

Drives

Components for drives technology



REO



Overview Drives catalogue

Chokes

4 - 31

Single-phase mains	● CNW 901	4 - 5
Three-phase line choke	● CNW 903	6 - 7
	● CNW 905	8 - 9
Zwischenkreisdrossel	● CNW 891	10 - 11
	● CNW 892	12 - 13
Three-phase du/dt filter	● CNW 806	14 - 15
	● CNW M 833	16 - 17
	● CNW 854	18 - 19
Three-phase motor choke	● CNW M 854	20 - 21
	● CNW 931	22 - 23
Three phase sinusoidal filter	● CNW 933	26 - 27
	● CNW M 933	28 - 29
	● CNW 961	30 - 31

EMC-Filters

34 - 49

Single phase mains filter	● CNW 101	34 - 35
	● CNW 102	36 - 37
Three phase mains filter	● CNW 103	38 - 39
	● CNW 107.3	40 - 41
	● CNW 114	42 - 43
	● CNW 105	44 - 45
Filter combinations	● CNW 307	46 - 47
	● CNW 304	48 - 49

Braking resistors

52 - 66

	● Technical explanation	52 - 53
	● BW 151	54 - 55
	● BW 154	56 - 57
	● BW 155	58 - 59
	● BW 155-Combinations	60 - 61
	● BW 156	62 - 63
Liquid-cooled	● BWD 158 - BWD 330	64 - 65
	● Cover for resistors	66

REO CNW 901

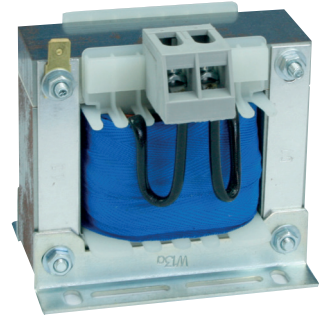
Single-phase mains / commutating choke 4 % U_k

Advantages

- Compact design
- Extended service life for electrical loads
- Minimal thermal losses
- Damping of current peaks up to 60 %
- Reduction of the input current up to 20 %
- Low noise
- Production according to UL insulation system E251513 possible

CE

RoHS
COMPLIANT
2011/EG



Series REO CNW 901

Technical details

Type	Nominal voltage / nominal frequency [V]	Nominal current [A]	Nominal inductance [mH]	Copper [kg]	weight [kg]
CNW 901 / 2	250 50 / 60 Hz	2	14.5	0.2	0.6
CNW 901 / 4		4	7.3	0.2	0.6
CNW 901 / 6		6	4.8	0.2	0.6
CNW 901 / 8		8	3.6	0.25	0.8
CNW 901 / 10		10	2.9	0.3	1.1
CNW 901 / 16		16	1.8	0.4	1.4
CNW 901 / 20		20	1.5	0.5	2.0
CNW 901 / 25		25	1.1	0.55	2.0
CNW 901 / 30		30	0.95	0.65	2.0
CNW 901 / 35		35	0.84	0.8	3.1
CNW 901 / 40		40	0.73	0.9	3.9
CNW 901 / 45		45	0.65	1.0	3.9
CNW 901 / 50		50	0.57	1.3	4.6
CNW 901 / 63		63	0.5	1.3	5.5
CNW 901 / 75		75	0.4	1.6	7.1
CNW 901 / 100		100	0.29	2.4	8.3

REO CNW 901

Higher performance upon request

Description

- Nominal voltage: $U \leq 250 \text{ V}$
- Short-circuit voltage: $U_k 4 \% (230\text{VAC}/50\text{Hz}, I_{\text{Rated}})$
- Frequency: 50/60 Hz
- According to: EN 60289 / EN 61558
- Test voltage: L-PE 2500 V, DC 1min
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Design: standing Mounting brackets

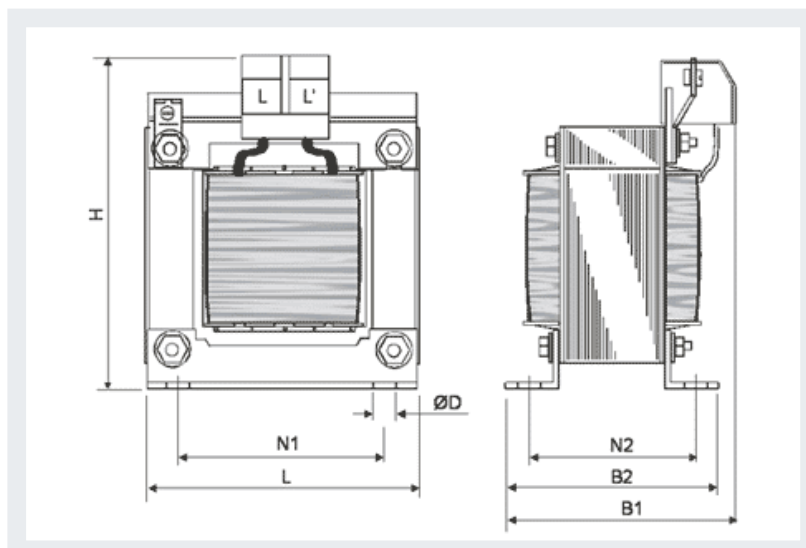
Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- power supply

Measurements

Type	Measurements							Clamps
	L [mm]	B1 [mm]	B2 [mm]	H [mm]	N1 [mm]	N2 [mm]	ØD [mm]	Cross section [mm]
CNW 901/2	60	65	48	65	44	38	3.6 x 7.0	2.5
CNW 901/4	60	70	49	66	44	38	3.6 x 7.0	2.5
CNW 901/6	60	65	47	70	44	38	3.6 x 7.0	2.5
CNW 901/8	60	70	59	66	44	47	3.6 x 7.0	2.5
CNW 901/10	66	80	72	78	50	56	4.8 x 9.0	2.5
CNW 901/16	78	80	60	80	57	46	4.8 x 9.0	4.0
CNW 901/20	85	90	75	85	64	62.5	4.8 x 9.0	4.0
CNW 901/25	85	85	76	95	64	62.5	4.8 x 9.0	4.0
CNW 901/30	85	100	75	95	64	59	4.8 x 9.0	10.0
CNW 901/35	96	100	88	140	84	72	5.8 x 11.0	10.0
CNW 901/40	96	103	102	145	84	85	5.8 x 11.0	10.0
CNW 901/45	96	103	102	150	84	85	5.8 x 11.0	10.0
CNW 901/50	105	115	103	155	84	87	5.8 x 11.0	10.0
CNW 901/63	120	130	101	180	90	85	5.8 x 11.0	35
CNW 901/75	120	150	120	180	90	104	5.8 x 11.0	35
CNW 901/100	150	130	106	205	122	86	7.0 x 13.0	35

REO CNW 901



REO CNW 903

Three-phase line choke 4 % U_k



RoHS
COMPLIANT
2011/EG



Series REO CNW 903

Advantages

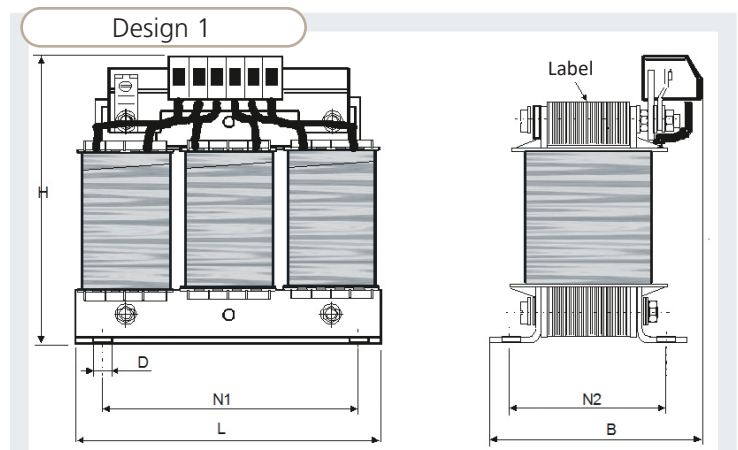
- Compact design
- Extended service life for electrical loads
- Minimal thermal losses
- Damping of current peaks up to 60 %
- Reduction of the input current up to 20 %
- Low noise
- Production according to UL insulation system E251513 possible

Technical details

Name	Nominal voltage: U_N [V]	Nominal current I_N [A]	Inductance L [mH]	Losses P [W]	weight [kg]
CNW 903 / 3	3 x 400 50 / 60 Hz	3	9.800	14	1.5
CNW 903 / 6		6	4.880	22	2.4
CNW 903 / 8		8	3.680	25	2.8
CNW 903 / 10		10	2.930	30	3.1
CNW 903 / 12		12	2.450	32	3.9
CNW 903 / 16		16	1.830	42	4.4
CNW 903 / 25		25	1.170	48	6.4
CNW 903 / 36		36	0.810	59	9.2
CNW 903 / 50		50	0.590	76	11
CNW 903 / 70		70	0.420	96	15
CNW 903 / 90		90	0.320	130	19
CNW 903 / 110		110	0.270	150	23
CNW 903 / 125		125	0.235	180	24
CNW 903 / 160		160	0.180	210	29
CNW 903 / 200		200	0.147	290	34
CNW 903 / 250		250	0.118	350	40
CNW 903 / 300		300	0.098	360	44
CNW 903 / 350		350	0.084	430	52
CNW 903 / 400		400	0.074	590	58
CNW 903 / 500		500	0.059	660	66
CNW 903 / 600		600	0.049	790	81
CNW 903 / 700		700	0.042	820	89
CNW 903 / 800		800	0.037	1000	101
CNW 903 / 900		900	0.033	1000	130
CNW 903 / 1000	1000	0.029	1170	130	
CNW 903 / 1200	1200	0.024	1180	147	

REO CNW 903

Higher performance upon request





Description

- Nominal voltage: $U \leq 3 \times 500 \text{ V}$
- Short-circuit voltage: $U_k 4 \% (400\text{VAC}/50\text{Hz}, I_{\text{Rated}})$
- Frequency: 50/60 Hz
- According to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, DC 1 min; L-PE 2500 V, DC 1 min
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Design: Mounted on brackets

Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- power supply
- wind turbines

Measurements

Type	Length L [mm]	Width W [mm]	Height H [mm]	Mounting		A1	D / D1	D2	connection	Design
				N1 [mm]	N2 [mm]					
CNW 903 / 3	95	75	105	56	34	-	4.8 x 9	-	2,5 mm ²	1
CNW 903 / 6	95	75	105	56	43	-	4.8 x 9	-	2,5 mm ²	1
CNW 903 / 8	125	85	123	100	55	-	5 x 8	-	2,5 mm ²	1
CNW 903 / 10	125	85	123	100	55	-	5 x 8	-	2,5 mm ²	1
CNW 903 / 12	125	85	125	100	55	-	5 x 8	-	4 mm ²	1
CNW 903 / 16	155	77	153	130	57	-	8 x 12	-	4 mm ²	1
CNW 903 / 25	155	92	185	130	72	-	8 x 12	-	10 mm ²	2
CNW 903 / 36	190	82	225	170	58	-	8 x 12	-	16 mm ²	2
CNW 903 / 50	190	102	225	170	78	-	8 x 12	-	16 mm ²	2
CNW 903 / 70	230	90	270	176	71	-	9 x 13	-	35 mm ²	2
CNW 903 / 90	240	107	290	185	85	-	10 x 18	-	35 mm ²	2
CNW 903 / 110	240	138	211	185	94	32	10 x 18	9	25 x 3	3
CNW 903 / 125	300	139	263	224	94	32	10 x 18	9	25 x 3	3
CNW 903 / 160	300	157	264	224	107	37	10 x 18	11	30 x 3	3
CNW 903 / 200	300	175	264	224	120	39	10 x 18	11	30 x 4	3
CNW 903 / 250	300	190	264	224	135	39	10 x 18	11	30 x 4	3
CNW 903 / 300	360	176	311	264	127	39	10 x 18	11	30 x 4	3
CNW 903 / 350	360	198	311	264	142	49	10 x 18	13	40 x 5	3
CNW 903 / 400	360	215	311	264	157	49	10 x 18	13	40 x 5	3
CNW 903 / 500	420	206	369	316	144	49	13 x 20	13	40 x 5	3
CNW 903 / 600	420	235	369	316	164	59	13 x 20	13	40 x 8	3
CNW 903 / 700	420	246	369	316	174	59	13 x 20	13	40 x 8	3
CNW 903 / 800	420	255	440	316	174	69	13 x 20	2x 13	60 x 5	3
CNW 903 / 900	480	275	460	356	178	79	13 x 20	2x 13	60 x 10	3
CNW 903 / 1000	480	275	460	356	178	79	13 x 20	2x 13	60 x 10	3
CNW 903 / 1200	540	287	483	450	144	79	13 x 20	2x 13	60 x 10	3

REO CNW 903

CNW 903 / 3 - CNW 903 / 160 is also available on request with cable lug or cables.

