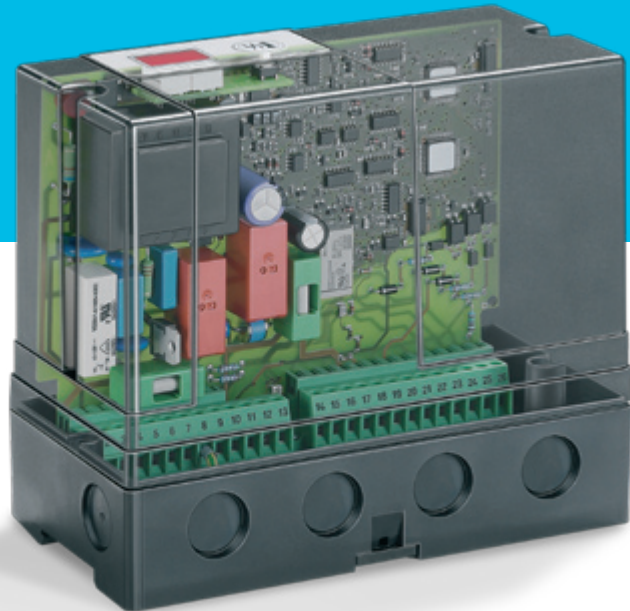


# Automatic burner control units for continuous operation IFD 450, IFD 454

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CE

krom  
schroder



- For directly ignited burners of unlimited capacity continuous operation pursuant to EN 746-2
- Continuous self-testing for faults
- IFD 450 includes immediate fault lock-out following flame failure
- IFD 454 includes restart following flame failure
- Flame control with UV sensor or ionisation sensor
- Multi-flame control with an additional flame detector IFW 50
- Checking that the gas valve is closed upon start-up
- EC type-tested and certified





IFD 450, IFD 454

Automatic burner control units for continuous operation IFD 450, IFD 454

## Application

### IFD 450, IFD 454

The automatic burner control units for continuous operation IFD 450, IFD 454 ignite and monitor gas burners. As a result of their fully electronic design they react quickly to various process requirements and are therefore also suitable for frequent cycling operation.

They can be used for directly ignited industrial burners of unlimited capacity. The burners may be modulating or stage-controlled.

The program status and the level of the flame signal can be read directly from the unit.

### IFD 450

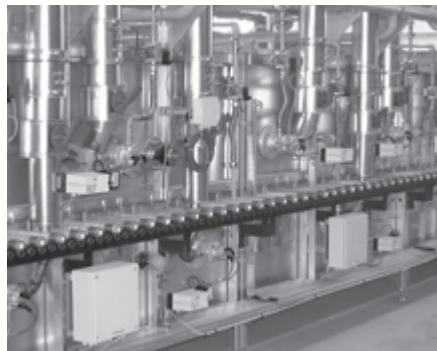
Immediate fault lock-out following flame failure during operation.

### IFD 454

Automatic restart following flame failure during operation.



