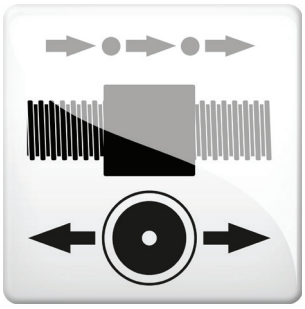


Positioning Applications Brochure

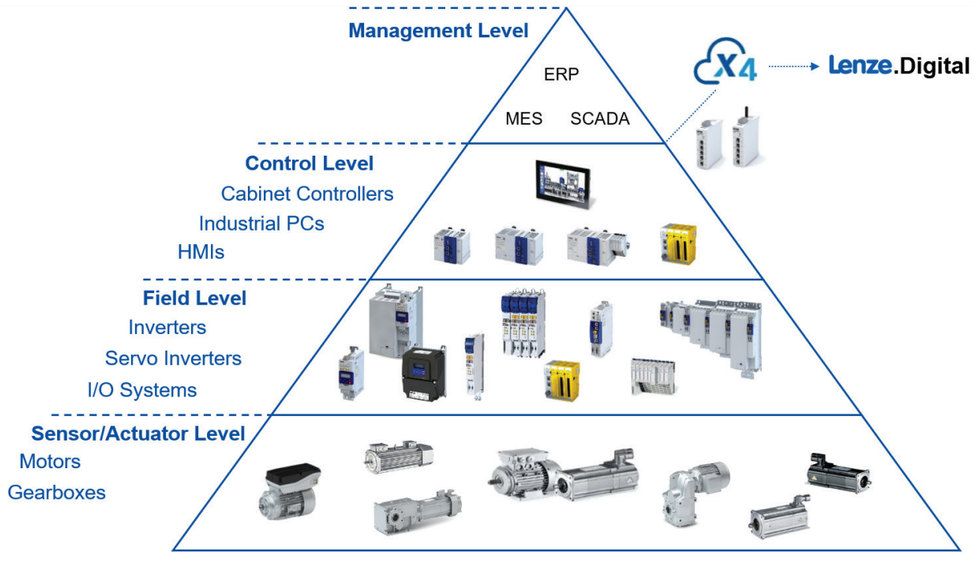
i950, i700, i550

Lenze Positioning Applications

As one of the leading specialists in drive and automation technology, with extensive know-how and a worldwide network of experts in many industries, we make it our priority to work closely with you to find the best solution for your needs. Whether you want to improve your existing equipment or develop a new machine, we are here to help you set your ideas in motion. We are dedicated to supporting you through all phases of your projects in accordance with your individual requirements and goals. And when you develop an innovative concept, we will be there to help you make your vision a reality – from the planning of individual assemblies or complete materials handling systems, to commissioning of the final equipment you need.

Our comprehensive, future-proof portfolio covers the control level, the field level and the electromechanics, and it ensures that the data communication is standardized right up to the cloud level. It gives you solutions that enable you to meet all your requirements easily and efficiently, with the greatest possible flexibility. Thanks to our energy-efficient mechatronic portfolio of reliable technologies, you benefit from long lasting quality and user-friendly products.

Furthermore, our compliance with market standards and open platform allows for the efficient integration of components from various partners. This openness makes engineers and users feel confident of being able to adapt to changes in the future. You can keep your core expertise in-house and hold onto your competitive advantage.

