

VFDs



0.25 ... 132 kW



Lenze drives – universally applicable

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

Lenze drives are an important component in modern drive solutions which range from the cloud via controllers 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 drive 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 drives are extremely compact to implement solutions and save costs.

The i510 cabinet and i550 cabinet VFDs 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.

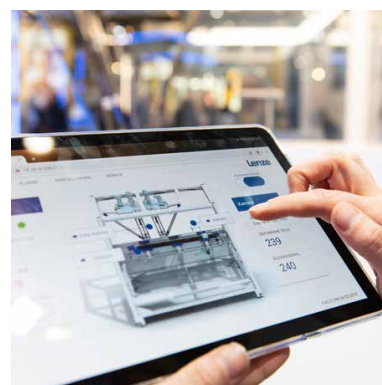
Flexibility



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 VFD such as the i510 cabinet or i550 cabinet.

In many applications, a mixture of centralized and decentralized drive technology is advisable. Fortunately, all Lenze VFDs 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 drives 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 and plant engineering, space is limited and expensive. Thus, Lenze drives are extremely compact to implement solutions and save costs.

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

protec – These drives can also be mounted in a decentralized manner in various machine modules close to the motor.

motec – These drives 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 VFDs 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, drives and motors - energy-efficiently and sustainably.

	i510 cabinet	i550 cabinet	i510 protec	i550 protec	i550 motec	i650 motec
						
Design/mounting	Control cabinet	Control cabinet	Wall	Wall	Wall or motor	Wall or motor
Power range	0.25 ... 15 kW	0.25 ... 132 kW	0.37 ... 11 kW	0.37 ... 75 kW	0.37 ... 45 kW	0.37 ... 45 kW
Degree of protection	IP20	IP20	IP20	IP55/66	IP66	IP66
Functional safety	-	Basic Safety - STO	-	Basic Safety - STO	Basic Safety - STO	Basic Safety - STO, Extended Safety - S or Extended Safety - ST
Communication	CANopen	CANopen	CANopen	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 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	Sequence control	-	-
	-	-	-	-	-	Logic PLC
	-	-	-	-	-	Table positioning
	PID controller	PID controller	PID controller	PID controller	PID controller	PID controller
	-	Energy compensation	-	Energy compensation	-	-
	-	-	-	-	Regenerative feed-back mode	Regenerative feed-back mode

Basic Safety - STO

Safety function "Safe Torque Off (STO)" via terminals

Extended Safety - S

Safety technology with various functions via Ethernet-based safety buses

Extended Safety - ST

Safety technology with various functions via Ethernet-based safety buses and terminals

Product comparison

	i510 cabinet VFD	i550 cabinet VFD	i510 protec VFD	
				
Design/mounting	Control cabinet	Control cabinet	Wall (UL installation)	
Degree of protection	IP20	IP20	IP20	
Mains connection/power range				
1/N/PE AC 120 V	-	0.25 ... 1.1 kW	0.37 ... 1.1 kW	
1/N/PE AC 230/240 V	0.25 ... 2.2 kW	0.25 ... 2.2 kW	0.37 ... 4 kW	
3/PE AC 230/240 V	0.25 ... 7.5 kW	0.25 ... 7.5 kW	0.37 ... 7.5 kW	
3/PE AC 400/480 V	0.37 ... 15 kW	0.37 ... 132 kW	0.75 ... 11 kW	
3/PE AC 600 V	-	-	0.75 ... 11 kW	
Market approvals/environment				
CE	✓	✓	✓	
UKCA	✓	✓	✓	
cULus	✓	✓	✓	
RoHS	✓	✓	✓	
Energy efficiency	Class IE2	Class IE2	Class IE2	
Ambient conditions				
Degree of pollution	2	2	2	
Vibration resistance during operation	Up to 1 g	Up to 1 g	Up to 1 g	
Insulation resistance	Category III	Category III	Category III	
Operation (EN 60721-3-3)	3K3 (-20 ... +60 °C)	3K3 (-20 ... +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	
Storage (EN 60721-3-1)	1K3 (-25 ... +60 °C)	1K3 (-25 ... +60 °C)	1K3 (-30 ... +60 °C)	
Transport (EN 60721-3-2)	2K3 (-25 ... +70 °C)	2K3 (-25 ... +70 °C)	2K3 (-30 ... +70 °C)	
Control connections				
Digital inputs	5	5 (Standard-I/O) 7 (Application-I/O)	5	
Digital outputs	1	1 (Standard-I/O) 2 (Application-I/O)	1	
Analog inputs	2	2	2	
Analog outputs	1	1 (Standard-I/O) 2 (Application-I/O)	1	
Relay	1	1	1	
IO-Link ports	-	-	-	
Process temperature (PT100/PT1000)	-	-	-	
Protective measures				
Earth-fault protected	✓	✓	✓	
Short-circuit-proof	✓	✓	✓	
Overvoltage-proof	✓	✓	✓	
Motor stall protection	✓	✓	✓	
Motor overtemperature	I²xT	With PTC, I²xT	I²xT	

