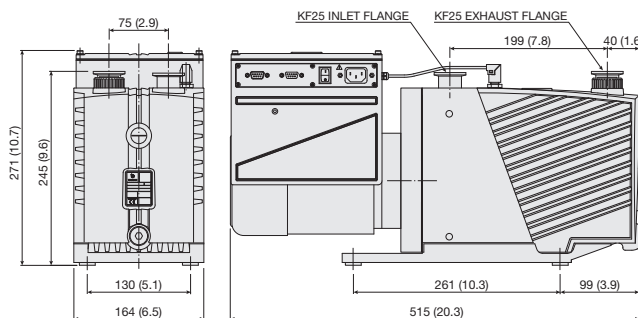


Agilent HS Series Pump Models

Agilent HS 652



Dimensions: millimeters (inches)

The first rotary vane pumps with truly “smart” capabilities.

- Agilent’s HS 452 and HS 652 pumps employ an innovative frequency inverter technology that delivers optimal and consistent performance while encompassing the worldwide range of voltage and frequency conditions.
- Operating with low power requirements, the microprocessor controlled frequency inverter, combined with a 3-phase motor, is an efficient driving unit capable of delivering the high starting torque required of a dual-stage oil pump.
- HS 452 and HS 652 technology solves the common problems inherent in traditional single-phase motors. Smart Pumps start with inrush current about 7 times lower than that of equivalent traditional pumps.

- Unlike traditional pumps, Smart Pump’s software driven startup procedure recognizes faulty pumps within seconds, and so avoids uncontrolled load conditions. The result is very easy pump integration.
- The 3-phase inverter output is constant and independent of single-phase input frequencies and voltages. Motor efficiency and power factors remain optimal and as a result motor and pump working temperatures remain low and constant worldwide.
- Smart Pumps can be remotely driven via discrete I/O or RS232/RS485 interfaces. Agilent’s T-plus Navigator Software facilitates communication making it very easy to drive the pump. Pump performance can be tailored by setting the rotational speed for specific applications. The software monitors and logs pump parameters making it possible to perform pump and system diagnostics.

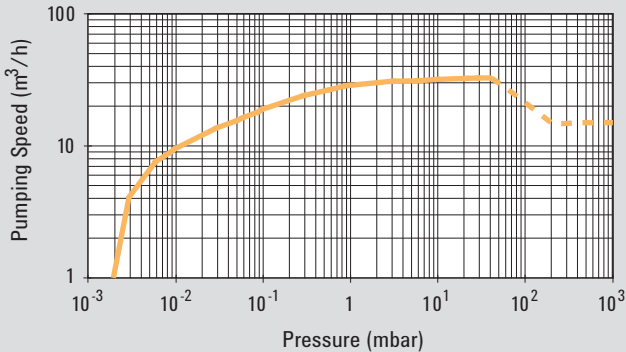
Technical Specifications

Free air displacement	40.3 m ³ /h (23.8 cfm)
Pumping speed*	32 m ³ /h (19 cfm)
Ultimate total pressure*	2 x 10 ⁻³ mbar
Ultimate total pressure with gas ballast*	1 x 10 ⁻² mbar
Operating voltage	100-120/200-240 V ±10%, 50/60 Hz
Inverter maximum output power	780 W
Nominal rotation speed	2000 rpm
Weight	33 kg (73 lbs)

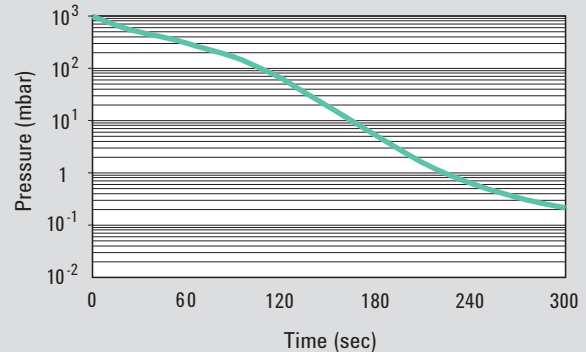
* According to PNEUROP 6602

Rotary Vane Pumps

HS 652 - Pump Speed Curve



HS 652 - Pump Down Curve



Ordering Information

Pump	Part Number
HS 652 Smart Pump 1 phase worldwide motor	9499365
IP44 accessory connector Kit	9499367

Accessories	Part Number
NW25 oil exhaust filter	9499392
Oil return kit	9499376
Oil drain extension	9499375
Rotary vane fluid, DS19 type, 1 liter	9499390
European plug power cable 2 meters 1 ph	9499396
USA plug power cable 2 meters 1 ph	9499397
UK plug power cable 2 meters 1 ph	9499398
Minor maintenance kit	9499371
Major maintenance kit	9499382

Application Note

Steady state high gas load applications exploit the major benefits of the smart technologies. When operated at pressures lower than the auto-tuning pressure, the HS 452 and HS 652 outperform the equivalent traditional DS402 and DS602 pumps by 10% at 60 Hz and by 30% at 50 Hz.

The Smart Pumps can run below auto-tuning pressure at their full speed of 2000 rpm. As shown in the pumping speed curve

at top right, the HS 452 has an auto-tuning pressure of 100 mbar while the HS 652 has an auto-tuning pressure of 40 mbar. Despite the lower power requirements of 780 W max, the Smart Pumps deliver good performance in the roughing phase. Fast cycling or inrush applications need to be evaluated on a case by case basis with our application engineers.