



HYBRID TURBOMOLECULAR PUMPS
ATH SERIES



Introduction

Adixen offers the ATH series of hybrid turbomolecular pumps with pumping speeds at 200 and 300 l/s. These models have been optimized for instrumentation or R&D applications while others for heavy cycling applications.

Adixen's knowledge of hybrid turbomolecular pumps has resulted in the design of the ATH series, optimizing vacuum performance, electronics functionality and reliability.

The ATH series also offers added value through features such as:

- Intermediate vacuum ports
- Efficient integration

To cover a wide range of application requirements, multiple pump monitoring options are available.



ATH series



ATH 200 I



ATH 300

TECHNOLOGY

The ATH series hybrid turbomolecular pump incorporates turbomolecular stages with molecular drag stages, resulting in the following benefits:

- High pumping speed,
- High compression ratio, resulting in high exhaust pressure tolerance.

ROBUSTNESS

The low rotational speed and the machined rotors of the ATH series make these pumps very robust against:

- Unexpected air inrushes,
- Shocks,
- Gyroscopic effects,
- Bearing failures.

OTHER ADVANTAGES

The patented design of the ATH 300 allow integration of the pumps closer to the application, saving space and money. Additionally, the ATH pumps can be equipped with intermediate vacuum ports to offer application flexibility such as:

- Additional pumping capacity,
- Management of a pressure set point,
- Venting.

ATH 200 Optimized for low pressure applications

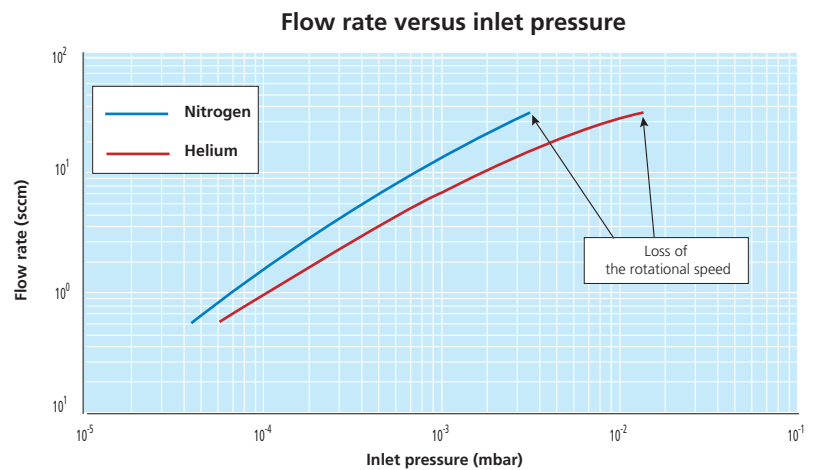
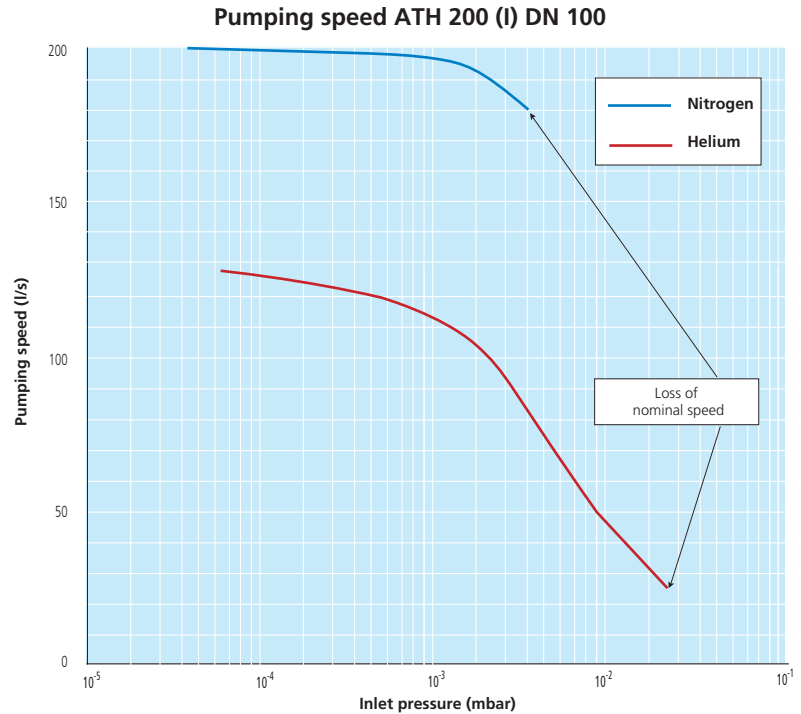
An ultimate pressure of 10^{-10} mbar

The ATH 200 can be backed with dry or rotary vane pumps.

