

8 Appendix

8.1 Technical information

8.1.1 Technical data

Vacuum pump

Vacuum pump
technical data

Ambient conditions		(US)
Ambient temperature, max.	10 – 40 °C	50 – 104 °F
Storage/transport temperature	-10 – 60 °C	14 – 140 °F
Max. altitude	2000 m above sea level	6562 ft above sea level
Relative humidity	30 – 85 %, non-condensing	
Pollution degree	2	
Impact energy	5 J	
Protection class (DIN 60529)	IP 20	
Protection class (UL 50E)	type 1	
Operating conditions		(US)
Maximum admissible media temperature (gas), non-explosive atmosphere:		
Short term (< 5 minutes)	80 °C	176 °F
Continuous operation	40 °C	104 °F
Max. surface temperature in the area in contact with the medium	160 °C	320 °F
Connections		
Vacuum connection IN (inlet)	Small flange KF DN 25	
Outlet connection OUT	Small flange KF DN 25	
Cold device plug	+ power connection CEE, CH, CN, UK, IN, US	
Connection accessories (optional)	VACUU·BUS	
Controller connection (optional)	VACUU·BUS / Modbus RTU	

Technical data

Electrical data	
Nominal voltage	100 – 230 V ±10 %
Mains frequency	50 / 60 Hz
Overvoltage category	II
Power, max.	700 W
Interface	VACUU·BUS / Modbus RTU
Power cord	2 m
Max. permissible load on VACUU·BUS connections	11 W
Device fuse 2x	250 V / 8 AT – 5x20

Vacuum data		(US)
Max. pumping speed	10 m ³ /h	5.9 cfm
Ultimate vacuum*, abs.	5*10 ⁻³ mbar	3.8*10 ⁻³ Torr
Max. inlet pressure, abs.	Atmospheric pressure (ATM)	
Max. outlet pressure, abs.	15 mbar above atmospheric pressure	11 Torr above atmospheric pressure

* Specification at 1013 mbar. Due to their functional principle, the ultimate vacuum of screw pumps of this design shows a dependency on the ambient pressure.

Mechanical data		(US)
Dimensions (L x W x H)	507 mm x 269 mm x 413 mm	20 in x 10.6 in x 16.3 in
Weight*	21.1 kg	46.5 lb

* without cable

Other information	
Emission sound pressure level* (uncertainty K _{pA} : 3 dB(A))	52 dB(A)

* Measurement according to DIN EN ISO 2151:2009 and EN ISO 3744:1995 at ultimate vacuum with outlet line at outlet connection

Frequency converter

Frequency converter
technical data

Frequency converter		
Type	FC 700S 10	
Ambient conditions (US)		
Ambient temperature, max. (end use)	10 – 40 °C	50 – 104 °F
Storage/transport temperature	-10 – 60 °C	14 – 140 °F
Installation height, maximum (end use)	2000 m above sea level	6562 ft above sea level
Relative humidity	30 – 85 %, non-condensing	
Pollution degree	2	
Protection class (DIN 60529) (end use)	IP 00	
EMC (DIN EN 61326) (end use)	CE Declaration	
Cooling (end use)	Actively cooled	
Electrical data		
Nominal voltage (IN)	100 – 230 V ±10 %	
Mains frequency (IN)	50 / 60 Hz	
Power, max.	700 W	
Output voltage (OUT)	max. 400 VDC phase–phase	
Output frequency (OUT)	0 – 20 kHz	
Mechanical data (US)		
Housing	Open aluminum housing (drawer unit in end use)	
Dimensions (L x W x H)	220 mm x 253 mm x 119 mm	8.7 in x 10 in x 4.7 in
Weight including housing	1.96 kg	4.3 lb
Interfaces		
I/O interfaces	RS-485	
Internal power supply unit	24 VDC, 25 W (SELV)	
Function		
Software	Programming / parameterization	
Protective function	Overvoltage / undervoltage in the intermediate circuit; overcurrent; excessive temperature	