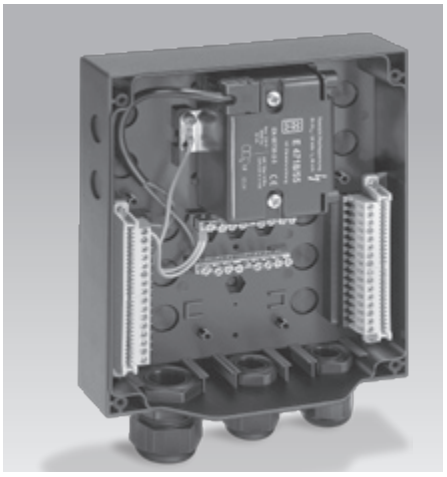
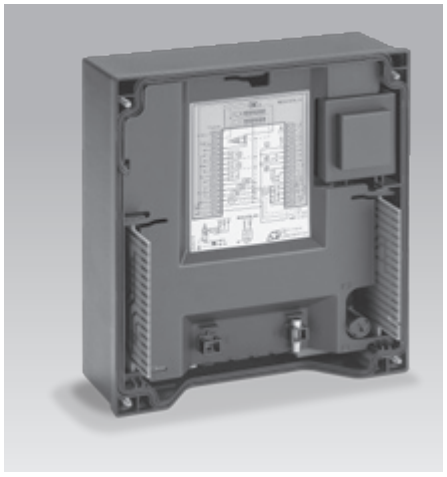
Burner control unit BCU 370

Product brochure · GB
6.1.3.2 Edition 12.05

- For modulating, forced draught burners for gas of unlimited capacity in intermittent or continuous operation
- Control of fan and butterfly valve
- Simple system set-up thanks to optional tightness control and integrated ignition unit
- Easy start-up and maintenance thanks to Manual operating mode
- Enhanced flexibility and simplified logistics thanks to programmable functions
- Easy servicing thanks to informative operating, warning and fault messages
- Optionally available with integral field bus interface for simple wiring
- EC type-tested and certified, CSA and FM approved





Burner control unit BCU 370.

Application

The BCU 370 burner control unit 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 with pilot burner. The BCU 370 activates the blower and sets the connected butterfly valve to pre-purging and ignition position. After pre-purge and burner start, the Enable signal is issued to an external controller which positions the butterfly valve in accordance with the output 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.

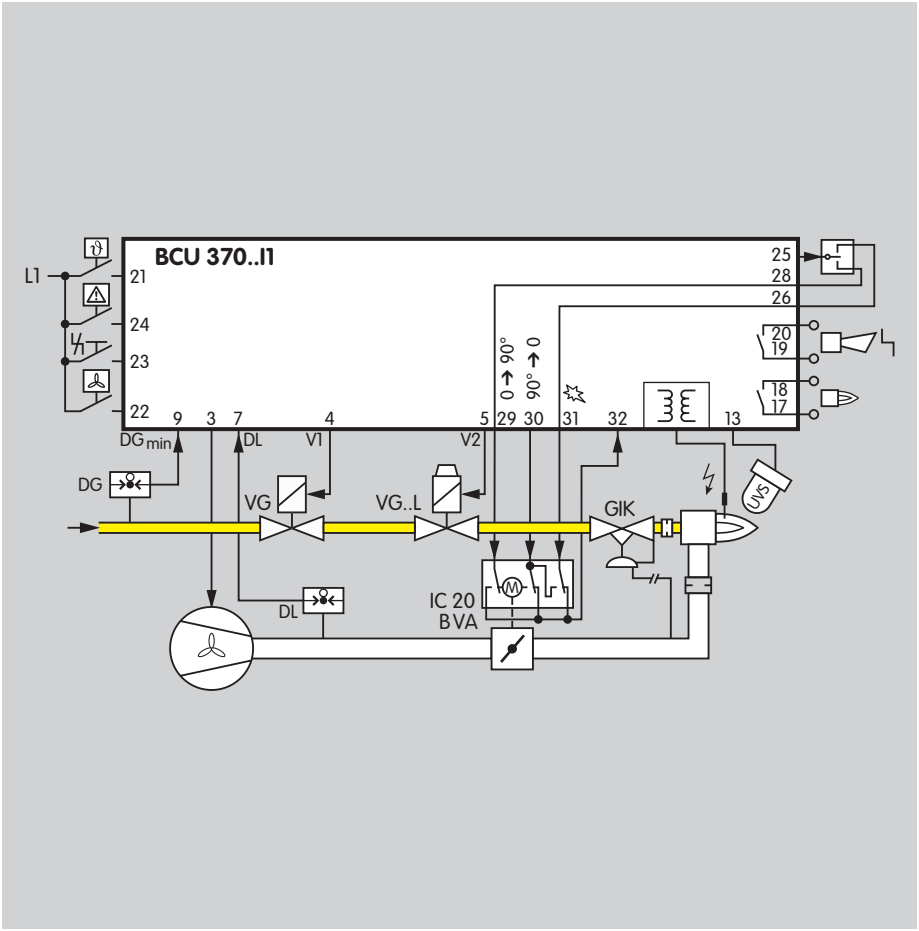
Programmability by means of the optical interface and BCSoft PC software guarantees optimum adaptation to the relevant application. Adjustable start-up attempts and automatic restart which can be activated ensure the high availability of the burner equipment.

