

Actuators IC 20, IC 40

- // IC 20 for basic applications with three-point step control and automatic/manual mode changeover for easy commissioning
- // IC 40 for complex applications with programmable functions for flexible adjustment to the process, with statistics and error history to support service personnel
- // External readable position indicator
- // Spacious connection chamber for ease of installation
- // Actuator can be mounted directly onto the butterfly valves BVG, BVA or BVH



IC 20



IC 40

IC 40 with status display and optical interface.

Application

The actuators IC 20 and IC 40 are designed for all applications that require precise, controlled rotary movement between 0° and 90°. They can be mounted directly onto the butterfly valves BVG, BVA or BVH in order to control the gas and air flow rates on gas burners. They are designed for control ratios up to 1:10.

An optional integrated feedback potentiometer offers the option of monitoring the current position of the actuator. This scan function can be used in automation processes.

IC 20

IC 20 is used for basic applications. It is controlled by a three-point step signal. The automatic/manual mode changeover and the position indicator that can be read externally assist in the setting of the infinitely adjustable switching cams upon commissioning. This enables precise settings even in the low-fire rate range.

IC 40

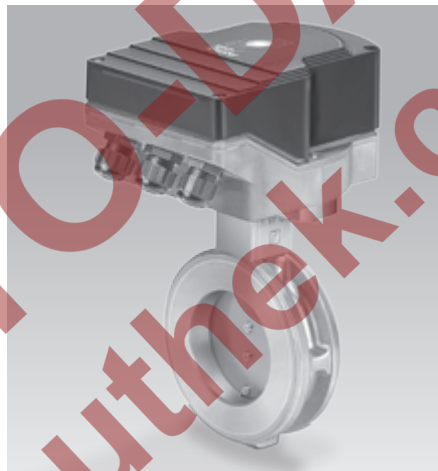
The IC 40 offers additional functions. It can be used in continuously-controlled burners and in step-by-step-controlled burners.

Settings on the actuator IC 40 can be made using a PC with the parameterisation software BCSofT. All the relevant settings for the process are made using the software via an optical interface instead of with switching the cams. Various operating modes, which may be modified, are stored in the unit. In addition the control type (two-point signal, three-point step signal or continuous control), running times, adjustment angles and intermediate positions can be programmed.

The actuator can also be controlled "by hand" using the software.

Once set, all the parameters can be saved and copied into other actuators, thus saving time during the commissioning process.

Service technicians can call up statistical data using BCSofT, such as hours of operation, actuating cycles and an error history. Some values can also be set to zero, for example to record data over a specific period of time.



The actuator can be mounted directly onto the butterfly valves BVG, BVA or BVH.

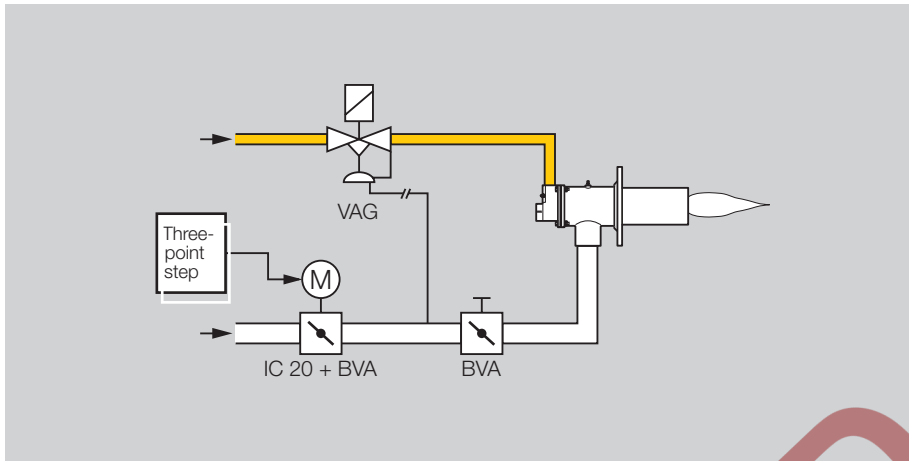


Roller hearth kiln in the ceramics industry.



