



Protective system controls, automatic burner control units, burner control units



FCU 500

Protective system controls

FCU 500

Protective system control FCU 500 is designed to monitor and control central safety functions, e.g. $gas_{min.}$, $gas_{max.}$, $air_{min.}$, pre-purge, tightness test, high temperature operation or start enable for burner control units, in multiple burner systems on industrial furnaces.

The FCU 500 controls multiple furnace zones acting as the central protective system control. If the centrally checked safety requirements, e.g. pre-purge, flow detector and pressure switch check, have been met, the FCU issues the start enable signal to the burner control units.

The FCU is optionally available with integrated safety temperature monitor or safety temperature limiter, integrated tightness control and with an interface for controlling the capacity of actuators or a frequency converter interface.

Using the BCSoft program, the parameters, analysis and diagnostic information can be read from the FCU via the optionally available opto-adaptor. Parameters can be changed and saved

on the integrated parameter chip card. The parameter chip card can be removed easily, for example when the unit is replaced, and inserted into a new FCU to transfer the parameters.

An integrated Manual mode allows the manual activation of the burner control units and adjustment of the butterfly valves.

The fail-safe outputs for protecting the furnace, e.g. for fan, actuator and valves, are activated via a plug-in power module. When the maximum number of operating cycles has been reached, it can simply be replaced.

The FCU can be installed on a DIN rail in the control cabinet. The plug-in connection terminal strips make it easier to install and remove the FCU.

Mains voltage:

120 V AC, -15/+10%, 50/60 Hz, $\pm 5\%$,

230 V AC, -15/+10%, 50/60 Hz, $\pm 5\%$.



FCU 505

FCU 505

Furnace zone control FCU 505 is designed to monitor and control central safety functions, e.g. $gas_{min.}$, $gas_{max.}$, $air_{min.}$, tightness test, high temperature operation or start enable for burner control units, in multiple burner systems on industrial furnaces.

The FCU 505 is used for protective system and capacity control in individual furnace zones. If the centrally checked safety requirements, e.g. pre-purge, flow detector and pressure switch check, have been met, the FCU issues the start enable signal to the burner control units.

The FCU is optionally available with integrated safety temperature monitor or safety temperature limiter, integrated tightness control and with an interface for controlling the capacity of actuators or a frequency converter interface.

Using the BCSoft program, the parameters, analysis and diagnostic information can be read from the FCU via the optionally available opto-adaptor. Parameters can be changed and saved

on the integrated parameter chip card. The parameter chip card can be removed easily, for example when the unit is replaced, and inserted into a new FCU to transfer the parameters.

An integrated Manual mode allows the manual activation of the burner control units and adjustment of the butterfly valves.

The fail-safe outputs for protecting the furnace, e.g. for fan, actuator and valves, are activated via a plug-in power module. When the maximum number of operating cycles has been reached, it can simply be replaced.

The FCU can be installed on a DIN rail in the control cabinet. The plug-in connection terminal strips make it easier to install and remove the FCU.

Mains voltage:

120 V AC, -15/+10%, 50/60 Hz, $\pm 5\%$,

505W: 230 V AC, -15/+10%, 50/60 Hz, $\pm 5\%$.





IFD 244

Burner control units for multiple burner applications

Automatic burner control unit IFD 200

IFD 244

Automatic burner control unit IFD 244 ignites and monitors gas burners in continuous operation. As a result of its fully electronic design, it reacts quickly to various process requirements and is therefore also suitable for frequent cycling operation.

It can be used for directly ignited industrial burners in double-electrode operation up to 350 kW (1,191,745 BTU/h).

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

Following a flame failure during operation, a restart is conducted automatically.

Mains voltage:

120 V AC, -15/+10%, 50/60 Hz,
230 V AC, -15/+10%, 50/60 Hz.

IFD 244..I with integrated electronic ignition



IFD 258

IFD 258

Automatic burner control unit IFD 258 ignites and monitors directly ignited industrial gas burners of unlimited capacity in intermittent or continuous operation. As a result of its fully electronic design, it reacts quickly to various process requirements and is therefore also suitable for frequent cycling operation.

