

Frequency inverters



0.25 ... 132 kW



Lenze inverters – universally applicable

A multifunctional solution for all applications – just another way to perfectly describe the frequency inverter. Thanks to a high number of integrated functions, network interfaces and a simple parameter setting, the inverter is suitable for both mechanical engineering and machine construction.

Lenze inverters are an important component in modern drive solutions which range from the cloud via control systems to motors and gearmotors.

Typical application fields

- Textile machines
- Materials handling technology
- Packaging technology
- Forming technology
- Commercial HVAC (pumps, fans, and compressors)
- Wood working
- Car washes
- And many more

Features

- The modular and scalable concept allows for the selection of the right inverter required for the respective application.
- The compact design allows an efficient installation for applications where space means money.
- Energy efficiency and high functionality

The benefits for you

- Lower investment costs
- Less control cabinet space
- More productivity
- More time for innovation
- Sustainability
- Reliability

Features at a glance

Compact design



In mechanical engineering and machine construction, space is limited and expensive. Thus, Lenze inverters are extremely compact to implement solutions and save costs.

The i510 cabinet and i550 cabinet frequency inverters impress due to a space-saving design with a width of 60 mm (up to 4 kW) and a depth of just 130 mm (up to 11 kW). Moreover, the devices can be mounted directly next to each other without derating.

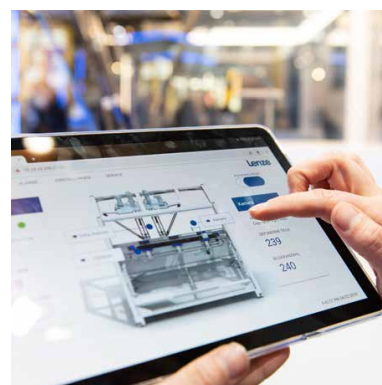
Flexibility



Lenze offers one of the most comprehensive solution portfolios for mechanical and plant engineering.

No matter which power, mains voltages, communication interfaces, or diagnostics options – our product range has the right solution 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.

Centralized/ decentralized



Many machines provide enough space for a compact frequency inverter such as the i510 cabinet or i550 cabinet.

In many applications, a mixture of centralized and decentralized drive technology is advisable. Fortunately, all Lenze frequency inverters have a similar drive behavior and can be commissioned with the same engineering tools.

Innovative



Innovative functions for a safe operation. Two examples:

Easy engineering and reduction of system costs through integration of limited IO-Link master functionality in the i550/i650 motec.

Regenerative energy feedback by the i550/i650 motec in case of dynamic braking reduces energy consumption. This simplifies engineering and saves the cost of a brake resistor.

Energy-efficient



Lenze inverters comply with the Ecodesign Directive, achieve the lowest possible energy losses, and thus ensure optimum efficiency in system design.

Scaled portfolio for machines

In mechanical engineering and machine construction, space is limited and expensive. Thus, Lenze inverters are extremely compact to implement solutions and save costs.

cabinet – These inverters are designed for installation in a control cabinet.

protec – These inverters can also be mounted decentrally in various machine modules close to the motor.

motec – These inverters are the ideal decentralized drive solution for wall and motor mounting.

Whether in the control cabinet, decentralized or mounted directly on the motor - our scalable frequency inverters are perfectly tailored to your needs.

The EASY Engineering Tools simplify the engineering of the machine and support the selection of the most suitable controllers, inverters and motors - energy-efficiently and sustainably.

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
					
Design/mounting	Control cabinet	Control cabinet	Wall	Wall or motor	Wall or motor
Power range	0.25 ... 15 kW	0.25 ... 132 kW	0.37 ... 75 kW	0.37 ... 45 kW	0.37 ... 45 kW
Degree of protection	IP20	IP20	IP55/66	IP66	IP66
Functional safety	-	Basic Safety - STO	Basic Safety - STO	Basic Safety - STO	Basic Safety - STO or Extended Safety - S
Communication	CANopen	CANopen	CANopen	-	-
	-	EtherCAT	EtherCAT	EtherCAT	EtherCAT
	-	EtherNet/IP	EtherNet/IP	EtherNet/IP	EtherNet/IP
	-	IO-Link (device)	IO-Link (device)	IO-Link (master)	IO-Link (master)
	Modbus RTU	Modbus RTU	Modbus RTU	-	-
	-	Modbus TCP	Modbus TCP	Modbus TCP	Modbus TCP
	-	POWERLINK	-	-	-
	-	PROFIBUS	-	-	-
Additional functions	-	PROFINET	PROFINET	PROFINET	PROFINET
	Sequence control	Sequence control	Sequence control	-	-
	-	-	-	-	Logic PLC
	-	-	-	-	Table positioning
	PID controller	PID controller	PID controller	PID controller	PID controller
	-	Energy compensation	Energy compensation	-	-
	-	-	-	Regenerative feedback mode	Regenerative feedback mode
	Basic Safety - STO Extended Safety - S	Safety function "Safe Torque Off (STO)" via terminals Safety technology with various functions via safety bus CIP Safety			

Product comparison

	Frequency inverter i510 cabinet	Frequency inverter i550 cabinet	Frequency inverter i550 protec	Frequency inverter i550 motec	Frequency inverter i650 motec
					
Design/mounting	Control cabinet	Control cabinet	Wall	Wall or motor	Wall or motor
Degree of protection	IP20	IP20	IP55/66	IP66	IP66

Mains connection/power range

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
1 AC 120 V	-	-	0.37 ... 1.1 kW	-	-
1 AC 230/240 V	0.25 ... 2.2 kW	0.25 ... 2.2 kW	0.37 ... 2.2 kW	-	-
3 AC 230/240 V	0.25 ... 7.5 kW	0.25 ... 7.5 kW	0.37 ... 45 kW	0.37 ... 22 kW	0.37 ... 22 kW
3 AC 400 V	0.37 ... 15 kW	0.37 ... 132 kW	0.37 ... 75 kW	0.37 ... 45 kW	0.37 ... 45 kW
3 AC 480 V	0.37 ... 15 kW	0.37 ... 132 kW	0.37 ... 75 kW	0.37 ... 45 kW	0.37 ... 45 kW
3 AC 600 V	-	-	0.75 ... 22 kW	-	-

Market approvals

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
CE	✓	✓	✓	✓	✓
UKCA	✓	✓	✓	✓	✓
cULus	✓	✓	✓	✓	✓
RoHS	✓	✓	✓	✓	✓
Energy efficiency	Class IE2	Class IE2	Class IE2	Class IE2	Class IE2

Ambient conditions

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Degree of pollution	2	2	2	2	2
Vibration resistance during operation	Up to 1 g	Up to 1 g	Up to 1 g	Up to 1 g	Up to 1 g
Insulation resistance	Category III	Category III	Category III	Category III	Category III
Operation (EN 60721-3-3)	3K3 (-10 ... +60 °C)	3K3 (-10 ... +60 °C)	3K3 (-30 ... +60 °C)	3K3 (-30 ... +60 °C)	3K3 (-30 ... +60 °C)
Derating	2.5 % / °C above 45 °C	2.5 % / °C above 45 °C	2.5 % / °C above 45 °C	2.5 % / °C above 40 °C	2.5 % / °C above 40 °C
Storage (EN 60721-3-1)	1K3 (-25 ... +60 °C)	1K3 (-25 ... +60 °C)	1K3 (-30 ... +60 °C)	1K3 (-30 ... +60 °C)	1K3 (-30 ... +60 °C)
Transport (EN 60721-3-2)	2K3 (-25 ... +70 °C)	2K3 (-25 ... +70 °C)	2K3 (-30 ... +70 °C)	2K3 (-30 ... +70 °C)	2K3 (-30 ... +70 °C)

