

Control Valve 8021

with integrated positioner

GS 1 series - DN 15 up to DN 150

Pneumatic control valve for the control of neutral through to highly aggressive media in process engineering, chemical industries and for plant equipment.

- Space saving wafer type construction
- Lowest possible weight
- Quiet operation
- Fast response time
- Control of high differential pressures with small actuators
- Greatly reduced energy consumption rates due to short strokes and low actuating forces on the throttle element
- High Kvs-values



**Type 8021
with digital positioner,
Type 8049**

Technical Information

| | | | |
|--|--|------------------|--------------------|
| Body design | flangeless, wafer-type construction dimensions acc. DIN EN 558-1 series 20 for flanges acc. DIN EN 1092-1, form B more versions see data-sheet 8021-GS3 | | |
| Nominal size | DN 15 to DN 150 | | |
| Nominal pressure | PN 40 acc. DIN 2401 (also for flanges PN 10 to PN 25) | | |
| Fluid temperature | carbon steel body | -10°C to +350°C | |
| | stainless steel body | -60°C to +350°C | |
| Ambient temperature* | -30°C up to +100°C | | |
| Rangeability / Characteristic analog positioner | ,30 : 1 | | |
| digital positioner | 40 : 1 linear / 80 : 1 equal percentage | | |
| Leakage | Disc pair Carbon-stainless steel | Disc pair SFC | Disc pair STN 2 |
| % of Kvs | < 0,0001 | < 0,0005 | < 0,001 |
| IEC 60534-4 | IV-S1 | IV-S1 | IV |
| EN 12266-1 | E | F | F |
| Marking ATEX non electric | II 2G Ex h IIC T6...T1 X Gb II 2D Ex h IIIC 85°C...530°C X Db | | |
| Packing leakage | tested according to TA-Luft as defined in DIN EN ISO 15848-1 and VDI 2440 | | |

* Please consider the limitation of use of the positioner!

** With DN15 with reduction of less than 25%, different leakage rates possible.

Kvs-values see data sheet 8001.

Materials

| | | |
|------------------------|--|-------------------------|
| Body | Carbon steel 1.0619 | Stainless steel 1.4408 |
| Diaphragm housing | Aluminium, KTL- coated | |
| Actuator springs | Stainless steel 1.4310 | |
| Packing | PTFE carbon filled (spring 1.4310) | |
| Actuating stem | Stainless steel 1.4571, roller burnished | |
| Bellows (optional) | Stainless steel 1.4571 | |
| Fixed disc | Stainless steel 1.4571 coated | STN2 - disc |
| Sliding disc | Special carbon material | SFC - disc (max. 300°C) |
| Coupling ring for disc | Stainless steel 1.4581 | |
| Positioner Housing | Aluminium anodized, synthetic | |

Positioner

For technical information of our positioners please refer to the corresponding data sheets.

Control Valve 8021-GS1

with integrated digital positioner, Type 8049

(also on-off valves and valves with other side-mounted positioner)



Admissible Differential Pressure (For temperatures of up to 120°C)

For temperatures of 120°C and above:
obey application limits !

Disc pair: carbon - stainless steel SFC - stainless steel

| Diaphragm area | 125 cm ² | | 250 cm ² | |
|----------------------|--|-----|---------------------|----|
| Supply air (bar) | 4,5 | 5,5 | 3 | 4 |
| DN | Admissible differential pressures in bar | | | |
| 15 | 40 | 40 | 40 | 40 |
| 20 | 40 | 40 | 40 | 40 |
| 25 | 40 | 40 | 40 | 40 |
| 32 | 40 | 40 | 40 | 40 |
| 40 | 40 | 40 | 40 | 40 |
| 50 | 40 | 40 | 40 | 40 |
| 65 | 37 | 40 | 40 | 40 |
| 80 | 23 | 29 | 40 | 40 |
| 100 | 15 | 16 | 24 | 25 |
| 125 | 10 | 11 | 16 | 16 |
| 150 | 7 | 7,5 | 13 | 15 |
| Spring configuration | 3 | 4 | 3 | 4 |

