

Accessories

For frequency and servo inverters



Accessories – helpful in the application

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.

Features

- The scalable concept enables easy selection
- Sophisticated accessories save space and time during installation
- Energy-efficient requirements can be optimally solved

The benefits for you

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



Accessories at a glance

Braking operation and brake control



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If the machine has to be braked or brought to a standstill in a short time, the motor at the inverter runs in regenerative mode. The resulting energy can be dissipated with a brake resistor.

Mains chokes



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By using a mains choke, harmonics at the mains input of an inverter are smoothed. For large powers, the use of a mains choke is mandatory.

RFI and mains filters



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These filters are used to ensure compliance with the EMC requirements of European Standard EN 61800-3 and are easy to use for categories C1 – C3.

Power supply units



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If the control electronics are to remain active even when the inverter is serviced, they can be supplied externally with 24 V power supply units.

Electrical protection devices and busbars



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The inverters can be interconnected via a DC bus. This can significantly improve the energy balance of the machine. Busbars can be used to easily set up a DC-bus connection.



Brake resistors – well braked

For regenerative operation over a longer period of time or if large moments of inertia have to be braked, an external brake resistor is required in many applications. This converts the excess braking energy into heat.

The brake resistor is switched on when the DC-bus voltage of the inverter exceeds the switching threshold. This prevents the inverter from setting pulse inhibit through the “overvoltage” fault and the drive from coasting down. The external brake resistor serves to control the braking process at any time.

Lenze offers you a wide range of brake resistors for optimum system design.



ERBG

- For side mounting IP20
- 1900 ... 34000 W



ERBM

- For side mounting IP20/IP23/IP54
- 20 ... 150 W



ERBP

- For side mounting IP23
- 200 ... 300 W



ERBS

- For side mounting IP66
- 150 ... 6300 W



ERBU

- For mounting IP20 and IP66
- 15 ... 35 W



ERBG

Power range

- 1.9 ... 34 kW

Resistance range

- 2.3 ... 18 Ω

Degree of protection

- IP20

Approvals

- CE; UKCA; UR for USA and Canada

Housing

- Steel grid

Mounting

- Side mounting

Connection system

- Connection bolt

Temperature monitoring

- Thermal contact

Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)



ERBM

Power range

- 20 ... 150 W

Resistance range

- 39 ... 470 Ω

Degree of protection

- IP20/IP23/IP54

Approvals

- CE; UKCA; UR for USA and Canada

Housing

- Aluminum profile

Mounting

- Side mounting

Connection system

- Assembled connecting cable 500 mm/700 mm

Temperature monitoring

- Thermal contact

Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)



ERBP

Power range

- 200 ... 300 W

Resistance range

- 18 ... 180 Ω

Degree of protection

- IP23

Approvals

- CE; UKCA; UR for USA and Canada

Housing

- Aluminum profile

Mounting

- Side mounting

Connection system

- Assembled connecting cable 500 mm

Temperature monitoring

- Thermal contact

Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)



ERBS

Power range

- 150 ... 6300 W

Resistance range

- 5 ... 470 Ω

Degree of protection

- IP66

Approvals

- CE; UKCA; UR for USA and Canada

Housing

- Aluminum profile

Mounting

- Side mounting

Connection system

- Terminal box

Temperature monitoring

- Thermal contact

Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)



ERBU

Power range

- 15 ... 35 W

Resistance range

- 150 ... 390 Ω

Degree of protection

- IP20 and IP66

Approvals

- CE; UKCA; UR for USA and Canada

Housing

- Metal cartridge

Mounting

- Mounting

Connection system

- Assembled connecting cable

Temperature monitoring

- None, brake resistor is intrinsically safe





































Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)

Technical data

ERBG

Conformity	CE	2006/95/EC 2014/35/EU	Low-Voltage Directive
		2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011 (TR CU 004/2011)	Eurasian conformity: Safety of low voltage equipment
Approval	UR	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E221095) for USA and Canada
Degree of protection	EN	EN 60529	IP20
	NEMA	NEMA 250	Type 1, only protection against accidental contact
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 0.7 g
Mounting position	Standard		Horizontally standing
	Variant		Vertically suspended with connecting cables at the bottom, up to P _{max} <10 kW

Order code	R _B	P _D	Q _B	V _{max}	m	Degree of protection	H x W x D	Material number
	[Ω]	[W]	[kW]	[V DC]	[kg]		[mm]	
Brake resistor for installation in the control cabinet								
ERBG023D05K6	2.3	5600	840	1000	15.9	IP20	302 x 486 x 426	13598296  
ERBG028D04K1	2.8	4100	615	1000	12.8	IP20	302 x 486 x 426	13598297  
ERBG028D11K0WBN000	2.8	11000	1650	1000	28	IP20	302 x 486 x 736	13598315  
ERBG028D34K0WBN000	2.8	34000	5100	1000	90	IP20	1020 x 486 x 736	13598316  
ERBG035D03K3	3.5	3300	495	1000	12.6	IP20	302 x 486 x 326	13598298  
ERBG005R02K6	5	2600	390	1000	11.0	IP20	302 x 486 x 326	13598148  
ERBG005R10K0WBN000	5	10000	1500	1000	26.7	IP20	302 x 486 x 736	13598312  
ERBG005R22K0WBN000	5	22000	3300	1000	54	IP20	600 x 486 x 736	13598313  
ERBG005R27K0WBN000	5	27000	4050	1000	68	IP20	1020 x 486 x 636	13598314  
ERBG075D01K9	7.5	1900	285	1000	9.5	IP20	302 x 486 x 236	13598301  
ERBG075D04K5WBN000	7.5	4500	675	1000	15	IP20	1020 x 486 x 636	13598317  
ERBG075D15K0WBN000	7.5	15000	2250	1000	38	IP20	600 x 486 x 526	13598318  
ERBG012R01K9	12	1900	285	1000	9.5	IP20	302 x 486 x 236	13598270  
ERBG012R05K2	12	5200	780	1000	15.1	IP20	302 x 486 x 426	13598271  
ERBG015R03K3	15	3300	495	1000	12.6	IP20	302 x 486 x 326	13598292  
ERBG015R06K2	15	6200	930	1000	17.0	IP20	302 x 486 x 526	13598293  
ERBG015R10K0	15	10000	34000	1000	22.0	IP20	302 x 486 x 736	13598294  
ERBG018R04K3	18	4300	645	1000	13.5	IP20	302 x 486 x 426	13598295  

















ERBM

Conformity	CE	2014/35/EU	Low-Voltage Directive
		2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011 (TR CU 004/2011)	Eurasian conformity: Safety of low voltage equipment
Approval	UR	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E208678 + E232497) for USA and Canada
Degree of protection	EN	EN 60529	IP20, IP23, IP54
	NEMA	NEMA 250	Type 1, Type 2, Type 13
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5%/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 0.7 g
Mounting position	Standard		Vertically suspended

Order code	R _B	P _D	Q _B	V _{max}	m	Degree of protection	H x W x D	Material number		
	[Ω]	[W]	[kW]	[V DC]	[kg]		[mm]			
Brake resistor for installation in the control cabinet										
ERBM047R135W	47	135	6.3	800	0.67	IP23	216 x 80 x 28	13554431		
ERBM082R150W	82	150	22.5	800	0.70	IP20	238 x 80 x 59	13556675		
ERBM100R086W	100	86	3.4	800	0.49	IP23	110 x 80 x 28	13554432		
ERBM100R150W	100	150	22.5	800	0.54	IP20	238 x 80 x 59	13556673		
ERBM470R020W	470	20	3	800	0.34	IP20	160 x 40 x 36	13557874		
Brake resistor for mounting outside the control cabinet										
ERBM039R120W	39	120	18	800	1.0	IP54	265 x 31 x 60	13565484		
ERBM100R100W	100	100	15	400	0.37	IP54	235 x 20.6 x 40	13565461		
ERBM180R050W	180	50	7.5	400	0.28	IP54	175 x 20.6 x 40	13565460		
ERBM390R100W	390	100	15	800	0.37	IP54	235 x 20.6 x 40	13565482		

ERBP

Conformity	CE	2014/35/EU	Low-Voltage Directive
		2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011 (TR CU 004/2011)	Eurasian conformity: Safety of low voltage equipment
Approval	UR	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E232497) for USA and Canada
Degree of protection	EN	EN 60529	IP23
	NEMA	NEMA 250	Type 2
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 0.7 g
Mounting position	Standard		Horizontally standing
	Variant		Vertically suspended with 30% current reduction

Order code	R _B	P _D	Q _B	V _{max}	m	Degree of protection	H x W x D	Material number		
	[Ω]	[W]	[kW]	[V DC]	[kg]		[mm]			
Brake resistor for installation in the control cabinet										
ERBP018R300W	18	300	45	800	1.4	IP23	320 x 42 x 122	13565500		
ERBP027R200W	27	200	30	800	1.0	IP23	240 x 42 x 122	13565501		
ERBP033R200W	33	200	30	800	1.0	IP23	240 x 42 x 122	13565504		
ERBP033R300W	33	300	45	800	1.4	IP23	320 x 42 x 122	13565505		
ERBP047R200W	47	200	30	800	1.0	IP23	240 x 42 x 122	13565502		
ERBP082R200W	82	200	30	800	1.0	IP23	240 x 42 x 122	13565503		
ERBP180R200W	180	200	30	800	1.0	IP23	240 x 42 x 122	13565506		
ERBP180R300W	180	300	45	800	1.4	IP23	320 x 42 x 122	13565507		











ERBS

Conformity	CE	2014/35/EU	Low-Voltage Directive
		2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011 (TR CU 004/2011)	Eurasian conformity: Safety of low voltage equipment
Approval	UR	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E208678 + E232497) for USA and Canada
Degree of protection	EN	EN 60529	IP66
	NEMA	NEMA 250	Type 4x
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 0.7 g
Mounting position	Standard		Vertically suspended with connecting cables at the bottom
	Variant		Horizontally standing with 20% current reduction

Order code	R _B	P _D	Q _B	V _{max}	m	Degree of protection	H x W x D	Material number		
	[Ω]	[W]	[kWs]	[V DC]	[kg]		[mm]			
Brake resistor for mounting outside the control cabinet										
ERBS005R02K0WQN000	5	2000	300	848	9	IP66	105 x 204 x 865	13625982		
ERBS075D01K2WQN000	7.5	1200	180	848	5.6	IP66	105 x 114 x 1020	13625930		
ERBS075D04K0WQN000	7.5	4000	600	848	18.2	IP66	105 x 279 x 1100	13625931		
ERBS012R02K0WQN000	12	2000	300	800	9.8	IP66	865 x 200 x 105	13599742		
ERBS012R05K0WQN000	12	5000	750	800	35.5	IP66	995 x 300 x 280	13599743		
ERBS015R01K2	15	1200	180	800	5.6	IP66	1020 x 114 x 105	13566413		
ERBS015R02K4	15	2400	360	800	10	IP66	1020 x 204 x 105	13566414		
ERBS015R06K3WQN000	15	6300	945	800	39	IP66	1095 x 300 x 280	13599744		
ERBS015R800W	15	800	120	800	4.0	IP66	710 x 114 x 105	13566412		
ERBS018R01K2	18	1200	180	800	5.6	IP66	1020 x 114 x 105	13566411		
ERBS018R01K4	18	1400	210	800	6.3	IP66	1110 x 114 x 105	13566409		
ERBS018R01K9	18	1900	285	800	18.7	IP66	825 x 204 x 105	13566408		
ERBS018R02K8	18	2800	420	800	12	IP66	1110 x 204 x 105	13566410		
ERBS018R04K5WQN000	18	4500	675	800	30.5	IP66	895 x 300 x 280	13599745		
ERBS018R800W	18	800	120	800	4.0	IP66	710 x 114 x 105	13566407		
ERBS027R01K2	27	1200	180	800	5.6	IP66	1020 x 114 x 105	13566402		
ERBS027R01K4	27	1400	210	800	6.3	IP66	1110 x 114 x 105	13566406		
ERBS027R600W	27	600	90	800	3.1	IP66	550 x 114 x 105	13566405		
ERBS039R01K6NQN000	39	1600	246	800	7.8	IP66	748 x 200 x 122	13549460		
ERBS047R400W	47	400	60	800	2.3	IP66	400 x 114 x 105	13566403		
ERBS047R400WGQN000	47	400	60	800	2.6	IP66	405 x 114 x 115	13599422		
ERBS047R800W	47	800	120	800	4.0	IP66	710 x 114 x 105	13566404		
ERBS047R800WGQN000	47	800	120	800	4.3	IP66	715 x 114 x 115	13599423		
ERBS082R780WNQN000	82	780	117	800	3.6	IP66	666 x 124 x 122	13549459		
ERBS100R625WNQN000	100	625	94	800	3.1	IP66	566 x 124 x 122	13549458		
ERBS180R350WGQN000	180	350	53	800	2.4	IP66	382 x 124 x 138	13599424		
ERBS180R350WNQN000	180	350	53	800	2.1	IP66	382 x 124 x 122	13549457		
ERBS180R350WNQN600	180	350	52.5	850	2.1	IP66	382 x 124 x 122	13617266		
ERBS470R150WNQN000	470	150	22.5	800	1.3	IP66	222 x 124 x 122	13549455		
ERBS470R150WNQN600	470	150	22.5	850	1.3	IP66	222 x 124 x 122	13617265		