Control connections

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Digital inputs	5	5 or 7	5	4/3 or 8/4	8/4
Digital outputs	1	1 or 2	1	0/1 or 0/4	0/4
Analog inputs	2	2	2	-	-
Analog outputs	1	1	1	-	-
Relay	1	1	1	-	-

✓ = standard, O = option, P = planned

Protective measures

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Earth-fault protected	✓	✓	✓	✓	✓
Short-circuit-proof	✓	✓	✓	✓	✓
Overvoltage-proof	✓	✓	✓	✓	✓
Motor stall protection	✓	✓	✓	✓	✓
Motor overtemperature	I ² xT	With PTC, I ² xT	With PTC, I ² xT	With PTC, I ² xT	With PTC, I ² xT

Operation on public networks

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Devices below 1 kW (EN IEC 61000-3-2)	With mains choke	With mains choke	With mains choke	✓	✓
Devices above 1 kW up to 16 A (EN IEC 61000-3-2)	✓	✓	✓	✓	✓
Devices above 16 A up to 75 A (EN IEC 61000-3-12)	With mains choke	With mains choke	From 30 kW Integrated mains choke	Rsce ≥ 250	Rsce ≥ 250

Motor cable lengths

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
EMC category C1	-	Max. 3 m up to 2.2 kW	Max. 3 m up to 2.2 kW	-	-
EMC category C2	Max. 15 m up to 0.37 kW Max. 20 m up to 11 kW	Max. 15 m up to 0.37 kW Max. 20 m up to 11 kW	Max. 20 m up to 11 kW	Max. 10 m	Max. 10 m

Fusing

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Fuses, characteristic	gG/gI or gRL	gG/gI or gRL	gG/gI or gRL	gG/gL or gRL up to 11 kW gR	gG/gL or gRL up to 11 kW gR
Circuit breakers, characteristic	B or C	B or C	B	B	B
Residual current devices (RCD), characteristic	≥ 30 mA up to 11 kW Type B or F	≥ 30 mA up to 11 kW Type B or F	≥ 30 mA up to 11 kW Type B	≥ 30 mA Type B	≥ 30 mA Type B

Communication

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
CANopen	O	O	O	-	-
EtherCAT	-	O	O	✓	✓
EtherNet/IP	-	O	O	✓	✓
IO-Link	-	O (device)	O (device)	O (master)	O (master)
Modbus RTU	O	O	O	-	-
Modbus TCP	-	O	O	✓	✓
POWERLINK	-	O	-	-	-
PROFIBUS	-	O	-	-	-
PROFINET	-	O	O	✓	✓

Feedback

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
HTL incremental encoder	-	✓	✓	✓	✓

Motor controls

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
V/f characteristic control	✓	✓	✓	✓	✓
Vector control for asynchronous motors	✓	✓	✓	✓	✓
Vector control for synchronous motors	✓	✓	✓	-	-
Vector control for synchronous motors with frequency support at low speeds	✓	✓	✓	✓	✓
V/f characteristic control with feedback	-	✓	✓	✓	✓
Vector control for asynchronous motors with feedback	-	✓	✓	✓	✓

✓ = standard, O = option, P = planned

Additional functions for the motor controls

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Auto-tuning	-	-	-	-	-
Boost	✓	✓	✓	✓	✓
Slip compensation	✓	✓	✓	✓	✓
Oscillation damping	✓	✓	✓	✓	✓
Torque control	✓	✓	✓	✓	✓
Skip frequencies	✓	✓	✓	✓	✓
Motor stall protection	✓	✓	✓	✓	✓
Motor monitoring	✓	✓	✓	✓	✓

Component control/additional functions

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Fixed frequencies (jog values)	✓	✓	✓	✓	✓
Motor potentiometer	✓	✓	✓	✓	✓
Sequence control	✓	✓	✓	-	-
Logic PLC	-	-	-	-	O
Table positioning	-	-	-	-	O
PID controller	✓	✓	✓	✓	✓
Position counter	✓	✓	✓	✓	✓
Parameter set changeover	✓	✓	✓	✓	✓

Energy efficiency

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Energy compensation	-	✓	✓	-	-
Energy-saving function "VFC eco"	✓	✓	✓	✓	✓
Regenerative feedback mode	-	-	-	✓	✓

Additional motor functions

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Flying restart circuit	✓	✓	✓	✓	✓
DC-injection brake	✓	✓	✓	✓	✓
Holding brake control	✓	✓	✓	✓	✓
Switching frequency setting	✓	✓	✓	✓	✓

System protection

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Access protection	✓	✓	✓	✓	✓
Temperature monitoring	✓	✓	✓	✓	✓
Mains failure control	✓	✓	✓	-	-
Operation on a UPS	✓	✓	✓	-	-

Safe stop functions

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Safe Torque Off (STO)	-	O	O	O	O
Safe stop 1 (SS1)	-	-	-	-	O
Safe stop emergency (SSE)	-	-	-	-	P
Safe stop 2 (SS2)	-	-	-	-	P
Safe Operational Stop (SOS)	-	-	-	-	P
Safe brake control (SBC)	-	-	-	-	P
Cascading STO (CAS)	-	-	-	-	P

Safe monitoring functions

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Safe maximum speed (SMS)	-	-	-	-	P (sensorless)
Safely limited speed (SLS)	-	-	-	-	P (sensorless)
Safe speed monitoring (SSM)	-	-	-	-	P (sensorless)
Safe direction (SDI)	-	-	-	-	P (sensorless)

✓ = standard, O = option, P = planned

Auxiliary and maintenance functions for functional safety

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Operation mode selector (OMS)	-	-	-	-	P
Enable switch (ES)	-	-	-	-	P
Safe Muting (MUT)	-	-	-	-	O

Safety bus

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
FSoE	-	-	-	-	P
CIP Safety	-	-	-	-	O (STO, SS1-t)
PROFIsafe	-	-	-	-	P

Operation and diagnostics

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Control panel	Accessories: Keypad	Accessories: Keypad	O (Keypad)	-	-
Diagnostic interface	Accessories: USB module (Micro-USB)	Accessories: USB module (Micro-USB)	✓ (Micro-USB)	✓ (USB-C)	✓ (USB-C)
WLAN	Accessories: WLAN module	Accessories: WLAN module	O (WLAN module)	P	P

Options

	i510 cabinet	i550 cabinet	i550 protec	i550 motec	i650 motec
Mains connection	- (terminals)	- (terminals)	- (terminals)	Han Q4/2 connector or terminals	Han Q4/2 connector or terminals
Motor connection	- (terminals)	- (terminals)	- (terminals)	Han Q8 connector, M23 connector, M40 connector, or terminals	Han Q8 connector, M23 connector, M40 connector, or terminals
I/Os	Basic-I/O (standard)	Standard-I/O (standard) or Application-I/O	Standard-I/O (standard)	Standard-I/O (standard) or Application-I/O	Application-I/O (standard)
Functional safety	-	Basic Safety - STO	Basic Safety - STO	Basic Safety - STO	Basic Safety - STO or Extended Safety - S

i510 cabinet

The i510 cabinet frequency inverter is a compact control cabinet device with scalable functionality. It is versatile, reliable, and easy to use.

The requirements of the Ecodesign Directive, standard EN IEC 61800-9-2, are met.

