

Piloted check valves HGL

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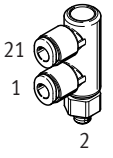
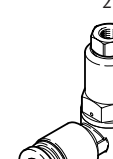
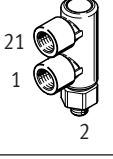
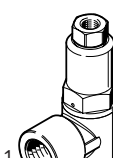
★ Generally ready for shipping ex works in 24 hours
In stock at 13 Service Centres worldwide
More than 2200 products

★ Generally ready for shipping ex works in 5 days
Assembled for you at 4 Service Centres worldwide
Up to 6×10^{12} variants per product family

Just look
for the
star!

Product range overview and type codes

Product range overview

| Valve function | Design | Pneumatic connection 1 | Pneumatic connection 2 | Pilot air connection 21 | q _{nN} [l/min] | → Page/Internet | |
|-----------------------------|-------------------|------------------------------------------------------------------------------------|--------------------------------|----------------------------|-------------------------|-----------------|---|
| Piloted non-return function | Push-in connector |  | QS-4 | M5 | QS-4 | 130 | 3 |
| | |  | QS-4, QS-6, QS-8, QS-10, QS-12 | G1/8, G1/4, G3/8, G1/2 | M5, G1/8, G1/4, G3/8 | 200 ... 1400 | 3 |
| | Female thread |  | M5 | M5 | M5 | 130 | 6 |
| | |  | M5, G1/8, G1/4, G3/8, G1/2 | M5, G1/8, G1/4, G3/8, G1/2 | M5, G1/8, G1/4, G3/8 | 300 ... 1600 | 6 |

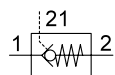
Type codes

| | |
|------------|-------------------------------|
| 001 | Series |
| HGL | Piloted check valve |
| 002 | Pneumatic connection 2 |
| M5 | Male thread M5 |
| 1/8 | Male thread G1/8 |
| 1/4 | Male thread G1/4 |
| 3/8 | Male thread G3/8 |
| 1/2 | Male thread G1/2 |

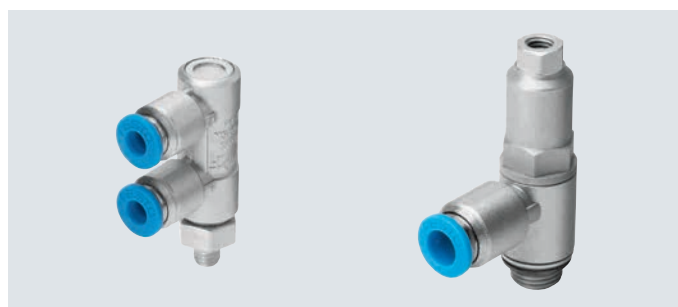
| | |
|--------------|------------------------------------|
| 003 | Pneumatic connection 1 |
| | Connection size as for port 1 or 2 |
| QS-4 | Push-in connector 4 mm |
| QS-6 | Push-in connector 6 mm |
| QS-8 | Push-in connector 8 mm |
| QS-10 | Push-in connector 10 mm |
| QS-12 | Push-in connector 12 mm |
| 004 | Generation |
| | None |
| B | Series B |

Data sheet – Push-in connector

Function



- - Flow rate
130 ... 1400 l/min
- - Temperature range
-10 ... +60°C
- - Operating pressure
0.5 ... 10 bar



The piloted check valve is suitable for brief positioning and braking functions in pneumatic drives. Compressed air flows to and from the drive as long as a control signal is applied to pneumatic connection 21. If

no control signal is applied, the valve shuts off the exhaust air from the drive in flow direction 2 → 1 and the movement of the drive is stopped.

- Proven component suitable for use in safety-related systems
- Swivel joint can be turned after mounting
- Manual exhausting of air trapped in the cylinder with manual override HAB as an accessory → page 9

Note

If used in safety-related applications, additional measures are necessary, e.g. in Europe the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with legally specified minimum requirements, the product is not suitable as a safety-related component in control systems.