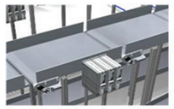


Positioning Applications

i950, i700, i550

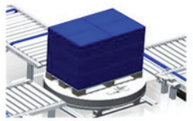
Various kinematics for many applications
- Linear Systems – for extended or heavy duty applications
- Delta – for highly dynamic solutions
- Scara – for rapid and precise handling
- Belts – as a universal system
- Joints – for typical palletizing applications

Pallet magazine



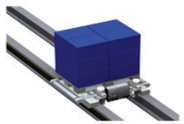
Accumulating conv

- For simple positioning of an axis to complex, coordinated multi-axis applications
- Electronic cam, electrical shaft, and virtual master for precise axis movements
- Material-independent winding – with dancer controller
- Cross cutters and flying saws for cutting

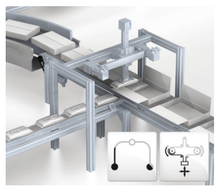


Turntable

Transfer car



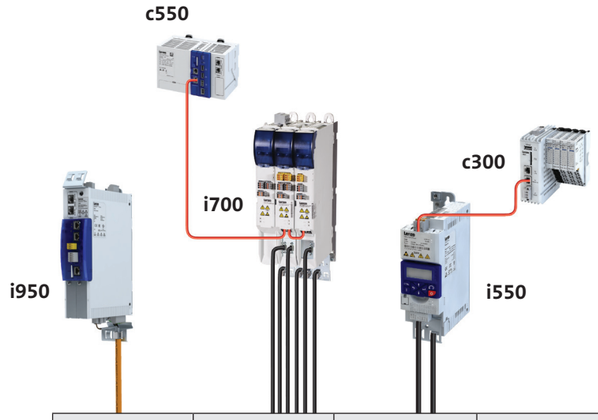
- Efficient decentralized or panel-based drive solution for horizontal handling systems
- High degree of reliability
- Reduced energy consumption
- Soft starting and braking with adjustable ramps
- Minimal installation and wiring complexity



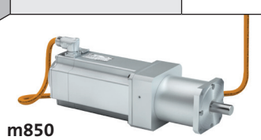
- High degree of reliability due to low-wear brake management
- Less stress as the load is held in position at standstill
- Fast and easy replacement during maintenance
- Reduced energy consumption due to power recovery

AS/RS (boxes)

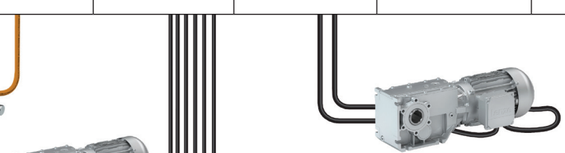
- For advanced storage and retrieval units
- Easy commissioning
- More available storage capacity
- High degree of availability
- Reduced energy consumption
- Regenerative modules for optimum energy balances



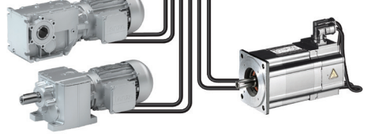
	Typical machine accuracy (mm)	Typical machine accuracy (mm)	Typical machine accuracy (mm)	Mass (kg)	Speed (m/s)	Acceleration (m/s^2)	Power (kW)
Pick & Place	0.05 - 0.5	0.1 - 1	----	5 - 100	1 - 10	20 - 30	0.55 - 10
Traverse & Electronic Gearing	0.1 - 1	0.5 - 2	5 - 10	2000 - 6000	3 - 6	2 - 3	10 - 55
Lift & Conveyor	0.1 - 1	1 - 2	5 - 10	5000 - 8000	0.5 - 1	0.5 - 1.5	30 - 100
Portal	0.1 - 1	1 - 2	----	100 - 500	1 - 10	1 - 8	2 - 70
Stacker Crane	0.5 - 2	----	----	100 - 25000	1 - 6	0.5 - 5	7.5 - 55



m850 synchronous servo motors for positioning, robotics, packaging technology and handling system applications.*



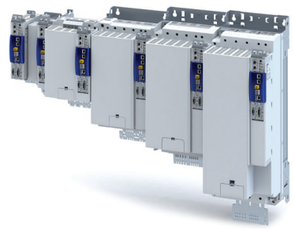
m600 inverter-optimized three-phase AC motor for variable motion.