The quick-start option allows standard-compliant start-up of the forced draught burner without pre-purge after normal shutdown. 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.

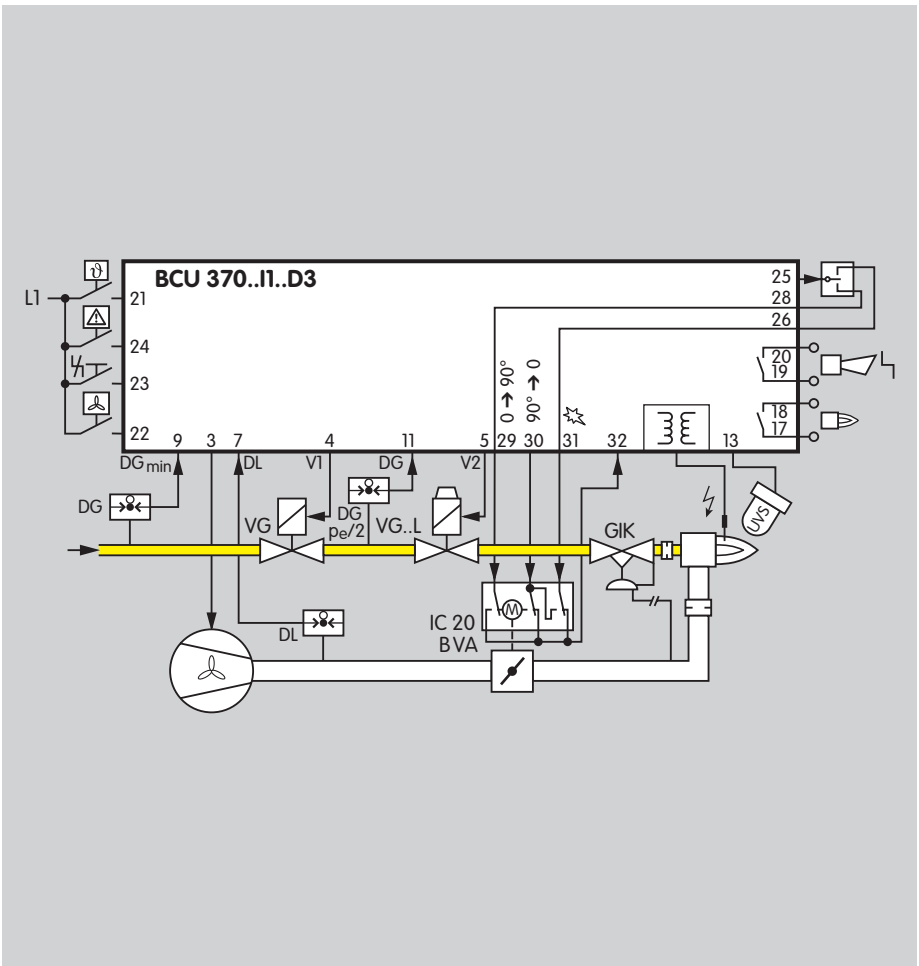
To reduce the installation and wiring costs Kromschröder offers an optional Profibus-DP interface to transfer the activation signals and feedbacks.

