LEYBOLD VAKUUM

GA 06.229/1.02

Power Failure Venting Valve

electromagnetically actuated
with position indicator
DN 10 ISO-KF

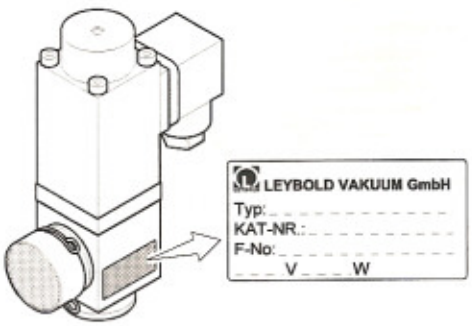
Catalog number
174 18
174 48

CE

Operating Manual
incl. Manufacturer's Declaration

Product Identification

In all communications with Leybold Vakuum, please specify the information on the product nameplate. For convenient reference copy that information into the space provided below.



Validity

This document applies for products with catalog numbers

174 18 (230 VAC)
174 48 (24 VDC)

The catalog number can be taken from the product nameplate.

We reserve the right to make technical changes without prior notice.

Intended Use

The Power failure venting valve is used for automatic venting of pumps as well as small and medium vacuum systems.

If the Power failure venting valve is to be integrated in a vacuum system where toxic process gases are used or toxic gases arise during the process and where the overpressure can rise to >2 bar, take appropriate safety measures for educing the exhaust gases and dispose of them without polluting the environment.

Functional Principle

The Power failure venting valve opens in the event of a power failure or when the pressure rises to >2 bar. The position indicator becomes visible.

The Power failure venting valve is closed as long as the solenoid coil is energized. The position indicator is not visible in this case.

Safety

Symbols Used

STOP DANGER

Information on preventing any kind of physical injury.

WARNING

Information on preventing extensive equipment and environmental damage.

Caution

Information on correct handling or use. Disregard can lead to malfunctions or minor equipment damage.

Personnel Qualifications

Skilled personnel

All work described in this document may only be carried out by persons who have suitable technical training and the necessary experience or who have been instructed by the end-user of the product.

General Safety Instructions

- Adhere to the applicable regulations and take the necessary precautions for the process media used.
  Consider possible reactions between the materials and the process media.
- Adhere to the applicable regulations and take the necessary precautions for all work you are going to do and consider the safety instructions in this document.
- Before beginning to work, find out whether any vacuum components are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.

Communicate the safety instructions to all other users.

Liability and Warranty

Leybold Vakuum assumes no liability and the warranty becomes null and void if the end-user or third parties

- disregard the information in this document
- use the product in a non-conforming manner
- make any kind of interventions (modifications, alterations etc.) on the product
- use the product with accessories and options not listed in the corresponding product documentation.

The end-user assumes the responsibility in conjunction with the process media used.

Technical Data

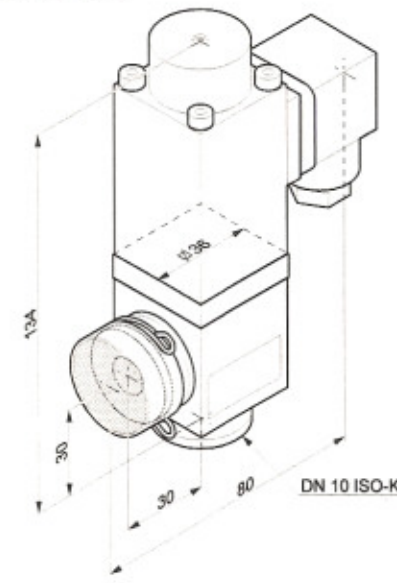
Catalog number	174 18	174 48
Connection flange	DN 10 ISO-KF	
Nominal voltage	230 V 50/60 Hz	24 VDC
Connection	cable socket	
Pickup/holding power	0.2 / 0.12 A	2 / 1.0 A
Duty cycle	100%	
Installation angle	any	
Actuation	opens with pressure spring closes electromagnetically	
Stroke of valve plate	5.5 mm	
Conductance [1]	4 l/s	
Switching frequency [2]	60 / min	60 / min
Opening time [2]	70 ms	70 ms
Closing time [2]	30 ms	30 ms
Service life [3]	1 million cycles	
Tightness	$<1\times10^{-7}$ mbar l/s	
Venting time for 50 l 10 l	26 s 5.2 s	
Pressure range	1×10^{-6} mbar ... 3 bar (absolute)	
Bursting pressure	6 bar	
Pressure difference Δp in opening direction	≤2 bar	
Temperatures ambiance housing bakeout housing actuator	 0 °C ... 50 °C 140 °C at ambiance temp. 50 °C 100 °C at ambiance temp. 20 °C <80 °C <50 °C	
Type of protection	IP 65 according to DIN VDE 0470 / EN60529	
Flow direction	in case of power failure	at overpressure >2 bar
Materials aluminum housing valve plate pressure spring O-rings filter protective lid packing	 3.3527 1.4301 1.4310 FPM RCH 1000 P / Al PE carton box, foamed material	
Weight	0.75 kg	

[1] For air with molecular flow.