✓ = standard

O = option

P = planned

	i550 protec VFD	i550 motec VFD	i650 motec VFD
			
	Wall	Wall or motor	Wall or motor
	IP55/66	IP66	IP66
	0.37 ... 1.1 kW	-	-
	0.37 ... 2.2 kW	-	-
	0.37 ... 45 kW	0.37 ... 22 kW	0.37 ... 22 kW
	0.37 ... 75 kW	0.37 ... 45 kW	0.37 ... 45 kW
	0.75 ... 45 kW	-	-
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	Class IE2	Class IE2	Class IE2
	2	2	2
	Up to 1 g	Up to 1 g	Up to 1 g
	Category III	Category III	Category III
	3K3 (-30 ... +60 °C)	3K3 (-30 ... +60 °C)	3K3 (-30 ... +60 °C)
	2.5 %/°C above +45 °C	2.5 %/°C above +40 °C	2.5 %/°C above +40 °C
	1K3 (-30 ... +60 °C)	1K3 (-30 ... +60 °C)	1K3 (-30 ... +60 °C)
	2K3 (-30 ... +70 °C)	2K3 (-30 ... +70 °C)	2K3 (-30 ... +70 °C)
	5	Configurable: 3 ... 4 (Standard-I/O) 4 ... 8 (Application-I/O) 2 ... 5 (Extended-I/O)	Configurable: 4 ... 8 (Application-I/O) 2 ... 5 (Extended-I/O)
	1	Configurable: 0 ... 1 (Standard-I/O) 0 ... 4 (Application-I/O) 0 ... 2 (Extended-I/O)	Configurable: 0 ... 4 (Application-I/O) 0 ... 2 (Extended-I/O)
	2	Configurable: 1 ... 2 (Extended-I/O)	Configurable: 1 ... 2 (Extended-I/O)
	1	Configurable: 0 ... 1 (Extended-I/O)	Configurable: 0 ... 1 (Extended-I/O)
	1	-	-
	-	Configurable: 0 ... 4 (Application-I/O)	Configurable: 0 ... 4 (Application-I/O)
	-	Configurable: 0 ... 1 (Extended-I/O)	Configurable: 0 ... 1 (Extended-I/O)
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	With PTC, I ² xT	With PTC, I ² xT	With PTC, I ² xT

✓ = standard

O = option

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	i510 cabinet VFD	i550 cabinet VFD	i510 protec VFD	
Operation on public networks				
Device 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	With mains choke	
Motor cable lengths				
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 from 0.55 kW	Max. 15 m up to 0.37 kW Max. 20 m from 0.55 kW	Max. 20 m up to 11 kW	
Fusing				
Fuses (IEC 60269-1), characteristic	gG	gG	gG	
Circuit breaker (IEC 60947-2), characteristic	B or C	B or C	B	
RCD (IEC 62423), type	≥ 30 mA up to 11 kW B or F	≥ 30 mA up to 11 kW B or F	≥ 30 mA up to 11 kW B or F	
Communication				
CANopen	O	O	O	
EtherCAT	-	O	-	
EtherNet/IP	-	O	-	
IO-Link	-	O (Device)	-	
Modbus RTU	O	O	O	
Modbus TCP	-	O	-	
POWERLINK	-	O	-	
PROFIBUS	-	O	-	
PROFINET	-	O	-	
Feedback				
HTL incremental encoder	-	✓ (2 track)	-	
Motor controls				
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	-	✓	-	
Additional functions for motor controls				
Auto-tuning	-	-	-	
Boost	✓	✓	✓	
Slip compensation	✓	✓	✓	
Oscillation damping	✓	✓	✓	
Torque control	✓	✓	✓	
Skip frequencies	✓	✓	✓	
Motor stall protection	✓	✓	✓	
Motor monitoring	✓	✓	✓	
Component control/additional functions				
Fixed frequencies (jog values)	✓	✓	✓	
Motor potentiometer	✓	✓	✓	
Sequence control	✓	✓	✓	
Logic PLC	-	-	-	
Table positioning	-	-	-	
PID controller	✓	✓	✓	
Position counter	✓	✓	✓	
Parameter set changeover	✓	✓	✓	

✓ = standard

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P = planned

[illegible]

✓ = standard

O = option

P = planned

	i510 cabinet VFD	i550 cabinet VFD	i510 protec VFD	
Energy efficiency				
DC bus	-	✓	-	
Energy-saving function "VFC eco"	✓	✓	✓	
Regenerative feedback mode	-	-	-	
Additional motor functions				
Flying restart circuit	✓	✓	✓	
DC-injection brake	✓	✓	✓	
Holding brake control	✓	✓	✓	
Switching frequency setting	✓	✓	✓	
System protection				
Access protection	✓	✓	✓	
Temperature monitoring	✓	✓	✓	
Mains failure control	✓	✓	✓	
Operation on a UPS	✓	✓	✓	
Safe stop functions				
Safe Torque Off (STO)	-	O	-	
Safe stop 1 (SS1)	-	-	-	
Safe stop emergency (SSE)	-	-	-	
Safe brake control (SBC)	-	-	-	
Cascading STO (CAS)	-	-	-	
Safe monitoring functions				
Safe maximum speed (SMS)	-	-	-	
Safely limited speed (SLS)	-	-	-	
Safe speed monitoring (SSM)	-	-	-	
Safe direction (SDI)	-	-	-	
Auxiliary and maintenance functions for functional safety				
Operation mode selector (OMS)	-	-	-	
Enable switch (ES)	-	-	-	
Safe Muting (MUT)	-	-	-	
Safe inputs and outputs				
Sensor inputs (SIL 3/PL e)	-	1 (Basic Safety - STO)	-	
Acknowledgment inputs			-	
Safe outputs (SIL 3/PL e)			-	
Safety bus				
FSoE	-	-	-	
CIP Safety	-	-	-	
PROFIsafe	-	-	-	
Operation and diagnostics				
Keypad	Accessories	Accessories	O (replaceable)	
Diagnostic interface	Accessories: USB module (Micro-USB)	Accessories: USB module (Micro-USB)	O (USB module with Micro-USB, replaceable)	
WLAN	Accessories: WLAN module	Accessories: WLAN module	O (WLAN module, replaceable)	
Options				
Mains connection	- (terminals)	- (terminals)	- (terminals)	
Motor connection	- (terminals)	- (terminals)	- (terminals)	
I/Os	Basic-I/O	Standard-I/O or Application-I/O	Standard-I/O	
Functional safety	-	Basic Safety - STO	-	