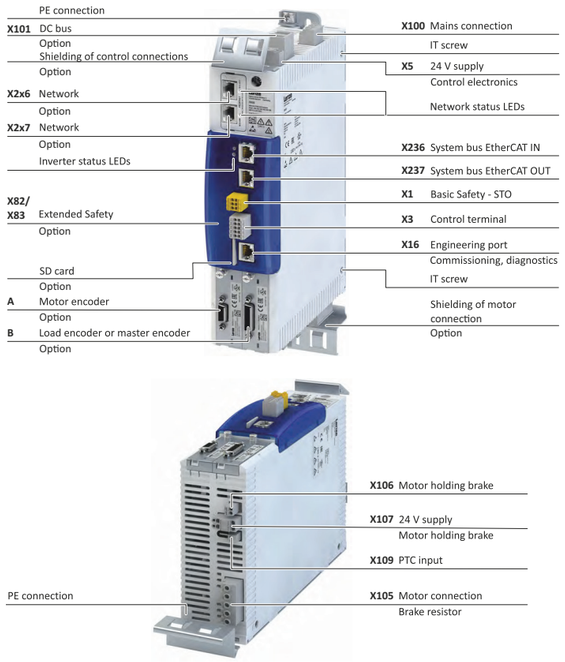
MCS synchronous servo motors for precisely controlled motion.*

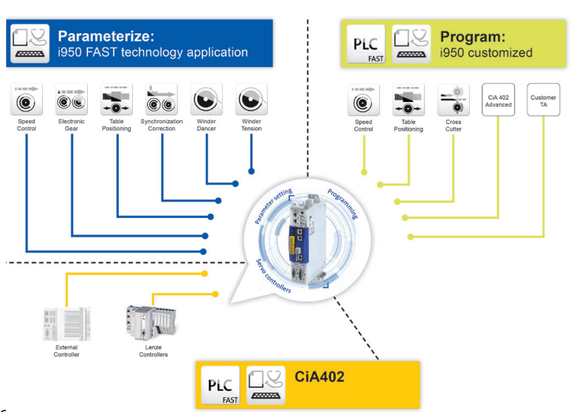
**Various combinations with induction and servo motors are possible.*

Positioning
i950



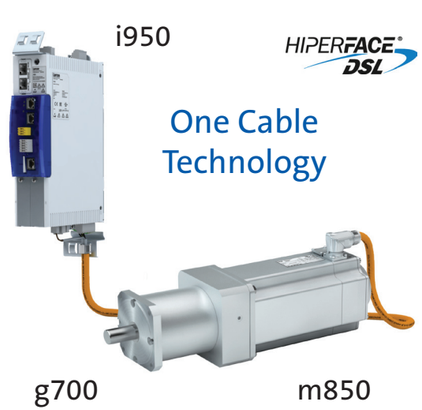
i950 product information & features





FAST technology applications

- Sequenced time- or event- controlled motion profile positioning function
- 15 positioning profiles
- TouchProbe positioning (registration)
- Profile linkage with velocity changeover
- Teach function
- Override for velocity, acceleration and jerk
- Homing
- Manual jog
- Software + Hardware limit switches
- Torque limitation
- Output of electric shaft (e.g. follower)



i950 technical data

230V, 400V available

Conformity declarations	CE	2006/42/EG, 2014/30/EU
	RoHS 2	2011/65/EU
Approvals	$_{c}UL_{us}$	UL 61800-5-1, CSA 22.2 No. 274
Energy efficiency	Class IE2	EN 50598-2
Enclosure	IP20	EN 60529 (except in wire range of terminals)
		NEMA 250 (Type 1 protection against accidental contact only)
	Open type	Only in UL-approved systems
Power system	TT, TN	Voltage against earth: max. 300 V
	IT	Apply the measures described for IT systems!
Mains switching		3x within one minute possible, from 5 kW 1 x within one minute
Operation with residual current circuit breaker		Up to 4.0 kW 30 mA; from 5.5 kW 300 mA
Cable length for EMC	Category C2	20m
	Category C3	≥ 35 m
Switching frequencies		2, 4, 8, 16 kHz. The rated output currents listed below apply at 45°C and switching frequencies of 2 and 4 kHz, and at 40°C and switching frequencies of 8 and 16 kHz
Ambient temperature		55°C (derating of 2.5 %/°C above 45°C)
Max. Output frequency		0 Hz ... 599 Hz
Overload capacity		200% for 3s; 150% for 60s

