

Suction Cup Accessories

Chapter 4

Suction Cup Accessories

Chapter 4

4

TS11

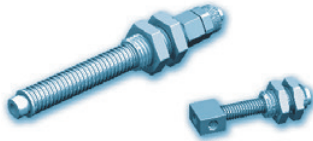


Level Compensators

- Stroke available from 7 to 40 mm
- Protected internal spring
- The TS 11 series spring systems are recommended for horizontal handling of objects located on different levels. The spring function also ensures the gripping points are applied on the same plane when gripping using multiple suction cups.

P_{4/3}

TS YS



Level Compensators TS1 – TS2 – TS3 – YS1

- 6 models
- 5 to 70 mm stroke available
- The TS and YS series spring systems are recommended for horizontal handling of objects located on different levels. The spring function also ensures the gripping points are applied on the same plane when gripping using multiple suction cups.

P_{4/4}

TS

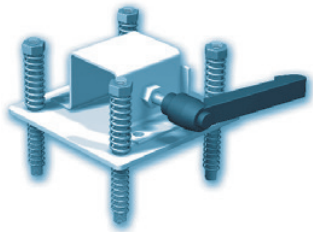


Level Compensators TS4 - TS5

- 3 models available
- Stroke 40 mm and 60 mm
- Available connections to suction cups: G3/8"-M and G1/2"-M
- TS Series spring systems are recommended for horizontal handling of parts at different levels. The spring function also ensures the gripping points are applied on the same plane when gripping using multiple suction cups.

P_{4/5}

RSC



Multi-Compensator Systems

- 2 models
- 30 mm stroke + 10° ball-joint effect
- Possibility of mounting on square tube with fitting system
- The system of 4 compensated springs is particularly recommended for horizontal handling requiring large diameter suction cups. The springs compensate for different levels between the suction cups (ball-joint effect).

P_{4/5}

TSOP TSOG

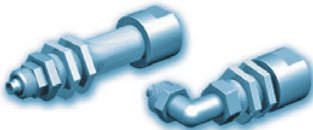


Anti-Rotation Level Compensators

- 8 models
- Anti-rotation
- 7 to 50 mm stroke available
- Protected spring
- The TSOP and TSOG series anti-rotation spring systems are used for horizontal handling of objects at different levels. The anti-rotation function ensures that objects are always gripped in the same position.

P_{4/6}

L



Mounting Extensions

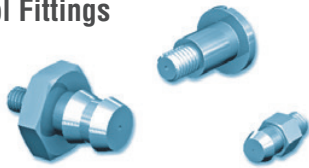
- 3 ranges (G1/4"-M, G1/8"-M and G3/8"-F)
- 3 possible strokes
- The L series extensions are used for gripping on various levels using the same installation plate. These extensions are adjustable to different heights.

P_{4/7}

Suction Cup Accessories

Chapter 4

Flow Control Fittings



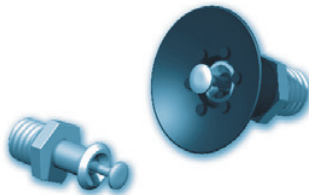
Groups 1 and 2

- 13 models
- (Hollow screw or hollow shaft fitting)

- These fittings are designed for installations requiring a large number of suction cups connected to the same vacuum source, particularly for situations where parts may be missing in the layer to be handled. Using flow-controlled fittings reduces the loss of flow and therefore optimizes the size of the vacuum generator.

P_{4/9}

PMG2



Mechanical Feelers

- Mechanical feelers
- 5 models
- For VP series Ø30 to 60 mm suction cups

- The PMG2 series mechanical feelers are mounted on VP series diameter 30 to 60 mm flat suction cups in all types of material. The feeler is activated by the object to be handled, causing it to open and free the route for the vacuum.

P_{4/10}

4

IMU



Axial Ball-Joints

- Ball-joint fitting
- 4 models

- IMU series ball-joints are recommended for gripping rounded products.
- When installed on a flat suction cup, they provide greater force than a bellows suction cup.

P_{4/11}

CSP



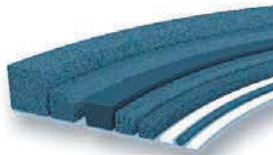
Piloted Safety Valves

- Vacuum check-valve
- Directly mounted on the suction cup
- Release by blow-off

- The CSP series safety valve is a useful safety device in the event of loss of vacuum or emergency shut-off as it maintains the vacuum in the suction cup. Release is obtained by connecting the ancillary coupling to the pressure supply.

P_{4/12}

BM



Foam Seals

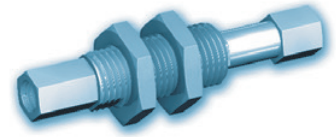
- Foam strip (airtight cells)
- 10 models
- 3 types of material (Nitrile, Silicone and Natural rubber)

- The foam strip is designed for gripping products with an uneven or ridged surface: sawn wood, metal sheets, flat surfaces with bumps or hollows.
- All granular surfaces to which suction cups cannot adhere correctly and therefore cannot be airtight.

P_{4/13}

TS 11

Level Compensators

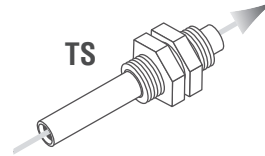


The TS 11 series compensated spring systems are recommended for horizontal handling of objects at different levels. The spring function also ensures that the gripping points are applied on the same plane when gripping with multiple suction cups.

- Protected spring.

Materials

- Spring** Stainless steel
- Tubing** Zinc-plated steel
- Slider** Brass



4

TS 11

Characteristics

| References | A | F1 | F2 | C | D | L | ↻ 1 | ↻ 2 | Fres (lbf/in) | Frep (lbf) | ⚖ (g) |
|------------|------|------|---------|----|----|-----|-----|-----|---------------|------------|-------|
| TS11 7 | M5-F | M5-F | G1/8"-M | 7 | 19 | 43 | 7 | 14 | 3.88 | 0.29 | 20 |
| TS11 10 | M5-F | M5-F | G1/8"-M | 10 | 22 | 49 | 7 | 14 | 2.57 | 0.40 | 22 |
| TS11 20 | M5-F | M5-F | G1/8"-M | 20 | 39 | 76 | 7 | 14 | 1.37 | 0.38 | 33 |
| TS11 40 | M5-F | M5-F | G1/8"-M | 40 | 64 | 121 | 7 | 14 | 0.74 | 0.36 | 50 |

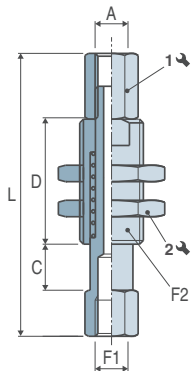
Note: All dimensions are in mm

C = Stroke

Fres = Spring force

Frep = Force at rest

TS11



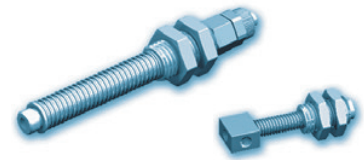
Please specify the part n° e.g.: TS1140
See part n° table above.

Suction cup mounting

The TS 11 series spring system can be fitted on all suction cups in group 1 (VP, VSA, VS Ø 5 to 25 mm) for IM21 and on suction cups in series VPG 5 to 20.

TS, YS

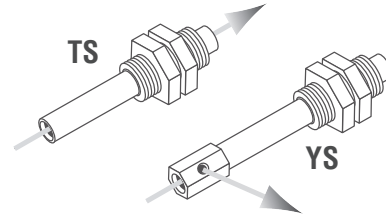
Level Compensators



TS and YS series compensated spring systems are recommended for horizontal handling of parts at different levels. The spring function also ensures that the gripping points are applied on the same plane when gripping with multiple suction cups.

Materials

- Spring** Stainless steel
- Tubing** Zinc-plated steel
- Slider** Brass



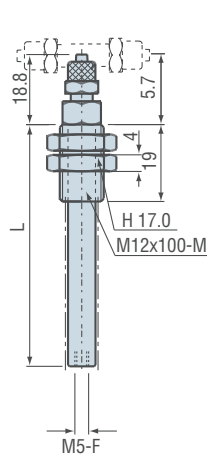
Characteristics

| Models | TS1 | | | | TS2 | | | | TS3 | | | | TS1.20 LG | YS1 | | | |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|------|------|------|------|
| Stroke | 05 | 10 | 20 | 30 | 10 | 30 | 50 | 70 | 10 | 30 | 50 | 70 | 20 | 5 | 10 | 20 | 30 |
| L | 29 | 39 | 59 | 79 | 48 | 88 | 128 | 168 | 48 | 88 | 128 | 168 | 59 | 29 | 39 | 59 | 79 |
| Spring force (lbf/in) | 2.06 | 0.86 | 0.40 | 0.26 | 5.14 | 1.14 | 0.66 | 0.46 | 5.14 | 1.14 | 0.66 | 0.46 | 0.40 | 2.06 | 0.86 | 0.40 | 0.26 |
| Force at rest (lbf) | 0.22 | 0.38 | 0.33 | 0.45 | 1.82 | 0.94 | 1.01 | 1.01 | 1.15 | 0.94 | 1.01 | 1.01 | 0.33 | 0.22 | 0.38 | 0.33 | 0.45 |

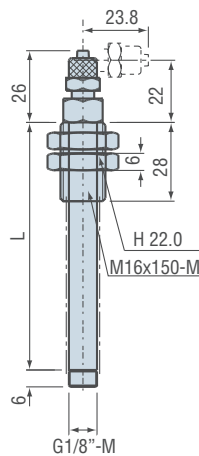
Note: All dimensions are in mm

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TS YS

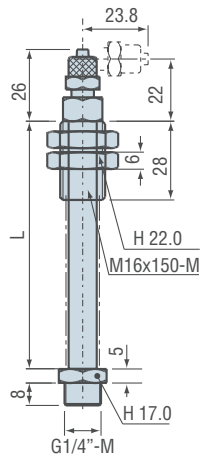
TS1



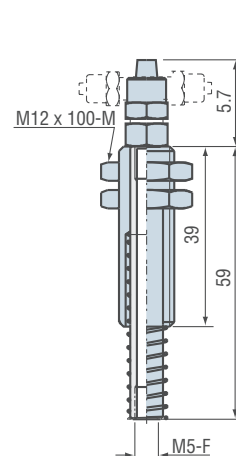
TS2



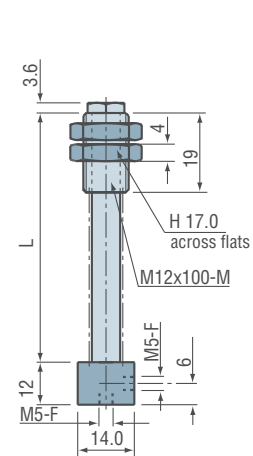
TS3



TS1.20 LG



YS1



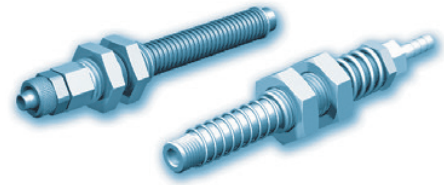
Please specify the part n° e.g.:
Model + Spring stroke + Fitting
 e.g.: TS350C46

| 1: Model | 2: Spring stroke | 3: Fittings (for TS series) |
|----------|------------------------------|--|
| TS1 | 05 - 10 - 20 - 30 (TS1, YS1) | D46 (Straight 4 x 6 - TS1, TS2, TS3) |
| TS2 | 10 - 30 - 50 - 70 (TS2, TS3) | D68 (Straight 6 x 8 - TS2, TS3) |
| TS3 | | C46 (Elbow 4 x 6 - TS1, TS2, TS3) |
| YS1 | | C68 (Elbow 6 x 8 - TS2, TS3) |
| | | T46 ¹ (T-shape 4 x 6 - TS1) |
| | | N ² (Without fitting) |

(1) versions T46 and T68 on request for TS2 and TS3.
 (2) For TS1 model, vacuum connection M5-F and for models TS2 and TS3 vacuum connection G1/8"-M.