Application areas: Conveyor drives, traveling drives, pumps, fans, ...

Mains connection/power range

1 AC 230/240 V	0.25 ... 2.2 kW
3 AC 230/240 V	0.25 ... 7.5 kW
3 AC 400 V	0.37 ... 15 kW
3 AC 480 V	0.37 ... 15 kW

Highlights

- Space saving design: 60 mm wide (up to 4 kW), 130 mm deep (up to 11 kW), with zero-clearance mounting
- Innovative interaction (e.g. over WLAN) makes new record-breaking commissioning times and convenient diagnostics a reality
- Special user-friendliness



Product overview

V _{mains} [V]	Heavy Duty		Light Duty		Degree of protection	m [kg]	H x W x D [mm]	Info	Product
	P _{rated} [kW]	I _{rated} [A]	P _{rated} [kW]	I _{rated} [A]					
1 AC 230/240 V	0.25	1.7	-	-	IP20	0.75	155 x 60 x 130		i510-C0.25/230-1
	0.37	2.4	-	-					i510-C0.37/230-1
	0.55	3.2	-	-					i510-C0.55/230-1
	0.75	4.2	-	-	IP20	0.95	180 x 60 x 130		i510-C0.75/230-1
	1.1	6	-	-					i510-C1.1/230-1
	1.5	7	-	-					i510-C1.5/230-1
	2.2	9.6	-	-					i510-C2.2/230-1
1/3 AC 230/240 V	0.25	1.7	-	-	IP20	0.75	155 x 60 x 130		i510-C0.25/230-2
	0.37	2.4	-	-					i510-C0.37/230-2
	0.55	3.2	-	-					i510-C0.55/230-2
	0.75	4.2	-	-	IP20	0.95	180 x 60 x 130		i510-C0.75/230-2
	1.1	6	-	-					i510-C1.1/230-2
	1.5	7	-	-					i510-C1.5/230-2
	2.2	9.6	-	-					i510-C2.2/230-2
3 AC 230/240 V	4	16.5	5.5	20.6	IP20	2.1	250 x 90 x 130		i510-C4.0/230-3
	5.5	23	7.5	27.6					i510-C5.5/230-3
3 AC 400/480 V	0.37	1.3 / 1.1	-	-	IP20	0.75	155 x 60 x 130		i510-C0.37/400-3
	0.55	1.8 / 1.6	-	-					i510-C0.55/400-3
	0.75	2.4 / 2.1	-	-					i510-C0.75/400-3
	1.1	3.2 / 3	-	-	IP20	1.35	250 x 60 x 130		i510-C1.1/400-3
	1.5	3.9 / 3.5	-	-					i510-C1.5/400-3
	2.2	5.6 / 4.8	-	-					i510-C2.2/400-3
	3	7.3 / 6.3	4	8.8 / 7.6					i510-C3.0/400-3
	4	9.5 / 8.2	5.5	11.9 / 9.8					i510-C4.0/400-3
	5.5	13 / 11	7.5	15.6 / 13.2					i510-C5.5/400-3
	7.5	16.5 / 14	11	23 / 18.3					i510-C7.5/400-3
	11	23.5 / 21	15	28.2 / 25.2					i510-C11/400-3

Options



Communication

CANopen



Communication and I/Os

	Communication		I/Os	
Basic-I/O without network	Without		5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay	13-pole spring terminal, 3-pole screw terminal (relay)
Basic-I/O with CANopen/Modbus	CANopen/Modbus RTU	3-pole double spring terminal	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay	13-pole spring terminal, 3-pole screw terminal (relay)

Accessories

Connection

Shield mounting	See brochure "Accessories for frequency and servo inverters"
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System cables

		info	ID
Motor cables	See brochure "Accessories for frequency and servo inverters"		
Communication cables	3 m micro USB cable	 	13501172
	5 m micro USB cable	 	13501173

RFI and mains filters

RFI and mains filters i0FAE	See brochure "Accessories for frequency and servo inverters"
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Mains chokes

Mains chokes ELN1 EZAELN3 mains chokes	See brochure "Accessories for frequency and servo inverters"
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Diagnostics

		Info	ID
Keypad	Control panel for parameterization, control and diagnostics of the inverter directly on the device. Parameters and actual values are shown on the easy-to-read display.	 	13549150
USB module	For wired parameterization and diagnostics of the inverter with engineering tools.	 	13516238
WLAN module	For wireless parameterization and diagnostics of the inverter with engineering tools.	 	13648699
Protective cover	Protective cover when no diagnostic module is plugged on.	 	13502341
	Keypad holder for mounting in the control cabinet door	 	13550210
External keypad	Keypad holder with 3 m connection cable	 	13550222
	Keypad holder with 5 m connection cable	 	13550223
Memory modules	12 replacement modules for the inverter, directly pluggable.	 	13481882
Memory module copier	For duplicating the data of the memory module to other memory modules for faster serial commissioning.	 	13559235

Power supply units

24 V power supply units	See brochure "Accessories for frequency and servo inverters"
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Electrical protection devices and busbars

Fuses	
Fuse holders	See brochure "Accessories for frequency and servo inverters"
Busbars	

Mounting

		Info	ID
DIN rail mounting	Mounting kit for inverters 0.25 ... 0.75 kW	 	13566907
	Mounting kit for inverters 1.1 ... 5.5 kW	 	13566908

i550 cabinet

The i550 cabinet frequency inverter is a compact control cabinet device with scalable functionality. It is versatile, reliable, and easy to use.

The requirements of the Ecodesign Directive, standard EN IEC 61800-9-2, are met.

Application areas: Conveyor drives, traveling drives, winding drives, hoist drives, extruders, packaging machines, pumps, fans, ...

Mains connection/power range	
1 AC 120 V	0.25 ... 1.1 kW
1 AC 230/240 V	0.25 ... 2.2 kW
3 AC 230/240 V	0.25 ... 7.5 kW
3 AC 400 V	0.37 ... 132 kW
3 AC 480 V	0.37 ... 132 kW

Highlights

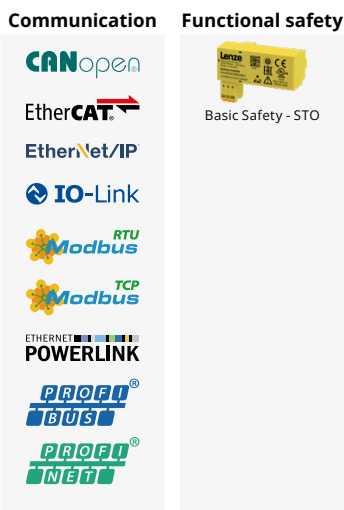
- Space saving design: 60 mm wide (up to 4 kW), 130 mm deep (up to 11 kW), with zero-clearance mounting
- Innovative interaction (e.g. over WLAN) makes new record-breaking commissioning times and convenient diagnostics a reality
- Optionally available with "Safe Torque Off (STO)" with SIL 3 (EN IEC 62061/ EN IEC 61508) and Performance Level e (EN ISO 13849-1)
- For the greatest possible flexibility available as a complete device or in individual parts (Power Unit, Control Unit and Safety Unit)