Intermittent shuttle kiln in the ceramics industry

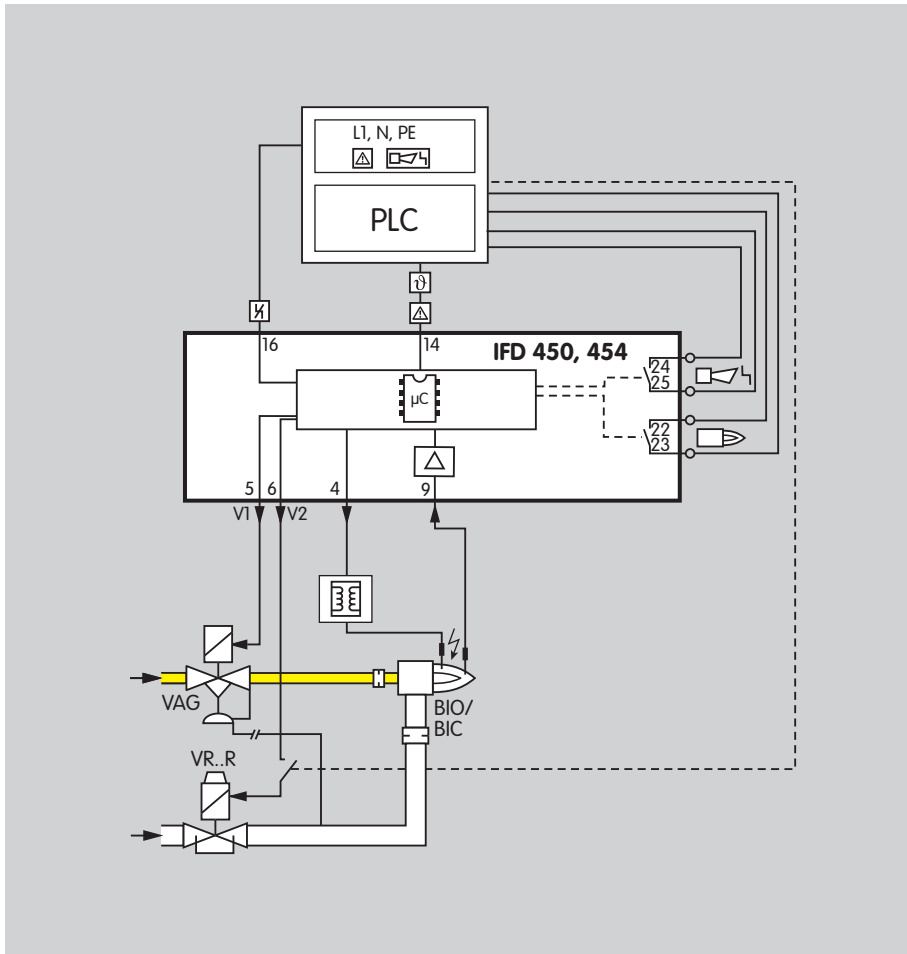


Roller hearth kiln



Intermittent shuttle kiln

Application examples

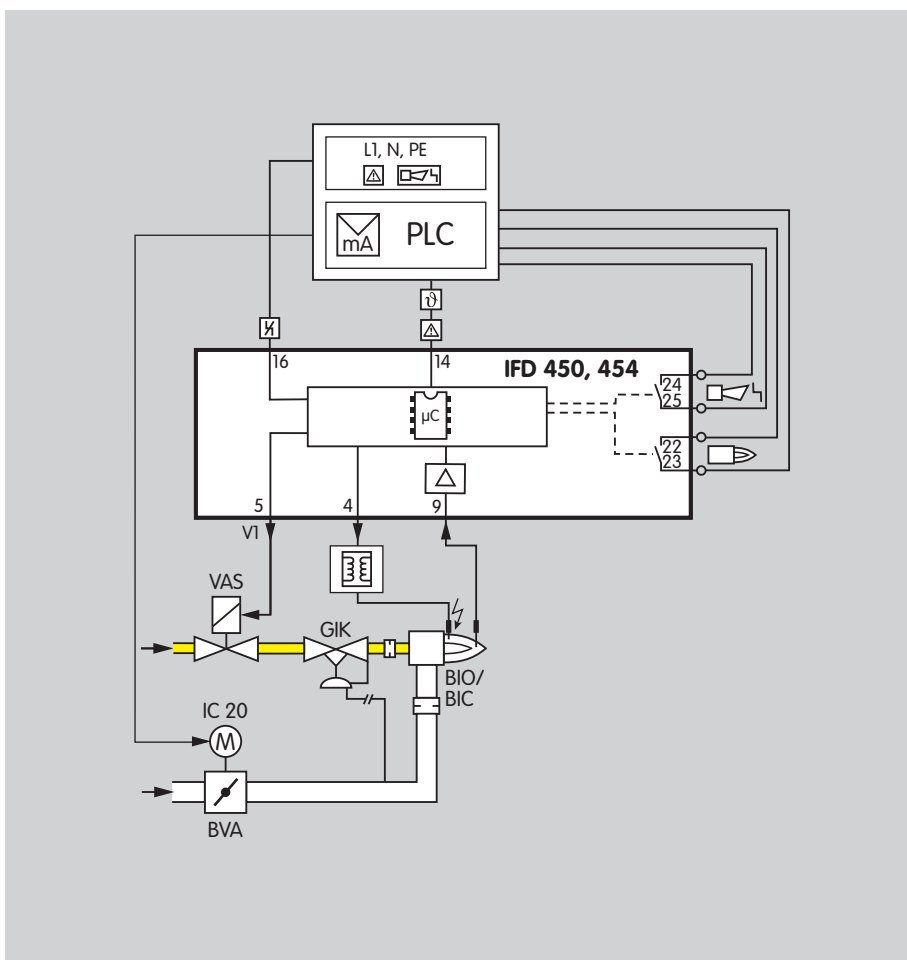


Two-stage-controlled burner

Control: ON/OFF or ON/HIGH/LOW/OFF

The burner BIO/BIC starts at low-fire rate. Once the normal operating state is reached, the automatic burner