



GUTH

Control valves



guth ventile

FLUID PROCESS GROUP



MAXIMUM FLEXIBILITY
Guth control valves

Contents

THE CONTROL VALVE RANGE – AN OVERVIEW	4 – 7
SINGLE-STAGE CONTROL VALVES	8
MULTI-STAGE CONTROL VALVES Two- and three-stage	10
DISTRIBUTORS/MIXER CONTROL VALVES	12
VALVE TESTING	14 – 15
POSITION CONTROLLERS	16 – 17
ENQUIRY FORM	19



CONTROL VALVES

Control without exception

Guth control valves are based on the modular system of the single-seat valve series. Different flow coefficients as well as control characteristics and seal types can be implemented with one nominal size.



Control valve with DigiPos positioner and diaphragm actuator

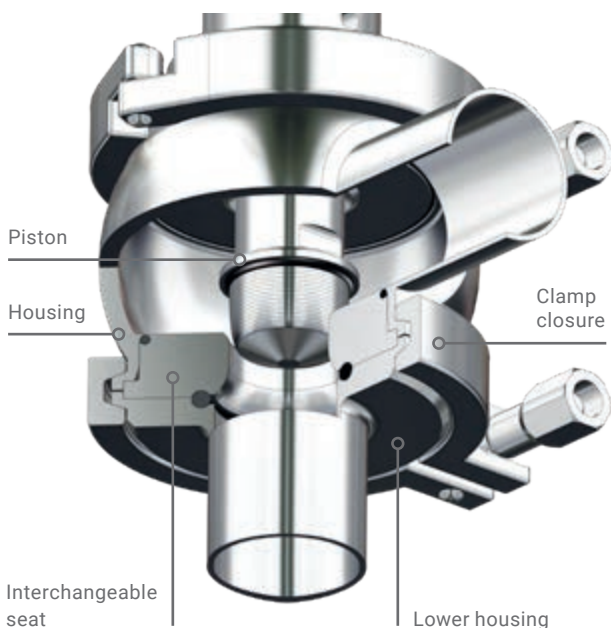
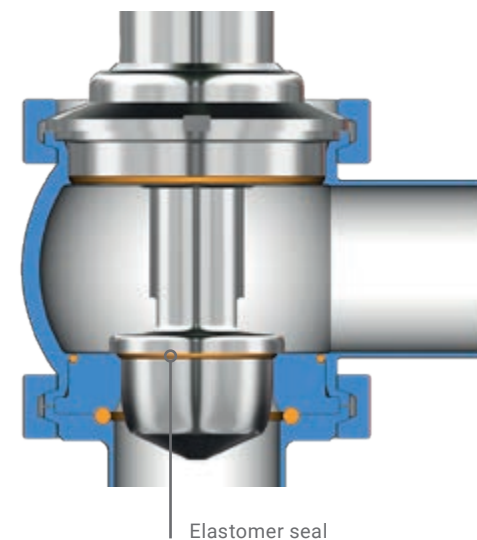
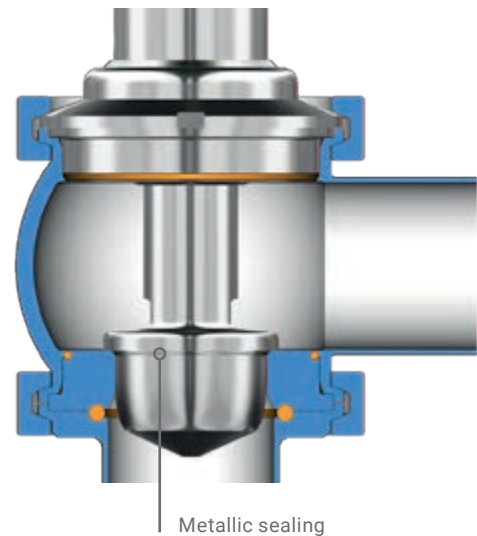
Flexible due to interchangeable seat concept

The essential feature of this valve series is the hygienic interchangeable seat concept. Linear or equal percentage control characteristics are available to choose from. **Cone and seat** can be replaced in a few simple steps. The seal variant is easy to convert from soft to metallic. For the greatest possible flexibility, our control valves can be adapted to flow coefficients from 0.1 m³/h to 160 m³/h, without the need for costly conversion work.