Advantage of the TS120LG
 The adjustment height is twice that of the standard TS1 spring system and its spring is protected.

TS Level Compensators

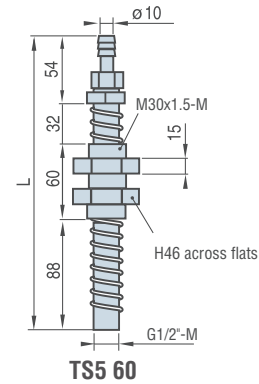
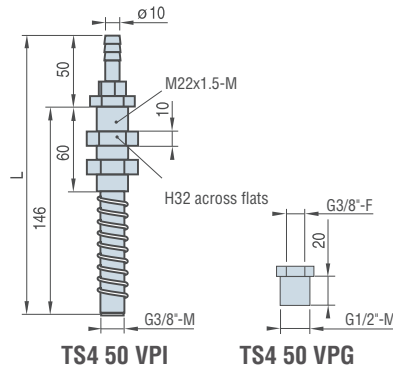


Characteristics

| Models | TS4 50 | TS5 60 |
|-----------------------|--------|--------|
| Stroke | 45 | 60 |
| L | 196 | 234 |
| Spring force (lbf/in) | 2.68 | 7.02 |
| Force at rest (lbf) | 0.90 | 0 |

Materials

Spring Stainless steel
Tubing Zinc-plated steel
Slider Brass



Note: All dimensions are in mm

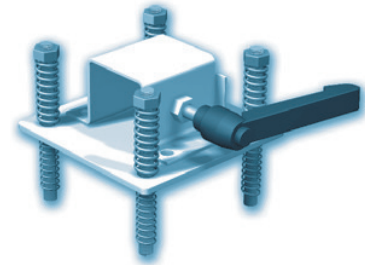
TS4 50 VPI

TS4 50 VPG

TS5 60

4 RSC

Multi-Compensator Systems



Use

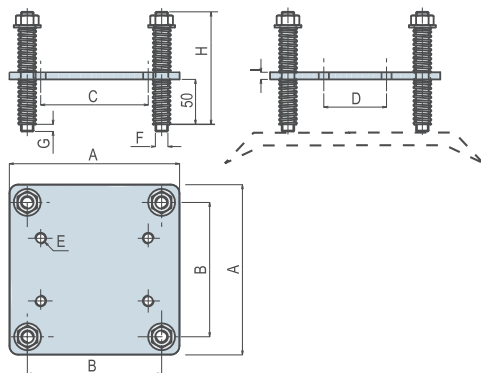
The system of 4 compensated springs is particularly recommended for horizontal handling requiring large diameter suction cups. The upper stainless steel springs act as dampers for all vertical movements. They compensate for different levels between the suction cups. The system of 4 compensated springs mounted in a square gives the assembly a ball-joint effect.

Materials

Spring Stainless steel
Damper Stainless steel
Studs A 60
Colour Yellow RAL 1023

Characteristics

| Models | Max. load (lbf) | Stroke under traction | Vertical force (lbf) | Maxi. weight (kg) | Ball-joint angle | Tube mounted | A | B | C | D | E | F | G | H | I | J | K | L |
|--------|-----------------|-----------------------|----------------------|-------------------|------------------|--------------|-----|-----|-----|----|-------|-------|---|-----|---|----|----|----|
| RSC1 | 449.60 | 30 | 35.97 | 1 | 10 ° | 50 | 140 | 106 | 88 | 50 | M8-F | M10-M | 8 | 120 | 5 | 52 | 52 | 9 |
| RSC2 | 899.20 | 30 | 76.43 | 2.7 | 10 ° | 80 | 190 | 150 | 120 | 70 | M12-F | M14-M | 8 | 130 | 8 | 83 | 83 | 13 |



RSC option...VAC

Square tube mounting options (Tightening by indexable lever).

- RSC1 VAC on 50 mm square tube.
- RSC2 VAC on 80 mm square tube.

Note: All dimensions are in mm

Note:

- RSC1: for SPL 240 suction cups, 5085 steel suction cups, VA 250, VA 280 and VA 320.
- RSC2: for SPL 340 suction cups, 5150 steel suction cups, VA 350, VA 380 and VA 410.



Please specify the part:
Model + Type + Tube mounting option
 e.g.: RSC2VAC

| 1: Model | 2: Type | 3: Tube-mounting option |
|----------|---------|---------------------------|
| RSC | 1 | max. 449.60 lbf |
| | 2 | max. 899.20 lbf |
| | VAC | with tube-mounting option |

TSOP - TSOG

Anti-Rotation Level Compensators



The TSOP and T SOG series spring systems are anti-rotation spring systems. They are used for horizontal handling of parts at different levels. The anti-rotation function ensures that objects are always gripped in the same position

The TSOP range is designed for applications requiring very precise handling.

- The hexagonal rod prevents the suction cup from rotating.
- Protected spring.

Characteristics - TSOP

| References | A | F1 | F2 | C | D | L | 1 | 2 | Fres (lbf/in) | Frep (lbf) | (g) |
|------------|------|------|---------|----|----|-------|---|----|---------------|------------|-----|
| TSOP 107 | M5-F | M5-F | G1/8"-M | 7 | 18 | 42 | 7 | 14 | 3.88 | 0.29 | 20 |
| TSOP 110 | M5-F | M5-F | G1/8"-M | 10 | 22 | 49 | 7 | 14 | 2.57 | 0.40 | 22 |
| TSOP 120 | M5-F | M5-F | G1/8"-M | 20 | 39 | 73.5 | 7 | 14 | 1.37 | 0.38 | 33 |
| TSOP 140 | M5-F | M5-F | G1/8"-M | 40 | 64 | 118.5 | 7 | 14 | 0.74 | 0.36 | 50 |

Note: All dimensions are in mm

C = Stroke

Fres = Spring force

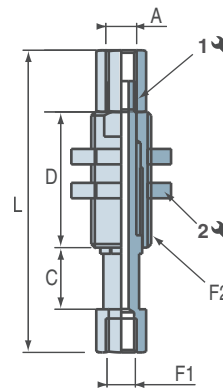
Frep = Force at rest

Materials

Spring Stainless steel

Tubing Anodized aluminum

Slider Nickel-plated steel



Characteristics - T SOG

| References | A | F1 | F2 | C | B | D | E | G | L | 1 | 2 | 3 | Fres (lbf/in) | Frep (lbf) | (g) |
|------------|---------|---------|-----------|----|----|------|----|----|-------|----|----|----|---------------|------------|-----|
| TSOG2 20F | G1/8"-F | G1/8"-F | M16x1-M | 20 | 20 | 38.5 | 7 | 9 | 100 | 12 | 19 | 12 | 1.44 | 0.82 | 35 |
| TSOG2 35F | G1/8"-F | G1/8"-F | M16x1-M | 35 | 20 | 58.5 | 7 | 9 | 135 | 12 | 19 | 12 | 0.78 | 0.97 | 45 |
| TSOG3 25F | G1/4"-F | G1/4"-F | M20x1.5-M | 25 | 23 | 50 | 10 | 10 | 113 | 16 | 24 | 16 | 1.47 | 0.99 | 65 |
| TSOG3 50F | G1/4"-F | G1/4"-F | M20x1.5-M | 50 | 23 | 82.5 | 10 | 10 | 170.5 | 16 | 24 | 16 | 0.74 | 1.00 | 90 |
| TSOG4 40F | G3/8"-F | G3/8"-F | M25x1.5-M | 40 | 33 | 71 | 11 | 11 | 159 | 22 | 32 | 22 | 1.31 | 1.37 | 170 |
| TSOG4 80F | G3/8"-F | G3/8"-F | M25x1.5-M | 80 | 33 | 121 | 11 | 11 | 249 | 22 | 32 | 22 | 0.68 | 1.35 | 235 |

Note: All dimensions are in mm

C = Stroke

Fres = Spring force

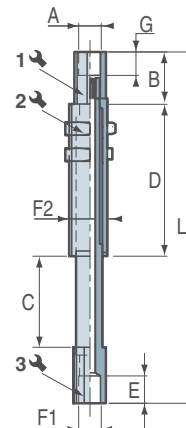
Frep = Force at rest

Materials

Spring Stainless steel

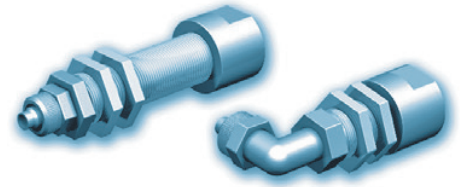
Tubing Anodized aluminum

Slider Anodized aluminum



Please specify the part e.g.: T SOG350F
See part n° table above.

L Mounting Extensions



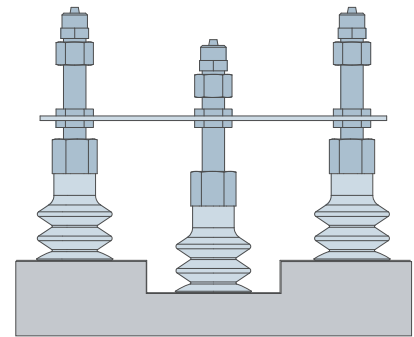
The L series extensions are used for gripping on various levels using the same installation plate. These extensions are adjustable to different heights.

This system is especially useful for 2.5 bellows type suction cups, as height adjustment is made easier by the deflection of the suction cup.

Spring systems should be chosen, instead, for flat suction cups with low deflection.

Materials

Threaded rod and nut Brass
Screwed vacuum fitting Nickel-plated brass



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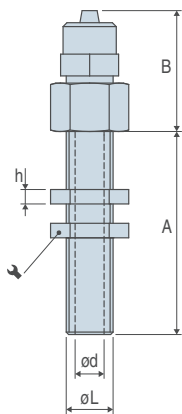
Characteristics

| Models | A ⁽¹⁾ | | | B | C | h | | Ød | ØL | D | P |
|---------|------------------|----|----|------|------|---|----|----|---------|----|----|
| G1/8"-M | 22 | 42 | 52 | 25 | 19 | 3 | 14 | 6 | G1/8"-M | - | - |
| G1/4"-M | 19 | 49 | 69 | 29 | 24 | 4 | 19 | 9 | G1/4"-M | - | - |
| G3/8"-F | 19 | 49 | 69 | 20.5 | 19.5 | 4 | 23 | - | G3/8"-F | 19 | 22 |
| G3/8"-M | 19 | 49 | 69 | 20.5 | 19.5 | 4 | 23 | 10 | G3/8"-M | - | - |

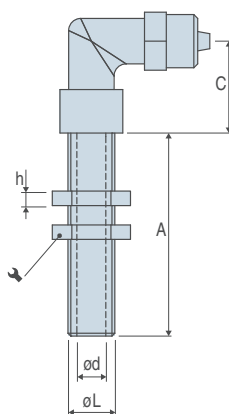
(1) Other lengths available on request for a minimum quantity of 10 pieces.