	Rated power	Mains voltage range	Rated output current	Weight	Dimensions (h x w x d)
	[kW]	[V]	[A]	[kg]	[mm]
i950-C0.55/400-3	0.55	3/PE AC 340 V ... 528 V 45 Hz ... 65 Hz	1.8	1.6	250 x 60 x 173
i950-C0.75/400-3	0.75		2.4		
i950-C2.2/400-3	2.2		5.6		
i950-C4.0/400-3	4		9.5		
i950-C7.5/400-3	7.5		16.5	3.9	276 x 120 x 173
i950-C11/400-3	11		23.5		
i950-C15/400-3	15		32		
i950-C22/400-3	22		47	10.7	347 x 205 x 240
i950-C30/400-3	30		61	16.7	450 x 250 x 234
i950-C45/400-3	45		89		
i950-C55/400-3	55		110	24	536 x 250 x 270
i950-C75/400-3	75		150		
i950-C90/400-3	90		180	35.6	685 x 258 x 304
i950-C110/400-3	110		212		

Motor feedback

- Resolver
- SinCos incremental encoder 1 Vss
- SinCos absolute value encoder 1 Vss with HIPERFACE®
- SSI encoder
- SinCos-SSI absolute value encoder
- TTL incremental encoder
- HIPERFACE® DSL (one cable technology)

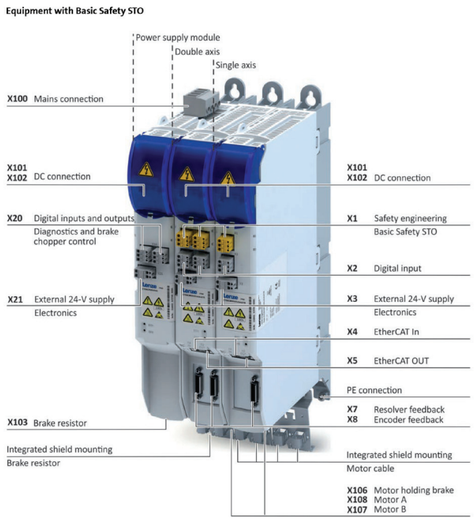
Integrated safety

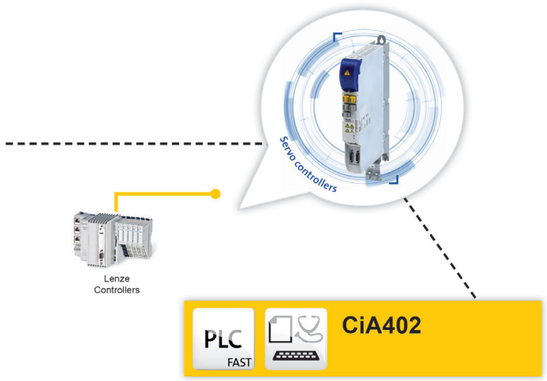
- Basic safe torque off (STO)
- Extended safety options available

Extended Safety Options		
Profisafe	Safe maximum speed (SMS)	Pos.-depended safe speed (PDSS)
FSoE via Systembus	Safely-limited increment (SLI)	Safe in- and outputs
Safe stop 1 (SS1)	Safe direction (SDI)	SBC
Safe stop 2 (SS2)	Operation mode switch (OMS) with enable switch (ES)	Muting
Safe operating stop (SOS)	Safely-limited position (SLP)	
Safely-limited speed (SLS)	Safe cam (SCA)	

