

i950 cabinet servo drive



The high-performance **i950 cabinet** servo drive easily integrates into modular machine solutions, thanks to a suite of Lenze technology applications. These innovative **FAST** pre-coded function blocks allow easy parameterization versus complete programming for each application.

This architecture, engineering, and use of application programming comes from over 75 years of application experience. These solutions dissolve the boundaries between centralized and decentralized motion control.

The i950 cabinet is available up to 150 hp (110 kW) and serves as a power extension of the **i750 cabinet** servo drive in the range from 30 to 150 hp (22 to 110 kW). It fits well with existing motion controllers that support CiA 402 motion over EtherCAT.

Easy diagnostics

A standard Ethernet port enables convenient on-site diagnostics using a standard cable, as well as easy networking with existing remote maintenance structures.

System bus

An EtherCAT-based system bus is used to synchronize several axes at high speed.

Easy commissioning

Vastly simplified setup of the servo drive using plug-and-play mechanisms.

- Real-time data exchange between drives
- Simplified diagnostics even with larger axis groupings

Easy implementation

The **Lenze FAST** pre-coded function blocks guide the user through the configuration process to achieve the optimum result in the shortest possible time.

Suited for the following applications

- Speed control
- Positioning
- Electronic gearbox
- Synchronization with mark correction
- Winding

Features and benefits

- **Scalable and flexible** — CODESYS open development environment expands your automation choices
- **Integrated PLC** — simplifies setup by using fewer components
- **Compact size** — reduces cabinet footprint compared to competitive drives (*Smallest frame size of up to 4 kW Dimensions: 11.3 in (287 mm) H x 2.36 in (60 mm) W x 7.36 in (187 mm) D*)
- **Auto-tuning** — provides quick controller adjustment
- **Less cabling** — utilizing One Cable Technology (OCT) reduces wiring time and potential connection flaws during installation
- **Pre-coded function blocks** — vastly simplifies programming using Lenze FAST (Fast Application Software Toolbox)
- **Safety on board** — Integrated safety protocols
- **Compatibility** — Complies with up to SIL 3/PL e Cat. 4
- **Certifications** — PLCopen, IEC61131-3

i950 cabinet



Design/mounting	Control cabinet
Degree of protection	NEMA 1 IP20

Mains connection/power range

1ph AC 230V (1ph AC 120V possible with derate)	0.37 ... 1.5 kW 0.5 ... 2.0 hp
3ph AC 230V	0.37 ... 5.5 kW 0.5 ... 7.5 hp
3ph AC 480V	0.55 ... 110 kW 0.75 ... 150 hp

Market approvals/environment

CE	Yes
UKCA	Yes
UL	Yes
CSA	Yes
CCC	Yes
RoHS	Yes
Energy efficiency	Class IE2
Degree of pollution	2
Vibration resistance during operation	Up to 1g
Insulation resistance	Category III

Control connections

Digital inputs	4 (optional: 5 / 4)
Digital outputs	0 (optional: 5 / 2)
Analog inputs	1 (optional: 0 / 1)
Analog outputs	0 (optional: 0 / 1)

Protective measures

Earth-fault protected	Yes
Short-circuit-proof	Yes
Overvoltage-proof	Yes
Motor stalling protection	Yes
Motor overtemperature	With PT 1000, I ² xt

Communication

CANopen	Yes
EtherCAT	Yes
EtherNet/IP	Yes
PROFINET	Yes

Feedback

HIPERFACE DSL® absolute value encoder (One Cable Technology OCT)	Yes
Resolver	Yes
HIPERFACE® SinCos absolute value encoder	Yes
Endat (V2.1&V2.2) SinCos absolute value encoder	Yes
SSI absolute value encoder	Yes
SSI SinCos absolute value encoder	Yes
TTL incremental encoder	Yes
HTL incremental encoder	Yes

Cooling

Operation (EN 60721-3-3)	3K3 (-10 ... +55°C)
Derating	2.5 %/°C above 45°C
Storage (EN 60721-3-1)	1K3 (-25 ... +60°C)
Transport (EN60721-3-2)	2K3 (-25 ... +70°C)

Operation on public supply systems

Device below 1 kW (EN IEC 61000-3-2)	With mains choke
Devices above 1 kW up to 16 A (EN IEC 61000-3-2)	Yes
Devices above 16 A (EN IEC 61000-3-2)	With mains choke

Motor cable lengths

EMC category C2	Max. 20 m above this with filter
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Fusing

Fuse characteristic	gG/gI or gRL
Circuit breaker characteristic	B or C
Earth-leakage circuit breaker	Type B

Functional safety

Stop functions

Safe torque off (STO)	Yes
Safe stop 1 (SS1)	Yes
Safe stop 2 (SS2)	Yes
Safe stop emergency (SSE)	Yes
Safe operational stop (SOS)	Yes
Safe brake control (SBC)	Yes
Cascading STO (CAS)	Yes

Monitoring functions

Safe maximum speed (SMS)	Yes
Safely limited speed (SLS)	Yes
Safe speed monitoring (SSM)	Yes
Safely limited increment (SLI)	Yes
Safe direction (SDI)	Yes
Safely limited position (SLP)	Yes
Safe position-dependent speed (PDSS)	Yes
Safe cam (SCA)	Yes

Motor controls

Motor controls

V/f characteristic control	Yes
V/f characteristic control with feedback	Yes
Vector control for asynchronous motors	Yes
Servo control for asynchronous motors	Yes
Servo control for synchronous motors	Yes
Sensorless control for synchronous motors	Yes

Additional functions

Auto-tuning	Yes
Wiring check	Yes
Torque control	Yes
Skip frequencies	Yes
Motor monitoring	Yes
Oscilloscope	Yes
Access protection for parameters	Yes

Technology applications

Speed Control	Yes
Table Positioning	Yes
Electronic Gearbox	Yes
Sync and Correction	Yes
Winder Dancer	Yes
Winder Tension	Yes
CiA 402 advanced	Yes
AC Drive Profile	Yes