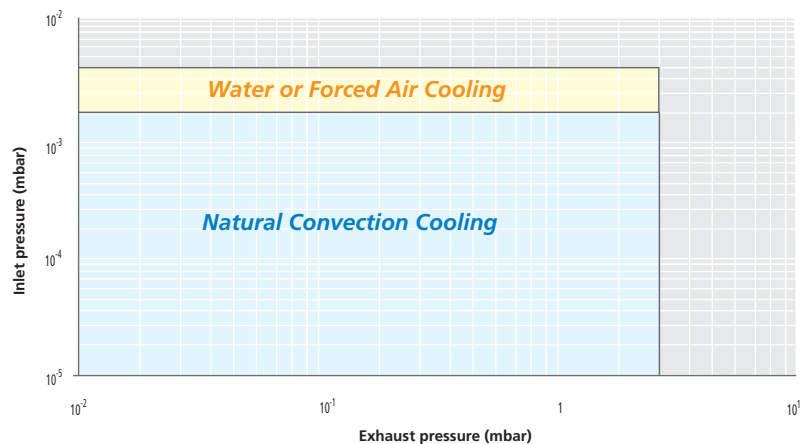
The pump may be equipped with nitrile seals for better resistance in a radiative environment.

The ATH 200 is available with an intermediate pumping port - ATH 200 I

The pumping speed for Nitrogen at the intermediate port is 10 l/s.



Cooling requirements at (20°C ambient temperature)



ATH 300 Optimized for heavy duty applications and analytical instruments

**Wide operating pressure
range from 10^{-10} mbar (torr)
up to 0.1 mbar (torr) with
a wet or dry fore pump**

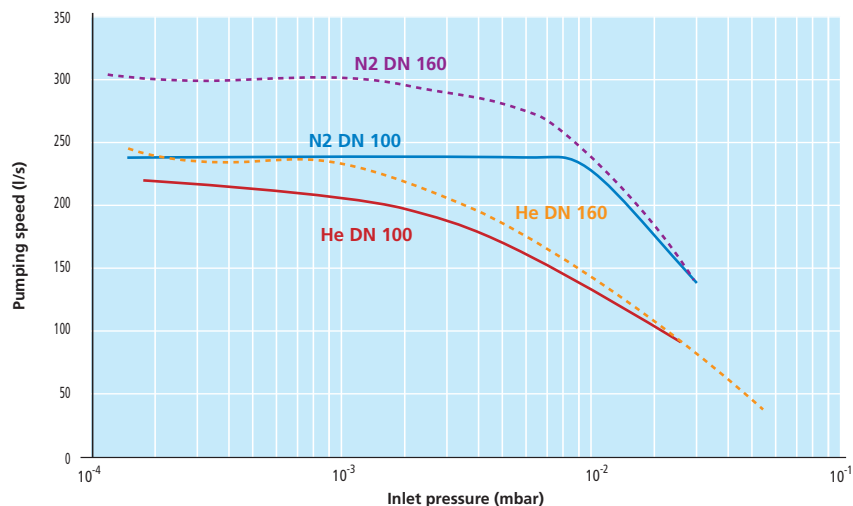
A chemical version equipped with
a gas purge is available for pumping
corrosive gases - ATH 300 CI.

**To increase
the pump flow capability,**

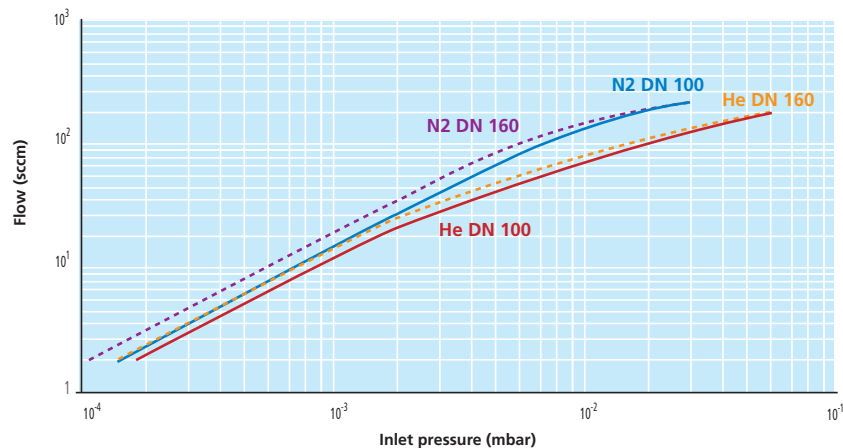
The ATH 300 is available with
a DN160 flange or a nude
configuration.