All very simple

With our in-house developed sizing software, we take over the calculation of the valve or the suitable cone and seat for you. This way you can be sure that the valve perfectly matches the required operating condition and provides the most accurate control possible. Simply fill out the enquiry form at the end of this prospectus, send it off and you're done. You will immediately receive the design for your valve.

The design of the Guth control valves is based on the proven hygienic concept of the KI-DS valve series. This makes them particularly suitable for sensitive production areas in the food and beverage industry.



DID YOU ALREADY KNOW, THAT...

all fastenings of our control valves are designed as easily detachable clamp connections? This makes it easy to replace individual parts.

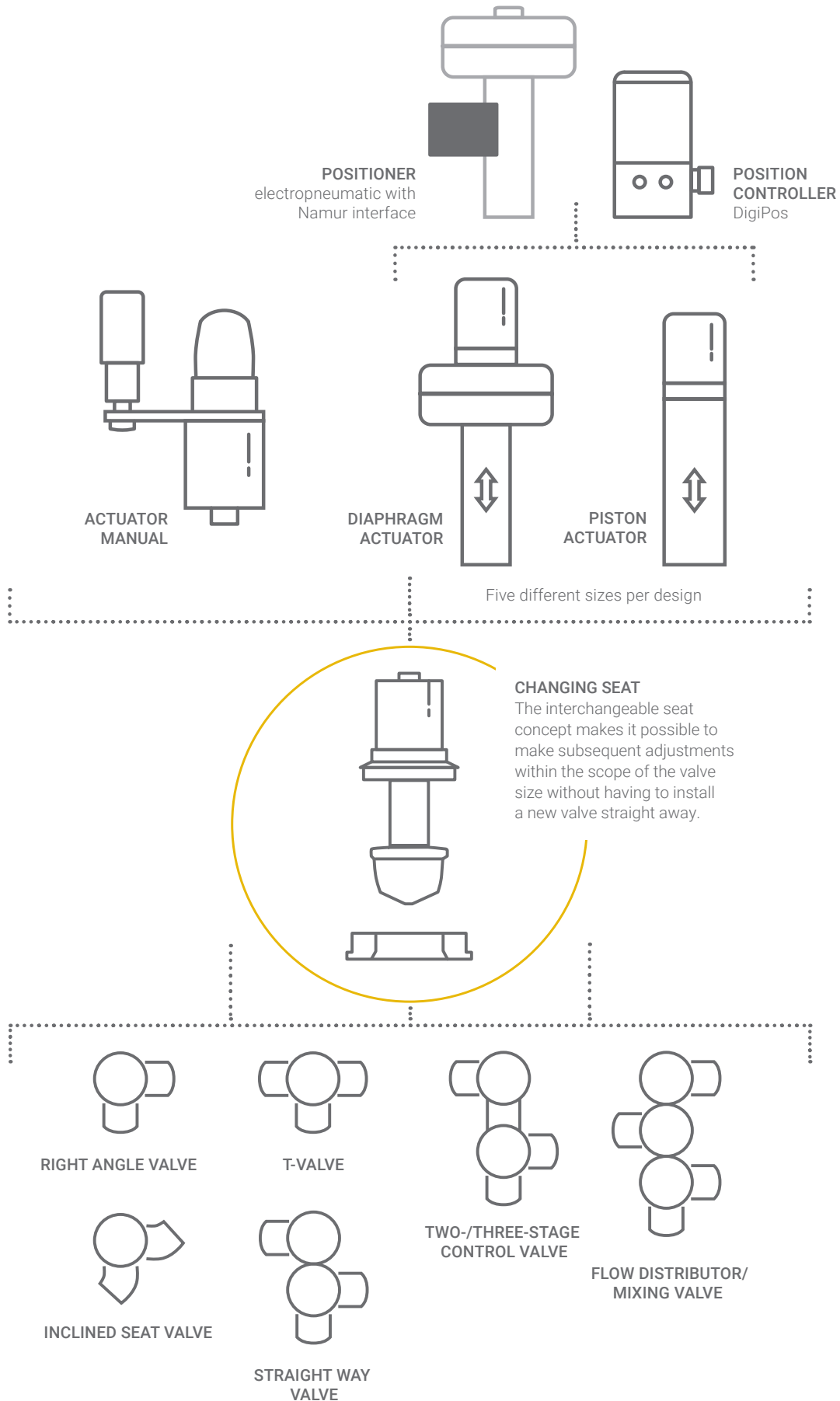
Thomas Dreisigacker
Head of Internal Sales
Guth