G1/4"-M - G1/8"-M

Straight

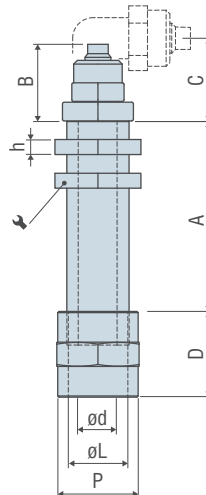


Elbow



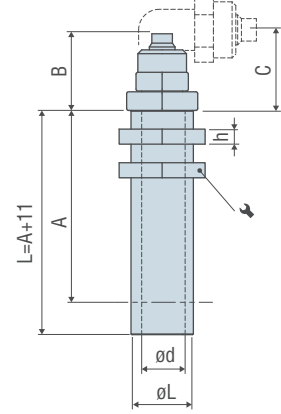
G3/8"-F

Straight or elbow 6x8



G3/8"-M

Straight or elbow 6x8



Note: All dimensions are in mm



Please specify the part:
Model + Thread + Adjustable stroke + Fitting + Suction cup fitting
 e.g.: L1449C68F

| 1: Model | 2: Thread | 3: Adjustable stroke | 4: Fittings | 5: Suction cup fitting G3/8" version | |
|----------|-----------|----------------------|--------------------------|--------------------------------------|-----------------|
| L | 18 G1/8" | 22 - 42 - 52 | G1/8" | D46 Straight 4 x 6 | F Female |
| | 14 G1/4" | | G1/4" | D68 Straight 6 x 8 | M Male |
| | 38 G3/8" | 19 - 49 - 69 | G3/8" | C46 Elbow 4 x 6 | |
| | | | | C68 Elbow 6 x 8 | |
| | | | N Without fitting | | |

G3/8" extensions are compatible with the High Performance C series range of suction cups (see page 2/55).

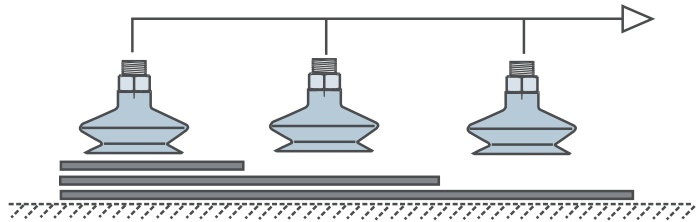
Miscellaneous Gripping

Principle

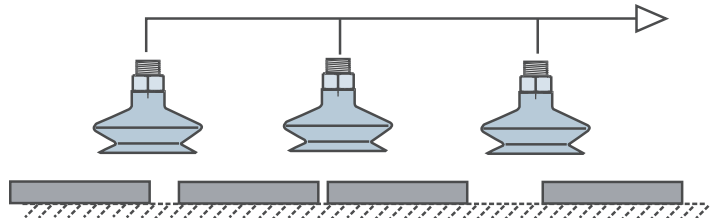
In many cases when using a multi-suction cup installation, some of the cups will not be covered by the product(s) to be handled. This leads to a high risk of reduced grip from the covered suction cups, or may even prevent them gripping at all.

Examples

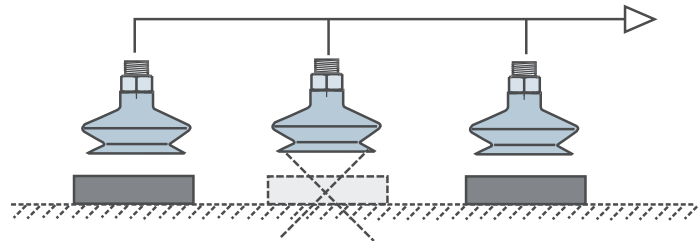
- Gripping of panels, sheet metal, etc. in a wide variety of sizes by a vacuum lifter equipped with suction cups.



- Uncertain position of the object(s).



- Gripping several objects at one time, some of which may be missing.



Solutions

- Independent ejector

Mounting an ejector for each suction cup guarantees the installation will operate perfectly even if one or more suction cups are not covered.

COVAL responds to this problem by offering the CIL, VR, GVR, and GVRL Series ejectors.

For further information, see chapter 6.

- Flow control fittings

Flow control fittings are incorporated as part of the suction cup mounting, thus reducing leakage in that cup with no part present during the vacuum cycle.

This technical solution is particularly suitable for vacuum grippers with a large number of suction cups.

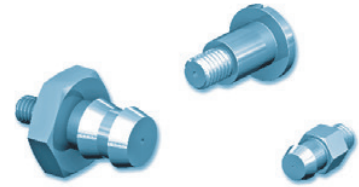
To determine the diameter of the nozzle, COVAL has developed a specific CAD.

- Mechanical feelers

See following pages. COVAL offers four solutions depending on the application, with their advantages and drawbacks.

Flow Control Fittings

Groups 1 and 2

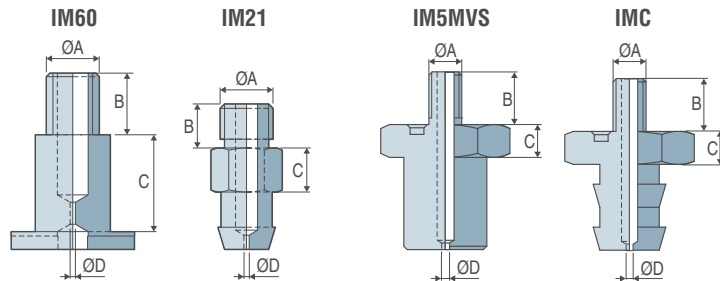


These fittings are designed for installations with a large number of suction cups connected to the same vacuum generator (vacuum gripper technology), particularly in cases where there may be objects missing from the layer of objects to be handled. Using flow-controlled fittings reduces the loss of flow and therefore optimizes the size of the vacuum generator.

Caution, do not use this type of fitting for applications in a dusty environment.

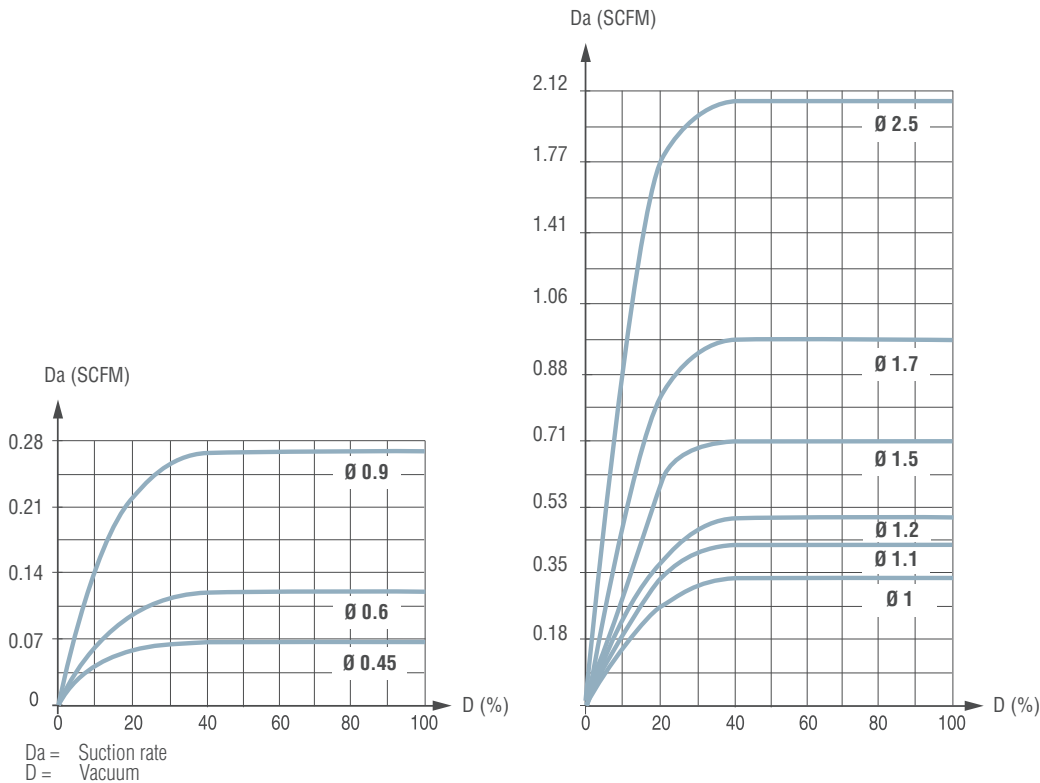
Characteristics

| References | ØA | ØD | B | C |
|-------------|------|------|-----|----|
| IM5 MVSD1.1 | M5-M | 1.1 | 8 | 5 |
| IM21 SP058 | M5-M | 0.45 | 4.5 | 5 |
| IM21 SP094 | M5-M | 0.6 | 4.5 | 5 |
| IM60 SP335 | M6-M | 0.6 | 7 | 11 |
| IM60 SP387 | M6-M | 1.2 | 7 | 11 |
| IM60 SP461 | M6-M | 0.9 | 7 | 11 |
| IM60 SP483 | M6-M | 1 | 7 | 11 |
| IM60 SP510 | M6-M | 1.7 | 7 | 11 |
| IM60 SP511 | M6-M | 2.5 | 7 | 11 |
| IMCM5 D0.6 | M5-M | 0.6 | 8 | 5 |
| IMCM5 SP691 | M5-M | 1.1 | 8 | 5 |
| IMCM5 SP701 | M5-M | 1.5 | 8 | 5 |



4

Maximum suction per nozzle diameter

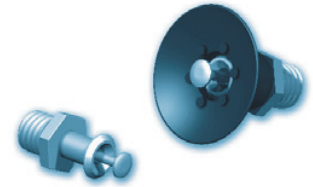


Please specify the part e.g.: IM60SP387
See part n° table above.

Note: All dimensions are in mm

PMG2

Mechanical Feelers



The PMG2 series mechanical feelers are mounted on VP series diameter 30 to 60 mm flat suction cups in all types of material (group 2 suction cups).

The mechanical feeler blocks the path from the vacuum source to the suction cup.

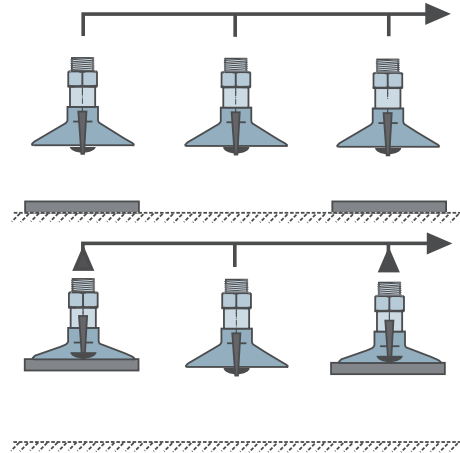
The feeler is actuated by the object, causing it to open and free the path for the vacuum.

