Drives Accessories – BLOCK Line & Load Reactors

BLOCK Line (AC drive input) reactors reduce low-frequency interference (harmonics) and relieve the strain on the supply network, compensating for the reactive power distortion this interference causes. Connected devices are protected by limiting inrush current, which extends their service life. The BLOCK LR3 series is available in 3% and 5% impedance ratings.

BLOCK load (motor) reactors provide basic protection between a drive and a motor. They smooth out voltage differentials while improving the insulation strength and service life of the motor's winding wires. The motor is also protected through a reduction in voltage edge steepness (dV/dt). By improving electromagnetic compatibility with other system components, motor reactors also enhance overall power quality across the drive system.

Agency Approvals:

- cURus recognized/listed
- LR3 series is cULus listed
- CE marked
- RoHS

Features:

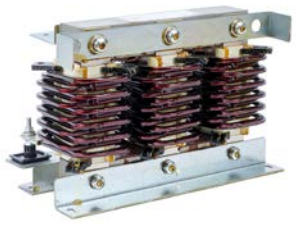
- Open-style construction for panel mounting
- Corrosion protection and low noise due to vacuum impregnation
- Line Reactors:
  - Impedance: 3%, 4% (NKE Series), or 5%
  - LR3-48 series assembled in the USA
  - LR3 series with UL approval
  - Increases impedance and reduces the possible short-circuit current
  - Dampens power harmonic and limits starting current
- Load Reactors:
  - Highly dampens edge steepness
  - Highly dampens inverter switching frequency
  - Reduces leakage current
  - Long shielded cable lengths possible
  - High efficiency

BLOCK Line & Load Reactors – Series Selection

Series	Type	Phases	Design Voltage	Impedance	Amp Range	Rated Horsepower
NKE	Line reactor	1	120/230 VAC	4%	4–25A	1/6 to 3 hp @ 230 VAC
LR3-48-3		3	230/480 VAC	3%	2–70A	1-1/2 to 63 hp @ 480 VAC
LR3-AE-483					80–250A	60 to 225 hp @ 480 VAC
LR3-48-5				5%	2–45A	1-1/2 to 40 hp @ 480 VAC
LR3-AE-485					63–200A	55 to 180 hp @ 480 VAC
MR3	Load (motor) reactor			N/A	2.5–61A	1-1/2 to 50 hp @ 480 VAC
MDB					72–110A	60 to 100 hp @ 480 VAC



LR3 Series



LR3-AE Series



NKE Series



MR3 Series



MDB Series

Drives Accessories – BLOCK LR3 Series Line Reactors, 3% Impedance

Line Reactors for AC Drives – LR3 Series, 3% Impedance

Part Number	Price	Max Rated Current (A)	Linearity Current (A)	Inductance (mH)	Resistance (mΩ)	UL Insulation Class	Weight (lb)	Terminals	Wire Size Range (AWG)	Terminal Torque (lb·in)	Drawing Links
LR3-48-3 Series – 2 to 70A											
LR3-48-3/2	$45.00	2.0	3	11.000	710	UL class 130	1	4 mm² / #12 AWG screw	22–10	4–9	PDF
LR3-48-3/4	$49.00	4.0	6	5.500	274		2				PDF
LR3-48-3/6	$59.00	6.0	9	3.700	149		2				PDF
LR3-48-3/8	$69.00	8.0	12	2.750	102	UL class 155	4				PDF
LR3-48-3/10	$81.00	10.0	15	2.200	52.93		4				PDF
LR3-48-3/16	$98.00	16.0	24	1.380	39.58		6				PDF
LR3-48-3/20	$122.00	20.0	30	1.100	18.5		8				PDF
LR3-48-3/25	$143.00	25.0	37.5	0.880	10.7		9	10 mm² / #8 AWG screw	24–6	11–18	PDF
LR3-48-3/30	$166.00	30.0	45	0.740	7.7		13				PDF
LR3-48-3/35	$174.00	35.0	52.5	0.630	7.91		13				PDF
LR3-48-3/40	$197.00	40.0	60	0.550	7.5		14				PDF
LR3-48-3/45	$211.00	45.0	67.5	0.490	5.8		15				PDF
LR3-48-3/50	$222.00	50.0	75	0.440	5.8		15	16 mm² / #6 AWG screw	10–6	18–35	PDF
LR3-48-3/63	$244.00	63.0	90	0.350	3.06		18				PDF
LR3-48-3/70	$283.00	70.0	105	0.315	4.1		22		10–6	18–35	PDF
LR3-AE Series – 80 to 250A											
LR3-AE080-483-0	$370.00	80.0	120	0.270	5.7	UL class 180	24	M6 screw	N/A	49	PDF
LR3-AE100-483-0	$408.00	100	150	0.220	3.81		31				PDF
LR3-AE125-483-0	$455.00	125	187.5	0.180	2.63		37				PDF
LR3-AE160-483-0	$509.00	160	240	0.137	1.77		40				PDF
LR3-AE200-483-0	$590.00	200	300	0.110	1.76		57	M8 screw	N/A	133	PDF
LR3-AE250-483-0	$613.00	250	375	0.088	1.37		58				PDF