Positioning
i700

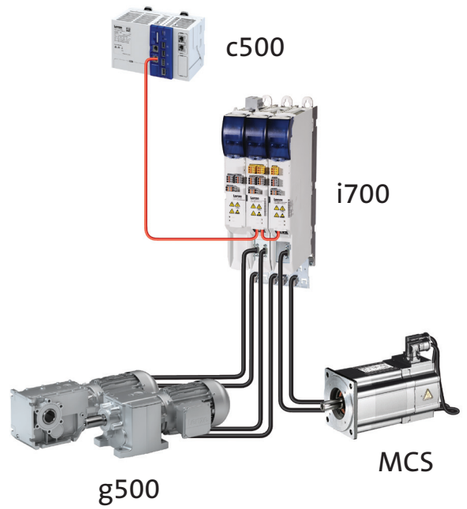
i700 product information & features





FAST technology modules

- Sequenced time- or event- controlled motion profile positioning function
- 15 positioning profiles
- TouchProbe positioning (registration)
- Profile linkage with velocity changeover
- Teach function
- Override for velocity, acceleration and jerk
- Homing
- Manual jog
- Software + Hardware limit switches
- Torque limitation
- Output of electric shaft (e.g. follower)



i700 technical data

120V, 240V, 400V available

Conformity declarations	CE	Low-Voltage Directive
	EAC	TP TC 004/2011 (TR CU 004/2011) TP TC 020/2011 (TR CU 020/2011)
	RoHS 2	2006/95/EC
Approvals	UL 508C	Power Conversion Equipment (file no. E132659)
	CSA	CSA 22.2 No. 14
Energy efficiency	Class IE2	EN 50598-2
Enclosure	IP20	EN 60529
	NEMA 250	Type 1
	Open type	Only in UL-approved systems
Power system	TT, TN	Voltage against earth: max. 300 V
	IT	Apply the measures described for IT systems!
Mains switching		Cyclic mains switching of 5 times in 5 minutes is permissible without restrictions.
Operation with residual current circuit breaker		Up to 2.2 kW 30 mA
Cable length for EMC	Category C2	20 m (≤0.37 kW max. 15 m)
	Category C3	35 m (≤0.37 kW max. 15 m)
Switching frequencies		2, 4, 8, 16 kHz. The rated output currents listed below apply at 45°C and switching frequencies of 2 and 4 kHz, and at 40°C and switching frequencies of 8 and 16 kHz
Ambient temperature		55°C (derating of 2.5 %/°C above 45°C)
Max. Output frequency		0 Hz ... 599 Hz
Overload capacity		200 % for 3s; Heavy Duty: 150 % for 60s; Light Duty: 120 % for 60 s

	Rated power	Mains voltage range	Rated DC-bus current	Weight	Dimensions (h x w x d)
i700 power supply	**[kW]**	**[V]**	**[A]**	**[kg]**	**[mm]**
		3/PE AC 180 V-0 % ... 528 V+0 %, 45 Hz-0 % ... 65 Hz+0 %	30	2.8	350 x 50 x 261
			60	5.8	350 x 100 x 261
	Rated power	**Mains voltage range**	**Rated output current**	**Weight**	**Dimensions (h x w x d)**
i700 single axis module	**[kW]**	**[V]**	**[A]**	**[kg]**	**[mm]**
i700-C0.75/DC	0.75	DC 260V -)% ... 775V +0%	2.5	2.7	350 x 50 x 261
i700-C1.5/DC	1.5		5		
i700-C4/DC	4		10		
i700-C7.5/DC	7.5		16	5.2	350 x 100 x 261
i700-C11/DC	11		24		
i700-C15/DC	15		32		
i700 double axis module	**[kW]**	**[V]**	**[A]**	**[kg]**	**[mm]**
i700-C2x0.75/DC	0.75	DC 260V -)% ... 775V +0%	2.5	2.9	350 x 50 x 261
i700-C2x1.5/DC	1.5		5		
i700-C2x4/DC	4		10	5.2	350 x 100 x 261
i700-C2x7.5/DC	7.5		16		