control unit for continuous operation IFD 454 or IFD 450 will release control.

The PLC can now pulse the air solenoid valve VR..R in order to control the capacity between high and low fire.

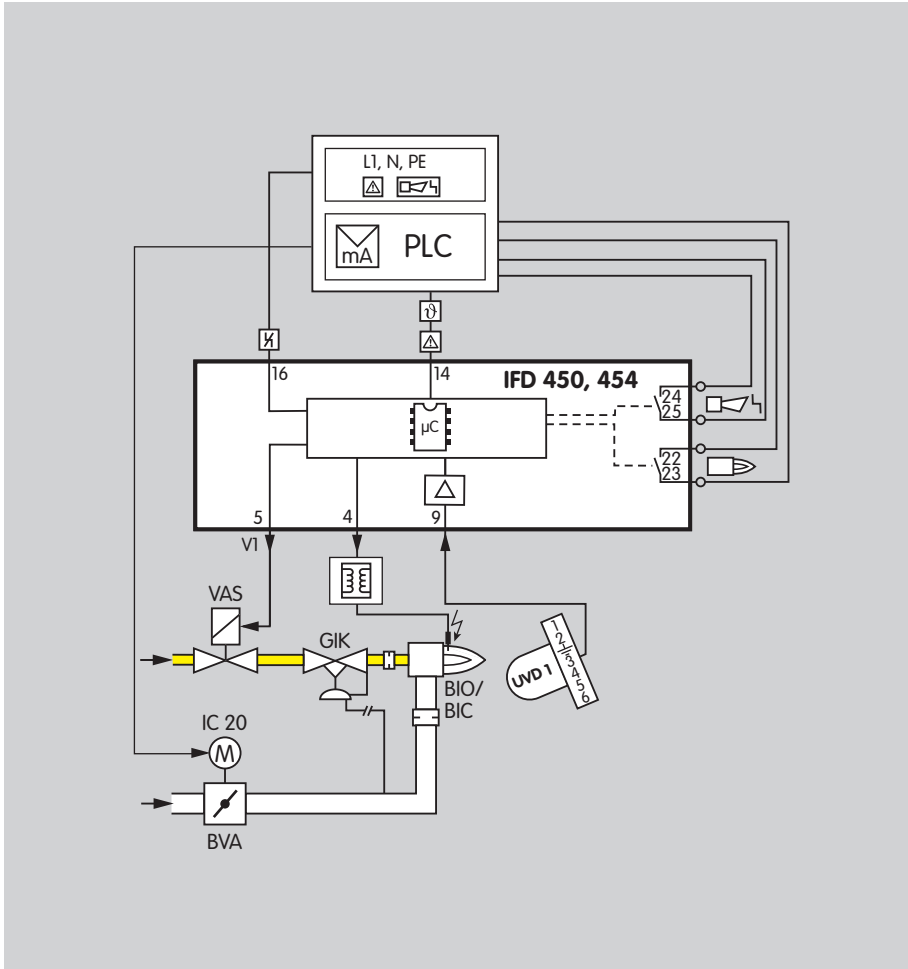


Modulating-controlled burner

Control: ON/OFF/continuous

The PLC uses the actuator IC 20 to move the air butterfly valve BVA to ignition position.