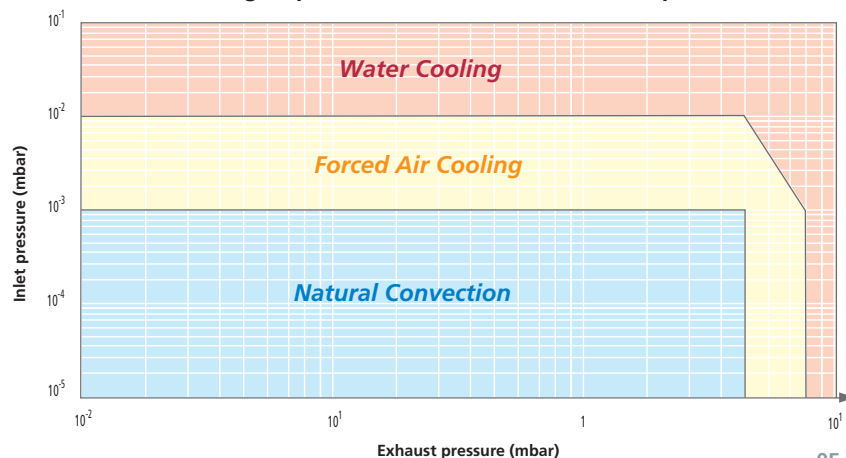
Pumping speed ATH 300 (CI)



Flow rate versus inlet pressure



Cooling requirements at (20°C ambient temperature)



ATH 200 - ATH 300: Technical data

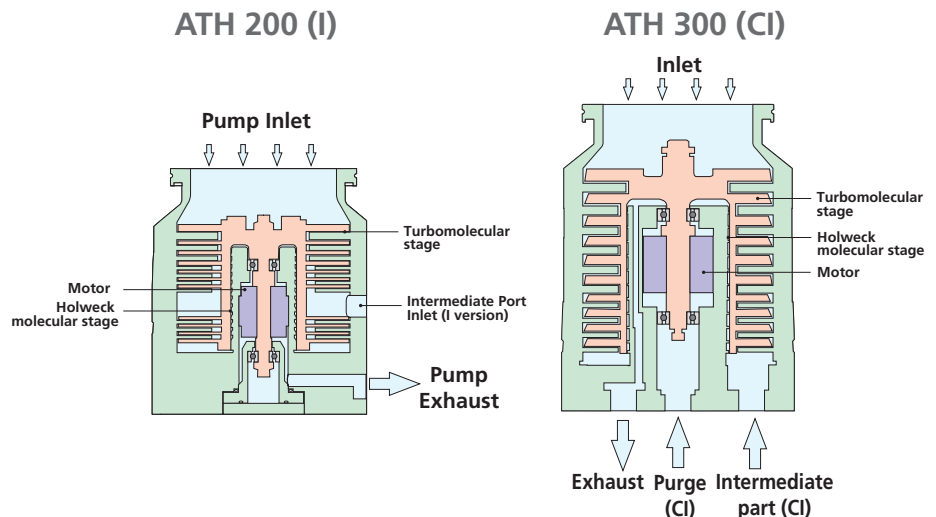
(measured specifications per PNEUROP standards)

Characteristics		ATH 200 (I)	ATH 300 (CI)	
Inlet flange		DN 100	DN 100	DN 160
	N ₂ l/s	200	250	300
Pumping speed	He l/s	130	215	240
Compression ratio	N ₂	$> 10^9$	$> 10^9$	
	He	10^5	10^5	
Ultimate pressure (*)	mbar	$< 5 \cdot 10^{-10}$	$< 5 \cdot 10^{-10}$	
Maximum inlet pressure	mbar	$4 \cdot 10^{-3}$	0.1	
Maximum exhaust pressure	mbar	4	10	
Intermediate port flange		DN 25 (I version)	DN 16	
Intermediate port	N ₂ l/s	10 (I)	2 - 5 (CI)	
pumping speed	He l/s	8 (I)	3 - 5 (CI)	
Recommended fore pump		RVP, ACP, AMD	RVP, ACP, AMD	
Exhaust port flange		DN 16	DN 25	
Mounting orientation		Any	Any	
Rotational speed	RPM	36000	42000	
Noise level	dB(A)	< 53	< 53	
Vibration level	mm/s	0.3	0.3	
Starting power	VA	100	250	
Nominal power	W	150	300	
Start-up time	mn	< 6	< 3.5	
Pump weight ISO-K/CF-F	kg (lb)	5.5 / 9.7 (12.2 / 21.4)	6.5 / 10.5 (14.4 / 23.2)	
Controllers		ACT 202 TH	ACT 600 TH	
Cooling		Natural, air, water	Natural, air, water	

(*) Measured following Pneuop Standards (CFF flange, after 48 hours of baking with a RVP primary pump).

