

Adsorption dryer PDAD

FESTO



Characteristics

At a glance

Cold-regenerating adsorption dryer with defined pressure dew point and high flow rate for decentralised compressed air drying. Adsorption dryers are always required when pressure dew points of less than -20°C need to be reliably achieved.

- Defined fixed pressure dew point -40°C or -70°C (with reduced flow rate)
- Integrated filtering of oil and particulates
- High flow rate performance of up to 2400 l/min
- Selectable voltage for electrical connection

The air flow is filtered in the pre-filter supplied, a micro filter with a grade of filtration of $0.01\ \mu\text{m}$. It protects the drying agent from interfering dirt and oil particles. The adsorption dryer has two (four in the PDAD-100) cartridges filled with drying agent.

The damp compressed air flows alternately through one of the two cartridges, whereby the water is deposited on the surface of the drying agent. After a preset time, the air flow is switched to the other cartridge and some of the dried air (purge air) is used to regenerate the drying agent in the first cartridge. The purge air escapes into the atmosphere.

Note: The drying agent has a service life of 12000 operating hours. The average purge air requirement at nominal conditions (7 bar/ 25°C) is approx. 17%. If the dryer is used under different operating conditions, the ratio of input air/purge air could change, as purge air consumption depends only on the input pressure and not on the output flow rate used. It is therefore necessary to adjust the purge air volume to different input pressures by replacing the air gun nozzle (air gun nozzle set with 3 air gun nozzles ADNA)

Type code

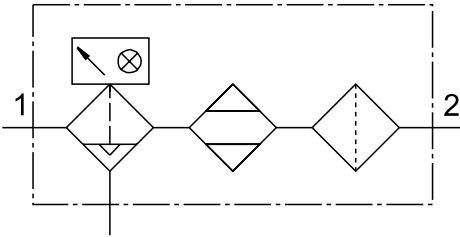
| | | |
|-------------|------------------|--|
| 001 | Series | |
| PDAD | Adsorption dryer | |

| | | |
|-------------|------------------------------|--|
| 002 | Dryer version | |
| F9 | Nominal flow rate 90 l/min | |
| F13 | Nominal flow rate 130 l/min | |
| F22 | Nominal flow rate 220 l/min | |
| F51 | Nominal flow rate 510 l/min | |
| F73 | Nominal flow rate 730 l/min | |
| F100 | Nominal flow rate 1000 l/min | |

| | | |
|------------|-----------------------------|--|
| 003 | Pneumatic connection | |
| G12 | G1/2 | |
| G38 | G3/8 | |

Datasheet

General technical data



| Dryer version | Nominal flow rate 90 l/min | Nominal flow rate 130 l/min | Nominal flow rate 220 l/min | Nominal flow rate 510 l/min | Nominal flow rate 730 l/min | Nominal flow rate 1000 l/min |
|--|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|
| Pneumatic connection, port 1 | G3/8 | | | | G1/2 | |
| Pneumatic connection, port 2 | G3/8 | | | | G1/2 | |
| Design | Cold regenerating adsorption dryer | | | | | |
| Type of mounting | With accessories | | | | | |
| Mounting position | Vertical, Horizontal | | | | | |
| Pressure dew point | -40°C | | | | | |
| Pressure dewpoint with reduced cross-section | -70°C | | | | | |
| Air purity class at output | Compressed air to ISO 8573-1:2010 [2:1:2] at -70°C Compressed air to ISO 8573-1:2010 [2:2:2] at -40°C | | | | | |
| Pollution degree | 2 | | | | | |

Electrical data

| | |
|--|--|
| Electrical connection 1, function | Power supply AC |
| Electrical connection 1, connection type | Socket |
| Electrical connection 1, connector system | Plug pattern type C to industry standard, 9.4 mm |
| Electrical connection 1, number of connections/cores | 3 |
| Electrical connection 1, used connections/cores | 2 |
| Electrical connection 2, function | Power supply DC |
| Electrical connection 2, connection type | Socket |
| Electrical connection 2, connector system | Plug pattern type C to industry standard, 9.4 mm |
| Electrical connection 2, number of connections/cores | 4 |
| Electrical connection 2, used connections/cores | 2 |
| Power consumption at 24VDC | 9.6 W |
| Power consumption at 230 VAC | 16 VA |
| Degree of protection | IP65 |
| Protection class | II |
| Overvoltage category | II |