Design 2

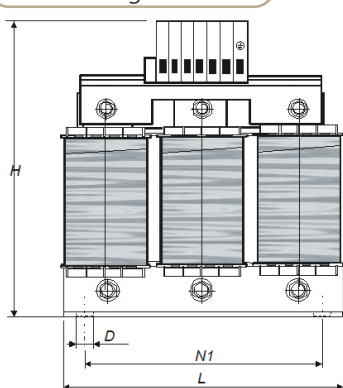
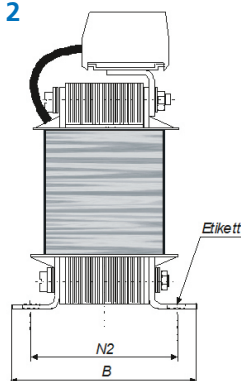


Image 2



Design 3

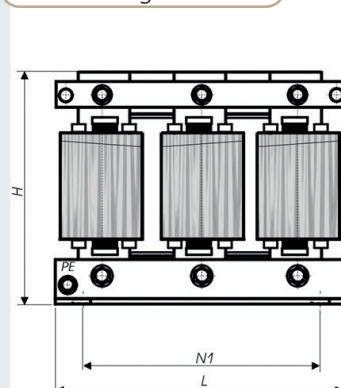
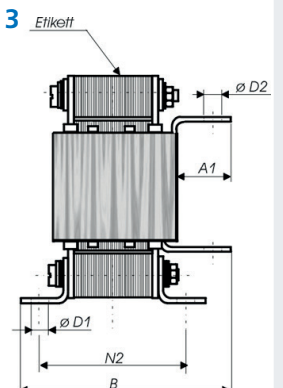


Image 3



REO CNW 905

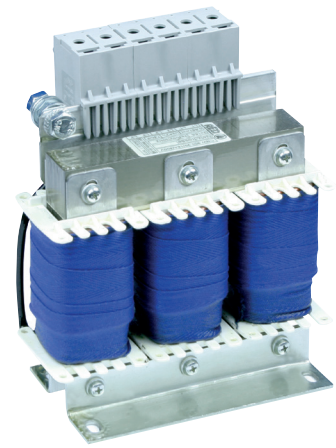
Three-phase line choke 2 % U_k

Advantages

- Compact design
- Extended service life for electrical loads
- Minimal thermal losses
- Damping of current peaks up to 30 %
- Reduction of the input current up to 15 %
- Low noise
- Production according to UL insulation system E251513 possible



RoHS
COMPLIANT
2011/EG



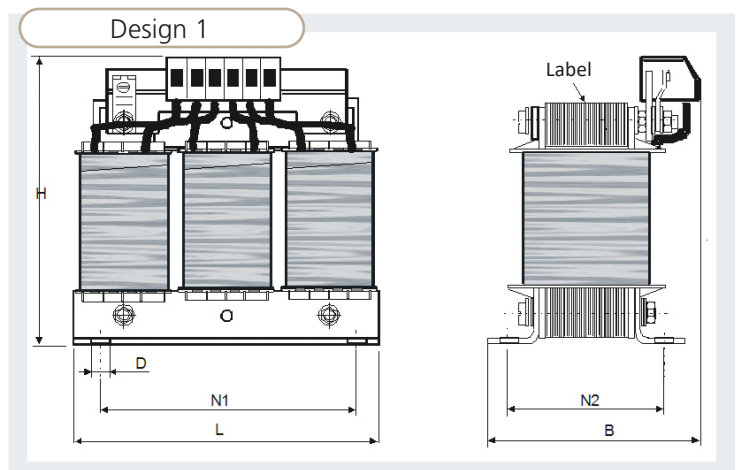
Series REO CNW 905

Technical details

Type	Nominal voltage / nominal frequency [V]	Nominal current [A]	Rated inductance per phase [mH]	Copper [kg]	Alu [kg]	weight [kg]
CNW 905 / 3	up to 3 x 500 V 50 /60 Hz	3	4.8	0.4	-	0.95
CNW 905 / 6		6	2.4	0.4	-	0.95
CNW 905 / 8		8	1.8	0.4	-	0.95
CNW 905 / 10		10	1.4	0.7	-	1.4
CNW 905 / 12		12	1.2	1.1	-	1.9
CNW 905 / 16		16	0.91	1.1	-	1.9
CNW 905 / 25		25	0.58	1.3	-	2.1
CNW 905 / 36		36	0.40	2.0	-	4.2
CNW 905 / 50		50	0.29	2.5	-	4.5
CNW 905 / 70		70	0.20	3.8	-	9.0
CNW 905 / 90		90	0.16	4.1	-	11.0
CNW 905 / 110		110	0.13	6.5	-	12.0
CNW 905 / 125		125	0.12	6.5	-	12.0
CNW 905 / 160		160	0.09	11.0	-	25.0
CNW 905 / 200		200	0.073	1.4	-	35
CNW 905 / 250		250	0.058	1.4	-	35
CNW 905 / 300		300	0.049	1.4	5.1	48
CNW 905 / 350		350	0.042	2.4	5.5	49
CNW 905 / 400		400	0.036	2.8	6.0	56
CNW 905 / 500		500	0.029	2.8	7.5	75
CNW 905 / 600		600	0.024	3.1	8.0	75
CNW 905 / 700		700	0.021	4.1	9.0	85
CNW 905 / 800		800	0.018	4.1	17.0	84
CNW 905 / 900		900	0.016	10.1	20.0	140
CNW 905 / 1000	1000	0.014	10.1	21.0	140	
CNW 905 / 1200	1200	0.012	10.1	23.0	144	

REO CNW 905

Higher performance upon request





Description

- Nominal voltage: $U \leq 3 \times 500 \text{ V}$
- Short-circuit voltage: $U_k \ 2\% \ (400\text{VAC}/50\text{Hz}, I_{\text{Rated}})$
- Frequency 50/60 Hz
- According to EN 60289 / EN 61558
- Test voltage L-L 2500 V, DC 1 min; L-PE 2500 V, DC 1 min
- Insulation class T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload $1.5 \times I_{\text{Rated}}$ 1 min/h
- Design: Mounted on brackets

Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- power supply
- wind turbines

Measurements

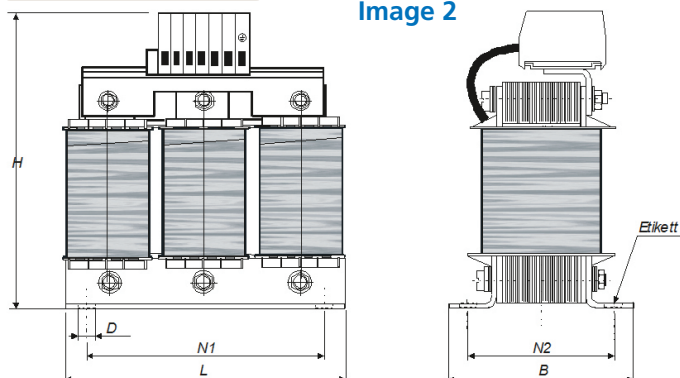
Type	Measurements							connection	Design
	L [mm]	W [mm]	H _{max} [mm]	N1 [mm]	N2 [mm]	ØD [mm]	A1 [mm]		
CNW 905 / 3	95	65	105	56	34	4,8 x 9	-	1,5 mm ²	1
CNW 905 / 6	95	65	105	56	34	4,8 x 9	-	2,5 mm ²	1
CNW 905 / 8	95	65	105	56	34	4,8 x 9	-	2,5 mm ²	1
CNW 905 / 10	95	75	105	56	43	4,8 x 9	-	2,5 mm ²	1
CNW 905 / 12	125	75	135	100	45	5 x 8	-	4,0 mm ²	1
CNW 905 / 16	125	75	135	100	45	5 x 8	-	4,0 mm ²	1
CNW 905 / 25	125	71	160	100	55	5 x 8	-	6 mm ²	2
CNW 905 / 36	155	77	185	130	57	8 x 12	-	10 mm ²	2
CNW 905 / 50	155	92	195	130	72	8 x 12	-	16 mm ²	2
CNW 905 / 70	190	92	230	170	68	8 x 12	-	35 mm ²	2
CNW 905 / 90	190	102	230	170	78	8 x 12	-	35 mm ²	2
CNW 905 / 110	230	90	290	176	71	9 x 13	-	50 mm ²	2
CNW 905 / 125	230	90	290	176	71	9 x 13	-	50 mm ²	2
CNW 905 / 160	240	117	310	185	95	10 x 18	-	95 mm ²	2
CNW 905 / 200	300	140	265	224	85	10 x 18	40	D2=11 30 x 4	3
CNW 905 / 250	300	190	265	224	115	10 x 18	53	Ø 11 30 x 4	3
CNW 905 / 300	300	170	265	224	115	10 x 18	40	Ø 11 30 x 4	3
CNW 905 / 350	300	195	265	224	115	10 x 18	70	Ø 13 40 x 5	3
CNW 905 / 400	360	210	320	265	127	10 x 18	70	Ø 13 40 x 5	3
CNW 905 / 500	370	210	310	248	184	10 x 18	40	Ø 13 40 x 8	3
CNW 905 / 600	420	210	320	316	134	13 x 20	60	Ø 13 40 x 8	3
CNW 905 / 700	420	240	375	316	142	13 x 20	85	Ø 13 40 x 8	3
CNW 905 / 800	360	265	440	365	127	13 x 20	70	2 x 13 40 x 4	3
CNW 905 / 900	420	240	495	316	124	13 x 20	85	2 x 13 60 x 10	3
CNW 905 / 1000	490	260	420	356	194	13 x 20	60	2x13	3
CNW 905/1200	490	280	420	356	199	13x20	60	2x13	3

REO CNW 905

CNW 905 / 3 - CNW 905 / 160 is also available upon request with cable lug or Cables.

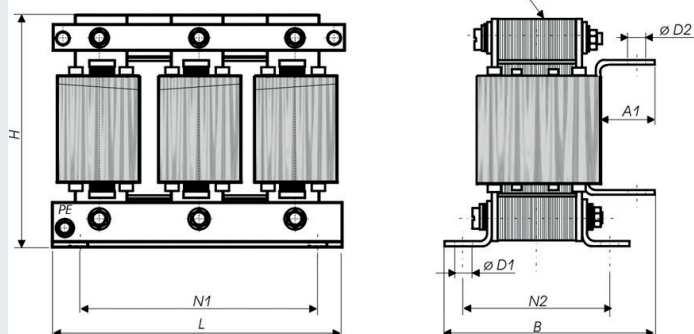
Design 2

Image 2



Design 3

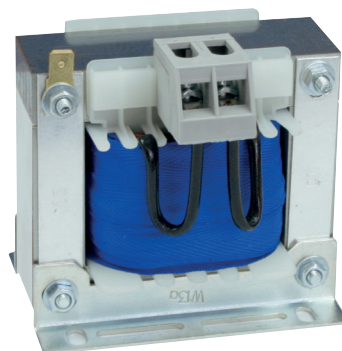
Image 3



REO CNW 891



RoHS
COMPLIANT
2011/EG



Series REO CNW 891

Advantages

- Reduction of harmonic currents
- Damping of current peaks up to 70 %
- Compact design
- Advantages compared to the line choke:
 - Smaller size
 - Reduced material costs / price
 - Lower power dissipation
- Production according to UL insulation system E251513 possible

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Nominal power [kW]	Power dissipation [W]	Copper [kg]	Weight . ca. [kg]
CNW 891 / 8	600 V DC 50 / 60 Hz	8	9.4	3.7	15	0.4	1.4
CNW 891 / 11		11	6.2	5.5	20	0.5	2.0
CNW 891 / 15		15	4.8	7.5	23	0.7	2.3
CNW 891 / 20		20	3.3	11	28	0.8	3.6
CNW 891 / 28		28	2.4	15	35	1.1	4.6
CNW 891 / 34		34	2.0	18.5	40	1.3	5.2
CNW 891 / 40		40	1.6	22	43	1.5	6.9
CNW 891 / 55		55	1.2	30	45	2.3	7.8
CNW 891 / 70		70	0.98	37	50	2.5	10.1
CNW 891 / 85		85	0.81	45	53	2.9	13.6
CNW 891 / 100		100	0.67	55	65	4.4	15.9

REO CNW 891



Description

- Nominal voltage: $U \leq 600 \text{ V}$
- According to: EN 60289 / EN 61558
- Test voltage: L-PE 4000 V, AC/50 Hz, 60 s
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Design: Mounted on brackets

Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- power supply
- wind turbines

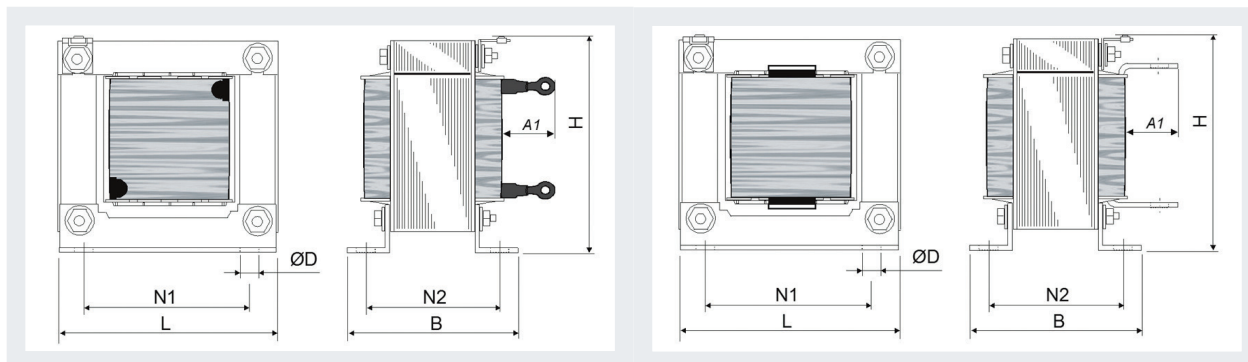
Measurements

Type	Design	Measurements							connection
		L [mm]	W [mm]	H [mm]	N1 [mm]	N2 [mm]	D1 [mm]	A1 [mm]	Output optional
CNW 891 / 8	Cable lugs	85	79	76	64	44	4.8 x 9	25	M4 x 2,5
CNW 891 / 11	Cable lugs	85	95	76	64	59	4.8 x 9	25	M4 x 2,5
CNW 891 / 15	Cable lugs	96	78	88	84	62	5.8 x 11	30	M4 x 4,0
CNW 891 / 20	Cable lugs	96	102	88	84	84	5.8 x 11	30	M4 x 4,0
CNW 891 / 28	Cable lugs	105	103	95	84	85	5.8 x 11	35	M5 x 10
CNW 891 / 34	Cable lugs	120	101	108	90	84	5.8 x 11	35	M5 x 16
CNW 891 / 40	Cable lugs	120	120	108	90	103	5.8 x 11	35	M6 x 16
CNW 891 / 55	Cable lugs	150	106	134	122	86	7 x 13	40	M6 x 25
CNW 891 / 70	Cable lugs	150	123	134	122	103	7 x 13	40	M8 x 35
CNW 891 / 85	CU rails	150	149	134	122	129	7 x 13	40	M8
CNW 891 / 100	CU rails	174	108	152	135	128	7 x 13	40	M8

REO CNW 891

Version with cable lugs

Version with CU rails



REO CNW 892

Single-phase intermediate circuit choke (2 conductor)