ERBU

Conformity	CE	2014/35/EU	Low-Voltage Directive
		2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011 (TR CU 004/2011)	Eurasian conformity: Safety of low voltage equipment
Approval	UR	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E208678 + E232497) for USA and Canada
Degree of protection	EN	EN 60529	IP20, IP65, IP66
	NEMA	NEMA 250	Type 1, Type 4x
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 0.7 g
Mounting position	Standard		Vertically suspended

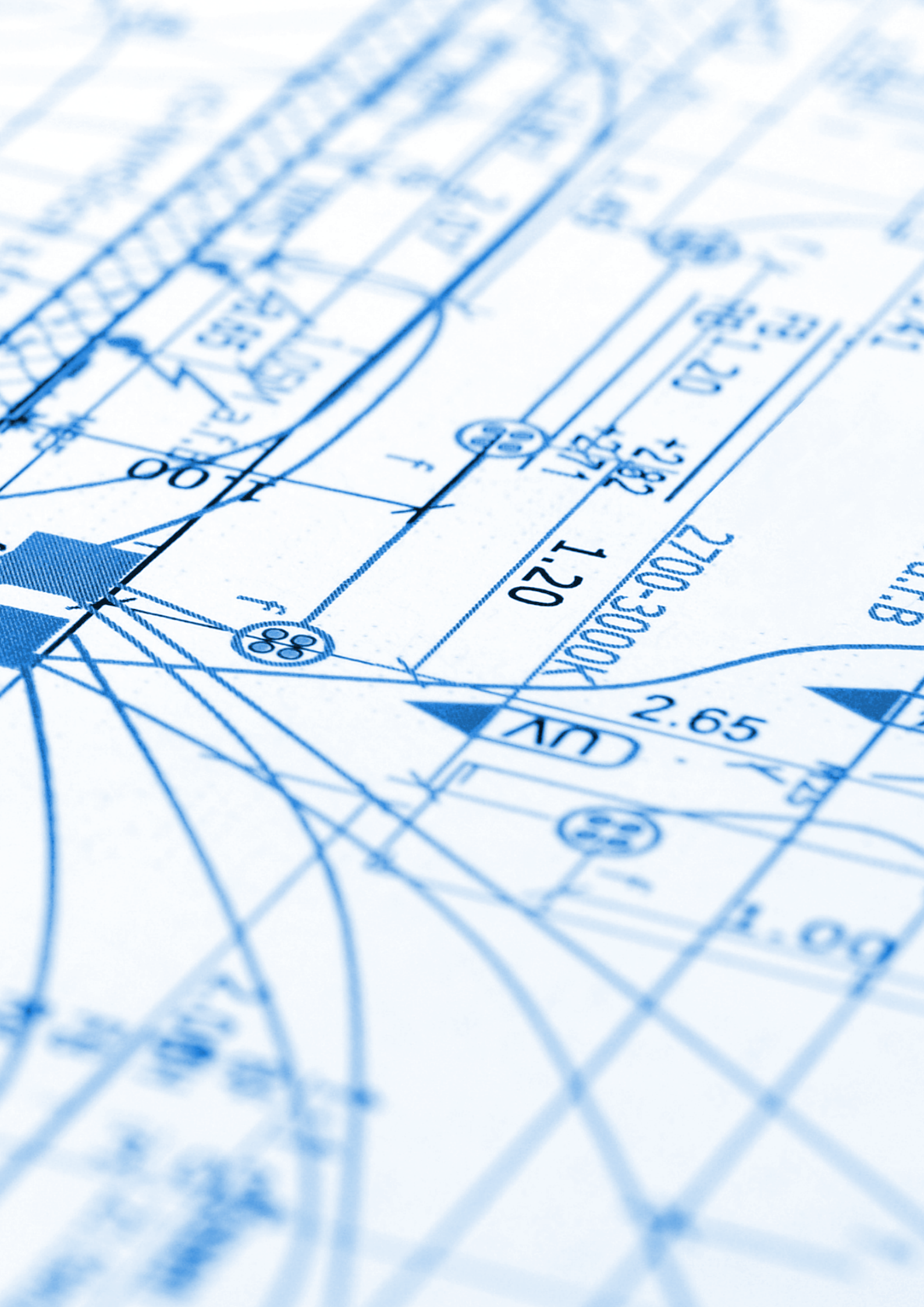
Order code	R _B	P _D	Q _B	V _{max}	m	Degree of protection	H x W x D	Material number		
	[Ω]	[W]	[kW]	[V DC]	[kg]		[mm]			
Brake resistor for mounting outside the control cabinet										
ERBU150R015WAQN000	150	15	0.3	800	0.2	IP66	83 x 24 x 24	13596343		
ERBU150R035WUQN000	150	35	5.25	800	0.38	IP20	278 x 60 x 27.5	13619027		
ERBU390R015WAQN000	390	15	0.3	800	0.2	IP66	83 x 24 x 24	13596344		
ERBU390R020W	390	20	0.25	800	0.17	IP65	42 x 24 x 173	13476442		
ERBU390R035WUQN000	390	35	5.25	800	0.38	IP20	278 x 60 x 27.5	13619024		

Product extensions

Protective screen for brake resistors

The brake resistors can become very hot during braking operation of the inverter. The following ERBS brake resistors can be equipped with a protective screen as protection against contact.

Brake resistor	Mounting kit				mounted			
			Material number			Material number		
ERBS047R400W	ERZ0020	13592259	i	🛒	ERBS047R400WQGN000	13599422	i	🛒
ERBS015R800W	ERZ0021	13592260	i	🛒	-			
ERBS018R800W	ERZ0021	13592260	i	🛒	-			
ERBS047R800W	ERZ0021	13592260	i	🛒	ERBS047R800WQGN000	13599423	i	🛒
ERBS180R350W	ERZ0022	13592261	i	🛒	ERBS180R350WQGN000	13599424	i	🛒



Project planning

Dimensioning conditions

- The mounting location must always ensure the operating conditions mentioned in the technical data; if required, additional measures must be taken.
- The mounting location and material must ensure a durable mechanical connection.
- The installation clearances specified in the technical data must be observed to ensure unobstructed air circulation for dissipating the heat.
- Protect the mounting location by suitable fire prevention and protection against contact.
- Flammable materials or substances may not be placed in the vicinity of the brake resistor.
- Always connect the thermal contact and integrate it into the system monitoring so that the voltage supply to the inverter is disconnected when the thermal contact responds (e.g. switch off the control of the mains contactor).

Assignment of the brake resistors to the inverter

Lenze provides selection tables for easy and quick selection of a brake resistor. The assignment via the mains voltage and the rated power of the inverter is a non-binding recommendation.

A distinction is made between 4 application classes:

Application class	Meaning	Examples
Dynamic load	Compensation of low, sporadic voltage peaks	Overshoot due to backlash-affected mechanics at the end of the acceleration phase Transfer of conveyed material to downstream conveyor line
Emergency stop	Compensation of regenerative energy during emergency stop	Braking after pressing the emergency stop button
Passive load	Compensation of regenerative energy during horizontal movement	Braking of slides on machine tools or rotary tables
Active load	Compensation of regenerative energy during vertical movement	Braking hoists

Observe the operating conditions:

- Mean value of regenerative power < permanent power of the brake resistor
- Regenerative power during braking time < thermal capacity of the brake resistor.
- At any time, the following must apply:
Cumulative braking times within the cycle time < maximum braking time

A brake resistor can be optimally designed with the DSD Engineering Tool.

Mains connection 120 V and 230 V

Inverter						Brake resistor, protection class IP20 ... IP66			
PN	V _{mains}	i500	i700	i900	For control cabinet installation				
kW	V	cabin-	pro-	cabin-	cabin-	Dynamic load	Emergency stop	Passive load	Active load
		net	tec	net	net				
0.25	1 x 120V	x					ERBM180R050W	ERBM180R050W	ERBP180R200W
0.37	1 x 120V	x	x			ERBU390R015WAQN000	ERBM180R050W	ERBM180R050W	ERBP180R200W
0.75	1 x 120V	x	x			ERBU150R015WAQN000	ERBM047R135W	ERBM047R135W	ERBP047R200W
1.1	1 x 120V	x	x			ERBU150R015WAQN000	ERBM047R135W	ERBM047R135W	ERBP047R400W
							ERBM100R100W	ERBM100R100W	ERBS100R625WNQN000
0.25	1 x 230V	x					ERBM180R050W	ERBM180R050W	ERBP180R200W
0.37	1 x 230V	x			x		ERBM180R050W	ERBM180R050W	ERBP180R200W
			x			ERBU150R015WAQN000	ERBM100R086W	ERBM100R086W	ERBM100R100W
0.55	1 x 230V	x	x		x		ERBM100R100W	ERBM100R100W	ERBS100R625WNQN000
						ERBU150R015WAQN000	ERBM100R086W	ERBM100R086W	ERBM100R150W
0.75	1 x 230V	x	x		x		ERBM100R086W	ERBM100R086W	ERBM100R150W
1.1	3 x 230V	x	x				ERBP033R200W	ERBP033R200W	ERBP033R300W
						ERBU150R015WAQN000	ERBM039R120W	ERBM039R120W	ERBS039R01K6NQN000
1.5	3 x 230V	x	x		x		ERBP033R200W	ERBP033R200W	ERBP033R300W
						ERBU150R015WAQN000	ERBM039R120W	ERBM039R120W	ERBS039R01K6NQN000
2.2	3 x 230V	x	x				ERBP033R200W	ERBP033R200W	ERBP033R300W
						ERBU150R015WAQN000	ERBM039R120W	ERBM039R120W	ERBS039R01K6NQN000
0.25	3 x 230V	x					ERBM180R050W	ERBM180R050W	ERBP180R200W
0.37	3 x 230V	x	x		x		ERBM180R050W	ERBM180R050W	ERBP180R200W
						ERBU150R015WAQN000	ERBM100R100W	ERBM100R100W	ERBS100R625WNQN000
0.55	3 x 230V	x	x		x		ERBM100R086W	ERBM100R086W	ERBM100R150W
						ERBU150R015WAQN000	ERBM100R086W	ERBM100R086W	ERBM100R150W
0.75	3 x 230V	x	x		x		ERBM100R086W	ERBM100R086W	ERBM100R150W
1.1	3 x 230V	x	x				ERBP033R200W	ERBP033R200W	ERBP033R300W
						ERBU150R015WAQN000	ERBM039R120W	ERBM039R120W	ERBS039R01K6NQN000
1.5	3 x 230V	x	x		x		ERBP033R200W	ERBP033R200W	ERBP033R300W
						ERBU150R015WAQN000	ERBM039R120W	ERBM039R120W	ERBS039R01K6NQN000
2.2	3 x 230V	x	x				ERBP033R200W	ERBP033R200W	ERBP033R300W
						ERBU150R015WAQN000	ERBM039R120W	ERBM039R120W	ERBS039R01K6NQN000
4	3 x 230V	x	x		x		ERBS015R800W	ERBS015R800W	ERBS015R01K2
						ERBU150R015WAQN000	ERBS015R800W	ERBS015R800W	ERBS015R01K2
5.5	3 x 230V	x	x		x		ERBS015R800W	ERBS015R800W	ERBS015R01K2
						ERBU150R015WAQN000	ERBS015R800W	ERBS015R800W	ERBS015R02K4
7.5	3 x 230V	x					ERBS015R800W	ERBS015R800W	ERBS015R02K4
11	3 x 230V	x					ERBS015R800W	ERBS015R01K2	ERBS015R02K4
15	3 x 230V	x					ERBS012R02K0WQN000	ERBS012R02K0WQN000	ERBS012R05K0WQN000
18.5	3 x 230V	x					ERBS012R02K0WQN000	ERBS012R02K0WQN000	ERBS012R05K0WQN000
22	3 x 230V	x					ERBS012R02K0WQN000	ERBS012R02K0WQN000	ERBS012R05K0WQN000