Note: Line reactors are installed between line power and the drive. Do not install a line reactor to a drive's output.

Common Specifications – LR3 Series, 3% Impedance

Number of Phases		3	**Impedance**		3%
Frequency (Hz)		50–60	**Orientation**		input side only
Winding Material	**LR3-48-3**	CU	**Environment**		Humidity: 85% max, non-condensing
	LR3-AExxx-483	AL	**Operating Temperature Range**	**LR3-48-3**	+14 to +104 °F [-10 to +40 °C]
Design Voltage Rating		230/480 VAC		**LR3-AExxx-483**	-22 to +104 °F [-30 to +40 °C]
Maximum Voltage		690 VAC			

Drives Accessories – BLOCK LR3 3% – Power & Voltage Drop

Rated Power & Short-Circuit Voltage – LR3 Series, 3% Impedance										
Part Number	Rated Power				Short-Circuit Voltage uk (%)[1]					
	@ 230 VAC		@ 480 VAC		230V		480V		600V	
	HP	kW	HP	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
LR3-48-3 Series – 2 to 70A										
LR3-48-3/2	0.6	0.5	1.8	1.3	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/4	1.4	1	3.5	2.6	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/6	2.2	1.6	5	4	5.3	6.3	2.5	3.0	2.0	2.4
LR3-48-3/8	3	2.2	7	5	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/10	4	3	9	6.6	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/16	6	4.6	14	10.5	5.2	6.3	2.5	3.0	2.0	2.4
LR3-48-3/20	8	6	18	13.3	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/25	10	7.4	22	16.2	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/30	12	9	25	19	5.3	6.3	2.5	3.0	2.4	2.4
LR3-48-3/35	14.5	10.6	30	23.2	5.2	6.3	2.5	3.0	2.0	2.4
LR3-48-3/40	16.5	12.2	35	26.5	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/45	19	13.8	40	30	5.2	6.3	2.5	3.0	2.0	2.4
LR3-48-3/50	21	15.4	45	33.2	5.2	6.2	2.5	3.0	2.0	2.4
LR3-48-3/63	27	20	55	42	5.2	6.3	2.5	3.0	2.0	2.4
LR3-48-3/70	31	22.5	63	46.5	5.2	6.3	2.5	3.0	2.0	2.4
LR3-AE Series – 80 to 250A										
LR3-AE080-483-0	35	26	72	53	5.1	6.1	2.4	2.9	2.0	2.4
LR3-AE100-483-0	44	32.7	90	66.5	5.2	6.2	2.5	3.0	2.0	2.4
LR3-AE125-483-0	56	41.3	110	83	5.3	6.4	2.6	3.1	2.0	2.4
LR3-AE160-483-0	70	52	140	105	5.2	6.2	2.5	3.0	2.0	2.4
LR3-AE200-483-0	90	67	180	133	5.2	6.2	2.5	3.0	2.0	2.4
LR3-AE250-483-0	115	86	225	166	5.2	6.2	2.5	3.0	2.0	2.4

1. uk is the short-circuit voltage (impedance voltage) expressed as a percentage of the rated voltage, given at each supply voltage and frequency.

