

The NFO Sinus® frequency inverter is based on a patented Swedish technology that allows you to control the speed of electric motors without generating electromagnetic interference, which in turn offers a range of unique benefits. Thanks to the sine-wave voltage, the inverter is intrinsic EMC, i.e., it is interference-free in itself.

NFO[®]
Sinus

SIMPLE

Installation is easy and cost-efficient due to there is no need of shielded cables, EMC filters or other EMC-classed installation accessories. When undertaking energy efficiency projects, it's also possible to use the existing non-shielded cables, this makes the installation work quick, easy and cost-efficient. There is no cable length limitation between the motor and the NFO Sinus except for the resistance of the cable. The NFO Sinus can be installed where it's suitable depending on the application, even if the distance to the motor is several hundred meters thanks to the Sinus technique which gives cost-efficient flexible solutions in all environments.

SILENT

NFO Sinus® is interference free and therefore does not create any electromagnetic interference which can disturb surrounding equipment. The NFO Sinus satisfies the most stringent demands set out in the EMC directive 2014/30/ EU without filters and without shielded cables and can be

used in every kind of environment from industrial, medical to residential. With NFO Sinus® you also avoid all the disturbing switching noise in the motor, which results in a quieter environment.

SAFE

NFO Sinus® does not generate any bearing currents. The motor therefore has a longer lifespan. No earth leakage currents are generated, which means that residual current devices for both personal safety and fire prevention can be used. This provides a high level of electrical safety.

HIGH PRECISION

The motor speed is very precisely controlled and with full torque right from stand-still as well as at a low speed regardless of chosen control mode Speed, frequency, torque or process-control. The inverter furthermore has an energy-save function that allows you to conserve even more energy when running with a low load on the motor, e.g., fans, which at times run at a low speed.



Simple installation

- No shielded cables
- No complicated installation requirement
- No limitations of distance



Silent operation

- No electromagnetic interference
- No irritating switching noise



Safe technology

- No bearing currents
- No earth currents

Power rating (kW)	18.5	22.0
Continuous Rating (A)	35	41.0
Maximum Rating (A)	42	49.2
Protection Class	IP54	IP54
Measurements HxDxW (mm)	900x280x300	900x280x300
Weight (kg)	45	45
Part number	NFO 2D3D3351D	NFO 2D3D3411D
	Voltage (V)	Frequency (Hz)
Input:	3x380-460V ±10%	50/60 Hz ± 10 %
Output:	0-460V + 10 %	0-150Hz
Output voltage wave form:	Sinus	
Operating mode:	4-kvadrant	
Control inputs configurable:	Setpoint	Actual value
2 pcs of voltage(V)	0-10V, 2-10V, ± 10V	0-10V, 2-10V, ± 10V
1 pc of current (mA)	0-20 mA, 4-20 mA ± 20 mA	0-20 mA, 4-20 mA ± 20 mA
1 pc of potentiometer input	Potentiometer 10 kΩ	
Selectable from terminal + or- logic	7 fixed setpoints	
Acceleration time:	0,2-500 s	
Retardation time:	0,2-500 s	
Relay outputs:	Common alarm (Potential free contact max IA 50VDC) Run signal (Potential free contact max IA 50VDC)	
Voltage output:	24V supply to external sensor	
Control modes:	Frequency control 0-150 Hz Speed control 0-9000 rpm Torque control 1-400% of nominal motor torque, depending on inverter capacity Process control PI- controller with feedback	
Local mode keyboard:	Forward, Reverse, Stop	
Motor protection:	Thermistor input PTC or Klixon Power guard Overload protection	
Communication:	Modbus RTU/ASCII	
Software:	Sinus Manager free download from www.nfodrives.se	
Energysave function:	Optimized motors magnetizing current at low load.	
Environment:	Ambient temp -10-> +40, °C Storage temp -20->+60°C RH 0->90% non-condensing.	
Earth current:	< 2 mA. RCD's for both person -and fireprotection can be used.	
EMC:	Certified to be used without shielded cables and filters EMC Directive 2014/30/EU Standards: EMC Emission EN 61000-6-3:2007/A1:2011 EMC Immunity EN 61000-6-2:2005, EN 61000-4-2, -3, -4, -5, -6, -11 LVD EN 61800-5-1	
Option		
Expansion card I/O:	Input PT1000 Output 0-10V, Frequency 0-32 kHz open collector Function relay Potential free contact max 2A 50VDC 50W, 24V to external sensor	
Brake resistors/chopper:	Dimensioning of braking resistors; see the user and installation manual Chap. 6	
Communication card:	Can-open, Profi-Bus DP	

For more information: See NFO Drives Operating and installation manual