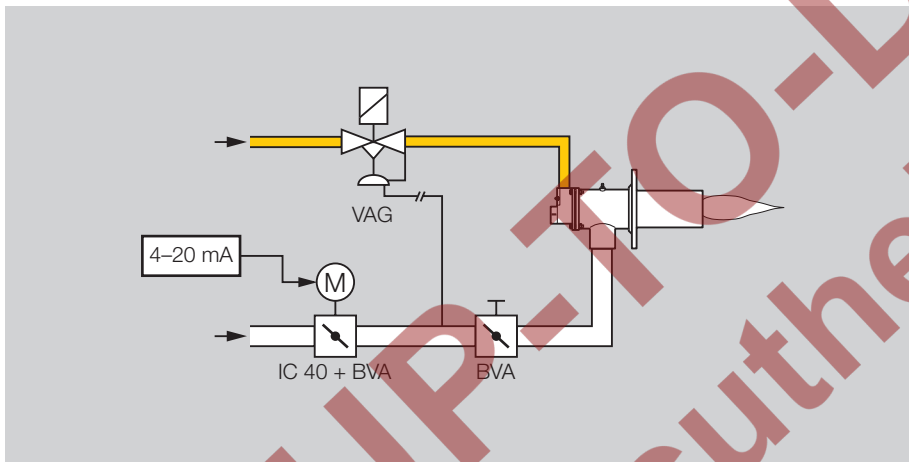
Forging furnace.

Application examples



IC 20, continuous control

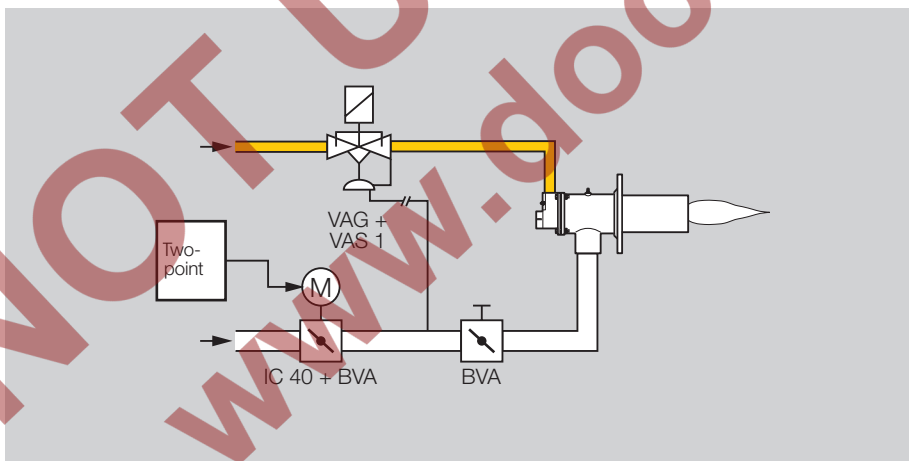
For processes that require high temperature accuracy and low circulation in the furnace. The actuator IC 20 is controlled by a three-point step controller.



IC 40, continuous control

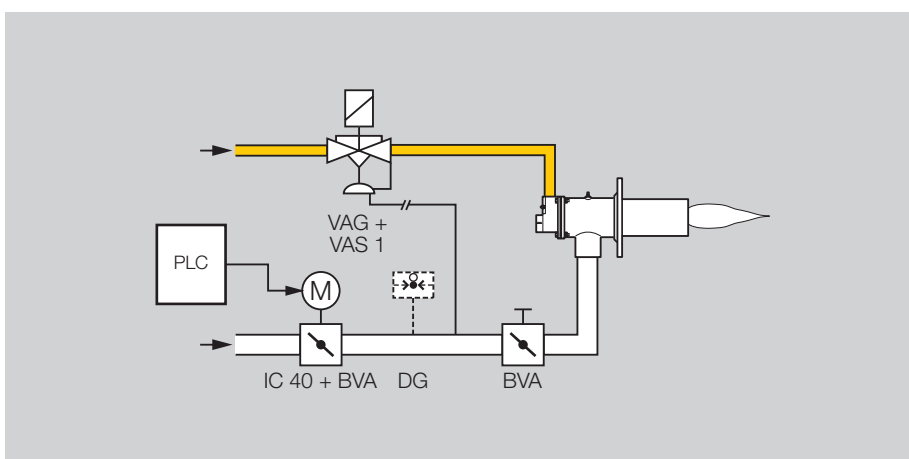
For processes that require high temperature accuracy and low circulation in the furnace. The actuator IC 40 is controlled by a 4 – 20 mA signal.