Motor feedback

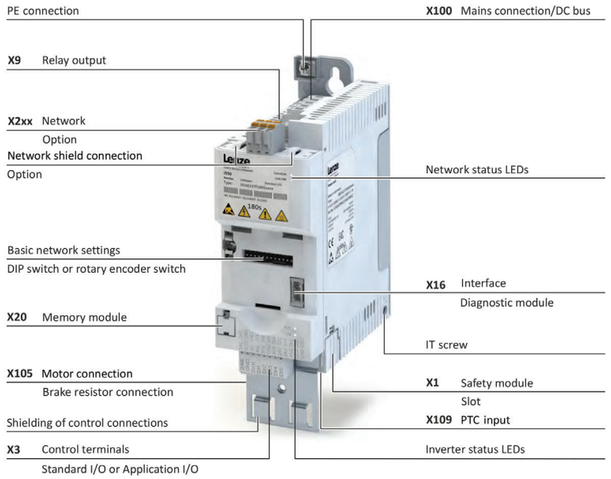
- Resolver
- SinCos incremental encoder 1 Vss
- SinCos absolute value encoder 1 Vss with HIPERFACE®

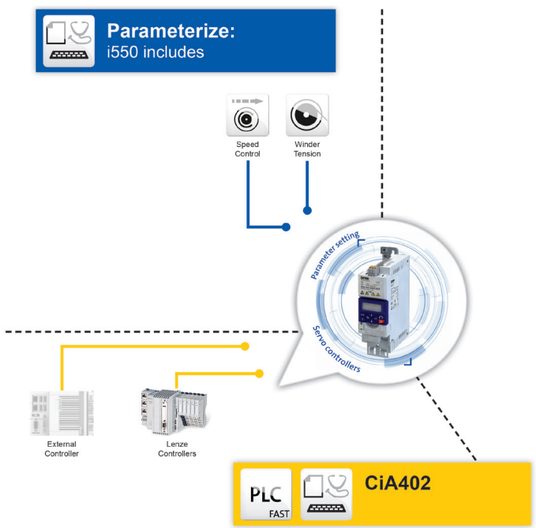
Integrated safety

- Basic safe torque off (STO)

Positioning
i550

i550 product information & features





FAST technology modules

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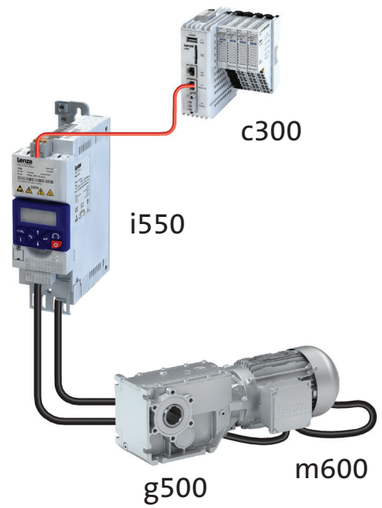
- Override for velocity, acceleration and jerk
- Homing
- Manual jog
- Software + Hardware limit switches
- Torque limitation
- Output of electric shaft (e.g. follower)



