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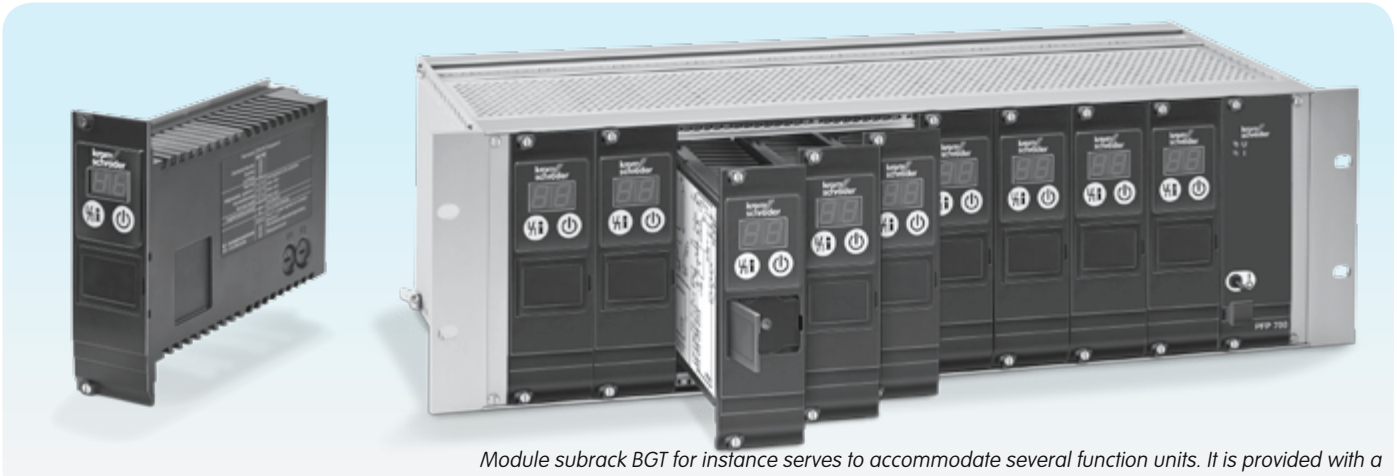
Burner control unit PFU 780

Product brochure · GB
6 Edition 02.12





- For pilot and main burners of unlimited capacity in thermoprocessing equipment pursuant to EN 746-2
- Plug-in function unit for mounting in 19" module subracks
- Separate flame control for pilot burner and main burner by UV, ionisation or a further option of using the furnace chamber temperature
- Display of the program status, unit parameters and flame signal; Manual mode for burner adjustment and for diagnostic purposes
- Visualisation and adaptation to the specific application via the PC programming and diagnostic software BCSoft to simplify logistics management
- Air valve control relieves the furnace control
- Certified for systems up to SIL 3 and compliant with PL e



PFU 780

Module subrack BGT for instance serves to accommodate several function units. It is provided with a backplane with screw terminals for simple, reliable wiring.

Application

The burner control units PFU 780 control, ignite and monitor gas burners for intermittent or continuous operation. As a result of their fully electronic design they react quickly to various process requirements and are therefore also suitable for frequent cycling operation.

The PFU 780 can be used for industrial burners of unlimited capacity which are ignited by pilot burners. Pilot and main burners are controlled and monitored independently. This reduces the main burner start-up time. The pilot burner can burn permanently or be switched off. The main burners may be modulating or stage-controlled.

On industrial furnaces, the PFU 780 reduces the load on the central furnace control by taking over tasks that only relate to the burner, for example it ensures that the burner always ignites in a safe condition after it has been restarted.

The burner control unit is used for burners with mechanical combustion air supply where the fan is controlled by a separate logic and for atmospheric burners.

The air valve control on the PFU 780L assists the furnace control for cooling, purging and capacity control tasks.