[2] At a pressure difference $\Delta p = 0$ bar.

[3] Switching cycles without expendable parts (O-rings) and under clean conditions.

Dimensions [mm]



Installation

Vacuum Connection

DANGER

Caution: overpressure in the vacuum system >1 bar

Injury caused by released parts and harm caused by escaping process gases can result if clamps are opened while the vacuum system is pressurized.

Do not open any clamps while the vacuum system is pressurized. Use the type clamps which are suited to overpressure.

Caution

Caution: vacuum component

Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.

Caution

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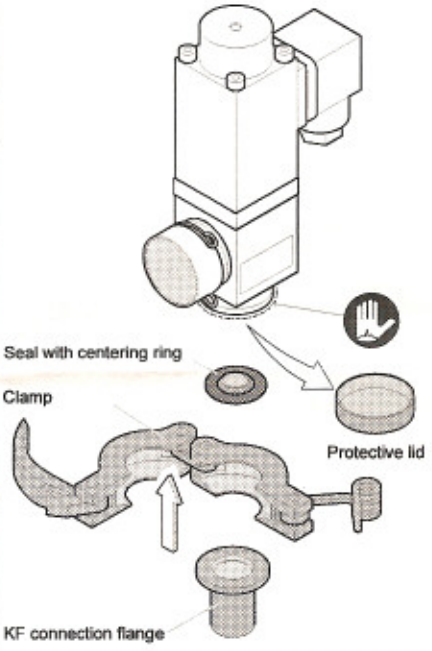
Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.

Notice:
Keep the lids and put them in place again when removing the product from the vacuum system.

Remove the lid and connect the valve to the vacuum system using the small flange fitting.



Power Connection

Caution

Caution: line voltage

Incorrect voltages can destroy the product.

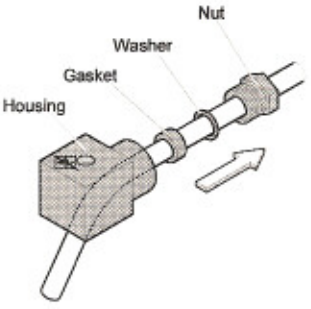
The local line voltage ratings must correspond to the nominal voltage of the product (→ nameplate). If they do not correspond, exchange the Power failure venting valve.

Notice:
The cable must meet the following specifications:

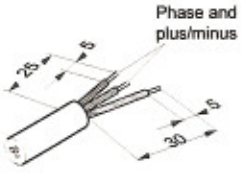
- flexible
- conductor cross section 0.75 mm²
- cable diameter ≤7 mm
- 3 poles with protective conductor

Procedure

1. Slide the nut, washer, gasket and housing on the cable.

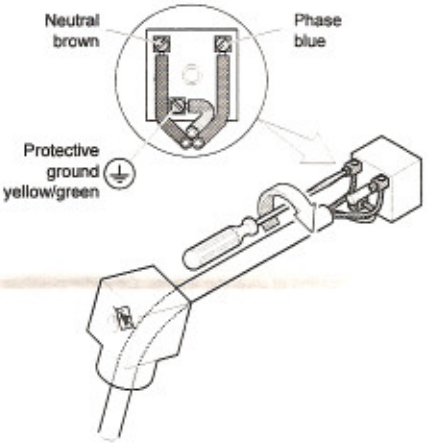


2. Strip the cable.



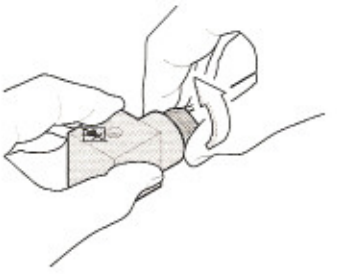
3. Screw in the cable.

Notice:
For the 24 VDC version, the polarity need not be taken into consideration.
For safety reasons, we recommend to connect the protective ground also for the 24 VDC version.

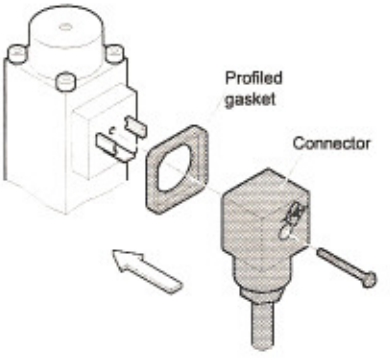


4. Align the housing and insert and push in the insert until it catches.

5. Tighten the cable gland.



6. Mount the profiled gasket. Plug in the cable socket and secure it with the screw.



Operation

The product is ready for installation as soon as it has been installed.

DANGER

Caution: hot surface

Touching the hot surface (>55 °C) can cause burns.

Wear protective gloves.

