

Pressure Regulator compact 8011 SCHUBERT & SALZER

GS 3 series 1/2" up to 6" without supply energy



Self operated regulation of inlet and outlet pressures of neutral through to highly aggressive media in process engineering, chemical industries and for plant equipment.

- Space saving wafer type design
- Lowest possible weight
- High Kvs (Cv)-values

Technical Information

| | | | |
|---|---|--|--|
| Body design | ANSI flange wafer (self-aligning) | | |
| Nominal sizes | 1/2" - 6" | | |
| Nominal pressure acc. DIN 2401 for flanges with facing type B | 580 psi (fits also to 145-365 psi) | 1/2" - 6" | |
| Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF | ANSI 150 ANSI 300 | 1/2" - 6" | |
| Nominal pressure acc. JIS for "raiced face" flanges | 10K 20K | 1/2" - 2" 1/2" - 1 1/2" | |
| Pressure range | 4,4 up to 145 psi (see table) | | |
| Media temperature | -75°F up to +445°F at special versions up to 572°F | | |
| Max. ambient temperature | +176°F | | |
| Max. temperature for the actuator | Diaphragm material CR: -4°F up to +176°F EPDM: -22°F up to +266°F EPDM (FDA): -22°F up to +266°F Viton: -5°F up to +302°F | | |
| Leakage | Disc pair Carbon-stainless steel < 0,0001 IV-S1 D | Disc pair SFC < 0,0005 IV-S1 E | Disc pair STN 2 < 0,001 IV E |
| % of Kvs IEC 60534-4 EN 12266-1 | | | |



Cvs-values see data sheet 8001.

Fixed

Sliding disc

PTFE Packing, self-adjust-

Diaphragm-housing

Diaphragm

Set point

Set point

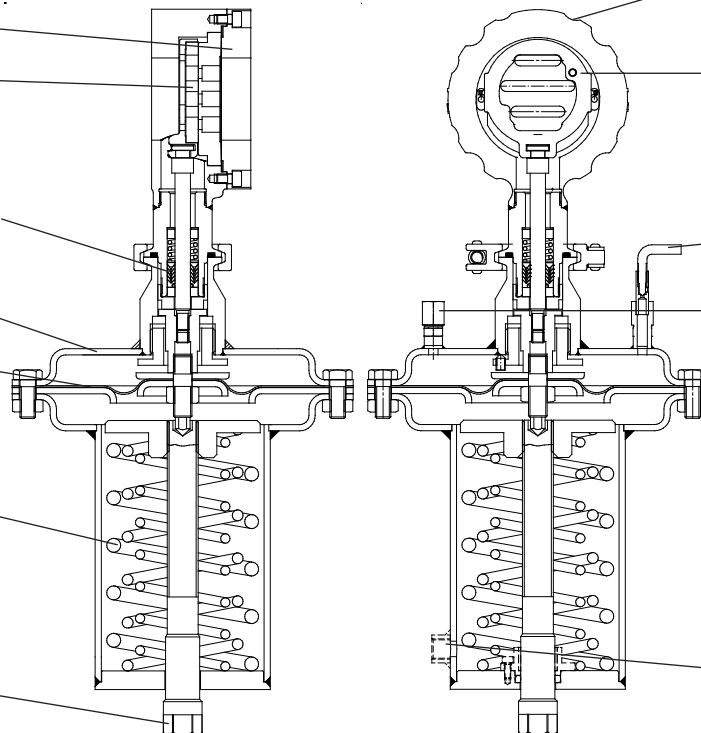
Flangeless body design

Coupling ring for sliding disc

Bleeder valve

Sensing port

leak detection port (optional)



without supply energy

Admissible Pressures

(For temperatures of up to 100°F for ANSI-

Carbon-stainless steel coated

Maximum pressures for
pressure reducing valve (downstream pressure control)