Product overview

V _{mains} [V]	Heavy Duty		Light Duty		Degree of protection	m [kg]	H x W x D [mm]	Info	Product
	P _{rated} [kW]	I _{rated} [A]	P _{rated} [kW]	I _{rated} [A]					
1 AC 120 V	0.25	1.7	-	-	IP20	1	180 x 60 x 130		i550-C0.25/120-1
	0.37	2.4	-	-					i550-C0.37/120-1
	0.75	4.2	-	-	IP20	1.35	250 x 60 x 130		i550-C0.75/120-1
	1.1	6	-	-					i550-C1.1/120-1
1 AC 230/240 V	0.25	1.7	-	-	IP20	0.8	155 x 60 x 130		i550-C0.25/230-1
	0.37	2.4	-	-					i550-C0.37/230-1
	0.55	3.2	-	-					i550-C0.55/230-1
	0.75	4.2	-	-					i550-C0.75/230-1
	1.1	6	-	-	IP20	1.35	250 x 60 x 130		i550-C1.1/230-1
	1.5	7	-	-					i550-C1.5/230-1
	2.2	9.6	-	-					i550-C2.2/230-1
1/3 AC 230/240 V	0.25	1.7	-	-	IP20	0.8	155 x 60 x 130		i550-C0.25/230-2
	0.37	2.4	-	-					i550-C0.37/230-2
	0.55	3.2	-	-					i550-C0.55/230-2
	0.75	4.2	-	-					i550-C0.75/230-2
	1.1	6	-	-	IP20	1.35	250 x 60 x 130		i550-C1.1/230-2
	1.5	7	-	-					i550-C1.5/230-2
	2.2	9.6	-	-					i550-C2.2/230-2
3 AC 230/240 V	4	16.5	5.5	20.6	IP20	2.1	250 x 90 x 130		i550-C4.0/230-3
	5.5	23	7.5	27.6					i550-C5.5/230-3
3 AC 400/480 V	0.37	1.3 / 1.1	-	-	IP20	0.8	155 x 60 x 130		i550-C0.37/400-3
	0.55	1.8 / 1.6	-	-					i550-C0.55/400-3
	0.75	2.4 / 2.1	-	-					i550-C0.75/400-3
	1.1	3.2 / 3	-	-					i550-C1.1/400-3
	1.5	3.9 / 3.5	-	-	IP20	1.35	250 x 60 x 130		i550-C1.5/400-3
	2.2	5.6 / 4.8	-	-					i550-C2.2/400-3
	3	7.3 / 6.3	4	8.8 / 7.6					i550-C3.0/400-3
	4	9.5 / 8.2	5.5	11.9 / 9.8					i550-C4.0/400-3
	5.5	13 / 11	7.5	15.6 / 13.2	IP20	2.3	250 x 90 x 130		i550-C5.5/400-3
	7.5	16.5 / 14	11	23 / 18.3					i550-C7.5/400-3
	11	23.5 / 21	15	28.2 / 25.2					i550-C11/400-3
	15	32 / 27	18.5	38.4 / 32.4					i550-C15/400-3
	18.5	40 / 34	22	48 / 40.8	IP20	8	342 x 180 x 165		i550-C18.5/400-3
	22	47 / 44.4	30	56.4 / 48.5					i550-C22/400-3
	30	61 / 52	37	73.2 / 62.4					i550-C30/400-3
	37	76 / 65	45	91.2 / 78					i550-C37/400-3
	45	89 / 77	55	107 / 82.4	IP20	17.2	450 x 250 x 230		i550-C45/400-3
	55	110 / 96	75	132 / 115					i550-C55/400-3
	75	150 / 124	90	180 / 149					i550-C75/400-3
	90	180 / 156	110	216 / 187					i550-C90/400-3
	110	212 / 162	132	254 / 216	IP20	35.6	685 x 258 x 304		i550-C110/400-3

Options



Communication and I/Os

	Communication		I/Os	
Standard-I/O without network	Without		5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with CANopen	CANopen	3-pole double spring terminal	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with EtherCAT	EtherCAT	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with EtherNet/IP	EtherNet/IP	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with IO-Link	IO-Link	3-pole spring terminal	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with Modbus RTU	Modbus RTU	3-pole double spring terminal	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with Modbus TCP	Modbus TCP	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with Powerlink	POWERLINK	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with PROFIBUS	PROFIBUS	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Standard-I/O with PROFINET	PROFINET	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 3-pole screw terminal (relay)
Application-I/O without network	Without		7 x digital input, 2 x digital output, 2 x analog input, 2 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 12-pole spring terminal, 3-pole screw terminal (relay)

Functional safety

Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" This function corresponds to a "Stop 0" according to EN 60204	3-pole double spring terminal
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Accessories

Connection

Shield mounting	See brochure "Accessories for frequency and servo inverters"
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System cables

		Info	ID
Motor cables	See brochure "Accessories for frequency and servo inverters"		
Communication cables	3 m micro USB cable	 	13501172
	5 m micro USB cable	 	13501173

RFI and mains filters

RFI and mains filters i0FAE	See brochure "Accessories for frequency and servo inverters"
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Mains chokes

Mains chokes ELN1 EZAELN3 mains chokes	See brochure "Accessories for frequency and servo inverters"
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Braking operation and brake control

		Info	ID
Brake resistors	See brochure "Accessories for frequency and servo inverters"		
Brake connection sets	1 x brake rectifier for 1 x 230 V AC	 	13218705
	1 x brake rectifier for 3 x 400 V AC	 	13218704

Diagnostics

		Info	ID
Keypad	Control panel for parameterization, control and diagnostics of the inverter directly on the device. Parameters and actual values are shown on the easy-to-read display.	 	13549150
USB module	For wired parameterization and diagnostics of the inverter with engineering tools.	 	13516238
WLAN module	For wireless parameterization and diagnostics of the inverter with engineering tools.	 	13648699
Protective cover	Protective cover when no diagnostic module is plugged on.	 	13502341
External keypad	Keypad holder for mounting in the control cabinet door	 	13550210
	Keypad holder with 3 m connection cable	 	13550222
	Keypad holder with 5 m connection cable	 	13550223
	12 replacement modules for the inverter, directly pluggable.	 	13481882
Memory module copier	For duplicating the data of the memory module to other memory modules for faster serial commissioning.	 	13559235

Power supply units

24 V power supply units	See brochure "Accessories for frequency and servo inverters"
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Electrical protection devices and busbars

Fuses	
Fuse holders	See brochure "Accessories for frequency and servo inverters"
Busbars	

Mounting

		Info	ID
DIN rail mounting	Mounting kit for inverters 0.25 ... 0.75 kW	 	13566907
	Mounting kit for inverters 1.1 ... 5.5 kW	 	13566908

i550 protec

The i550 protec frequency inverter uses the same tried-and-tested technology used in control cabinet inverters and differs in terms of a higher degree of housing protection and an adapted design. If there is not enough space in the control cabinet or the inverter has to be mounted close to the motor in various machine modules, then this versatile and reliable device is the right solution. Thanks to the extension box, a disconnect switch and operating elements can be used.

The requirements of the Ecodesign Directive, standard EN IEC 61800-9-2, are met.

Application areas: Conveyor drives, traveling drives, winding drives, hoist drives, extruders, packaging machines, pumps, fans, ...

