



Data sheet

Product data

| | |
|---------------------|-----------------------------|
| Product description | HELIX V403-1/16/E/KS/400-50 |
|---------------------|-----------------------------|

Hydraulic data

| | |
|------------------------------------|--------|
| Minimum efficiency index (MEI) | ≥0.7 |
| Maximum inlet pressure p_{inl} | 10 bar |
| Maximum operating pressure P_N | 16 bar |
| Discharge port | G 1 |
| Min. fluid temperature T_{min} | -30 °C |
| Max. fluid temperature T_{max} | 120 °C |
| Min. ambient temperature T_{min} | -15 °C |
| Max. ambient temperature T_{max} | 50 °C |

Motor data

| | |
|--------------------------------------|----------------------|
| Mains connection | 3~400 V, 50 Hz |
| Voltage tolerance | ±10 % |
| Rated power P_2 | 0.37 kW |
| Motor efficiency class | IE2 |
| Rated current I_N | 0.95 A |
| Rated speed n | 2900 1/min |
| Power factor $\cos \varphi_{100}$ | 0.91 |
| Activation type | Direct On Line (DOL) |
| Motor efficiency 50% $\eta_M 50\%$ | 65.4 % |
| Motor efficiency 75% $\eta_M 75\%$ | 65.6 % |
| Motor efficiency 100% $\eta_M 100\%$ | 64.7 % |
| Insulation class | F |
| Protection class motor | IP55 |