Example applications



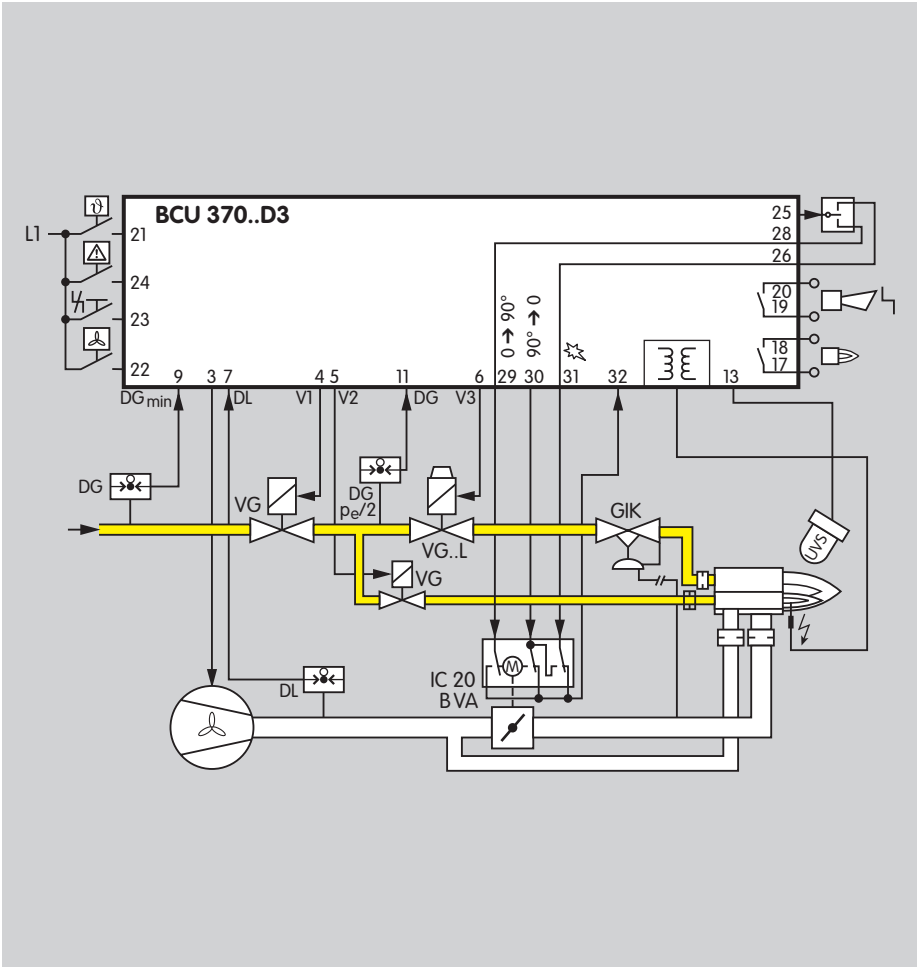
Modulating-controlled forced draught burner

The BCU 370 controls the blower and moves the butterfly valve to pre-purging and ignition position. It issues the Enable signal to the control system after start-up of the burner.



Modulating-controlled forced draught burner with tightness control

In addition to controlling the forced draught burner, the burner control unit also monitors the fail-safe function of the two solenoid valves for gas via the DG. gas pressure switch.



Modulating-controlled forced draught burner with pilot burner and tightness control

A pilot burner ignites the main burner and is switched off during the main burner's safety time.

Technical data

Mains voltage:
BCU..W: 230 V AC, -15/+10%, 50/60 Hz, or
BCU..Q: 120 V AC, -15/+10%, 50/60 Hz,
for grounded or ungrounded mains.

Flame control with UV sensor or ionisation sensor.

Flame signal for:
Ionisation control: 1–28 µA,
UV control: 1–35 µA.

For intermittent or continuous operation.

Air pressure check during pre-purge and operation by external air pressure switch DL.

Maximum length of ignition cable with integrated electronic ignition: 1 m.

Maximum length of ionisation/UV cable: 50 m (164 ft).

Max. number of operating cycles: 250,000.

Ambient temperature:
BCU 370: -20–+60 °C (-4–+140 °F),
BCU 370..I: -10–+60 °C (14–+140 °F),
no condensation permitted.

Enclosure: IP 54 pursuant to IEC 529.

Housing made of impact-resistant and heat-resistant plastic. Plug-in upper section with operating and display elements.