ADVANTAGES

- > Simple adaptation
- > Linear or equal-percentage control
- > Flexible cone and replacement seat concept
- > 2 actuator variants each in 5 sizes

THE MODULAR SYSTEM FOR CONTROL VALVES

The right control valve...



TECHNICAL SPECIFICATIONS AND MATERIALS

for every need

Actuator types



Manual actuator



Piston actuator



Diaphragm actuator

The highly modular valve concept also allows the use of actuator and positioner brands outside our standard range.

TECHNICAL DATA

Nominal diameters	DN 10–150/OD 1/2"–6"
Nominal pressure	PN 16
Temperature range Media Cleaning (CIP) Sterilisation (SIP)	0°–100° C 100° C 140° C
Control air pressure	max. 3–5.5 bar
Characteristic curve type	Linear, equal-percentage
Control ratio	50:1
Housing profile	Right-angle, T, straight way inclined deat
Housing connections Weld-on end Flanged connection Clamped connection Aseptic	EN 10357, Series B DIN 11866, Series C DIN 11853-2 DIN 11864-2 DIN 11853-3 DIN 11864-3 Aseptic collar flange Aseptic grooved flange Other connection profiles on request
Pipe classes	DN according to EN 10357, Series A OD according to DIN 11866, Series C
Product-contacting surfaces	Ra ≤ 0.8 µm*
Product-contacting material	1.4404/AISI 316L
Cone profile	Parabolic cone
Seal materials	HNBR (max. 120 °C, SIP 30 min) EPDM (max. 140 °C, SIP 30 min) FKM (max. 110 °C, SIP 30 min)
Leakage classes soft-sealing metallic sealing	EN 60534-4, KI.VI / FCI 70-2, Class VI EN 60534-4, KI.VI / FCI 70-2, Class IV
Spindle sealing	EPDM, HNBR, FKM, FDA, Directive EC 1935/2004
Actuators	Manual, piston and diaphragm actuator

