Scaled portfolio for machine building

Competitiveness in machine equipment building is becoming increasingly challenging due to rising requirements in terms of energy efficiency, machine intelligence, and market needs, along with a shortage of skilled personnel and cost pressure. Lenze frequency inverters rise to these challenges.

i510 cabinet and i550 cabinet

- For control cabinets with cabinet space-optimized bookshelf design
- i510 cabinet for economic solutions and i550 cabinet for full flexibility and functionality

i510 protec and i550 protec

- i510 protec for cabinets requiring cubicle design or most economic decentral installation NEMA 1
- i550 protec for full flexibility and harsh decentral installations in NEMA 1 or NEMA 12/4X Indoor & Outdoor

i550 motec

- Motor and wall mounting in NEMA 4X
- Focus on installation time (connectors)
- Regenerative applications

Compact design
The smallest of their class for low space requirements in decentral installations or in the control cabinet e.g. only 2.3 in width up to 5 hp and only 5.1 in depth up to 15 hp.

Flexibility
No matter what power, mains voltage, communication interfaces, or diagnostic options are required, we have the right solution in our portfolio, optimized for the requirement.

User-friendliness
Many small details in the device facilitate handling and significantly reduce the time required for installation, commissioning, and service. These include voltage-free parameterization, simple menu navigation, practical factory settings, and pluggable connections, etc.

Innovations
Easy engineering and reduction of system costs by the integrated IO-Link master functionality of the i550 motec. Regenerative energy feedback by i550 motec in case of dynamic braking reduces energy consumption and simplifies engineering and system costs of a brake resistor.

Energy efficiency
The Lenze inverters comply with the Ecodesign Directive and achieve the lowest energy losses and thus ensure optimal efficiency in the machine design.

Centralized/decentralized
In many applications, a mixture of centralized and decentralized drive technology is useful. All frequency inverters show the same drive behavior and have a uniform parameter structure.

Product information

Frequency inverter

	i510 cabinet	i550 cabinet	i510 protec	i550 protec	i550 motec
					
Design/Mounting					
	Cabinet		Cabinet or wall		Wall or motor
Degree of protection					
	NEMA 250 Open Type	NEMA 250 Open Type	NEMA 1	NEMA 1, NEMA 12/4X	NEMA 4X
Mains connection/Power range					
1 AC 120 V	–	0.33 ... 1.5 hp	0.5 ... 1 hp	0.5 ... 1.5 hp	–
1 AC 230 V	0.33 ... 3 hp	0.33 ... 3 hp	0.5 ... 3 hp	0.5 ... 4 hp	–
3 AC 230 V	0.33 ... 7.5 hp	0.33 ... 7.5 hp	0.5 ... 7.5 hp	0.33 ... 60 hp	0.5 ... 30 hp
3 AC 480 V	0.5 ... 20 hp	0.5 ... 175 hp	1 ... 10 hp	0.5 ... 100 hp	0.5 ... 60 hp
3 AC 600 V	–	–	–	0.5 ... 30 hp	–
Market approvals					
Approval	CE, UKCA, UL, CSA, CCC, UKSepro				CE, UKCA, UL, CSA
Environment	RoHS				
Energy efficiency	IE2 according to EN IEC 61800-9-2				
Functions					
Motor controls	Energy-saving function (VFC eco), V/f characteristic control linear/square-law (VFC plus), sensorless vector control (SLVC), sensorless control for synchronous motors				
	–	Motor HTL encoder 100 kHz	–	Motor HTL encoder 100 kHz	Motor HTL encoder 200 kHz or IO-Link interface
Properties	DC-injection braking, brake management for low-wear brake control, dynamic braking via brake resistor, S-ramps for smooth acceleration and deceleration, flying restart circuit, PID control, cascade function for pumps and fans				
	Sequencer (16 steps), operation on UPS				–
	–	Dynamic braking through resistor	–	Dynamic braking through resistor	Dynamic braking through regeneration
Functional safety	–	Safe torque off (STO)	–	Safe torque off (STO)	Safe torque off (STO)
	–				Extended Safety (in preparation)
Overload behavior					
	200 % for 3 s; 150 % for 60 s				
Cooling					
Ambient operating temperature	3K3 (+14 ... +140 °F) EN IEC 60721-3-3 (derating of 2.5 %/°C above +113 °F)		3K3 (-22 ... +140 °F) EN IEC 60721-3-3 (derating of 2.5 %/°C above +104 °F)		
Inputs/Outputs					
Digital input/output	5/1				Max. 8/0 or 4/4 (configurable)
Analog input/output	2/1				–
NO/NC relay	1				–
IO-Link					
Operation	–	Device	–	Device	Master
Ports	–			–	Max. 4
Communication					
	CANopen – – Modbus RTU – – – –	CANopen EtherCAT EtherNet/IP Modbus RTU Modbus TCP Powerlink PROFIBUS PROFINET	CANopen – – Modbus RTU – – – –	– EtherCAT EtherNet/IP – Modbus TCP – – PROFINET	– EtherCAT EtherNet/IP – Modbus TCP – – PROFINET
Diagnostics					
	Keypad, WLAN module, USB module				USB RFID, WLAN (in preparation)
Compliances					
EN 61000-3-2	> 1.5 hp up to 16 A: no additional measures, < 1.5 hp: with mains choke				No additional measures
EN 61000-3-12	> 16 A: with mains choke				
	–			From 40 hp mains choke integrated	
EMC category C1	–	Max. 120 in up to 3 hp, above that RFI filter	–	Max. 120 in up to 3 hp	–
EMC category C2	Max. 800 in (up to 0.5 hp 600 in), above that RFI filter		–	Max. 800 in up to 15 hp > 15 hp 600 in	Max. 400 in
RCD operation					
	Up to 15 hp: 30 mA				Up to 60 hp: 30 mA