

# Magnetic Rotor Suspension with integrated Frequency Converter, with Compound Stage

## TURBOVAC MAG W 300/400 iP

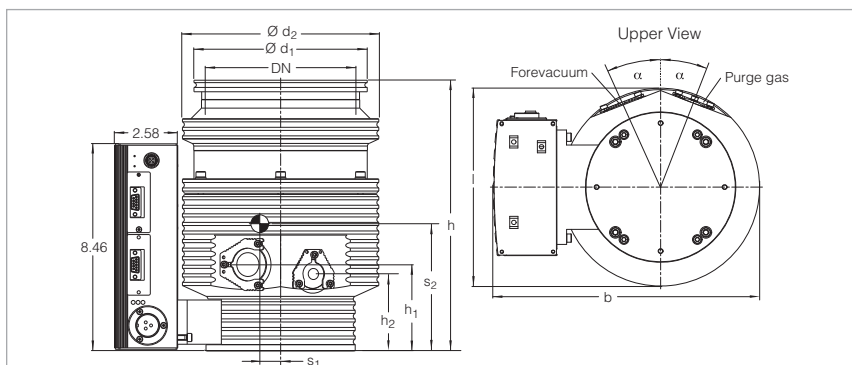


### Typical Applications

- Gas analysis systems
- Particle accelerators
- Electron microscopes
- Research
- Coating systems

### Technical Features

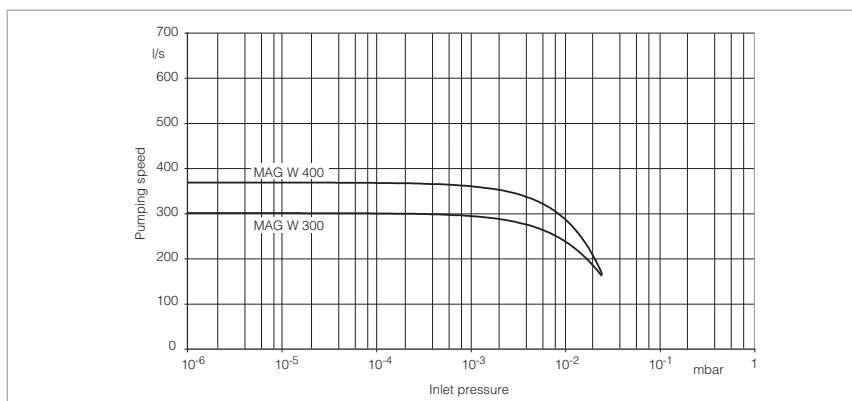
- Installation in any orientation
- DN 100 or 160 ISO-K and/or CF high vacuum connection
- DN 16 KF with clamped forevacuum connection
- Purge gas/venting connection DN 16 KF with clamped connection (purge/vent)
- Water or air cooling optional
- CE and RoHS compliant; fulfilment of UL requirements
- 2 slots for industrial communications modules
- Standard 9 pin 24 V SPS PLC-IO in Control Slot
- RS 232 C in Service Slot
- further interfaces can be fitted: Ethernet, Profibus, DeviceNet, RS 485 C



	DN	$\varnothing d_1$	$\varnothing d_2$	h	$h_1$	$h_2$	l	b	$b^*$	$\alpha$	$s_1$	$s_2$	
MAG W 300 iP	mm	100 ISO-K	130.0	155.0	250.0	77.7	70.0	156.0	250.0	233.0	16°	19.0	103.0
	in.		5.12	6.10	9.84	3.06	2.76	6.14	9.84	9.17	16°	0.75	4.06
	mm	100 CF	151.5	155.0	264.3	77.7	70.0	156.0	250.0	233.0	16°	15.0	129.0
	in.		5.96	6.10	10.41	3.06	2.76	6.14	9.84	9.17	16°	0.59	5.08
MAG W 400 iP	mm	160 ISO-K	180.0	155.0	241.0	77.7	70.0	168.5	262.5	245.5	16°	19.0	106.0
	in.		7.09	6.10	9.49	3.06	2.76	6.63	10.33	9.67	16°	0.75	4.17
	mm	160 CF	202.5	155.0	234.7	77.7	70.0	181.2	273.7	256.7	16°	14.0	129.0
	in.		7.97	6.10	9.24	3.06	2.76	9.13	10.78	10.11	16°	0.55	5.08

$b^*$  = width with plug of the DRIVE/BEARING cable connected instead of MAG.DRIVE iS