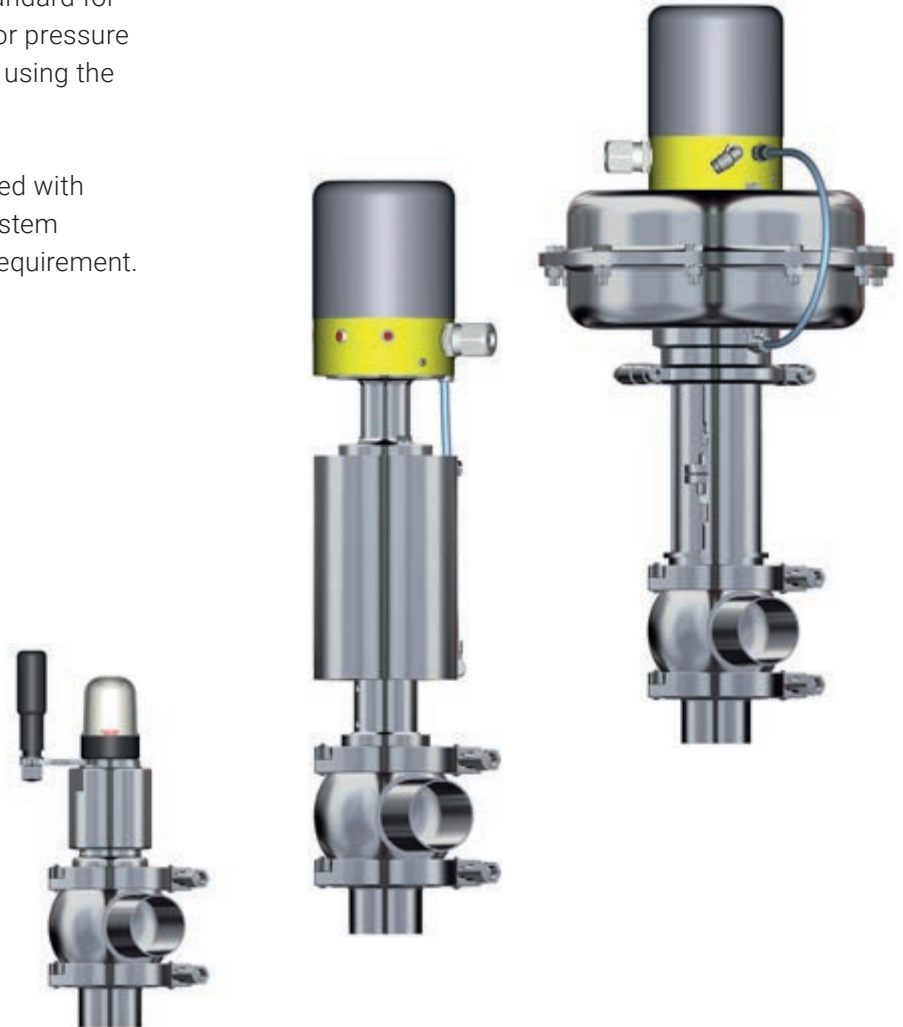
* Higher surface finishes on request

CONTROL VALVE

Single-stage

The single-stage control valve is the standard for all tasks where flow must be regulated or pressure reduced. The high precision is achieved using the replacement seat concept.

Whether manually-operated or automated with positioner, the high modularity of the system makes it possible to meet any process requirement.



Housing types

Right angle valve (L)



T-valve (T)



Inclined seat valve (S)



Straight way valve (LL, LT, TL, TT)



CONTROL VALVE

Single-stage

KVS VALUES, NOMINAL DIAMETERS AND ACTUATOR SIZES																	
Pneumatic actuator					Piston actuator					Diaphragm actuator							
Size					H104	H129	H167	H190	H230	M02	M2	M4	M10				
max. Control air pressure [bar]					5,5	5,5	5,5	5,5	5,5	4	3	3	3				
Kvs [m³/h]	DN	OD	Seat-Ø [mm]	Stroke [mm]	all. Operating pressure												
0,1	10	—	6	16						16							
1	15	—	7	16						16							
0,1	20	—	4	16													
0,2	20	—	4	16													
0,4	20	—	6	16	16					16							
	25	1"	6	20													
1,0	25	1"	6	20													
1,6	25	1"	12	20													
2,5	25	1"	12	20													
4	25	1"	12	20		16						16					
	40	1½"															
7	25	1"	22	20			16							16			
	40	1½"															
10	25	1"	22	20	16			16					16		16		
	40	1½"															
	50	2"															
18	40	1½"	34	20				14	16							7	16
	50	2"															
	65	2½"															
26	50	2"	46	20		7,5	11		16					16			
	65	2½"															
	80	3"															
40	50	2"	46	27			10		16						16		
	65	2½"															
	80	3"															
	100	4"															
52	65	2½"	60	27					12	16						12	16
	80	3"															
	100	4"															
68	65	2½"	60	27					12	16	16					12	16
	80	3"															
	100	4"															
85	80	3"	72	27					8	14	14					8,5	16
	100	4"															
100	80	3"	81	27					6,5	11	11					7	16
	100	4"															
	125	—															
120	100	4"	95	27						7,5	7,5						13
	125	—															
160	125	—	125	27							4,5				4,5		

CONTROL VALVE

Two-/three-stage

In general, an attempt is made to solve the control task with a single-stage control valve. However, there are process conditions where this is not possible and cavitation occurs.

As with the single-stage control valves, the high number of modular possibilities of the system are available here.

ENQUIRY VIA FORM



To make an enquiry use the form on page 19. Our design software recognizes process conditions where cavitation can occur.