Datasheet

Operating and environmental conditions

| | |
|--|--|
| Inlet pressure 1 | 4 ... 16 bar |
| Operating medium | Compressed air to ISO 8573-1:2010 [6:-:4] |
| Note on operating and pilot medium | Lubricated operation not possible, No water in liquid form |
| Ambient temperature | 5 ... 50°C |
| Media temperature | 2 ... 50°C |
| Storage temperature | -20 ... 60°C |
| Corrosion resistance class CRC ¹⁾ | 2 - Moderate corrosion stress |
| CE mark (see declaration of conformity) ²⁾ | In accordance with EU Pressure Equipment Directive, To EU EMC Directive, To EU Low Voltage Directive |
| CE marking (see declaration of conformity) ³⁾ | to UK Pressure Equipment Regulations, To UK instructions for EMC, To UK regulations for electrical equipment |
| KC mark | KC-EMV |

1) Further information www.festo.com/x/topic/crc

2) Further information www.festo.com/catalogue/pdad → Support/Downloads. EMC: if the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

3) Further information www.festo.com/catalogue/pdad → Support/Downloads. EMC: if the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

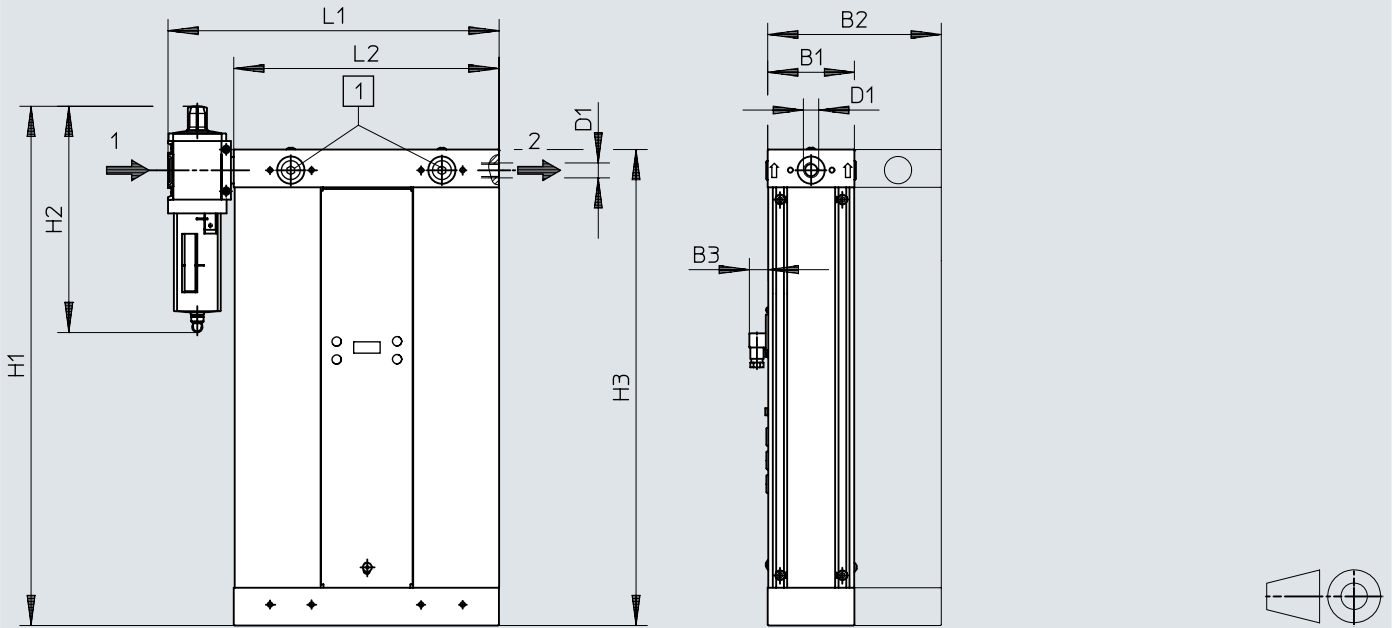
Materials

| | |
|------------------------|-------------------------|
| Material housing | Wrought aluminium alloy |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L |