Mains connection/power range

1 AC 120 V	0.37 ... 1.1 kW
1 AC 230/240 V	0.37 ... 2.2 kW
3 AC 230/240 V	0.37 ... 45 kW
3 AC 400 V	0.37 ... 75 kW
3 AC 480 V	0.37 ... 75 kW
3 AC 600 V	0.75 ... 22 kW

Highlights

- Decentralized drive with IO-Link interface V1.1
- Integrated diagnostic interface (micro USB) for service purposes
- Versions with or without disconnect switch, with keypad or WLAN module for easy commissioning
- Optionally available with "Safe Torque Off (STO)" with SIL 3 (EN IEC 62061/ EN IEC 61508) and Performance Level e (EN ISO 13849-1)



Product overview

V _{mains} [V]	P _{rated} [kW]	I _{rated} [A]	Degree of protection	i550 protec without extension box			i550 protec with extension box			Product
				m [kg]	H x W x D [mm]	Info	m [kg]	H x W x D [mm]	Info	
1 AC 120 V	0.37	2.4	IP66	1.8	190 x 140 x 117	i	2.5	330 x 140 x 117	i	i550-P0.37/120-1
	0.75	4.2	IP66	2.7	205 x 140 x 140	i	3.5	346 x 140 x 140	i	i550-P0.75/120-1
	1.1	6				i			i	i550-P1.1/120-1
1 AC 230/240 V	0.37	2.4	IP66	1.8	190 x 140 x 117	i	2.5	330 x 140 x 117	i	i550-P0.37/230-1
	0.55	3.2				i			i	i550-P0.55/230-1
	0.75	4.2				i			i	i550-P0.75/230-1
	1.1	6	IP66	2.7	205 x 140 x 140	i	3.5	346 x 140 x 140	i	i550-P1.1/230-1
	1.5	7				i			i	i550-P1.5/230-1
	2.2	9.6				i			i	i550-P2.2/230-1
1/3 AC 230/240 V	0.37	2.4	IP66	1.7	190 x 140 x 117	i	2.4	330 x 140 x 117	i	i550-P0.37/230-2
	0.55	3.2				i			i	i550-P0.55/230-2
	0.75	4.2				i			i	i550-P0.75/230-2
	1.1	6	IP66	2.6	205 x 140 x 140	i	3.4	346 x 140 x 140	i	i550-P1.1/230-2
	1.5	7				i			i	i550-P1.5/230-2
	2.2	9.6				i			i	i550-P2.2/230-2
3 AC 230/240 V	3	12	IP66	4.8	250 x 180 x 168	i	5.9	396 x 180 x 165	i	i550-P3.0/230-3
	4	16.5				i			i	i550-P4.0/230-3
	5.5	23				i			i	i550-P5.5/230-3
	7.5	29	IP66	5	290 x 180 x 173	i	6.2	471 x 180 x 170	i	i550-P7.5/230-3
	11	42				i			i	i550-P11/230-3
	15	54				i			i	i550-P15/230-3
	18.5	68	IP66	9.4	405 x 230 x 187	i	11.9	612 x 230 x 184	i	i550-P18.5/230-3
	30	89	IP55	46	778 x 298 x 286	i	-	-	-	i550-P30/230-3
	45	150	IP55	53	778 x 298 x 378	i	-	-	-	i550-P45/230-3
3 AC 400/480 V	0.37	1.3 / 1.1	IP66	1.8	190 x 140 x 117	i	2.5	330 x 140 x 117	i	i550-P0.37/400-3
	0.55	1.8 / 1.6				i			i	i550-P0.55/400-3
	0.75	2.4 / 2.1				i			i	i550-P0.75/400-3
	1.1	3.2 / 3	IP66	2.7	205 x 140 x 140	i	3.5	346 x 140 x 140	i	i550-P1.1/400-3
	1.5	3.9 / 3.5				i			i	i550-P1.5/400-3
	2.2	5.6 / 4.8				i			i	i550-P2.2/400-3
	3	7.3 / 6.3	IP66	4.9	250 x 180 x 168	i	6	396 x 180 x 165	i	i550-P3.0/400-3
	4	9.5 / 8.2				i			i	i550-P4.0/400-3
	5.5	13 / 11				i			i	i550-P5.5/400-3
	7.5	16.5 / 14	IP66	5.1	290 x 180 x 173	i	6.3	471 x 180 x 170	i	i550-P7.5/400-3
	11	23.5 / 21				i			i	i550-P11/400-3
	15	32 / 27				i			i	i550-P15/400-3
	18.5	40 / 34	IP66	10.2	405 x 230 x 187	i	12	612 x 230 x 184	i	i550-P18.5/400-3
	22	47 / 40.4				i			i	i550-P22/400-3
	30	61 / 52				i			i	i550-P30/400-3
	37	76 / 65	IP55	46	778 x 298 x 286	i	-	-	-	i550-P37/400-3
	45	89 / 77				i				i550-P45/400-3
	55	110 / 96				i				i550-P55/400-3
	75	150 / 124	IP55	53	778 x 298 x 378	i	-	-	-	i550-P75/400-3
3 AC 600 V	0.75	1.7	IP66	1.8	190 x 140 x 117	i	2.5	330 x 140 x 117	i	i550-P0.75/600-3
	1.5	2.7	IP66	2.7	205 x 140 x 140	i	3.5	346 x 140 x 140	i	i550-P1.5/600-3
	2.2	3.9				i			i	i550-P2.2/600-3
	4	6.1				i			i	i550-P4.0/600-3
	5.5	9	IP66	4.9	250 x 180 x 168	i	6	396 x 180 x 165	i	i550-P5.5/600-3
	7.5	11				i			i	i550-P7.5/600-3
	11	17				i			i	i550-P11/600-3
	15	22	IP66	10.2	405 x 230 x 187	i	12	612 x 230 x 184	i	i550-P15/600-3
	18.5	27				i			i	i550-P18.5/600-3
	22	32				i			i	i550-P22/600-3

Options



Communication	Diagnostics	Functional safety
 	 Keypad WLAN module	 Basic Safety - STO

Communication and I/Os

	Communication		I/Os	
Standard-I/O without network	Without		5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)
Standard-I/O with CANopen	CANopen	3-pole spring terminal	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)
Standard-I/O with EtherCAT	EtherCAT	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)
Standard-I/O with EtherNet/IP	EtherNet/IP	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)
Standard-I/O with IO-Link	IO-Link	3-pole spring terminal	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)
Standard-I/O with Modbus RTU	Modbus RTU	3-pole spring terminal	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)
Standard-I/O with Modbus TCP	Modbus TCP	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)
Standard-I/O with PROFINET	PROFINET	RJ45	5 x digital input, 1 x digital output, 2 x analog input, 1 x analog output, 1 x NO/NC relay, external 24 V supply	2 x 8-pole spring terminal, 1 x 3-pole spring terminal (relay)

Diagnostics

Keypad	Control panel for parameterization, control and diagnostics of the inverter directly on the device. Parameters and actual values are shown on the easy-to-read display.
WLAN module	For wireless parameterization and diagnostics of the inverter with engineering tools.