i550 technical data

120V, 240V, 400V available

Conformity declarations	CE	2014/35/EU, 2014/30/EU
	EAC	TR TC 004/2011, TP TC 020/2011
	RoHS 2	2011/65/EU
Approvals	$_{c}UL_{us}$	UL 61800-5-1, CSA 22.2 No. 274
Energy efficiency	Class IE2	EN 50598-2
Enclosure	IP20	EN 60529 (except in wire range of terminals)
		NEMA 250 (Type 1 protection against accidental contact only)
	Open type	Only in UL-approved systems
Power system	TT, TN	Voltage against earth: max. 300 V
	IT	Apply the measures described for IT systems!
Mains switching		3x within one minute possible
Operation with residual current circuit breaker		Up to 2.2 kW 30 mA
Cable length for EMC	Category C2	20 m (≤0.37 kW max. 15 m)
	Category C3	35 m (≤0.37 kW max. 15 m)
Switching frequencies		2, 4, 8, 16 kHz. The rated output currents listed below apply at 45°C and switching frequencies of 2 and 4 kHz, and at 40°C and switching frequencies of 8 and 16 kHz
Ambient temperature		55°C (derating of 2.5 %/°C above 45°C)
Max. Output frequency		0 Hz ... 599 Hz
Overload capacity		200 % for 3s; Heavy Duty: 150 % for 60s; Light Duty: 120 % for 60 s

	Rated power	Mains voltage range	Rated output current	Weight	Dimensions (h x w x d)
	[kW]	[V]	[A]	[kg]	[mm]
	3-phase mains connection 400 V – heavy duty; with integrated RFI filter				
i550-C0.37/400-3	0.37	3/PE AC 340 V ... 528 V 45 Hz ... 65 Hz	1.3	0.8	155 x 60 x 130
i550-C0.55/400-3	0.55		1.8	1	180 x 60 x 130
i550-C0.75/400-3	0.75		2.4		
i550-C1.1/400-3	1.1		3.2	1.35	250 x 60 x 130
i550-C1.5/400-3	1.5		3.9		
i550-C2.2/400-3	2.2		5.6		
i550-C3.0/400-3	3		7.3		
i550-C4.0/400-3	4		9.5		
i550-C5.5/400-3	5.5		13	2.3	250 x 90 x 130
i550-C7.5/400-3	7.5		16.5	3.7	276 x 120 x 130
i550-C11/400-3	11		23.5		
i550-C15/400-3	15		32	10.3	347 x 204.5 x 222
i550-C18/400-3	18.5		40		
i550-C22/400-3	22		47		
i550-C30/400-3	30		61	17.2	450 x 250 x 230
i550-C37/400-3	37		76		
i550-C45/400-3	45		89		
i550-C55/400-3	55		110	24	536 x 250 x 265
i550-C75/400-3	75		150		
i550-C90/400-3	90		180	35.6	685 x 258 x 304
i550-C110/400-3	110		212		

	Rated power	Mains voltage range	Rated output current	Weight	Dimensions (h x w x d)
	[kW]	[V]	[A]	[kg]	[mm]
	3-phase mains connection 400 V – light duty; with integrated RFI filter				
i550-C3.0/400-3	4	3/PE AC 340 V ... 528 V 45 Hz ... 65 Hz	8.8	1.35	250 x 60 x 130
i550-C4.0/400-3	5.5		11.9		
i550-C5.5/400-3	7.5		15.6	2.3	250 x 90 x 130
i550-C7.5/400-3	11		23	3.7	276 x 120 x 130
i550-C11/400-3	15		28.2		
i550-C15/400-3	18.5		38.4	10.3	347 x 204.5 x 222
i550-C18/400-3	22		48		
i550-C22/400-3	30		56.4		
i550-C30/400-3	37		73.2	17.2	450 x 250 x 230
i550-C37/400-3	45		91.2		
i550-C45/400-3	55		107		
i550-C55/400-3	75		132	24	536 x 250 x 265
i550-C75/400-3	90		180		
i550-C90/400-3	110		216	35.6	685 x 258 x 304
i550-C110/400-3	132		254		

i550-C3.0/400-3 and i550-C4.0/400-3 of the generation “A” are 90 mm wide.
As stated, the devices of the generation “B” with a width of 60 mm are 33% smaller.

Motor feedback

- HTL encoder

Integrated safety

- Basic safe torque off (STO)

04/2022 | 1.1

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