It can be used for atmospheric burners or forced draught burners in multiple burner applications, where a central control system is used for pre-purge and for monitoring. The burners may be modulating-controlled or stage-controlled.

The program status and the level of the flame signal can be read directly from the unit. The cut-off point can be set using a potentiometer.

The behaviour in the event of flame failure during operation can be selected using a switch. Either an immediate fault lock-out or a restart occurs.

Mains voltage:

100 V AC, -15/+10%, 50/60 Hz,
120 V AC, -15/+10%, 50/60 Hz,
200 V AC, -15/+10%, 50/60 Hz,
230 V AC, -15/+10%, 50/60 Hz.

IFD 258..I with integrated electronic ignition



BCU 440

Burner control units BCU 400

BCU 440

Burner control unit BCU 440 controls, ignites and monitors gas burners in continuous operation.

It can be used for directly ignited industrial burners up to 350 kW (1,191,745 BTU/h). The BCU is installed near the burner to be monitored.

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

If the local requirements on the burner control unit change, the unit parameters can be adjusted to the application via the optical interface using the PC software BCSOFT.

The service personnel is supported by a convenient visualization system of the input and output signals and the fault history.

Mains voltage:

115 V AC, -15/+10%, 50/60 Hz,
230 V AC, -15/+10%, 50/60 Hz.





BCU 46x

BCU 460, BCU 465

Burner control units BCU 460 and BCU 465 control, ignite and monitor gas burners in intermittent or continuous operation. As a result of their fully electronic design, they react quickly to various process requirements and are therefore suitable for frequent cycling operation.

They can be used for directly ignited industrial burners of unlimited capacity. The burners may be modulating-controlled or stage-controlled. The BCU is installed near the burner to be monitored.

On industrial furnaces, the BCU 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 optional air valve control on the BCU..L assists the furnace control for cooling, purging and capacity control tasks.

The BCU 465..L is equipped with air flow monitoring and pre- and post-ventilation for use on self recuperative burners.

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

If the local requirements on the burner control unit change, the unit parameters can be adjusted to the application via the optical interface using the PC software BCSOft.

The service personnel is supported by a convenient visualization system of the input and output signals and the fault history.

To reduce the installation and wiring costs, an optional PROFIBUS DP interface is available to transfer the activation signals and feedbacks so as to expand the remote maintenance and diagnostics facilities.

Mains voltage:

115 V AC, -15/+10%, 50/60 Hz,
230 V AC, -15/+10%, 50/60 Hz.



BCU 56x

Burner control units BCU 500

BCU 560, BCU 565

Burner control units BCU 560 and BCU 565 control, ignite and monitor gas burners in intermittent or continuous operation. They can be used for directly ignited industrial burners of unlimited capacity. The burners may be modulating-controlled or stage-controlled. Their fast reaction to various process requirements makes them suitable for frequent cycling operation.

On industrial furnaces, the BCU reduces the load on the central furnace control by taking over tasks that relate to the burner, for example it ensures that the burner ignites in a safe condition when it is restarted.

The air control on the BCU..F1, F2 or F3 assists the furnace control for cooling, purging and capacity control tasks.

The burner control units have an interface via which an air valve or actuator (IC 20, IC 40 or RBW) can be controlled for staged or modulating burner capacity control.

The BCU 565..F3 is equipped with air flow monitoring and pre- and post-ventilation for use on self recuperative burners.

The program status, the unit parameters and the level of the flame signal can be read directly from the unit. The burner or a connected actuator can be activated manually using the integ-

rated Manual mode for setting and diagnostic purposes.

Thanks to the optionally integrated valve proving system, the valves can be checked for leaks by querying an external gas pressure switch or it can be checked whether the gas valve on the inlet side is closed.

Using the BCSOft program, the parameters, analysis and diagnostic information can be read from the BCU via the optionally available opto-adaptor. All valid parameters are saved on an integrated parameter chip card. The parameter chip card can be removed from the old unit and inserted into the new BCU to transfer the parameters, for example when replacing the unit.