Disc pair: STN2

| Diaphragm area | 125 cm ² | | 250 cm ² | |
|----------------------|--|-----|---------------------|-----|
| Spring range (bar) | 4,5 | 5,5 | 3 | 4 |
| DN | Admissible differential pressures in bar | | | |
| 15 | 40 | 40 | 40 | 40 |
| 20 | 40 | 40 | 40 | 40 |
| 25 | 40 | 40 | 40 | 40 |
| 32 | 40 | 40 | 40 | 40 |
| 40 | 26 | 27 | 27 | 27 |
| 50 | 18 | 20 | 31 | 38 |
| 65 | 15 | 16 | 26 | 31 |
| 80 | 9 | 9,5 | 15 | 19 |
| 100 | 5 | 5,5 | 9 | 1w1 |
| 125 | 3 | 3,5 | 6 | 7 |
| 150 | 2 | 2,5 | 4,5 | 5,5 |
| Spring configuration | 3 | 4 | 3 | 4 |

Standard

Control Valve 8021-GS1



with integrated p/p and i/p - positioner, Type 8047

**Admissible Differential Pressure
(For temperatures of up to 120°C)**

For temperatures of 120°C and above: obey application limits !

**Disc pair: carbon - stainless steel
SFC - stainless steel**

| Diaphragm area | 125 cm ² | | | | 250 cm ² | | | |
|----------------------|--|--------|---------|--------|---------------------|--------|---------|--------|
| | 4 | | 5 | | 3 | | 4 | |
| Supply air (bar) | Admissible differential pressures in bar | | | | | | | |
| DN | Control | On-Off | Control | On-Off | Control | On-Off | Control | On-Off |
| 15 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 20 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 25 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 32 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 40 | 29 | 29 | 36 | 40 | 40 | 40 | 40 | 40 |
| 50 | 17 | 19 | 21 | 29 | 29 | 29 | 35 | 40 |
| 65 | 14 | 16 | 17 | 24 | 24 | 24 | 29 | 34 |
| 80 | 8 | 10 | 10 | 15 | 14 | 14 | 17 | 22 |
| 100 | 5 | 6 | 6 | 10 | 9 | 9 | 10 | 14 |
| 125 | 3 | 4 | 4 | 6 | 6 | 6 | 7 | 9 |
| 150 | 2 | 3 | 3 | 5 | 4 | 4 | 5 | 7 |
| Spring configuration | 3 | | 4 | | 3 | | 4 | |

Standard

Disc pair: STN2

| Diaphragm area | 125 cm ² | | | | 250 cm ² | | | |
|----------------------|--|--------|---------|--------|---------------------|--------|---------|--------|
| | 4 | | 5 | | 3 | | 4 | |
| Supply air (bar) | Admissible differential pressures in bar | | | | | | | |
| DN | Control | On-Off | Control | On-Off | Control | On-Off | Control | On-Off |
| 15 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 20 | 37 | 37 | 40 | 40 | 40 | 40 | 40 | 40 |
| 25 | 25 | 26 | 31 | 40 | 40 | 40 | 40 | 40 |
| 32 | 17 | 19 | 22 | 30 | 30 | 30 | 36 | 40 |
| 40 | 11 | 13 | 14 | 20 | 19 | 19 | 24 | 27 |
| 50 | 6 | 8 | 8 | 12 | 11 | 11 | 13 | 17 |
| 65 | 5 | 6 | 6 | 10 | 9 | 9 | 11 | 14 |
| 80 | 3 | 4 | 3,5 | 6 | 5 | 5 | 6 | 8 |
| 100 | 1,5 | 2 | 2 | 3 | 3 | 3 | 4 | 5 |
| 125 | - | - | 1,5 | 2 | 2 | 2 | 2,5 | 3,5 |
| 150 | - | - | 1 | 1,5 | 1,5 | 1,5 | 1,8 | 2,5 |
| Spring configuration | 3 | | 4 | | 3 | | 4 | |