| Pressure range (psi) output pressure P2 | 60 to 145 | 30 to 75 | 15 to 35 | 4,4 to 17 |
|--|--------------|-------------|-------------|--------------|
| Diaphragm: Diameter (inch) | 8,65 | 8,65 | 8,65 | 8,65 |
| Surface area (in ²) | 6,2 | 12,4 | 27,3 | 27,3 |
| 1/2" | 580 | 580 | 580 | 580 |
| 3/4" | 580 | 580 | 580 | 550 |
| 1" | 580 | 580 | 580 | 350 |
| 1 1/4" | 465 | 465 | 520 | 230 |
| 1 1/2" | 290 | 290 | 320 | 145 |
| 2" | 160 | 160 | 175 | 80 |
| 2 1/2" | 130 | 130 | 145 | 65 |
| 3" | 75 | 75 | 85 | 40 |
| 4" | 45 | 45 | 50 | 25 |
| 5" | 30 | 30 | 35 | 15 |
| 6" | 20 | 20 | 25 | 12 |

back pressure (upstream pressure control)

| Pressure range (psi) inlet pressure P1 | 60 to 145 | 30 to 75 | 15 to 35 | 4,4 to 17 |
|---|--------------|-------------|-------------|--------------|
| Diaphragm: Diameter (inch) | 8,65 | 8,65 | 8,65 | 8,65 |
| Surface area (in ²) | 6,2 | 12,4 | 27,3 | 27,3 |
| 1/2" | 145 | 75 | 35 | 15 |
| 3/4" | 145 | 75 | 35 | 15 |
| 1" | 145 | 75 | 35 | 15 |
| 1 1/4" | 145 | 75 | 35 | 15 |
| 1 1/2" | 145 | 75 | 35 | 15 |
| 2" | 145 | 75 | 35 | 15 |
| 2 1/2" | 130 | 75 | 35 | 15 |
| 3" | 75 | 75 | 35 | 15 |
| 4" | 45 | 45 | 35 | 15 |
| 5" | 30 | 30 | 35 | 15 |
| 6" | 20 | 20 | 25 | 12 |

For temperatures exceeding 100°F (ANSI)
or 250°F (PN): consider operation limits

STN 2

Maximum pressures for
pressure reducing valve (downstream pressure control)

| Pressure range (psi) output pressure P2 | 60 to 145 | 30 to 75 | 15 to 35 | 4,4 to 17 |
|--|--------------|-------------|-------------|--------------|
| Diaphragm: Diameter (inch) | 8,65 | 8,65 | 8,65 | 8,65 |
| Surface area (in ²) | 6,2 | 12,4 | 27,3 | 27,3 |
| 1/2" | 580 | 580 | 580 | 305 |
| 3/4" | 435 | 435 | 480 | 175 |
| 1" | 275 | 275 | 305 | 115 |
| 1 1/4" | 160 | 160 | 190 | 75 |
| 1 1/2" | 100 | 100 | 115 | 50 |
| 2" | 60 | 60 | 65 | 25 |
| 2 1/2" | 45 | 45 | 50 | 20 |
| 3" | 25 | 25 | 30 | 12 |
| 4" | 15 | 15 | 17 | 7 |
| 5" | 10 | 10 | 12 | 4 |
| 6" | 7 | 7 | 7 | 4 |

back pressure (upstream pressure control)

| Pressure range (psi) inlet pressure P1 | 60 to 145 | 30 to 75 | 15 to 35 | 4,4 to 17 |
|---|--------------|-------------|-------------|--------------|
| Diaphragm: Diameter (inch) | 8,65 | 8,65 | 8,65 | 8,65 |
| Surface area (in ²) | 6,2 | 12,4 | 27,3 | 27,3 |
| 1/2" | 145 | 75 | 35 | 17 |
| 3/4" | 145 | 75 | 35 | 17 |
| 1" | 145 | 75 | 35 | 17 |
| 1 1/4" | 145 | 75 | 35 | 17 |
| 1 1/2" | 100 | 75 | 35 | 17 |
| 2" | 60 | 60 | 35 | 17 |
| 2 1/2" | 45 | 45 | 35 | 17 |
| 3" | 25 | 25 | 30 | 12 |
| 4" | 15 | 15 | 17 | 7 |
| 5" | 10 | 10 | 12 | 4 |
| 6" | 7 | 7 | 7 | 4 |