Housing types

Corner valve (LL, LT, TL, TT)



CONTROL VALVE

Two-/three-stage

KVS VALUES, NOMINAL DIAMETERS AND ACTUATOR SIZES TWO-/THREE-STAGE																							
Pneumatic actuator						Piston actuator					Diaphragm actuator												
Size						H104	H129	H167	H190	H230	M02	M2	M4	M10									
max. Control air pressure [bar]						5.5	5.5	5.5	5.5	5.5	4	3	3	3									
Kvs [m ³ /h] 2-stage	Kvs [m ³ /h] 3-stage	DN	OD	Seat-Ø [mm]	Stroke [mm]	all. Operating pressure																	
1.1	0.9	25	1"	12	20																		
1.8	1.4	25	1"	12	20																		
2.8	2.3	25	1"	12	20	16						16											
		40	1½"																				
5	4	25	1"	22	20																		
		40	1½"																				
7	6	25	1"	22	20	16	16					16	16										
		40	1½"																				
		50	2"																				
13	10	40	1½"	34	20	14	16					7	16										
		50	2"																				
		65	2½"																				
18	15	50	2"	46	20	7.5	11	16					16										
		65	2½"																				
		80	3"																				
28	23	50	2"	46	27		10	16						16									
		65	2½"																				
		80	3"																				
		100	4"																				
37	30	65	2½"	60	27			12	16					12	16								
		80	3"																				
		100	4"																				
48	39	65	2½"	60	27			12	16	16				12	16								
		80	3"																				
		100	4"																				
60	49	80	3"	72	27			8	14	14				8.5	16								
		100	4"																				
71	58	80	3"	81	27			6.5	11	11				7	16								
		100	4"																				
		125	–																				
85	69	100	4"	95	27				7.5	7.5					13								
		125	–																				
113	92	125	–	125					4.5	4.5					8								

CONTROL VALVE

Distribution and mixing control

Precise distribution

Distribution and mixing control valves are used to distribute a medium in a **targeted ratio to two process lines**. And this with only one valve instead of two.

Exact mixing

Mixing in the product line instead of in the tank is possible with the mixing valve. Two different media can be combined in an exact ratio with this valve. Both types of valve have two exchangeable seats with the advantages of **easy retrofitting**.

The clamp connections simplify the conversion.



Housing types

Corner valve (LL, LT, TL, TT)



ENQUIRY VIA FORM



To make an enquiry use the form on page 19. Our design software recognizes process conditions where cavitation can occur.

CONTROL VALVE

Distribution and mixing control

KVS VALUES, NOMINAL DIAMETERS AND ACTUATOR SIZES																
Pneumatic actuator						Piston actuator					Diaphragm actuator					
Size						H104	H129	H167	H190	H230	M02	M2	M4	M10		
max. Control air pressure [bar]						5.5	5.5	5.5	5.5	5.5	4	3	3	3		
K _{VS} [m ³ /h] Distribution	K _{VS} [m ³ /h] Mixing	DN	OD	Seat-Ø [mm]	Stroke [mm]	all. Operating pressure										
	0.4	25	1"	6	20											
	1.0	25	1"	6	20											
	1.6	25	1"	12	20	16					16					
	2.5	25	1"	12	20											
	4	25	1"	12	20	16					16					
		40	1½"													
7	7	25	1"	22	20	16					16					
		40	1½"													
10	10	25	1"	22	20	16	16				16	16				
		40	1½"													
		50	2"													
18	18	40	1½"	34	20	14	16				7	16				
		50	2"													
		65	2½"													
26	26	50	2"	46	20	7.5	11	16				16				
		65	2½"													
		80	3"													
40	40	50	2"	46	27		10	16					16			
		65	2½"													
		80	3"													
		100	4"													
52	52	65	2½"	60	27			12	16				12	16		
		80	3"													
		100	4"													
68	68	65	2½"	60	27			12	16	16			12	16		
		80	3"													
		100	4"													
85	85	80	3"	72	27			8	14	14			8.5	16		
		100	4"													
100	100	80	3"	81	27			6.5	11	11			7	16		
		100	4"													
		125	–													
120	120	100	4"	95	27				7.5	7.5				13		
		125	–													
160	160	125	–	125	27				4.5	4.5				8		



VALVE TESTING

Tested quality

Guth control valves are individually subjected to a comprehensive functional test before delivery to the customer.