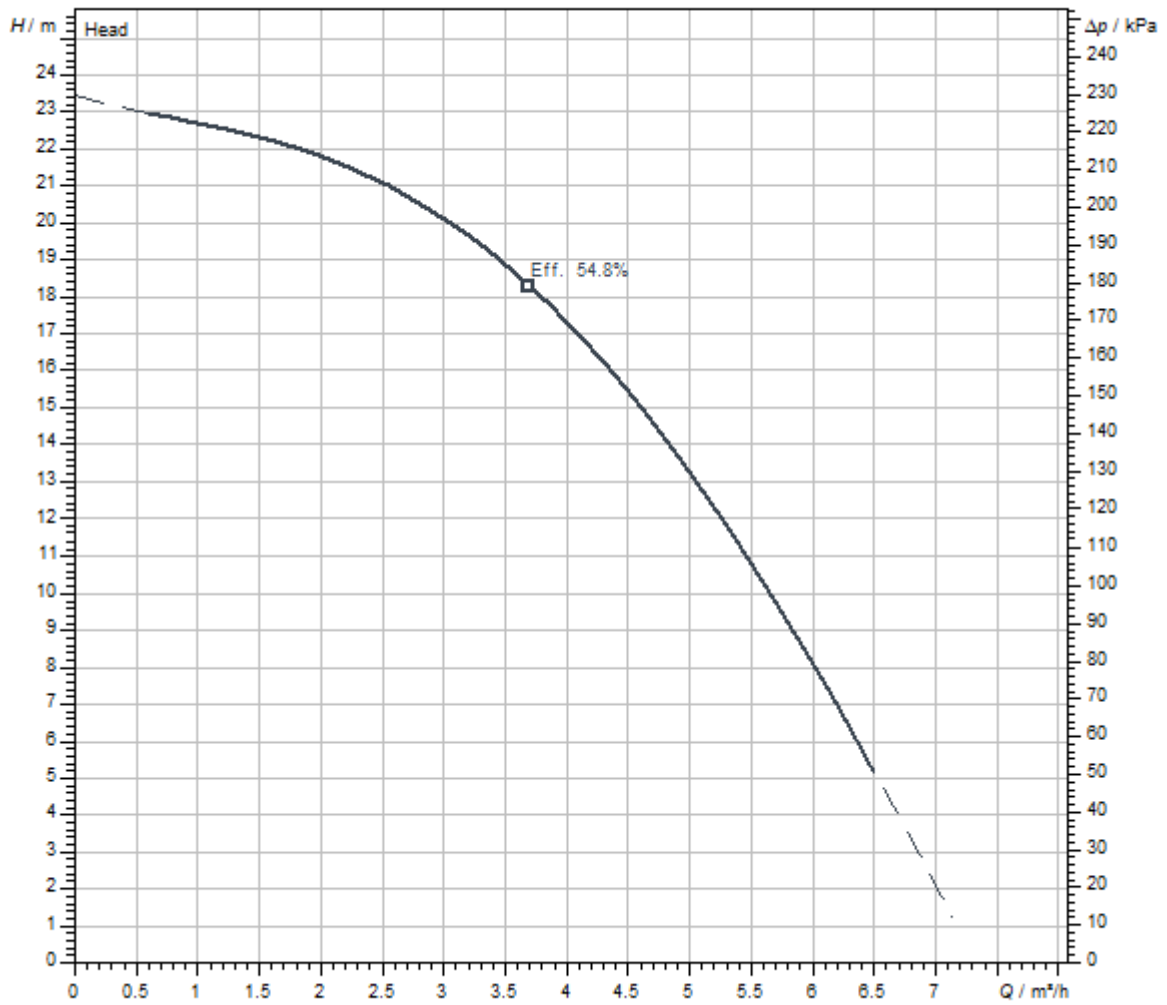
Materials

| | |
|-----------------|-----------------|
| Pump housing | Stainless steel |
| Impeller | Stainless steel |
| Shaft | Stainless steel |
| Mechanical seal | BQ1EGG |
| Gasket material | EPDM |

Installation dimensions

| | |
|--|-----|
| Pipe connection on the suction side DN_s | G 1 |
| Pipe connection on the discharge side DN_d | G 1 |

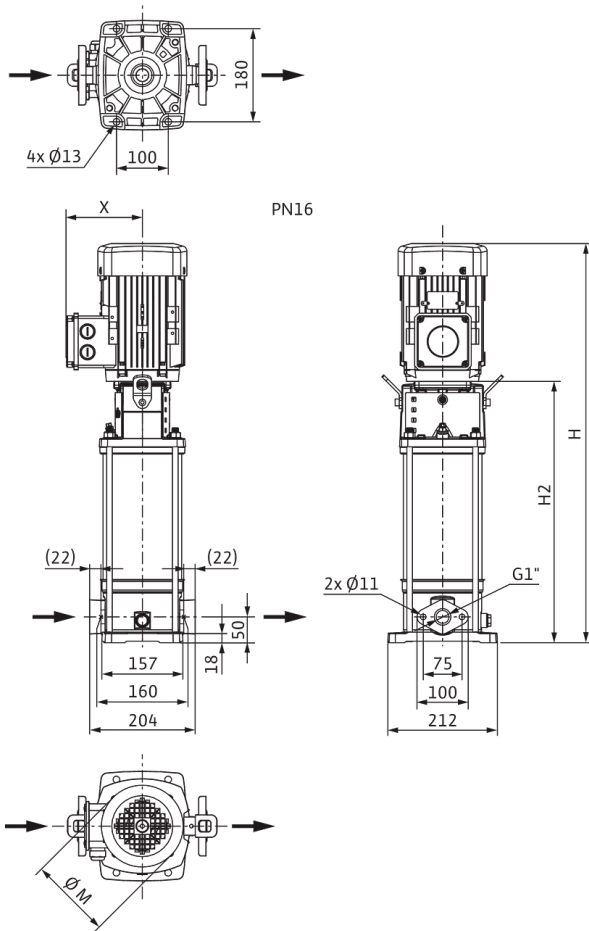
Pump curves



| | |
|---|-------------|
| Fluid media | Water 100 % |
| Fluid temperature <i>T</i> | 20.00 °C |
| speed at duty point <i>n hydr. @ OP</i> | 2,932 1/min |