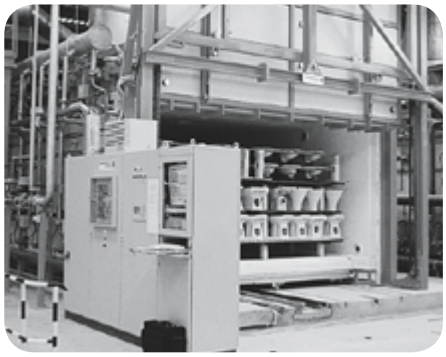
The program status, the unit parameters and the level of the flame signal can be read directly from the unit. Pilot and main burners can be controlled manually for commissioning and diagnostic purposes.

If the local requirements on the burner control units change, the PC software BCSoft can be adjusted to the unit parameters of the application by using the optical interface.

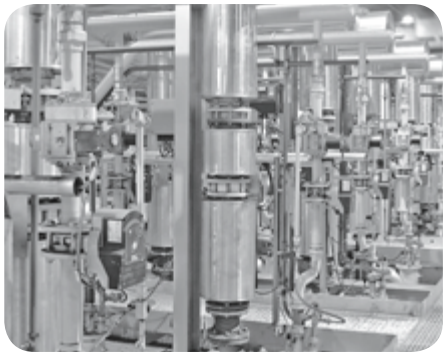
To support service personnel, BCSoft offers a convenient visualisation system of the input and output signals and the error history.