✓ = standard

O = option

P = planned

	i550 protec VFD	i550 motec VFD	i650 motec VFD
	✓	-	-
	✓	✓	✓
	-	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	-	-
	✓	-	-
	O	O	O
	-	-	O
	-	-	O
	-	-	P
	-	-	P
	-	-	P (sensorless)
	-	-	P (sensorless)
	-	-	P (sensorless)
	-	-	P (sensorless)
	-	-	O
	-	-	O
	-	-	O
	1 (Basic Safety - STO)	-	1 (Basic Safety - STO) 2 (Extended Safety - ST)
			AIS + AIE (Extended Safety - ST)
			1 (Extended Safety - ST)
	-	-	O
	-	-	O
	-	-	O
	O (not replaceable)	-	-
	✓ (Micro-USB)	✓ (USB-C)	✓ (USB-C)
	O (WLAN module, not replaceable)	P	P
	- (terminals)	Han Q4/2 connectors or terminals	Han Q4/2 connector
	- (terminals)	Han Q8 connectors, M23 connectors, M40 connectors, or terminals	Han Q8 connectors, M23 connectors, M40 connectors, or terminals
	Standard-I/O	Standard-I/O, Application-I/O or Extended-I/O	Application-I/O or Extended-I/O
	Basic Safety - STO	Basic Safety - STO	Basic Safety - STO, Extended Safety - S or Extended Safety - ST

✓ = standard

O = option

P = planned

i510 cabinet

The i510 cabinet VFD 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/N/PE AC 230/240 V	0.25 ... 2.2 kW
3/PE AC 230/240 V	0.25 ... 7.5 kW
3/PE AC 400/480 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}	Heavy Duty		Light Duty		Degree of protection	m	H x W x D		Product
	P _{rated}	I _{rated}	P _{rated}	I _{rated}					
[V]	[kW]	[A]	[kW]	[A]		[kg]	[mm]		
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	0.95	180 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	IP20	1.35	250 x 60 x 130		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

Modbus RTU

Communication and I/Os

Name	Network	Connection (network)	I/Os	Connection (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		

Accessories

System cables

Name	Description			ID
Communication cables	3 m micro USB cable			13501172
	5 m micro USB cable			13501173

Diagnostics

Name	Description			ID
Keypad	Control panel for parameterization, control and diagnostics of the drive 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 drive with engineering tools.			13516238
WLAN module	For wireless parameterization and diagnostics of the drive 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
Memory modules	12 replacement modules for the drive, directly pluggable.			13481882
Memory module copier	For duplicating the data of the memory module to other memory modules for faster serial commissioning.			13559235

Mounting

Name	Description			ID
DIN rail mounting	Mounting kit for drives 0.25 ... 0.75 kW			13566907
	Mounting kit for drives 1.1 ... 5.5 kW			13566908

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".

i550 cabinet

The i550 cabinet VFD 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/N/PE AC 120 V	0.25 ... 1.1 kW
1/N/PE AC 230/240 V	0.25 ... 2.2 kW
3/PE AC 230/240 V	0.25 ... 7.5 kW
3/PE AC 400/480 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 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

	Heavy Duty		Light Duty						
V _{mains}	P _{rated}	I _{rated}	P _{rated}	I _{rated}	Degree of protection	m	H x W x D		Product
[V]	[kW]	[A]	[kW]	[A]		[kg]	[mm]		
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	-	-	IP20	1	180 x 60 x 130		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	-	-	IP20	1	180 x 60 x 130		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	-	-	IP20	1	180 x 60 x 130		i550-C0.55/400-3
	0.75	2.4 / 2.1	-	-					i550-C0.75/400-3
	1.1	3.2 / 3	-	-	IP20	1.35	250 x 60 x 130		i550-C1.1/400-3
	1.5	3.9 / 3.5	-	-					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	IP20	2.3	250 x 90 x 130		i550-C4.0/400-3
	5.5	13 / 11	7.5	15.6 / 13.2					i550-C5.5/400-3
	7.5	16.5 / 14	11	23 / 18.3	IP20	3.7	276 x 120 x 130		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	IP20	8	342 x 180 x 165		i550-C15/400-3
	18.5	40 / 34	22	48 / 40.8					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	IP20	17.2	450 x 250 x 230		i550-C37/400-3
	45	89 / 77	55	107 / 82.4					i550-C45/400-3
	55	110 / 96	75	132 / 115	IP20	24	536 x 250 x 265		i550-C55/400-3
	75	150 / 124	90	180 / 149					i550-C75/400-3
	90	180 / 156	110	216 / 187	IP20	35.6	685 x 258 x 304		i550-C90/400-3
	110	212 / 162	132	254 / 216					i550-C110/400-3