| | Pressure limits ANSI and DIN in psi | | | |
|------------------------|-------------------------------------|----------|------|------|
| | ANSI150 | ANSI 300 | PN16 | PN40 |
| P max. carbon steel | 284 | 741 | 232 | 580 |
| P max. stainless steel | 276 | 719 | | |

For best regulation, the lowest spring range that contains the pressure setpoint should be selec-

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Materials

| | | | |
|-----------------------------|--|-----------|-----------|
| Body | Stainless steel 318 or CF8M | | |
| Bodycover | Stainless steel 316 Ti or 316 L | | |
| Diaphragm housing | Stainless steel 316 Ti | | |
| Diaphragm | CR, EPDM, FKM, PTFE-foil | | |
| Spring | Stainless steel 301 | | |
| Stem | Stainless steel 316 Ti, roller burnished | | |
| Fixed disc | Stainless steel 316 Ti, coated | STN2-disc | |
| Sliding disc | Special carbon material | SFC-disc | STN2-disc |
| Guide ring for sliding disc | Stainless steel 318 | | |

Ordering Number System

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|
| 8 | 0 | 1 | 1 | / | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | | | | | V | D | K | | | | | | M | | | | | S |

1 - 5 : Please quote all 5 sections.
6 - 12: Quote only if required.

Symbol: "V": Valve
 "R": Repair kit (sealings)

| 1. Fonction | 2. Design | 3. Type de construction | 4. Version | 5. Mode de fonctionnement | 6. Plage de pression |
|--|--------------------------|--|---|---------------------------|----------------------------------|
| D Régulateur de pression compact (Type 8011) | K Construction compacte | E GS3-version entre brides selon ANSI 150 | 2 Entièrement Inox | 0 Vanne de sécurité | 0 4 - 10 bar |
| | | F GS3-version entre brides selon ANSI 300 | 5 Entièrement Inox avec Connection de contrôle G 1/4" | 1 Réducteur de pression | 1 2 - 5 bar |
| | | G GS3-version entre brides selon DIN, PN 10-40 | | | 2 1 - 2,5 bar |
| | | | | | 3 0,3 - 1,2 bar |
| 7. Versions spéciales | 8. Membranes | 9. Disque mobile | 10. Disque fixe | 11. Valeur Kv | 12. Versions spéciales |
| M Indique un choix supplémentaire dans les postes 7 - 11 | - CR (Standard) | - Carbone | - Inox 1.4571 | - 100 % (standard) | S Versions spéciales sur demande |
| | 1 EPDM | 9 STN2 | 1 couvert | A réduit à 63 % | |
| | 2 FKM | S SFC | STN2 | 1 réduit à 40 % | |
| | 3 OR+feuille de PTFE | | | B réduit à 25 % | |
| | 4 EPDM + feuille de PTFE | | | 2 réduit à 16 % | |
| | 5 FKM + feuille de PTFE | | | C réduit à 10 % | |
| | 6 EPDM (FDA) | | | 3 réduit à 6,3 % | |
| | | | 4 réduit à 2,5 % | | |
| | | | 5 réduit à 1 % | | |
| | | | 7 réduit à 12 % | | |
| | | | 8 réduit à 2 % | | |

Ordering example:

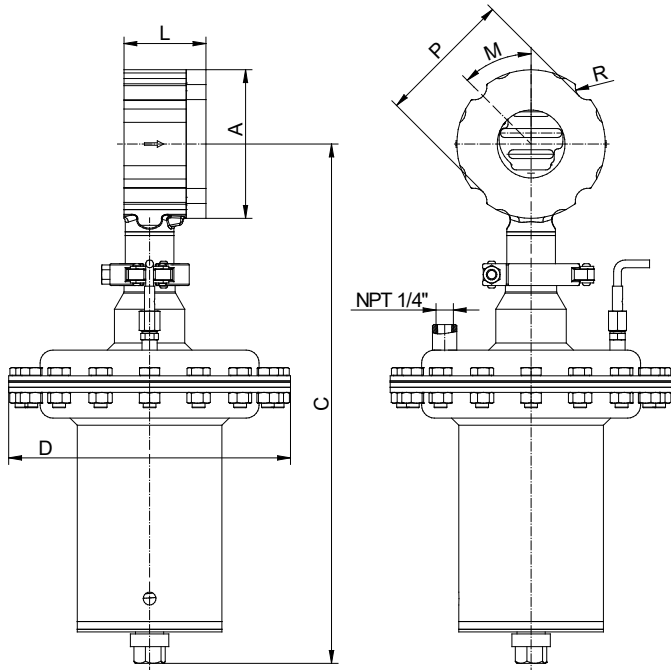
8011/080VDKG210M1- -1
 GS3-pressure regulator, 3", compact design, 145psi-580psi, completely stainless steel, spring cap closed, pressure regulator, pressure range 60-145 psi bar, diaphragm material EPDM, sliding disc carbon material, fixed disc, stainless steel 1.4571, reduced Cv-value (40%)

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without supply energy

Dimensions and Weights



| Size | Weight in lb for pressure range (psi) | | | |
|--------|---------------------------------------|---------|---------|----------|
| | 60 - 145 | 30 - 75 | 15 - 35 | 4.4 - 17 |
| 1/2" | 24.5 | 24.5 | 22 | 20.5 |
| 3/4" | 25 | 25 | 22.5 | 21 |
| 1" | 27 | 27 | 24.5 | 23 |
| 1 1/4" | 28 | 28 | 25.5 | 24 |
| 1 1/2" | 29 | 29 | 26.5 | 24.5 |
| 2" | 33.5 | 33.5 | 31 | 29.5 |
| 2 1/2" | 37.5 | 37.5 | 35 | 33 |
| 3" | 40 | 40 | 37.5 | 35.5 |
| 4" | 48.5 | 48.5 | 46 | 44.5 |
| 5" | 58 | 58 | 55.5 | 53.5 |
| 6" | 66 | 66 | 63.5 | 62 |