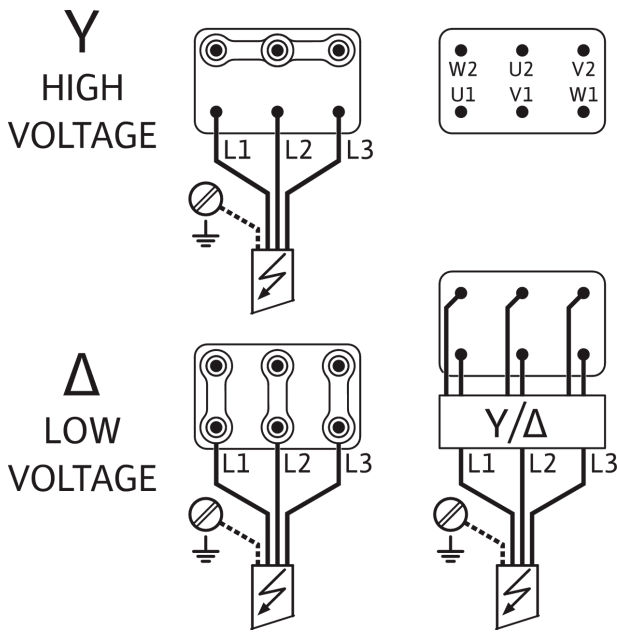
Dimensions and dimensions drawings

Helix V 2/V4, PN 16



| | |
|--|--------|
| Dimensions H | 620 mm |
| Dimensions $H1$ | 128 mm |
| Dimensions $L1$ | 102 mm |
| Dimensions X | 119 mm |
| Dimensions $\varnothing g$ | 138 mm |
| Pipe connection on the suction side DN_s | G 1 |
| Pipe connection on the discharge side DN_d | G 1 |
| Motor diameter X | 121 mm |

Wiring diagram



Ordering information

Product data

| | |
|----------------------------|-----------------------------|
| Brand | Wilo |
| Product description | HELIX V403-1/16/E/KS/400-50 |
| Article number | 4160519 |
| EAN number | 4048482199450 |
| Colour | green/silver |
| Minimum order quantity | 1 |
| Date of sales availability | 2011-09-01 |

Packaging

| | |
|--------------------|---------------------|
| Packaging type | One-way pallet |
| Packaging property | Transport packaging |
| Pieces per pallet | 1 |
| Number per layer | 1 |

Dimension, weight

| | |
|--------------------------------|--------|
| Length with packaging | 800 mm |
| Length <i>L</i> | 223 mm |
| Height with packaging | 400 mm |
| Height <i>H</i> | 620 mm |
| Width with packaging | 400 mm |
| Width <i>W</i> | 212 mm |
| Gross weight, approx. <i>m</i> | 26 kg |
| Net weight, approx. <i>m</i> | 23 kg |

Tender text

Highly efficient high-pressure multistage centrifugal pump in vertical design with in-line connections.

The non self-priming high-pressure multistage centrifugal pump has a compact overall design and is particularly efficient and easy to maintain. The pump shaft and the motor shaft of the IEC standard motor are connected by means of a clamp coupling.

A separate lantern roller bearing ensures optimum admission of axial thrusts. Intermediate bearings in the hydraulics and corrosion-resistant shaft due to stainless steel sleeve ensure a long service life. Special, permanently attached lifting eyes enable easy pump installation.

The pump is suitable for water supply, water distribution and pressure boosting, industrial recirculation systems, process water and closed cooling circuits. It can also be used in fire extinguishing systems, washing systems as well as for irrigation.

Special features/product advantages

- > Efficiency-optimised, laser-welded 2D/3D hydraulics, flow and degassing optimised
- > Corrosion-resistant impellers, guide vanes and stage housings
- > Flow and NPSH-optimised pump housing
- > Maintenance-friendly design with particularly robust coupling guard
- > Drinking water approval for pumps with parts that come in contact with the fluid made of stainless steel (EPDM version)

Scope of delivery

- > Wilo-Helix V high-pressure multistage centrifugal pump
- > Installation and operating instructions
- > PN16 version with oval flanges: Stainless steel counter flanges with the corresponding screws, nuts and gaskets

Design notes

- > Motor protection for 3-phase motor is to be provided on request or onsite
- > Single-phase AC motor equipped with built-in thermal motor protection and capacitor
- > In its standard position, the terminal box is aligned with the suction flange, but this can be changed if necessary
- > The Wilo-Helix V is equipped with a user-friendly mechanical seal in a cartridge design and standard gasket for easy maintenance
- > The spacer coupling (from ≥ 7.5 kW) allows the mechanical seal to be replaced without removing the motor
- > The flexible lantern design, which is available in two alignments, enables direct access to the mechanical seal
- > For pump versions PN16, PN25 and $P_{max} = 30$ bar, round counter flanges in cast iron or stainless steel, screws, nuts and gaskets are available as accessories
- > Bypass sets are available as accessories
- > The Wilo-Helix V(F) VdS certified version upon request

