NICOTRA Gebhardt

Order line: 10

Specification of: PFP A1-0500 4.1kW 400V-3F M6H5

Direct driven high-performance centrifugal fan PFP
Motorized impeller with high system efficiency, with matching inlet nozzle, loose, suitable for horizontal or vertical installation, specifically developed and optimized for use without a scroll case. Equipped with flow measuring device IMV as a standard feature. Aluminium-made centrifugal impeller with 7 backward inclined welded blades. The wheel is directly fitted to a brushless external-rotor motor, with no transmission losses. The complete unit is dynamically balanced according to DIN ISO 21940-11. Light-weight motor frame cast from corrosion-resistant aluminium. A three-phase sensorless driver is fully integrated into the motor. Continuous speed variation control Drive System by 0 ... 10 V analogue signal, or with Modbus RS485 compliant interface. All the drive system is protected according to class IP 54. Power supply 400 V – 50/60 Hz. Air performance ratings according to AMCA 210-07 (Fig. 12) and ISO 5801:2007 (Fig. 41 and par. 30.3).

Technical data of the fan: PFP A1-0500 4.1kW 400V-3F M6H5

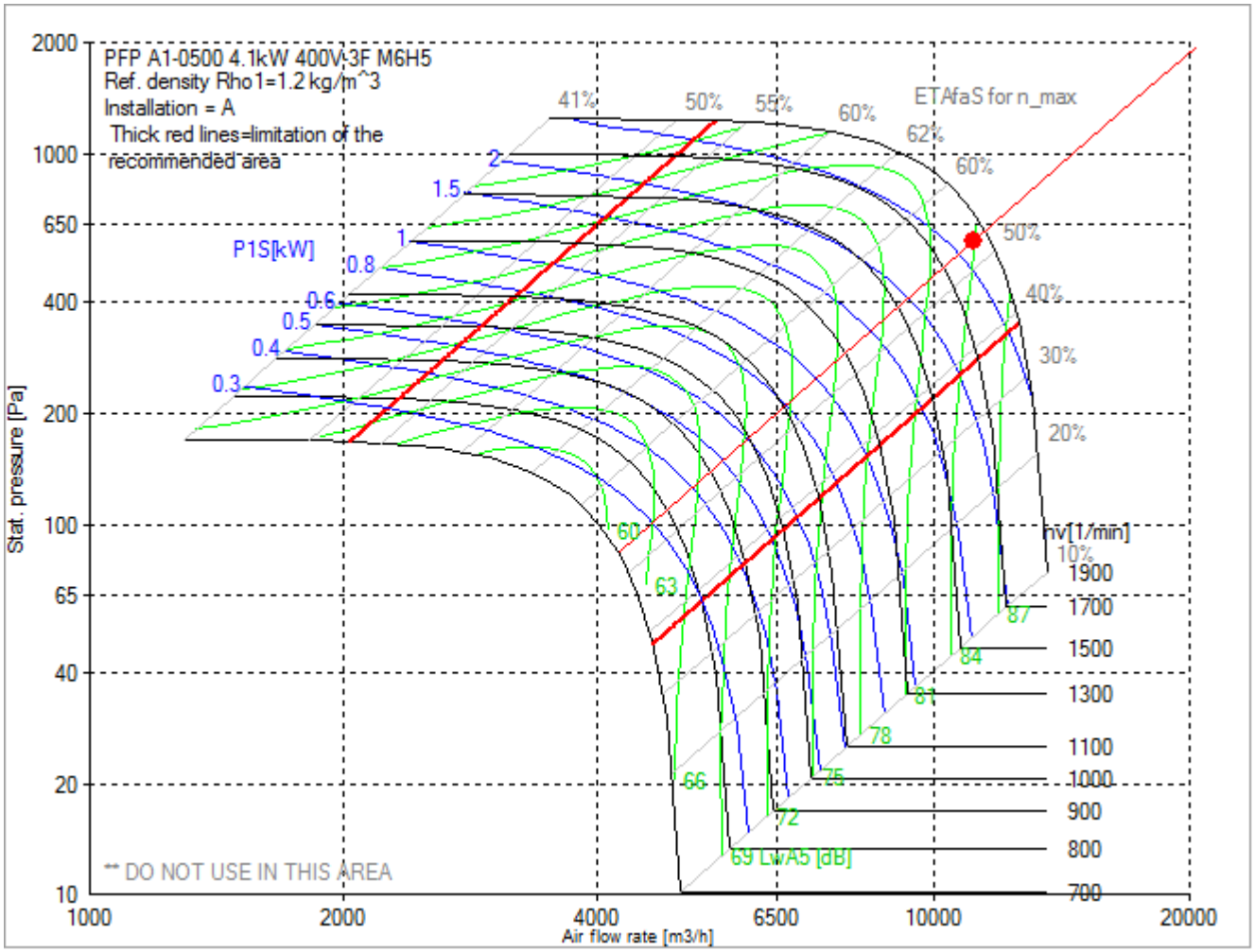