| Size | Ø A | D | C max. | Stroke | PN40 | | | ANSI150 | | | ANSI300 | | | R | L |
|--------|------|------|--------|--------|------|------|------------|---------|------|------------|---------|-------|------------|------|------|
| | | | | | P | M | Anzahl "R" | P | M | Number "R" | P | M | Number "R" | | |
| 1/2" | 2.5 | 8.65 | 15.3 | 0.25 | 2.1 | 1.75 | 0.15 | 1.9 | 1.75 | 4 | 2.1 | 1.75 | 4 | 0.3 | 2.2 |
| 3/4" | 2.85 | 8.65 | 15.45 | 0.25 | 2.5 | 1.75 | 0.15 | 2.3 | 1.75 | 4 | 2.7 | 1.75 | 4 | 0.4 | 2.2 |
| 1" | 3.25 | 8.65 | 15.65 | 0.25 | 2.85 | 1.75 | 0.15 | 2.65 | 1.75 | 4 | 2.85 | 1.75 | 4 | 0.4 | 2.2 |
| 1 1/4" | 3.5 | 8.65 | 15.8 | 0.25 | 3.25 | 1.75 | 0.15 | 3.05 | 1.75 | 4 | 3.25 | 1.75 | 4 | 0.4 | 2.2 |
| 1 1/2" | 3.9 | 8.65 | 16 | 0.25 | 3.7 | 1.75 | 0.15 | 3.45 | 1.75 | 4 | 3.7 | 1.75 | 4 | 0.4 | 2.2 |
| 2" | 4.55 | 8.65 | 16.4 | 0.3 | 4.55 | 1.75 | 0.15 | 4.15 | 1.75 | 4 | 4.4 | 0.9 | 8 | 0.4 | 2.5 |
| 2 1/2" | 5.45 | 8.65 | 16.75 | 0.3 | 5.1 | 0.9 | 0.3 | 4.9 | 1.75 | 4 | 5.1 | 0.9 | 8 | 0.4 | 2.7 |
| 3" | 6 | 8.65 | 17.1 | 0.3 | 5.65 | 0.9 | 0.3 | 5.45 | 1.75 | 4 | 5.9 | 0.9 | 8 | 0.4 | 2.75 |
| 4" | 7.25 | 8.65 | 17.95 | 0.35 | 6.45 | 0.9 | 0.3 | 6.95 | 0.9 | 8 | 7.15 | 0.9 | 8 | 0.4 | 2.95 |
| 5" | 8.35 | 8.65 | 18.5 | 0.35 | 7.65 | 0.9 | 0.3 | 7.65 | 0.9 | 8 | 8.35 | - - - | 0 | 0.65 | 3.15 |
| 6" | 9.55 | 8.65 | 19 | 0.35 | 8.65 | 0.9 | 0.3 | 8.65 | 0.9 | 8 | 9.55 | - - - | 0 | 0.65 | 3.15 |

Dimensions in inch

without supply energy

Application limitations for GS3 valves in stainless steel

These pressure must not be exceeded for GS-valves from the GS3-series made of stainless steel, even though the actuator power might allow it.

PN40

| Size | Sliding unit: carbon/SFC - stainless steel, coated maximum pressures for GS3-valves (psi) | | | | | | Sliding unit: STN 2 max. admissible pressures for GS3-valves | | | | | |
|---------------|--|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|
| | 100°F | 122°F | 212°F | 302°F | 392°F | 446°F | 100°F | 122°F | 212°F | 302°F | 392°F | 446°F |
| 1/2" - 2 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 3" | 580 | 580 | 580 | 580 | 580 | 580 | 522 | 522 | 522 | 493 | 478 | 377 |
| 4" | 478 | 478 | 478 | 478 | 478 | 478 | 464 | 464 | 464 | 449 | 435 | 348 |
| 5" | 333 | 333 | 333 | 333 | 333 | 333 | 304 | 304 | 304 | 304 | 275 | 232 |
| 6" | 232 | 232 | 232 | 232 | 232 | 232 | 217 | 217 | 217 | 217 | 203 | 159 |

Limitation for SFC-sliding discs: 300°C

ANSI150

| DN | Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves | | | | | | Sliding unit: STN 2 max. admissible pressures for GS3-valves | | | | | |
|-----------|--|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|
| | 100°F | 122°F | 212°F | 302°F | 392°F | 446°F | 100°F | 122°F | 212°F | 302°F | 392°F | 446°F |
| 1/2" - 5" | 275,0 | 266,0 | 234,0 | 214,0 | 198,0 | 184,0 | 275,0 | 266,0 | 234,0 | 214,0 | 198,0 | 184,0 |
| 6" | 232,0 | 232,0 | 232,0 | 214,0 | 198,0 | 184,0 | 234,0 | 234,0 | 234,0 | 214,0 | 198,0 | 184,0 |