Functional safety

Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" This function corresponds to a "Stop 0" according to EN 60204	3-pole double spring terminal
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Extension box for decentralized control functions

Extension box for inverters up to – 18.5 kW (230/240 V) – 22 kW (400/480 V) – 22 kW (600 V)	Empty extension box
	Extension box with disconnect switch

Accessories

Connection

		Info	ID
Connectors	QUICKON connector (male) for the mains connection 0.37 ... 4 kW (1 ... 2.5 mm ²) with wall bushing	 	13591613
	Distributor for QUICKON wiring of several inverters, T-piece, 1 ... 2.5 mm ²	 	13566790
	Distributor for QUICKON wiring of several inverters, T-piece, 2.5 ... 6 mm ²	 	13566824
	Distributor for QUICKON wiring of several inverters, H-piece, 1 ... 2.5 mm ²	 	13566789
	Distributor for QUICKON wiring of several inverters, H-piece, 2.5 ... 6 mm ²	 	13566823
	Angled RJ45 connector for simplified connection for EtherCAT, EtherNet/IP, Modbus TCP and PROFINET networks	 	13598644
Cable gland sets	5-fold cable gland set for devices 0.37 ... 2.2 kW	 	13584557
	5-fold cable gland set for devices 3 ... 11 kW	 	13584558
	5-fold cable gland set for devices 15 ... 22 kW	 	13584559
	Membrane set, 5 x M12 cable glands to avoid condensation water	 	13584561
	1 x RJ45 cable gland for easy network connection	 	13584560

System cables

		Info	ID
Motor cables	See brochure "Accessories for frequency and servo inverters"		
Communication cables	3 m micro USB cable	 	13501172
	5 m micro USB cable	 	13501173
	0.5 m Ethernet cable	 	13641901
	1 m Ethernet cable	 	13641902
	2 m Ethernet cable	 	13641903
	3 m Ethernet cable	 	13641904
	5 m Ethernet cable	 	13641905

Braking operation and brake control

		Info	ID
Brake resistors	See brochure "Accessories for frequency and servo inverters"		
Brake connection sets	1 x brake rectifier for 1 x 230 V AC	 	13218705
	1 x brake rectifier for 3 x 400 V AC	 	13218704

Diagnostics

		Info	ID
Memory modules	12 replacement modules for the inverter, directly pluggable	 	13481882
Memory module copier	For duplicating the data of the memory module to other memory modules for faster serial commissioning.	 	13559235

Power supply units

24 V power supply units	See brochure "Accessories for frequency and servo inverters"		
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Electrical protection devices and busbars

Fuses			
Fuse holders	See brochure "Accessories for frequency and servo inverters"		
Busbars			

Accessories for extension box

		Info	ID
Switch/potentiometer set	1 x selector switch and labeling field, 1 x potentiometer 10 kOhm	 	13592391
	10 x selector switch and labeling field	 	13604743
	5 x potentiometer 10 kOhm	 	13604744
Pushbutton sets	10 x black pushbutton with labeling field	 	13604711
	10 x red pushbutton with labeling field	 	13604742
Signal lamp sets	10 x blue signal lamp	 	13606251
	10 x green signal lamp	 	13606443
	10 x red signal lamp	 	13606442
Connection set	5 x DIN rail, 7-pole terminal block incl. PE	 	13593846

i550 motec

The i550 motec frequency inverter for wall mounting and motor mounting in protection class IP66 (UL Type 4X indoor) is the optimal decentralized drive solution. The inverter can be extended for universal use with an extension box with/without Type E combination motor controller and operating elements.

Fast mounting and easy commissioning thanks to user-friendly tools as well as connections for commercially available connectors are the focus of this inverter. Parameters, drive behavior and usability correspond to our proven frequency inverters. Rounded off by high energy efficiency, we thus offer a modern and sustainable drive solution.

The requirements of the Ecodesign Directive, standard EN IEC 61800-9-2, are met.

Application areas: Conveyor drives, traveling drives, winding drives, hoist drives, extruders, packaging machines, pumps, fans, ...

Mains connection/power range

3 AC 230/240 V	0.37 ... 22 kW
3 AC 400 V	0.37 ... 45 kW
3 AC 480 V	0.37 ... 45 kW

Highlights

- Compact solution for decentralized drive technology, wall-mounted or motor-mounted with high IP66 protection (UL Type 4X indoor)
- Wall-mounted extendable: Extension box with/without Type E combination motor controller and operating elements
- Fast mounting due to pluggable, standardized connections (plug & play)
- Four IO-Link ports with limited IO-Link master functionality for easy data exchange between IO-Link sensors and actuators
- Integrated regenerative module for very high energy efficiency - a brake resistor is no longer required



Product overview

V _{mains} [V]	P _{rated} [kW]	I _{rated} [A]	Degree of protection	i550 motec for wall mounting			i550 motec for motor mounting			Product
				m [kg]	H x W x D [mm]	Info	m [kg]	H x W x D [mm]	Info	
3 AC 230/240 V	0.37	2.4	IP66	3.2	202 x 265 x 128	i	2.9	160 x 265 x 126	i	i550-M0.37/230-3
	0.55	3.2				i			i	i550-M0.55/230-3
	0.75	4.2				i			i	i550-M0.75/230-3
	1.1	6				i			i	i550-M1.1/230-3
	1.5	7	IP66	3.8	202 x 265 x 152	i	3.4	160 x 265 x 140	i	i550-M1.5/230-3
	2.2	9.6				i			i	i550-M2.2/230-3
	3	12				i			i	i550-M3.0/230-3
	4	16.5				i			i	i550-M4.0/230-3
	5.5	23	IP66	6	257 x 358 x 168	i	5.4	211 x 358 x 164	i	i550-M5.5/230-3
	7.5	29				i			i	i550-M7.5/230-3
	11	42				i			i	i550-M11/230-3
	15	54				i			i	i550-M15/230-3
	18.5	68	IP66	13.3	340 x 443 x 209	i	12.5	280 x 443 x 216	i	i550-M18.5/230-3
	22	80				i			i	i550-M22/230-3
3 AC 400/480 V	0.37	1.3 / 1.1	IP66	3.2	202 x 265 x 128	i	2.9	160 x 265 x 126	i	i550-M0.37/400-3
	0.55	1.8 / 1.6				i			i	i550-M0.55/400-3
	0.75	2.4 / 2.1				i			i	i550-M0.75/400-3
	1.1	3.2 / 3				i			i	i550-M1.1/400-3
	1.5	3.9 / 3.5				i			i	i550-M1.5/400-3
	2.2	5.6 / 4.8				i			i	i550-M2.2/400-3
	3	7.3 / 6.3	IP66	3.8	202 x 265 x 152	i	3.4	160 x 265 x 140	i	i550-M3.0/400-3
	4	9.5 / 8.2				i			i	i550-M4.0/400-3
	5.5	13 / 11				i			i	i550-M5.5/400-3
	7.5	16.5 / 14				i			i	i550-M7.5/400-3
	11	23.5 / 21	IP66	6	257 x 358 x 168	i	5.4	211 x 358 x 164	i	i550-M11/400-3
	15	32 / 27				i			i	i550-M15/400-3
	18.5	40 / 34				i			i	i550-M18.5/400-3
	22	47 / 40.4				i			i	i550-M22/400-3
	30	61 / 52	IP66	13.3	340 x 443 x 209	i	12.5	280 x 443 x 216	i	i550-M30/400-3
	37	76 / 65				i			i	i550-M37/400-3
	45	84 / 77				i			i	i550-M45/400-3

i550 motec for wall mounting with extension box

V _{mains} [V]	P _{rated} [kW]	I _{rated} [A]	Degree of protection	m [kg]	H x W x D [mm]	Info	Product
3 AC 230/240 V	0.37	2.4	IP66	4.3	202 x 400 x 172	i	i550-M0.37/230-3
	0.55	3.2				i	i550-M0.55/230-3
	0.75	4.2				i	i550-M0.75/230-3
	1.1	6				i	i550-M1.1/230-3
	1.5	7	IP66	5	202 x 400 x 196	i	i550-M1.5/230-3
	2.2	9.6				i	i550-M2.2/230-3
	3	12				i	i550-M3.0/230-3
	4	16.5	IP66	7.4	257 x 493 x 193	i	i550-M4.0/230-3
	5.5	23				i	i550-M5.5/230-3
3 AC 400/480 V	0.37	1.3 / 1.1	IP66	4.3	202 x 400 x 172	i	i550-M0.37/400-3
	0.55	1.8 / 1.6				i	i550-M0.55/400-3
	0.75	2.4 / 2.1				i	i550-M0.75/400-3
	1.1	3.2 / 3				i	i550-M1.1/400-3
	1.5	3.9 / 3.5				i	i550-M1.5/400-3
	2.2	5.6 / 4.8				i	i550-M2.2/400-3
	3	7.3 / 6.3	IP66	5	202 x 400 x 196	i	i550-M3.0/400-3
	4	9.5 / 8.2				i	i550-M4.0/400-3
	5.5	13 / 11				i	i550-M5.5/400-3
	7.5	16.5 / 14	IP66	7.4	257 x 493 x 193	i	i550-M7.5/400-3
	11	23.5 / 21				i	i550-M11/400-3