Operating Data

Product data

| | |
|------------------------------------|------------|
| Min. fluid temperature T_{min} | -30 °C |
| Max. fluid temperature T_{max} | 120 °C |
| Max. ambient temperature T_{max} | 50 °C |
| Maximum operating pressure PN | 16 bar |
| Maximum inlet pressure p_{inl} | 10 bar |
| Minimum efficiency index (MEI) | ≥ 0.7 |

Motor data

| | |
|--------------------------------------|----------------|
| Mains connection | 3~400 V, 50 Hz |
| Voltage tolerance | ±10 % |
| Rated power P_2 | 0.37 kW |
| Motor efficiency class | IE2 |
| Rated current I_N | 0.95 A |
| Rated speed n | 2900 1/min |
| Power factor $\cos \varphi_{100}$ | 0.91 |
| Motor efficiency 50% $\eta_M 50\%$ | 65.4 % |
| Motor efficiency 75% $\eta_M 75\%$ | 65.6 % |
| Motor efficiency 100% $\eta_M 100\%$ | 64.7 % |
| Insulation class | F |
| Protection class | IP55 |

Materials

| | |
|-----------------|-----------------|
| Pump housing | Stainless steel |
| Impeller | Stainless steel |
| Shaft | Stainless steel |
| Shaft seal | BQ1EGG |
| Gasket material | EPDM |

Installation dimensions

| | |
|--|-----|
| Pipe connection on the suction side DN_s | G 1 |
| Pipe connection on the discharge side DN_d | G 1 |

Ordering information

| | |
|-------------------------|-----------------------------|
| Brand | Wilo |
| Product description | HELIX V403-1/16/E/KS/400-50 |
| Net weight, approx. m | 23 kg |
| Article number | 4160519 |

Installation type

In inlet mode

Counter flange (stainless steel)

| | |
|---|---------|
| Stainless steel counter flange (oval, 2 piece), PN16/DN25 | 4016168 |
|---|---------|

Baseplate

| | |
|------------|---------|
| Base plate | 4157154 |
|------------|---------|

Shut-off valve

| | |
|-----------------|---------|
| Ball valve Rp 1 | 2663980 |
|-----------------|---------|

Non-return valve

| | |
|---------------------------|---------|
| Non-return valve RV/S R 1 | 2660842 |
|---------------------------|---------|

Screwed connection for non-return valve

| | |
|---|---------|
| Screwed connection for non-return valve DN 25 | 2660509 |
|---|---------|

Level control with fault signal

Float switch WAO

| | |
|---------------------------------|-----------|
| Float switch WAO 65, 10 m cable | 2006027 |
| Float switch WAO 65, 20 m cable | 2004429 |
| Float switch WAO 65, 30 m cable | 2004430 |
| Float switch WAO 65, 5 m cable | 503211595 |

Level control without fault signal

Float switch WAO

| | |
|---------------------------------|-----------|
| Float switch WAO 65, 10 m cable | 2006027 |
| Float switch WAO 65, 20 m cable | 2004429 |
| Float switch WAO 65, 30 m cable | 2004430 |
| Float switch WAO 65, 5 m cable | 503211595 |

Pressure control with fault signal

Wilo-EFC

| | |
|---------------------------------|---------|
| EFC0.37 3x380-480V 50/60Hz IP55 | 2193429 |
|---------------------------------|---------|

Sensor kit

| | |
|------------|---------|
| Sensor kit | 2501886 |
|------------|---------|

Mechanical accessories

Bypass line

Bypass line

| | |
|---|---------|
| Bypass line for Helix and Medana CV1-L series | 4230350 |
|---|---------|

Fittings

Non-return valve

| | |
|--------------------------|---------|
| Non-return valve RV/SR 1 | 2660842 |
|--------------------------|---------|

Shut-off valve

| | |
|-----------------|---------|
| Ball valve Rp 1 | 2663980 |
|-----------------|---------|

Pipe installation

Counter flange (stainless steel)

| | |
|---|---------|
| Stainless steel counter flange (oval, 2 piece), PN16/DN25 | 4016168 |
|---|---------|

Valves/accessories

Screwed connection for non-return valve

| | |
|---|---------|
| Screwed connection for non-return valve DN 25 | 2660509 |
|---|---------|