fulfills the ErP requirements 2015

Description	Value	Dimension
Installation acc. DIN 24163 Part 1	A	
Reference density (Rho1)	1.20	kg/m³
Medium temperature (t)	20	C
Air flow rate (V)	11138	m³/h
Total pressure rise (dp_t)	656	Pa
Dynamic pressure at discharge (pd_2)	71	Pa
Static pressure rise (dp_{fa})	585	Pa
Possible increase to max. speed (f_R)	3	%
Fan speed (n_v)	1841	min^{-1}
Absorbed power of fan system (P_{1S})	3.40	kW
max. current at n_v: Inverter out resp. control unit in (I)	5.7	A
System efficiency (ETA $_{faS}$) (over all efficiency of fan (static), motor, and inverter/Controller)	53	%
Specific Fan Power (SFP-factor)	1097	W/(m^3/s)
Nozzle calibration factor (K_{10})	208	m^2s/h
Differential pressure on nozzle (dp_D)	1720	Pa
Velocity at discharge area (c)	10.9	m/s
Fan weight	22	kg
A-weighted sound power level discharge/intake $LwA_{6/5}$	90/84	dB
Unweighted octave sound power level	Octave mid frequencies [1]	
	63/125/250/500/1k/2k/4k/8k	Hz
	77/77/87/84/83/86/77/75	dB discharge $LwOkt_6$
	76/78/88/79/76/77/72/71	dB intake $LwOkt_5$

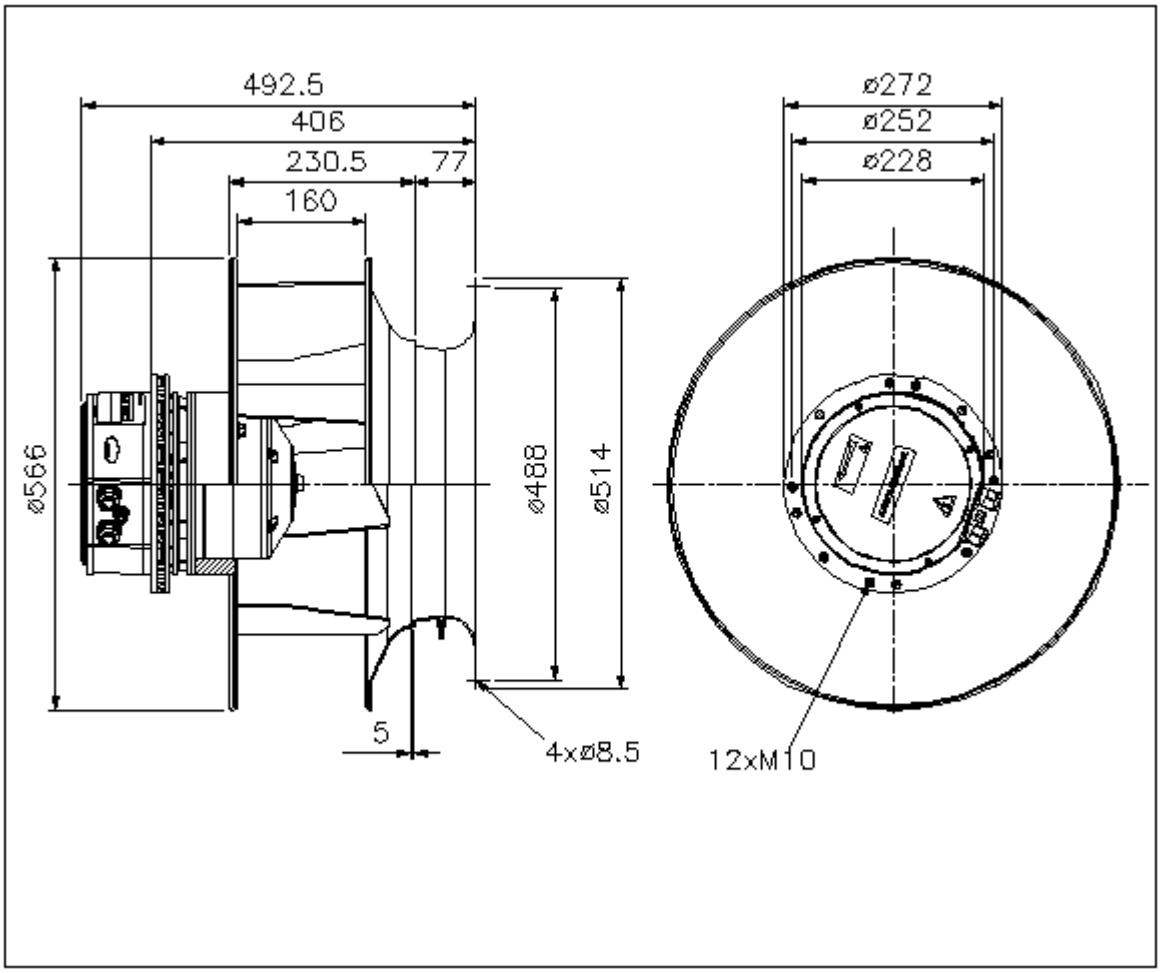
[1] The octave sound power levels can be higher at octave bands at or close to blade passing frequency.