The burner BIO/BIC starts at low-fire rate. Once the normal operating state is reached, the PLC uses the actuator IC 20 and the air butterfly valve BVA to control the burner capacity.

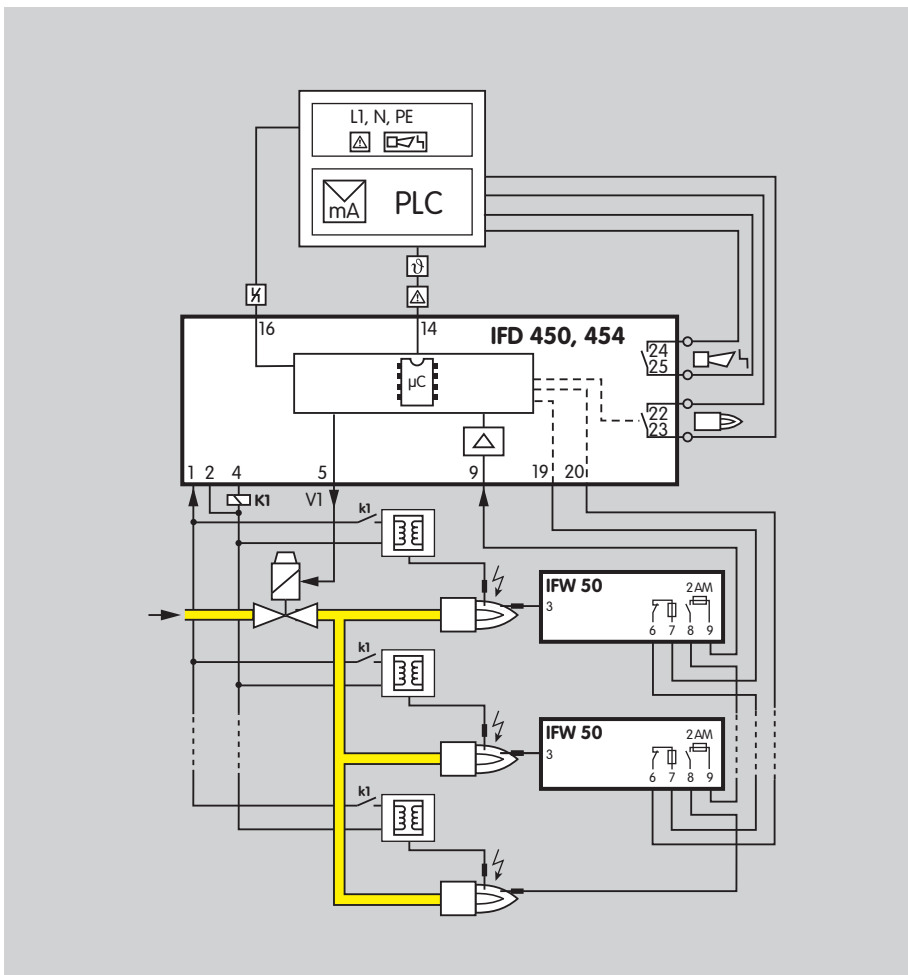


### Modulating-controlled burner with UV control for continuous operation

Control: ON/OFF/continuous

The PLC uses the actuator IC 20 to move the air butterfly valve BVA to ignition position. The burner BIO/BIC starts at low-fire rate.

The UV sensor for continuous operation UVD 1 is also connected in order to monitor the flame. It notifies the automatic burner control unit for continuous operation IFD 454 or IFD 450 of the presence of a flame. Once the normal operating state is reached, the PLC uses the actuator IC 20 and the air butterfly valve BVA to control the burner capacity.