Bogie hearth forging furnace in the metallurgical industry

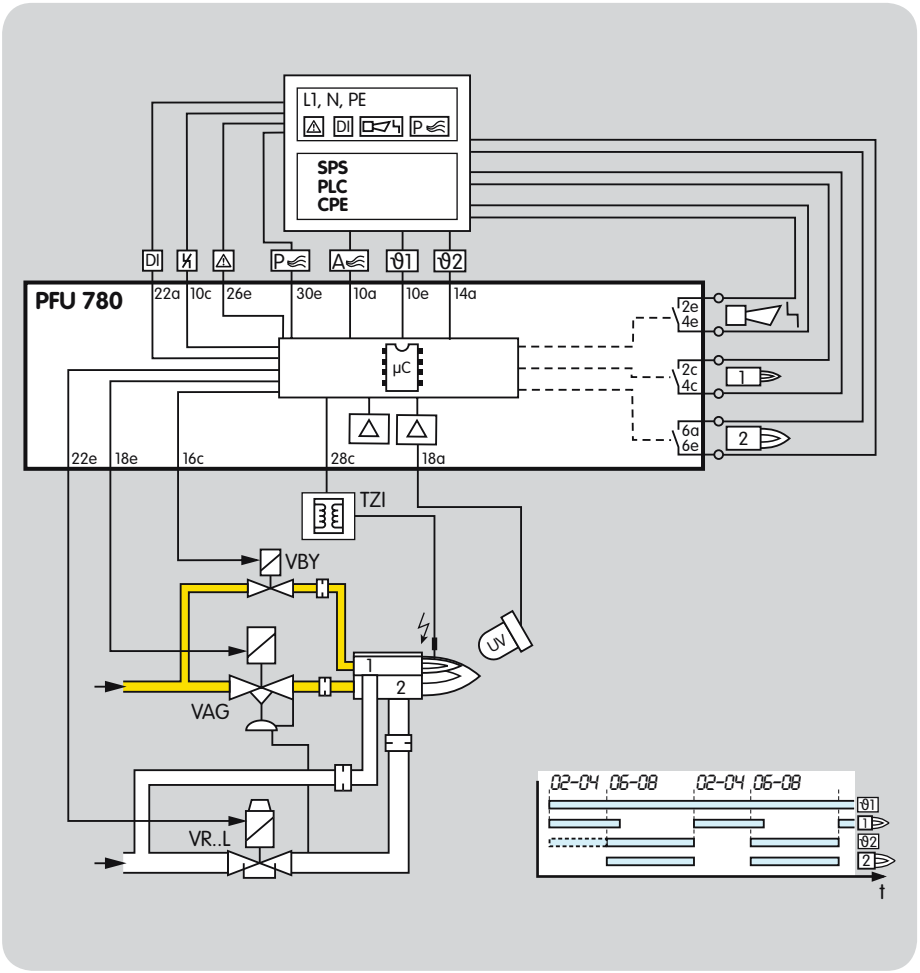


Intermittent shuttle kiln in the ceramics industry



Walking beam furnace with overhead firing

Examples of application

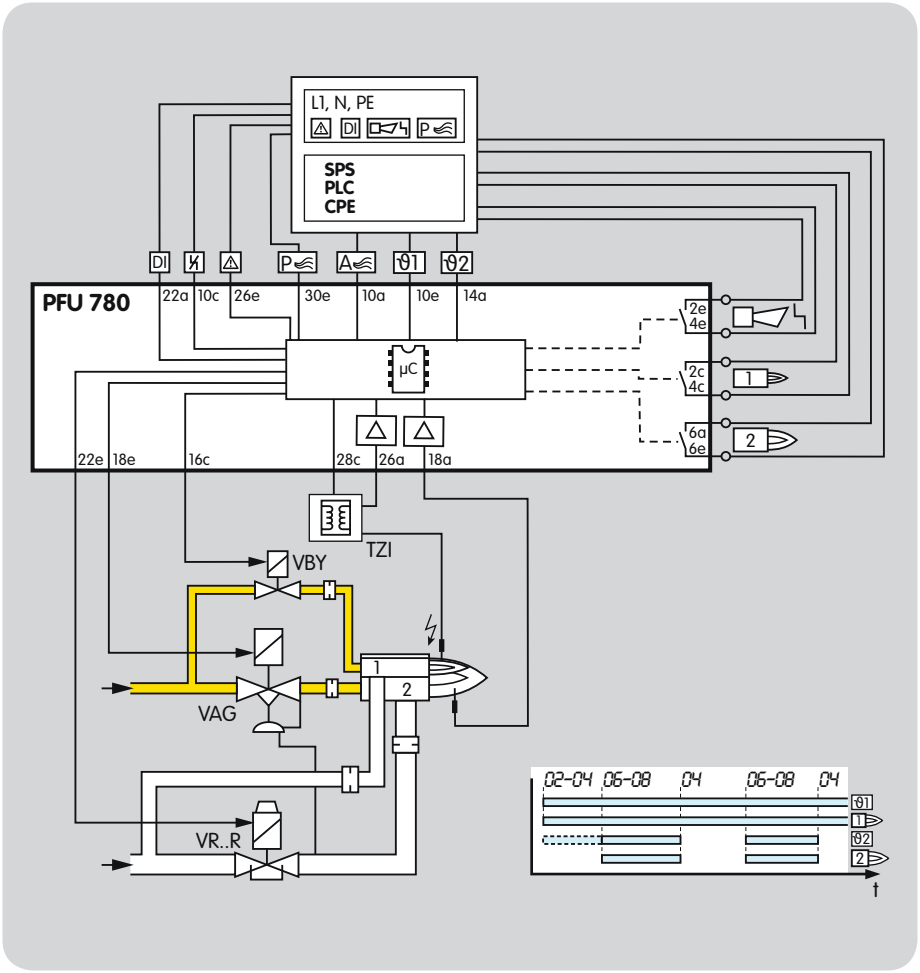


Stage-controlled main burner with alternating pilot burner

Control: Main burner ON/OFF.

The main burner can be started with reduced capacity after the operating signal from the pilot burner has been detected. The pilot burner is switched off automatically after the main burner has started up. When the main burner is switched off, the pilot burner automatically switches on again.