Dimensions

Dimensions – with pre-filter and connecting kit

Download CAD data → www.festo.com



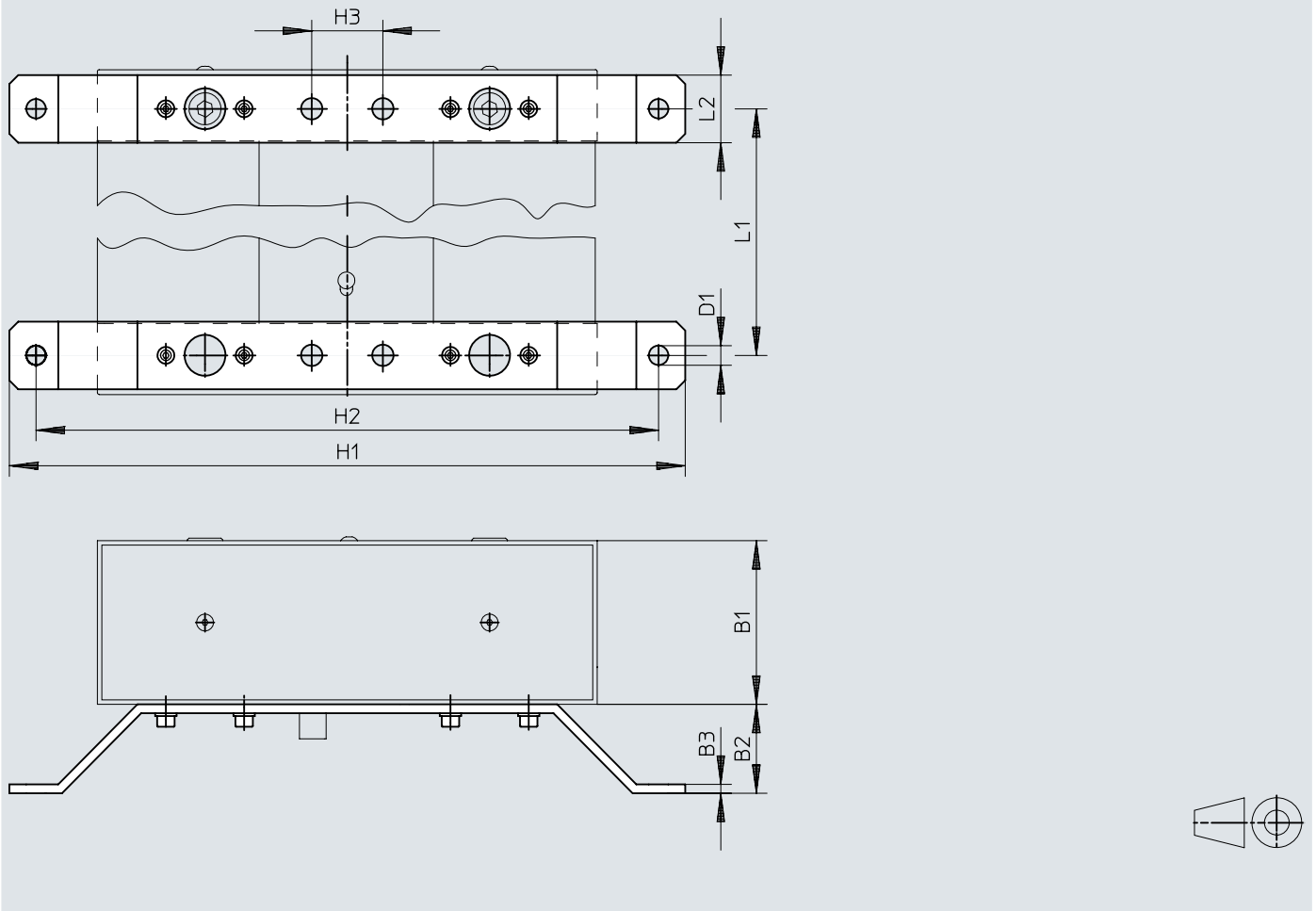
[1] Blanking plug

| | B1 | B2 | B3 | D1 | H1 | H2 | H3 | L1 | L2 |
|----------|-----|------|-----|------|-------|------|-------|------|------|
| PDAD-09 | ~92 | – | ~20 | G3/8 | ~491 | ~240 | ~445 | ~351 | ~281 |
| PDAD-13 | ~92 | – | ~20 | G3/8 | ~550 | ~240 | ~504 | ~351 | ~281 |