Options



Communication

Functional safety

Basic Safety - STO

Communication and I/Os

Name	Network	Connection (network)	I/Os	Connection (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		
Standard-I/O with EtherCAT	EtherCAT	RJ45		
Standard-I/O with EtherNet/IP	EtherNet/IP	RJ45		
Standard-I/O with IO-Link	IO-Link	3-pole spring terminal		
Standard-I/O with Modbus RTU	Modbus RTU	3-pole double spring terminal		
Standard-I/O with Modbus TCP	Modbus TCP	RJ45		
Standard-I/O with POWERLINK	POWERLINK	RJ45		
Standard-I/O with PROFIBUS	PROFIBUS	RS485		
Standard-I/O with PROFINET	PROFINET	RJ45		
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

Name	Description	Connection
Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" (STO corresponds to an uncontrolled standstill in accordance with EN 60204-1, Category 0.)	3-pole double spring terminal

Accessories

System cables

Name	Description			ID
Communication cables	3 m micro USB cable			13501172
	5 m micro USB cable			13501173

Braking operation and brake control

Name	Description			ID
Brake connection sets	1 x brake rectifier for 1/N/PE AC 230/240 V			13218705
	1 x brake rectifier for 3/PE AC 400/480 V			13218704

Diagnostics

Name	Description			ID
Keypad	Control panel for parameterization, control and diagnostics of the drive 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 drive with engineering tools.			13516238
WLAN module	For wireless parameterization and diagnostics of the drive 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
Memory modules	12 replacement modules for the drive, directly pluggable.			13481882
Memory module copier	For duplicating the data of the memory module to other memory modules for faster serial commissioning.			13559235

Mounting

Name	Description			ID
DIN rail mounting	Mounting kit for drives 0.25 ... 0.75 kW			13566907
	Mounting kit for drives 1.1 ... 5.5 kW			13566908

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".

i510 protec

The i510 protec VFD is rated IP20 (EN IEC 60529)/UL NEMA 1 and does not include an internal filter.

In EU countries where the EN IEC 60529 standard is mandatory, installation outside a control cabinet is not permitted. Protection class IP20 offers no protection against water, splash water, or dust and does not comply with European EMC directives.

In North America, including Canada, a device with UL NEMA 1 protection class may be mounted in a decentralized location. The relevant EMC requirements are also met.

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/N/PE AC 120 V	0.37 ... 1.1 kW
1/N/PE AC 230/240 V	0.37 ... 4 kW
3/PE AC 230/240 V	0.37 ... 7.5 kW
3/PE AC 400/480 V	0.75 ... 11 kW
3/PE AC 600 V	0.75 ... 11 kW

Highlights

- Versions with keypad, USB module or WLAN module for easy commissioning
- Industry standard fieldbus network options



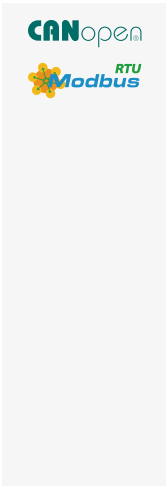
Product overview

	Heavy Duty		Light Duty						
V _{mains}	P _{rated}	I _{rated}	P _{rated}	I _{rated}	Degree of protection	m	H x W x D		Product
[V]	[kW]	[A]	[kW]	[A]		[kg]	[mm]		
1 AC 120 V	0.37	2.4	-	-	IP20	1.29	170 x 100 x 111.2		i510-P0.37/120-1
	0.75	4.2	-	-					i510-P0.75/120-1
	1.1	6	-	-	IP20	2	222.5 x 130 x 114		i510-P1.1/120-1
1/3 AC 230/240 V	0.37	2.4	0.55	3.2	IP20	1.29	170 x 100 x 111.2		i510-P0.37/230-2
	0.75	4.2	1.1	6					i510-P0.75/230-2
	1.1	6	1.5	7.2					i510-P1.1/230-2
	1.5	7	2.2	9.6	IP20	1.33	200 x 100 x 111.2		i510-P1.5/230-2
	2.2	9.6	-	-					i510-P2.2/230-2
	3	12.4	4	15.2	IP20	2	222.5 x 130 x 114		i510-P3.0/230-2
3 AC 230/240 V	3	12	4	14.4	IP20	1.6	230 x 100 x 104		i510-P3.0/230-3
	4	16.5	5.5	19.8					i510-P4.0/230-3
	5.5	23	7.5	28	IP20	2	222.5 x 130 x 114		i510-P5.5/230-3
3 AC 400/480 V	0.75	2.4 / 2.1	1.1	3.4 / 3	IP20	1.29	170 x 100 x 111.2		i510-P0.75/400-3
	1.1	3.2 / 3	1.5	3.6 / 3.4					i510-P1.1/400-3
	1.5	3.9 / 3.5	2.2	5.3 / 4.8					i510-P1.5/400-3
	2.2	5.6 / 4.8	3	7.2 / 6.2					i510-P2.2/400-3
	3	7.3 / 6.3	4	8.8 / 7.6	IP20	1.33	200 x 100 x 111.2		i510-P3.0/400-3
	4	9.5 / 8.2	5.5	12.7 / 11					i510-P4.0/400-3
	5.5	13 / 11	7.5	16.5 / 14	IP20	2	222.5 x 130 x 114		i510-P5.5/400-3
	7.5	16.5 / 14	11	24.5 / 21					i510-P7.5/400-3
3 AC 600 V	0.75	1.7	1.1	2.4	IP20	1.33	200 x 100 x 111.2		i510-P0.75/600-3
	1.5	2.7	2.2	3.9					i510-P1.5/600-3
	2.2	3.9	3	5					i510-P2.2/600-3
	4	6.1	5.5	9					i510-P4.0/600-3
	5.5	9	7.5	11	IP20	2	222.5 x 130 x 114		i510-P5.5/600-3
	7.5	11	11	17					i510-P7.5/600-3

