



# HiPace<sup>®</sup> 300 M



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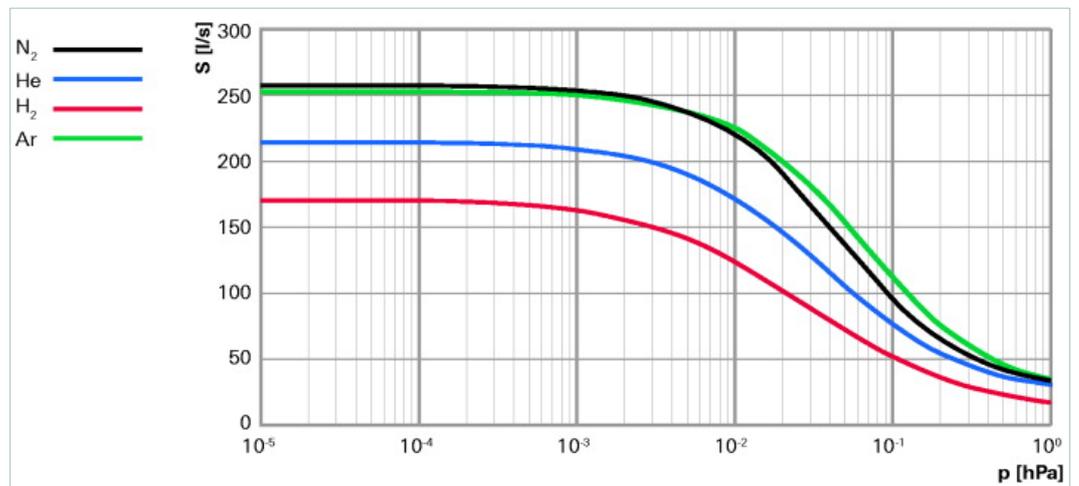
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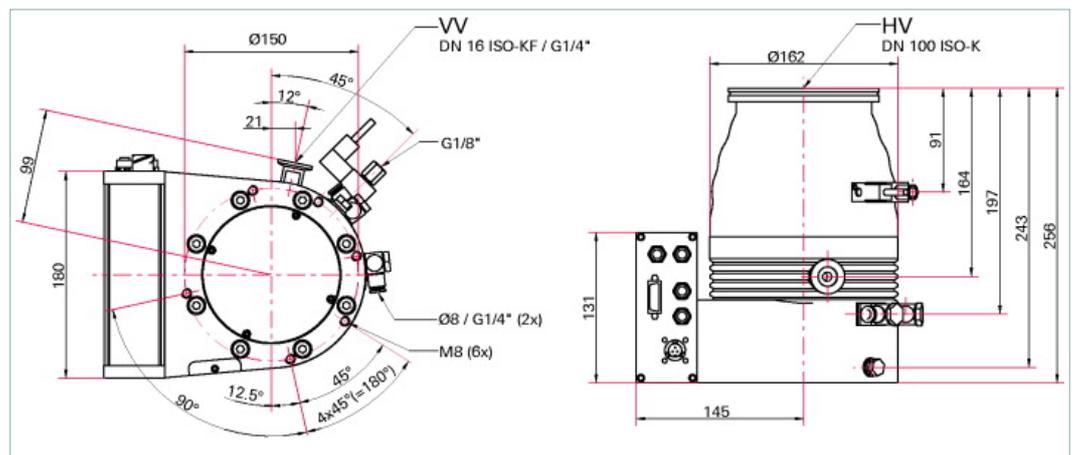
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## HiPace® 300 M with TM 700, DN 100 ISO-K

- 5-axis magnetically levitated turbopump with a pumping speed of 255 l/s for N<sub>2</sub>
- Integrated digital magnetic bearing controller TM 700
- Installation in any orientation; flexible through connectivity of up to 4 accessory parts
- With integrated water cooling for maximum gas throughput
- Interfaces: RS-485, Remote (Profibus/DeviceNet on request)
- The turbopump features extremely low vibration and is oil-free
- With patented In-field sensor calibration
- Including venting valve and patented "pulsed venting"
- Protection Class: IP 54
- Extensive accessories expand the range of applications