RoHS
COMPLIANT
2011/EG



Series REO CNW 892

Advantages

- Reduction of harmonic waves
- Damping of current peaks up to 70 %
- Compact design
- Advantages compared to the line choke:
 - Smaller size
 - Reduced material costs / price
 - Lower power dissipation
- Production according to UL insulation system E251513 possible

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Nominal power [kW]	Power dissipation [W]	Copper [kg]	Weight . ca. [kg]
CNW 892 / 8	800 V DC	8	9.4	3.7	19	0.4	1.2
CNW 892 / 11		11	6.2	5.5	22	0.5	1.3
CNW 892 / 15		15	4.8	7.5	30	1.1	2.5
CNW 892 / 20		20	3.3	11	33	1.1	2.5
CNW 892 / 28		28	2.4	15	35	1.3	3.6
CNW 892 / 34		34	2.0	18.5	39	1.3	3.6
CNW 892 / 40		40	1.6	22	43	2.1	5.4
CNW 892 / 55		55	1.2	30	48	2.3	6.5
CNW 892 / 70		70	0.98	37	55	3.8	8.9
CNW 892 / 85		85	0.81	45	70	0.5 / 1.5	13.3
CNW 892 / 100		100	0.67	55	73	0.5 / 1.5	10.5

REO CNW 892



Description

- Nominal voltage: $U \leq 800 \text{ V}$
- According to: EN 60289 / EN 61558
- Test voltage: L-PE 4000 V, AC/50 Hz, 60s
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Design: Mounted on brackets

Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- power supply
- wind turbines

Measurements

Type	Design	Measurements							connection
		L [mm]	W [mm]	H [mm]	N1 [mm]	N2 [mm]	D1 [mm]	A1 [mm]	Output optional
CNW 892 / 8	Cable lugs	80	53	110	50	39	4.8 x 9	25	M4 x 2,5
CNW 892 / 11	Cable lugs	80	63	110	50	49	4.8 x 9	25	M4 x 2,5
CNW 892 / 15	Cable lugs	100	67	138	63	50	6.0 x 10	30	M4 x 4,0
CNW 892 / 20	Cable lugs	100	67	138	63	50	6.0 x 10	30	M4 x 4,0
CNW 892 / 28	Cable lugs	100	82	138	63	65	6.0 x 10	30	M5 x 10
CNW 892 / 34	Cable lugs	100	82	138	63	65	6.0 x 10	30	M5 x 16
CNW 892 / 40	Cable lugs	120	86	160	76	67	7 x 13	35	M6 x 16
CNW 892 / 55	Cable lugs	120	96	160	76	77	7 x 13	35	M6 x 25
CNW 892 / 70	Cable lugs	152	90	205	100	71	7 x 13	35	M8 x 35
CNW 892 / 85	CU rails	160	105	215	100	81	7 x 13	40	25 x 3 / d=9
CNW 892 / 100	CU rails	160	105	215	100	81	7 x 13	40	25 x 3 / d=9

REO CNW 892

Image 1 - Version with cable lugs

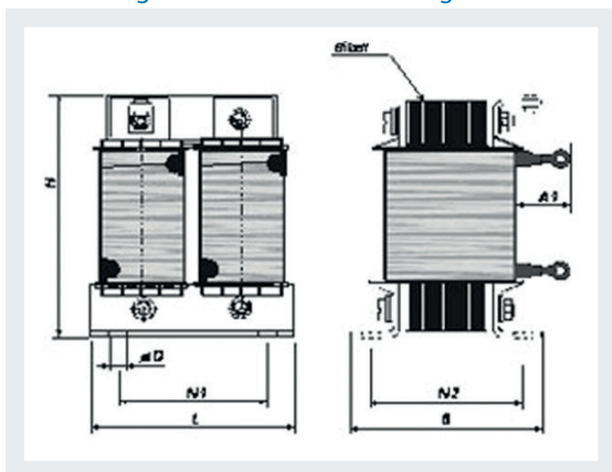
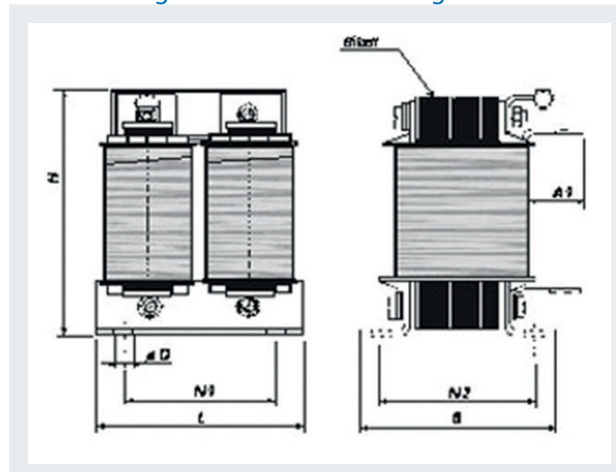


Image 2 - Version with CU lugs



REO CNW 806

Three-phase DV/DT filter



RoHS
COMPLIANT
2011/EG



Series REO CNW 806

Advantages

- Protection for electrical loads
- Limitation of voltage rise to $< 500 \text{ V}/\mu\text{s}$
- Extended service life for electrical loads
- Low leakage currents at the motor
- Low total loss
- Easy assembly
- Compact design
- Production according to UL insulation system E251513 possible

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Resistance [$\text{m}\Omega$]	Power dissipation [W]	U_k at 400 V [%]	U_k at 230 V [%]	U_k at 480 V [%]	U_k at 500 V [%]
CNW 806 / 4	400 - 500 V 50 / 60 Hz	4	1.5	37.0	7	0.8	1.4	0.7	0.7
CNW 806 / 10		10	0.6	13.8	13		1.4	0.7	0.7
CNW 806 / 18		18	0.33	5.8	17		1.4	0.7	0.7
CNW 806 / 24		24	0.245	4.7	22		1.4	0.7	0.6
CNW 806 / 37		37	0.16	2.7	29		1.4	0.7	0.6
CNW 806 / 48		48	0.123	1.8	33		1.4	0.7	0.6
CNW 806 / 65		65	0.09	0.65	37		1.4	0.7	0.6
CNW 806 / 90		90	0.065	0.4	46		1.4	0.7	0.6
CNW 806 / 120		120	0.05	0.45	60		1.4	0.7	0.7
CNW 806 / 150		150	0.039	0.35	80		1.4	0.7	0.6
CNW 806 / 180		180	0.033	0.35	100		1.4	0.7	0.7
CNW 806 / 200		200	0.029	0.29	100		1.4	0.7	0.6
CNW 806 / 250		250	0.024	0.22	130		1.4	0.7	0.7
CNW 806 / 300		300	0.02	0.15	130		1.4	0.7	0.7
CNW 806 / 350		350	0.017	0.12	130		1.4	0.7	0.7
CNW 806 / 400		400	0.015	0.1	150		1.4	0.7	0.7
CNW 806 / 500		500	0.012	0.1	200		1.4	0.7	0.7
CNW 806 / 600		600	0.010	0.08	250		1.4	0.7	0.7
CNW 806 / 700		700	0.008	0.07	260		1.3	0.6	0.6
CNW 806 / 800		800	0.007	0.06	280		1.3	0.6	0.6
CNW 806 / 900	900	0.0065	0.05	300	1.4	0.7	0.6		
CNW 806 / 1000	1000	0.006	0.05	360	1.4	0.7	0.7		
CNW 806 / 1200	1200	0.005	0.05	480	1.4	0.7	0.7		

CNW 806



Description

- Nominal voltage: $U \leq 3 \times 500 \text{ V}$
- Reduction of the voltage rise DV/DT to $< 500 \text{ V}/\mu\text{s}$
- Rotating field frequency: 0 - 60 Hz
- Clock frequency of the inverter: up to 150 A > 4 kHz, from 150 A > 1.5 kHz
- According to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, AC/50 Hz 60s; L-PE 2500 V, AC/50 Hz 60s
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Ambient temperature 40 °C)
- Design: Mounted on brackets

Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- power supply
- wind turbines

Dimensions table

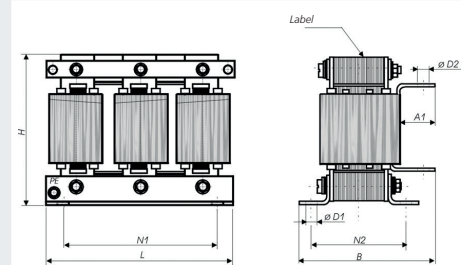
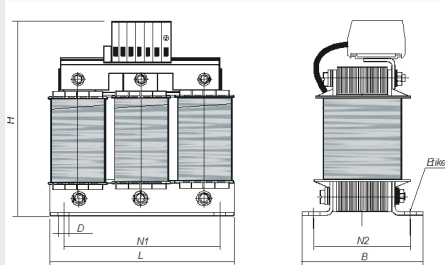
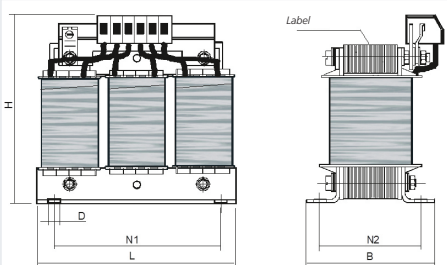
Type	L [mm]	W [mm]	H [mm]	N1 [mm]	N2 [mm]	D [mm]	Aluminum [kg]	Copper [kg]	Weight [kg]	connection	Figure
CNW 806 / 4	95	47	106	56	34	4.8 x 9.0	0	0.4	1.1	2.5 mm ²	1
CNW 806 / 10	95	56	106	56	43	4.8 x 9.0	0	0.5	1.5	2.5 mm ²	1
CNW 806 / 18	125	60	160	100	45	5 x 8	0	0.9	2.2	2.5 mm ²	2
CNW 806 / 24	125	60	160	100	45	5 x 8	0	1.0	2.3	4 mm ²	2
CNW 806 / 37	125	70	160	100	55	5 x 8	0	1.1	2.8	6 mm ²	2
CNW 806 / 48	155	77	187	130	57	8 x 12	0	1.6	4	10 mm ²	2
CNW 806 / 65	155	91	187	130	71	8 x 12	0	2.1	6	10 mm ²	2
CNW 806 / 90	190	110	157	170	67	8 x 12	0	3.0	9	25 x 3	3
CNW 806 / 120	230	108	200	176	71	9 x 13	0.9	0.7	10	25 x 3	3
CNW 806 / 150	240	115	209	185	74	10 x 18	0.8	0.9	11	30 x 3	3
CNW 806 / 180	240	125	210	185	84	10 x 18	0.7	0.8	13	30 x 3	3
CNW 806 / 200	240	128	210	185	84	10 x 18	0.9	1.0	14	30 x 4	3
CNW 806 / 250	300	121	262	224	78	10 x 18	1.1	1.3	16	30 x 4	3
CNW 806 / 300	300	124	262	224	78	10 x 18	1.7	1.3	16	30 x 4	3
CNW 806 / 350	300	136	263	224	78	10 x 18	2.4	2.2	18	40 x 5	3
CNW 806 / 400	300	151	263	224	95	10 x 18	2.2	2.2	24	40 x 5	3
CNW 806 / 500	300	159	294	224	95	10 x 18	3.3	2.6	27	40 x 5	3
CNW 806 / 600	300	177	293	224	105	10 x 18	2.5	4.4	32	40 x 8	3
CNW 806 / 700	300	177	325	224	105	10 x 18	3	4.9	35	40 x 8	3
CNW 806 / 800	300	194	325	224	105	10 x 18	3.8	5.2	36	40 x 8	3
CNW 806 / 900	420	207	387	316	124	13 x 20	5.5	10.7	55	60 x 10	3
CNW 806 / 1000	420	217	388	316	124	13 x 20	5.9	10.8	56	60 x 10	3
CNW 806 / 1200	420	217	389	316	124	13 x 20	6	10.8	56	60 x 10	3

CNW 806

Image 1

Image 2

Image 3

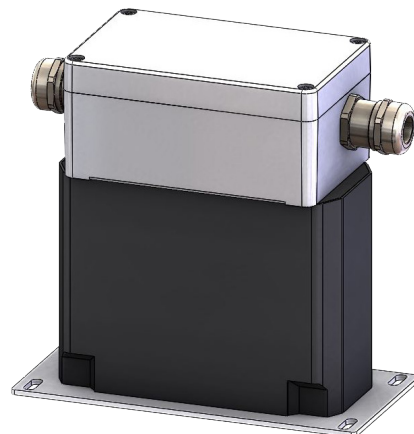


REO CNW M 833

Fully-cast three-phase DV/DT filter



RoHS
COMPLIANT
2011/EG



Series REO CNW M 833

Advantages

- Use in harsh environments
- Protection class: IP 00 - IP 66
- Optimum mechanical protection of the choke
- Protection for electrical loads
- Limitation of voltage rise to $< 500 \text{ V}/\mu\text{s}$
- Extended service life for electrical loads
- Low leakage currents at the motor
- Low total loss
- Very low noise
- Easy assembly
- Production according to UL insulation system E251513 possible

Technical details

Type	Protection class	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Capacitance [pF]	Weight [kg]	Clamp [mm ²]	Cable screw connection
CNW M 833 / 8	IP 64	3 x 400 ≤ 60 Hz	8	2	330	3.3	2.5	M20x1,5
CNW M 833 / 16	IP 64		16	0.9	330	4.5	6	M25x1.5
CNW M 833 / 36	IP 64		36	0.42	1500	9	16	M32x1.5
CNW M 833 / 60	IP 64		60	0.27	2200	25	35	M40x1.5
CNW M 833 / 90	IP 64		90	0.17	4700	27	35	M40x1.5
CNW M 833 / 180	IP 64		175	0.09	10000	40	95	M63x1.5

REO CNW M 833



Description

- Nominal voltage: $U \leq 3 \times 400 \text{ V}$
- Reduction of the voltage rise DV/DT to $< 500 \text{ V}/\mu\text{s}$
- Max length of supply cable to motor: 200 m
- Rotating field frequency: 10 - 60 Hz
- Short-circuit voltage U_K at 400 V: 0.8 %
- Clock frequency of the inverter: $4 \text{ kHz} > f_t < 8 \text{ kHz}$
- According to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, AC/50 Hz 60 s; L-PE 2500 V, AC/50Hz 60 s
- Insulation class: T40/F
- Protection class: IP 00 - IP 66
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Ambient temperature 40 °C
- Design: Mounted on brackets

Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- power supply
- wind turbines

Measurements

Type	Measurements															De-sign
	Protection class	L1 [mm]	L2 [mm]	L3 [mm]	W1 [mm]	W2 [mm]	W3 [mm]	W4 [mm]	W5 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	N1 [mm]	N2 [mm]	D [mm]	
CNW M 833 / 8	IP 54	170	140	150	80	80	55	20,5	5,5	170	57	75	135	65	5.5x7	3
CNW M 833 / 16	IP 54	180	140	170	85	80	65	10,5	5,5	170	57	75	155	70	5.5x7	3
CNW M 833 / 36	IP 54	245	175	175	115	120	80	20	20	250	140	110	155	95	5.5x15	3
CNW M 833 / 60	IP 54	315	249	255	180	175	120	30	27	323	218	105	185	150	9x13	3
CNW M 833 / 90	IP 54	315	250	255	180	175	120	30	25	325	218	105	185	150	9x13	3
CNW M 833 / 180	IP 54	355	270	-	127	200	160	105	8	350	220	130	185	105	10x18	4

CNW M 833

Image 1

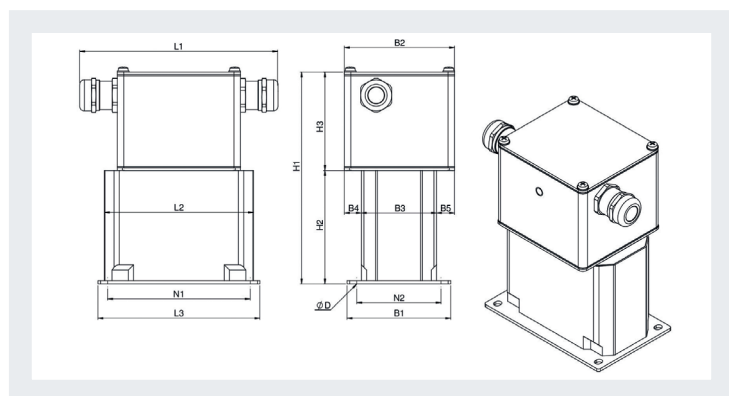
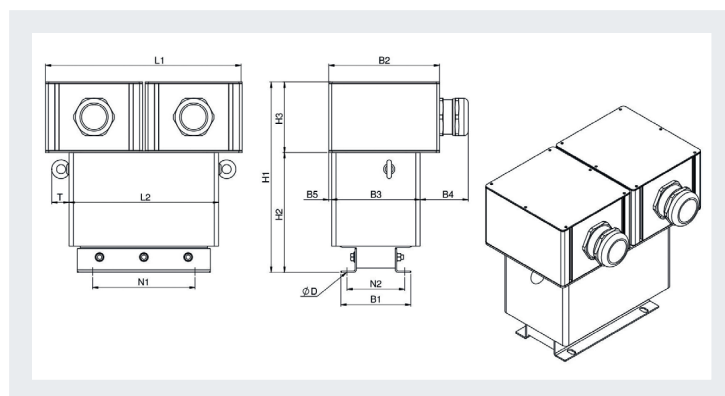


Image 2



REO CNW 854

Three-phase motor choke

Advantages

- Protection for electrical loads
- Limitation of voltage rise to $< 200 \text{ V}/\mu\text{s}$
- Extended service life for electrical loads
- Reduction of audible motor noise
- Low leakage currents at the motor
- Longer motor cables possible
- Easy assembly
- Compact design
- Production according to UL insulation system E251513 possible

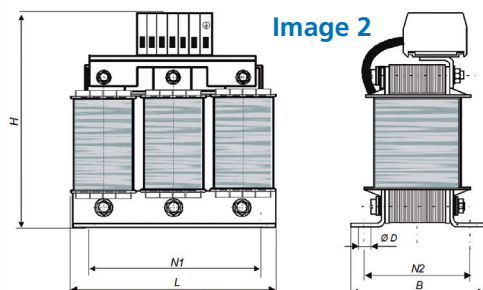
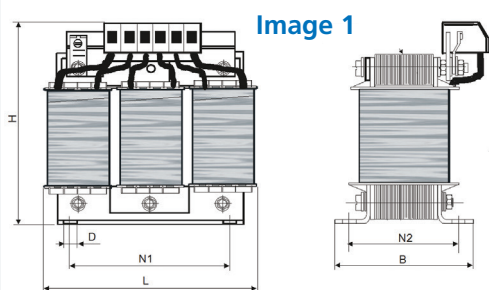


Series REO CNW 854

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Copper / Alu [kg]	Total [kg]
CNW 854 / 2	up to 3 x 500 50 / 60 Hz	2	7.0	0.2 / --	2.0
CNW 854 / 4		4	3.6	0.4 / --	2.0
CNW 854 / 6		6	2.3	0.4 / --	2.0
CNW 854 / 8		8	1.8	0.4 / --	2.0
CNW 854 / 10		10	1.7	0.8 / --	3.0
CNW 854 / 12		12	1.2	0.8 / --	2.7
CNW 854 / 16		16	0.9	0.8 / --	2.7
CNW 854 / 24		24	0.7	1.9 / --	4.4
CNW 854 / 30		30	0.5	2.0 / --	4.4
CNW 854 / 37		37	0.42	2.6 / --	6.3
CNW 854 / 48		48	0.38	3.6 / --	8.0
CNW 854 / 60		60	0.28	4.3 / --	8.4
CNW 854 / 75		75	0.22	3.6 / --	10.0
CNW 854 / 90		90	0.17	3.9 / --	11.6
CNW 854 / 115		115	0.14	8.7 / --	20.5
CNW 854 / 150		150	0.12	8.9 / --	21.5
CNW 854 / 180		180	0.090	0.9 / 2.3	32.0
CNW 854 / 200		200	0.080	1.3 / 2.1	41.0
CNW 854 / 250		250	0.065	1.3 / 1.8	45.0
CNW 854 / 300		300	0.053	1.5 / 2.7	44.0
CNW 854 / 350		350	0.046	2.6 / 4.6	50.0
CNW 854 / 400		400	0.041	2.6 / 4.9	58.0
CNW 854 / 500		500	0.032	2.6 / 5.2	62.0
CNW 854 / 600		600	0.028	5.0 / 5.9	65.0
CNW 854 / 700	700	0.024	5.0 / 5.7	86.0	
CNW 854 / 800	800	0.021	6.6 / 9.0	108.0	
CNW 854 / 900	900	0.018	13.8 / 7.6	114.0	
CNW 854 / 1000	1000	0.016	13.8 / 7.6	114.0	
CNW 854 / 1200	1200	0.013	13.8 / 8.0	122	

REO CNW 854





Description

- Nominal voltage: $U \leq 3 \times 500 \text{ V}$
- Reduction of the voltage rise DV/DT to $< 200 \text{ V}/\mu\text{s}$
- Rotating field frequency: $0 - 60 \text{ Hz}$
- Clock frequency of the inverter: up to $150 \text{ A} > 4 \text{ kHz}$, from $150 \text{ A} > 1.5 \text{ kHz}$
- According to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, AC/50 Hz 60 s; L-PE 2500 V, AC/50 Hz 60 s
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Ambient temperature $40 \text{ }^\circ\text{C}$
- Design: Mounted on brackets

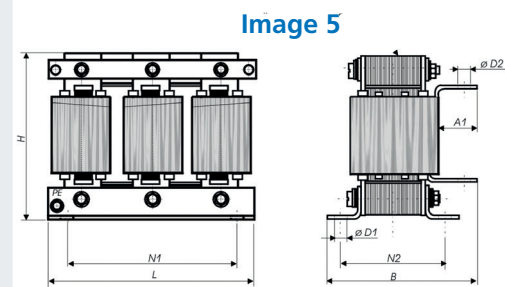
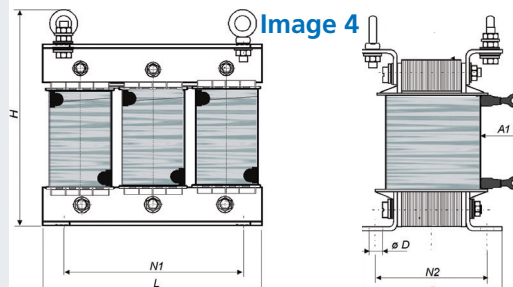
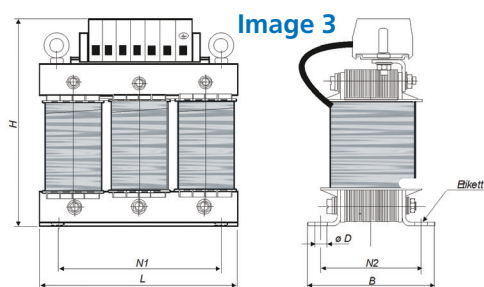
Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- Power supply
- wind turbines

Measurements

Type	Design	L [mm]	H [mm]	W [mm]	N1 [mm]	N2 [mm]	$\phi D1$ [mm]	A1 [mm]	Image	Connection [mm ²]
CNW 854 / 2	Clamps	95	107	47	56	34	4.8 x 9	-	1	1.5
CNW 854 / 4	Clamps	95	108	47	56	34	4.8 x 9	-	1	1.5
CNW 854 / 6	Clamps	95	107	56	56	43	4.8 x 9	-	1	1.5
CNW 854 / 8	Clamps	95	106	56	56	43	4.8 x 9	-	1	2.5
CNW 854 / 10	Clamps	125	158	61	100	45	5 x 8	-	2	3
CNW 854 / 12	Clamps	125	158	71	100	55	5 x 8	-	2	3
CNW 854 / 16	Clamps	125	158	71	100	55	5 x 8	-	2	6
CNW 854 / 24	Clamps	155	185	76	130	56	8 x 12	-	2	10
CNW 854 / 30	Clamps	155	185	76	130	56	8 x 12	-	2	10
CNW 854 / 37	Clamps	155	185	91	130	71	8 x 12	-	2	10
CNW 854 / 48	Clamps	190	220	81	170	57	8 x 12	-	2	16
CNW 854 / 60	Clamps	190	230	81	170	57	8 x 12	-	2	35
CNW 854 / 75	Clamps	190	225	91	170	67	8 x 12	-	2	35
CNW 854 / 90	Clamps	190	230	101	170	77	8 x 12	-	2	35
CNW 854 / 115	Clamps	240	300	106	185	84	10 x 18	-	3	50
CNW 854 / 150	Cable lugs	240	260	106	185	84	10 x 18	75	4	M12 95
CNW 854 / 180	CU rails	340	292	162	248	110	10 x 18	37	5	11
CNW 854 / 200	CU rails	300	263	200	224	145	10 x 18	39	5	11
CNW 854 / 250	CU rails	300	262	209	224	155	10 x 18	39	5	11
CNW 854 / 300	CU rails	360	311	181	264	137	10 x 18	39	5	11
CNW 854 / 350	CU rails	360	310	199	264	142	10 x 18	49	5	13
CNW 854 / 400	CU rails	360	312	214	264	157	10 x 18	49	5	13
CNW 854 / 500	CU rails	360	309	224	264	167	10 x 18	49	5	13
CNW 854 / 600	CU rails	420	364	213	316	144	13 x 20	59	5	13
CNW 854 / 700	CU rails	420	365	246	316	174	13 x 20	59	5	13
CNW 854 / 800	CU rails	420	477	256	316	174	13 x 20	69	5	2 x 13
CNW 854 / 900	CU rails	420	474	264	316	174	13 x 20	79	5	2 x 13
CNW 854 / 1000	CU rails	420	475	264	316	174	13 x 20	79	5	2 x 13
CNW 854 / 1200	CU rails	420	479	274	316	184	13 x 20	79	5	2 x 13

REO CNW 854

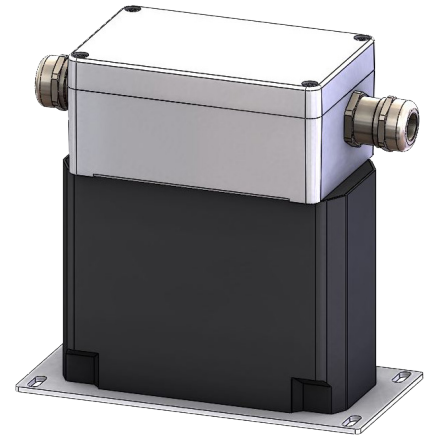


REO CNW M 854

Fully cast three-phase motor choke

Advantages

- Use in harsh environments
- IP 66
- Connection options include: Cables, Clamps, Terminals
- Customer-specific mounting plate possible
- Lower surface temperature
- Protection for electrical loads
- Limitation of voltage rise to < 500 V/μs
- Extended service life for electrical loads
- Reduction of audible motor noise
- Low leakage currents at the motor
- Longer motor cables possible
- Easy assembly and compact design
- Production according to UL insulation system E251513 possible



Series REO CNW M 854

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Copper [kg]	Total [kg]	Cables [mm ²]
CNW M 854 / 6	up to 3 x 500	6	2.3	0.5	1.7	1.5
CNW M 854 / 8		8	2.0	0.5	1.7	1.5
CNW M 854 / 10		10	1.7	0.9	2.8	1.5
CNW M 854 / 12		12	1.1	1.1	3.7	1.5
CNW M 854 / 16		16	0.9	1.1	3.7	2.5
CNW M 854 / 24		24	0.8	1.7	4.6	4.0
CNW M 854 / 30		30	0.5	1.7	4.6	4.0
CNW M 854 / 37		37	0.4	2.1	7.2	6.0

REO CNW M 854



Description

- Nominal voltage: $U \leq 3 \times 500 \text{ V}$
- Reduction of the voltage rise DV/DT to $< 200 \text{ V}/\mu\text{s}$
- Rotating field frequency: 0 - 60 Hz
- Clock frequency of the inverter: up to $150 \text{ A} > 4 \text{ kHz}$, from $150 \text{ A} > 1.5 \text{ kHz}$
- According to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, AC/50 Hz 60s; L-PE 2500 V, AC/50 Hz 60s
- Insulation class: T40/F
- Protection class: IP 66
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Ambient temperature $40 \text{ }^\circ\text{C}$
- Design: Mounted on brackets