Drives Accessories – BLOCK LR3 Series Line Reactors, 5% Impedance

Line Reactors for AC Drives – LR3 Series, 5% Impedance

Part Number	Price	Max Rated Current (A)	Linearity Current (A)	Inductance (mH)	Resistance (mΩ)	UL Insulation Class	Weight (lb)	Terminals	Wire Size Range (AWG)	Terminal Torque (lb·in)	Drawing Links
LR3-48-5 Series – 2 to 45A											
LR3-48-5/2	$56.00	2.0	3	18.500	1.05	UL class 130	1	4 mm² / #12 AWG screw	22–10	4–9	PDF
LR3-48-5/4	$66.00	4.0	6	9.200	0.4		2				PDF
LR3-48-5/6	$80.00	6.0	9	6.200	201		3				PDF
LR3-48-5/8	$100.00	8.0	12	4.600	105	UL class 155	5				PDF
LR3-48-5/10	$119.00	10.0	15	3.680	78		6				PDF
LR3-48-5/16	$146.00	16.0	24	2.300	44.1		8				PDF
LR3-48-5/25	$216.00	25.0	37.5	1.470	17.6		13	10 mm² / #8 AWG screw	24–6	11–18	PDF
LR3-48-5/35	$312.00	35.0	52.5	1.050	9.8		16				PDF
LR3-48-5/45	$368.00	45.0	67.5	0.817	7.53		24				PDF
LR3-AE Series – 63 to 200A											
LR3-AE063-485-0	$447.00	63.0	94.5	0.580	11	UL class 180	27	M6 screw	N/A	49	PDF
LR3-AE080-485-0	$475.00	80.0	120	0.450	6.7		33				PDF
LR3-AE100-485-0	$541.00	100	150	0.360	4.65		48				PDF
LR3-AE125-485-0	$579.00	125	187.5	0.290	3.17		58				PDF
LR3-AE160-485-0	$667.00	160	240	0.230	2.08		67				PDF
LR3-AE200-485-0	$740.00	200	300	0.180	2.29		80	M8 screw	N/A	133	PDF

Note: Line reactors are installed between line power and the drive. Do not fit a line reactor to a drive's output.

Common Specifications – LR3 Series, 5% Impedance

Number of Phases		3	***Impedance***		5%
Frequency (Hz)		50–60	***Orientation***		input side only
Winding Material	***LR3-48-5***	CU	***Environment***		Humidity: 85% max, non-condensing
	LR3-AExxx-485	AL	***Operating Temperature Range***	***LR3-48-5***	+14 to +104 °F [-10 to +40 °C]
Design Voltage Rating		230/480 VAC		***LR3-AExxx-485***	-22 to +104 °F [-30 to +40 °C]
Maximum Voltage		690 VAC			

Drives Accessories – BLOCK LR3 5% – Power & Voltage Drop

Rated Power & Short-Circuit Voltage – LR3 Series, 5% Impedance										
Part Number	Rated Power				Short-Circuit Voltage uk (%)[1]					
	@ 230 VAC		@ 480 VAC		230V		480V		600V	
	HP	kW	HP	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
LR3-48-5 Series – 2 to 45A										
LR3-48-5/2	0.6	0.5	1.8	1.3	8.8	10.5	4.2	5.0	3.4	4.0
LR3-48-5/4	1.4	1	3.5	2.6	8.7	10.4	4.2	5.0	3.3	4.0
LR3-48-5/6	2.2	1.6	5	4	8.8	10.6	4.2	5.1	3.4	4.0
LR3-48-5/8	3	2.2	7	5	8.7	10.4	4.2	5.0	3.3	4.0
LR3-48-5/10	4	3	9	6.6	8.7	10.4	4.2	5.0	3.3	4.0
LR3-48-5/16	6	4.6	14	10.5	8.7	10.4	4.2	5.0	3.3	4.0
LR3-48-5/25	10	7.4	22	16.2	8.7	10.4	4.2	5.0	3.3	4.0
LR3-48-5/35	14.5	10.6	30	23.2	8.7	10.4	4.2	5.0	3.3	4.0
LR3-48-5/45	19	13.8	40	30	8.7	10.4	4.2	5.0	3.3	4.0
LR3-AE Series – 63 to 200A										
LR3-AE063-485-0	27	20	55	42	8.6	10.4	4.1	5.0	3.3	4.0
LR3-AE080-485-0	35	26	72	53	8.5	10.2	4.1	4.9	3.3	3.9
LR3-AE100-485-0	44.5	32.7	90	66.5	8.5	10.2	4.1	4.9	3.3	3.9
LR3-AE125-485-0	56	41.3	110	83	8.6	10.3	4.1	4.9	3.3	3.9
LR3-AE160-485-0	71	52	140	105	8.7	10.4	4.2	5.0	3.3	4.0
LR3-AE200-485-0	91	67	180	133	8.5	10.2	4.1	4.9	3.3	3.9

1. uk is the short-circuit voltage (impedance voltage) expressed as a percentage of the rated voltage, given at each supply voltage and frequency.