Mains connection 120 V and 230 V

Inverter					Brake resistor, protection class IP66			
PN	V _{mains}	i500	i700	i900	Mounting outside the control cabinet			
kW	V	pro- tec	cabi- net	cabi- net	Dynamic load	Emergency stop	Passive load	Active load
0.37	1 x 120V	x			ERBU390R015WAQN000	ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
0.75	1 x 120V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
1.1	1 x 120V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
0.37	1 x 230V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
0.55	1 x 230V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
0.75	1 x 230V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
1.1	3 x 230V	x			ERBU150R015WAQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000
1.5	3 x 230V	x			ERBU150R015WAQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000
2.2	3 x 230V	x			ERBU150R015WAQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000
0.37	3 x 230V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
0.55	3 x 230V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
0.75	3 x 230V	x			ERBU150R015WAQN000	ERBS100R625WNQN000	ERBS100R625WNQN000	ERBS100R625WNQN000
1.1	3 x 230V	x			ERBU150R015WAQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000
1.5	3 x 230V	x			ERBU150R015WAQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000
2.2	3 x 230V	x			ERBU150R015WAQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000	ERBS039R01K6NQN000
4	3 x 230V	x			ERBU150R015WAQN000	ERBS015R800W	ERBS015R800W	ERBS015R01K2
5.5	3 x 230V	x			ERBU150R015WAQN000	ERBS015R800W	ERBS015R800W	ERBS015R01K2
7.5	3 x 230V	x				ERBS015R800W	ERBS015R800W	ERBS015R02K4
11	3 x 230V	x				ERBS015R800W	ERBS015R01K2	ERBS015R02K4
15	3 x 230V	x				ERBS012R02K0WQN000	ERBS012R02K0WQN000	ERBS012R05K0WQN000
18.5	3 x 230V	x				ERBS012R02K0WQN000	ERBS012R02K0WQN000	ERBS012R05K0WQN000
30	3 x 230V	x				ERBS075D01K2WQN000	ERBS075D04K0WQN000	
45	3 x 230V	x				ERBS005R02K0WQN000		

Mains connection 400 V

Inverter						Brake resistor, protection class IP20 ... IP66			
PN	V _{mains}	i500		i700	i900	For control cabinet installation			
kW	V	cabin-	pro-	cabin-	cabin-	Dynamic load	Emergency stop	Passive load	Active load
		net	tec	net	net				
0.37	3 x 400V	x				ERBU390R035WUQN000	ERBU390R035WUQN000	ERBU390R035WUQN000	ERBM390R100W
			x			ERBU390R015WAQN000	ERBM470R020W	ERBM390R100W	
0.55	3 x 400V	x			x	ERBU390R035WUQN000	ERBU390R035WUQN000	ERBM390R100W	ERBM390R100W
			x			ERBU390R015WAQN000	ERBM390R100W		
0.75	3 x 400V	x			x	ERBU390R035WUQN000	ERBU390R035WUQN000	ERBM390R100W	ERBM390R100W
			x			ERBU390R015WAQN000	ERBM390R100W		
1.1	3 x 400V	x				ERBU150R035WUQN000	ERBU150R035WUQN000	ERBP180R200W	ERBP180R300W
			x			ERBU150R015WAQN000	ERBP180R200W		
1.5	3 x 400V	x				ERBU150R035WUQN000	ERBP180R200W	ERBP180R200W	ERBS180R350WNQN000
			x			ERBU150R015WAQN000			
2.2	3 x 400V	x			x	ERBU150R035WUQN000	ERBP180R200W	ERBP180R300W	ERBS180R350WNQN000
			x			ERBU150R015WAQN000			
3	3 x 400V	x				ERBU150R035WUQN000	ERBM082R150W	ERBP082R200W	ERBS082R780WNQN000
			x			ERBU150R015WAQN000			
4	3 x 400V	x			x	ERBU150R035WUQN000	ERBM047R135W	ERBS047R400W	ERBS047R800W
			x			ERBU150R015WAQN000			
5.5	3 x 400V	x					ERBP047R200W	ERBS047R400W	ERBS047R800W
			x			ERBU150R015WAQN000			
7.5	3 x 400V	x			x		ERBP027R200W	ERBS027R600W	ERBS027R01K4
10.3	3 x 400V			x			ERBP018R300W	ERBS018R01K4	ERBG018R04K3
11	3 x 400V	x			x		ERBS027R600W	ERBS027R01K2	ERBS027R01K4
15	3 x 400V	x					ERBP018R300W	ERBS018R01K4	ERBG018R04K3
18.5	3 x 400V	x			x		ERBS015R800W	ERBS015R02K4	ERBG015R06K2
20.6	3 x 400V			x			ERBG012R01K9	ERBG012R01K9	ERBG012R05K2
22	3 x 400V	x			x		ERBS015R800W	ERBS015R02K4	ERBG015R06K2
30	3 x 400V	x			x		ERBG075D01K9	ERBG075D04K5WBN000	ERBG075D15K0WBN000
37	3 x 400V	x					ERBG075D01K9	-	-
45	3 x 400V	x			x		ERBG075D01K9	ERBG075D04K5WBN000	ERBG075D15K0WBN000
55	3 x 400V	x			x		ERBG005R02K6	ERBG005R10K0WBN000	ERBG005R22K0WBN000
75	3 x 400V	x			x		ERBG005R02K6	ERBG005R10K0WBN000	ERBG005R22K0WBN000
90	3 x 400V	x			x		ERBG028D04K1	ERBG028D11K0WBN000	ERBG028D34K0WBN000
110	3 x 400V	x			x		ERBG028D04K1	ERBG028D11K0WBN000	ERBG028D34K0WBN000
132	3 x 400V	x					ERBG028D04K1	ERBG028D11K0WBN000	ERBG028D34K0WBN000

Mains connection 400 V

Inverter					Brake resistor, protection class IP66			
PN	V _{mains}	i500	i700	i900	Mounting outside the control cabinet			
kW	V	pro- tec	cabi- net	cabi- net	Dynamic load	Emergency stop	Passive load	Active load
0.37	3 x 400V	x			ERBU390R015WAQN000	ERBS470R150WNQN000	ERBS470R150WNQN000	ERBS470R150WNQN000
0.55	3 x 400V	x			ERBU390R015WAQN000	ERBS470R150WNQN000	ERBS470R150WNQN000	ERBS470R150WNQN000
0.75	3 x 400V	x			ERBU390R015WAQN000	ERBS470R150WNQN000	ERBS470R150WNQN000	ERBS470R150WNQN000
1.1	3 x 400V	x			ERBU150R015WAQN000	ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
1.5	3 x 400V	x			ERBU150R015WAQN000	ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
2.2	3 x 400V	x			ERBU150R015WAQN000	ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
3	3 x 400V	x			ERBU150R015WAQN000	ERBS082R780WNQN000	ERBS082R780WNQN000	ERBS082R780WNQN000
4	3 x 400V	x			ERBU150R015WAQN000	ERBS047R400W	ERBS047R400W	ERBS047R800W
5.5	3 x 400V	x			ERBU150R015WAQN000	EERBS047R400W	EERBS047R400W	ERBS047R800W
7.5	3 x 400V	x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
11	3 x 400V	x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
15	3 x 400V	x				ERBS018R800W	ERBS018R01K4	ERBS018R04K5WQN000
18.5	3 x 400V	x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000
22	3 x 400V	x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000
30	3 x 400V	x				ERBS075D01K2WQN000	ERBS075D04K0WQN000	
37	3 x 400V	x				ERBS075D01K2WQN000	ERBS075D04K0WQN000	
45	3 x 400V	x				ERBS075D01K2WQN000	ERBS075D04K0WQN000	
55	3 x 400V	x				ERBS005R02K0WQN000		
75	3 x 400V	x				ERBS005R02K0WQN000		

Mains connection 480 V

Inverter						Brake resistor, protection class IP20 ... IP66			
PN	V _{mains}	i500		i700	i900	For control cabinet installation			
kW	V	cabin-	pro-	cabin-	cabin-	Dynamic load	Emergency stop	Passive load	Active load
		net	tec	net	net				
0.37	3 x 480V	x				ERBU390R035WUQN000	ERBU390R035WUQN000	ERBU390R035WUQN000	ERBM390R100W
			x			ERBU390R015WAQN000	ERBM470R020W	ERBM390R100W	
0.55	3 x 480V	x			x	ERBU390R035WUQN000	ERBU390R035WUQN000	ERBM390R100W	ERBM390R100W
			x			ERBU390R015WAQN000	ERBM390R100W		
0.75	3 x 480V	x			x	ERBU390R035WUQN000	ERBU390R035WUQN000	ERBM390R100W	ERBM390R100W
			x			ERBU390R015WAQN000	ERBM390R100W		
1.1	3 x 480V	x				ERBU150R035WUQN000	ERBU390R035WUQN000	ERBP180R200W	ERBP180R300W
			x			ERBU150R015WAQN000	ERBP180R200W		
1.5	3 x 480V	x				ERBU150R035WUQN000	ERBP180R200W	ERBP180R200W	ERBS180R350WNQN000
			x			ERBU150R015WAQN000			
2.2	3 x 480V	x			x	ERBU150R035WUQN000	ERBP180R200W	ERBP180R300W	ERBS180R350WNQN000
			x			ERBU150R015WAQN000			
3	3 x 480V	x				ERBU150R035WUQN000	ERBM082R150W	ERBP082R200W	ERBS082R780WNQN000
			x			ERBU150R015WAQN000			
4	3 x 480V	x			x	ERBU150R035WUQN000	ERBM047R135W	ERBS047R400W	ERBS047R800W
			x			ERBU150R015WAQN000			
5.5	3 x 480V	x					ERBP047R200W	ERBS047R400W	ERBS047R800W
			x			ERBU150R015WAQN000			
7.5	3 x 480V	x			x		ERBP027R200W	ERBS027R600W	ERBS027R01K4
10.3	3 x 480V			x			ERBP018R300W	ERBS018R01K4	ERBG018R04K3
11	3 x 480V	x			x		ERBS027R600W	ERBS027R01K2	ERBS027R01K4
15	3 x 480V	x					ERBP018R300W	ERBS018R01K4	ERBG018R04K3
18.5	3 x 480V	x			x		ERBS015R800W	ERBS015R02K4	ERBG015R06K2
20.6	3 x 480V			x			ERBG012R01K9	ERBG012R01K9	ERBG012R05K2
22	3 x 480V	x			x		ERBS015R800W	ERBS015R02K4	ERBG015R06K2
30	3 x 480V	x			x		ERBG075D01K9	ERBG075D04K5WBN000	ERBG075D15K0WBN000
37	3 x 480V	x					ERBG075D01K9	-	-
45	3 x 480V	x			x		ERBG075D01K9	ERBG075D04K5WBN000	ERBG075D15K0WBN000
55	3 x 480V	x			x		ERBG005R02K6	ERBG005R10K0WBN000	ERBG005R22K0WBN000
75	3 x 480V	x			x		ERBG005R02K6	ERBG005R10K0WBN000	ERBG005R22K0WBN000
90	3 x 480V	x			x		ERBG028D04K1	ERBG028D11K0WBN000	ERBG028D34K0WBN000
110	3 x 480V	x			x		ERBG028D04K1	ERBG028D11K0WBN000	ERBG028D34K0WBN000
132	3 x 480V	x					ERBG028D04K1	ERBG028D11K0WBN000	ERBG028D34K0WBN000