Wall fixation/installation on a base

Baseplate

| | |
|------------|---------|
| Base plate | 4157154 |
|------------|---------|

Electrical accessories

Pump control

Wilo-EFC

| | |
|---------------------------------|---------|
| EFC0.37 3x380-480V 50/60Hz IP55 | 2193429 |
|---------------------------------|---------|

Pump control/accessories

Low-water cut-out switchgear kit for domestic water systems

| | |
|---|---------|
| low-water cut-out switchgear kit WMS G 1¼ | 4204510 |
| low-water cut-out switchgear kit WMS G2 | 4204512 |

Output filter EFC (150-500 m cable length)

| | |
|--------------------------------|---------|
| 2.4 A sin IP54 Wilo-EFC filter | 6084559 |
| 2.5 A sin IP00 Wilo-EFC filter | 6084574 |
| 2.5 A sin IP20 Wilo-EFC filter | 6084900 |

Pressure control

Pressure sensor for systems

| | |
|-----------------------------|---------|
| Pressure sensor, 0 - 6 bar | 2550660 |
| Pressure sensor, 0 - 10 bar | 2550661 |
| Pressure sensor, 0 - 16 bar | 2550662 |
| Pressure sensor, 0 - 25 bar | 2550663 |
| Pressure sensor, 0 - 40 bar | 2550664 |

Sensor kit

| | |
|------------|---------|
| Sensor kit | 2501886 |
|------------|---------|

Level control

Float switch WA

| | |
|---|-----------|
| Float switch WA65 with 5 m cable | 503211390 |
| Float switch WA65 with 10 m cable | 503211893 |
| Float switch WA65 with 20 m cable | 2004431 |
| Float switch WA65 with 30 m cable | 2004432 |
| Float switch WA KR1 S with 5 m cable | 6082806 |
| Float switch WA KR1 S with 10 m cable | 6082807 |
| Float switch WA65 (PSN-X) with 20 m cable | 6088843 |
| Float switch WA65 (PSN-X) with 10 m cable | 6088844 |

| | |
|--|---------|
| Float switch WA65 (PSN-X) with 5 m cable | 6088845 |
|--|---------|

Float switch WAO

| | |
|---------------------------------|-----------|
| Float switch WAO 65, 5 m cable | 503211595 |
| Float switch WAO 65, 10 m cable | 2006027 |
| Float switch WAO 65, 20 m cable | 2004429 |
| Float switch WAO 65, 30 m cable | 2004430 |

Motor protection

PTC thermistor tripping unit

| | |
|------------------------------|-----------|
| PTC thermistor tripping unit | 509275993 |
|------------------------------|-----------|

Surcharge for thermistor sensor (high-pressure centrifugal pumps)

| | |
|---|---------|
| Surcharge for thermistor sensor (high-pressure centrifugal pumps) | HDK_KLF |
|---|---------|

Services

With Wilo as your partner, you can not only be sure of choosing high-quality product solutions, but also of benefiting from a comprehensive, worry-free package of well thought-out services. We collaborate to develop a service concept tailored to your individual needs; with our expertise and personal consultancy, we make sure that the operation of your systems is as energy-efficient, reliable and economical as possible. All the while our competent Wilo service technicians are ready to assist you with fast, reliable and on-time support.

Recommended services

| | |
|---|---------|
| Maintenance BASIC Booster Set 1-2 pumps | 2160453 |
| Maintenance COMFORT Booster Set 1-2 pumps | 2160468 |
| Maintenance PREMIUM Booster Set 1-2 pumps | 2160483 |
| Commissioning Booster Set 1-2 pumps | 2216414 |

More suitable services

| | |
|--|---------|
| Service Package L Booster Set 1-2 pumps | 2216420 |
| Service Package M Booster Set 1-2 pumps | 2216419 |
| Service Package S Booster Set 1-2 pumps | 2216418 |
| Wilo-Live Assistant Service | 2216415 |
| Extended Warranty Booster Set 1-2 pumps | 2216416 |
| Supervision Booster Set 1-2 pumps | 2216412 |
| Installation Booster Set 1-2 pumps | 2216413 |
| System Optimisation Booster Set 1-2 pump | 2216410 |
| Energy Solutions Booster Set 1-2 pumps | 2216411 |
| Repair Booster Set 1-2 pumps | 2216417 |