### Dimensions



### Technical Data

### HiPace® 300 M with TM 700, DN 100 ISO-K

Bearing	Magnetically Levitated
Compression ratio for Ar	$> 1 \cdot 10^{11}$
Compression ratio for H <sub>2</sub>	$5 \cdot 10^5$
Compression ratio for He	$> 1 \cdot 10^8$
Compression ratio for N <sub>2</sub>	$> 1 \cdot 10^{11}$
Cooling method, optional	Air, convection
Cooling method, standard	Water
Cooling water consumption	80 l/h

Technical Data	HiPace® 300 M with TM 700, DN 100 ISO-K
Cooling water temperature	15-35 °C   59-95 °F   288-308 K
Electronic drive unit	with TM 700
Flange (in)	DN 100 ISO-K
Flange (out)	DN 16 ISO-KF
Fore-vacuum max. for N <sub>2</sub>	20 hPa   15 Torr   20 mbar
Gas throughput at 0.1 hPa HV for Ar	11 hPa l/s   8.25 Torr l/s   11 mbar l/s
Gas throughput at 0.1 hPa HV for H <sub>2</sub>	5 hPa l/s   3.75 Torr l/s   5 mbar l/s
Gas throughput at 0.1 hPa HV for He	8 hPa l/s   6 Torr l/s   8 mbar l/s
Gas throughput at 0.1 hPa HV for N <sub>2</sub>	10 hPa l/s   7.5 Torr l/s   10 mbar l/s
Gas throughput at full rotational speed for Ar	13 hPa l/s   9.75 Torr l/s   13 mbar l/s
Gas throughput at full rotational speed for N <sub>2</sub>	28 hPa l/s   21 Torr l/s   28 mbar l/s
Interfaces	RS-485, Remote
Low vibrations	yes
Mounting orientation	in any orientation
Operating voltage	48 (± 5 %) V DC
Permissible magnetic field max.	5 mT
Protection category	IP 54
Pumping speed for Ar	250 l/s
Pumping speed for H <sub>2</sub>	170 l/s
Pumping speed for He	215 l/s
Pumping speed for N <sub>2</sub>	255 l/s
Rotation speed ± 2 %	60000 min <sup>-1</sup>
Rotation speed variable	20-100 %
Run-up time	< 2 min
Sound pressure level	≤ 45 dB (A)
Ultimate pressure according to PNEUROP	< 1 · 10 <sup>-7</sup> hPa   < 7.5 · 10 <sup>-8</sup> Torr   < 1 · 10 <sup>-7</sup> mbar
Venting connection	G 1/8"
Weight	13.1 kg   28.88 lb