Options



Communication



Communication and I/Os

Name	Network	Connection (network)	I/Os	Connection (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 spring terminal (relay)
Standard-I/O with CANopen/Modbus	CANopen/Modbus RTU	3-pole spring terminal		

Accessories

Connection

Name	Description	Info	ID
Connector	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 drives, T-piece, 1 ... 2.5 mm ²	 	13566790
	Distributor for QUICKON wiring of several drives, T-piece, 2.5 ... 6 mm ²	 	13566824
	Distributor for QUICKON wiring of several drives, H-piece, 1 ... 2.5 mm ²	 	13566789
	Distributor for QUICKON wiring of several drives, H-piece, 2.5 ... 6 mm ²	 	13566823

System cables

Name	Description	Info	ID
Communication cables	3 m micro USB cable	 	13501172
	5 m micro USB cable	 	13501173

Diagnostics

Name	Description	Info	ID
Keypad	Control panel for parameterization, control and diagnostics of the drive 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 drive with engineering tools.	 	13516238
WLAN module	For wireless parameterization and diagnostics of the drive 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
Memory modules	12 replacement modules for the drive, directly pluggable.	 	13481882
Memory module copier	For duplicating the data of the memory module to other memory modules for faster serial commissioning.	 	13559235

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".

i550 protec

The i550 protec VFD uses the same tried-and-tested technology used in control cabinet drives and differs in terms of a higher degree of protection and an adapted design. If there is not enough space in the control cabinet or the drive 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/N/PE AC 120 V	0.37 ... 1.1 kW
1/N/PE AC 230/240 V	0.37 ... 2.2 kW
3/PE AC 230/240 V	0.37 ... 45 kW
3/PE AC 400/480 V	0.37 ... 75 kW
3/PE AC 600 V	0.75 ... 45 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 61508) and Performance Level e (EN ISO 13849-1)



Product overview

				i550 protec without extension box			i550 protec with extension box			
V _{mains}	P _{rated}	I _{rated}	Degree of protection	m	H x W x D		m	H x W x D		Product
[V]	[kW]	[A]		[kg]	[mm]		[kg]	[mm]		
1 AC 120 V	0.37	2.4	IP66	1.8	190 x 140 x 117		2.5	330 x 140 x 117		i550-P0.37/120-1
	0.75	4.2	IP66	2.7	205 x 140 x 140		3.5	346 x 140 x 140		i550-P0.75/120-1
	1.1	6								i550-P1.1/120-1
1 AC 230/240 V	0.37	2.4	IP66	1.8	190 x 140 x 117		2.5	330 x 140 x 117		i550-P0.37/230-1
	0.55	3.2								i550-P0.55/230-1
	0.75	4.2								i550-P0.75/230-1
	1.1	6	IP66	2.7	205 x 140 x 140		3.5	346 x 140 x 140		i550-P1.1/230-1
	1.5	7								i550-P1.5/230-1
	2.2	9.6								i550-P2.2/230-1
1/3 AC 230/240 V	0.37	2.4	IP66	1.7	190 x 140 x 117		2.4	330 x 140 x 117		i550-P0.37/230-2
	0.55	3.2								i550-P0.55/230-2
	0.75	4.2								i550-P0.75/230-2
	1.1	6	IP66	2.6	205 x 140 x 140		3.4	346 x 140 x 140		i550-P1.1/230-2
	1.5	7								i550-P1.5/230-2
	2.2	9.6								i550-P2.2/230-2
3 AC 230/240 V	3	12	IP66	4.8	250 x 180 x 168		5.9	396 x 180 x 165		i550-P3.0/230-3
	4	16.5								i550-P4.0/230-3
	5.5	23								i550-P5.5/230-3
	7.5	29	IP66	5	290 x 180 x 173		6.2	471 x 180 x 170		i550-P7.5/230-3
	11	42								i550-P11/230-3
	15	54	IP66	9.4	405 x 230 x 187		11.9	612 x 230 x 184		i550-P15/230-3
	18.5	68								i550-P18.5/230-3
	30	89	IP55	46	778 x 298 x 286		-	-	-	i550-P30/230-3
	45	150	IP55	53	778 x 298 x 378		-	-	-	i550-P45/230-3
3 AC 400/480 V	0.37	1.3 / 1.1	IP66	1.8	190 x 140 x 117		2.5	330 x 140 x 117		i550-P0.37/400-3
	0.55	1.8 / 1.6								i550-P0.55/400-3
	0.75	2.4 / 2.1								i550-P0.75/400-3
	1.1	3.2 / 3	IP66	2.7	205 x 140 x 140		3.5	346 x 140 x 140		i550-P1.1/400-3
	1.5	3.9 / 3.5								i550-P1.5/400-3
	2.2	5.6 / 4.8								i550-P2.2/400-3
	3	7.3 / 6.3	IP66	4.9	250 x 180 x 168		6	396 x 180 x 165		i550-P3.0/400-3
	4	9.5 / 8.2								i550-P4.0/400-3
	5.5	13 / 11								i550-P5.5/400-3
	7.5	16.5 / 14	IP66	5.1	290 x 180 x 173		6.3	471 x 180 x 170		i550-P7.5/400-3
	11	23.5 / 21								i550-P11/400-3
	15	32 / 27								i550-P15/400-3
	18.5	40 / 34	IP66	10.2	405 x 230 x 187		12	612 x 230 x 184		i550-P18.5/400-3
	22	47 / 40.4								i550-P22/400-3
	30	61 / 52								i550-P30/400-3
	37	76 / 65	IP55	46	778 x 298 x 286		-	-	-	i550-P37/400-3
	45	89 / 77								i550-P45/400-3
	55	110 / 96								i550-P55/400-3
	75	150 / 124	IP55	53	778 x 298 x 378		-	-	-	i550-P75/400-3
3 AC 600 V	0.75	1.7	IP66	1.8	190 x 140 x 117		2.5	330 x 140 x 117		i550-P0.75/600-3
	1.5	2.7	IP66	2.7	205 x 140 x 140		3.5	346 x 140 x 140		i550-P1.5/600-3
	2.2	3.9								i550-P2.2/600-3
	4	6.1	IP66	4.9	250 x 180 x 168		6	396 x 180 x 165		i550-P4.0/600-3
	5.5	9								i550-P5.5/600-3
	7.5	11	IP66	5.1	290 x 180 x 173		6.3	471 x 180 x 170		i550-P7.5/600-3
	11	17								i550-P11/600-3
	15	22	IP66	10.2	405 x 230 x 187		12	612 x 230 x 184		i550-P15/600-3
	18.5	27								i550-P18.5/600-3
	22	32								i550-P22/600-3
	30	41								i550-P30/600-3
	37	52								i550-P37/600-3
	45	62								i550-P45/600-3