The characteristic current curve can be adjusted to the process during five support points.



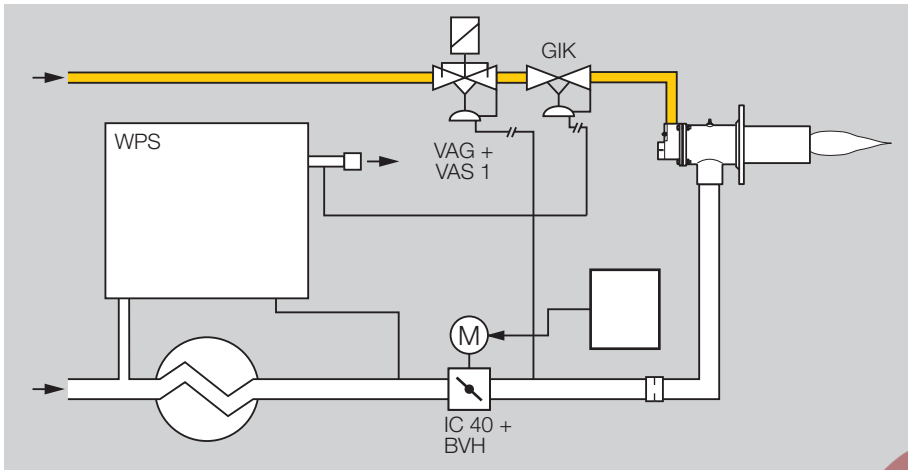
IC 40, staged control

For processes that require a homogeneous temperature distribution in the furnace. The actuator IC 40 is controlled by a two-point controller and operates in On/Off or High/Low intermittent mode. The actuator closes when the voltage supply is interrupted. The running time can be adjusted between 5 and 25 seconds.



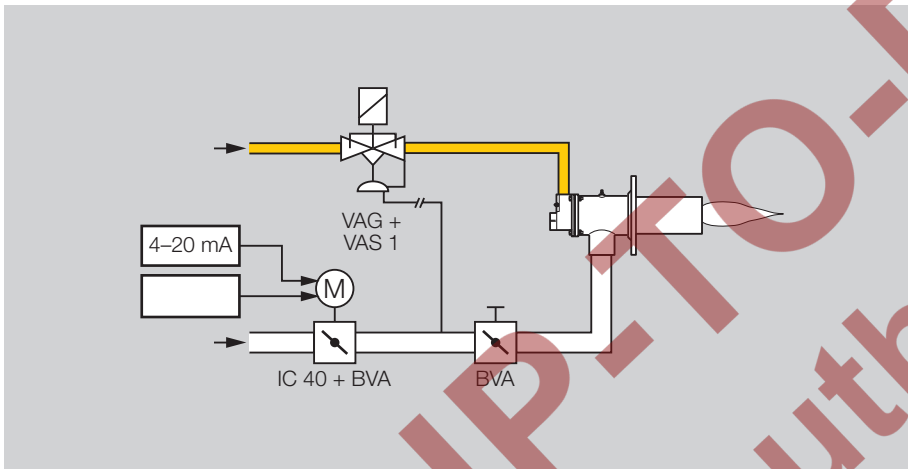
IC 40, staged control with three burner output levels

For processes that require a homogeneous temperature distribution in the furnace and three burner output levels. The actuator IC 40 is controlled by a programmable controller and works in High/Medium/Low or High/Medium/Low/Off intermittent operation. This allows the ignition stage to be started. The pressure switch provides fail-safe monitoring of the maximum pilot air volume. The actuator running time can be adjusted between 5 and 50 (75) seconds.



IC 40, hot air compensation

For processes in which preheated combustion air at a temperature of up to 450°C must be controlled, the actuator IC 40 is regulated by a two-point controller to adjust the burner firing capacity. It runs in High/Low intermittent operation. The running time can be adjusted between 5 and 25 seconds.



IC 40, staged control with online adjustment of the burner firing capacity

For processes that require a homogeneous temperature distribution and high temperature accuracy in the furnace.