| General technical data | | M5 | G1/8 | G1/4 | G3/8 | G1/2 |
|--------------------------------|--|-----------------------------|------------|-------------|-------------|---------|
| Pneumatic connection 2 | | M5 | G1/8 | G1/4 | G3/8 | G1/2 |
| Pneumatic connection 1 | | QS-4 | QS-4, QS-6 | QS-8, QS-10 | QS-8, QS-10 | QS-12 |
| Pilot air connection 21 | | QS-4 | M5 | G1/8 | G1/4 | G3/8 |
| Valve function | | Piloted non-return function | | | | |
| Actuation type | | Pneumatic | | | | |
| Type of mounting | | Screw-in, via male thread | | | | |
| Mounting position | | Any | | | | |
| Nominal tightening torque [Nm] | | 1.25 ±10% | 3.5 ±10% | 11 ±10% | 12.5 ±10% | 14 ±10% |

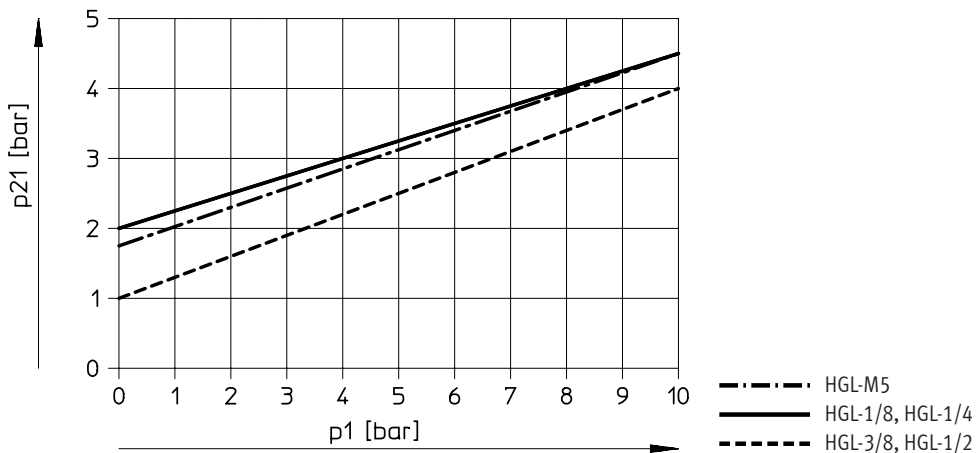
† Note: This product conforms to ISO 1179-1 and ISO 228-1.

| Operating and environmental conditions | | M5 | G1/8 | G1/4 | G3/8 | G1/2 |
|-------------------------------------------------------|--|--------------------------------------------------------------------------------------------|------|------|----------|------|
| Operating pressure for entire temperature range [bar] | | 0.5 ... 10 | | | | |
| Pilot pressure [bar] | | 2 ... 10 | | | 1 ... 10 | |
| Operating/pilot medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) | | | | |
| Ambient temperature [°C] | | -10 ... +60 | | | | |
| Temperature of medium [°C] | | -10 ... +60 | | | | |
| Storage temperature [°C] | | -10 ... +60 | | | | |
| Corrosion resistance class CRC ¹⁾ | | 2 | | | | |
| Maritime classification | | See certificate ²⁾ | | | | |

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
- 2) Additional information is available at www.festo.com/sp → Certificates.

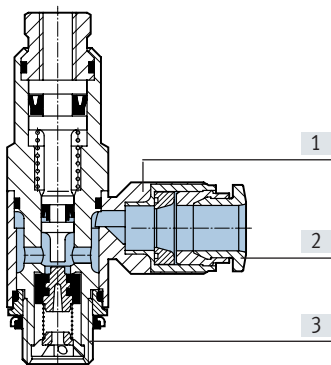
Data sheet – Push-in connector

Minimum pilot pressure p21 as a function of operating pressure p1



Materials

Sectional view



| Piloted check valve | |
|----------------------------|----------------------------------|
| [1] Swivel joint | Die-cast zinc |
| [2] Releasing ring | POM |
| [3] Hollow bolt | Anodised wrought aluminium alloy |
| - Seals, non-return collar | NBR |
| Note on materials | RoHS-compliant |
| | Free of copper and PTFE |