Applications

Mass spectrometry, leak detectors, electron microscopes, R&D, general low inlet pressure requirements, deposition.



Controller, ACT 202 TH, ACT 600 TH designed with a high level communication interface

Controller	Pump
ACT 202 TH	ATH 200
ACT 600 TH	ATH 300

Convenient interface

- Automatic power supply detection from 100 to 240 Volts 50/60 Hz single phase
- Menu operation



ACT 202 TH

Sophisticated pump monitoring

Display of:

- Rotational speed
- Pump current consumption
- Pump and controller temperature
- Total running time
- Pump fault detection
- Diagnostic mode with last ten alarm codes

Control of:

- Rotational speed
- Venting
- Auto start
- Start delay
- Maintenance schedule

Multiple interfaces

- PC/PLC controlled processes RS 232/R5485 (configurable)
- Remote control

Inputs:

- Remote start/stop
- Remote stand-by
- External safety

Outputs:

- Pump starting
- Pump at speed
- Stand-by on
- Vent valve on/off
- Power supply for air cooling kit
- Selectable 0 - 10 Volts output (speed/pump current/temperatures)

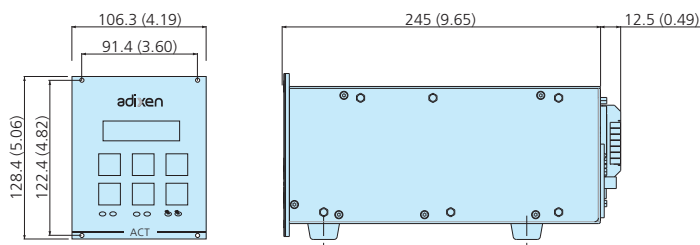


ACT 600 TH

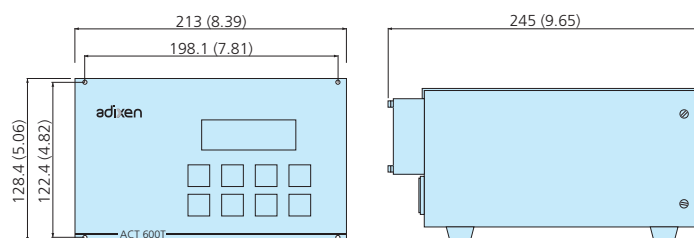
Dimensions

mm (inches)

ACT 202 TH (for ATH 200)



ACT 600 TH (for ATH 300)



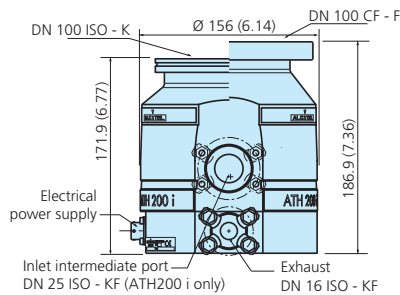
OEM controller electronics

Adixen has developed electronics and pumps designed specifically for integration into OEM equipment. For further information, please contact us.

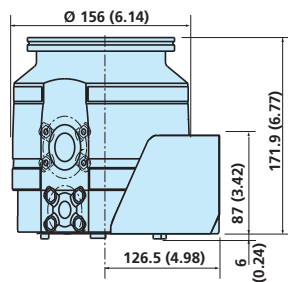
Dimensions mm (inches)

ATH 200

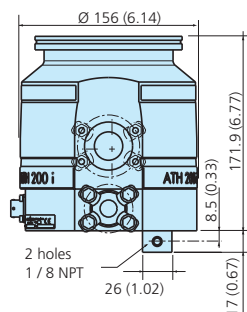
ATH 200 natural convection



ATH 200 with radial air cooling kit

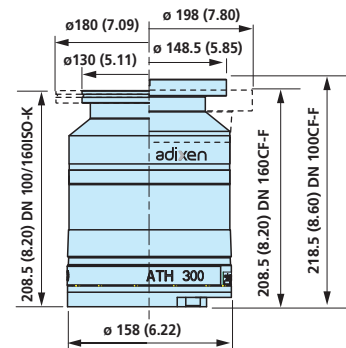


ATH 200 water cooled

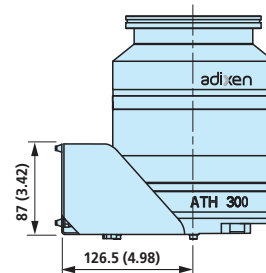


ATH 300

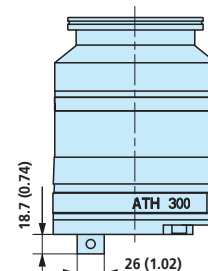
ATH 300 natural convection



ATH 300 with radial air cooling kit



ATH 300 water cooled



Ordering information

ATH 200 pump

(order controller, inlet screen and interconnecting cable separately)