Materials

Body Nickel-plated brass

Spring Stainless steel

Feeler Delrin and brass




Advantages

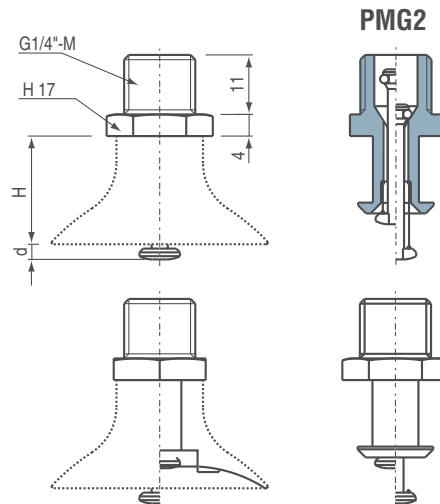
- Simple to install and operate.
- Very efficient air-tightness for non-covered suction cups.
- Little risk of marking delicate objects, as the feeler has a rounded surface.

Mounting

The feelers are mounted by press fitting. It is preferable to allow us to assemble the feeler onto the suction cup.

Characteristics

|  | VP 30 | VP 35 | VP 40 | VP 50 | VP 60 |
|---|-------|-------|-------|-------|-------|
| d (mm) | 3.9 | 2.9 | 2.9 | 0.9 | 0.9 |
| H (mm) | 19 | 20 | 20 | 22 | 22 |



Leakage rate

No leakage if all the suction cups are correctly placed. This represents substantial savings in power with regard to the vacuum source: pneumatic ejector or electric vacuum pumps.



Please specify the part: PMG2

Accessories

Mounting on spring or ball-joint systems (see chapter 4).

IMU

Axial Ball-Joints



IMU series ball-joints are recommended for gripping rounded or rotating products.

When installed on a flat suction cup, they provide greater force than a bellows suction cup.

The vacuum connection is axial and sealing is ensured by a special seal always in contact with the spherical articulation.

The suction pad installed over the axial ball joint is free to rotate on its axis around 360° and can incline up to 15°

The ball joints are manufactured entirely in copper except the spherical joint made in stainless steel.


Materials

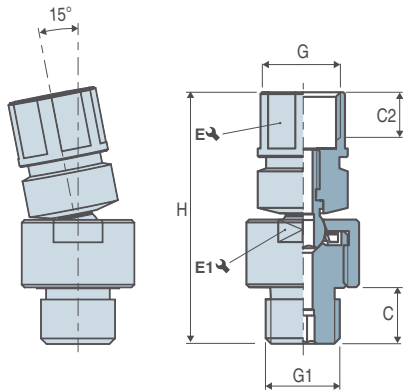
Ball-joint Zinc-plated steel and brass

Seal Nitrile (NBR)

4

Characteristics

| References | G | G1 | C2 | C | E ↙ | E1 ↙ | H |  (g) |
|------------|---------|---------|----|-----|-----|------|------|---|
| IMU 18 | G1/8"-F | G1/8"-M | 8 | 8.5 | 11 | 18 | 43 | 40 |
| IMU 14 | G1/4"-F | G1/4"-M | 8 | 10 | 15 | 18 | 44.6 | 56 |
| IMU 38 | G3/8"-F | G3/8"-M | 13 | 13 | 26 | 28 | 63.3 | 206 |
| IMU 12 | G1/2"-F | G1/2"-M | 15 | 17 | 26 | 28 | 72.3 | 232 |



Please specify the part e.g.: IMU14
See part n° table above.

Note: All dimensions are in mm

CSP

Piloted Safety Valves



The CSP series safety valve is a useful safety device. In the event of loss of vacuum or emergency stop it maintains the vacuum in the suction cup. Release is obtained by connecting the ancillary coupling to the pressure supply.

Materials

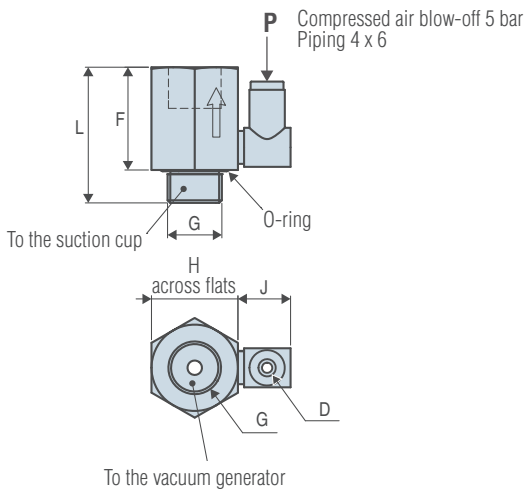
Valve Nitrile (NBR)

Body Anodized aluminum

Filter Stainless steel screen 200 μ

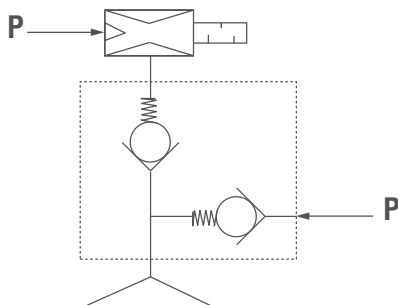
Characteristics

| Reference | G | $\varnothing D$ | F | L | J | H |
|-----------|---------|-----------------|----|----|------|----|
| CSP 14 | G1/4"-M | 4 | 25 | 33 | 12.8 | 21 |



Mounting

- One safety valve per suction cup.
- Blow-off pressure, minimum 5 bar.



 Please specify the part e.g.: CSP14
See part n° table above.

Note: All dimensions are in mm

BM Foam Strips



Industry-specific applications



Nitrile foam strip: 10m roll

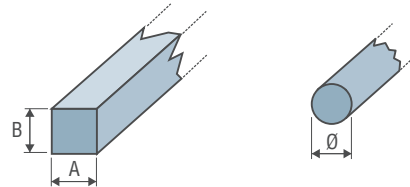
Mounting

Mounting with contact adhesive or flush-mounted at a depth adapted to the height and potential flush-mounting of the seal subject to the vacuum: 50% to 70% of the new height.

Support

- All supports, particularly steel, aluminum, etc.
- Closed cells.
- Tube of neoprene adhesive (120 ml):
Part No. 095.99.006.

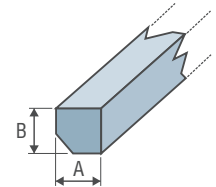
| References | A | B | Ø |
|------------|----|----|---|
| BM 8 | - | - | 8 |
| BM 1510 | 15 | 10 | - |
| BM 1010 | 10 | 10 | - |
| BM 1515 | 15 | 15 | - |
| BM 2020 | 20 | 20 | - |
| BM 3030 | 30 | 30 | - |
| BM 5050 | 50 | 50 | - |



Nitrile beveled foam strip: 10m roll

- The beveling facilitates gripping of products with uneven surfaces.
- Closed cells.
- Contact adhesive reference: BOSTIK 1400 (Neoprene adhesive).

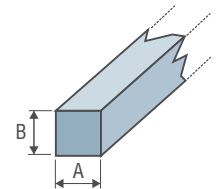
| References | A | B |
|--------------|----|----|
| BM 2020 SPTR | 20 | 20 |
| BM 3020 SPTR | 20 | 30 |
| BM 3030 SPTR | 30 | 30 |



Silicone foam strip

- Heat resistant: 320°F.
- Do not use on parts before painting.
- Closed cells.
- Contact adhesive reference: LOCTITE 5366 (silicone adhesive).

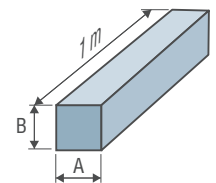
| References | A | B |
|------------|----|----|
| BM 210 SI | 10 | 2 |
| BM 513 SI | 13 | 5 |
| BM SI 3030 | 30 | 30 |



Natural rubber foam strips: Length 1m

- Flush-mounting.
- Use with turbine (strong suction) for gripping products with very uneven surfaces, such as slabs of washed gravel.
- Open cells.
- Contact adhesive reference: BOSTIK 1400 (Neoprene adhesive)

| Reference | A | B |
|-----------|----|----|
| BMS 3025 | 30 | 25 |



Please specify the part e.g.: BM1510
See part n° table above.

Note: All dimensions are in mm

NVS, NVR, NVA

Nourrices à vide

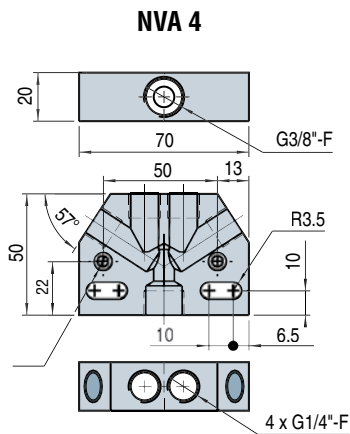
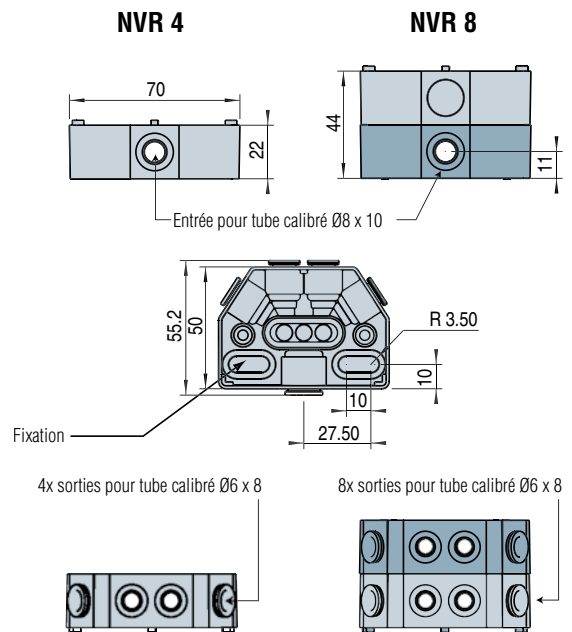
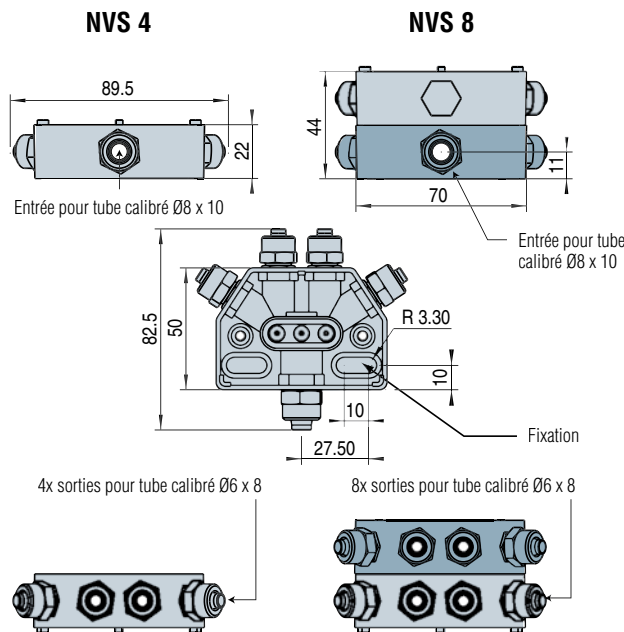


Les nourrices à vide séries NVS et NVR permettent la répartition du vide dans 4 ou 8 voies par un simple bloc. Les entrées en 8/10 et les 4 ou 8 sorties en 6/8 suppriment les pertes de charge.