Data sheet – Push-in connector

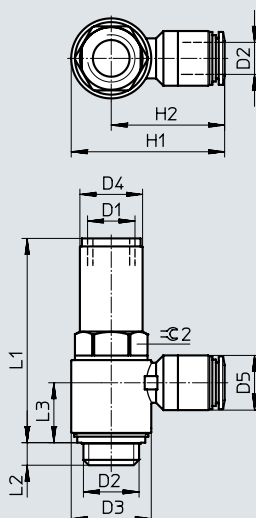
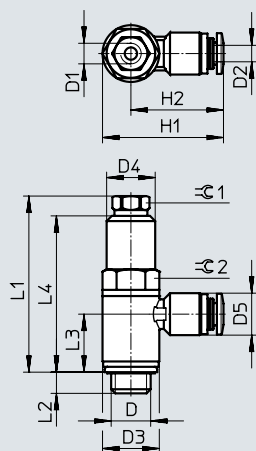
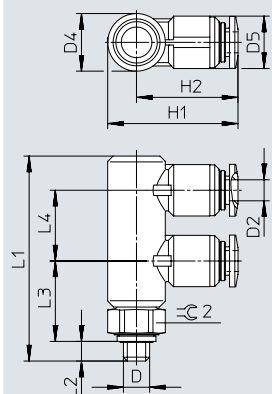
Dimensions

Download CAD data → www.festo.com

HGL-M5

HGL-1/8, HGL-1/4, HGL-3/8

HGL-1/2

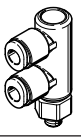
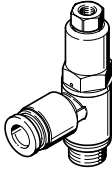


| Type | D | D1 | D2 | D3 ∅ | D4 ∅ | D5 ∅ | H1 | H2 | L1 | L2 | L3 | L4 | ∅ 1 | ∅ 2 |
|---------------|------|------|----|---------|---------|---------|------|------|------|-----|------|------|-----|-----|
| HGL-M5-QS-4 | M5 | - | 4 | - | 11 | 10 | 24.9 | 19.4 | 39 | 4 | 15 | 13.5 | - | 10 |
| HGL-1/8-QS-4 | G1/8 | M5 | 4 | 13.8 | 11.8 | 10.2 | 29.4 | 22.5 | 42.6 | 5.4 | 13.9 | 37.8 | 8 | 12 |
| HGL-1/8-QS-6 | | | 6 | | | 12.5 | | | | | 13.2 | | | |
| HGL-1/4-QS-8 | G1/4 | G1/8 | 8 | 17.8 | 16 | 14.5 | 39.6 | 30.7 | 50.8 | 6.5 | 16.6 | 44.5 | 12 | 16 |
| HGL-1/4-QS-10 | | | 10 | | | 17.5 | | | | | 42 | | | |
| HGL-3/8-QS-8 | G3/8 | G1/4 | 8 | 22.4 | 18.8 | 14.5 | 44.1 | 32.9 | 56.3 | 7 | 18.2 | 49.5 | 15 | 19 |
| HGL-3/8-QS-10 | | | 10 | | | 17.5 | | | | | 46.7 | | | |
| HGL-1/2-QS-12 | G1/2 | G3/8 | 12 | 27.8 | 23.5 | 20.5 | 55.3 | 41.4 | 75.8 | 8.8 | 22.4 | - | - | 24 |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

★ Core product range

Ordering data

| | Pneumatic connection | | Pilot air connection | Standard nominal flow rate qnN at 6 bar → 5 bar [l/min] | Standard flow rate qn at 6 bar → 0 bar [l/min] | Weight [g] | Part no. | Type |
|-------------------------------------------------------------------------------------|----------------------|-------|----------------------|---------------------------------------------------------------|------------------------------------------------------|---------------|-----------------------------|-----------------------------|
| | 2 | 1 | 21 | | | | | |
|  | M5 | QS-4 | QS-4 | 130 | 200 | 21 | ★ 530038 | HGL-M5-QS-4 ¹⁾ |
|  | G1/8 | QS-4 | M5 | 200 | 300 | 18.4 | ★ 530039 | HGL-1/8-QS-4 ¹⁾ |
| | | QS-6 | M5 | 270 | 400 | 21.4 | ★ 530040 | HGL-1/8-QS-6 ¹⁾ |
| | G1/4 | QS-8 | G1/8 | 390 | 640 | 38.7 | ★ 530041 | HGL-1/4-QS-8 ¹⁾ |
| | | QS-10 | G1/8 | 400 | 670 | 45 | ★ 530042 | HGL-1/4-QS-10 ¹⁾ |
| | G3/8 | QS-8 | G1/4 | 830 | 1200 | 54.7 | ★ 530043 | HGL-3/8-QS-8 ¹⁾ |
| | | QS-10 | G1/4 | 890 | 1300 | 60.3 | ★ 530044 | HGL-3/8-QS-10 ¹⁾ |
| G1/2 | QS-12 | G3/8 | 1400 | 2100 | 116.9 | ★ 530045 | HGL-1/2-QS-12 ¹⁾ | |

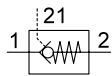
1) Sealing ring for male thread is included in the scope of delivery.