The dimensions for the version with an extension box apply to the empty extension box (without a disconnect switch).

Options



Communication



Diagnostics



Functional safety



Communication and I/Os

Name	Network	Connection (network)	I/Os	Connection (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 spring terminal (relay)
Standard-I/O with CANopen	CANopen	3-pole spring terminal		
Standard-I/O with EtherCAT	EtherCAT	RJ45		
Standard-I/O with EtherNet/IP	EtherNet/IP	RJ45		
Standard-I/O with IO-Link	IO-Link	3-pole spring terminal		
Standard-I/O with Modbus RTU	Modbus RTU	3-pole spring terminal		
Standard-I/O with Modbus TCP	Modbus TCP	RJ45		
Standard-I/O with PROFINET	PROFINET	RJ45		

Diagnostics

Name	Description
Keypad	Control panel for parameterization, control and diagnostics of the drive 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 drive with engineering tools.

Functional safety

Name	Description	Connection
Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" (STO corresponds to an uncontrolled standstill in accordance with EN 60204-1, Category 0.)	3-pole double spring terminal

Extension box for decentralized control functions

Name	Description
Extension box empty	For drives up to 18.5 kW (3/PE AC 230/240 V), 22 kW (3/PE AC 400/480 V), 45 kW (3/PE AC 600 V)
Extension box with disconnect switch	

Accessories

Connection

Name	Description			ID
Connector	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 drives, T-piece, 1 ... 2.5 mm ²			13566790
	Distributor for QUICKON wiring of several drives, T-piece, 2.5 ... 6 mm ²			13566824
	Distributor for QUICKON wiring of several drives, H-piece, 1 ... 2.5 mm ²			13566789
	Distributor for QUICKON wiring of several drives, 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

Name	Description			ID
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

Name	Description			ID
Brake connection sets	1 x brake rectifier for 1/N/PE AC 230/240 V			13218705
	1 x brake rectifier for 3/PE AC 400/480 V			13218704

Diagnostics

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

Accessories for extension box

Name	Description			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

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".

i550 motec

The i550 motec VFD for wall mounting and motor mounting in protection class IP66 (UL Type 4X indoor) is the optimal decentralized drive solution. The drive 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 drive. Parameters, drive behavior and usability correspond to our proven VFDs. 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/PE AC 230/240 V	0.37 ... 22 kW
3/PE AC 400/480 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}	P _{rated}	I _{rated}	Degree of protection	i550 motec for wall mounting			i550 motec for motor mounting			Product
				m	H x W x D		m	H x W x D		
	[V]	[kW]		[kg]	[mm]		[kg]	[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		i550-M0.37/230-3
	0.55	3.2								i550-M0.55/230-3
	0.75	4.2								i550-M0.75/230-3
	1.1	6								i550-M1.1/230-3
	1.5	7	IP66	3.8	202 x 265 x 152		3.4	160 x 265 x 140		i550-M1.5/230-3
	2.2	9.6								i550-M2.2/230-3
	3	12								i550-M3.0/230-3
	4	16.5								i550-M4.0/230-3
	5.5	23	IP66	6	257 x 358 x 168		5.4	211 x 358 x 164		i550-M5.5/230-3
	7.5	29								i550-M7.5/230-3
	11	42								i550-M11/230-3
	15	54								i550-M15/230-3
	18.5	68	IP66	13.3	340 x 443 x 209		12.5	280 x 443 x 216		i550-M18.5/230-3
	22	80								i550-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		i550-M0.37/400-3
	0.55	1.8 / 1.6								i550-M0.55/400-3
	0.75	2.4 / 2.1								i550-M0.75/400-3
	1.1	3.2 / 3								i550-M1.1/400-3
	1.5	3.9 / 3.5								i550-M1.5/400-3
	2.2	5.6 / 4.8								i550-M2.2/400-3
	3	7.3 / 6.3	IP66	3.8	202 x 265 x 152		3.4	160 x 265 x 140		i550-M3.0/400-3
	4	9.5 / 8.2								i550-M4.0/400-3
	5.5	13 / 11								i550-M5.5/400-3
	7.5	16.5 / 14								i550-M7.5/400-3
	11	23.5 / 21	IP66	6	257 x 358 x 168		5.4	211 x 358 x 164		i550-M11/400-3
	15	32 / 27								i550-M15/400-3
	18.5	40 / 34								i550-M18.5/400-3
	22	47 / 40.4					12.5	280 x 443 x 216		i550-M22/400-3
	30	61 / 52	IP66	13.3	340 x 443 x 209					i550-M30/400-3
	37	76 / 65								i550-M37/400-3
	45	84 / 77								i550-M45/400-3

i550 motec for wall mounting with extension box

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

For the following versions, the protection class is reduced to IP54/UL Type 12:

- 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

CANopen

EtherCAT

EtherNet/IP

IO-Link

Modbus RTU

Modbus TCP

PROFINET



Basic Safety - STO

Mains connection

Name	Description
Han Q4/2 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 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/PE AC 230/240 V); 15 kW (3/PE AC 400/480 V) Screw terminals for mains connection

Motor connection

Name	Description
Terminals	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 V): Spring terminals From 7.5 kW (3/PE AC 230/240 V); 15 kW (3/PE AC 400/480 V): Screw terminals
Han Q8 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 V)
M23 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 V)
M40 connector	From 7.5 ... 11 kW (3/PE AC 230/240 V); 15 ... 22 kW (3/PE AC 400/480 V)

Communication and I/Os

Name	Network	Connection (network)	I/Os	Connection (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	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	4 x 5-pole M12 connector, A coded
Extended-I/O without network	Without			
Extended-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	1 x analog input 1 x analog input or digital input 1 x analog output or thermal sensor 1 x digital input or digital output 2 x digital input 1 x digital input or digital output	4 x 5-pole M12 connector, A coded
Extended-I/O with CANopen	CANopen	2 x 5-pole M12 connector, A coded		
Extended-I/O with Modbus RTU	Modbus RTU	2 x 5-pole M12 connector, A coded		

Functional safety

Name	Description	Connection
Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" (STO corresponds to an uncontrolled standstill in accordance with EN 60204-1, Category 0.)	1 x 5-pole M12 connector, A coded

Extension box for decentralized control functions

Name	Description
	For drives up to 5.5 kW (3/PE AC 230/240 V), 11 kW (3/PE AC 400/480 V)
Extension box empty	Empty extension box, only with mains terminals
Extension box with disconnect switch	Extension box with disconnect switch
	Extension box with disconnect switch with status feedback
	Extension box with Type E combination motor controller (IP54/UL Type 12)
	Extension box with Type E combination motor controller and status feedback (IP54/UL Type 12)
	Extension box with disconnect switch with status feedback, and operating elements (IP54/UL Type 12)
	Extension box with disconnect switch with status feedback, operating element, and potentiometer (IP54/UL Type 12)

Accessories – wall mounting

Connection

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

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".

Options – motor mounting



Communication Functional safety



Basic Safety - STO

Mains connection

Name	Description
Han Q4/2 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 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/PE AC 230/240 V); 15 kW (3/PE AC 400/480 V) Screw terminals for mains connection

Motor adapters

Name	Description
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

Name	Network	Connection (network)	I/Os	Connection (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	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	4 x 5-pole M12 connector, A coded
Extended-I/O without network	Without			
Extended-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	1 x analog input 1 x analog input or digital input 1 x analog output or thermal sensor 1 x digital input or digital output 2 x digital input	4 x 5-pole M12 connector, A coded
Extended-I/O with CANopen	CANopen	2 x 5-pole M12 connector, A coded	1 x digital input or digital output	
Extended-I/O with Modbus RTU	Modbus RTU	2 x 5-pole M12 connector, A coded		

Functional safety

Name	Description	Connection
Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" (STO corresponds to an uncontrolled standstill in accordance with EN 60204-1, Category 0.)	1 x 5-pole M12 connector, A coded

Accessories – motor mounting

Connection

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

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".

i650 motec



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

The i650 motec VFD 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/PE AC 230/240 V	0.37 ... 22 kW
3/PE AC 400/480 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
- Advanced functional range:
 - Logic PLC
 - Table positioning
 - Ethernet-based safety technology with various functions



Product overview

V _{mains}	P _{rated}	I _{rated}	Degree of protection	i550 motec for wall mounting			i550 motec for motor mounting			Product
				m	H x W x D		m	H x W x D		
	[V]	[kW]		[kg]	[mm]		[kg]	[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								i650-M15/230-3
	18.5	68	IP66	13.3	340 x 443 x 209		12.5	280 x 443 x 216		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		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								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								i650-M7.5/400-3
	11	23.5 / 21	IP66	6	257 x 358 x 168		5.4	211 x 358 x 164		i650-M11/400-3
	15	32 / 27								i650-M15/400-3
	18.5	40 / 34								i650-M18.5/400-3
	22	47 / 40.4					12.5	280 x 443 x 216		i650-M22/400-3
	30	61 / 52	IP66	13.3	340 x 443 x 209					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}	P _{rated}	I _{rated}	Degree of protection	m	H x W x D		Product
[V]	[kW]	[A]		[kg]	[mm]		
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	IP66	7.4	257 x 493 x 193		i650-M4.0/230-3
	5.5	23					i650-M5.5/230-3
3 AC 400/480 V	0.37	1.3 / 1.1	IP66	4.3	202 x 400 x 172		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					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	5	202 x 400 x 196		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	7.4	257 x 493 x 193		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 UL Type 12:

- 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
 	 Basic Safety - STO Extended Safety - S Extended Safety - ST	 Logic PLC Table positioning

Mains connection

Name	Description
Han Q4/2 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 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/PE AC 230/240 V); 15 kW (3/PE AC 400/480 V) Screw terminals for mains connection

Motor connection

Name	Description
Terminals	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 V): Spring terminals From 7.5 kW (3/PE AC 230/240 V); 15 kW (3/PE AC 400/480 V): Screw terminals
Han Q8 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 V)
M23 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 V)
M40 connector	From 7.5 ... 11 kW (3/PE AC 230/240 V); 15 ... 22 kW (3/PE AC 400/480 V)

Communication and I/Os

Name	Network	Connection (network)	I/Os	Connection (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	4 x 5-pole M12 connector, A coded
Extended-I/O without network	Without			
Extended-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded	1 x analog input 1 x analog input or digital input 1 x analog output or thermal sensor 1 x digital input or digital output 2 x digital input 1 x digital input or digital output	4 x 5-pole M12 connector, A coded
Extended-I/O with CANopen	CANopen	2 x 5-pole M12 connector, A coded		
Extended-I/O with Modbus RTU	Modbus RTU	2 x 5-pole M12 connector, A coded		

Extended-I/O with CANopen and Extended-I/O with Modbus RTU do not support Extended Safety.

Functional safety

Name	Description	Connection
Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" (STO corresponds to an uncontrolled standstill in accordance with EN 60204-1, Category 0.)	1 x 5-pole M12 connector, A coded
Extended Safety - S	Safe stop functions: Safe torque off (STO), safe stop 1 (SS1), safe stop emergency (SSE) Auxiliary and maintenance functions: Operating mode selector (OMS), enable switch (ES), safe muting (MUT) Safety buses: PROFIsafe, FSoE and CIP Safety	
Extended Safety - ST	Scope as "Extended Safety - S", plus I/Os: 2 x safe dual-channel input (SIL 3/PL e) 1 x safe dual-channel output (SIL 3/PL e) 2 x acknowledgment input (AIS + AIE)	4 x 5-pole M12 connector, A coded

Safety bus

Name	Description
CIP Safety	License costs for using the safety bus CIP Safety via EtherNet/IP

Additional functions

Name	Description
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

Name	Description
	For drives up to 5.5 kW (3/PE AC 230/240 V), 11 kW (3/PE AC 400/480 V)
Extension box empty	Empty extension box, only with mains terminals
Extension box with disconnect switch	Extension box with disconnect switch
	Extension box with disconnect switch with status feedback
	Extension box with Type E combination motor controller (IP54/UL Type 12)
	Extension box with Type E combination motor controller and status feedback (IP54/UL Type 12)
	Extension box with disconnect switch with status feedback, and operating elements (IP54/UL Type 12)
	Extension box with disconnect switch with status feedback, operating element, and potentiometer (IP54/UL Type 12)

Accessories – wall mounting

Connection

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

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".

Options – motor mounting



Communication	Functional safety	Additional functions
 	 Basic Safety - STO Extended Safety - S Extended Safety - ST	 Logic PLC Table positioning

Mains connection

Name	Description
Han Q4/2 connector	Up to 5.5 kW (3/PE AC 230/240 V); 11 kW (3/PE AC 400/480 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/PE AC 230/240 V); 15 kW (3/PE AC 400/480 V) Screw terminals for mains connection

Motor adapters

Name	Description
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

Name	Network	Connection (network)	I/Os	Connection (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	4 x 5-pole M12 connector, A coded
Extended-I/O without network	Without		1 x analog input 1 x analog input or digital input 1 x analog output or thermal sensor 1 x digital input or digital output 2 x digital input 1 x digital input or digital output	4 x 5-pole M12 connector, A coded
Extended-I/O with Multi-Ethernet	Switchable: EtherCAT EtherNet/IP Modbus TCP PROFINET	2 x 4-pole M12 connector, D coded		
Extended-I/O with CANopen	CANopen	2 x 5-pole M12 connector, A coded		
Extended-I/O with Modbus RTU	Modbus RTU	2 x 5-pole M12 connector, A coded		

Extended-I/O with CANopen and Extended-I/O with Modbus RTU do not support Extended Safety.

Functional safety

Name	Description	Connection
Basic Safety - STO	Functional safety function "Safe Torque Off (STO)" (STO corresponds to an uncontrolled standstill in accordance with EN 60204-1, Category 0.)	1 x 5-pole M12 connector, A coded
Extended Safety - S	Safe stop functions: Safe torque off (STO), safe stop 1 (SS1), safe stop emergency (SSE) Auxiliary and maintenance functions: Operating mode selector (OMS), enable switch (ES), safe muting (MUT) Safety buses: PROFIsafe, FSoE and CIP Safety	
Extended Safety - ST	Scope as "Extended Safety - S", plus I/Os: 2 x safe dual-channel input (SIL 3/PL e) 1 x safe dual-channel output (SIL 3/PL e) 2 x acknowledgment input (AIS + AIE)	4 x 5-pole M12 connector, A coded

Safety bus

Name	Description
CIP Safety	License costs for using the safety bus CIP Safety via EtherNet/IP

Additional functions

Name	Description
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

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

Further accessories can be found on the Internet and in the brochure "[Accessories for VFDs and servo drives](#)".



Accessories

By simply selecting the accessories, the operation of the drive 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 VFDs and servo drives](#)".