Drives Accessories – BLOCK NKE Single-Phase Line Reactors

Single-Phase Line Reactors for AC Drives – NKE Series

Part Number	Price	Max Rated Current (A)	Linearity Current (A)	Inductance (mH)	Resistance (mΩ)	UL Insulation Class	Weight (lb)	Terminals	Wire Size Range (AWG)	Terminal Torque (lb·in)	Drawing Links
NKE-4/7.33	$29.00	4.0	6	7.330	240	UL class 130	1	4 mm² / #12 AWG screw	22–10	4–9	PDF
NKE-6/4.88	$36.00	6.0	9	4.880	375		1				PDF
NKE-10/2.93	$45.00	10.0	15	2.930	73		3				PDF
NKE-16/1.83	$48.00	16.0	24	1.830	43		3				PDF
NKE-20/1.47	$52.00	20.0	30	1.470	34		3	10 mm² / #8AWG screw	24–6	11–18	PDF
NKE-25/1.17	$59.00	25.0	37.5	1.170	20		3				PDF

Note: Line reactors are installed between line power and the drive. Do not fit a line reactor to a drive's output.

Common Specifications – NKE Series

Number of Phases	1	Impedance	4%
Frequency (Hz)	50–60	Orientation	input side only
Winding Material	CU	Environment	Humidity: 85% max, non-condensing
Design Voltage Rating	120/230 VAC	Operating Temperature Range	+14 to +104 °F [-10 to +40 °C]
Maximum Voltage	690 VAC		

Rated Power & Short-Circuit Voltage – NKE Series

Part Number	Rated Power				Applicable VFD 3-phase Output (hp)[2]	Short-Circuit Voltage uk (%)[1]			
	@ 120 VAC		@ 230 VAC			120V		230V	
	HP	kW	HP	kW		50 Hz	60 Hz	50 Hz	60 Hz
NKE-4/7.33	0.5	0.4	1	0.7	1/6	7.7	9.2	4.0	4.8
NKE-6/4.88	0.8	0.6	1.5	1.1	1/4	7.7	9.2	4.0	4.8
NKE-10/2.93	1.4	1	2	1.8	1/2	7.7	9.2	4.0	4.8
NKE-16/1.83	2	1.5	4	3	3/4	7.7	9.2	4.0	4.8
NKE-20/1.47	2.5	1.9	5	3.7	1	7.7	9.2	4.0	4.8
NKE-25/1.17	3.3	2.4	6	4.6	1-1/2	7.7	9.2	4.0	4.8

1. uk is the short-circuit voltage (impedance voltage) expressed as a percentage of the rated voltage, given at each supply voltage and frequency.
2. NKE reactors are rated for 120 and 230 VAC single-phase supplies only. Single-phase reactors are typically used with 1-phase VFD input to power a 3-phase AC motor. Ensure the reactor amps are adequate for the specific VFD input amps in the application.