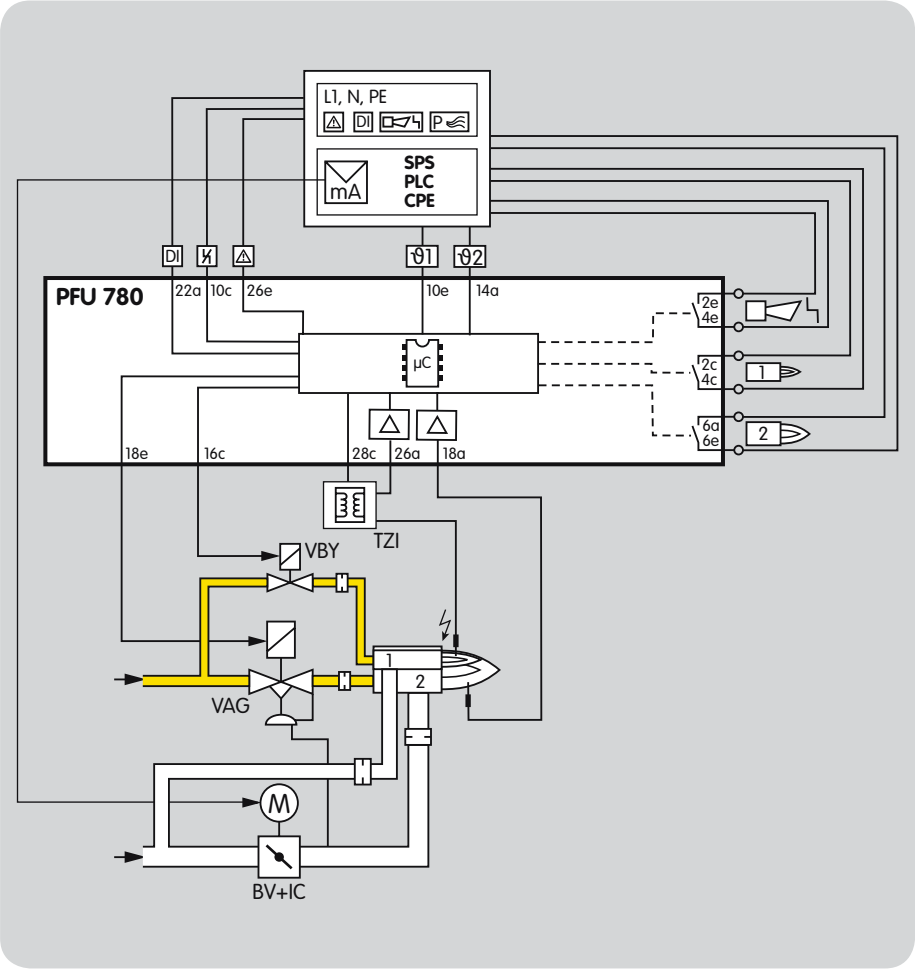
A UV sensor monitors the flame signal from pilot and main burners. UV sensor UVD 1 is used for continuous operation, UV sensor UVS for intermittent operation.



Stage-controlled main burner with permanent pilot burner

Control: Main burner ON/OFF.

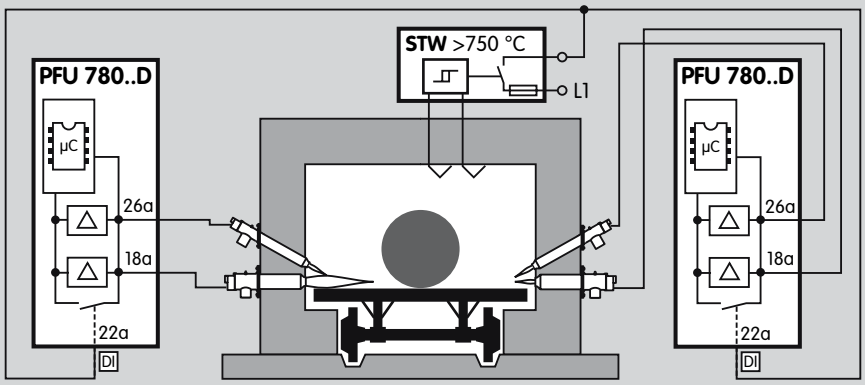
The main burner can be started with reduced capacity after the operating signal from the pilot burner has been detected. Pilot and main burners can be operated simultaneously. Both are ionisation-controlled independently.