Lower section with connection terminals, earthing strip and pre-wired neutral bus with spacious wiring chamber.

1x M25 multiple screw connector,
4x 7 mm cable grommets,
2x M20 multiple screw connectors,
2x 7 mm cable grommets, and loosely enclosed

1x or 2x M16 plastic screw connector(s) for the ignition cable(s).

Voltage to inputs, valves, fan, controller enable, actuator and ignition unit = mains voltage.

Power consumption: Approx. 9 VA plus approx. 50 VA for integrated ignition.

Input voltage signal inputs:

Rated value	120 V AC	230 V AC
Signal "1"	80–126.5 V	160–253 V
Signal "0"	0–20 V	0–40 V

Input current signal "1": Typ. 2 mA

Output to ignition transformer:
No-switch contacts via semi-conductor.

Contact rating:
Valves: Max. 1 A, cos φ = 1,
Butterfly valves: Max. 1 A, cos φ = 1,
Ignition: Max. 1 A, cos φ = 0.3,
Controller enable signal:
Max. 1 A, cos φ = 1,
the contacts may be loaded with a max. total of 2.5 A,
Fan: Max. 3 A, start-up current:
Max. 6.5 A < 1 s.

The outputs may be loaded with a max. total of 4 A.

Operation and fault signalling contacts:
Dry Contact, max. 1 A, 253 V, not fused internally.

Reset/Information button: Max. number of operating cycles: 1000.

Fuse in BCU, replaceable, F1: T 5A H, pursuant to IEC 60127-2/5.

Permissible UV sensors:
Kromschröder models UVS 1, 5, 6, 8 and UVD 1.

Weight: Approx. 1.8 kg.

PROFIBUS-DP

Manufacturer ID: 0x08EC.

ASIC type: SPC3.

SYNC- and FREEZE-capable.

Baud rate detection: Automatic.

Min. cycle time: 0.1 ms.

Diagnostic bytes: 6 (DP Standard).

Parameter bytes: 7 (DP Standard).

Certification

EC type-tested and certified

pursuant to

- Gas Appliances Directive (90/396/EEC) in conjunction with EN 298,
- Low Voltage Directive (73/23/EEC) in conjunction with the relevant standards,
- Electromagnetic compatibility 89/336/EEC in conjunction with the relevant standards relating to radiation.

AGA

Approval No. 6478 in preparation

CSA and FM approved

Canadian Standards Association Class: 3335-01 and 3335-81 Systems (Gas-)Automatic Ignition and Components

Factory Mutual Research Class: 7611 Combustion Safeguards and Flame Sensing System

Suitable for applications pursuant to NFPA 85 and NFPA 86

PROFIBUS User Organisation

BCU 370..B1

PUO = PROFIBUS User Organisation,

Certificate no. Z 00692 pursuant to EN 50170-2

Selection

BCU 370: for modulating-controlled forced draught burners

Order example

BCU 370WI1FEU0D1

	W	Q	I1	I2	I3	F	E	U0	U1	D1	D3	B1*	-3*
BCU 370	●	●	●	○**	○**	●	●	●	○	●	○	○	○

● = standard
○ = available

Type = BCU

Mains voltage
230 V AC, 50/60 Hz = W
120 V AC, 50/60 Hz = Q

Ignition
Electronic ignition, single-pole = I1
Electronic ignition, double-pole = I2**
Electronic ignition, double-pole with neutral conductor = I3**
Without ignition = no specification

Fan control = F

Valve control = E

Flame control
Ionisation control (continuous or intermittent op.) or UV control (intermittent op. with UVS) = U0
UV (continuous operation with UVD 1) = U1

DG_{max} monitoring = D1
Integrated tightness control = D3

For PROFIBUS-DP = B1*

Three-point step control via PROFIBUS-DP = -3*

* If "none", this specification is omitted.
** I2 only for 230 V, I3 only for 120 V

Detailed information on this product

www.docuthek.com

Contact

www.kromschroeder.com ➔ Sales

Elster GmbH
Postfach 2809 · 49018 Osnabrück
Strotheweg 1 · 49504 Lotte (Büren)
Germany

T +49 541 1214-0
F +49 541 1214-370
info@kromschroeder.com

www.kromschroeder.com
www.elster.com

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03250459 Druckerei MM.JJ X.XXX