Caractéristiques

| Modèles | | Raccord à coiffe | | Raccord instantané | | Tarauté |
|--------------------------------|---------|--|-------|--------------------|-------|----------------------------|
| | | NVS 4 | NVS 8 | NVR 4 | NVR 8 | NVA 4 |
| Matière | Corps | PA 6.6 - 30 % de fibre de verre - couleur noire - ULV094 | | | | Aluminium 2014 A |
| | raccord | Laiton nickelé | | PA | | |
| Pour tube | | Calibré polyamide ou polyuréthane (PUR) | | | | 4 x G1/4"-F et 1 x G3/8"-F |
| Vide | | ■ ++ | ■ ++ | ■ | ■ | ■ ++ |
| Pression (jusqu'à 10 bar max.) | | - | - | ■ | ■ | ■ |

■ ++ Préconisé pour réseau de vide à régulation



Pour passer commande préciser :
Modèle + Type + Nombre de sorties.
ex.: NVS8

| 1 : Modèle | 2 : Type | 3 : Nombre de sorties |
|------------|--------------------|------------------------|
| NV | S raccords vissés | 4 4 sorties - 1 entrée |
| | R raccords rapides | 8 8 sorties - 1 entrée |
| | A tarautés | 4 4 sorties - 1 entrée |

Note : toutes les cotes sont indiquées en mm

Nota : pour série NVA, une seule référence : NVA4

RDV, RCOV, Y

Raccords à coiffe avec joint torique



Caractéristiques

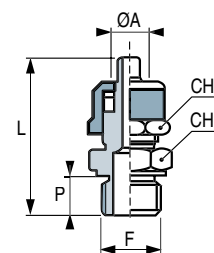
Gamme de raccords spéciaux étanches au vide, équipés d'un joint torique (bleu).

- Étanchéité au vide à 100 % et meilleure étanchéité des circuits,
- Démontables et remontables sans préparation du tube,
- Raccords orientables pour une meilleure distribution du vide,
- Matière : laiton nickelé.

Raccord droit série RDV

| Ref. | ØA | F | CH | CH1 | P | L |
|-----------|-------|---------|----|-----|----|------|
| RDV1868 | 6/8* | G1/8"-M | 14 | 14 | 6 | 26 |
| RDV1468 | 6/8* | G1/4"-M | 17 | 14 | 8 | 29 |
| RDV14810 | 8/10 | G1/4"-M | 17 | 16 | 9 | 30.5 |
| RDV3868 | 6/8* | G3/8"-M | 19 | 14 | 9 | 30.5 |
| RDV38810 | 8/10 | G3/8"-M | 19 | 16 | 9 | 32 |
| RDV38812 | 8/12 | G3/8"-M | 19 | 19 | 9 | 32.3 |
| RDV12810 | 8/10 | G1/2"-M | 24 | 16 | 10 | 33.5 |
| RDV381012 | 10/12 | G3/8"-M | 19 | 19 | 9 | 32.3 |
| RDV12812 | 8/12 | G1/2"-M | 24 | 19 | 10 | 34.5 |
| RDV121012 | 10/12 | G1/2"-M | 24 | 19 | 10 | 34 |

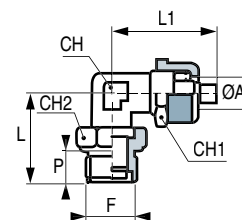
* Les raccords 6/8 sont compatibles 5.5/8.



Raccord coudé série RCOV

| Ref. | ØA | F | CH | CH1 | CH2 | P | L | L1 |
|------------|-------|---------|----|-----|-----|----|------|------|
| RCOV1868 | 6/8* | G1/8"-M | 10 | 14 | 14 | 7 | 24 | 22 |
| RCOV1468 | 6/8* | G1/4"-M | 13 | 14 | 17 | 9 | 28.5 | 27.5 |
| RCOV14810 | 8/10 | G1/4"-M | 13 | 16 | 17 | 9 | 28.5 | 28 |
| RCOV3868 | 6/8 | G3/8"-M | 13 | 14 | 22 | 9 | 29 | 27.5 |
| RCOV38810 | 8/10 | G3/8"-M | 13 | 16 | 22 | 9 | 29 | 28 |
| RCOV12810 | 8/10 | G1/2"-M | 17 | 16 | 26 | 10 | 35 | 34 |
| RCOV121012 | 10/12 | G1/2"-M | 17 | 19 | 26 | 10 | 35 | 34 |

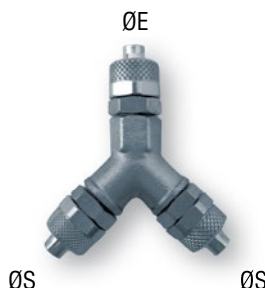
* Les raccords 6/8 sont compatibles 5.5/8.



Raccord Y série Y

| Ref. | ØE | ØS |
|----------|-------|-------|
| Y68 | 6/8* | 6/8* |
| Y810 | 8/10 | 8/10 |
| Y81068 | 8/10 | 6/8 |
| Y812 | 8/12 | 8/12 |
| Y81268 | 8/12 | 6/8 |
| Y1012 | 10/12 | 10/12 |
| Y1012810 | 10/12 | 8/10 |

* Les raccords 6/8 sont compatibles 5.5/8.



Note : toutes les côtes sont indiquées en mm.

Vacuum Switch Range

Chapter 11

PSK



Mini Vacuum Switch

- 1 digital output
- Adjustable vacuum threshold
- 3 vacuum port sizes available
- M8 connection

- Ultra-compact and lightweight
- LED visual indicators

P_{11/3}

PSA 100 C



Electronic Vacuum Switch with Display

- 2 configurable digital outputs
- NO or NC outputs
- Adjustable hysteresis
- IP 65

- The PSA100 C electronic vacuum switch is the most efficient vacuum measuring component in the COVAL range.
- It can be easily installed on all machines and robots, etc. thanks to its compact lightweight design.

P_{11/4}

PSD 100



Vacuum Switch with 3-colour Display

- 1 to 5 VDC analog output
- Response time: < 5ms
- 2 vacuum fittings available
- M8 connection

- The compact PSD100 electronic vacuum switch is used to check the exact level of vacuum in the system.
- Analog output

P_{11/5}

PSP 100



Electronic Vacuum Switch

- 1 configurable digital output
- Response time: < 5ms
- 3 vacuum fittings available
- 2 electric fittings available

- The PSP100 electronic switch reduces size while accurately monitoring the vacuum level
- Adjustable digital output and hysteresis.

P_{11/7}

PSP 100 ANA



Electronic Vacuum Switch Analog Output

- 1 Analog output from 1V to 5 VDC
- Response time: < 5ms
- 2 vacuum port sizes available
- M8 connections

- The PSP100 ANA electronic switch reduces size while accurately monitoring the vacuum level
- Analog output

P_{11/8}

PSE 100 E



Electric Vacuum Switch

- Adjustment range -300mb to -850mb
- All voltages
- Cable or M12 connector outputs

- The PSE 100 E vacuum switch with electric output is used to check the vacuum level in the circuit.
- It is adapted to all electrical automated systems.
- The choice between the NO or NC function is made during wiring.

P_{11/9}

PSE 100 P



Pneumatic Vacuum Switch

- 2 versions available (NO or NC)
- Adjustment range: -300mb to -850mb
- The PSE 100 E series vacuum switch with pneumatic output enables the vacuum level in the system to be checked by means of a patented system.

- This vacuum switch exists in two versions:
- NO version, recommended for "air-saving" on the vacuum pump
- N.C. version to cover the "safety" function (object detected, etc.) and "SFC signal" function.

P_{11/10}

Vacuum Switch Range

Chapter 11

PSE 100 PK



Pneumatic Vacuum Switch

- 2 versions available (NO or NC)
- Adjustment range:
 - NC: -250 to -830mb
 - NO: -350 to -880mb
- The vacuum switch with pneumatic output is used to check the vacuum level in the circuit. It is recommended for measuring slowly changing vacuum levels such as regulating or checking vacuum levels in networks over 1 liter.
- NO version, recommended for "air-saving" on the vacuum pump.
- NC version to cover the "safety" function (object detected, etc.) and "SFC signal" function.

P 11/11

VAF 111



Needle Vacuum Gauge

- VAF 111 series vacuum gauges are recommended for viewing the level of vacuum on a network for maintenance, checking and adjustment purposes (Green zone of use: -0.65 to -1 bar)
- 3 diameters available: 40, 50 and 63 mm
- Zone for use printed red and green

P 11/12

PSK

Mini Vacuum Switch

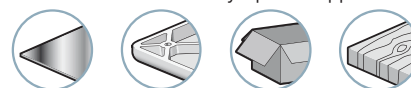


The PSK series adjustable vacuum switches, due to a compact and ultra-light design, enable installation close to the suction cups for reduced response times.

PSKs are ideal for applications requiring only a simple "object gripped" signal, and offer an economical and effective solution for applications with one vacuum generator per suction cup.

- Simple installation, plug-in port or thread-in fitting
- Compact size : 26 x 10 x 10.4 mm
- Weight: 8.3 g

Industry-specific applications



Specifications

| Model | PSK 100 |
|---------------------------------|--|
| Setting pressure range | 0 to 100% vacuum (0~-101.3 kPa) |
| Withstand pressure | 0.6 MPa |
| Fluid | Air, Non-corrosive/Non-flammable gas |
| Power supply voltage | 10.8 to 30 VCC |
| Load current | 80mA max. |
| Internal voltage drop | ≤ 0.8 V |
| Current consumption | 10 mA max. |
| Sensor type | PNP |
| Output short circuit protection | Yes |
| Setting method | Adjusting by VR |
| Response time | Approx. 1ms |
| Repeatability | ≤ +/-1% F/S/ |
| Hysteresis | 3% F.S. max. |
| Indicator | Red LED turns ON |
| Enclosure | IP 40 |
| Temperature characteristic | ≤ +/-3% F/S/ of detected pressure (77°F) at temp. Range of 32~122°F |
| Ambient temp. range | Operation: 0 ~ 60°C (32 ~ 140°F), Storage: -20 ~ 70°C (-4 ~ 158°F) (No condensation or freezing) |
| Ambient humidity range | Operation/Storage: 35 85% RH (No condensation) |
| Vibration | Total amplitude 1.5 mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z |
| Shock | 980m/s ² (100G), 3 times each in direction of X, Y and Z |
| vacuum connection | Push-in tube or thread-in |
| Electrical connection | M8 connection 3-pin (Cable L:150 mm) |
| Weight | Approx. 8.3 g (with M8, 3-pin male connector) |

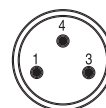
Advantages

- Simple installation:
Plug-in port for push-to-connect fittings
- Compact size:
Extremely compact size to fit the most confined areas

Additional Information

Electrical connections

- M8, 3-pin male connector

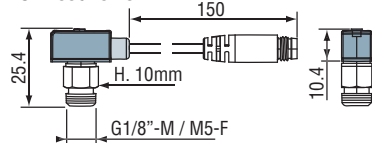


- 1 = + (Brown)
- 2 = - (Blue)
- 4 = out (Black)

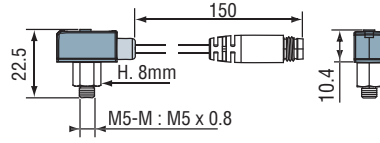
- Ø6mm stem for one-touch push fitting, Male M5 or G1/8"-M.