Limitation for SFC-sliding discs: 300°C

ANSI300

| DN | Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves | | | | | | Sliding unit: STN 2 max. admissible pressures for GS3-valves | | | | | |
|---------------|--|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|
| | 100°F | 122°F | 212°F | 302°F | 392°F | 446°F | 100°F | 122°F | 212°F | 302°F | 392°F | 446°F |
| 1/2" - 2 1/2" | 719,0 | 697,0 | 611,0 | 558,0 | 517,0 | 497,0 | 719,0 | 697,0 | 611,0 | 558,0 | 517,0 | 497,0 |
| 3" | 696,0 | 696,0 | 611,0 | 558,0 | 517,0 | 497,0 | 530,0 | 530,0 | 530,0 | 504,0 | 478,0 | 420,0 |
| 4" | 478,0 | 478,0 | 478,0 | 478,0 | 478,0 | 478,0 | 478,0 | 478,0 | 478,0 | 459,0 | 436,0 | 384,0 |
| 5" | 333,0 | 333,0 | 333,0 | 333,0 | 333,0 | 333,0 | 319,0 | 319,0 | 319,0 | 304,0 | 288,0 | 253,0 |
| 6" | 232,0 | 232,0 | 232,0 | 232,0 | 232,0 | 232,0 | 232,0 | 232,0 | 232,0 | 223,0 | 211,0 | 187,0 |

Limitation for SFC-sliding discs: 300°C

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without supply energy

| Ordering code | | - | A | 1 | B | 6 | 2 | 7 | C | 3 | 4 | 8 | 5 | 9 |
|---------------|---------------|-------|------|------|------|-----|------|------|------|-------|-------|------|------|------|
| Size | Charact. | 100 % | 63 % | 40 % | 25 % | 20% | 16 % | 12 % | 10 % | 6,3 % | 2,5 % | 2 % | 1 % | 0,4% |
| 1/2" | (mod.) linear | 4.6 | 3 | 2 | 1.6 | - | 0.82 | 0.57 | 0.51 | 0.3 | 0.16 | 0.09 | 0.05 | - |
| | eq. perc. | 2 | - | 1.3 | - | - | - | - | - | 0.12 | - | - | - | - |
| 3/4" | (mod.) lin. | 7.4 | - | - | - | - | 1.16 | - | - | - | - | 0.15 | - | - |
| | eq. perc. | 3.5 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1" | (mod.) linear | 13 | 7.4 | 4.6 | - | - | 1.9 | - | 1.08 | 0.72 | 0.3 | - | 0.16 | 0.05 |
| | eq. perc. | 5.8 | - | 2.8 | - | 1.3 | - | - | - | - | - | - | - | - |
| 1 1/4" | (mod.) linear | 19 | 12 | - | - | - | | | | | | | | |
| | eq. perc. | 9.3 | - | - | - | - | | | | | | | | |
| 1 1/2" | (mod.) lin. | 30 | 19 | 13 | 8.1 | - | | | | | | | | |
| | eq. perc. | 13 | 9.9 | - | 3.2 | - | | | | | | | | |
| 2" | (mod.) linear | 52 | 32 | 23 | 14 | 12 | | | | | | | | |
| | eq. perc. | 22 | 14 | - | - | - | | | | | | | | |
| 2 1/2" | (mod.) linear | 60 | 41 | - | 17 | | | | | | | | | |
| | eq. perc. | 35 | - | - | 9.3 | | | | | | | | | |
| 3" | (mod.) linear | 107 | 67 | 46 | | | | | | | | | | |
| | eq.perc. | 56 | 41 | - | | | | | | | | | | |
| 4" | (mod.) linear | 179 | 110 | 72 | | | | | | | | | | |
| | eq.perc. | 89 | 56 | - | | | | | | | | | | |
| 5" | (mod.) linear | 275 | - | 110 | | | | | | | | | | |
| | eq.perc. | 135 | - | - | | | | | | | | | | |
| 6" | (mod.) linear | 392 | 246 | - | | | | | | | | | | |
| | eq.perc. | 171 | 104 | - | | | | | | | | | | |
| 8" | (mod.) linear | 650 | 408 | - | | | | | | | | | | |
| | eq.perc. | - | - | - | | | | | | | | | | |
| 10" | (mod.) linear | 1056 | | | | | | | | | | | | |
| | eq.perc. | - | | | | | | | | | | | | |