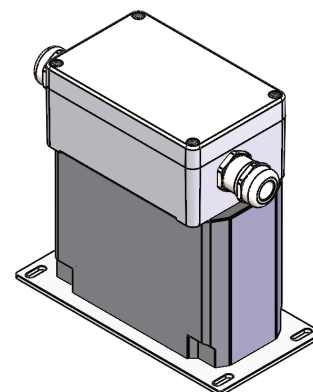
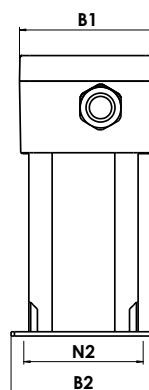
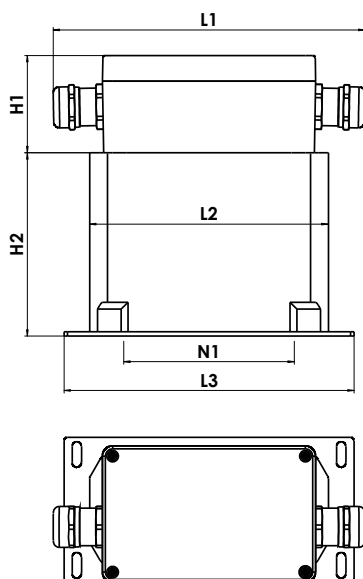
Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- Power supply
- wind turbines

Measurements

Typ	L1 (mm)	B1 (mm)	H1 (mm)	Bolting	Clamp	L2 (mm)	L3 (mm)	B2 (mm)	H2 (mm)	N1 (mm)	N2 (mm)	ØD (mm)
CNW M 854/6	185	80	57	M20	4mm ²	115	100	74	88	80	60	5,5 x 7,0
CNW M 854/8	185	80	57	M20	4mm ²	115	100	74	88	80	60	5,5 x 7,0
CNW M 854/10	185	80	57	M20	4mm ²	140	125	77	113	100	60	5,5 x 7,0
CNW M 854/12	185	80	57	M20	4mm ²	140	125	87	113	100	70	5,5 x 7,0
CNW M 854/16	185	80	57	M20	6mm ²	140	125	87	113	100	70	5,5 x 7,0
CNW M 854/24	190	80	57	M25	6mm ²	175	155	99	137	130	79	5,5 x 7,0
CNW M 854/30	190	80	57	M25	16mm ²	175	155	99	137	130	79	5,5 x 7,0
CNW M 854/37	190	80	57	M25	16mm ²	175	155	114	137	130	94	5,5 x 12,0

CNW M 854



REO CNW 931

Single-phase sinusoidal filter 6.15 % U_k



RoHS
COMPLIANT
2011/EC

Advantages

- Minimal thermal losses
- Low noise
- Production according to UL insulation system 251513 possible
- Easy connection
- Use with motor cables up to 1000 meters possible
- Reduction in use of shielded cable possible



Series REO CNW 931

Technical details

Type	Nominal current [A]	Inductance [mH]	Resistance R20 [mΩ]	Capacitance [pF]	Power dissipation [W]	U _k @ 230 V	U _k @ 133 V	U _k @ 400 V	Copper [kg]
CNW 931 / 3	3	15	349.5	6.8	17	6.2 %	10.6 %	3.5 %	0.15
CNW 931 / 4	4	11.3	275.2	10	22	6.2 %	10.7 %	3.6 %	0.23
CNW 931 / 6	6	7.5	133.1	10	29	6.2 %	10.6 %	3.5 %	0.29
CNW 931 / 8	8	5.6	94.4	20	33	6.1 %	10.6 %	3.5 %	0.33
CNW 931 / 10	10	4.5	62.2	20	37	6.2 %	10.6 %	3.5 %	0.53
CNW 931 / 12	12	3.75	59.9	20	43	6.2 %	10.6 %	3.5 %	0.64
CNW 931 / 16	16	2.8	43.4	20	56	6.1 %	10.6 %	3.5 %	0.82

REO CNW 931



Description

- Ambient temperature 50 °C)
- Protection class: IP 00
- Insulation class: F
- Linearity: LN at 1.2 x IN u. $\geq 0.8 \times LN$ by 1.5 x IN
- Test voltage: 3 kV
- Nominal voltage: 230 V
- U_k : 6.15 %
- Overvoltage category: 2
- Level of contamination 2
- Cooling: TO
- Switching frequency: ≥ 4 kHz
- Current ripple ≤ 20 % at 4 kHz

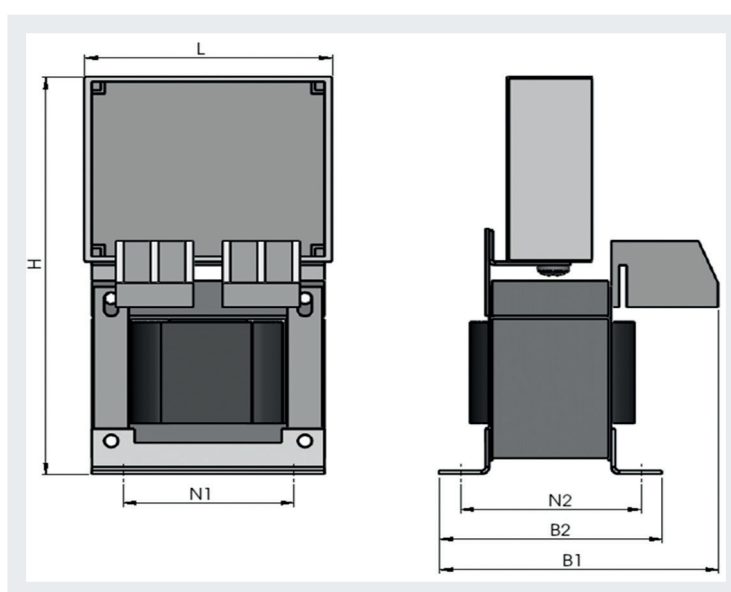
Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- Power supply
- wind turbines



Measurements

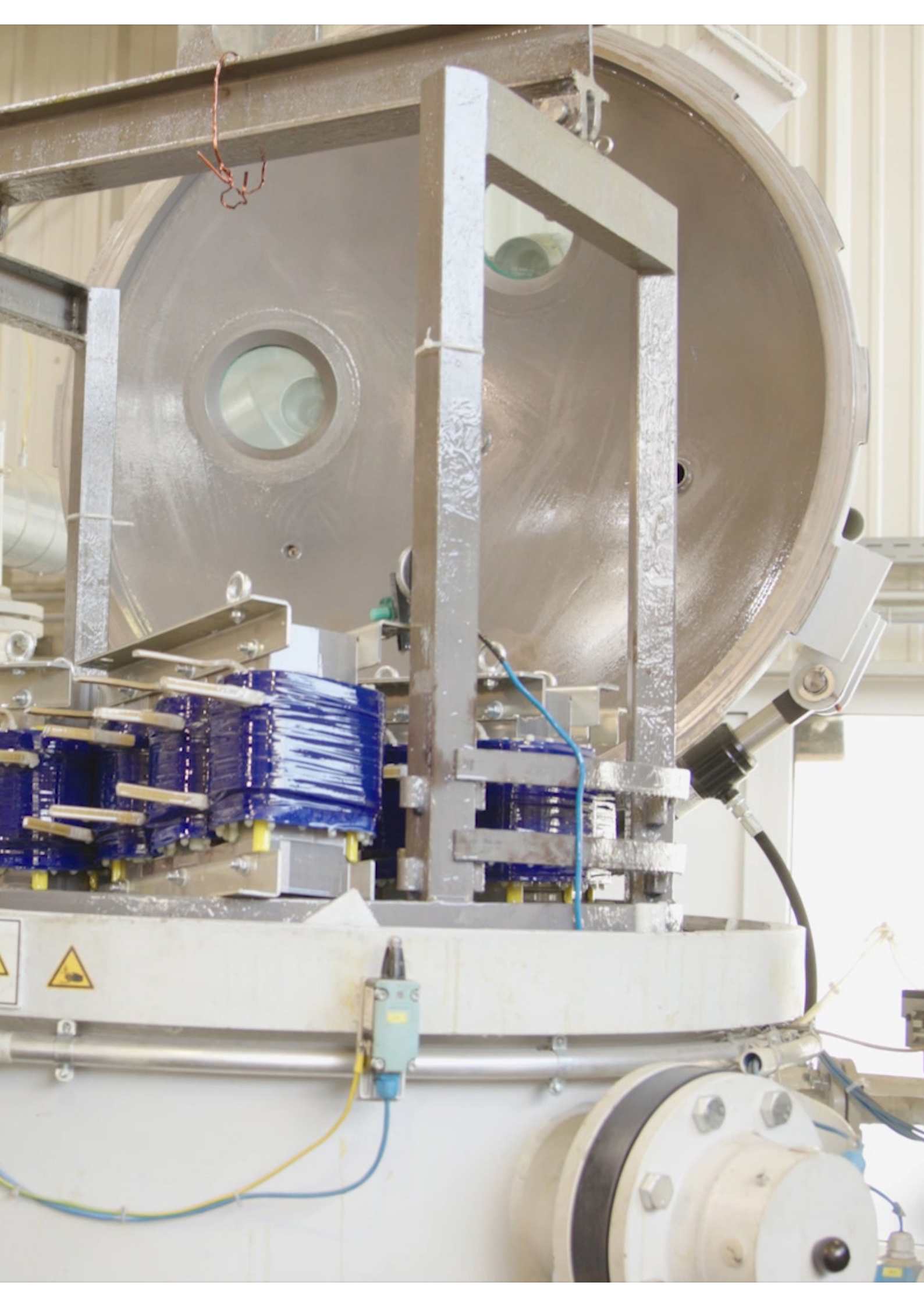
Type	L [mm]	W1 [mm]	W2 [mm]	H [mm]	N1 [mm]	N2 [mm]	Clamp [mm ²]	Weight [kg]
CNW 931 / 3	64	72	59	115	44	47	1.5 mm ²	0.9
CNW 931 / 4	66	74	64	130	50	49	1.5 mm ²	1.1
CNW 931 / 6	83	80	69	153	56	56	1.5 mm ²	1.8
CNW 931 / 8	83	80	69	153	56	56	2.5 mm ²	1.9
CNW 931 / 10	84	90	84	160	71	71	2.5 mm ²	2.5
CNW 931 / 12	96	86	86	170	80	71	2.5 mm ²	3
CNW 931 / 16	96	110	110	170	80	95	2.5 mm ²	4.4

CNW 931



REO
www.reo.de

 Aufhängewerkzeug
max. Belastung 2,5 t 

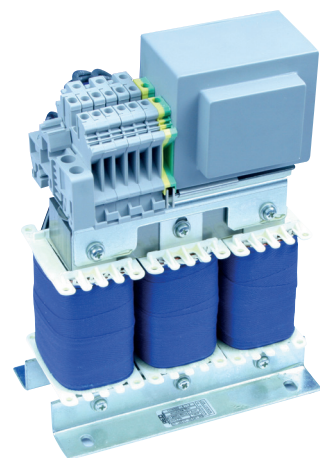


REO CNW 933

Three phase sinusoidal filter



RoHS
COMPLIANT
2011/EG



Series REO CNW 933

Advantages

- Output voltage is sinusoidal
- DV/DT is eliminated
- High damping of interference emissions from the lines
- Effective against symmetrical disturbances
- Motor cables up to 1000 m possible
- Savings in shielded cable possible
- Extended service life for electrical loads
- Reduction of motor noises
- Low leakage currents at the motor
- Easy assembly
- Production according to UL insulation system E251513 possible

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Capacitance [pF]	Power dissipation [W]	Copper / Alu [kg]	Weight [kg]
CNW 933 / 2	3 x 500	2	25	0.22	20	0,5 / --	1.15
CNW 933 / 4		4	12.5	1	30	0,9 / --	2.4
CNW 933 / 6		6	7.5	2.2	40	0,8 / --	2.9
CNW 933 / 8		8	5.8	2.2	40	0,9 / --	3
CNW 933 / 10		10	5.6	2.2	50	1,9 / --	4.6
CNW 933 / 12		12	4.3	3.3	60	1,6 / --	6
CNW 933 / 16		16	3.4	3.3	90	2,9 / --	8
CNW 933 / 20		20	2.9	1.5	90	3,3 / --	9.3
CNW 933 / 24		24	2.4	2.2	100	3,6 / --	11
CNW 933 / 30		30	1.9	2.2	70	7,4 / --	16
CNW 933 / 37		37	1.6	3.3	120	8,3 / --	20.5
CNW 933 / 48		48	1.2	4.7	150	8 / --	22
CNW 933 / 60		60	0.95	6.8	160	10 / --	27
CNW 933 / 75		75	0.79	6.8	160	13,8 / --	34
CNW 933 / 90		90	0.68	8	200	12,6 / --	40
CNW 933 / 115		115	0.6	12	370	13,4 / --	65
CNW 933 / 120		120	0.5	18	340	-- / 6,6	58
CNW 933 / 150		150	0.326	47	310	-- / 7,1	61
CNW 933 / 180		180	0.325	40	390	-- / 8,0	76
CNW 933 / 200		200	0.293	47	550	-- / 5,7	79
CNW 933 / 250		250	0.236	68	620	-- / 6,9	89
CNW 933 / 350		350	0.167	68	810	-- / 11,3	104
CNW 933 / 400		400	0.146	120	980	-- / 11,3	106
CNW 933 / 450		450	0.13	120	960	-- / 12,3	122
CNW 933 / 500		500	0.118	120	1020	-- / 16,5	125
CNW 933 / 600		600	0.103	180	1350	-- / 14,4	145
CNW 933 / 700		700	0.085	180	1180	-- / 20,7	164
CNW 933 / 750		750	0.078	120 + 80	1490	-- / 20,7	167
CNW 933 / 800		800	0.074	220	1530	-- / 21,4	175
CNW 933 / 900		900	0.065	180 + 40	1970	-- / 25,4	232
CNW 933 / 1000	1000	0.059	120 + 120	2400	-- / 22,6	229	
CNW 933 / 1200	1200	0.05	220 + 220	2410	-- / 35,4	309	