The valve outputs for the actuator and valves which are checked for faults are accommodated in a plug-in power module. This can simply be replaced if necessary.

The BCU can be installed on a DIN rail in the control cabinet. Plug-in connection terminal strips on the BCU make it easier to install and remove.

Mains voltage:

120 V AC, -15/+10 %, 50/60 Hz, ±5%,
230 V AC, -15/+10 %, 50/60 Hz, ±5%





BCU 480

BCU 480

Burner control unit BCU 480 controls, ignites and monitors gas burners in intermittent or continuous operation. As a result of its fully electronic design, it reacts quickly to various process requirements and is therefore suitable for frequent cycling operation.

It can be used for industrial burners of unlimited capacity which are ignited by pilot burners. Pilot and main burners may be modulating-controlled or stage-controlled. The BCU 480 monitors pilot and main burners independently. The pilot burner can burn permanently or be switched off. The BCU is installed near the burner to be monitored.

On industrial furnaces, the BCU 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 air valve control 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. The burner can be controlled manually for commissioning and diagnostic purposes.

If the local requirements on the burner control unit change, the unit parameters can be adjusted to the application via the optical interface using the PC software BCSOft.

The service personnel is supported by a convenient visualization system of the input and output signals and the fault history.

To reduce the installation and wiring costs, an optional PROFIBUS DP interface is available to transfer the activation signals and feedbacks so as to expand the remote maintenance and diagnostics facilities.

Mains voltage:
115 V AC, -15/+10%, 50/60 Hz,
230 V AC, -15/+10%, 50/60 Hz.



BCU 580

BCU 580

Burner control unit BCU 580 controls, ignites and monitors gas burners in intermittent or continuous operation. It can be used for directly ignited industrial burners of unlimited capacity which are ignited by pilot burners. Pilot and main burners may be modulating-controlled or stage-controlled. The BCU 580 monitors pilot and main burners independently. The pilot burner can burn permanently or be switched off. Its fast reaction to various process requirements makes it suitable for frequent cycling operation.

On industrial furnaces, the BCU reduces the load on the central furnace control by taking over tasks that relate to the burner, for example it ensures that the burner ignites in a safe condition when it is restarted.

The air control on the BCU..F1, F2 or F3 assists the furnace control for cooling, purging and capacity control tasks.

The burner control units have an interface via which an air valve or actuator (IC 20, IC 40 or RBW) can be controlled for staged or modulating burner capacity control.

The program status, the unit parameters and the level of the flame signal can be read directly from the unit. The burner or a connected actuator can be activated manually using the integ-

rated Manual mode for setting and diagnostic purposes.

Thanks to the optionally integrated valve proving system, the valves can be checked for leaks by querying an external gas pressure switch or it can be checked whether the gas valve on the inlet side is closed.

Using the BCSOft program, the parameters, analysis and diagnostic information can be read from the BCU via the optionally available opto-adapter. All valid parameters are saved on an integrated parameter chip card. The parameter chip card can be removed from the old unit and inserted into the new BCU to transfer the parameters, for example when replacing the unit.

The valve outputs for the actuator and valves which are checked for faults are accommodated in a plug-in power module. This can simply be replaced if necessary.

The BCU can be installed on a DIN rail in the control cabinet. Plug-in connection terminal strips on the BCU make it easier to install and remove.

Mains voltage:
120 V AC, -15/+10 %, 50/60 Hz, ±5%,
230 V AC, -15/+10 %, 50/60 Hz, ±5%





PFU 760

Burner control units PFU 700

PFU 760

Burner control unit PFU 760 controls, ignites and monitors gas burners in intermittent or continuous operation. As a result of its fully electronic design, it reacts quickly to various process requirements and is therefore also suitable for frequent cycling operation.

The PFU 760 can be used for directly ignited industrial burners. The burners may be modulating-controlled or stage-controlled.