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	ATH 200 I		ATH 200		
	DN100 ISO-K	DN100 CF-F	DN100 ISO-K	DN100 CF-F	DN63 ISO-K
Code	3C	3D	31	32	21

	Cooling		
	Natural	Air	Water
Code	0	1	2

	Seals material	
	FPM	Nitrile
Code	1	2

ATH 300 pump

(order controller, inlet screen and interconnecting cable separately)

C					00
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	ATH 300	
	SD	CI
Code	1	2

	Housing				
	DN100 ISO-K	DN100 CF-F	DN160 ISO-K	DN160 CF-F	nude
Code	31	32	41	42	00

	Cooling		
	Natural	Air	Water
Code	0	1	2

	Seals material	
	FPM	Nitrile
Code	1	2

Controllers and Cables

Controllers

Model	Pump	PART NUMBER
ACT 202 TH	ATH 200	200034
ACT 600 TH	ATH 300	111692

Interconnecting cables (pump to controller)

For pump	ATH200	ATH300
Associated controller	ACT202TH	ACT600TH
Cable lengths	PART NUMBER	
1 m	A463207-010	A461237-010
1.5 m	A463207-015	A461237-015
3.5 m	A463207-035	A461237-035
5 m	A463207-050	A461237-050
10 m	A463207-100	A461237-100
20 m	A463207-200	A461237-200

Cables comes with straight connector. For other lengths and connector configurations, please contact us.

Power cords for controller (for ACT202TH and ACT600TH*)

Designation	PART NUMBER
USA low voltage	103567
USA high voltage	103898
Europe	103566
Japan low voltage	103567
Japan high voltage	104559
United Kingdom	104411
Switzerland	A459212

* The ACT600TH controllers are supplied with one European power cord and one US low voltage power cord. The ACT202TH controllers are not supplied with power cord.

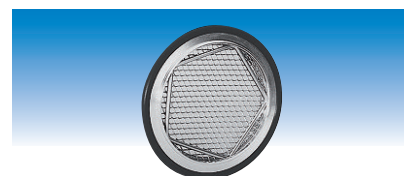
Accessories

Inlet screens and dense mesh dust filters

For pumps	Inlet flange	Mesh size		PART NUMBER
		2.5 mm	20 µm	
ATH 200, ATH 300	DN 100 ISO-K	●	●	056844
	DN 100 CF-F	●	●	056845
ATH 300	DN 160 ISO-K	●	●	102680
	DN 160 ISO-K	●	●	056942
	DN 160 CF-F	●	●	063216
			●	056928
			●	102685



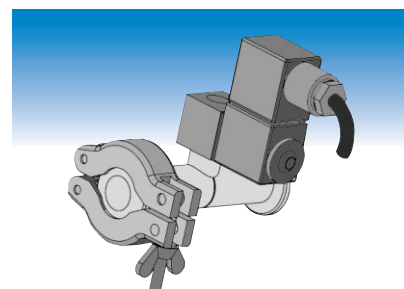
Dense mesh filters



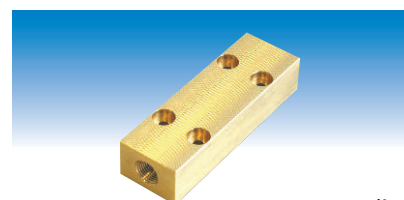
Inlet screen

Electrical venting valves

Voltage	For ATH 200, ATH 300	For ATH 300
	DN 16	DN 25 ISO-K
24 VDC	200042	200043
100V - 50/60 Hz	063165	063175
115V - 50/60 Hz	063171	063089
200V - 50/60 Hz	063173	063176
220V - 50/60 Hz	063169	056994
240V - 50/60 Hz	063172	063177



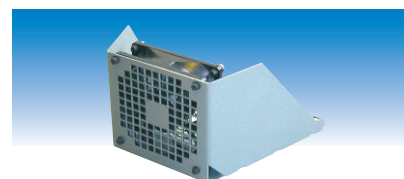
Electrical venting valve



Water cooling

Cooling kit

For pumps	Type	PART NUMBER
ATH 200	Air	109258
	Water	109259
ATH 300	Air	109258
	Water	109259



Air cooling

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