Mains connection 480 V

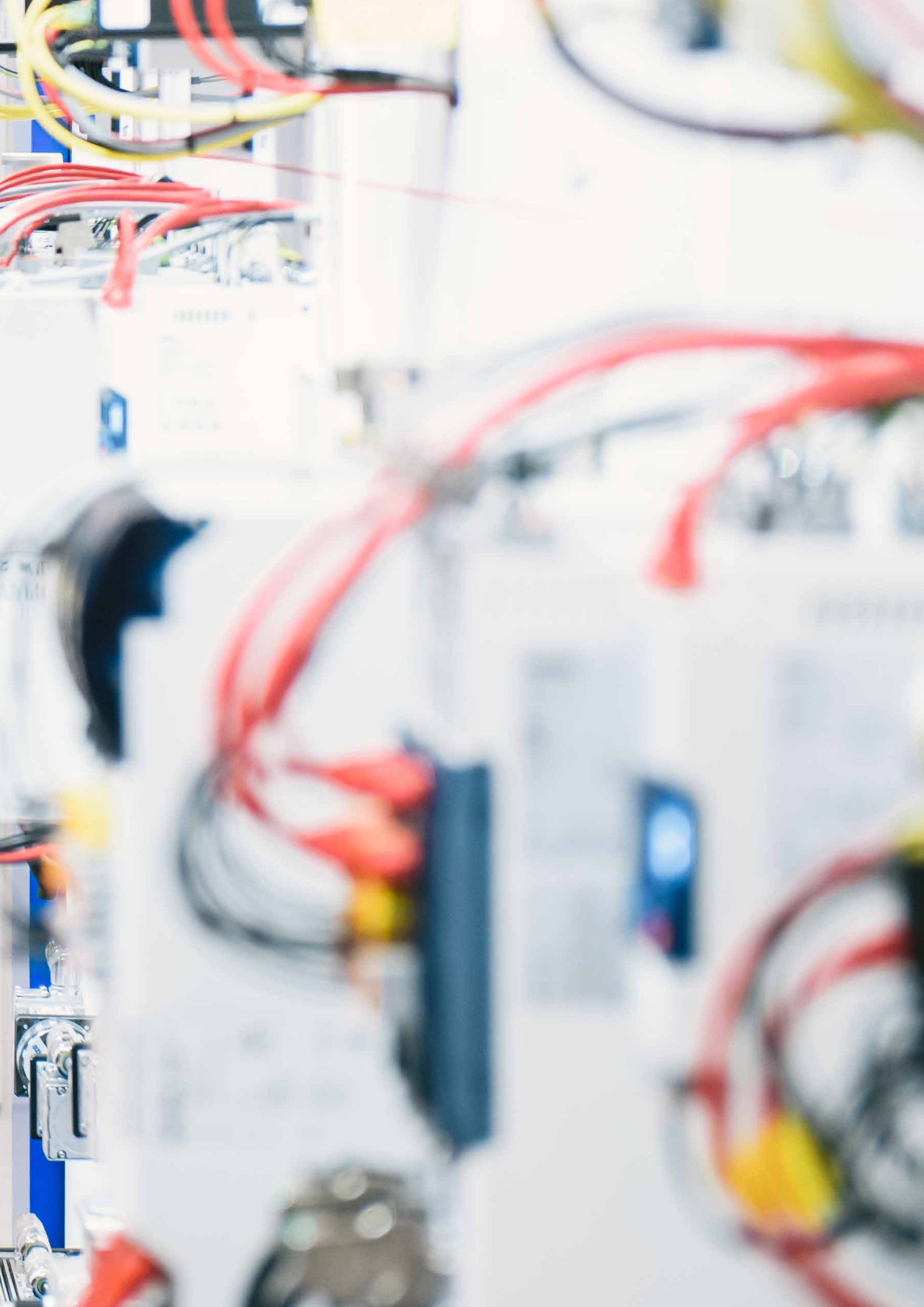
Inverter					Brake resistor, protection class IP66			
PN	V _{mains}	i500	i700	i900	Mounting outside the control cabinet			
kW	V	pro- tec	cabi- net	cabi- net	Dynamic load	Emergency stop	Passive load	Active load
0.37	3 x 480V	x			ERBU390R015WAQN000	ERBS470R150WNQN000	ERBS470R150WNQN000	ERBS470R150WNQN000
0.55	3 x 480V	x			ERBU390R015WAQN000	ERBS470R150WNQN000	ERBS470R150WNQN000	ERBS470R150WNQN000
0.75	3 x 480V	x			ERBU390R015WAQN000	ERBS470R150WNQN000	ERBS470R150WNQN000	ERBS470R150WNQN000
1.1	3 x 480V	x				ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
1.5	3 x 480V	x				ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
2.2	3 x 480V	x				ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
3	3 x 480V	x				ERBS082R780WNQN000	ERBS082R780WNQN000	ERBS082R780WNQN000
4	3 x 480V	x				ERBS047R400W	ERBS047R400W	ERBS047R800W
5.5	3 x 480V	x				EERBS047R400W	EERBS047R400W	ERBS047R800W
7.5	3 x 480V	x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
11	3 x 480V	x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
15	3 x 480V	x				ERBS018R800W	ERBS018R01K4	ERBS018R04K5WQN000
18.5	3 x 480V	x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000
22	3 x 480V	x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000
30	3 x 400V	x				ERBS075D01K2WQN000	ERBS075D04K0WQN000	
37	3 x 400V	x				ERBS075D01K2WQN000	ERBS075D04K0WQN000	
45	3 x 400V	x				ERBS075D01K2WQN000	ERBS075D04K0WQN000	
55	3 x 400V	x				ERBS005R02K0WQN000		
75	3 x 400V	x				ERBS005R02K0WQN000		

Mains connection 600 V

Inverter						Brake resistor, protection class IP20 ... IP66			
PN	V _{mains}	i500		i700	i900	For control cabinet installation			
kW	V	cabin-	pro-	cabin-	cabin-	Dynamic load	Emergency stop	Passive load	Active load
		net	tec	net	net				
0.75	3 x 600V		x				ERBS470R150WNQN000	ERBS470R150WNQN000	ERBS470R150WNQN000
1.5	3 x 600V		x				ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
2.2	3 x 600V		x				ERBS180R350WNQN000	ERBS180R350WNQN000	ERBS180R350WNQN000
4	3 x 600V		x				ERBS047R400W	ERBS047R400W	ERBS047R800W
5.5	3 x 600V		x				ERBS047R400W	ERBS047R400W	ERBS047R800W
7.5	3 x 600V		x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
11	3 x 600V		x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
15	3 x 600V		x				ERBS018R800W	ERBS018R01K4	ERBS018R04K5WQN000
18.5	3 x 600V		x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000
22	3 x 600V		x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000

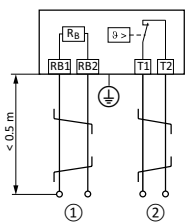
Mains connection 600 V

Inverter					Brake resistor, protection class IP66			
PN	V _{mains}	i500	i700	i900	Mounting outside the control cabinet			
kW	V	pro- tec	cabi- net	cabi- net	Dynamic load	Emergency stop	Passive load	Active load
0.75	3 x 600V	x				ERBS470R150WNQN600	ERBS470R150WNQN600	ERBS470R150WNQN600
1.5	3 x 600V	x				ERBS180R350WNQN600	ERBS180R350WNQN600	ERBS180R350WNQN600
2.2	3 x 600V	x				ERBS180R350WNQN600	ERBS180R350WNQN600	ERBS180R350WNQN600
4	3 x 600V	x				ERBS047R400W	ERBS047R400W	ERBS047R800W
5.5	3 x 600V	x				ERBS047R400W	ERBS047R400W	ERBS047R800W
7.5	3 x 600V	x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
11	3 x 600V	x				ERBS027R600W	ERBS027R01K2	ERBS027R01K4
15	3 x 600V	x				ERBS018R800W	ERBS018R01K4	ERBS018R04K5WQN000
18.5	3 x 600V	x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000
22	3 x 600V	x				ERBS015R800W	ERBS015R02K4	ERBS015R06K3WQN000



Electrical installation

Connection diagrams



Short connecting cables up to 0.5 m

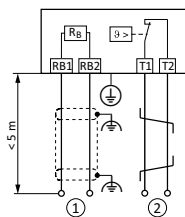
Up to a cable length of 0.5 m, the brake resistor cable and the temperature monitoring cable can be twisted. This procedure reduces problems caused by EMC interference.

Long connecting cables up to max. 5 m

The cable of the brake resistor must be shielded

The maximum length is 5 m.

Twisting is sufficient for the temperature monitoring cable.



① Wiring to the "brake resistor" connection on the inverter or another component with brake chopper.

② Wiring to a control contact that is set to monitor the thermal contact. If the thermal contact responds, the voltage supply to the inverter must be disconnected (e.g. switch off the control of the mains contactor).

Assembled connecting cables

For ERBM and ERBP brake resistors with assembled connecting cables, the cables can be extended to max. 5 m.

To do this, shorten the assembled connecting cables to max. 10 cm and place them on external clamping units. Lay shielded or twisted cables from there.

Intrinsically safe brake resistors

Temperature monitoring is not required for intrinsically safe brake resistors.



Mains chokes – efficient operation

A mains choke is an inductance that is connected into the mains cable upstream of the inverter. The use in the plant has the following advantages:

- Reduced system perturbation
The waveform of the mains current is smoothed and is thus more sinusoidal - this saves energy.
- Reduced effective mains current.
In many cases, the use of a mains choke will reduce the cable load and fuse load.

Lenze offers you the optimally matched mains choke for every inverter.



ELN1

- For 1-phase inverters
- 5 ... 18 A



EZAELN3

- For 3-phase inverters
- 1.5 ... 250 A



ELN1

Rated current

- 5 ... 18 A

Mains voltage range

- 1 x 230/240 V

Degree of protection

- IP00

Approvals

- CE; UKCA; UR for USA and Canada

Mounting

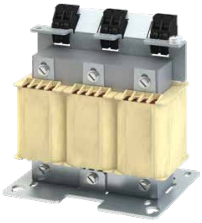
- Wall or base

Connection system

- Screw terminal

Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)



EZAELN3

Rated current

- 1.5 ... 250 A

Mains voltage range

- 3 x 230/240 V
- 3 x 400/480 V

Degree of protection

- IP00

Approvals

- CE; UKCA; UR for USA and Canada

Mounting

- Wall or base

Connection system

- Screw terminal







Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)

Technical data















































ELN1

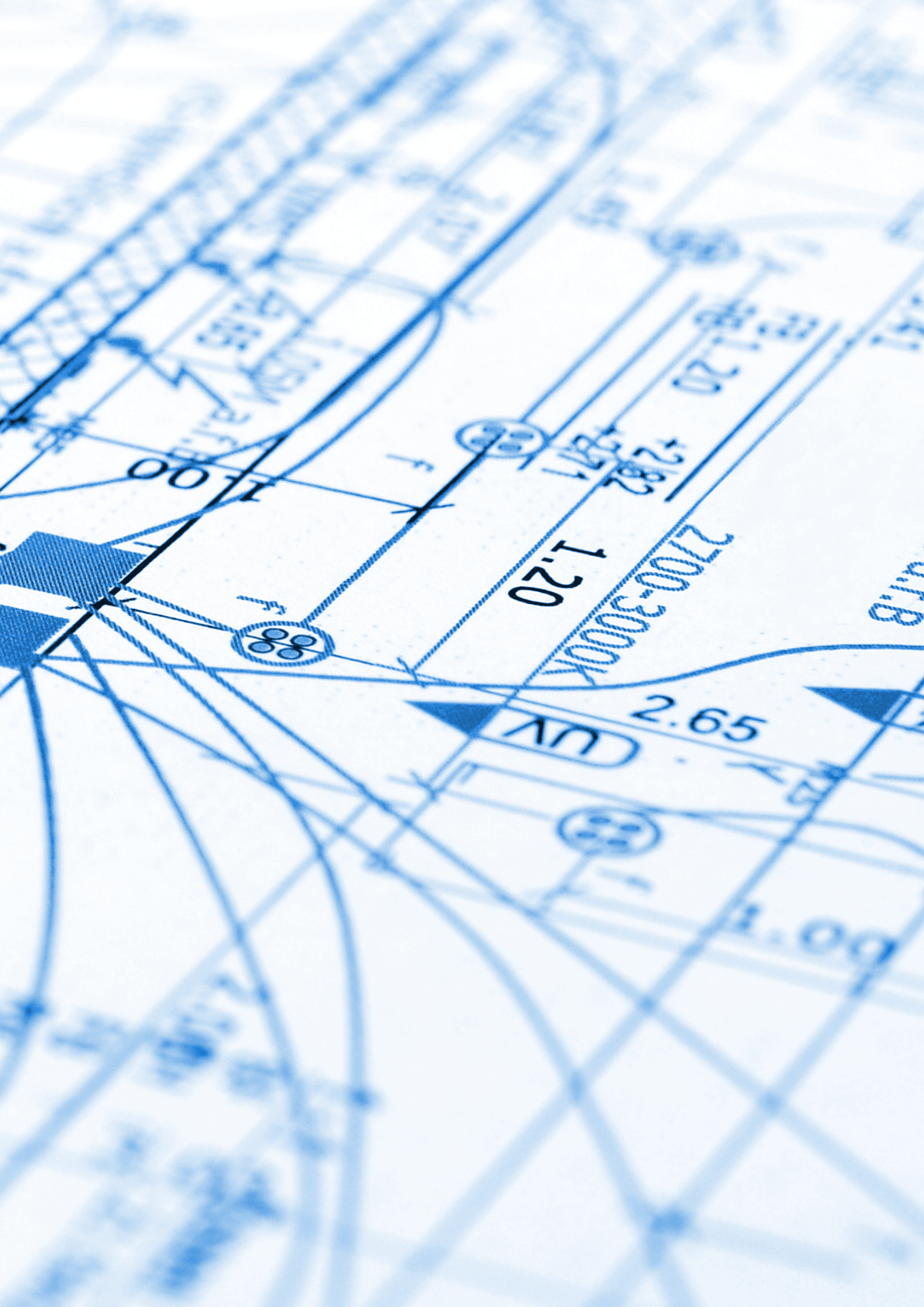
Conformity	CE	2014/35/EU	Low-Voltage Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011	Eurasian conformity: Safety of low voltage equipment
Approval	cURus	UL506	Industrial Control Equipment, Underwriter Laboratories (File-No. E103521) for USA and Canada
		CSA 22.2	
Degree of protection	EN	EN 60529	IP00
	NEMA	NEMA 250	Type 1
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Pollution		IEC 61800-5-1	Degree of pollution 2
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 1 g
Mounting position			Horizontally hanging or standing