Dimensions

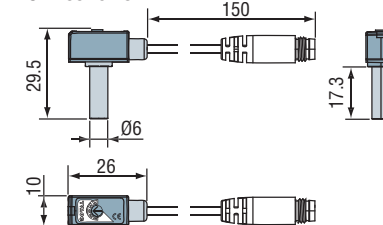
PSK 100G18M8



PSK 100M5M8



PSK 100D6M8



PSK 11



For all orders, please specify:
Model + Measuring range + Vacuum connection + Connection
Example: PSK100G18M8

| 1: I | 2: Measuring range | 3: Vacuum connection | 4: Connection |
|------|----------------------|---|-----------------------------|
| PSK | 100 0 to 100% vacuum | D6 Ø 6 mm G18 G 1/8"-M, M5-F M5 M5 male | M8 M8, 3-pin male connector |

PSA 100 C

Electronic Vacuum Switch with Display

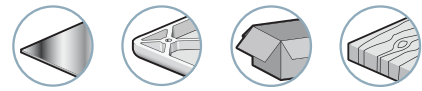


The PSA100C series electronic vacuum switch is the most efficient COVAL vacuum measuring component. It can be easily installed on all machines and robots, etc. thanks to its compact lightweight design.

Moreover it has a digital vacuum level display with two independently-adjustable digital outputs. Every aspect has been designed to make it easy to use.

Advantages: front panel programming, simplified adjustment and threshold locking, display inversion, your choice of NO or N.C. outlets (hysteresis can be independently adjusted for each output).

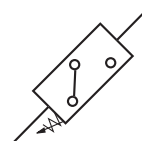
Industry-specific applications



| Specifications | |
|-----------------------|---|
| Compatible fluids | All non-corrosive, filtered, non-lubricated gases |
| Supply | 12 to 24 V CC \pm 10% |
| Current consumed | \leq 60 mA |
| PNP transistor output | 125 mA with 24 V DC, programmable NO or NC |
| Output viewing | Led |
| Output 1 | Green LED |
| Output 2 | Red LED |
| Programming | Keyboard |
| Display | Bar |
| EMC | Industrial standard Class B |
| Protection | IP 40 |
| Electrical connection | M8, 4-pin connector |
| Pneumatic connection | G1/8" or M5-F |
| Shock resistance | 100 G on XYZ |
| Display resolution | 1% |
| Adjustment resolution | 1% |
| Rating range | 0.10 ~ -1.00 bar |
| Setting range | 0.00 ~ -1.00 bar |
| Maximum overpressure | 3 bar |
| Weight | 30 g |

Advantages

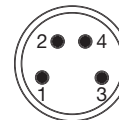
- 2 configurable digital outputs
- Adjustable hysteresis
- M8 F connector
- LED display
- PNP



Additional Information

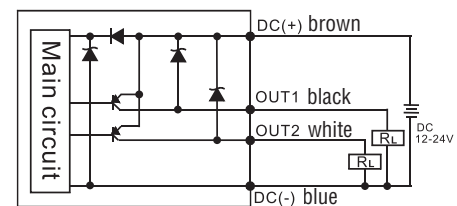
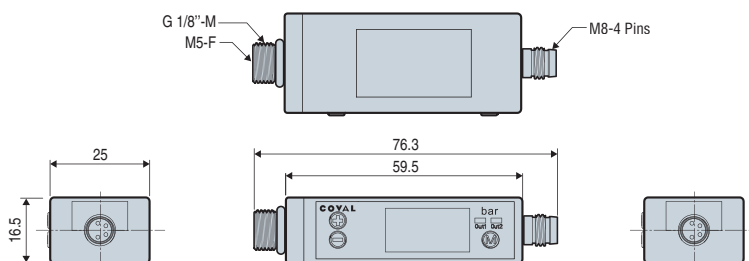
Electrical connections

- M8 connector



- 1 = + 24 V DC
- 2 = Output 2
- 3 = Common
- 4 = Output 1

Dimensions



Accessories

- Straight or elbow connector, see page 10/11.
- Mounting on vacuum pump:
 - GVP series: GVO PSA 100 C
 - GEMP series: VA option

Note: all dimensions shown in (mm)



For all orders, please specify: PSA 100 C

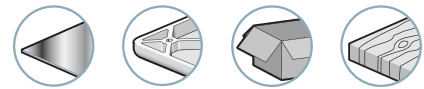
PSD 100

Vacuum Switch with 3-color Display



The new PSD100 series mini-vacuum switch with display offers easy reading thanks to the size of its screen and its 3-color display. Its compactness and lightness facilitate its integration on all machines. Easily adjustable, it is equipped with an extremely precise electronic vacuum level sensor and has an adjustable digital output as well as an analog output. The PSD100 has mounting accessories on option, making it very easy to install.

Industry-specific applications

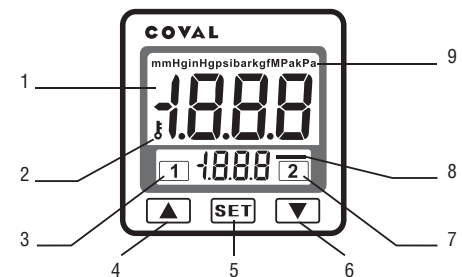


| Specifications | | | | | | | | | | | | | | | |
|---|---|---|-------|---------------------|------|------|------|------|-----|---|-------|-------|------|-----|---|
| Pressure rating range | 0.0 ~ -101.3 kPa | | | | | | | | | | | | | | |
| Pressure setting range | 10.0 ~ -101.3 kPa | | | | | | | | | | | | | | |
| Max. pressure | 300 kPa | | | | | | | | | | | | | | |
| Fluid | Air, non-corrosive/non-flammable gas | | | | | | | | | | | | | | |
| Pressure setting resolution | <table border="1"> <tr> <td>kPa</td> <td>MPa</td> <td>kgf/cm²</td> <td>bar</td> <td>psi</td> <td>inHg</td> <td>mmHg</td> </tr> <tr> <td>0.1</td> <td>/</td> <td>0.001</td> <td>0.001</td> <td>0.01</td> <td>0.1</td> <td>1</td> </tr> </table> | kPa | MPa | kgf/cm ² | bar | psi | inHg | mmHg | 0.1 | / | 0.001 | 0.001 | 0.01 | 0.1 | 1 |
| kPa | MPa | kgf/cm ² | bar | psi | inHg | mmHg | | | | | | | | | |
| 0.1 | / | 0.001 | 0.001 | 0.01 | 0.1 | 1 | | | | | | | | | |
| Power supply voltage | 12 to 24 V DC ±10%, ripple (P-P) 10% or less | | | | | | | | | | | | | | |
| Current consumption | ≤ 40 mA (without load) | | | | | | | | | | | | | | |
| Switch output | 1 PNP digital output (2x on PNP2 version) Max. load current: 125 mA Max. supply voltage: 24 VDC Residual voltage: ≤ 1.5 V | | | | | | | | | | | | | | |
| Repeatability (Switch output) | ≤ ± 0.2% F.S. ±1 digit | | | | | | | | | | | | | | |
| Hysteresis | Threshold mode | Adjustable (1 to 8 digits) | | | | | | | | | | | | | |
| | Hysteresis mode | Adjustable | | | | | | | | | | | | | |
| | Window comparator mode | Adjustable (1 to 8 digits) | | | | | | | | | | | | | |
| Response time | ≤ 2.5ms (anti-vibration function: 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selection) | | | | | | | | | | | | | | |
| Output short circuit protection | Yes | | | | | | | | | | | | | | |
| 7 segment LCD display | Two colour (red / green) main display, orange sub-display (refresh rate: 5 times / 1sec.) | | | | | | | | | | | | | | |
| Indicator accuracy | ≤ ± 2% F.S. ± 1 digit (ambient temperature: 77 ± 37.4°F) | | | | | | | | | | | | | | |
| Switch ON indicator | Orange OUT 1 / OUT 2 (PNP2 only) | | | | | | | | | | | | | | |
| Analog output (voltage power) (PNP version only) | Output voltage: 1 to 5 V ≤ ± 2.5% F.S. (within rated pressure range), linearity: ≤ ± 1% F.S. / Output impedance: approx. 1 kΩ | | | | | | | | | | | | | | |
| Environment | Enclosure | IP40 | | | | | | | | | | | | | |
| | Ambient temp. range | operation: 32 – 122° F / storage: 14 – 140° F (no condensation or freezing) | | | | | | | | | | | | | |
| | Ambient humidity | Operation / Storage: 35-85% RH (no condensation) | | | | | | | | | | | | | |
| | Permissible voltage | 1000 V AC in 1-min (between case and lead wire) | | | | | | | | | | | | | |
| | Insulation resistance | 50 M Ohm min. (at 500 V DC, between case and lead wire) | | | | | | | | | | | | | |
| | Vibrations | Total amplitude 1.5 mm or 10 G, 10 Hz-150 Hz-10 Hz scan for 1 minute, two hours in each direction of X, Y and Z | | | | | | | | | | | | | |
| | Shocks | 100 m/s ² (10 G), 3 times each in direction of X, Y and Z | | | | | | | | | | | | | |
| Temperature characteristic | ≤ ± 2% F.S. of detected pressure (77°F) at temp. range of 32~122°F | | | | | | | | | | | | | | |
| Port size | G1/8", M5-F | | | | | | | | | | | | | | |
| Lead wire | Oil-resistance cable (0.15 mm ²) | | | | | | | | | | | | | | |
| Weight | Approx. 45 g (with M8, 4-pin male connector) | | | | | | | | | | | | | | |

Advantages

- 3-colour digital LCD display, easy readability.
- 6 pressure units available (kPa, bar, psi, inHg, mmHg, kgf/cm²).
- PNP version:
 - 1 PNP digital output (NO or NC).
 - 1 analog output (1-5V).
- PNP2 version:
 - 2 PNP digital outputs (NO or NC).
- Double display showing the measured value and threshold value at the same time.
- "Key lock function" with indicator light, «Lock» mode with light indicator to prevent an accidental misadjustment.
- "Power-save function" with indicator light.
- 3 mounting solutions.

Panel Description



- 1 - 2-colour main display
- 2 - Lock indicator
- 3 - Output 1 indicator
- 4 - Button
- 5 - Setting button
- 6 - Button
- 7 - Output 2 indicator (PNP2 version)
- 8 - Setting mode (sub-display section)
- 9 - Pressure unit display section

Accessories

- CDM8: M8 Female connector – 4 poles, 2 m.
- PSDFIXA: Vertical attachment bracket.
- PSDFIXB: Horizontal attachment bracket.
- PSDFIXC: Front attachment kit.
- PSDFIXD: Front attachment kit + front protective lid.