Dimensional drawing for the TURBOVAC MAG W 300/400 iP



Pumping speed for  $N_2$  of the TURBOVAC MAG W 300/400 iP as a function of the inlet pressure

### Advantages to the User

- Highest pumping speed from the smallest possible size
- New standard regarding maintenance free systems
- Suitability for vibration sensitive applications in the area of analytical engineering, thin-film technology, electron microscopes, research, development among others
- Flexibility due to the modular concept; the converter is optionally also available by way of a bench top unit

## TURBOVAC MAG

### Technical Data

#### W 300 iP

#### W 400 iP

Inlet flange	DN	100 ISO-K	100 CF	160 ISO-K	160 CF
<b>Pumping speed</b>					
N <sub>2</sub>	l x s <sup>-1</sup>	300	300	365	365
Ar	l x s <sup>-1</sup>	260	260	330	330
He	l x s <sup>-1</sup>	260	260	280	280
H <sub>2</sub>	l x s <sup>-1</sup>	190	190	200	200
Operating speed	min <sup>-1</sup>	58 800	58 800	58 800	58 800
<b>Compression ratio</b>					
N <sub>2</sub>		1.0 x 10 <sup>10</sup>	1.0 x 10 <sup>10</sup>	1.0 x 10 <sup>10</sup>	1.0 x 10 <sup>10</sup>
H <sub>2</sub>		3.2 x 10 <sup>3</sup>	3.2 x 10 <sup>3</sup>	3.2 x 10 <sup>3</sup>	3.2 x 10 <sup>3</sup>
He		9.2 x 10 <sup>4</sup>	9.2 x 10 <sup>4</sup>	9.2 x 10 <sup>4</sup>	9.2 x 10 <sup>4</sup>
Ultimate pressure	mbar (Torr)	< 10 <sup>-8</sup> (< 0.75 x 10 <sup>-8</sup> )	< 10 <sup>-10</sup> (< 10 <sup>-10</sup> )	< 10 <sup>-8</sup> (< 0.75 x 10 <sup>-8</sup> )	< 10 <sup>-10</sup> (< 10 <sup>-10</sup> )
Max. degassing temperature	°C (°F)	–	80 (176)	–	80 (176)
Max. foreline pressure for N <sub>2</sub>	mbar (Torr)	8 (6)	8 (6)	8 (6)	8 (6)
Recommended backing pump		TRIVAC D 2,5 E TRIVAC D 8 B	TRIVAC D 2,5 E TRIVAC D 8 B	TRIVAC D 2,5 E TRIVAC D 8 B	TRIVAC D 2,5 E TRIVAC D 8 B
Run-up time	min	< 5	< 5	< 5	< 5
Foreline flange (clamped)	DN	16 KF	16 KF	16 KF	16 KF
Purge / vent port (clamped)	DN	16 KF	16 KF	16 KF	16 KF
Water cooling connection (optional)	G	1/8"	1/8"	1/8"	1/8"
Weight, approx.	kg (lbs)	12 (26)	12 (26)	12 (26)	12 (26)