For the following versions, the degree of protection is reduced to IP54:

- i550 motec with extension box with Type E combination motor controller
- i550 motec with extension box with disconnect switch and operating elements

Options – wall mounting



Communication



Functional safety



Mains connection

Han Q4/2	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V) Han Q4/2 connector (male) for mains connection Han Q4/2 connector (female) for looping through the mains
Terminals	From 7.5 kW (3 x 230/240 V); 15 kW (3 x 400 V) Screw terminals for mains connection and for looping through the mains

Motor connection

Terminals	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V): Spring terminals From 7.5 ... 11 kW (3 x 230/240 V); 15 ... 22 kW (3 x 400 V): Screw terminals
Han Q8 connectors	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V)
M23 connectors	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V)
M40 connectors	From 7.5 ... 11 kW (3 x 230/240 V); 15 ... 22 kW (3 x 400 V)

Communication and I/Os

	Communication		I/Os	
Standard-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	2 x digital input or 1 x digital input/1 x digital output 2 x digital input (also available for HTL encoders or digital frequency)	2 x 5-pole M12 connector, A coded
Application-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output (also available for HTL encoders or digital frequency)	4 x 5-pole M12 connector, A coded

Functional safety

Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" This function corresponds to a "Stop 0" according to EN 60204	1 x 5-pole M12 connector, A coded
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Extension box for decentralized control functions

Extension box for inverters up to – 5.5 kW (230/240 V) – 11 kW (400/480 V)	Empty extension box, only with mains terminals
	Extension box with disconnect switch
	Extension box with disconnect switch with status feedback
	Extension box with Type E combination motor controller (IP54)
	Extension box with Type E combination motor controller and status feedback (IP54)
	Extension box with disconnect switch with status feedback and operating elements (IP54)
	Extension box with disconnect switch with status feedback, operating element, and potentiometer (IP54)

Accessories – wall mounting

Connection

		Info	ID
Cable gland set	Membrane set, 5 x M12 cable glands to avoid condensation water	 	13584561

System cables

Mains cables	See brochure "Accessories for frequency and servo inverters"
Motor cables	

Power supply units

24 V power supply units	See brochure "Accessories for frequency and servo inverters"
48 V power supply units	

Options – motor mounting



Communication

Functional safety

Mains connection

Han Q4/2	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V) Han Q4/2 connector (male) for mains connection Han Q4/2 connector (female) for looping through the mains
Terminals	From 7.5 kW (3 x 230/240 V); 15 kW (3 x 400 V) Screw terminals for mains connection and for looping through the mains

Motor adapters

Motor adapter 063-071	For motor designs BG063 and BG071
Motor adapter 080-112	For motor designs BG080, BG090, BG100 and BG112
Motor adapter 132	For motor design BG132
Motor adapter 160-180	For motor designs BG160 and BG180

Communication and I/Os

	Communication		I/Os	
Standard-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	2 x digital input or 1 x digital input/1 x digital output 2 x digital input (also available for HTL encoders or digital frequency)	2 x 5-pole M12 connector, A coded
Application-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output (also available for HTL encoders or digital frequency)	4 x 5-pole M12 connector, A coded

Functional safety

Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" This function corresponds to a "Stop 0" according to EN 60204	1 x 5-pole M12 connector, A coded
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Accessories – motor mounting

Connection

		Info	ID
Cable gland set	Membrane set, 5 x M12 cable glands to avoid condensation water	 	13584561

System cables

Mains cables	See brochure "Accessories for frequency and servo inverters"
Motor cables	

Power supply units

24 V power supply units	See brochure "Accessories for frequency and servo inverters"
48 V power supply units	

i650 motec



The i650 motec frequency inverter for wall mounting and motor mounting in protection class IP66 (UL Type 4X indoor) is the optimal decentralized drive solution. The inverter can be extended for universal use with an extension box with/without Type E combination motor controller and operating elements.

The i650 motec frequency inverter stands out from the i550 motec due to its extended range of functions: For simple automation tasks, a Logic PLC based on CODESYS in accordance with the IEC 61131-3 standard is integrated in the i650 motec. Table positioning is available for the realization of autonomous axes and machine modules. The "Extended Safety" option (safety technology with various functions) rounds off the overall package.

The requirements of the Ecodesign Directive, standard EN IEC 61800-9-2, are met.

Application areas: Conveyor drives, traveling drives, winding drives, hoist drives, extruders, packaging machines, pumps, fans, ...

Mains connection/power range

3 AC 230/240 V	0.37 ... 22 kW
3 AC 400 V	0.37 ... 45 kW
3 AC 480 V	0.37 ... 45 kW

Highlights

- Compact solution for decentralized drive technology, wall-mounted or motor-mounted with high IP66 protection (UL Type 4X indoor)
- Wall-mounted extendable: Extension box with/without Type E combination motor controller and operating elements
- Fast mounting due to pluggable, standardized connections (plug & play)
- Four IO-Link ports with limited IO-Link master functionality for easy data exchange between IO-Link sensors and actuators
- Integrated regenerative module for very high energy efficiency - a brake resistor is no longer required
- Extended range of functions:
 - Logic PLC
 - Table positioning
 - "Safe Torque Off (STO)" via CIP Safety



Product overview

V _{mains} [V]	P _{rated} [kW]	I _{rated} [A]	Degree of protection	i650 motec for wall mounting			i650 motec for motor mounting		Product
				m [kg]	H x W x D [mm]		m [kg]	H x W x D [mm]	
3 AC 230/240 V	0.37	2.4	IP66	3.2	202 x 265 x 128		2.9	160 x 265 x 126	i650-M0.37/230-3
	0.55	3.2							i650-M0.55/230-3
	0.75	4.2							i650-M0.75/230-3
	1.1	6							i650-M1.1/230-3
	1.5	7	IP66	3.8	202 x 265 x 152		3.4	160 x 265 x 140	i650-M1.5/230-3
	2.2	9.6							i650-M2.2/230-3
	3	12							i650-M3.0/230-3
	4	16.5							i650-M4.0/230-3
	5.5	23	IP66	6	257 x 358 x 168		5.4	211 x 358 x 164	i650-M5.5/230-3
	7.5	29							i650-M7.5/230-3
	11	42							i650-M11/230-3
	15	54							IP66
	18.5	68	i650-M18.5/230-3						
	22	80	i650-M22/230-3						
3 AC 400/480 V	0.37	1.3 / 1.1	IP66	3.2	202 x 265 x 128		2.9	160 x 265 x 126	
	0.55	1.8 / 1.6							i650-M0.55/400-3
	0.75	2.4 / 2.1							i650-M0.75/400-3
	1.1	3.2 / 3							i650-M1.1/400-3
	1.5	3.9 / 3.5							i650-M1.5/400-3
	2.2	5.6 / 4.8							i650-M2.2/400-3
	3	7.3 / 6.3	IP66	3.8	202 x 265 x 152		3.4	160 x 265 x 140	i650-M3.0/400-3
	4	9.5 / 8.2							i650-M4.0/400-3
	5.5	13 / 11							i650-M5.5/400-3
	7.5	16.5 / 14							IP66
	11	23.5 / 21	i650-M11/400-3						
	15	32 / 27	i650-M15/400-3						
	18.5	40 / 34	IP66	13.3	340 x 443 x 209		12.5	280 x 443 x 216	i650-M18.5/400-3
	22	47 / 40.4							i650-M22/400-3
	30	61 / 52							i650-M30/400-3
	37	76 / 65							i650-M37/400-3
	45	84 / 77							i650-M45/400-3