Standard

Applications limits for GS1-Valves PN 40

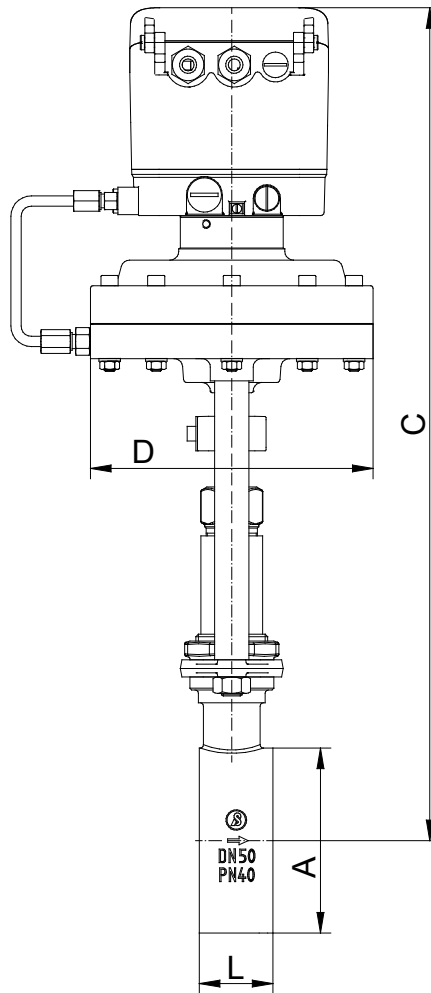
| DN | Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS1-valves | | | | | | Sliding unit: carbon - STN2 max. admissible pressures for GS1-valves | | | | | |
|---------|--|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|
| | 100°C | 150°C | 200°C | 250°C | 300°C | 350°C | 100°C | 150°C | 200°C | 250°C | 300°C | 350°C |
| 15 - 25 | 40 | 36 | 31 | 28 | 26 | 24 | 40 | 36 | 31 | 28 | 26 | 24 |
| 32 | 40 | 36 | 31 | 28 | 26 | 24 | 40 | 36 | 31 | 28 | 25 | 22 |
| 40 | 40 | 36 | 31 | 28 | 26 | 24 | 26 | 25 | 24 | 19 | 16 | 14 |
| 50 | 40 | 36 | 31 | 28 | 26 | 24 | 40 | 36 | 31 | 28 | 26 | 24 |
| 65 | 40 | 36 | 31 | 28 | 26 | 24 | 37 | 35 | 31 | 27 | 22 | 19 |
| 80 | 40 | 36 | 31 | 28 | 26 | 24 | 22 | 20 | 19 | 16 | 13 | 11 |
| 100 | 24 | 23 | 22 | 19 | 17 | 16 | 13 | 12 | 12 | 9 | 8 | 6 |
| 125 | 16 | 15 | 14 | 13 | 11 | 10 | 8 | 8 | 7 | 6 | 5 | 4 |
| 150 | 16 | 16 | 16 | 16 | 14 | 13 | 10 | 10 | 9 | 7 | 6 | 5 |