Order number	
HiPace® 300 M	<b>PM P03 950</b>

<b>Accessories</b>	
<b>Accessory for TC 400/1200 and TM 700</b>	
Y-connector, shielded, M12 for accessories	<b>P 4723 013</b>
<b>Adapter and control cables</b>	
Control cable for pumping stations 0.7 m	<b>PM 061 675 AT</b>
HiPace - ACP connection cable	<b>PM 071 142 -X</b>
<b>Air cooling</b>	
Air cooling, shielded, for HiPace 400/700/800 and 300700/800 M with TC 400 PB/TM 700	<b>PM Z01 363</b>
<b>Connection cables</b>	
Connection cable for HiPace with TC 400/TM 700 to power supply TPS/DCU 310/311/400/401	<b>PM 061 352 -T</b>
<b>Control and display units</b>	
Accessories package for HPU 001/PC	<b>PM 061 005 -T</b>
DCU 002, Display Control Unit	<b>PM 061 348 -T</b>
HPU 001, Handheld Programming Unit	<b>PM 051 510 -T</b>
<b>DCU with integrated power supply</b>	
DCU 400, Display control unit incl. power supply	<b>PM C01 823</b>
<b>DN ISO-K, Mounting kit, bracket screws</b>	
Mounting kit for HiPace 300 M, DN 100 ISO-K, including coated centering ring, bracket screws	<b>PM 016 775 -T</b>
Mounting kit for HiPace 300 M, DN 100 ISO-K, including coated centering ring, splinter shield and bracket screws	<b>PM 016 776 -T</b>
Mounting kit for HiPace 300 M, DN 100 ISO-K, including coated centering ring with protective screen, bracket screws	<b>PM 016 777 -T</b>
<b>DN ISO-K / -F, sealings, splinter shields, protection screens</b>	
Centering ring with multifunction coating, DN 100 ISO-K/-F	<b>PM 016 210 -U</b>
Centering ring with multifunction coating and integrated protection screen, DN 100 ISO-K/-F	<b>PM 016 212 -U</b>
Centering ring with multifunction coating and integrated splinter shield, DN 100 ISO-K/-F	<b>PM 016 211 -U</b>
<b>Fore-vacuum safety valves</b>	
TVV 001 fore-vacuum safety valve, 115 V AC	<b>PM Z01 206</b>
TVV 001 fore-vacuum safety valve, 230 V AC	<b>PM Z01 205</b>
<b>Interface and extension cables</b>	
Interface cable, M12 m straight/M12 m straight, 3 m	<b>PM 061 283 -T</b>
<b>Mains cables</b>	
Mains cable 115 V AC, NEMA 5-15 to C13, 3 m	<b>P 4564 309 ZE</b>
Mains cable 208 V AC, NEMA 6-15 to C13, 3 m	<b>P 4564 309 ZF</b>
Mains cable 230 V AC, CEE 7/7 to C13, 3 m	<b>P 4564 309 ZA</b>
<b>Pressure Sensors</b>	
IKT 010, Digital Cold Cathode Sensor, low current	<b>PTR 72 100</b>
IKT 011, Digital Cold Cathode Sensor, high current	<b>PT R73 100</b>
RPT 010, Digital Piezo/Pirani Sensor	<b>PT R71 100</b>
TIC 010, Adapter for two sensors	<b>PT R70 000</b>
<b>Relay boxes</b>	
Relay box, shielded, for backing pumps, 1-phase 20 A for TC 400/1200, TM 700 and TCP 350, M12	<b>PM 071 285 -X</b>
Relay box, shielded, for backing pumps, 1-phase 7 A for TC 400/1200, TM 700 and TCP 350, M12	<b>PM 071 284 -X</b>

<b>Accessories</b>	
<b>RS-485</b>	
Connector M12 to RS-485	<b>PM 061 270 -X</b>
Power separator for RS-485	<b>PT 348 132 -T</b>
Termination resistor for RS-485	<b>PT 348 105 -T</b>
USB converter to RS-485 interface	<b>PM 061 207 -T</b>
Y-Connector M12 to RS-485	<b>P 4723 010</b>
<b>Sealing gas</b>	
Sealing gas throttle for HiPace 300	<b>PM Z01 317</b>
Sealing gas valve, shielded for HiPace 300 with TC 400 and TM 700, TCP 350	<b>PM Z01 312</b>
<b>TPS-19" rack module</b>	
Front panel kit for TPS 401	<b>PM 061 396 -T</b>
TPS 401, power supply 48 V DC, 19" partial plug-in 3HU	<b>PM 061 347 -T</b>
<b>TPS wall rail fitting</b>	
TPS 400, power supply 48 V DC, for wall/standard rail fitting	<b>PM 061 343 -T</b>
Wall rail fitting for TPS 110/180/310/400	<b>PM 061 392 -T</b>
<b>Venting accessory with small flange, G 1/8", hoses, air drier</b>	
TTV 001, dryer for venting turbopumps	<b>PM Z00 121</b>
<b>Venting valve (normally closed)</b>	
Venting valve, shielded, 24 V DC, G 1/8", for connection to TC 400/1200 and TM 700	<b>PM Z01 291</b>
<b>Vibration damper</b>	
Vibration damper for HiPace 300/400, DN 100 ISO-K/F	<b>PM 006 459 -X</b>

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