Order code	L _{rated} [mH]	I _{rated} [A]	P _v [W]	V _{max} [V]	m [kg]	H x W x D [mm]	Material number
Mains choke for 1-phase inverters							
ELN1-0900H005	9	5	15	1 AC 230/240	1.1	82 x 66 x 75	13553593  
ELN1-0500H009	5	9	25		1.1	82 x 66 x 75	13553611  
ELN1-0250H018	2.5	18	50		2.1	90 x 96 x 96	13553732  

EZAELN3

Conformity	CE	2014/35/EU	Low-Voltage Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011	Eurasian conformity: Safety of low voltage equipment
Approval	cURus	UL506	Industrial Control Equipment, Underwriter Laboratories (File-No. E103521) for USA and Canada
		CSA 22.2	
Degree of protection	EN	EN 60529	IP00
	NEMA	NEMA 250	Type 1
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Pollution		IEC 61800-5-1	Degree of pollution 2
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 1 g
Mounting position			Horizontally hanging or standing

Order code	L _{rated}	I _{rated}	P _V	V _{max}	m	H x W x D	Material number
	[mH]	[A]	[W]	[V]	[kg]	[mm]	
Mains choke for 3-phase inverters							
EZAELN3002B203	19.6	1.5	3.8	3 AC 400/480	0.52	56 x 77 x 116	13553734  
EZAELN3002B153	14.7	2	5.8		0.53	56 x 77 x 116	13553735  
EZAELN3004B742	7.35	4	11.5		1.3	60 x 95 x 116	13553736  
EZAELN3006B492	4.9	6	17.3		1.45	69 x 95 x 117	13553737  
EZAELN3008B372	3.68	8	23.1		1.9	85 x 120 x 135	13553738  
EZAELN3010B292	2.94	10	28.9		2	85 x 120 x 135	13553739  
EZAELN3016B182	1.84	16	46.1		2.7	95 x 120 x 135	13553740  
EZAELN3020B152	1.47	20	57.6		3.8	95 x 155 x 162	13553741  
EZAELN3025B122	1.18	25	72		5.8	110 x 155 x 167	13553752  
EZAELN3030B981	0.98	30	86.4		5.85	110 x 155 x 167	13553753  
EZAELN3035B841	0.84	35	101		5.95	110 x 155 x 170	13553754  
EZAELN3040B741	0.74	40	116		6.8	102 x 185 x 195	13553755  
EZAELN3045B651	0.65	45	130		8.25	112 x 185 x 196	13553756  
EZAELN3050B591	0.59	50	144		8.35	112 x 185 x 207	13553757  
EZAELN3063B471	0.47	63	181		9.65	117 x 185 x 241	13553758  
EZAELN3080B371	0.37	80	230		12.5	125 x 210 x 238	13553759  
EZAELN3090B331	0.33	90	273		10.95	149 x 267 x 200	13553760  
EZAELN3100B301	0.3	100	303		16.3	173 x 267 x 200	13553761  
EZAELN3125B241	0.24	125	378		17.1	179 x 291 x 210	13553763  
EZAELN3160B191	0.19	160	500		22.1	189 x 291 x 210	13553764  
EZAELN3180B171	0.17	180	570	25	164 x 316 x 235	13553765  	
EZAELN3200B151	0.15	200	605	25	194 x 352 x 260	13553766  	
EZAELN3250B121	0.12	250	758	31	158 x 352 x 265	13426784  	



Project planning

Dimensioning conditions

- The mounting location must always ensure the operating conditions mentioned in the technical data; if required, additional measures must be taken.
- The mounting location and material must ensure a durable mechanical connection.
- The installation clearances specified in the technical data must be observed to ensure unobstructed air circulation for dissipating the heat.

Assignment of the mains choke to the inverter

As a rule, mains chokes are prescribed for inverters from 22 kW (from 15 kW for light duty)

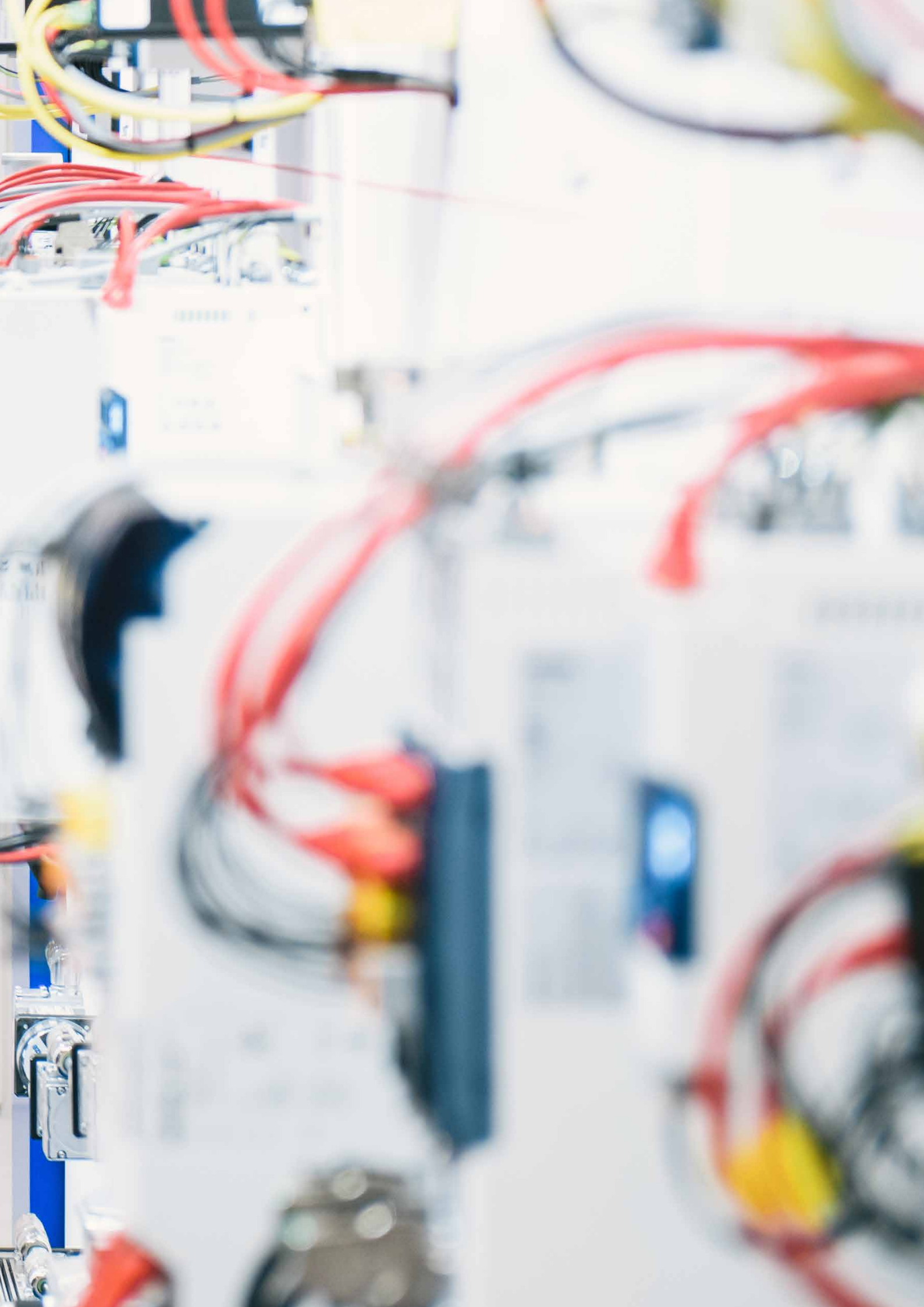
- Mains chokes reduce the effects of the inverter on the supplying mains by smoothing the harmonics.
- The effective mains current is reduced which saves energy.
- Mains chokes can be used without restrictions in conjunction with RFI filters.

Mains connection 120 V, 230 V and 400 V

		Inverter				Mains choke
PN	V _{mains}	i510 cabinet/i550 cabinet		i700 cabinet	i900 cabinet	For control cabinet installation
KW	V	Heavy Duty	Light Duty			
0.25	1 x 120	x				ELN1-0500H009
0.37	1 x 120	x				ELN1-0500H009
0.75	1 x 120	x				ELN1-0250H018
1.1	1 x 120	x				ELN1-0250H018
0.25	1 x 230	x				ELN1-0900H005
0.37	1 x 230	x				ELN1-0900H005
0.55	1 x 230	x			x	ELN1-0500H009
0.75	1 x 230	x			x	ELN1-0500H009
1.1	1 x 230	x				ELN1-0250H018
1.5	1 x 230	x			x	ELN1-0250H018
2.2	1 x 230	x				ELN1-0250H018
0.25	3 x 230	x				EZAELN3002B153
0.37	3 x 230	x				EZAELN3004B742
0.55	3 x 230	x			x	EZAELN3004B742
0.75	3 x 230	x			x	EZAELN3006B492
1.1	3 x 230	x				EZAELN3006B492
1.5	3 x 230	x			x	EZAELN3008B372
2.2	3 x 230	x			x	EZAELN3010B292
4	3 x 230	x			x	EZAELN3016B182
5.5	3 x 230		x			EZAELN3016B182
		x			x	EZAELN3025B122
7.5	3 x 230		x			EZAELN3025B122
0.37	3 x 400	x				EZAELN3002B203
0.55	3 x 400	x			x	EZAELN3002B153
0.75	3 x 400	x			x	EZAELN3004B742
1.1	3 x 400	x				EZAELN3004B742
1.5	3 x 400	x				EZAELN3004B742
2.2	3 x 400	x			x	EZAELN3006B492
3.0	3 x 400	x				EZAELN3008B372
4.0	3 x 400	x	x		x	EZAELN3010B292
5.5	3 x 400	x	x			EZAELN3016B182
7.5	3 x 400	x	x		x	EZAELN3016B182
11	3 x 400	x	x		x	EZAELN3025B122
15	3 x 400			x		EZAELN3025B122
		x	x		x	EZAELN3030B981
18.5	3 x 400	x	x			EZAELN3040B741
22	3 x 400	x	x		x	EZAELN3045B651
30	3 x 400			x		EZAELN3050B591
		x	x		x	EZAELN3063B471
37	3 x 400	x	x			EZAELN3080B371
45	3 x 400V		x			EZAELN3090B331
		x			x	EZAELN3080B371
55	3 x 400	x	x		x	EZAELN3100B301
75	3 x 400		x			EZAELN3125B241
		x			x	EZAELN3160B191
90	3 x 400	x	x		x	EZAELN3180B171
110	3 x 400	x	x		x	EZAELN3200B151
132	3 x 400		x			EZAELN3250B121

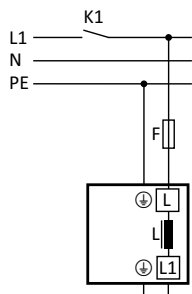
Mains connection 480 V

		Inverter				Mains choke
PN	V _{mains}	i510 cabinet/i550 cabinet		i700 cabinet	i900 cabinet	For control cabinet installation
kW	V	Heavy Duty	Light Duty			
0.37	3 x 480	x				EZAELN3002B203
0.55	3 x 480	x			x	EZAELN3002B153
0.75	3 x 480	x			x	EZAELN3004B742
1.1	3 x 480	x				EZAELN3004B742
1.5	3 x 480	x				EZAELN3004B742
2.2	3 x 480	x			x	EZAELN3006B492
3.0	3 x 480	x				EZAELN3006B492
4.0	3 x 480	x	x		x	EZAELN3008B372
5.5	3 x 480		x			EZAELN3010B292
		x				EZAELN3016B182
7.5	3 x 480	x	x		x	EZAELN3016B182
11	3 x 480	x	x		x	EZAELN3020B152
15	3 x 480	x	x			EZAELN3025B122
18.5	3 x 480			x		EZAELN3025B122
		x	x		x	EZAELN3030B981
22	3 x 480	x	x		x	EZAELN3040B741
30	3 x 480	x	x		x	EZAELN3050B591
37	3 x 480			x		EZAELN3050B591
		x	x			EZAELN3063B471
45	3 x 480	x	x		x	EZAELN3080B371
55	3 x 480	x	x		x	EZAELN3090B331
75	3 x 480	x	x		x	EZAELN3125B241
90	3 x 480	x	x		x	EZAELN3160B191
110	3 x 480	x	x		x	EZAELN3180B171
132	3 x 480		x			EZAELN3200B151



Electrical installation

Connection diagrams

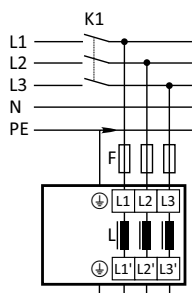


1-phase mains choke

The mains choke is connected to the mains phase directly before the inverter.