Limitation for SFC-sliding discs: 300°C

Control Valve 8021-GS1

with integrated digital positioner, Type 8049

Dimensions and Weights



digital positioner ,Type 8049

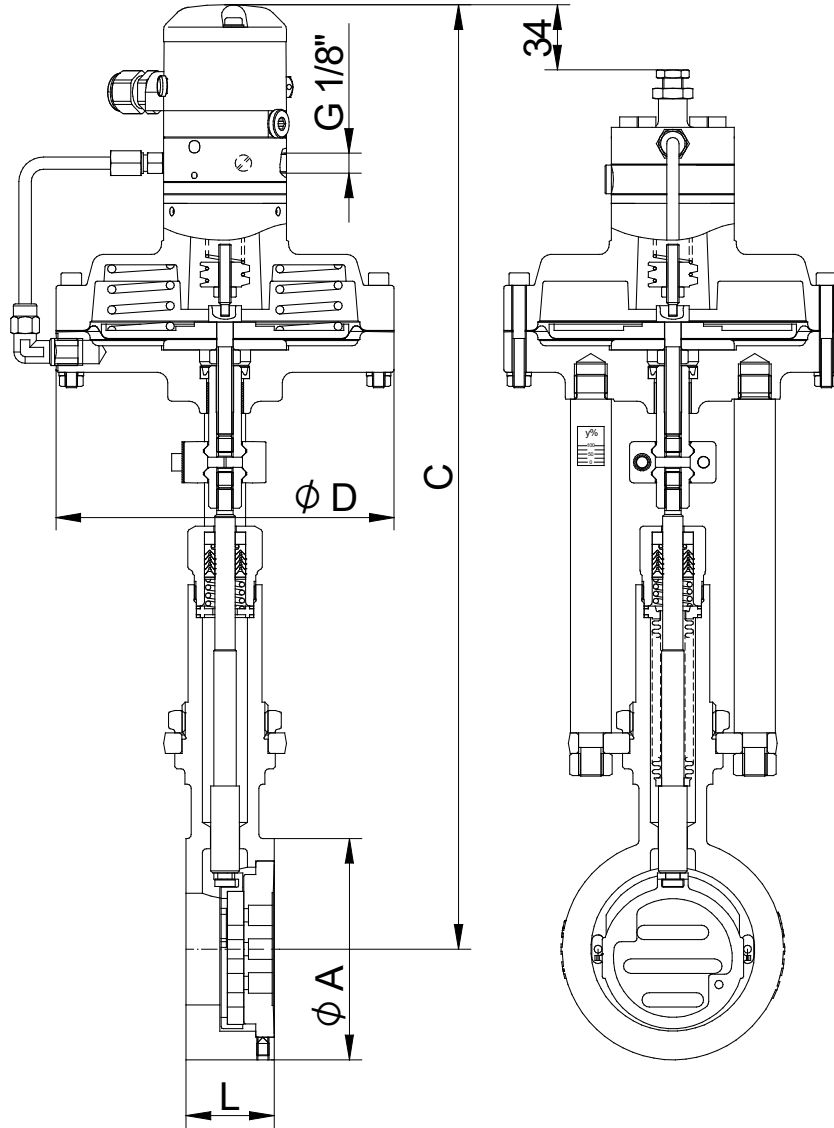
| DN | ØA | C | D | | L | Stroke | Weight | |
|-----|-----|-----|-----|-----|----|--------|--------|-------|
| | | | 125 | 250 | | | D 125 | D 250 |
| 15 | 53 | 460 | 165 | 222 | 33 | 6 | 6,9 | 9,1 |
| 20 | 62 | 465 | 165 | 222 | 33 | 6 | 7 | 9,2 |
| 25 | 72 | 470 | 165 | 222 | 33 | 6 | 7,2 | 9,4 |
| 32 | 82 | 475 | 165 | 222 | 33 | 6 | 7,5 | 9,7 |
| 40 | 92 | 480 | 165 | 222 | 33 | 6 | 7,7 | 9,9 |
| 50 | 108 | 490 | 165 | 222 | 43 | 8 | 8,9 | 11,1 |
| 65 | 127 | 500 | 165 | 222 | 46 | 8 | 9,7 | 11,9 |
| 80 | 142 | 510 | 165 | 222 | 46 | 8 | 10,3 | 12,5 |
| 100 | 164 | 520 | 165 | 222 | 52 | 8,5 | 11,8 | 14 |
| 125 | 194 | 535 | 165 | 222 | 56 | 8,5 | 15,5 | 17,7 |
| 150 | 219 | 550 | 165 | 222 | 56 | 8,5 | 17,4 | 19,6 |

Dimensions in mm

Control Valve 8021-GS1

with integrated i/p and p/p - positioner, Type 8047

Dimensions and Weights



i/p - positioner, Type 8047

p/p - positioner, Type 8047

| DN | Ø A | C* | Ø D Actuator | | L | Stroke | Weight Actuator | |
|-----|-----|-----|--------------|-------|----|--------|-----------------|-------|
| | | | D 125 | D 250 | | | D 125 | D 250 |
| 15 | 53 | 430 | 165 | 222 | 33 | 6 | 6,9 | 9,1 |
| 20 | 62 | 435 | 165 | 222 | 33 | 6 | 7,0 | 9,2 |
| 25 | 72 | 440 | 165 | 222 | 33 | 6 | 7,2 | 9,4 |
| 32 | 82 | 445 | 165 | 222 | 33 | 6 | 7,5 | 9,7 |
| 40 | 92 | 450 | 165 | 222 | 33 | 6 | 7,7 | 9,9 |
| 50 | 108 | 460 | 165 | 222 | 43 | 8 | 8,9 | 11,1 |
| 65 | 127 | 470 | 165 | 222 | 46 | 8 | 9,7 | 11,9 |
| 80 | 142 | 480 | 165 | 222 | 46 | 8 | 10,3 | 12,5 |
| 100 | 164 | 490 | 165 | 222 | 52 | 8,5 | 11,8 | 14,0 |
| 125 | 194 | 505 | 165 | 222 | 56 | 8,5 | 14,0 | 16,2 |
| 150 | 219 | 520 | 165 | 222 | 56 | 8,5 | 15,5 | 17,7 |

Dimensions in mm