For this purpose, a modern, computer-aided test bench is used to simulate conditions in the plant.

The valves are delivered with an individually issued test certificate.

Documentation as required

- Kvs measurements according to DIN
- Kvs individual value measurements
- Control behaviour





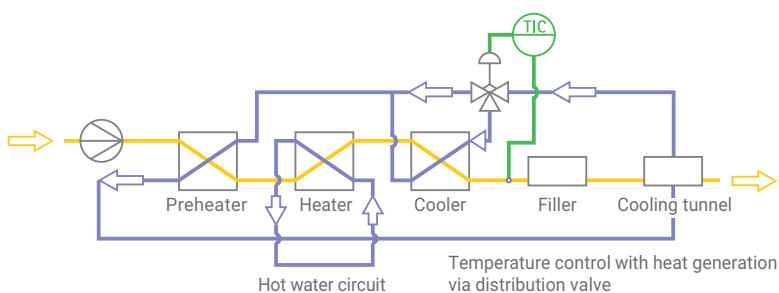
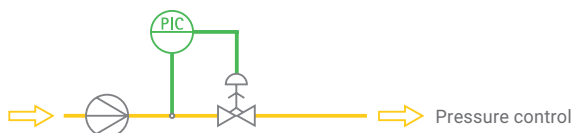
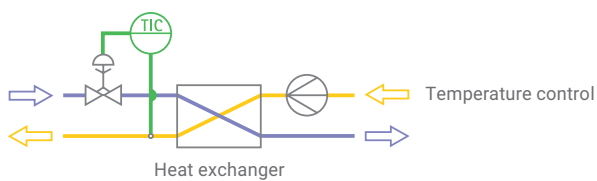
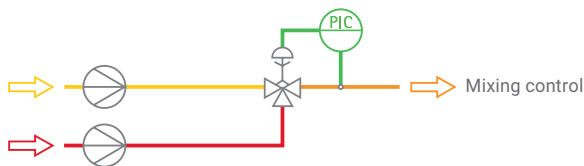
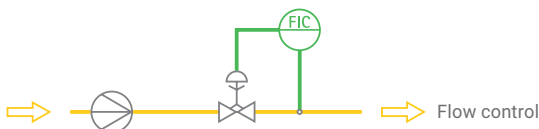
DIGIPOS POSITION CONTROLLER

It's like it
regulates itself

We equip all Guth control valves with our digital I/P positioner DigiPos as standard, attachment of other controller types to NAMUR interface on request.

DESIGN/CHARACTERISTICS

- > Digital I/P-Position controllers for diaphragm, piston and rotary actuators
- > Simple design and operation
- > Non-contact position sensing, therefore easy to install, wear-free and insensitive to vibrations
- > No internal air consumption in the regulated state
- > Compact design, no moving parts on the outside, therefore improved accident prevention
- > Protection of the electronics by stainless steel cover (protection class IP 65)

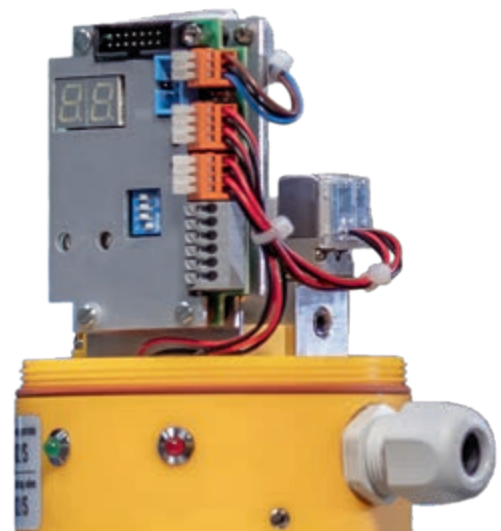


High control accuracy

The digital DigiPos positioners are part of the standard equipment of our control valves with diaphragm actuator. They are characterised by high control accuracy. Linear, equal-percentage or special characteristic curves can be set via interface and software. They also enable partial range or split range operation as well as signal inversion.