PSD 100

11



**For all orders, please specify:
Model + Electrical connection + Outputs.
Example: PSD100CPNP**

| 1: Model | 2: Electrical connection | 3: Outputs |
|-------------|--------------------------|---|
| PSD100CPNP | M8 connector | 1 digital output PNP 1 analog output |
| PSD100LPNP2 | 2 m cable | 2 digital outputs PNP |

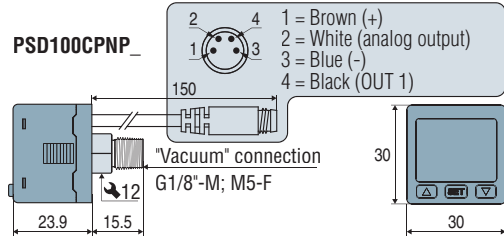
PSD 100

Vacuum Switch with 3-color Display

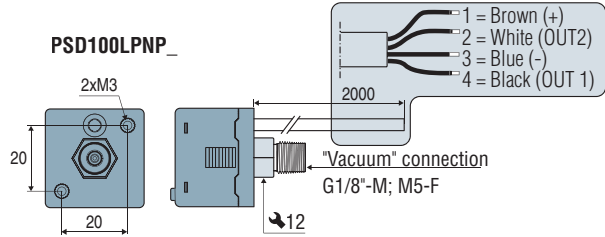


Electrical Diagrams - Dimensions

■ M8 Connector-4 poles

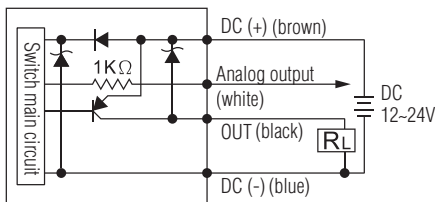


■ 2 m. cable

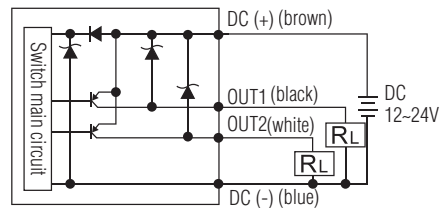


Electrical Diagrams

PSD100_PNP



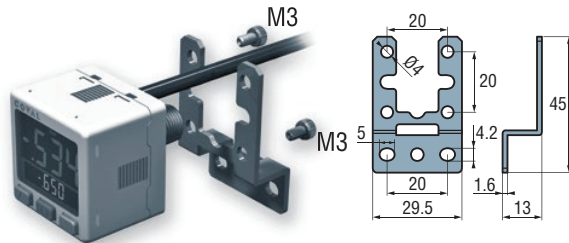
PSD100_PNP2



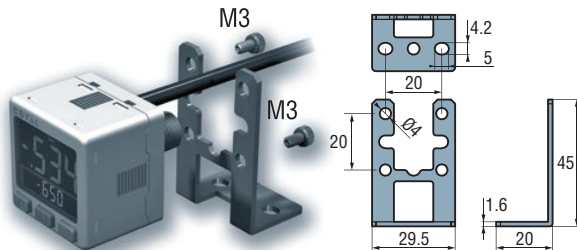
Mounting Solutions

Mounting brackets

■ PSDFIXA, vertical attachment.



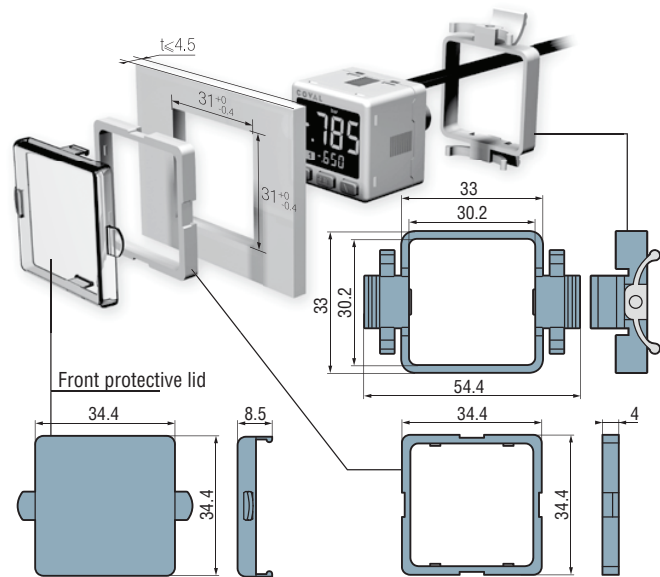
■ PSDFIXB, horizontal attachment.



Panel mounting kits

■ PSDFIXC: front attachment kit.

■ PSDFIXD: front attachment kit + front protective lid



Panel opening (max. thickness: 4.5 mm)

For 1 vacuum switch

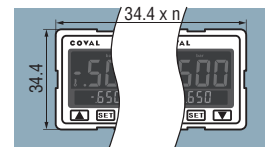
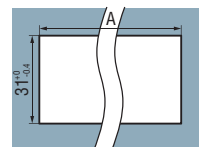
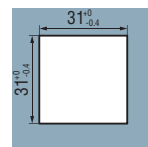
For multiple vacuum switches:

A = (34.4 x n) - 3.4

n = number of switches

Dimensions after installation

n = number of switches



Note: all dimensions shown in (mm)

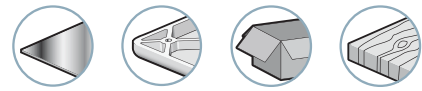
PSP 100

Electronic Vacuum Switch



PSP series electronic vacuum switches have integrated threshold and hysteresis adjustment as standard. 3 vacuum fittings (G1/8" Male, M5 female or M5 F Base) and 2 electrical connections (2 meter cable and M8 connector) make up the standard range.

Industry-specific applications

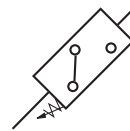


Specifications

| Models | PSP 100 L | PSP 100 LM5 | PSP 100 C | PSP 100 CM5 |
|------------------------------|---|----------------|------------------------|----------------|
| Compatible fluids | All non-corrosive, filtered, non-lubricated gases | | | |
| Supply | Regulated 18-30 V DC, polarity inversion protection | | | |
| Current consumed | < 20 mA | | | |
| Transistor output | NO 125 mA with 24 VDC | | | |
| Thermal drift | ± 3% of the measuring scale between 32 and 122°F | | | |
| Output viewing | LED | | | |
| Response time | < 5 ms | | | |
| Threshold adjustment | By 3/4 turn potentiometer | | | |
| Hysteresis adjustment | 0 to 30% adjustment by 3/4 turn potentiometer | | | |
| EMC | Industrial standard class B | | | |
| Materials | PA 66 and brass | PA 66 and Alu. | PA 66 and brass | PA 66 and Alu. |
| Temperature | Operation: 32 to 122 °F Storage: 14 to 140 °F | | | |
| Protection | IP 50 | | | |
| Electrical connection | PVC cable (length 2m) | | M8 connector (4 poles) | |
| Pneumatic connection | G1/8"-M or M5-F | Base M5-F | G1/8"-M or M5-F | Base M5-F |
| Weight | 62 g | 67 g | 22 g | 27 g |
| Adjustment range | 0 to -1 bar | | | |

Advantages

- 1 configurable digital output
- Adjustable hysteresis
- Measuring range: 0 / -1 bar
- Overpressure: +3 bar
- PNP

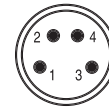


Additional Information

Electrical connections

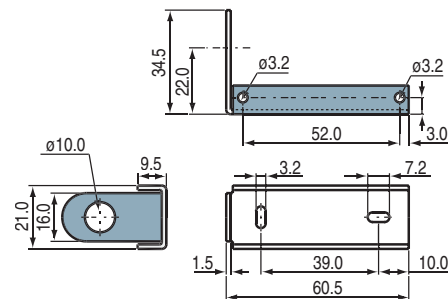
- PVC cable (length 2m)
 - Brown (+24 V)
 - Blue (0 V)
 - Black (Contact)

M8 connector

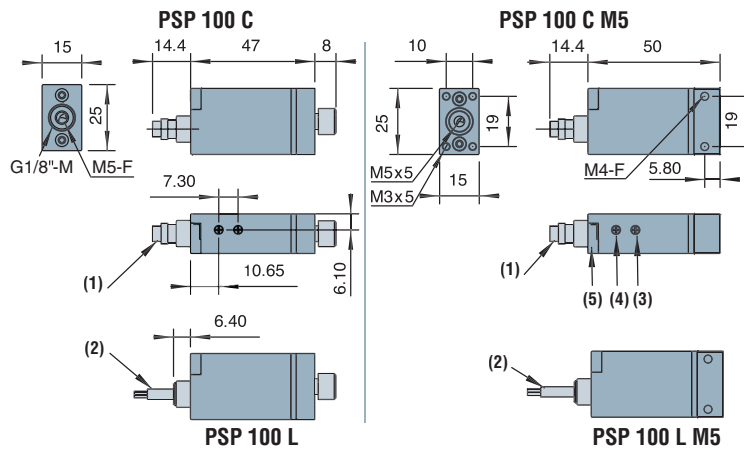


- 1 = +24 V - Brown
- 2 = -
- 3 = 0 V - Blue
- 4 = Contact - Black

Vacuum switch attachment - Clip Part No: PSE.F



Dimensions



- (1) M8 4 pole connector version
- (2) PVC cable version (2 m)
- (3) Hysteresis adjustment
- (4) Threshold adjustment
- (5) Threshold display LED

Note: all dimensions shown in (mm)

Accessories

- Straight or angled connector, see page 10/11.
- Mounting on vacuum pump:
 - GVP series: GVO PSP 100 C
 - GVO PSP 100 L
 - GEMP series: VB option



For all orders, please specify:
Model + Electrical connection + Vacuum connection.
Example: PSP100C

| 1: Model | 2: Electrical connection | 3: Vacuum connection |
|----------|--------------------------|----------------------|
| PSP 100 | L 2 m cable | - G1/8"-M or M5-F |
| | C M8 connector | M5 Base M5-F |

11 PSP 100

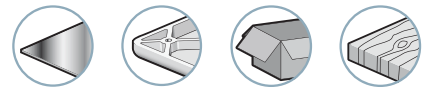
PSP 100 ANA

Electronic Vacuum Switch Analog Output



The PSP 100 ANA contains an analog output. It is fitted with 2 vacuum connections as standard (G1/8" male or M5 Female) and one M8 electrical connector.

Industry-specific applications



Specifications

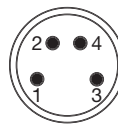
| | |
|------------------------------|---|
| Compatible fluids | All filtered, non-corrosive, non-lubricated gases |
| Supply | 24 V DC (18 V DC min / 30 V DC max) |
| Current draw | < 20 mA |
| Analog output | 1 to 5 VDC from 0 to -1 bar |
| Thermal drift | ± 3% of the measuring scale between 32 and 122°F |
| Response time | < 5 ms |
| EMC | Industrial standard Class B |
| Materials | PA 66 and brass |
| Temperature | Operation: 32 to 122 °F Storage: 14 to 140 °F |
| Protection | IP 50 |
| Electrical connection | M8 connector (4 pins) |
| Pneumatic connection | G1/8" Male and M5 Female |
| Weight | 22 g |

Advantages

- 1 analog output from 1 to 5 VDC
- Measuring range: 0 / -1 bar
- Overpressure: +3 bar max.
- PNP

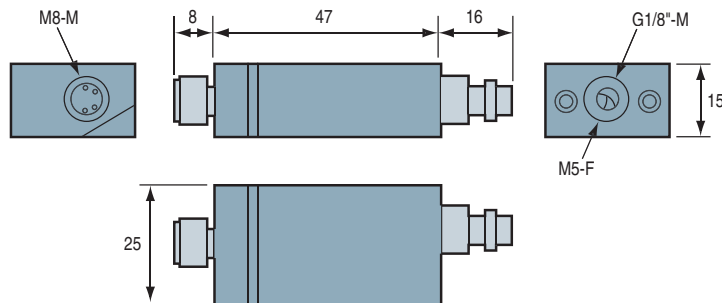
Electrical Diagrams

- M8 connector



- 1 = + 24 V (Brown)
- 2 = analog output from 1 to 5 VDC (white)
- 3 = 0 V common (blue)

Dimensions



Note: all dimensions shown in (mm)

Accessories

- Straight or elbow connector, see page 10/11.