On industrial furnaces, the PFU 760 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 burner control unit PFU 760L 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. The burner can be controlled manually for commissioning and diagnostic purposes.

If the local requirements on the burner control unit change, the unit parameters can be adjusted to the application via the optical interface using the PC software BCSOft.

The service personnel is supported by a convenient visualization system of the input and output signals and the fault history.

To reduce the installation and wiring costs, the fieldbus interface PFA 700 is available to transfer the control signals and feedbacks via PROFIBUS DP.

Mains voltage:

110/120 V AC, -15/+10%, 50/60 Hz,
220/240 V AC, -15/+10%, 50/60 Hz.



PFU 780

PFU 780

Burner control unit PFU 780 controls, ignites and monitors gas burners in intermittent or continuous operation. As a result of its fully electronic design, it reacts quickly to various process requirements and is 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-controlled 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 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 unit parameters can be adjusted to the application via the optical interface using the PC software BCSOft.

To support service personnel, BCSOft offers a convenient visualization system of the input and output signals and the fault history.

Mains voltage:

110/120 V AC, -15/+10%, 50/60 Hz,
220/240 V AC, -15/+10%, 50/60 Hz.





BCU 370

Burner control units for single or forced draught burners

BCU 370

Burner control unit BCU 370 controls, ignites and monitors industrial forced draught burners of unlimited capacity in intermittent or continuous operation.

It can be used for directly ignited forced draught burners or forced draught burners ignited by a pilot burner. The BCU 370 activates the fan and sets the connected butterfly valve to pre-purge and ignition position. After pre-purge and burner start, the controller enable signal is issued to an external controller which positions the butterfly valve in accordance with the capacity demand. Post-purge occurs after the end of burner operation. The burner control unit BCU 370 monitors the gas and air pressure. An optionally integrated tightness control function checks the valves with an external gas pressure switch.

Programmability by means of the optical interface and BCSOFT PC software guarantees optimum adaptation to the relevant application. Adjustable start-up attempts and automatic

restart which can be activated ensure the high flexibility of the burner equipment.

The quick-start option allows standard-compliant start-up of the forced draught burner without pre-purge after a controlled shut-down. This avoids unnecessary admission of air into the combustion chamber. The heat output is available as quickly as possible after a temperature demand.

The program status, the unit parameters and the level of the flame signal can be read directly from the unit. An integrated Manual mode allows manual start of the burner and setting of the butterfly valve position independently of the central control system. The BCSOFT operator-control and setting software provides a powerful tool for start-up and servicing.

To reduce the installation and wiring costs, an optional PROFIBUS DP interface is available to transfer the activation signals and feedbacks.

Mains voltage:

120 V AC, -15/+10%, 50/60 Hz,

230 V AC, -15/+10%, 50/60 Hz.



BCU 570

BCU 570

Burner control unit BCU 570 controls, ignites and monitors industrial individual burners and forced draught burners of unlimited capacity in intermittent or continuous operation. It can be used for directly ignited burners or burners ignited by a pilot burner.

The BCU 570 has an interface for control elements for burner capacity control. Both actuators (IC 20, IC 40, 3-point step and RBW) and frequency converters can be controlled. A valve proving system can be integrated as an option.

The BCU 570 activates the fan and sets a connected actuator or frequency converter to pre-purge and ignition position. If the centrally checked safety requirements, e.g. pre-purge, flow detector and pressure switch check, have been met, the BCU 570 starts the burner. An enable signal is then issued to an external temperature controller which controls the actuator or frequency converter in accordance with the capacity demand. The burner control unit BCU 570 monitors the gas and air pressure. The optionally integrated valve proving system checks the valves by checking an external gas pressure switch or by checking whether the gas valve on the inlet side is closed.

Using the BCSOFT program, the parameters, analysis and diagnostic information can be read from the BCU via the optionally available opto-adaptor. All valid parameters are saved on the integrated parameter chip card. The parameter chip card can be removed easily, for example when the unit is replaced, and inserted into a new BCU to transfer the parameters.