| PDAD-22 | ~92 | – | ~20 | G3/8 | ~681 | ~240 | ~635 | ~351 | ~281 |
| PDAD-51 | ~92 | – | ~20 | G3/8 | ~1111 | ~240 | ~1065 | ~351 | ~281 |
| PDAD-73 | ~92 | – | ~20 | G1/2 | ~1506 | ~360 | ~1460 | ~351 | ~281 |
| PDAD-100 | – | ~184 | ~20 | G1/2 | ~1111 | ~360 | ~1065 | ~351 | ~281 |

Dimensions

Dimensions – Wall mounting kit ABMW

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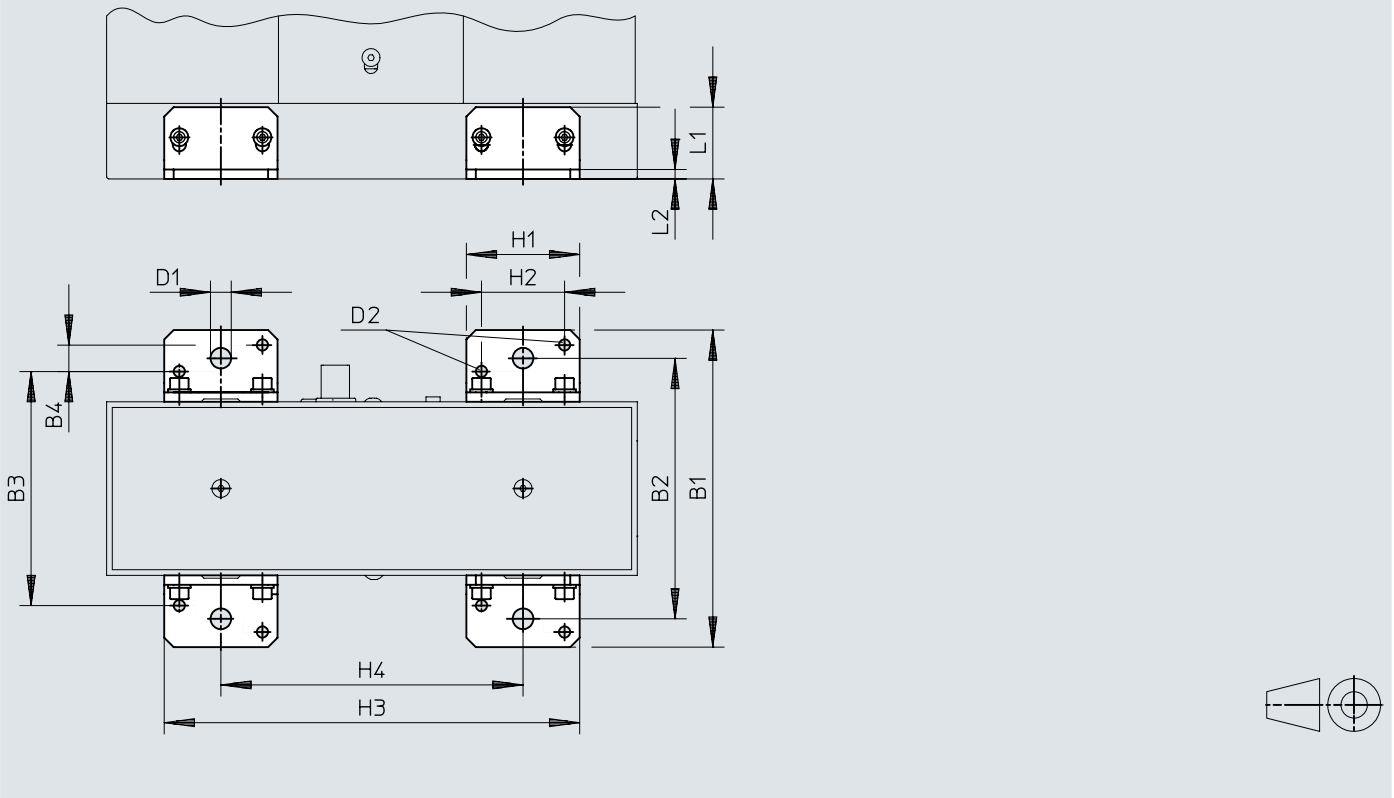