REO CNW 933



Description

- Nominal voltage: $U \leq 3 \times 500 \text{ V}$
- Max. voltage ripple: 5 %
- Rotating field frequency: 0 - 60 Hz
- Clock frequency of the inverter: up to $150 \text{ A} > 4 \text{ kHz}$, from $150 \text{ A} > 1.5 \text{ kHz}$
- Short-circuit voltage U_K : 8 % (at 400V)
- Voltage drop: 18.4 V/strand (at I_{Rated} and 50 Hz)
- Max length of supply cable to motor:
600m (unshielded) 1000m (shielded)
- According to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, AC/50 Hz 60s; L-PE 2500 V, AC/50 Hz 60s
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Ambient temperature 40 °C
- Design: Mounted on brackets

Typical applications

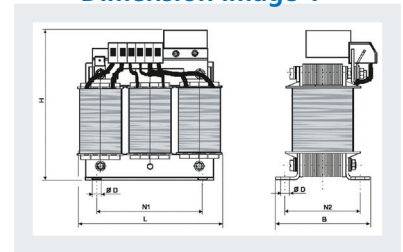
- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- Power supply
- wind turbines

Measurements

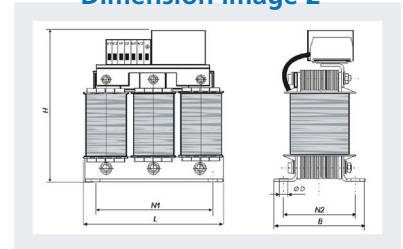
Type	Image	L [mm]	W/W1 [mm]	W2 [mm]	H [mm]	N1 [mm]	N2 [mm]	øD [mm]	A1 [mm]	Connection [mm ²]
CNW 933 / 2	1	95	47	-	105	56	34	5 x 8	-	1.5
CNW 933 / 4	2	125	61	-	167	100	43	5 x 8	-	2.5
CNW 933 / 6	2	125	72	-	175	100	56	5 x 8	-	2.5
CNW 933 / 8	2	125	72	-	175	100	56	5 x 8	-	2.5
CNW 933 / 10	2	155	77	-	205	130	57	8 x 12	-	4
CNW 933 / 12	2	155	91	-	205	130	71	8 x 12	-	4
CNW 933 / 16	2	190	82	-	235	170	58	8 x 12	-	4
CNW 933 / 20	3	190	125	-	215	170	68	8 x 12	-	10
CNW 933 / 24	3	190	135	-	215	170	78	8 x 12	-	10
CNW 933 / 30	3	230	130	-	255	176	71	9 x 13	-	10
CNW 933 / 37	3	240	160	-	275	185	85	10 x 18	-	16
CNW 933 / 48	3	240	170	-	275	185	95	10 x 18	-	16
CNW 933 / 60	4	240	180	-	285	185	105	10 x 18	-	35
CNW 933 / 75	4	300	170	-	355	224	95	10 x 18	-	50
CNW 933 / 90	4	300	205	-	355	224	120	10 x 18	-	50
CNW 933 / 115	4	360	218	-	412	264	157	10 x 18	-	95
CNW 933 / 120	5	360	258	183	351	264	157	10x18	32	9
CNW 933 / 150	5	360	298	183	345	264	157	10x18	37	11
CNW 933 / 180	5	360	321	213	353	264	187	10x18	37	11
CNW 933 / 200	5	360	329	213	347	264	187	10x18	39	11
CNW 933 / 250	5	360	338	223	348	264	197	10x18	39	11
CNW 933 / 350	5	480	327	204	446	356	149	13x20	49	13
CNW 933 / 400	5	450	348	204	445	356	168	13x20	49	13
CNW 933 / 450	5	480	365	221	450	356	185	13x20	49	13
CNW 933 / 500	5	480	364	221	448	356	185	13x20	49	13
CNW 933 / 600	5	480	370	221	528	356	185	13x20	59	13
CNW 933 / 700	5	480	386	234	530	356	198	13x20	59	13
CNW 933 / 750	5	480	386	234	531	356	198	13x20	59	13
CNW 933 / 800	5	480	406	244	524	356	208	13x20	69	2x13
CNW 933 / 900	5	550	610	254	560	356	174	13x26	79	2x13
CNW 933 / 1000	5	550	606	254	557	356	174	13x26	79	2x13
CNW 933 / 1200	5	550	665	264	703	356	184	13x26	79	2x13

REO CNW 933

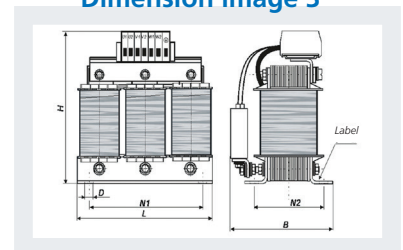
Dimension image 1



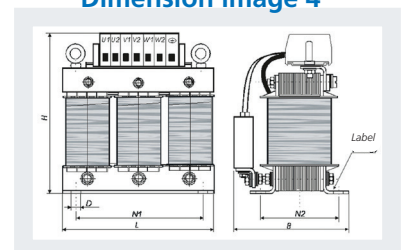
Dimension image 2



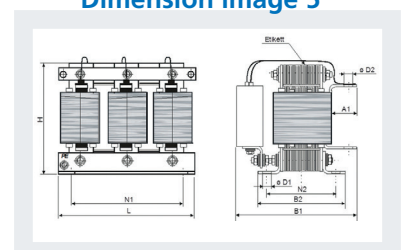
Dimension image 3



Dimension image 4



Dimension image 5



REO CNW M 933

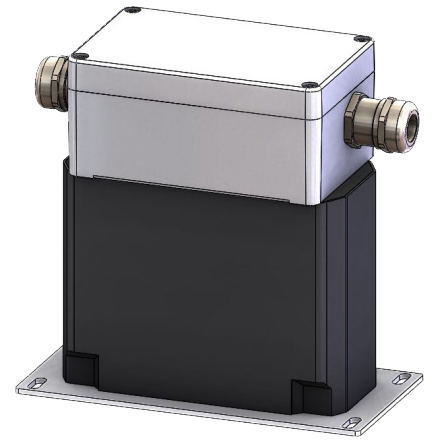
Fully cast three-phase sinusoidal filter

Advantages

- Use in harsh environments
- Optimum mechanical protection of the choke
- Upgrade to IP 66 possible
- Various connection options
- Customer-specific mounting plate possible
- Lower surface temperature
- Output voltage is sinusoidal
- Greatly reduced DV/DT
- High damping of interference emissions from the lines
- Motor cables up to 1000 m possible
- Extended service life for electrical loads
- Production according to UL insulation system E251513 possible



RoHS
COMPLIANT
2011/EG



Series REO CNW M 933

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance [mH]	Capacitance [μ F]	Copper weight [kg]	Weight [kg]	Strand [mm ²]
CNW M 933 / 2	up to 3 x 500	2	29.3	0.22	0.9	2.9	1.5
CNW M 933 / 4		4	14.6	0.33	0.9	2.9	1.5
CNW M 933 / 6		6	9.7	0.73	1.0	3.6	1.5
CNW M 933 / 8		8	5.3	0.73	1.0	3.6	1.5
CNW M 933 / 10		10	5.0	0.73	1.8	5.8	1.5
CNW M 933 / 12		12	4.9	1.1	2.3	7.5	1.5
CNW M 933 / 16		16	3.6	1.1	3.2	9.0	2.5
CNW M 933 / 20		20	2.9	1.5	3.6	13.0	4.0
CNW M 933 / 24		24	2.4	2.2	3.6	13.0	4.0
CNW M 933 / 30		30	2.0	2.2	10.0	28.0	6.0
CNW M 933 / 37		37	1.9	3.3	11.0	29.0	6.0

REO CNW M 933



Description

- Nominal voltage: $U \leq 3 \times 500 \text{ V}$
- Max. voltage ripple: 5 %
- Rotating field frequency: 0 - 60 Hz
- Clock frequency of the inverter: up to 150 A > 4 kHz, from 150 A > 1.5 kHz
- Short-circuit voltage U_K : 8 % (at 400 V)
- Voltage drop: 18.4 V/strand (at I_{Rated} and 50 Hz)
- Max. length of supply cable to motor:
600 m (unshielded) 1000 m (shielded)
- According to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, AC/50 Hz 60s; L-PE 2500 V, AC/50 Hz 60s
- Insulation class: T40/F
- Protection class: IP 00
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h
- Ambient temperature 40 °C)
- Design: Constructed on mounting plate

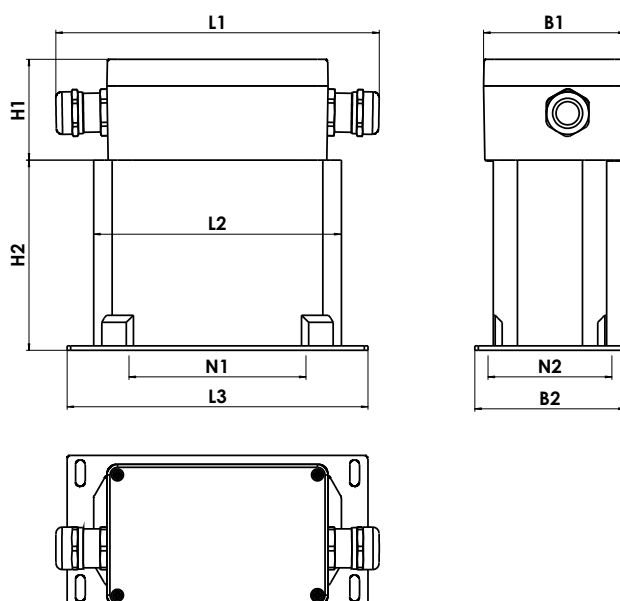
Typical applications

- Drive technology for motor drives, e.g.
 - mechanical engineering
 - elevators / escalators
 - pumping
 - materials handling
 - ventilation and climate technology
 - robot technology
- automation technology
- Power supply
- wind turbines

Measurements

Typ	L1 (mm)	B1 (mm)	H1 (mm)	Bolting	Clamp		L2 (mm)	L3 (mm)	B2 (mm)	H2 (mm)	N1 (mm)	N2 (mm)	ØD (mm)
CNW M 933/2	185	80	57	M20	4mm ²	IP66	140	125	77	113	100	60	5,5 x 7,0
CNW M 933/4	185	80	57	M20	4mm ²	IP66	140	125	77	113	100	60	5,5 x 7,0
CNW M 933/6	185	80	57	M20	4mm ²	IP66	140	125	87	113	100	70	5,5 x 7,0
CNW M 933/8	185	80	57	M20	4mm ²	IP66	140	125	87	113	100	70	5,5 x 7,0
CNW M 933/10	200	80	80	M20	4mm ²	IP64*	175	155	99	137	130	79	5,5 x 12,0
CNW M 933/12	200	80	80	M20	4mm ²	IP64*	175	155	114	137	130	94	5,5 x 12,0
CNW M 933/16	200	120	100	M20	6mm ²	IP64*	195	200	125	165	165	100	9,0 x 13,0
CNW M 933/20	200	120	100	M25	6mm ²	IP64*	195	200	145	165	165	120	9,0 x 13,0
CNW M 933/24	200	120	100	M25	6mm ²	IP64*	195	200	145	165	165	120	9,0 x 13,0
CNW M 933/30	210	120	110	M32	16mm ²	IP64*	250	255	180	220	185	150	9,0 x 13,0
CNW M 933/37	210	120	110	M32	16mm ²	IP64*	250	255	180	220	185	150	9,0 x 13,0

*IP64 optionally available as IP66



CNW M 933

REO CNW 961

Triple-phase Sinusoidal Filter Plus**



RoHS
COMPLIANT
2011/EG



Series REO CNW 961

Advantages

- Distortion factor U off < 5%
- Use of unshielded cables is possible
- Low EMC interference from parallel conductors
- Simple internal EMC filter sufficient in the frequency converter
- No external mains filters required
- Compact and low-noise

Technical details

Type	Nominal voltage [V]	Nominal current [A]	Inductance Total [mH]	Capacitance [μ F]	Copper [kg]	Weight [kg]
CNW 961 / 2	up to 3 x 500	2	33.4	0.11	1.4	5.2
CNW 961 / 4		4	16.7	0.34	1.65	5.5
CNW 961 / 6		6	11.0	0.50	3.0	5.8
CNW 961 / 10		10	6.60	1.10	4.5	9.1
CNW 961 / 16		16	4.20	1.10	5.0	13.0
CNW 961 / 24		24	2.83	1.50	6.5	17.3
CNW 961 / 30		30	2.20	2.20	12.0	37.0
CNW 961 / 37		37	1.64	2.20	12.5	38.0
CNW 961 / 48		48	1.41	3.30	16.2	42.0
CNW 961 / 60		60	0.91	4.70	17.0	62.0

REO CNW 961

Minimum clock frequency 8 kHz

**The inverter load is increased by feedback into the DC Link.
Please check if the inverter is suitable for this!**



Description

- According to: NDS 61558-2-20
- Test voltage: L-L 1000 V, DC 1 min; L-PE 2500 V, DC 1 min
- Nominal voltage: $\underline{U} = 3 \times 500 \text{ V}$
- Insulation class: T40/B
- Climate category: DIN IEC 60068-1
- Overload: $1.5 \times I_{\text{Rated}}$ 1 min/h

Typical applications

Water treatment - in particular heat pumps and material safety in general

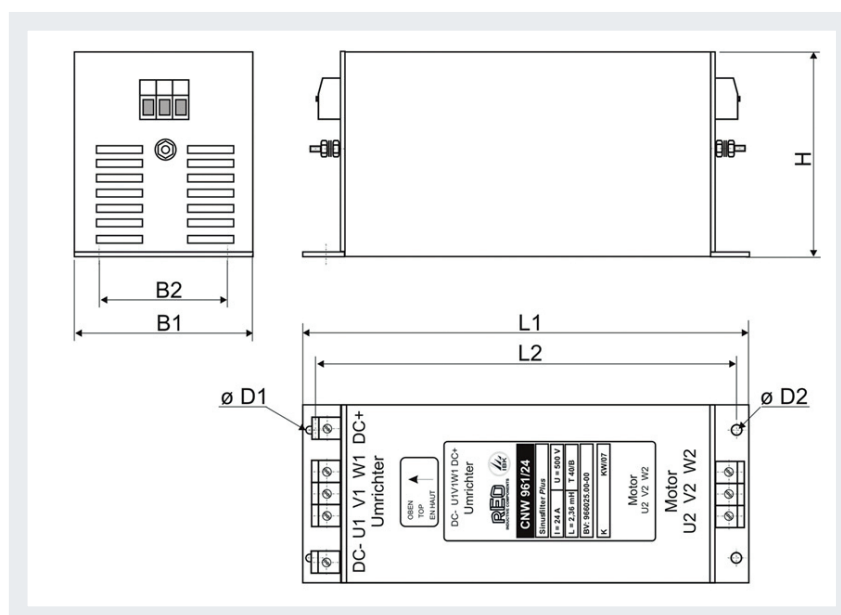
With the REO Sinusoidal Filter Plus++, not only the mains leads to the motor, are suppressed but also the Earth conductor. Bearing currents generated in the motor are fed through the REO Sinusoidal Filter Plus++ into the DC link so that they cannot cause mechanical damage.