i650 motec for wall mounting with extension box

V _{mains} [V]	P _{rated} [kW]	I _{rated} [A]	Degree of protection	m [kg]	H x W x D [mm]	Product
3 AC 230/240 V	0.37	2.4	IP66	4.3	202 x 400 x 172	i650-M0.37/230-3
	0.55	3.2				i650-M0.55/230-3
	0.75	4.2				i650-M0.75/230-3
	1.1	6				i650-M1.1/230-3
	1.5	7	IP66	5	202 x 400 x 196	i650-M1.5/230-3
	2.2	9.6				i650-M2.2/230-3
	3	12				i650-M3.0/230-3
	4	16.5				i650-M4.0/230-3
3 AC 400/480 V	5.5	23	IP66	7.4	257 x 493 x 193	i650-M5.5/230-3
	0.37	1.3 / 1.1				i650-M0.37/400-3
	0.55	1.8 / 1.6				i650-M0.55/400-3
	0.75	2.4 / 2.1				i650-M0.75/400-3
	1.1	3.2 / 3	IP66	4.3	202 x 400 x 172	i650-M1.1/400-3
	1.5	3.9 / 3.5				i650-M1.5/400-3
	2.2	5.6 / 4.8				i650-M2.2/400-3
	3	7.3 / 6.3				i650-M3.0/400-3
	4	9.5 / 8.2	IP66	5	202 x 400 x 196	i650-M4.0/400-3
	5.5	13 / 11				i650-M5.5/400-3
	7.5	16.5 / 14				i650-M7.5/400-3
	11	23.5 / 21				i650-M11/400-3

For the following versions, the degree of protection is reduced to IP54:

- i650 motec with extension box with Type E combination motor controller
- i650 motec with extension box with disconnect switch and operating elements

Options – wall mounting



Communication



Functional safety



Additional functions



Mains connection

Han Q4/2	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V) Han Q4/2 connector (male) for mains connection Han Q4/2 connector (female) for looping through the mains
Terminals	From 7.5 kW (3 x 230/240 V); 15 kW (3 x 400 V) Screw terminals for mains connection and for looping through the mains

Motor connection

Terminals	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V): Spring terminals From 7.5 ... 11 kW (3 x 230/240 V); 15 ... 22 kW (3 x 400 V): Screw terminals
Han Q8 connectors	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V)
M23 connectors	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V)
M40 connectors	From 7.5 ... 11 kW (3 x 230/240 V); 15 ... 22 kW (3 x 400 V)

Communication and I/Os

	Communication		I/Os
Application-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output 1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output (also available for HTL encoders or digital frequency)
			4 x 5-pole M12 connector, A coded

Functional safety

Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" This function corresponds to a "Stop 0" according to EN 60204	1 x 5-pole M12 connector, A coded
Extended Safety - S	Safe stop functions: Safe Torque Off (STO), Safe Stop 1 (SS1) Auxiliary and maintenance functions: Safe Muting (MUT) Safety bus: CIP Safety	

Safety bus

CIP Safety	License costs for using the safety bus CIP Safety via EtherNet/IP
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Additional functions

Logic PLC	For simple automation tasks in accordance with the IEC 61131-3 standard
Table positioning	For the realization of autonomous axes and machine modules

Extension box for decentralized control functions

Extension box for inverters up to – 5.5 kW (230/240 V) – 11 kW (400/480 V)	Empty extension box, only with mains terminals
	Extension box with disconnect switch
	Extension box with disconnect switch with status feedback
	Extension box with Type E combination motor controller (IP54)
	Extension box with Type E combination motor controller and status feedback (IP54)
	Extension box with disconnect switch with status feedback and operating elements (IP54)
	Extension box with disconnect switch with status feedback, operating element, and potentiometer (IP54)

Accessories – wall mounting

Connection

		Info	ID
Cable gland set	Membrane set, 5 x M12 cable glands to avoid condensation water	 	13584561

System cables

Mains cables	See brochure "Accessories for frequency and servo inverters"
Motor cables	

Power supply units

24 V power supply units	See brochure "Accessories for frequency and servo inverters"
48 V power supply units	

Options – motor mounting



Communication	Functional safety	Additional functions
EtherCAT EtherNet/IP IO-Link Modbus RTU PROFINET	Basic Safety - STO Extended Safety - S	PLC 4 Logic PLC Table positioning

Mains connection

Han Q4/2	Up to 5.5 kW (3 x 230/240 V); 11 kW (3 x 400 V) Han Q4/2 connector (male) for mains connection Han Q4/2 connector (female) for looping through the mains
Terminals	From 7.5 kW (3 x 230/240 V); 15 kW (3 x 400 V) Screw terminals for mains connection and for looping through the mains

Motor adapters

Motor adapter 063-071	For motor designs BG063 and BG071
Motor adapter 080-112	For motor designs BG080, BG090, BG100 and BG112
Motor adapter 132	For motor design BG132
Motor adapter 160-180	For motor designs BG160 and BG180

Communication and I/Os

Communication			I/Os
Application-I/O with Multi-Ethernet	Switchable:		1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output
	EtherCAT		1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output
	EtherNet/IP		1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output
	Modbus TCP	2 x 4-pole M12 connector, D coded	1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output
	PROFINET		1 x IO-Link port or 2 x digital input or 1 x digital input/1 x digital output (also available for HTL encoders or digital frequency)
			4 x 5-pole M12 connector, A coded

Functional safety

Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" This function corresponds to a "Stop 0" according to EN 60204	1 x 5-pole M12 connector, A coded
Extended Safety - S	Safe stop functions: Safe Torque Off (STO), Safe Stop 1 (SS1) Auxiliary and maintenance functions: Safe Muting (MUT) Safety bus: CIP Safety	

Safety bus

CIP Safety	License costs for using the safety bus CIP Safety via EtherNet/IP
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Additional functions

Logic PLC	For simple automation tasks in accordance with the IEC 61131-3 standard
Table positioning	For the realization of autonomous axes and machine modules

Accessories – motor mounting

Connection

		Info	ID
Cable gland set	Membrane set, 5 x M12 cable glands to avoid condensation water	 	13584561

System cables

Mains cables	See brochure "Accessories for frequency and servo inverters"
Motor cables	

Power supply units

24 V power supply units	See brochure "Accessories for frequency and servo inverters"
48 V power supply units	



Accessories

By simply selecting the accessories, the operation of the inverter can be optimally adjusted. This is how a modern drive solution can be safely achieved.

The scalable concept enables easy selection, sophisticated accessories saves space and time during installation, and energy-efficient requirements can be optimally solved. Your benefits from this are more productivity and functional safety as well as sustainability and reliability.

Information on accessories can be found on the Internet and in the brochure "[Accessories for frequency and servo inverters](#)".