3-phase mains choke

The mains choke is connected to the three mains phases directly before the inverter.





Radio interference suppression – safe operation

RFI and mains filters are used to ensure compliance with the EMC requirements of European Standard EN 61800-3. This standard defines the EMC requirements for electrical drive systems in various categories.

Category C1 is applicable in public networks (residential areas).

Category C2 is applicable in public networks (residential and commercial areas) at the discretion of the competent, responsible user.

Category C3 is applicable in industrial networks.



IOFAE

- RFI and mains filters for i510 cabinet, i550 cabinet and i950 cabinet
- 3.3 ... 234 A
- Mounting under or next to the inverter



E94AZ

- RFI and mains filters for i700 cabinet
- 8 ... 200 A
- Mounting next to the inverter



IOFAE

Rated current

- 3.3 ... 234 A

Mains voltage range

- 1 x 230/240 V
- 3 x 400/480 V

Degree of protection

- IP20

Approvals

- CE; UKCA; UR for USA and Canada

Mounting

- Wall or base

Connection system

- Screw terminal

Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +40 °C)



E94AZ

Rated current

- 8 ... 200 A

Mains voltage range

- 3 x 400/480 V

Degree of protection

- IP20

Approvals

- CE; UKCA; UR for USA and Canada

Mounting

- Wall or base

Connection system

- Screw terminal















Ambient temperature during operation

- 3K3 (-10 ... +55 °C) EN 60721-3-3
(current reduction of 2.5 %/°C above +45 °C)

Technical data











































IOFAE

Conformity	CE	2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011	Eurasian conformity: Safety of low voltage equipment
TP TC 020/2011		Eurasian conformity: Electromagnetic compatibility of technical means	
Approval	UL	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E219022) for USA and Canada
	UR		For USA and Canada 22.2 No. 14-13
Degree of protection	EN	EN 60529	IP20
	NEMA	NEMA 250	Type 1
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Pollution		IEC 61800-5-1	Degree of pollution 2
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 1 g
Mounting position			Mounting under or next to the inverter

Order code	I _{rated} [A]	P _v [W]	V _{max} [V]	m [kg]	H x W x D [mm]	Material number
RFI and mains filters for 1-phase inverters, short distance						
IOFAE175B100S0000S	10	5.4	1 AC	0.77	276 x 60 x 50	13517324  
IOFAE222B100S0000S	22.5	9.4	230/240	1.02	346 x 60 x 50	13517329  
RFI and mains filters for 1-phase inverters, long distance						
IOFAE175B100D0000S	10	5.4	1 AC	0.82	276 x 60 x 50	13517322  
IOFAE222B100D0000S	22.5	9.4	230/240	1.09	346 x 60 x 50	13517327  
RFI and mains filters for 1-phase inverters, low leakage						
IOFAE137B100L0000S	6	5.7	1 AC 230/240	0.85	226 x 60 x 50	13540532  
IOFAE175B100L0000S	10	9.9		1	276 x 60 x 50	13517323  
IOFAE222B100L0000S	22.5	25		1.35	346 x 60 x 50	13517328  



















IOFAE

Conformity	CE	2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011	Eurasian conformity: Safety of low voltage equipment
		TP TC 020/2011	Eurasian conformity: Electromagnetic compatibility of technical means
Approval	UL	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E219022) for USA and Canada For USA and Canada 22.2 No. 14-13
	UR		
Degree of protection	EN	EN 60529	IP20
	NEMA	NEMA 250	Type 1
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Pollution		IEC 61800-5-1	Degree of pollution 2
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		IEC 61800-5-1	Acceleration resistant up to 1 g
Mounting position			Mounting under or next to the inverter

Order code	I_{rated}	P_v	V_{max}	m	$H \times W \times D$	Material number
	[A]	[W]	[V]	[kg]	[mm]	
RFI and mains filters for 3-phase inverters, short distance						
IOFAE175F100S0000S	3.3	2.8	3 AC 400/480	0.82	276 x 60 x 50	13517326  
IOFAE222F100S0000S	7.8	5.8		1.01	346 x 60 x 50	13517331  
IOFAE240F100S0001S	14	13.8		1.42	346 x 60 x 50	13619205  
IOFAE255F100S0001S	18.3	20		2.05	346 x 90 x 60	13545501  
IOFAE311F100S0000S	29	29		2.35	371 x 120 x 60	13517335  
RFI and mains filters for 3-phase inverters, long distance						
IOFAE175F100D0000S	3.3	2.8	3 AC 400/480	0.86	276 x 60 x 50	13517325  
IOFAE222F100D0000S	7.8	5.8		1.03	346 x 60 x 50	13517330  
IOFAE240F100D0000S	12.5	13.8		1.25	346 x 60 x 50	13540504  
IOFAE240F100D0001S	14	13.8		1.42	346 x 60 x 50	13619206  
IOFAE255F100D0001S	18.3	13.6		1.65	346 x 90 x 60	13545500  
IOFAE311F100D0000S	29	21.9		2.05	371 x 120 x 60	13517334  
IOFAE318F100D0000S	50.4	32		7.1	436 x 202 x 90	13550326  
IOFAE322F100D0000S	43	57		14	436 x 205 x 90	13543998  
IOFAE322F100D0001S	55	80		18.5	436 x 202 x 90	13543999  
IOFAE330F100D0000S	55	85		23	590 x 250 x 105	13550327  
IOFAE330F100D0001S	69	32.7		9.4	465 x 180 x 106	13619207  
IOFAE337F100D0000S	69	89		25	590 x 250 x 105	13544000  
IOFAE345F100D0001S	100	125		32	590 x 250 x 105	13544001  
IOFAE355F100D0001S	120	147		36	700 x 250 x 105	13540505  
IOFAE375F100D0001S	162	245		41.5	700 x 250 x 105	13540508  
IOFAE411F100D0001S	234	350		63	855 x 250 x 130	13540511  

E94AZ

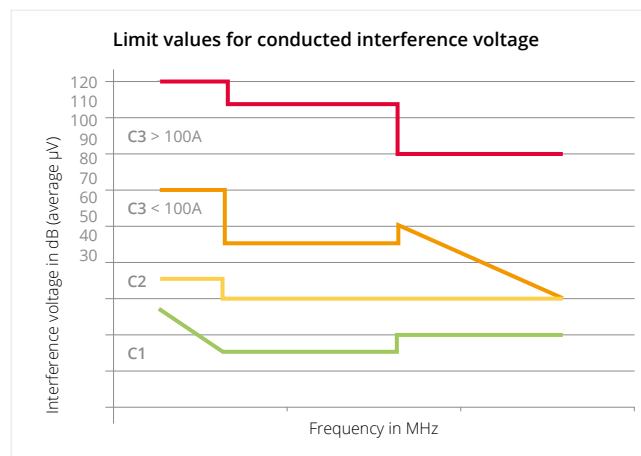
Conformity	CE	2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
	EAC	TP TC 004/2011	Eurasian conformity: Safety of low voltage equipment
		TP TC 020/2011	Eurasian conformity: Electromagnetic compatibility of technical means
Approval	UL	UL508	Industrial Control Equipment, Underwriter Laboratories (File-No. E219022) for USA and Canada
	UR		For USA and Canada 22.2 No. 14-13
Degree of protection	EN	EN 60529	IP20
	NEMA	NEMA 250	Type 1
Ambient conditions	Storage	IEC/EN 60721-3-1	1K3 (-25 ... +60 °C)
	Transport	IEC/EN 60721-3-2	2K3 (-25 ... +70 °C)
	Operation	IEC/EN 60721-3-3	3K3 (-10 ... +55 °C) (current reduction of 2.5 %/°C above +45 °C)
Pollution		IEC 61800-5-1	Degree of pollution 2
Installation altitude			0 ... 4000 m amsl 1000 ... 4000 m amsl: Current reduction 5 %/1000 m
Vibration resistance		EN IEC 60068-2-6	Acceleration resistant up to 1 g
Mounting position			Mounting next to the inverter

Order code	I_{rated}	P_v	V_{max}	m	$H \times W \times D$	Material number		
	[A]	[W]	[V]	[kg]	[mm]			
RFI and mains filters for 3-phase inverters								
E94AZRP0084	8	20	3 AC 400/500 V	4.2	485 x 60 x 261	13439275		
E94AZRP0294	29	50		4.5	485 x 60 x 261	13430919		
E94AZRP0824	82	80		18.5	490 x 209 x 272	13430920		
E94AZRP2004	200	150		29	490 x 209 x 272	13279797		
E94AZMP0084	8	50		8.6	485 x 90 x 261	13219375		
E94AZMP0294	29	110		16	485 x 120 x 261	13430921		
E94AZMP0494	49	86	3 AC 400/480 V	25.5	485 x 150 x 264	13551351		
E94AZMP0824	82	200	3 AC	29	490 x 270 x 272	13430982		
E94AZMP2004	200	350	400/500 V	51.5	490 x 270 x 272	13279795		

Project planning

Dimensioning conditions

- RFI and mains filters are used to ensure compliance with the EMC requirements of European Standard EN 61800-3.
- The requirements are distinguished in the following categories:
 - Category C1:
Residential areas, very low interference voltages permitted.
 - Category C2:
Residential and commercial areas, higher interference voltages permitted.
 - Category C3:
Industrial-only network, higher interference voltage than allowed for C1, C2



Assignment of RFI and mains filters to the inverter

Permanently assigned filters for categories C1 and C2 can be connected directly to the inverter as "sub-mounted" filters. This results in a compact unit in the machine. There are three different filters that can be connected upstream of the inverters:

- Filter Short Distance
 - Applicable for category C1 up to 25 m and C2 up to 50 m
 - Operation on 30 mA residual current device (RCD) possible
- Filter Long Distance
 - Applicable for category C1 up to 50 m and C2 up to 100 m
 - Operation on 300-mA residual current device (RCD) possible
- Filter Low Leakage
 - Applicable for category C1 up to 5 m
 - Operation on 10-mA residual current device (RCD) is possible

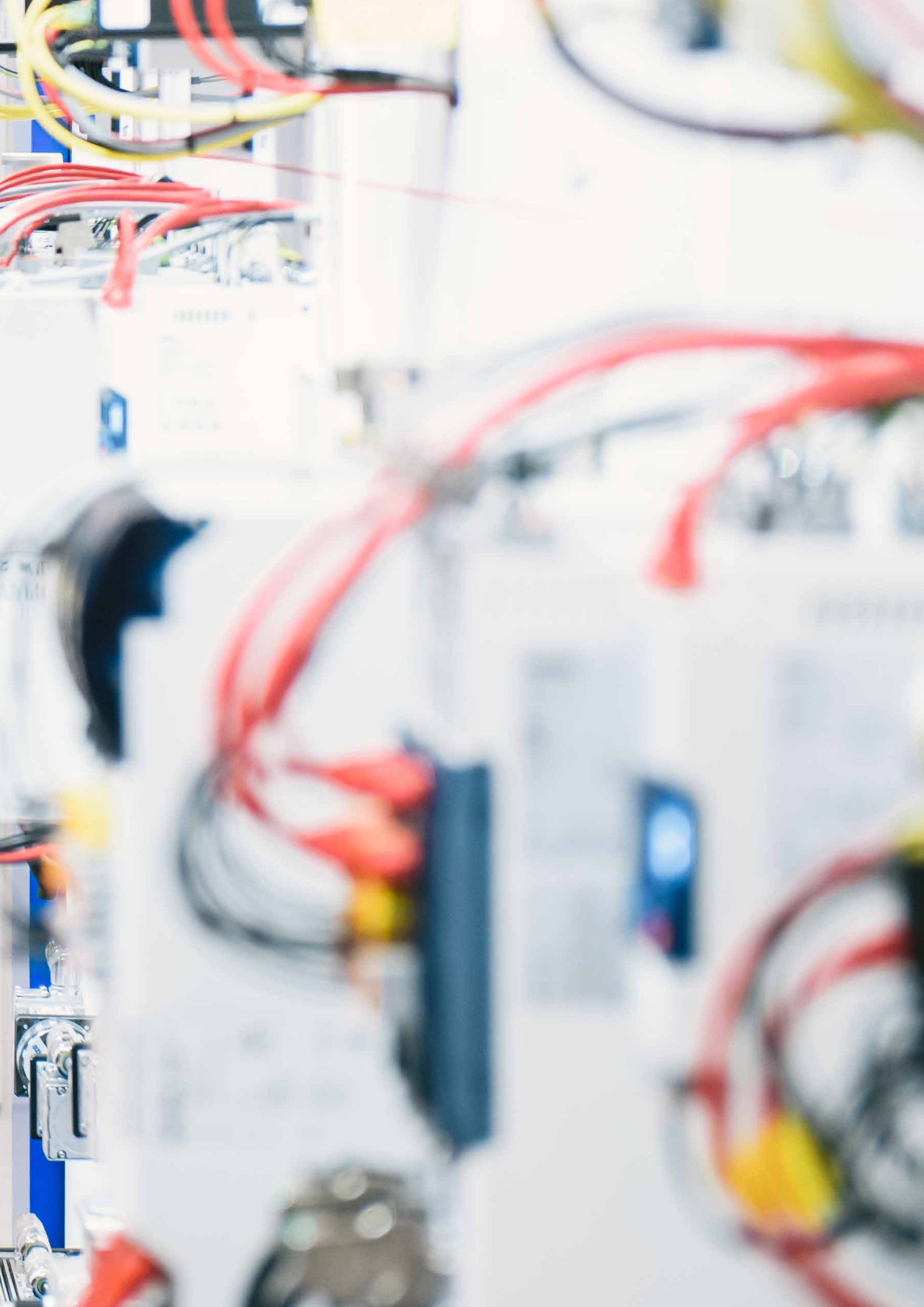
Mains connection 1 x 230 V and 3 x 400 V