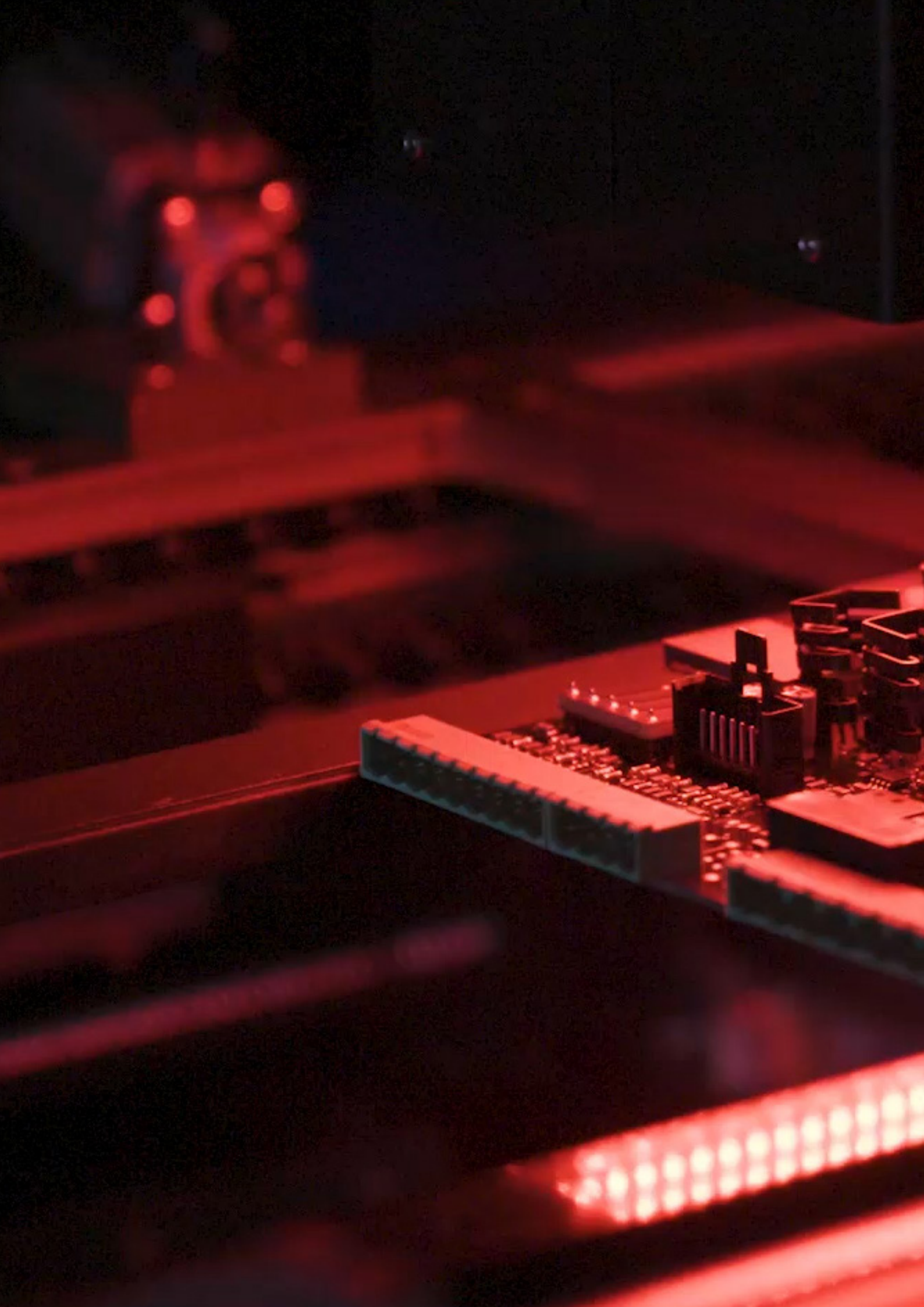
The REO Sinusoidal Filters Plus++ are used wherever safe continuous mechanical performance and reliability are required.

Measurements

Type	Measurements							Connections		
	L1 [mm]	L2 [mm]	W1 [mm]	W2 [mm]	H [mm]	Ø D1 [mm]	Ø D2 [mm]	PE-Bolt [mm]	Converter [terminals]	Motor [terminals]
CNW 961 / 2	366	351	90	60	175	7	7 x 10	M6	4 mm ²	4 mm ²
CNW 961 / 4	366	351	90	60	175	7	7 x 10	M6	4 mm ²	4 mm ²
CNW 961 / 6	366	3541	90	60	175	7	7 x 10	M6	4 mm ²	4 mm ²
CNW 961 / 10	470	455	90	60	175	7	7 x 10	M6	4 mm ²	4 mm ²
CNW 961 / 16	525	500	150	110	190	9 x 15	9 x 15	M6	4 mm ²	4 mm ²
CNW 961 / 24	655	630	150	110	190	9 x 17	9 x 17	M6	6 mm ²	6 mm ²
CNW 961 / 30	608	584	300	200	230	9 x 17	9	M6	16 mm ²	16 mm ²
CNW 961 / 37	608	584	300	200	230	9 x 17	9	M6	16 mm ²	16 mm ²
CNW 961 / 48	620	570	300	200	245	9	9	M6	16 mm ²	16 mm ²
CNW 961 / 60	620	570	350	250	242	9	9	M6	25 mm ²	25 mm ²

REO CNW 961



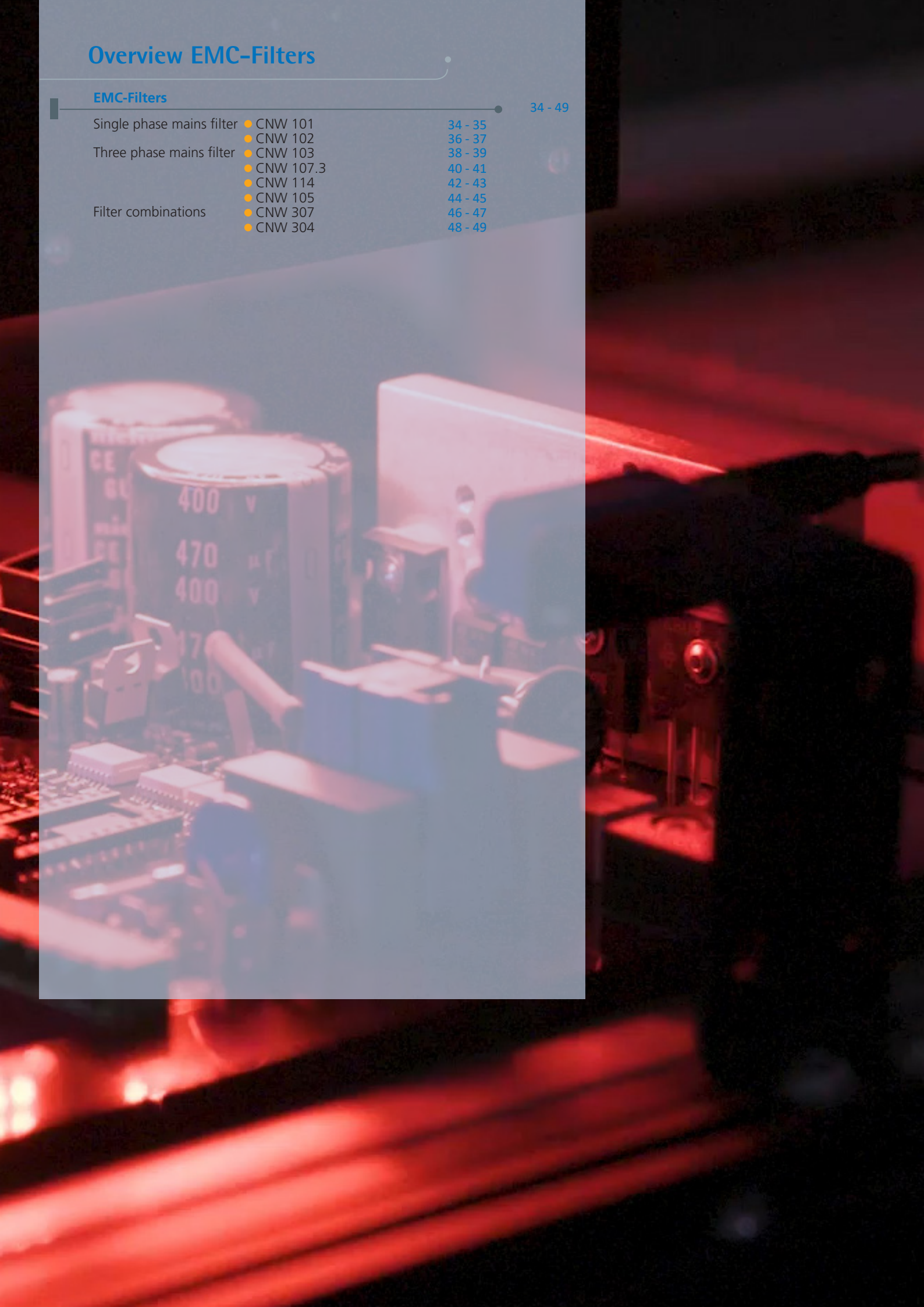


Overview EMC-Filters

EMC-Filters

34 - 49

Single phase mains filter	● CNW 101	34 - 35
	● CNW 102	36 - 37
Three phase mains filter	● CNW 103	38 - 39
	● CNW 107.3	40 - 41
	● CNW 114	42 - 43
	● CNW 105	44 - 45
Filter combinations	● CNW 307	46 - 47
	● CNW 304	48 - 49

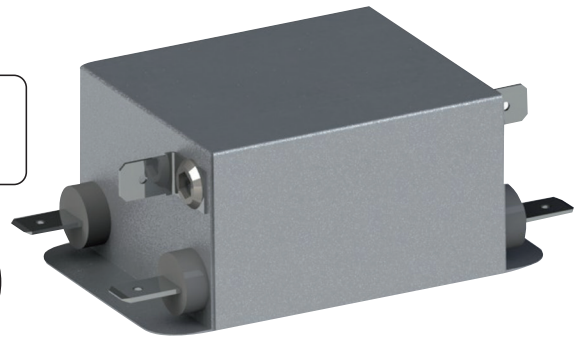


REO CNW 101

Single phase mains filter, single-stage



RoHS
COMPLIANT
2011/EG



Series REO CNW 101

Benefits

- compact construction
- easy installation
- touch-proof if used with insulated spade connectors
- good damping performance at a low leakage current
- also available as a medical version or with a lower leakage current
- optional with overvoltage protection
- UL approval for the complete model range - E217177 (not for N- and MED-versions)

Technical data

Type	Rated voltage [V]	Rated current [A]	Leakage current [mA]	Cx [μ F]	Cy [nF]	L [mH]	R [kOhm]
CNW 101/3	250	3	<3,5	0,94	20	3,3	560
CNW 101/6	250	6	<3,5	0,94	20	1,8	560
CNW 101/10	250	10	<3,5	0,94	20	1,8	560
CNW 101/16	250	16	<3,5	0,94	20	1,2	560
CNW 101/20	250	20	<3,5	0,94	20	1,0	560
CNW 101/3/N	250	3	<0,5	0,94	4,4	3,3	560
CNW 101/6/N	250	6	<0,5	0,94	4,4	1,8	560
CNW 101/10/N	250	10	<0,5	0,94	4,4	1,8	560
CNW 101/16/N	250	16	<0,5	0,94	4,4	1,2	560
CNW 101/20/N	250	20	<0,5	0,94	4,4	1,0	560
CNW 101/3/MED	250	3	<0,005	0,94	-	3,3	560
CNW 101/6/MED	250	6	<0,005	0,94	-	1,8	560
CNW 101/10/MED	250	10	<0,005	0,94	-	1,8	560
CNW 101/16/MED	250	16	<0,005	0,94	-	1,2	560
CNW 101/20/MED	250	20	<0,005	0,94	-	1,0	560

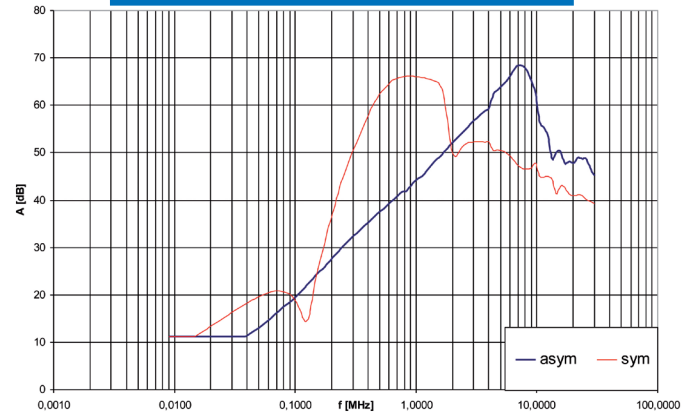
REO CNW 101



Typical applications

- Inverter applications
- Switch-mode power supplies for industrial electronics
- Telecommunications, information technology
- Medical applications

Attenuation curve CNW 101/16*

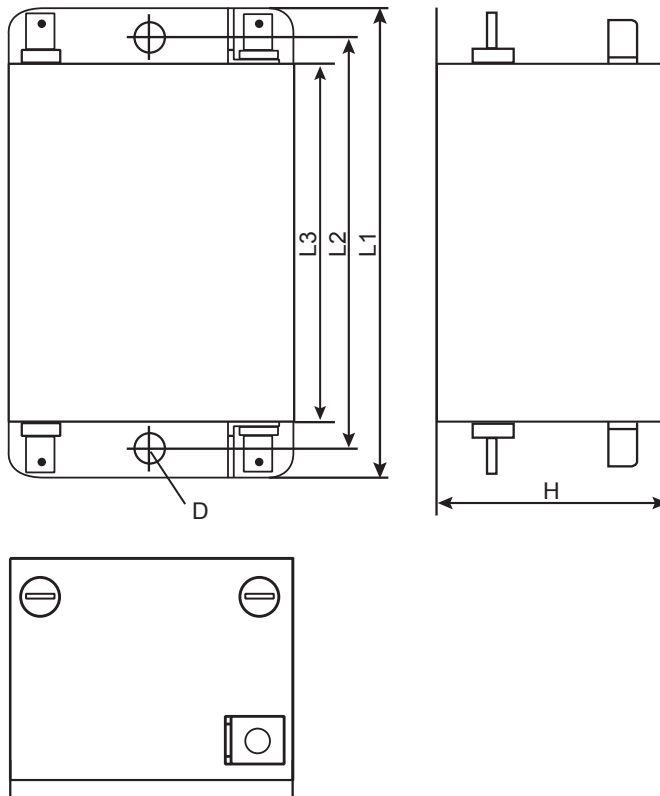


*For additional attenuation curves, please refer to our data sheet.

