



# HiPace<sup>®</sup> 700 M

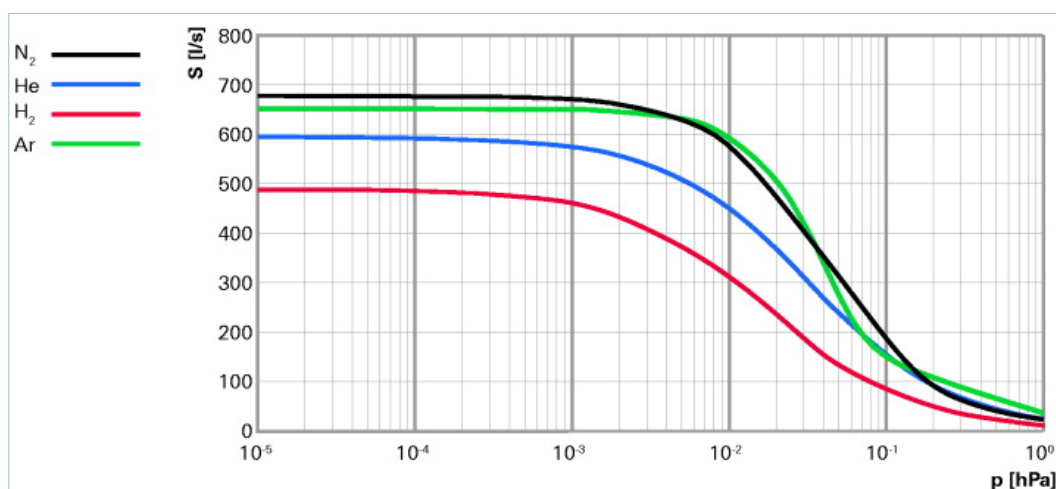




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## HiPace® 700 M with TM 700 and power supply OPS 400, Profibus, DN 160 ISO-F

- 5-axis magnetically levitated turbopump with a pumping speed of 685 l/s for N<sub>2</sub>
- Digital magnetic bearing controller TM 700 and power supply OPS 400 integrated
- 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



Technical Data	HiPace® 700 M with TM 700 and power supply OPS 400, Profibus, DN 160 ISO-F
Bearing	Magnetically Levitated
Compression ratio for Ar	$> 1 \cdot 10^{11}$
Compression ratio for H <sub>2</sub>	$2 \cdot 10^5$
Compression ratio for He	$> 1 \cdot 10^7$
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
Cooling water temperature	15-35 °C   59-95 °F   288-308 K
Electronic drive unit	with TM 700
Flange (in)	DN 160 ISO-F
Flange (out)	DN 25 ISO-KF
Fore-vacuum max. for N <sub>2</sub>	8 hPa   6 Torr   8 mbar
Gas throughput at 0.1 hPa HV for Ar	16 hPa l/s   12 Torr l/s   16 mbar l/s
Gas throughput at 0.1 hPa HV for H <sub>2</sub>	9 hPa l/s   6.75 Torr l/s   9 mbar l/s
Gas throughput at 0.1 hPa HV for He	16 hPa l/s   12 Torr l/s   16 mbar l/s
Gas throughput at 0.1 hPa HV for N <sub>2</sub>	16 hPa l/s   12 Torr l/s   16 mbar l/s
Gas throughput at full rotational speed for Ar	8 hPa l/s   6 Torr l/s   8 mbar l/s
Gas throughput at full rotational speed for N <sub>2</sub>	13 hPa l/s   9.75 Torr l/s   13 mbar l/s
Integrated power supply	yes
Interfaces	RS-485, Remote, Profibus
Low vibrations	yes
Mounting orientation	in any orientation

Technical Data		HiPace® 700 M with TM 700 and power supply OPS 400, Profibus, DN 160 ISO-F
Operating voltage		48 (± 5 %) V DC
Permissible magnetic field max.		5 mT
Protection category		IP 54
Pumping speed for Ar		660 l/s
Pumping speed for H <sub>2</sub>		480 l/s
Pumping speed for He		600 l/s
Pumping speed for N <sub>2</sub>		685 l/s
Rotation speed ± 2 %		49200 min <sup>-1</sup>
Rotation speed variable		20-100 %
Run-up time		4 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		18.3 kg   40.34 lb

Order number	
HiPace® 700 M	PM P04 984

Accessories	
<b>Accessory for TC 400/1200 and TM 700</b>	
Y-connector, shielded, M12 for accessories	P 4723 013
<b>Adapter and control cables</b>	
Control cable for pumping stations 0.7 m	PM 061 675 AT
HiPace - ACP connection cable	PM 071 142 -X
<b>Air cooling</b>	
Air cooling, shielded, for HiPace 400/700/800 and 300700/800 M with TC 400 PB/TM 700	PM Z01 363
<b>Control and display units</b>	
Accessories package for HPU 001/PC	PM 061 005 -T
DCU 002, Display Control Unit	PM 061 348 -T
HPU 001, Handheld Programming Unit	PM 051 510 -T
<b>DN ISO-F, Mounting kit</b>	
Mounting kit for DN 160 ISO-F, including coated centering ring, hexagon screws	PM 016 460 -T
Mounting kit for DN 160 ISO-F, including coated centering ring, protection screen, hexagon screws	PM 016 462 -T
Mounting kit for DN 160 ISO-F, including coated centering ring, protection screen, stud screws	PM 016 467 -T
Mounting kit for DN 160 ISO-F, including coated centering ring, splinter shield, hexagon screws	PM 016 461 -T
Mounting kit for DN 160 ISO-F, including coated centering ring, splinter shield, stud screws	PM 016 466 -T
Mounting kit for DN 160 ISO-F, including coated centering ring, stud screws	PM 016 465 -T
<b>DN ISO-K / -F, sealings, splinter shields, protection screens</b>	
Centering ring with multifunction coating, DN 160 ISO-K/-F	PM 016 216 -U
Centering ring with multifunction coating and integrated protection screen, DN 160 ISO-K/-F	PM 016 218 -U
Centering ring with multifunction coating and integrated splinter shield, DN 160 ISO-K/-F	PM 016 217 -U
<b>Fore-vacuum safety valves</b>	
TVV 001 fore-vacuum safety valve, 115 V AC	PM Z01 206
TVV 001 fore-vacuum safety valve, 230 V AC	PM Z01 205
<b>Interface and extension cables</b>	
Interface cable, M12 m straight/M12 m straight, 3 m	PM 061 283 -T
<b>Mains cables</b>	
Mains cable 115 V AC, NEMA 5-15 to HAN 3A, 3 m	PM 061 187 -X
Mains cable 208 V AC, NEMA 6-15 to HAN 3A, 3 m	P 4564 309 HB
Mains cable 230 V AC, CEE 7/7 to HAN 3A, 3 m	P 4564 309 HA
<b>Pressure Sensors</b>	
IKT 010, Digital Cold Cathode Sensor, low current	PTR 72 100
IKT 011, Digital Cold Cathode Sensor, high current	PT R73 100
RPT 010, Digital Piezo/Pirani Sensor	PT R71 100
TIC 010, Adapter for two sensors	PT R70 000
<b>Relay boxes</b>	
Relay box, shielded, for backing pumps, 1-phase 20 A for TC 400/1200, TM 700 and TCP 350, M12	PM 071 285 -X
Relay box, shielded, for backing pumps, 1-phase 7 A for TC 400/1200, TM 700 and TCP 350, M12	PM 071 284 -X

<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>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 with DN 160 ISO-K/F	<b>PM 006 492 -X</b>

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