Inverter					RFI and mains filter			
PN	V _{mains}	i510 cabinet/ i550 cabinet		i700 cabinet	i900 cabinet	For control cabinet installation		
kW	V	Heavy Duty	Light Duty			Short Distance	Long Distance	Low Leakage
0.25	1 x 230	x				I0FAE175B100S0000S	I0FAE175B100D0000S	I0FAE137B100L0000S
0.37	1 x 230	x				I0FAE175B100S0000S	I0FAE175B100D0000S	I0FAE137B100L0000S
0.55	1 x 230	x				I0FAE175B100S0000S	I0FAE175B100D0000S	I0FAE175B100L0000S
0.75	1 x 230	x				I0FAE175B100S0000S	I0FAE175B100D0000S	I0FAE175B100L0000S
1.1	1 x 230	x				I0FAE222B100S0000S	I0FAE222B100D0000S	I0FAE222B100L0000S
1.5	1 x 230	x				I0FAE222B100S0000S	I0FAE222B100D0000S	I0FAE222B100L0000S
2.2	1 x 230	x				I0FAE222B100S0000S	I0FAE222B100D0000S	I0FAE222B100L0000S
0.37	3 x 400	x				I0FAE175F100S0000S	I0FAE175F100D0000S	
0.55	3 x 400	x				I0FAE175F100S0000S	I0FAE175F100D0000S	
					x	I0FAE222F100S0000S	I0FAE222F100D0000S	
0.75	3 x 400	x				I0FAE175F100S0000S	I0FAE175F100D0000S	
					x	I0FAE222F100S0000S	I0FAE222F100D0000S	
1.1	3 x 400	x				I0FAE222F100S0000S	I0FAE222F100D0000S	
1.5	3 x 400	x	x			I0FAE222F100S0000S	I0FAE222F100D0000S	
2.2	3 x 400	x				I0FAE222F100S0000S	I0FAE222F100D0000S	
3.0	3 x 400	x				I0FAE240F100S0001S	I0FAE240F100D0001S	
4.0	3 x 400	x	x			I0FAE240F100S0001S	I0FAE240F100D0001S	
					x		I0FAE240F100D0000S	
5.5	3 x 400	x	x			I0FAE255F100S0001S	I0FAE255F100D0001S	
7.5	3 x 400		x			I0FAE255F100S0001S	I0FAE255F100D0001S	
		x			x	I0FAE311F100S0000S	I0FAE311F100D0000S	
11	3 x 400	x				I0FAE311F100S0000S	I0FAE311F100D0000S	
			x				I0FAE318F100D0000S	
15	3 x 400		x		x	I0FAE311F100S0000S EZAELN3025B122	I0FAE311F100D0000S EZAELN3025B122	
		x					I0FAE330F100D0001S	
18.5	3 x 400	x	x				I0FAE330F100D0001S	
22	3 x 400	x	x				I0FAE330F100D0001S	
					x		I0FAE220F100D0000S	
30	3 x 400	x	x				I0FAE330F100D0001S	
					x		I0FAE330F100D0000S	
37	3 x 400	x	x				I0FAE337F100D0000S	
45	3 x 400	x	x		x		I0FAE345F100D0001S	
55	3 x 400		x				I0FAE345F100D0001S	
		x			x		I0FAE355F100D0001S	
75	3 x 400		x				I0FAE355F100D0001S	
		x			x		I0FAE375F100D0001S	
90	3 x 400		x				I0FAE375F100D0001S	
		x			x		I0FAE411F100D0001S	
110	3 x 400	x	x		x		I0FAE411F100D0001S	
132	3 x 400		x				I0FAE411F100D0001S	

Mains connection 3 x 400 V

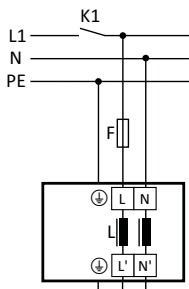
Inverter					RFI and mains filter			
PN	V _{mains}	i510 cabinet/ i550 cabinet		i700 cabinet	i900 cabinet	For control cabinet installation		
kW	V	Heavy Duty	Light Duty			RFI filter	Mains filter	
30	3 x 400			x		E94AZRP0084	E94AZMP0084	
	3 x 400			x		E94AZRP0294	E94AZMP0294	
	3 x 400			x			E94AZMP0494	
60	3 x 400			x		E94AZRP0824	E94AZMP0824	
	3 x 400			x		E94AZRP2004	E94AZMP2004	

These filters are suitable for the i700 cabinet power supply modules.



Electrical installation

Connection diagrams

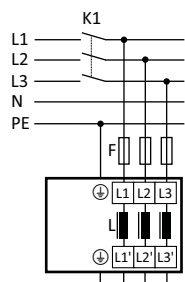


1-phase RFI and mains filter

The filter is connected directly upstream of the inverter in the mains phase and the neutral conductor.

3-phase RFI and mains filter

The filter is connected directly upstream of the inverter in the three mains phases.





24 V power supply units

The power supply units can alternatively be used as an external supply for the control electronics of frequency and servo inverters.

Through their use, parameterization and diagnostics can be carried out without mains supply. This helps during commissioning and when servicing the inverter.



24 V power supply units

- Supply of the control electronics
- 5 ... 20 A
- Mounting next to the inverter



24 V power supply units

Rated current

- 5 ... 20 A

Mains voltage range

- 1 x 230/240 V
- 3 x 400/480 V

Degree of protection

- IP20

Approvals

- CE; UKCA; UL for USA and Canada

Mounting

- Control cabinet

Connection system

- Screw terminal













Ambient temperature during operation

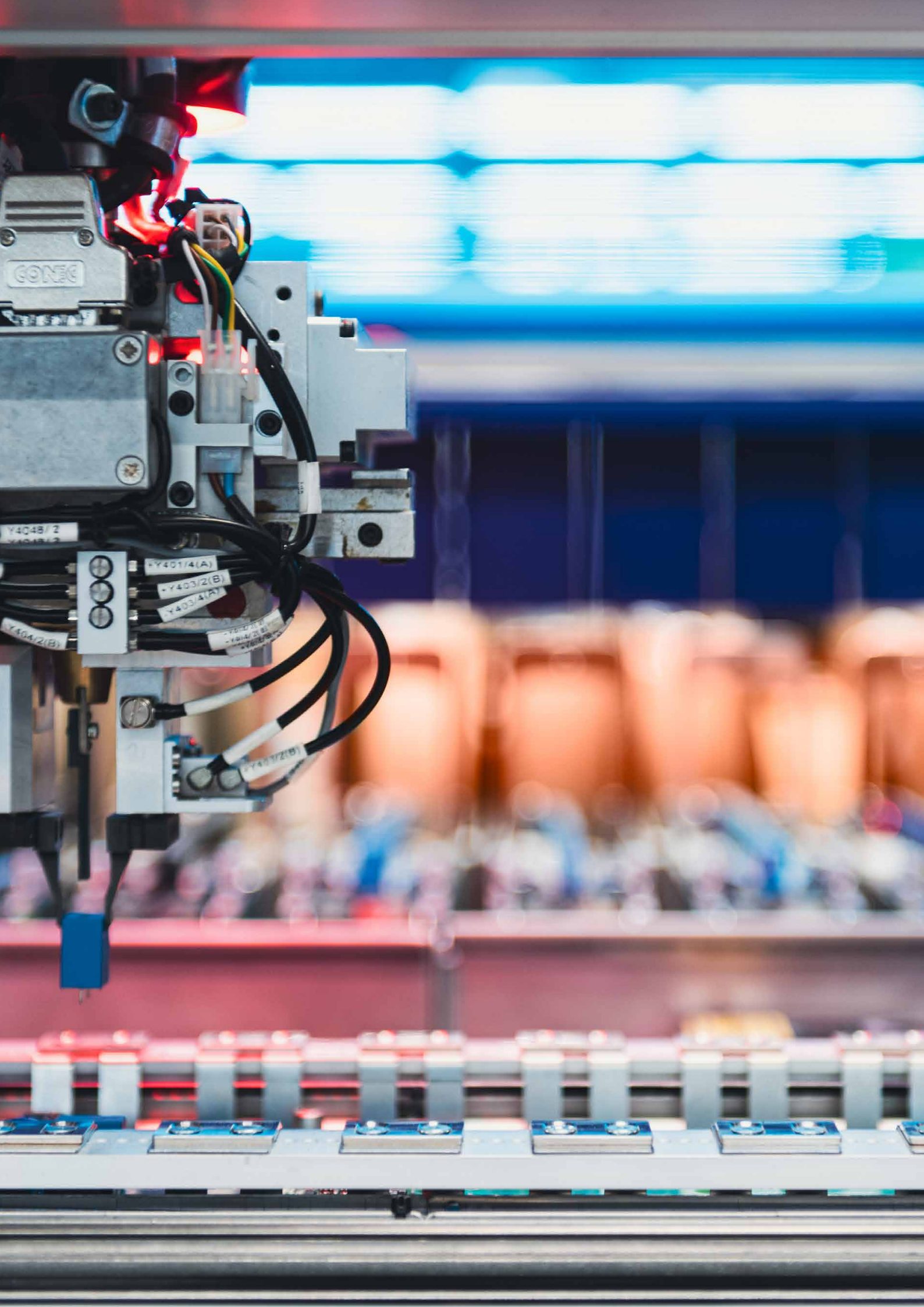
- -25 ... +70 °C (current reduction of 2.5 %/°C above +60 °C)

Technical data

Power supply units

Conformity	CE	2011/65/EU	Low-Voltage Directive
	UKCA	2016 No. 1101	
	EAC	TP TC 004/2011	
Approval	UL	UL61800-5-1	Industrial Control Equipment, Underwriter Laboratories (File-No. E258476) for USA and Canada
	UR		For USA and Canada 22.2 No. 274
Degree of protection	EN		IP20
Ambient conditions	Storage		-40 ... +85 °C
	Transport		-40 ... +85 °C
	Operation		-25 ... +70 °C (current reduction of 2.5 %/°C above +60 °C)
Pollution		IEC 61800-5-1	Degree of pollution 2
Mounting position			Next to the inverter

Order code	I_{rated}	V_{rated}	V_{out}	m	$H \times W \times D$	Material number
	[A]	[V]	[V DC]	[kg]	[mm]	
EZVA024005BB000000	5	1 x 230	24	0.86	130 x 40 x 125	13613136  
EZVA024010BB000000	10			1.05	130 x 60 x 125	13613137  
EZVA048010BB000000	10		48	2	130 x 90 x 150	13613141  
EZVA024005FB000000	5	3 x 400 ... 480	24	0.78	130 x 40 x 125	13613138  
EZVA024010FB000000	10			1.32	130 x 60 x 125	13613139  
EZVA024020FB000000	20			1.6	130 x 70 x 150	13613140  



CONEC

Y4048/2
Y4048/2

Y401/4(A)

Y403/2(B)

Y403/4(A)

Y404/2(B)

Y401/2(B)
Y404/2(B)
Y403/2(B)
Y403/4(A)

Y401/2(B)

Electrical protection devices and busbars

The frequency and servo inverters can be operated in a DC bus connection. The 400 V devices have a direct connection for this purpose. The fuses, busbars and accessories listed here are the complete set required for such operation.

A DC-bus connection can be used to balance the energy between the individual inverters. Especially in cyclic operation of several devices such an operation makes sense. The dimensioning of a DC-bus connection requires a very exact dimensioning of the energy requirements of the devices among each other.