For all orders, please specify: PSP 100 ANA

PSE 100 E

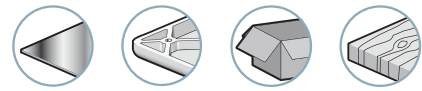
Electric Vacuum Switch



The PSE 100 E series vacuum switch with electric output allows the vacuum level in the system to be checked by means of a patented system.

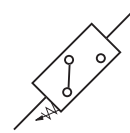
- It is adapted to all electrical automated systems.
- The choice between the NO or NC function is made during wiring.

Industry-specific applications



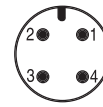
Specifications

| | |
|---------------------------------|--|
| Models | Two versions: PSE 100 E and PSE 100 EC |
| Compatible fluids | All non-corrosive gases |
| Switching power | 250 V - 5 A with cable 250 V - 3 A with M12 |
| Electrical connection | M12 female connector or 3 wire PVC cable, length 2 m |
| Adjustment range | -300 mb to -850 mb |
| Precision | 3% |
| Hysteresis | 125 mb |
| Repetitivity | < 3% of the whole range |
| Maximum speed | 30 cycles per minute |
| Permissible overpressure | 2 bar (destructive at 5 bar) |
| Mechanical endurance | 5 x 10 ⁶ operations |
| Materials | Body: Polyacetal - Vacuum sensor: nitrile membrane |
| Protection | IP 54 with hollow shaft connected - IP 40 without this fitting |
| Weight | PSE 100 E: 165 g and PSE 100 EC: 37 g |
| Temperature | 14 °F to 176 °F |



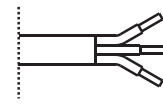
Electrical Connection

M12 connector



- 1: Common
- 2: NO Contact
- 3: -
- 4: NC Contact

PVC cable (length 2m)

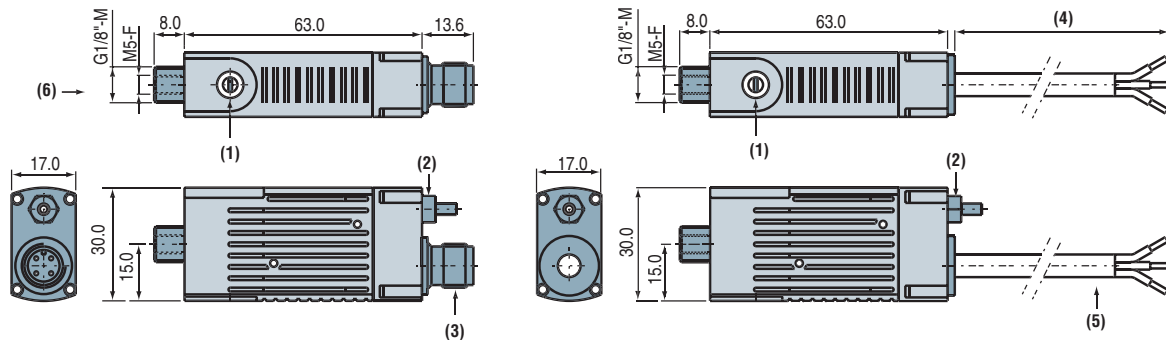


- Brown: Common
- White: NO Contact
- Black: NC Contact

Connection for EC version (M12)

Straight PVC cable, 2 meters: Part No CD M12.
Elbow PVC cable, 2 meters: Part No CC M12.
See page 10/11.

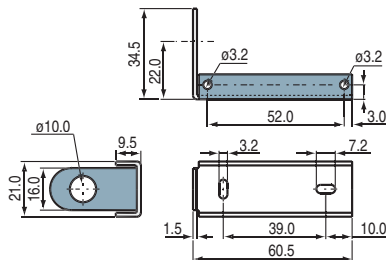
Dimensions



- (1) Adjustment screw
- (2) Atmospheric pressure hollow shaft fitting for tube, inside Ø 2.7mm
- (3) M12 male connector
- (4) Approx. 2 meters
- (5) Cable, 3 conductors
- (6) Vacuum

Additional Information

Vacuum switch attachment - Clip Part No: PSE.F



Note: all dimensions shown in (mm)

For all orders, please specify:
Model + Version.
Example: PSE100EC

| 1: Model | 2: Version |
|-----------|------------------------|
| PSE 100 E | - PVC cable, length 2m |
| | C M12 connector |

PSE 100 E

11

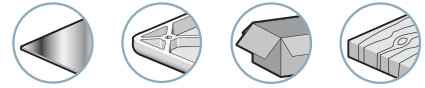
PSE 100 P

Pneumatic Vacuum Switch

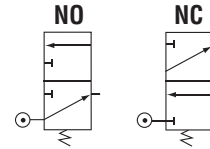


The PSE 100 P series vacuum switch with pneumatic output allows the vacuum level in the system to be checked by means of a patented system. This vacuum switch exists in two versions: NO version recommended for the "air saving" function on a venturi and NC version for the "safety" function (object detected, etc.) and "SFC signal".

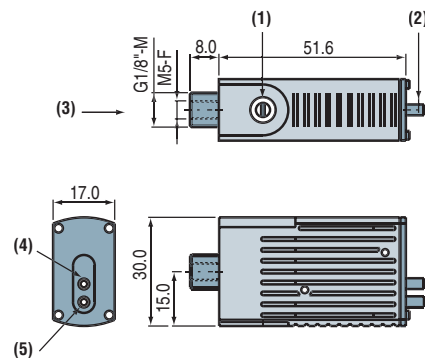
Industry-specific applications



| Specifications | |
|---------------------------------|--|
| Models | Two versions: NO and NC |
| Compatible fluids | All non-corrosive gases |
| Pression d'utilisation | 2 to 6 bar |
| Adjustment range | - 300 mb to -850 mb |
| Precision | 3% |
| Hysteresis | 80 to 100 mb |
| Repetitivity | < 3% of the whole range |
| Maximum speed | 30 cycles per minute |
| Permissible overpressure | 2 bar (destructive at 5 bar) |
| Mechanical endurance | 5 x 10 ⁶ operations |
| Materials | Body: Polyacetal - Vacuum sensor: nitrile membrane |
| Weight | 32 g |
| Temperature | 14 °F to 176 °F |
| Flow rate at 6 bar | 2.47 SCFM |



Dimensions

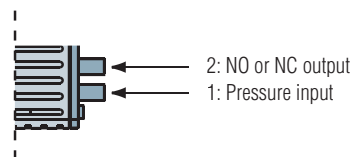


- (1) Vacuum threshold - Adjustment screw
- (2) Hollow shaft for tube, inside \varnothing 2.7 mm
- (3) Vacuum
- (4) NO or NC output
- (5) Pressure input

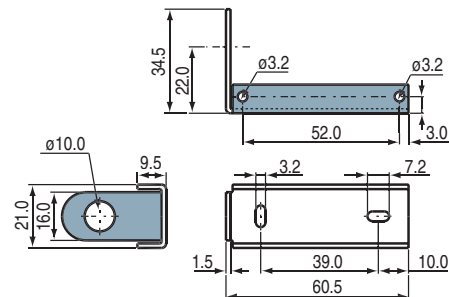
Additional Information

- Mounting as GVO option in the GVP / GEMP vacuum pump range.

Pneumatic connection



Vacuum switch attachment - Clip Part No: PSE.F



For all orders, please specify:
Model + Version.
Example: PSE100PNO

| 1: Model | 2: Version |
|-----------|-------------------------|
| PSE 100 P | NO Normally Open (NO) |
| | NF Normally Closed (NC) |

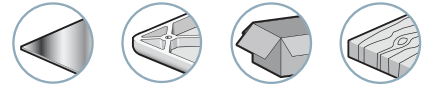
Note: all dimensions shown in (mm)

PSE 100 PK

Pneumatic Vacuum Switch



Industry-specific applications



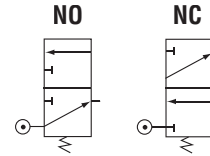
The PSE 100 K vacuum switch with pneumatic output is used to check the vacuum level in the circuit.

It is recommended for measuring slowly changing vacuum levels such as regulating or checking vacuum levels in networks over 1 liter.

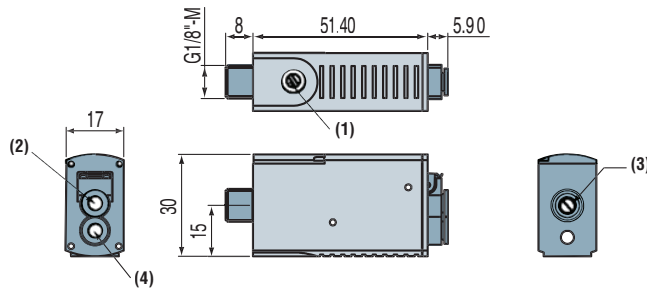
This vacuum switch exists in two versions: NO version recommended for the "air saving" function on a venturi and NC version for the "safety" function (object detected, etc.) and "SFC signal".

Specifications

| | |
|---------------------------------|--|
| Models | Two versions: NO and NC |
| Compatible fluids | All non-corrosive, non-lubricated gases |
| Operating pressure | 2 to 6 bar |
| Adjustment range | NF: -250 to -830 mb, NO: -350 to -880 mb |
| Precision | ± 10 % |
| Hysteresis | NF: 10 mb - NO: 200 mb |
| Repetitivity | < 3% of the whole range |
| Maximum speed | 30 cycles per minute |
| Permissible overpressure | 2 bar (destructive at 5 bar) (on vacuum measuring orifice) |
| Mechanical endurance | 5 x 10 ⁶ operations |
| Materials | Body: Polyacetal - Vacuum sensor: nitrile membrane |
| Weight | 32 g |
| Temperature | 14 °F to 176 °F |
| Flow rate at 6 bar | 2.33 SCFM |



Dimensions

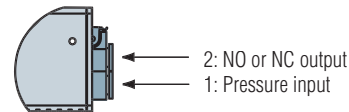


- (1) Vacuum threshold adjustment
 (2) Signal output, NC or NO tube
 (3) M5 Vacuum input
 (4) Pressure input Ø4 tube

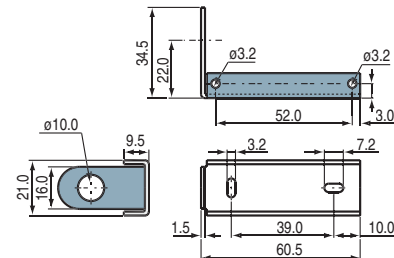
Additional Information

- Mounting in GVO option in the GVP / GEMP vacuum pump range.

Pneumatic connection



Vacuum switch attachment - Clip Part No: PSE.F



Note: all dimensions shown in (mm)

PSE 100 PK

11



For all orders, please specify:
Model + Version.
 Example: PSE100PKNO

| 1: Model | 2: Version |
|------------|-------------------------|
| PSE 100 PK | NO Normally Open (NO) |
| | NF Normally Closed (NC) |