If only a low heat output is required, for example to maintain the temperature in the furnace, the burner can continue to run in intermittent operation. The adjustment angle of the valve is reduced by the analogue input (4 – 20 mA) of the actuator and the burner output is therefore lowered. This ensures uniform temperature distribution even with a low burner output.

The functions of the actuator IC 40 can also be used in the ceramics industry to correct the lambda value or for temperature compensation purposes in hot air applications.

Technical data

IC 20

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

Power consumption:
4.9 VA at 50 Hz, 5.4 VA at 60 Hz.

Screw terminals using the elevator principles for cables up to 2.5 mm² (single core cables) and for cables up to 1.5 mm² with wire end ferrules.

Angle of rotation: 0–90°, adjustable.

Holding torque = Torque.

Switching power of the position switches:

Voltage	Resistive load	Incand. lamp load	Inductive load
125 V~	2 A	0,5 A	2 A
250 V~	2 A	0,5 A	2 A
<30 V=	2 A	2 A	2 A
<50 V=	1 A	0,4 A	1 A
<75 V=	0,75 A	0,3 A	0,75 A
<125 V=	0,5 A	0,2 A	0,03 A
<250 V=	0,25 A	0,1 A	0,03 A
12–30 V-~/=	100 mA		100 mA

IC 40

Mains voltage:
100 – 230 V AC, ±10%, 50/60 Hz,
the actuator automatically adjusts to the respective mains voltage.

Power consumption: 8.4 VA.

Screw terminals using the elevator principles for cables up to 4 mm² (single core cables) and for cables up to 2.5 mm² with wire end ferrules.

Angle of rotation: 0–90°, setting accuracy <0.05°.

Holding torque = Torque as long as permanent supply voltage is applied.

2 digital inputs:
24 V DC or 100 – 230 V AC each.

Current requirement of digital inputs:
3 mA ± 1.5 mA.

1 analogue input (optional): 4–20 mA
(internal load impedance max. 500 Ω at 20 mA).

2 digital outputs: Signalling contacts designed as relay change-over contacts.

2 LED status displays:

- Blue LED for operation “ON”,
Drive in motion = Slow flashing light;
Manual operation = Fast flashing light;
Drive stopped = Permanent light.
- Red LED
Fault = Flashing light.
- Red and blue LED
Calibration in progress = Flashing light.

IC 20, IC 40

Enclosure: IP 65 pursuant to IEC 529.

Safety class: I pursuant to EN 60335.

Electrical connection:

Line entrance: 3 x M20 plastic screw connectors.

Ambient temperature: -20 – +60°C, no condensation permitted.

Certification

Kromschroder AG certifies that the actuators IC 20 and IC 40 conform to the following EU Directives:

- Low Voltage Directive (73/23/EEC) on the basis of EN 60730-1,
- Electromagnetic Compatibility Directive (89/336/EEC) on the basis of EN 50082-2 and EN 50081-1.

UL approval for actuator IC 40 is in preparation.

Selection

IC 20: Actuator for basis applications

IC 40: Intelligent actuator for complex applications

Order example
IC 40A2R10

	S*	07	15	30	60	W	Q	A	2**	3**	A*	R10*
IC 20		●	●	●	●	●	●		●	●		○
IC 40	○				●			●	●	●	○	○
Type = IC												
Safety closing function = S*												
(with butterfly valve BVHS only)												
Running time (at 50 Hz)												
7.5 s = 07												
15 s = 15												
30 s = 30												
60 s = 60												
can be programmed												
Mains voltage												
230 V AC, -15/+10%, 50/60 Hz = W												
120 V AC, -15/+10%, 50/60 Hz = Q												
100–230 V AC, ±10%, 50/60 Hz = A												
Torque												
2.5 Nm = 2												
3 Nm = 3												
Analogue input 4–20 mA = A*												
Feedback potentiometer												
0–1000 Ω = R10*												

* IC 20-07: 2.5 Nm, IC 20-15/-30/-60: 3.0 Nm.
IC 40: 2.5 Nm, IC 40S: 3.0 Nm.

** Various parameter sets can be pre-set ex-works.

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

● = standard

○ = available

Detailed information on this product

www.kromschroeder.com

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We reserve the right to make technical modifications in the interests of progress.

Kromschroder uses environment-friendly production methods. Please send away for our Environment Report

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