An integrated Manual mode allows the manual activation of the burner control units and adjustment of the butterfly valves.

The fan output and the actuator and valve outputs which are checked for faults are accommodated in a plug-in power module. This can simply be replaced if necessary.

The BCU can be installed on a DIN rail in the control cabinet. The plug-in connection terminal strips make it easier to install and remove.

Mains voltage:

120 V AC, -15/+10%, 50/60 Hz, ±5%,

230 V AC, -15/+10%, 50/60 Hz, ±5%.



Type	Application		Burner		Capacity control		Requirements of the Standards		Flame control					Features							Replacement for								
	Single burner	Multiple burners	Direct ignition	Burner with pilot burner	Burner/pilot burner controlled separately	Staged, in cycles	For radiant tube burners	Modulating	EN 298, continuous operation	SIL 3	Ionization, single-electrode operation	Ionization, double-electrode operation	UV intermittent/UVS	UV continuous operation/UVD	High temperature operation	Multi-flame control	Number of gas valve outputs	Integrated ignition	Integrated valve proving system	Maximum flame signal cable length	Profibus fieldbus connection	Profinet fieldbus connection	Programmable via BCSofT	24 V activation	DIN rail	Housing for on-site mounting	19"	Enclosure [IP]	
IFD 244		●	●					●			●					1	○		1 m/75 m ¹⁾ 3.3 ft/246 ft ¹⁾					●			54	IFS 244	
IFD 258		●	●					●		●	●	●				1	○		1 m/75 m ¹⁾ 3.3 ft/246 ft ¹⁾					●			54	IFS 258, IFS 13x	
BCU 440		●	●					●	●	●	●					1	○		5 m/50 m ¹⁾ 16.4 ft/164 ft ¹⁾		●				●		54		
BCU 460		●	●			○		●	●	●	●	●	●	○		2	○		5 m/50 m ¹⁾ 16.4 ft/164 ft ¹⁾	○	●				●		54		
BCU 465		●	●			●		●	●	●	●	●	●	○		2	○		5 m/50 m ¹⁾ 16.4 ft/164 ft ¹⁾	○	●				●		54		
BCU 480		●		●	●	●		●	●	●	●	●	●	○		2	○		5 m/50 m ¹⁾ 16.4 ft/164 ft ¹⁾	○	●				●		54		
PFU 760		●	●			○		●	●	●	●	●	●	○	●	2			100 m 328 ft	○	●	●				●	00	PFS, PFD, PFU 778	
PFU 780		●		●	●	●		●	●	●	●	●	●	○		2			100 m 328 ft	○	●	●				●	00	PFU 798	
BCU 560		●	●			●	●	●	●	●	●	●	●	○	●	3	○		100 m 328 ft		○	●	●	●				20	IFS 11x, IFD 45x
BCU 565		●	●			●	●	●	●	●	●	●	●	○		3	○		100 m 328 ft		○	●	●	●				20	IFS 11x, IFD 45x
BCU 580		●		●	●	●		●	●	●	●	●	●	○		4	○		100 m 328 ft		○	●	●	●				20	IFS 11x, IFD 45x
BCU 370	●		●	●				●	●		● ²⁾	●	●			3	○	○	1 m/50 m ¹⁾ 3.3 ft/164 ft ¹⁾	○	●				●		54		
BCU 570	●		●	●				●	●	●	●	●	●			4	○		100 m 328 ft		○	●	●				20	IFS 11x	

● = standard, ○ = available

¹⁾ The lower value applies to units with integrated ignition transformers, the higher to units with external ignition.

²⁾ Single-electrode operation is only possible for BCU 370 with external ignition.

FCU 500, FCU 505

For monitoring and controlling central safety functions in multiple burner systems:

- Gas and air pressure monitoring
- Pre-purge
- Tightness test or proof of closure function (optional)
- Temperature monitoring (optional)
- Fieldbus connection (optional)

FCU 500:

central protective system control for multiple furnace zones.

FCU 505:

is used for protective system and capacity control in individual furnace zones.

Technical Information bulletin for this product

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