Feed data		
Main's frequency (f_N)	50/60	Hz
Voltage (U_N)	3~ 400	V
operational limits		
Max. fan speed (n_{vmax})	1900	min^{-1}
Max. absorbed power of the system (P_{maxS})	4.10	kW
max. current: Inverter out resp. control unit in (I_{max})	6.2	A
Temperature range for conveying medium (t_{min} ...t_{max})	-20...40	C
ErP-Data at best efficiency and density 1.20 kg/m^3		
measurement- / efficiency category	A / static	
design status of VSD	VSD is integrated	
overall efficiency (ETA_{opt})	64.5	%
achieved efficiency grade (N_{ist})	68.5	
required efficiency grade in 2013 / 2015 (N)	58 / 62	
Air flow rate (V_{opt})	9408	m³/h
pressure rise (dp_{opt})	975	Pa
Fan speed (n_{vopt})	1900	min^{-1}
motor power input (P_{1opt})	3.94	kW
specific ratio (d_{dpopt})	1.010	

Fan curve to PFP A1-0500 4.1kW 400V-3F M6H5

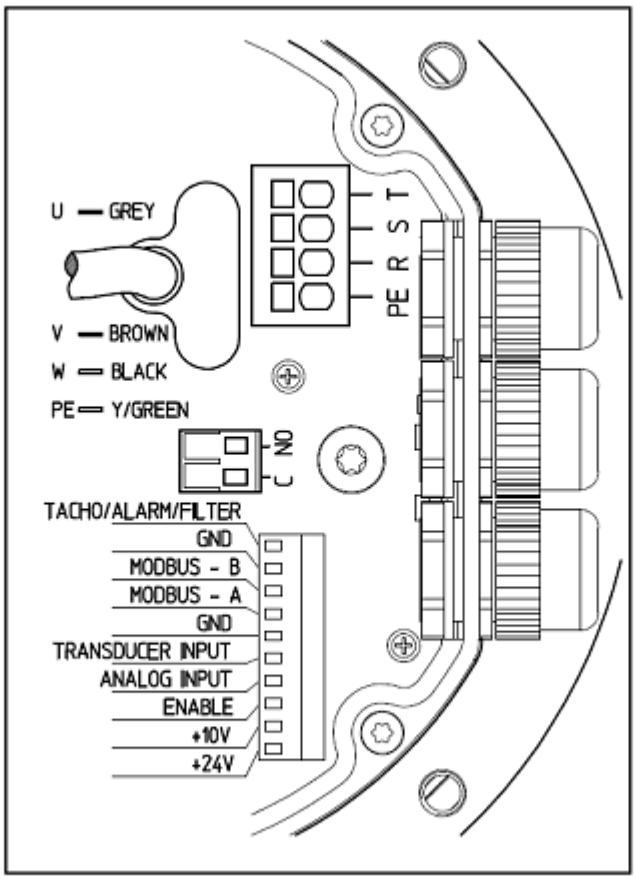


Dimensions to PFP A1-0500 4.1kW 400V-3F M6H5



Rotation:	RD
Handing:	90

Wiring diagram of the fan PFP A1-0500 4.1kW 400V-3F M6H5



11-10-2017 5Z

Wiring diagram for connection to: mains - VSD - motor
Rotation: LG