PARAMETERISATION

- > Characteristic curve setting via interface (RS 232) and visualisation software
- > Linear, equal-percentage or special characteristic curves can be set
- > Self-calibrating for easy commissioning
- > Signal range 4–20 mA
- > Split range operation and signal inversion possible





ENQUIRY FORM

Optimise together

Please also use our enquiry form for complex valves. Simply fill in the form and send it to sales@guth-vt.de. Using our design software we will calculate the optimal valve for you.





Date

Customer & contact person

E-Mail

Tel./Mobile

Project

Reference no.

FLUID DATA	CASE 1	CASE 2	CASE 3
Medium			
Temperature (°C)			
Dyn. Viscosity (Pa sec)			
Density (kg/m ³)			
PROCESS DATA	CASE 1	CASE 2	CASE 3
Flow (m ³ /h)			
Flow (kg/h)			
Inlet pressure p ₁ (bar(g))			
Outlet pressure p ₂ (bar(g))			
Closing pressure p _s (bar(g))			
Pipework	Nominal diameter:	Inlet:	Outlet:

CONTROL VALVE			
Nominal diameter standard <input type="checkbox"/> DN <input type="checkbox"/> OD	Control characteristic <input type="checkbox"/> Equal-percentage <input type="checkbox"/> Linear	Seat seal <input type="checkbox"/> Soft <input type="checkbox"/> Metallic	Seal material <input type="checkbox"/> EPDM <input type="checkbox"/> FKM <input type="checkbox"/> HNBR <input type="checkbox"/> _____

Inlet connection			
<input type="checkbox"/> Threaded nozzle	<input type="checkbox"/> Flange DIN 11853-3	<input type="checkbox"/> Clamp DIN 11853-3	<input type="checkbox"/> Guth small flange
<input type="checkbox"/> Conical nozzle	<input type="checkbox"/> GF (grooved flange)	<input type="checkbox"/> GCN (groove clamping nozzle)	<input type="checkbox"/> Grooved flange <input type="checkbox"/> _____
<input type="checkbox"/> Weld-on end	<input type="checkbox"/> CF (collar flange)	<input type="checkbox"/> CCN (collar clamping nozzle)	<input type="checkbox"/> Smooth flange <input type="checkbox"/> _____

Outlet connection			
<input type="checkbox"/> Threaded nozzle	<input type="checkbox"/> Flange DIN 11853-3	<input type="checkbox"/> Clamp DIN 11853-3	<input type="checkbox"/> Guth small flange
<input type="checkbox"/> Conical nozzle	<input type="checkbox"/> GF (grooved flange)	<input type="checkbox"/> GCN (groove clamping nozzle)	<input type="checkbox"/> Grooved flange <input type="checkbox"/> _____
<input type="checkbox"/> Weld-on end	<input type="checkbox"/> CF (collar flange)	<input type="checkbox"/> CCN (collar clamping nozzle)	<input type="checkbox"/> Smooth flange <input type="checkbox"/> _____

ACTUATOR			POSITION CONTROLLER	
Design type <input type="checkbox"/> Diaphragm <input type="checkbox"/> Piston <input type="checkbox"/> Electrical	Manufacturer <input type="checkbox"/> Fluid Process Group <input type="checkbox"/> _____	Direction of operation <input type="checkbox"/> SC (spring-closing) <input type="checkbox"/> SO (spring-opening) <input type="checkbox"/> DA (double-acting)	Design type/manufacture <input type="checkbox"/> Guth Standard <input type="checkbox"/> _____	Interface <input type="checkbox"/> Direct mounting <input type="checkbox"/> NAMUR, VDI/VDE 3845 <input type="checkbox"/> _____



Available brochures:

- > Range overview
- > Butterfly valves
- > High-pressure butterfly valves
- > Two-way diverter valves
- > Double-seat valves
- > **Control valves**
- > KI-TOP
- > Agitators



Our online product catalogue

Stainless steel valves and fluid power accessories easily and quickly accessible. The Guth catalogue with more than 6,000 items: www.guth-vt.de

Guth Ventiltechnik GmbH
Im Niedersand 52
76877 Offenbach an der Queich
+49 6348 23801-0
sales@guth-vt.de
www.guth-vt.de


guth ventile
FLUID PROCESS GROUP