Modulating-controlled burner

Control: Main burner continuous

The butterfly valve for air BV is moved to ignition position in order to start the main burner. The main burner can be started at low-fire rate after the operating signal from the pilot burner has been detected. The control system controls the burner capacity via the butterfly valve for air BV after the operating state has been signalled. Pilot and main burners can be operated simultaneously.



PFU 780..D: High temperature equipment

The flame is controlled indirectly on the basis of the temperature. During the start-up process, as long as the wall temperature is below auto ignition temperature the flame must be controlled by conventional methods. When the working temperature has exceeded 750°C, the safety temperature monitor (STW) takes over the indirect flame control.

Technical data

Mains voltage:
220/240 V AC, -15/+10%, 50/60 Hz or
110/120 V AC, -15/+10%, 50/60 Hz,
for grounded and ungrounded mains.

Power consumption: < 8 VA.

Control inputs:
Input voltage/current:
Pilot burner, main burner, air valve, multi-flame control and remote reset:
24 V DC, ± 10%, < 7 mA per input.

Input voltage for safety interlocks, digital input DI and purge = mains voltage.

Input voltage of signal inputs:

Rated value	110/120 V AC	220/240 V AC
Signal "1"	80 – 132 V	160 – 264 V
Signal "0"	0 – 20 V	0 – 40 V
Frequency	50/60 Hz	50/60 Hz

Rated value	24 V DC
Signal "1"	24 V, ±10%
Signal "0"	< 1 V

Inherent current:

Signal "1"	typ. 5 mA

Output voltage for voltage-related outputs = mains voltage.

Contact rating		
Gas valve V1, V2	Max. 1 A resistive	Max. 1 A cos φ 0.3
Air valve	Max. 1 A resistive	Max. 1 A cos φ 0.3
Ignition	Max. 1 A resistive	Max. 1 A cos φ 0.3
Number of operating cycles	Max. 1,000,000, typically 400,000	Max. 250,000, typically 100,000

Output current: max. 2 A per output, but total current for valves and ignition transformer max. 2.5 A.

Operation and fault signalling contacts: dry contact (floating), max. 1 A, 24 V, not fused internally.

Number of operating cycles:
Mains switch: 1000,
Reset/Information button: 1000.

Flame control:
Sensor voltage: approx. 230 V AC.
Sensor current: > 1 µA,
Length of sensor cable: max. 100 m.

Fuse in unit:
F1: 3.15 A, slow-acting, H pursuant to IEC 127-2/5,
F2: 3.15 A, slow-acting, H pursuant to IEC 127-2/5.

Ambient temperature:
-20 to +60 °C (-4 to +60.00 °C),
Climate: no condensation permitted.

Enclosure: IP 00 pursuant to IEC 529, after installing in a 19" module subrack according to the instructions, e.g. type BGT, the front corresponds to IP 20.

Input/Output safety circuit:
All the inputs and outputs marked "■" (see connection diagrams) may be used for safety tasks.

Weight: approx. 650 g (23 oz.).

Type code

Code	Description
L	Air valve control
	Mains voltage
T	220 – 240 V~, -15/+10 %, 50/60 Hz
N	110 – 120 V~, -15/+10 %, 50/60 Hz
D*	Digital input to interrupt flame control
U*	Preparation for UV sensor for continuous operation UVD 1
K2*	Compatible with PFU 798

** If "none", this specification is omitted.*

Detailed information on this product

http://docuthek.kromschroeder.com/doclib/main.php?language=1&folderid=206140&by_class=6

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