Festo core product range

- ★ Generally ready for shipping ex works in 24 hours
- ★ Generally ready for shipping ex works in 5 days

Data sheet – Female thread

Function



- - Flow rate
130 ... 1600 l/min
- - Temperature range
-10 ... +60°C
- - Operating pressure
0.5 ... 10 bar



The piloted check valve is suitable for brief positioning and braking functions in pneumatic drives.

Compressed air flows to and from the drive as long as a control signal is applied to pneumatic connection 21. If

no control signal is applied, the valve shuts off the exhaust air from the drive in flow direction 2 → 1 and the movement of the drive is stopped.

- Proven component suitable for use in safety-related systems
- Swivel joint can be turned after mounting
- Manual exhausting of air trapped in the cylinder with manual override HAB as an accessory → page 9

- **Note**

If used in safety-related applications, additional measures are necessary, e.g. in Europe the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with legally specified minimum requirements, the product is not suitable as a safety-related component in control systems.

General technical data

| | | | | | |
|--------------------------------|-----------------------------|----------|---------|-----------|---------|
| Pneumatic connection 2 | M5 | G1/8 | G1/4 | G3/8 | G1/2 |
| Pneumatic connection 1 | M5 | G1/8 | G1/4 | G3/8 | G1/2 |
| Pilot air connection 21 | M5 | M5, G1/8 | G1/8 | G1/4 | G3/8 |
| Valve function | Piloted non-return function | | | | |
| Actuation type | Pneumatic | | | | |
| Type of mounting | Screw-in, via male thread | | | | |
| Mounting position | Any | | | | |
| Nominal tightening torque [Nm] | 1.25 ±10% | 3.5 ±10% | 11 ±10% | 12.5 ±10% | 14 ±10% |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

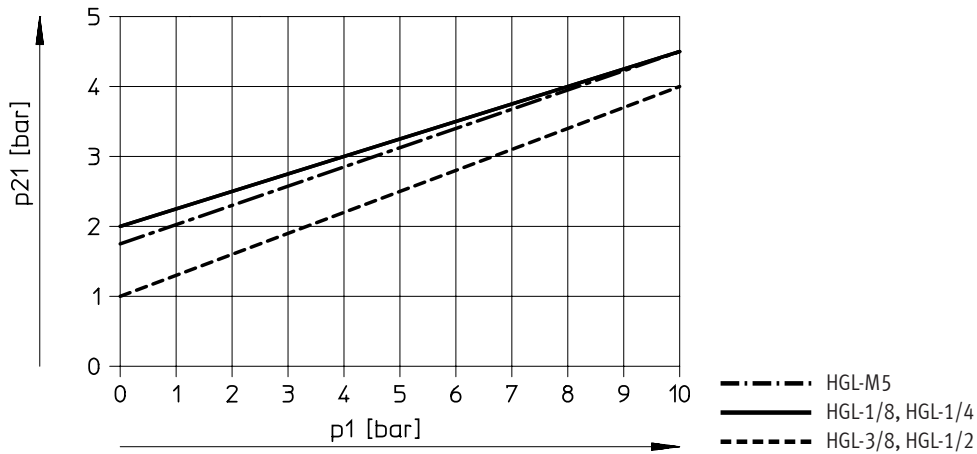
Operating and environmental conditions

| | | | | | |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------|------|------|----------|------|
| Pneumatic connection 2 | M5 | G1/8 | G1/4 | G3/8 | G1/2 |
| Operating pressure for entire temperature range [bar] | 0.5 ... 10 | | | | |
| Pilot pressure [bar] | 2 ... 10 | | | 1 ... 10 | |
| Operating/pilot medium | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | |
| Note on the operating/pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) | | | | |
| Ambient temperature [°C] | -10 ... +60 | | | | |
| Temperature of medium [°C] | -10 ... +60 | | | | |
| Storage temperature [°C] | -10 ... +60 | | | | |
| Corrosion resistance class CRC ¹⁾ | 2 | | | | |
| Maritime classification | See certificate ²⁾ | | | | |

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.
- 2) Additional information is available at www.festo.com/sp → Certificates.

