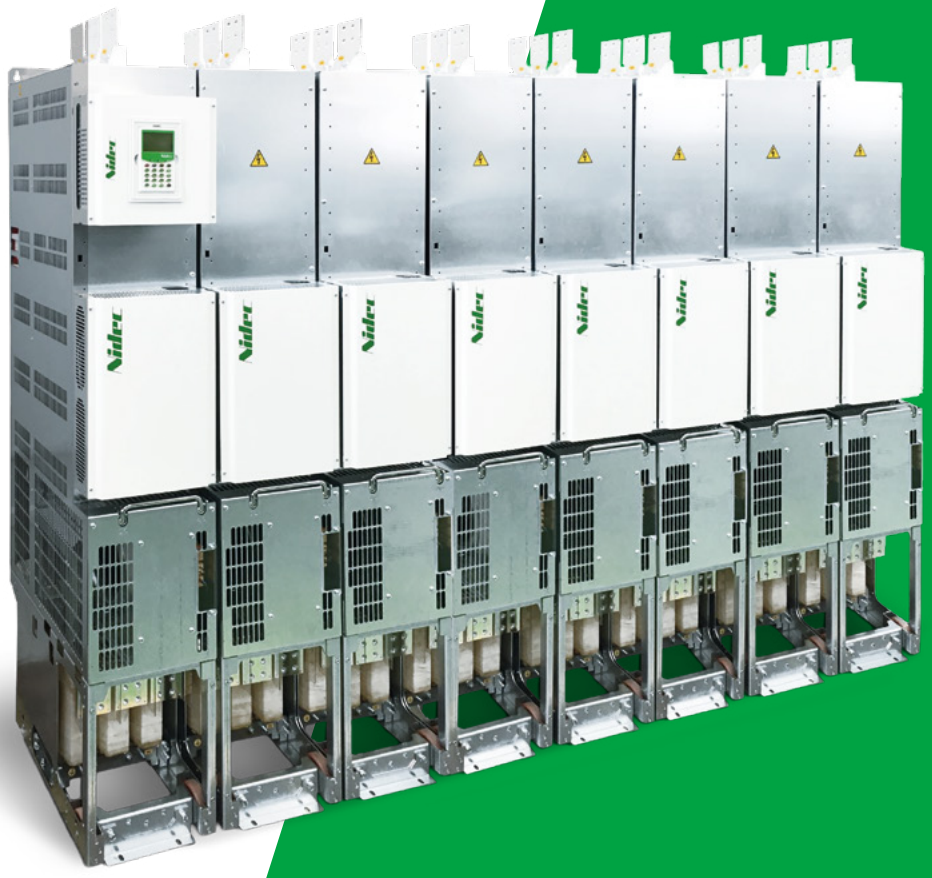
Nidec Conversion

AD5000

Air-cooled series



Variable frequency drives for industrial applications

380–690 V_{ac} or 650–1110 V_{dc}

18.5 kW–500 kW (single drive) / 4 MW (parallel drives)

Suitable for industrial automation applications including oil & gas, water treatment, HVAC, metals industry and ropeways. Scalable to medium and high-power systems adopting asynchronous and permanent magnet synchronous motors.
Available in multiple solutions providing flexibility for different needs:
AC/AC and DC/AC motor drive, and Active Front End (AFE).
Easily configurable either locally or remotely by Nidec Drive Manager (DVM) tool.
Supports the latest Ethernet-based protocols and provides back-compatibility with legacy fieldbuses.

Electrical

AC input voltage classes	380–480 V ± 10%		500 or 525–690 V ± 10%	
DC input voltage classes	650 V ± 10%	max. 770 V	975 V ± 10%	max. 1100 V
Rated current (I_{ND})	42–810 (x8) A		230–580 (x8) A	
Rated power (Motor drive)	18.5–450 (x8) kW / 3.6 MW		200–500 (x8) kW / 4 MW	
Rated power (AFE)	28–536 (x8) kVA / 4.3 MVA		263–662 (x8) kVA / 5.3 MVA	
AC input frequency	48–63 Hz			
Power factor	0.93 (total), 0.98 (fundamental), with typical line reactor at rated load			
Efficiency	98% max. at rated load			
Output frequency	0.1–200 Hz ± 0.05 Hz			
Control methods	V/f, vector V/f (sensorless), field-oriented control (FOC) with encoder or resolver, active front end (AFE).			
Switching frequency	1.5–8 kHz			

Environmental

Operating temperature	0 to +40 °C, above: current derating 1% per °C up to max. 55 °C
Storage temperature	-25 to +70 °C
Relative humidity	95% without condensation
Altitude	Up to 1000 m, above: current derating 1% per 100 m up to max. 3000 m
Protection grade	IP20 (frames I–VI) or IP00 (frames VII–VIII)
Cooling method	Forced air cooling with internal fan
Contamination level	Chemical gases: IEC 721-3-1 class 1C2. Solid particles: IEC 721-3-1 class 1S3.

Key features

Interfaces	Keypad with LCD display (option), or external control box (modular solution)
Configuration method	Locally, or remotely by Nidec Drive Manager (DVM) tool
PLC function	Built-in PLC compliant with IEC 61131-3 (ISaGRAF)
Communication protocols	Profinet, Ethernet/IP, EtherCAT, Modbus/TCP, Profibus DP, Modbus RTU
Line reactors	Included in AC/AC variants up to frame VI
Options	RFI filter, brake switch, I/O expansion, encoder/resolver expansion, safe torque off (STO), cart with or without output reactor (frames VII-VIII), sinusoidal filters
Reference standards and markings	EN IEC 61800-2, EN IEC 61800-3, EN IEC 61800-5-1, EN IEC 61800-5-2, EN 50178, CE, UL

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