### Multi-flame control with flame detector IFW 50

Several burners may be monitored jointly, following the principle of multi-flame control, using the flame detector IFW 50. In addition to monitoring a burner, the automatic burner control unit for continuous operation IFD 454 or IFD 450 is used in double-electrode operation to provide the entire control function. The remaining burners are each monitored by a flame detector.

A flame detector IFW 50 must be installed for each burner in order to monitor multiple burners in single-electrode operation. Where a system is subject to British standards, a flame detector IFW 50 must also be installed for each burner.

A fault will give rise to the shut-down of all burners.

## Selection table

Automatic burner control units for continuous operation IFD 450, IFD 454

	4	50	54	-3	-5	-10	/1	/2	/1	-T	-N
IFD	●	●	●	●	●	●	●	○	●	●	○

● = standard, ○ = available

### Order example

IFD 450-5/1/1-T

## Type code

Code	Description
IFD	Automatic burner control
4	Series 400
50	Fault lock-out following flame failure
54	Restart following flame failure
	Safety time on start-up $t_{SA}$ :
-3	3 s
-5	5 s
-10	10 s
	Safety time during operation $t_{SB}$ for V2:
/1	1 s
/2	2 s
/1	Safety time during operation $t_{SB}$ for V1: 1 s
	Mains voltage for grounded and ungrounded mains:
-T	220/240 V AC, -15/+10%, 50/60 Hz
-N	110/120 V AC, -15/+10%, 50/60 Hz

## Technical data

Mains voltage for grounded and ungrounded mains:  
 IFD..T: 220/240 V AC, -15/+10%, 50/60 Hz,  
 IFD..N: upon request  
 110/120 V AC, -15/+10%, 50/60 Hz.  
 Safety time on start-up  $t_{SA}$ : 3, 5 or 10 s.  
 Safety time during operation  $t_{SB}$ : < 1 s, < 2 s.  
 Ignition time  $t_Z$ : approx. 2, 3 or 7 s.  
 Power consumption: approx. 9 VA.  
 Output to ignition transformer with no-switch contacts via semi-conductor.  
 Output voltage for valves and ignition transformer = mains voltage.  
 Contact rating:  
 max. 1 A,  $\cos \varphi = 1$  per output,  
 V2: max. 0.75 A,  $\cos \varphi = 1$ ,  
 max. number of operating cycles: 250,000.  
 Total load: max. 2 A.  
 Reset button: max. number of operating cycles: 1000.  
 Signal inputs:

Input voltage	110/120 V AC	220/240 V AC
Signal "1"	80–126,5	160–253
Signal "0"	0–20	0–40
Frequency	50/60 Hz	

Input current signal inputs: Signal "1" typ. 2 mA.

Flame control:  
 Sensor voltage: approx. 220 V AC,  
 Sensor current: > 1  $\mu$ A,  
 max. sensor current: ionisation < 28  $\mu$ A.  
 Permissible UV sensor: Elster Kromschroder model UVD 1, for ambient temperatures from -40 to +80°C (-40 to 176°F).  
 Valve connections: 2.  
 Fuse in unit: FI: T 2A H 250 V pursuant to IEC 127-2/5.  
 Ambient temperature: -20 to +60°C (-4 to +140°F).  
 Relative humidity: no condensation permitted.  
 Enclosure: IP 54 pursuant to IEC 529.  
 Overvoltage category III pursuant to EN 60730.  
 Cable gland: M16.  
 Installation position: any.  
 Weight: 790 g.

## Certification

EC type-tested and certified pursuant to

- Gas Appliances Directive (90/396/EEC) in conjunction with EN 298.
- The automatic burner control units IFD 454 and IFD 450 are designed for applications pursuant to EN 746.

They comply with the requirements of the following directives and standards

- Low Voltage Directive (2006/95/EC) in conjunction with the relevant standards.
- Electromagnetic Compatibility Directive (2004/108/EC) in conjunction with the relevant standards relating to radiation.

## Maintenance cycles

The automatic burner control units for continuous operation IFD 454 and IFD 450 require little maintenance.



## Detailed information on this product

[www.docuthek.com](http://www.docuthek.com)

## Contact

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