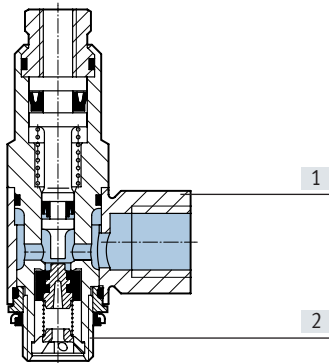
Data sheet – Female thread

Minimum pilot pressure p_{21} as a function of operating pressure p_1



Materials

Sectional view



| Piloted check valve | |
|----------------------------|----------------------------------|
| [1] Swivel joint | Die-cast zinc |
| [2] Hollow bolt | Anodised wrought aluminium alloy |
| - Seals, non-return collar | NBR |
| Note on materials | RoHS-compliant |
| | Free of copper and PTFE |

Data sheet – Female thread

Dimensions

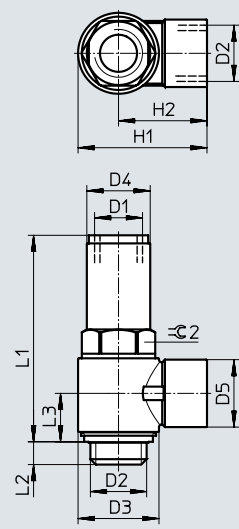
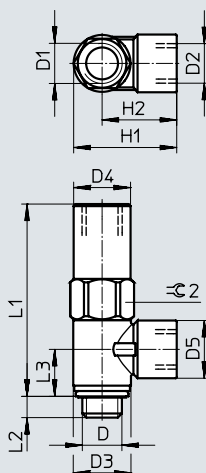
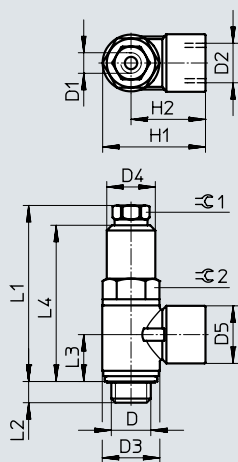
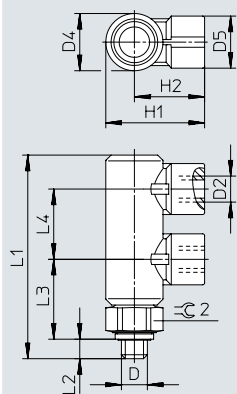
Download CAD data → www.festo.com

HGL-M5-B

HGL-1/8-B, HGL-1/4-B, HGL-3/8-B

HGL-1/8-1/8-B

HGL-1/2-B



| Type | D | D1 | D2 | D3 ∅ | D4 ∅ | D5 ∅ | H1 | H2 | L1 | L2 | L3 | L4 | ⌀ 1 | ⌀ 2 |
|---------------|------|------|------|---------|---------|---------|------|------|------|-----|------|------|-----|-----|
| HGL-M5-B | M5 | - | M5 | - | 11 | 10 | 19 | 13.5 | 39 | 4 | 15 | 13.5 | - | 10 |
| HGL-1/8-B | G1/8 | M5 | G1/8 | 14 | 11.8 | 14 | 25.1 | 18.1 | 42.6 | 5.4 | 11.2 | 37.8 | 8 | 12 |
| HGL-1/8-1/8-B | G1/8 | G1/8 | G1/8 | 14 | 13.8 | 14 | 25.1 | 18.1 | 46.7 | 5.2 | 11.2 | - | - | 14 |
| HGL-1/4-B | G1/4 | G1/8 | G1/4 | 18 | 16 | 17.5 | 34 | 25 | 50.8 | 6.5 | 13.5 | 44.5 | 12 | 16 |
| HGL-3/8-B | G3/8 | G1/4 | G3/8 | 23.8 | 18.8 | 20 | 39.3 | 27.4 | 56.3 | 7 | 15.1 | 49.5 | 15 | 19 |
| HGL-1/2-B | G1/2 | G3/8 | G1/2 | 30 | 23.5 | 25 | 47.8 | 32.8 | 75.8 | 8.8 | 17.7 | - | - | 24 |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