Valve positions

	No power applied or overpressure >2 bar	Power applied and overpressure <2 bar
Position indicator	Valve open	Valve closed
Valve plate position		

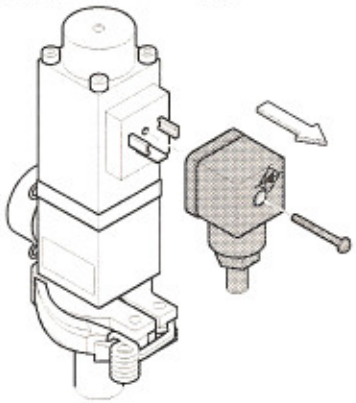
ge95.229/1.02 (0006)
Original: German GA 05.229/1.01

Deinstallation

Power Connection

Notice:
Before connecting or disconnecting the product, turn off the control system.

Unfasten the cable socket and unplug it.



Vacuum Connection

STOP DANGER

Caution: contaminated parts

Contaminated parts can be detrimental to health and environment.

Before beginning to work, find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.

Caution

Caution: vacuum component

Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.

Caution

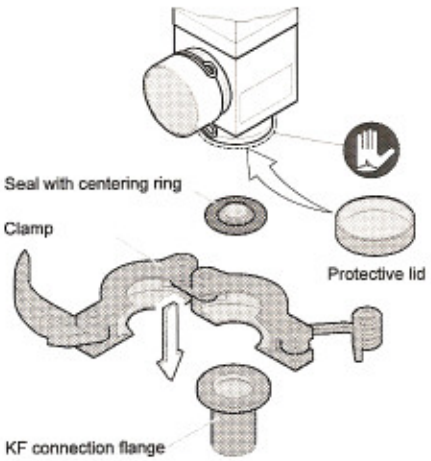
Caution: dirt sensitive area

Touching the product or parts thereof with one's bare hands increases the desorption rate.

Always wear clean, lint-free gloves and use clean tools when working in this area.

Notice:
The vacuum system must first be vented and the Power failure venting valve cooled down to <55 °C.

Remove the small flange fitting and put the protective lid in place.

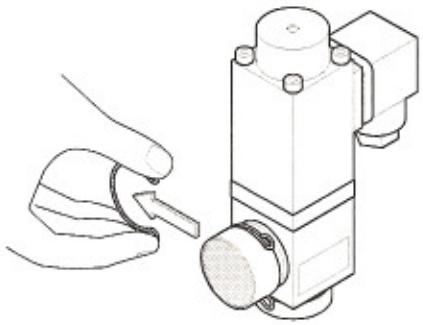


Maintenance

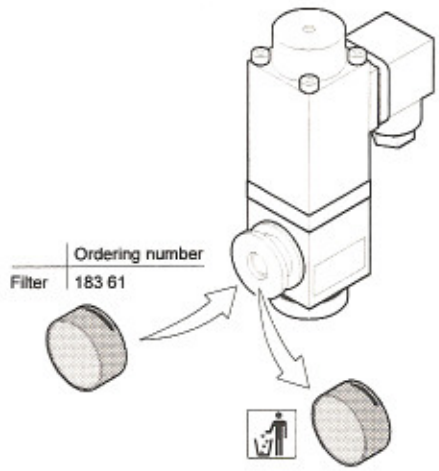
If the venting time increases noticeably, replace or clean the filter.

Replacing or Cleaning the Filter

❶ Remove the circlip.



❷ Remove the dirty filter and replace it or ...



... clean the dirty filter in an ultrasonic bath, or rinse it with alcohol and dry it with an industrial blower.

STOP DANGER

Caution: cleaning agents

Cleaning agents can be detrimental to health and environment.

Adhere to the relevant regulations and take the necessary precautions when handling and disposing of cleaning agents. Consider possible reactions with the product materials (→ Technical Data).

Repair

We recommend to return the defective product to your local Leybold Vakuum service center for repair.

Leybold Vakuum assumes no liability and the warranty becomes null and void if any repair work is carried out by the end-user or third parties.

Returning the Product

WARNING

Caution: forwarding contaminated products

Contaminated products (e.g. radioactive, toxic, caustic or microbiological hazard) can be detrimental to health and environment.

Products returned to Leybold Vakuum should preferably be free of harmful substances. Adhere to the forwarding regulations of all involved countries and forwarding companies and enclose a duly completed declaration of contamination.

Products that are not clearly declared as "free of harmful substances" are decontaminated at the expense of the customer.

Products not accompanied by a duly completed declaration of contamination are returned to the sender at his own expense.

Disposal

STOP DANGER

Caution: contaminated parts

Contaminated parts can be detrimental to health and environment.

Before beginning to work, find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.

WARNING

Caution: substances detrimental to the environment

Products or parts thereof (mechanical and electric components, operating fluids etc.) can be detrimental to the environment.

Dispose of such substances in accordance with the relevant local regulations.

Separating the components

After disassembling the product, separate its components according to the following criteria:

- Contaminated components
  Contaminated components (radioactive, toxic, caustic, or biological hazard etc.) must be decontaminated in accordance with the relevant national regulations, separated according to their materials, and disposed of.
- Other components
  Such components must be separated according to their materials and recycled.