

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 none 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

NFO Sinus® is available in size 0,37 kW up to 22 kW

| Power rating (kW) | 3.0 | 4.0 | 5.5 |
|-------------------------|---------------|---------------|---------------|
| Continuous Rating (A) | 6.7 | 8.8 | 11.1 |
| Maximum Rating (A) | 8.0 | 10.5 | 13.3 |
| Protection Class | IP54 | IP54 | IP54 |
| Measurements HxDxW (mm) | 413x280x150 | 413x280x150 | 413x280x150 |
| Weight (kg) | 10.8 | 10.8 | 10.8 |
| Part number | NFO 2B3A3670D | NFO 2B3A3880D | NFO 2B3A3111D |

| | Voltage (V) | Frequency (Hz) |
|--------------------------------------|-----------------------------|-----------------------------|
| Input: | 3x380-440V ±10% | 50/60 Hz ± 10 % |
| Output: | 0-440V + 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 | |

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|-----------------------------|--|
| Acceleration time: | 0,2-500 s |
| Retardation time: | 0,2-500 s |
| Relay outputs: | Common alarm (Potential free contact max 1A 50VDC) Run signal (Potential free contact max 1A 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 |
| Local mode keyboard: | Process control PI- controller with feedback 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-och fireprotection can be used. |
| EMC: | Certified to be used without Screen 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 |

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| 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