★ Core product range

| Ordering data | Pneumatic connection | | Pilot air connection | Standard nominal flow rate qnN at 6 bar → 5 bar [l/min] | Standard flow rate qn at 6 bar → 0 bar [l/min] | Weight [g] | Part no. | Type |
|---------------|----------------------|------|----------------------|---------------------------------------------------------------|------------------------------------------------------|---------------|----------|-----------------------------|
| | 2 | 1 | 21 | | | | | |
| | M5 | M5 | M5 | 130 | 200 | 21 | ★ 530029 | HGL-M5-B ¹⁾ |
| | G1/8 | G1/8 | M5 | 300 | 430 | 20.8 | ★ 530030 | HGL-1/8-B ¹⁾ |
| | | | G1/8 | 300 | 430 | 26.2 | ★ 543253 | HGL-1/8-1/8-B ¹⁾ |
| | G1/4 | G1/4 | G1/8 | 550 | 680 | 41.2 | ★ 530031 | HGL-1/4-B ¹⁾ |
| | G3/8 | G3/8 | G1/4 | 1100 | 1500 | 62.9 | ★ 530032 | HGL-3/8-B ¹⁾ |
| | G1/2 | G1/2 | G3/8 | 1600 | 2100 | 129.4 | ★ 530033 | HGL-1/2-B ¹⁾ |

1) Sealing ring for male thread is included in the scope of delivery.

Festo core product range

- ★ Generally ready for shipping ex works in 24 hours
- ★ Generally ready for shipping ex works in 5 days

Accessories

Manual override HAB

For check valve HGL

- For manual exhausting of air trapped in a cylinder

Material:

Housing: Anodised wrought aluminium alloy

Note on materials:

RoHS-compliant



| General technical data | | G1/8 | G1/4 | G3/8 | G1/2 |
|----------------------------|---------|-------------------|------|------|------|
| Pneumatic connection 2 | | G1/8 | G1/4 | G3/8 | G1/2 |
| Pneumatic connection 1 | | G1/8 | G1/4 | G3/8 | G1/2 |
| Nominal size | [mm] | 4.1 | 7 | 11 | 14 |
| Valve function | | Exhaust component | | | |
| Type of mounting | | Screw-in | | | |
| Mounting position | | Any | | | |
| Standard flow rate exhaust | [l/min] | 165 | | | |
| 6 → 0 bar | | | | | |
| Max. tightening torque | [Nm] | 4 | 11 | 40 | 50 |

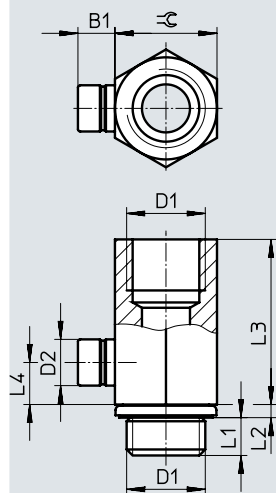
| Operating and environmental conditions | |
|----------------------------------------------|--------------------------------------------------------------------------------------------|
| Operating pressure | [bar] 0 ... 10 |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on the operating/pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) |
| Ambient temperature | [°C] -20 ... +80 |
| Temperature of medium | [°C] -20 ... +80 |
| Corrosion resistance class CRC ¹⁾ | 2 |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Dimensions

Download CAD data → www.festo.com



| Dimensions and ordering data | | | | | | | | | | |
|------------------------------|-----|------|---------|------|------|------|----|----|----------|---------|
| Connection | B1 | D1 | D2 ø | L1 | L2 | L3 | L4 | ☉ | Part no. | Type |
| G1/8 | 6.2 | G1/8 | 7.7 | 4.7 | 1.8 | 19.1 | 5 | 13 | 184585 | HAB-1/8 |
| G1/4 | 6.2 | G1/4 | 7.7 | 5.8 | 2.2 | 28 | 7 | 17 | 184586 | HAB-1/4 |
| G3/8 | 6.2 | G3/8 | 7.7 | 6.05 | 3.35 | 28.4 | 7 | 19 | 184587 | HAB-3/8 |
| G1/2 | 6.2 | G1/2 | 7.7 | 7.9 | 2.6 | 38.5 | 7 | 24 | 184588 | HAB-1/2 |

† Note: This product conforms to ISO 1179-1 and ISO 228-1.

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