Drives Accessories – BLOCK MR3 Series Load Reactors

Load Reactors for AC Drives – MR3 Series

Part Number	Price	Max Rated Current (A)	Linearity Current (A)	Inductance (mH)	Resistance (mΩ)	UL Insulation Class	Weight (lb)	Terminals	Wire Size Range (AWG)	Terminal Torque (lb·in)	Drawing Links
MR3-480/2.5	$49.00	2.5	3.8	2.550	340	UL class 130	1.5	4 mm² / #12 AWG screw	22–10	4–9	PDF
MR3-480/4	$55.00	4.0	6	1.590	160		1.7				PDF
MR3-480/6	$55.00	6.0	9	1.060	84		2.0				PDF
MR3-480/8	$52.00	8.0	12	0.800	49.9		2.1				PDF
MR3-480/10	$79.00	10.0	15	0.640	42.4	UL class 155	3.7				PDF
MR3-480/13	$83.00	13.0	19.5	0.490	26.2		4.0				PDF
MR3-480/18	$106.00	18.0	27	0.350	15.8		5.5				PDF
MR3-480/24	$117.00	24.0	36	0.270	10.9		5.7	10 mm² / #8 AWG screw	24–6	11–18	PDF
MR3-480/30	$139.00	30.0	45	0.210	7.8		7.7				PDF
MR3-480/37	$144.00	37.0	55.5	0.170	5		7.9				PDF
MR3-480/42	$174.00	42.0	63	0.150	4.4		11.5				PDF
MR3-480/48	$200.00	48.0	72	0.130	3.36		12.8	16 mm² / #6 AWG screw	10–6	18–35	PDF
MR3-480/61	$257.00	61.0	91.5	0.100	3.3		16.3				PDF

Note: Load reactors are installed between the drive output and the motor. Do not fit a load reactor to a drive input.

Common Specifications – MR3 Series

Number of Phases	3	Maximum Voltage	690 VAC
Frequency (Hz)	0–60	Orientation	output side only
Carrier (Switching) Frequency (kHz)	3–8	Environment	Humidity: 85% max, non-condensing
Winding Material	CU	Operating Temperature Range	+14 to +104 °F [-10 to +40 °C]
Design Voltage Rating	230/480 VAC		

Rated Power & Short-Circuit Voltage – MR3 Series

Part Number	Rated Power				Short-Circuit Voltage uk (%)[1]					
	@ 230 VAC		@ 480 VAC		230V		480V		600V	
	HP	kW	HP	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
MR3-480/2.5	0.8	0.6	2	2	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/4	1.4	1	4	3	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/6	2.2	1.6	5	4	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/8	3	2.2	7	5	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/10	4	3	9	7	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/13	5	4	12	9	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/18	7	5	16	12	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/24	9	7	22	16	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/30	12	9	27	20	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/37	15	11	33	25	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/42	17.5	12.8	38	28	1.5	1.8	0.7	0.9	0.6	0.7
MR3-480/48	20	14.8	43	32	1.5	1.8	0.7	0.8	0.6	0.7
MR3-480/61	26	19	55	41	1.4	1.7	0.7	0.8	0.6	0.7

1. uk is the short-circuit voltage (impedance voltage) expressed as a percentage of the rated voltage, given at each supply voltage and frequency.

Drives Accessories – BLOCK MDB Series Load Reactors

Load Reactors for AC Drives – MDB Series

Part Number	Price	Max Rated Current (A)	Linearity Current (A)	Inductance (mH)	Resistance (mΩ)	UL Insulation Class	Weight (lb)	Terminals	Wire Size Range (AWG)	Terminal Torque (lb·in)	Drawing Links
MDB-480/72	$471.00	72.0	144	0.050	0.89	UL class 155	22	M8 screw	N/A	133	PDF
MDB-480/91	$550.00	91.0	182	0.050	0.7		23				PDF
MDB-480/110	$727.00	110	220	0.050	0.67		32				PDF

Note: Load reactors are installed between the drive output and the motor. Do not fit a load reactor to a drive input.

Common Specifications – MDB Series

Number of Phases	3	Maximum Voltage	690 VAC
Frequency (Hz)	0–120	Orientation	output side only
Carrier (Switching) Frequency (kHz)	2–6	Environment	Humidity: 85% max, non-condensing
Winding Material	CU	Operating Temperature Range	+14 to +104 °F [-10 to +40 °C]
Design Voltage Rating	230/480 VAC		

Rated Power & Short-Circuit Voltage – MDB Series

Part Number	Rated Power				Short-Circuit Voltage uk (%)[1]					
	@ 230 VAC		@ 480 VAC		230V		480V		600V	
	HP	kW	HP	kW	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
MDB-480/72	31	23	65	48	0.9	1.0	0.4	0.5	0.3	0.4
MDB-480/91	40	29.5	82	61	1.1	1.3	0.5	0.6	0.4	0.5
MDB-480/110	49	36	99	73	1.3	1.6	0.6	0.7	0.5	0.6

1. uk is the short-circuit voltage (impedance voltage) expressed as a percentage of the rated voltage, given at each supply voltage and frequency.