### Technical Data

## Integrated Frequency Converter TURBO.DRIVE iS

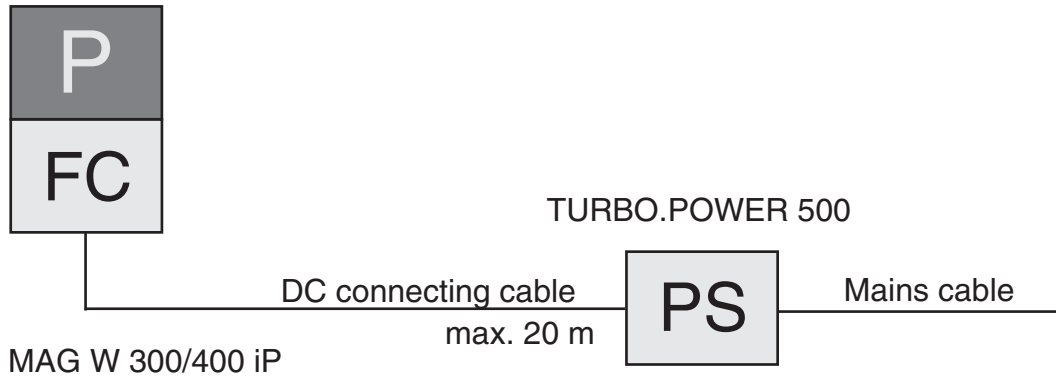
Power supply	V	48	48	48	48
Ripple	%	< 2	< 2	< 2	< 2
<b>Power consumption</b>					
Maximum	W	400	400	400	400
at ultimate pressure	W	259	259	259	259
DC current consumption, max.	A	7.5 to 9.3	7.5 to 9.3	7.5 to 9.3	7.5 to 9.3
DC power supply voltage range	V	43 to 53	43 to 53	43 to 53	43 to 53
<b>Length of the DC connection cable, max.</b>					
at 3 x 1.5 mm <sup>2</sup>	m (ft)	5 (17.5)	5 (17.5)	5 (17.5)	5 (17.5)
at 3 x 2.5 mm <sup>2</sup>	m (ft)	20 (70.0)	20 (70.0)	20 (70.0)	20 (70.0)
Contact rating for the relays, max.		32 V; 0,5 A	32 V; 0,5 A	32 V; 0,5 A	32 V; 0,5 A
<b>Permissible ambient temperature</b>					
during operation	°C	+10 to +40	+10 to +40	+10 to +40	+10 to +40
	(°F)	(+50 to +104)	(+50 to +104)	(+50 to +104)	(+50 to +104)
during storage	°C	0 to +60	0 to +60	0 to +60	0 to +60
	(°F)	(0 to +140)	(0 to +140)	(0 to +140)	(0 to +140)
Relative humidity of the air, non-condensing	%	5 to 85	5 to 85	5 to 85	5 to 85
Protection class	IP	30	30	30	30
Overvoltage category		II	II	II	II
Pollution category		2	2	2	2

## Ordering Information

## TURBOVAC MAG W 300/400 iP

TURBOVAC MAG W 300 iP with Integrated Frequency Converter and Seal Gas Connection	P FC	Part No.	
DN 100 ISO-K DN 100 CF		410300V0505 410300V0506	
TURBOVAC MAG W 400 iP with Integrated Frequency Converter and Seal Gas Connection	P FC		
DN 160 ISO-K DN 160 CF		410400V0505 410400V0506	
Mandatory Accessories		P FC	
Power supply TURBO.POWER 500		410300V0221	
DC cable frequency converter - power supply 1 m ( 3.5 ft) 3 m (10.5 ft) 5 m (17.5 ft) 10 m (35.0 ft) 20 m (70.0 ft)		410300V2001 410300V2003 410300V2005 410300V2010 410300V2020	
Mains cable, 3 m (10.5 ft) with EURO plug with US plug 5-15 P		800102V0002 800102V1002	
Forevacuum pump TRIVAC D 2,5 E 220-240 V, 50 Hz; 230 V, 60 Hz; earthed plug, EURO version 110-120 V, 50/60 Hz; NEMA plug, US version		140 000 140 002	
TRIVAC D 8 B 1 phase motor; 230 V, 50/60 Hz 3 phase motor; 230/400 V, 50 Hz; 250/440 V, 60 Hz		112 55 112 56	

## With integrated Frequency Converter



### Ordering Information

### TURBOVAC MAG W 300/400 iP

Accessories, optional	P	Part No.
Inlet screen		
DN 100 ISO-K		
coarse (3.2 x 3.2 mm (0.13 x 0.13 in.))		<b>800132V0101</b>
fine (1.6 x 1.6 mm (0.06 x 0.06 in.))		<b>800132V0102</b>
DN 100 CF		
coarse (3.2 x 3.2 mm (0.13 x 0.13 in.))		<b>200 91 514</b>
fine (1.6 x 1.6 mm (0.06 x 0.06 in.))		<b>E 200 17 195</b>
DN 160 ISO-K		<b>E 200 00 307</b>
DN 160 CF		<b>200 17 247</b>
Flange heater		
100 CF, 230 V, 50 Hz		<b>854 27</b>
100 CF, 115 V, 60 Hz		<b>854 28</b>
160 CF, 230 V, 50 Hz		<b>854 37</b>
160 CF, 115 V, 60 Hz		<b>854 38</b>
Water cooling unit		<b>410300V0101</b>
Air cooling unit		<b>410300V0102</b>
START/STOP switch for manual operation of the turbomolecular pump		<b>152 48</b>
DC plug		<b>800 001 694</b>
Solenoid venting valve, normally closed		
24 V DC, DN 16 KF		<b>800120V0011</b>
Power failure venting valve, normally open		<b>800120V0021</b>
<b>Included in the Delivery of the Pump</b>	<b>P</b>	
Flanges for forevacuum, venting and purge gas are blank-flanged		
Centering ring with FPM sealing ring and a clamping yoke		