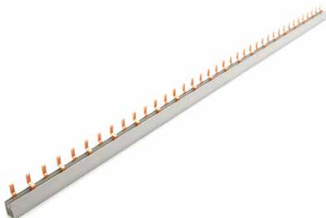
Fuses

- For DC-bus connection
- 5 ... 315 A
- 14 x 51, 22 x 58 or NH000



Fuse holders

- For DC-bus connection
- IP20



Busbars

- Length 1 m
- Suitable for fuses 14 x 51 and 22 x 58
- Additional end caps available



Fuses

Rated current

- 5 ... 315 A

Size

- 14 x 51
- 22 x 58
- NH000

Mains voltages

- 600 V

DC voltage

- 700 V

Degree of protection

- IP00

Approvals

- CE; UKCA; UR for USA and Canada

Mounting

- In the fuse holder



Fuse holders

Rated current

- 5 ... 315 A

Size

- 14 x 51
- 22 x 58
- NH

Mains voltages

- 600 V

DC voltage

- 700 V

Degree of protection

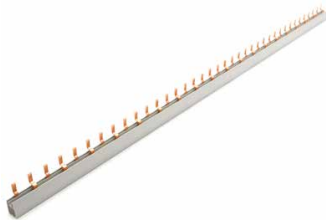
- 14 x 51, 22 x 58: IP20
- NH000: IP00

Approvals

- CE; UKCA; UR for USA and Canada

Mounting

- In the control cabinet



Busbars

Rated current

- 100 A

Length

- 1 m

Cross-section

- 25 mm²

Mains voltages

- 600 V

DC voltage

- 700 V

Degree of protection

- IP00

Approvals

- CE; UKCA

Mounting

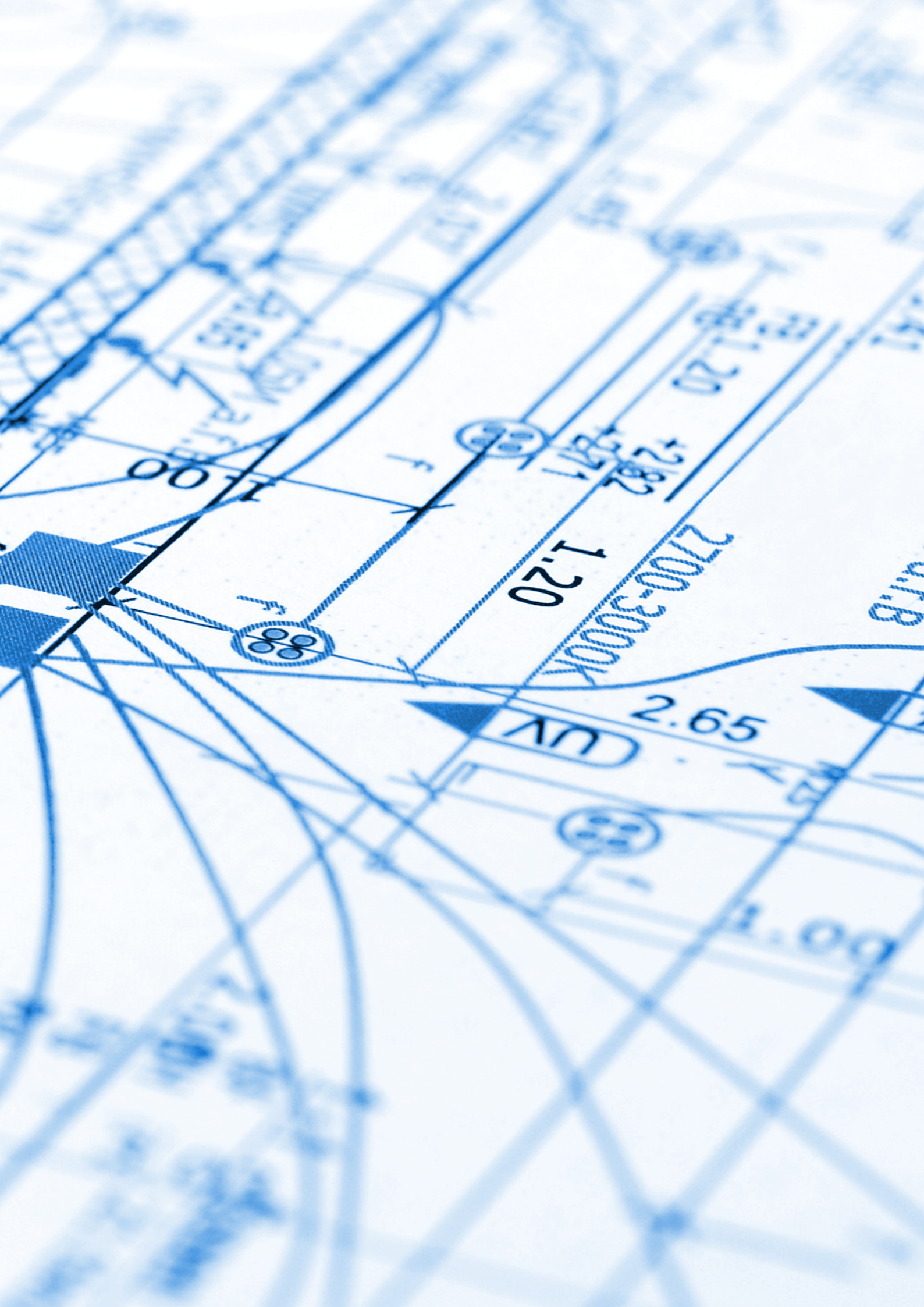
- In the control cabinet

Technical data

Fuses

Conformity	CE	2014/35/EU	Low-Voltage Directive
		2011/65/EU	RoHS Directive
	UKCA	2016 No. 1101	The Electrical Equipment (Safety) Regulations 2016
		2012 No. 3032	RoHS in Electrical and Electrical Equipment Regulations 2012
Approval	UR/CSA	UL248-13:2000	14 x 51: UL Recognised JFHR2. File No.: E91958
			22 x 58: UL Recognised JFHR2. File No.: E91958
			NH000: UL Recognised JFHR2. File No.: E125085
		UL/CSA/VANCE 248-1: 2011	14 x 51: CSA Class 53787. File No.: 1422-30
			22 x 58: CSA Class 53787. File No.: 1422-30
			NH000: CSA Class 53787. File No.: 1422-30
			NH000: UL Recognised JFHR2. File No.: E125085

Order code	I _{rated} [A]	P _v [W]	V _{mains} [V]	V _{DC} [V]	Character- istic	m [g]	H x B [mm]	Material number					
Fuses 14 x 51 for DC-bus operation													
EFNNAR0005WYA00000	5	1.5	600	700	aR	21.2	14 x 51	13573406					
EFNNAR0010WYA00000	10	4.0				21.2		13573408					
EFNNAR0015WYA00000	15	5.5				20.4		13573438					
EFNNAR0020WYA00000	20	6.5				20.2		13573439					
EFNNAR0025WYA00000	25	7.0				20.3		13573440					
EFNNAR0032WYA00000	32	8.0				20.5		13573441					
EFNNAR0040WYA00000	40	8.0				20.2		13574142					
EFNNAR0050WYA00000	50	9.0				21.2		13612406					
Fuses 22 x 58 for DC-bus operation													
EFNNAR0020WYB00000	20	5.0	600	700	aR	55.7	22 x 58	13574145					
EFNNAR0025WYB00000	25	6.0				62.6		13574146					
EFNNAR0032WYB00000	32	8.0				63.1		13574147					
EFNNAR0040WYB00000	40	12.0				59.9		13574148					
EFNNAR0050WYB00000	50	12.5				62.6		13574149					
EFNNAR0063WYB00000	63	15.0				62.6		13574150					
EFNNAR0080WYB00000	80	15.0				61.3		13574151					
EFNNAR0100WYB00000	100	16.5				62.0		13574152					
Fuses NH000 for DC-bus operation													
EFNNGR0010WYE00000	10	3.0	600	700	gR	136.4	NH000	13612455					
EFNNGR0016WYE00000	16	5.5				146.0		13612454					
EFNNGR0020WYE00000	20	7.0				146.0		13612453					
EFNNGR0025WYE00000	25	9.0				140.7		13612452					
EFNNGR0032WYE00000	32	10.0				145.8		13612411					
EFNNGR0040WYE00000	40	12.0				147.3		13612410					
EFNNGR0050WYE00000	50	15.0				146.1		13612409					
EFNNGR0063WYE00000	63	16.0				133.6		13612408					
EFNNGR0080WYE00000	80	19.0			134.5	13612407							
EFNNGR0100WYE00000	100	24.0			134.5	13574153							
EFNNGR0125WYE00000	125	28.0			136.0	13574154							
EFNNGR0200WYE00000	200	37.0			136.1	13574155							
EFNNGR0250WYE00000	250	42.0			136.4	13574156							
EFNNGR0315WYE00000	315	52.0			135.8	13574157							
					aR	136.4							
						136.1							



Project planning

Dimensioning conditions

A DC-bus connection can be used to balance the energy between the individual devices. Especially in cyclic operation of several devices such an operation makes sense. The dimensioning of a DC-bus connection requires a very exact dimensioning of the energy requirements of the devices among each other.

Assignment of fuses to the inverter

For the dimensioning of a DC-bus connection, a calculation of the energy exchange between the integrated drives is required. Feeding tasks, for example, often require greater power than clock drives.

The following must be observed:

- Two DC fuses are always required.
- The fuse holders EFNH20050WYA000000 (DC fuse 14 x 51) and EFNH20125WYB000000 (DC fuse 22 x 58) are 2-pole fuse holders.
- The fuse holders EFNH10400WYE000000 (fuses NH000) are 1-pole fuse holders.
- The fuses are UL approved for 600 Vac and 700 Vdc.
- From 80 A, the fuses provide short-circuit protection, but no cable protection.

Mains connection 3 x 400 V

The fuses listed here are intended for the DC bus connection at a DC voltage of 625 V.

		Inverter			Fuses			
PN	V _{mains}	i550 cabinet		i950 cabinet	For control cabinet installation			
kW	V	Heavy Duty	Light Duty		14 x 51	22 x 58	NH000	
0.37	3 x 400	x			EFNNAR0015WYA00000		EFNNGR0016WYE00000	
0.55		x			EFNNAR0015WYA00000		EFNNGR0016WYE00000	
0.75					x	EFNNAR0050WYA00000		EFNNGR0050WYE00000
			x			EFNNAR0015WYA00000		EFNNGR0016WYE00000
1.1					x	EFNNAR0050WYA00000		EFNNGR0050WYE00000
1.5			x			EFNNAR0050WYA00000		EFNNGR0050WYE00000
2.2			x		x	EFNNAR0050WYA00000		EFNNGR0050WYE00000
3.0			x			EFNNAR0050WYA00000		EFNNGR0050WYE00000
4.0				x		EFNNAR0050WYA00000		EFNNGR0050WYE00000
			x		x	EFNNAR0050WYA00000	EFNNAR0050WYB00000	EFNNGR0050WYE00000
5.5				x		EFNNAR0050WYA00000	EFNNAR0050WYB00000	EFNNGR0050WYE00000
			x				EFNNAR0080WYB00000	EFNNAR0080WYE00000
7.5				x			EFNNAR0080WYB00000	EFNNAR0080WYE00000
			x		x		EFNNAR0100WYB00000	EFNNAR0100WYE00000
11				x			EFNNAR0100WYB00000	EFNNAR0100WYE00000
			x		x		EFNNAR0100WYB00000	EFNNAR0100WYE00000
15				x			EFNNAR0100WYB00000	EFNNAR0100WYE00000
					x		EFNNAR0100WYB00000	EFNNAR0100WYE00000
18			x					EFNNAR0200WYE00000
				x				EFNNAR0200WYE00000
22		x					EFNNAR0200WYE00000	
			x				EFNNAR0200WYE00000	
30			x				EFNNAR0200WYE00000	
		x		x			EFNNAR0250WYE00000	
37			x				EFNNAR0250WYE00000	
		x					EFNNAR0250WYE00000	
45			x				EFNNAR0250WYE00000	
		x		x			EFNNAR0250WYE00000	
55			x				EFNNAR0250WYE00000	
		x		x			EFNNAR0315WYE00000	
75			x				EFNNAR0315WYE00000	
		x		x			EFNNAR0315WYE00000	
90			x				EFNNAR0315WYE00000	
		x		x			350 A fuse	
110			x					
		x		x				
132			x					







Fuse holders

Fuse holders for fuses of sizes 14 x 51, 22 x 58 and NH000.

Fuse holders		Material number
Connections		
Fuse holders	2-pole fuse holder for fuses 14 x 51	13612650  
	2-pole fuse holder for fuses 22 x 58	13612651  
	1-pole fuse holder for fuses NH	13612712  
Microswitches	Indicator for fuses NH000	13612713  

Busbars

Busbars are used for setting up a DC bus connection with several inverters.

Busbars		Material number
Connections		
DC busbar	1 m busbar (Ø 25 mm ²) for operation with fuses 14 x 51, 2-pole	13368656  
	1 m busbar (Ø 25 mm ²) for operation with fuses 22 x 58, 2-pole	13368657  
End caps	End caps to protect the busbars	13467645  
Terminals	Terminals for DC supply to the inverter	424554 