| | | B1 | B2 | B3 | D1 ∅ | H1 | H2 | H3 | L1 | L2 |
|-----------|----------|-----|----|----|---------|-----|-----|----|------|----|
| ABMW-PDAD | PDAD-09 | 92 | 50 | 5 | 11 | 380 | 350 | 40 | 401 | 38 |
| | PDAD-13 | 92 | 50 | 5 | 11 | 380 | 350 | 40 | 460 | 38 |
| | PDAD-22 | 92 | 50 | 5 | 11 | 380 | 350 | 40 | 591 | 38 |
| | PDAD-51 | 92 | 50 | 5 | 11 | 380 | 350 | 40 | 1021 | 38 |
| | PDAD-73 | 92 | 50 | 5 | 11 | 380 | 350 | 40 | 1416 | 38 |
| | PDAD-100 | 184 | 50 | 5 | 11 | 380 | 350 | 40 | 1021 | 38 |

Dimensions


Dimensions – Foot mounting ABMF

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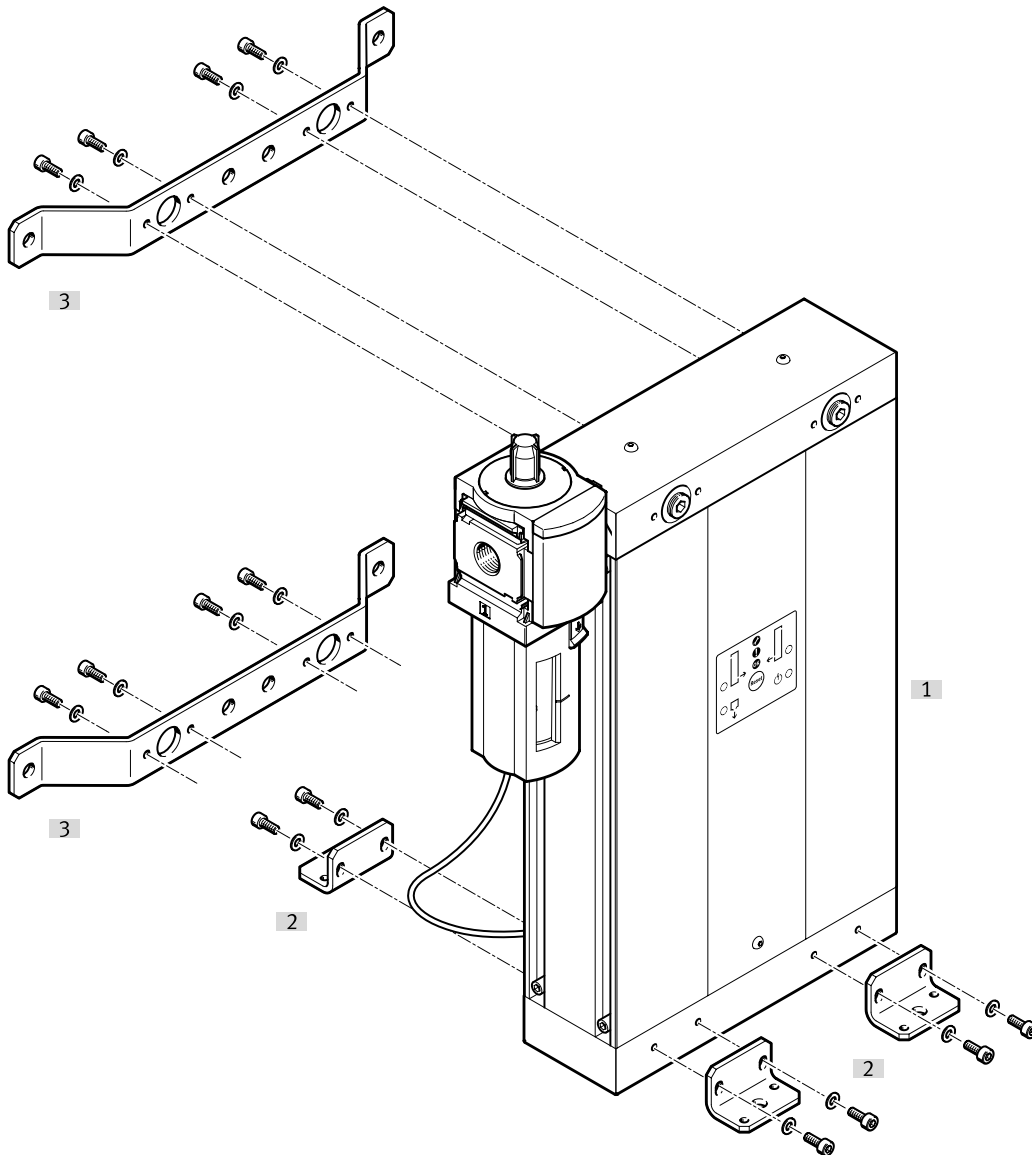
| | | B1 | B2 | B3 | B4 | D1 ∅ | D2 ∅ | H1 | H2 | H3 | H4 | L1 | L2 |
|-----------|---------------------|-----|-----|-----|----|---------|---------|----|----|-----|-----|----|----|
| ABMF-PDAD | PDAD-09/13/22/51/73 | 168 | 138 | 124 | 14 | 11 | 6 | 60 | 44 | 220 | 160 | 38 | 5 |
| | PDAD-100 | 260 | 230 | 216 | 14 | 11 | 6 | 60 | 44 | 220 | 160 | 38 | 5 |

Ordering data

| Order details (with pre-filter, connection kit, power supply socket) | | | | | | |
|---|------------------------------|------------------------------|------------------------------|----------------|----------|---------------|
| | Pneumatic connection, port 1 | Pneumatic connection, port 2 | Dryer version | Product weight | Part no. | Type |
|  | G3/8 | G3/8 | Nominal flow rate 90 l/min | 13000 g | 552170 | PDAD-09-G3/8 |
| | | | Nominal flow rate 130 l/min | 14000 g | 552171 | PDAD-13-G3/8 |
| | | | Nominal flow rate 220 l/min | 16500 g | 552172 | PDAD-22-G3/8 |
| | | | Nominal flow rate 510 l/min | 24000 g | 552173 | PDAD-51-G3/8 |
| | G1/2 | G1/2 | Nominal flow rate 730 l/min | 31000 g | 552174 | PDAD-73-G1/2 |
| | | | Nominal flow rate 1000 l/min | 47000 g | 552175 | PDAD-100-G1/2 |

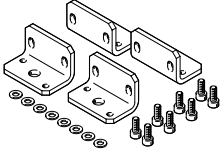
Peripherals

Peripherals overview

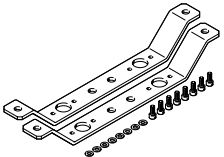


| Accessories | | → Page/Internet |
|-----------------|------------------------|-----------------|
| Type/order code | Description | |
| [1] | Adsorption dryer PDAD | pdad |
| [2] | Foot mounting ABMF | 11 |
| [3] | Wall mounting kit ABMW | 11 |

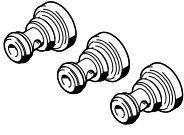
Accessories

| Foot mounting ABMF-PDAD | | | | | |
|---|--|------------------------|----------|-----------|--|
| | Corrosion resistance class CRC ¹⁾ | LABS (PWIS) conformity | Part no. | Type | |
|  | 2 - Moderate corrosion stress | VDMA24364-B1/B2-L | 553755 | ABMF-PDAD | |

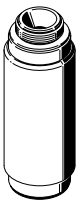
1) More information www.festo.com/x/topic/crc

| Wall mounting kit ABMW-PDAD | | | | | |
|---|--|------------------------|----------|-----------|--|
| | Corrosion resistance class CRC ¹⁾ | LABS (PWIS) conformity | Part no. | Type | |
|  | 2 - Moderate corrosion stress | VDMA24364-B1/B2-L | 553756 | ABMW-PDAD | |

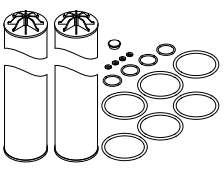
1) More information www.festo.com/x/topic/crc

| Air gun nozzle ADNA | | | | | |
|---|---------------------------|------------------|------------------------|----------|---------------|
| | Description ¹⁾ | Material housing | LABS (PWIS) conformity | Part no. | Type |
|  | For type PDAD-09 | Brass | VDMA24364-C1-L | 553763 | ADNA-PDAD-09 |
| | For type PDAD-100 | | | 553768 | ADNA-PDAD-100 |
| | For type PDAD-22 | | | 553765 | ADNA-PDAD-22 |
| | For type PDAD-13 | | | 553764 | ADNA-PDAD-13 |
| | For type PDAD-73 | | | 553767 | ADNA-PDAD-73 |
| | For type PDAD-51 | | | 553766 | ADNA-PDAD-51 |

1) Set consisting of 3 air gun nozzles (6 air gun nozzles for PDAD-100). See additional document for configuration options

| Micro-filter cartridge MS6-LFM-A | | | | | |
|---|---------------------------|---------------------|------------------------|----------|--------------|
| | Description ¹⁾ | Grade of filtration | LABS (PWIS) conformity | Part no. | Type |
|  | For type PDAD-73/100 | 0.01 µm | VDMA24364-B1/B2-L | 552093 | MS6-LFM-A-HF |
| | For type PDAD-09/13/22/51 | | | 532909 | MS6-LFM-A |

1) For pre-filter

| Service kit PDAD-SP | | | | | |
|---|---------------------------|--------------------|------------------------|----------|-------------------|
| | Description ¹⁾ | Operating pressure | LABS (PWIS) conformity | Part no. | Type |
|  | For type PDAD-100 | 4 ... 16 bar | VDMA24364-B1/B2-L | 553754 | PDAD-100-SP-12000 |
| | For type PDAD-22 | | | 553751 | PDAD-22-SP-12000 |
| | For type PDAD-73 | | | 553753 | PDAD-73-SP-12000 |
| | For type PDAD-51 | | | 553752 | PDAD-51-SP-12000 |
| | For type PDAD-09 | | | 553749 | PDAD-09-SP-12000 |
| | For type PDAD-13 | | | 553750 | PDAD-13-SP-12000 |

1) with 2 drying agent cartridges (4 drying agent cartridges in the service kit PDAD-100-SP), sealing rings, plastic discs and a reset disc