Dimensions

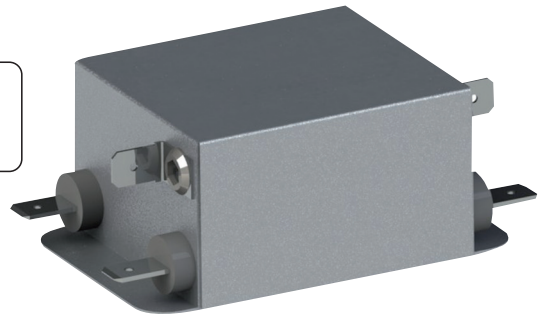
Type	Connection	PE-Connection	Dimensions [mm]					
			B	D	H	L 1	L 2	L 3
CNW 101/3	Faston spade 6,3x0,8		45	4,2	30	70	60	52
CNW 101/6	Faston spade 6,3x0,8		45	4,2	30	70	60	52
CNW 101/10	Faston spade 6,3x0,8		50	5,3	30	85	75	65
CNW 101/16	Faston spade 6,3x0,8		50	5,3	30	85	75	65
CNW 101/20	Faston spade 6,3x0,8		50	5,3	30	85	75	65

CNW 101



REO CNW 102

Single phase mains filter, two-stage



Series REO CNW 102

Benefits

- compact construction
- easy installation
- touch-proof if used with insulated spade connectors
- very good damping performance at a low leakage current
- also as a medical version or with a lower leakage current available
- optional with overvoltage protection
- UL approval for the complete model range - E217177 (except N- and MED-versions)

Technical data

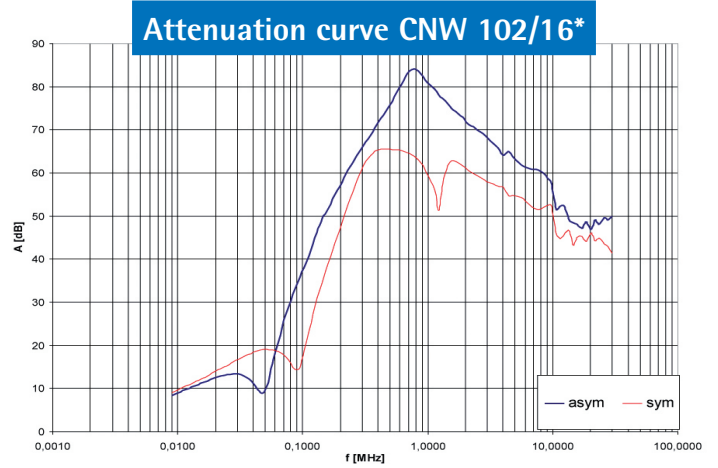
Type	Rated voltage [V]	Rated current [A]	Leakage current [mA]	C _x [μF]	C _y [nF]	L [mH]	R [kOhm]
CNW 102/3	250	3	<3,5	0,94	20	13,6	560
CNW 102/6	250	6	<3,5	0,94	20	7,8	560
CNW 102/10	250	10	<3,5	0,94	20	3,6	560
CNW 102/16	250	16	<3,5	0,94	20	2,4	560
CNW 102/20	250	20	<3,5	0,94	20	2,0	560
CNW 102/3/N	250	3	<0,5	0,94	4,4	13,6	560
CNW 102/6/N	250	6	<0,5	0,94	4,4	7,8	560
CNW 102/10/N	250	10	<0,5	0,94	4,4	3,6	560
CNW 102/16/N	250	16	<0,5	0,94	4,4	2,4	560
CNW 102/20/N	250	20	<0,5	0,94	4,4	2,0	560
CNW 102/3/MED	250	3	<0,005	0,94	-	13,6	560
CNW 102/6/MED	250	6	<0,005	0,94	-	7,8	560
CNW 102/10/MED	250	10	<0,005	0,94	-	3,6	560
CNW 102/16/MED	250	16	<0,005	0,94	-	2,4	560
CNW 102/20/MED	250	20	<0,005	0,94	-	2,0	560

REO CNW 102



Typical applications

- Switch-mode power supplies for industrial electronics
- frequency converters for motor drives
- power supply units
- medical and telecommunication applications
- DC applications

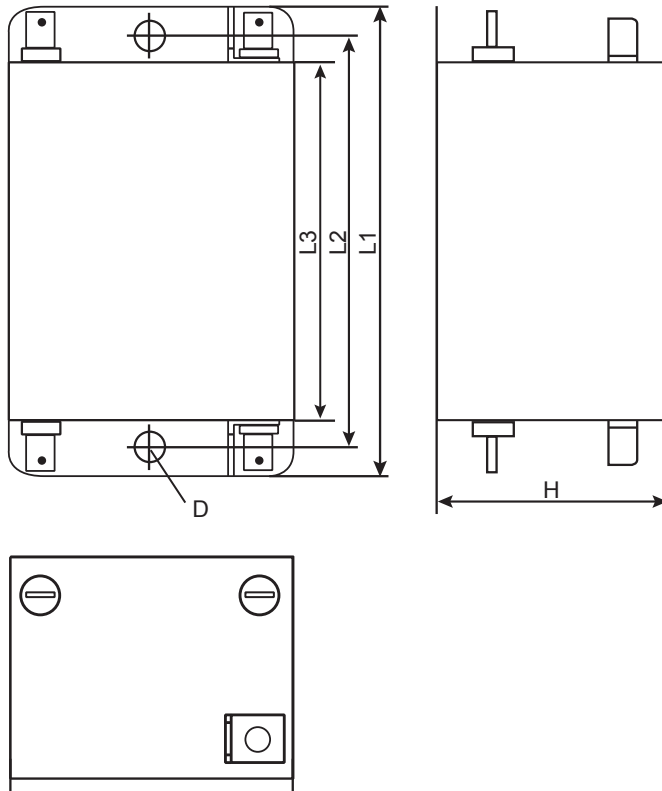


*For additional attenuation curves, please refer to our data sheet

Dimensions

Type	Connection	PE-Connection	Dimensions [mm]					
			B	D	H	L 1	L 2	L 3
CNW 102/3	6,3 x 0,8 mm Flat plug	6,3 x 0,8 mm Flat plug	50	5,3	40	87	75	65
CNW 102/6	6,3 x 0,8 mm Flat plug	6,3 x 0,8 mm Flat plug	50	5,3	40	87	75	65
CNW 102/10	6,3 x 0,8 mm Flat plug	6,3 x 0,8 mm Flat plug	50	5,3	40	87	75	65
CNW 102/16	6,3 x 0,8 mm Flat plug	6,3 x 0,8 mm Flat plug	53	5,3	40	110	100	90
CNW 102/20	6,3 x 0,8 mm Flat plug	6,3 x 0,8 mm Flat plug	53	5,3	40	110	100	90

CNW 102

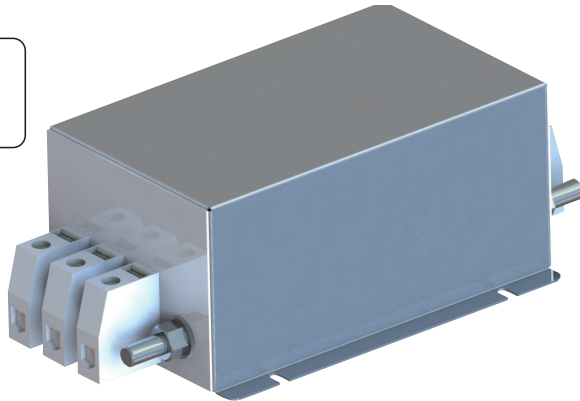


REO CNW 103

Three phase mains filter, single-stage, three wire



RoHS
COMPLIANT
2011/EG



Series REO CNW 103

Benefits

- compact construction
- easy installation
- low temperature rise
- touch-proof terminals
- good damping performance at a low leakage current
- useable for industrial applications
- UL approval for the complete model range

Technical data

Type	Rated voltage [V]	Rated current [A]	Leakage current [mA]	C _x [μF]	C _y [nF]	L [mH]	R [kOhm]
CNW 103/3	3x480	3x3	<3,5	0,5	30	3,0	560
CNW 103/6	3x480	3x6	<3,5	0,5	30	2,2	560
CNW 103/10	3x480	3x10	<3,5	0,5	30	1,7	560
CNW 103/16	3x480	3x16	<7	1,0	40	1,5	560
CNW 103/25	3x480	3x25	<7	1,0	60	1,2	560
CNW 103/36	3x480	3x36	<7	2,2	60	1,5	560
CNW 103/50	3x480	3x50	<7	2,2	60	0,9	560
CNW 103/80	3x480	3x80	<16	3,5	108	0,4	560
CNW 103/120	3x480	3x120	<16	2,7	190	0,25	560
CNW 103/150	3x480	3x150	<16	2,5	125	0,8	560

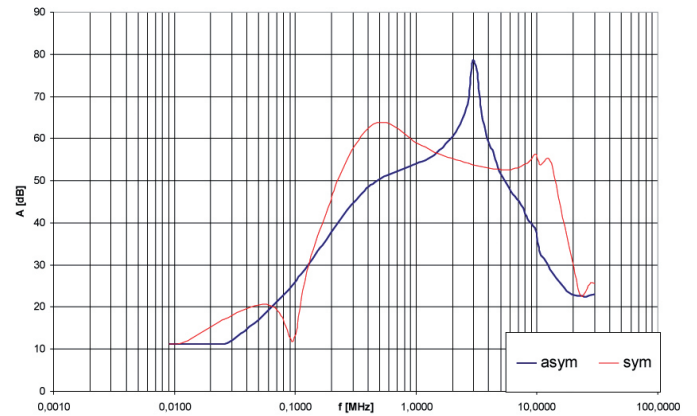
REO CNW 103



Typical applications

- Frequency converters for motor drives (e.g. lifts, materials handling, pumps, ventilation and air-conditioning systems, industrial applications, wind power installations and power supply units)

Attenuation curve

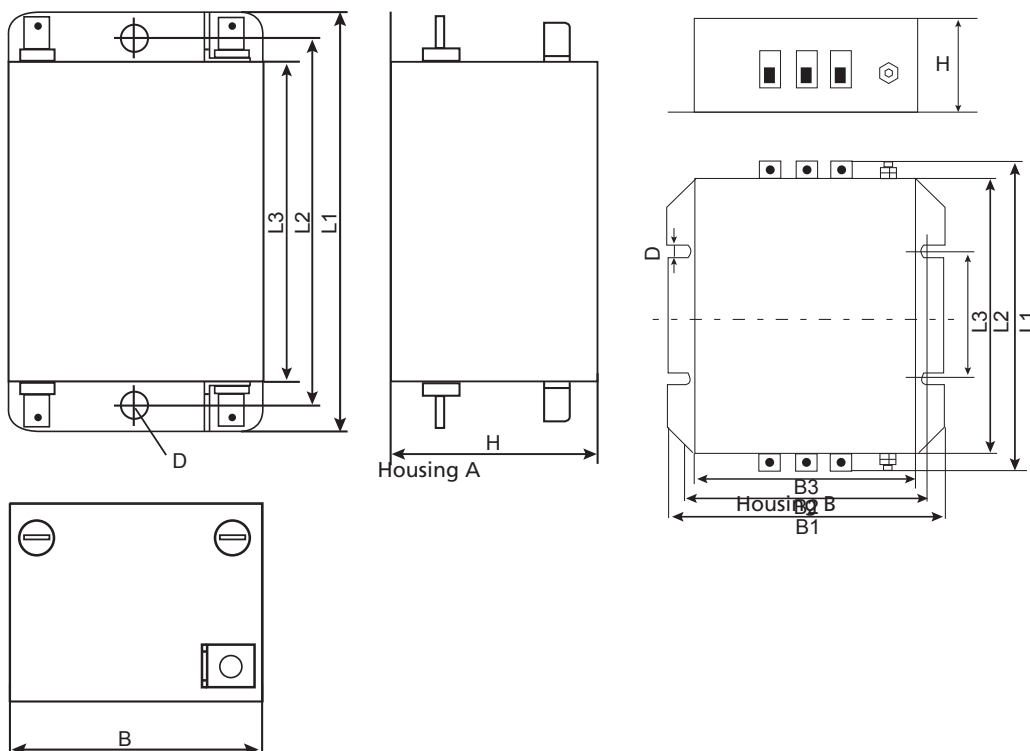


*For additional attenuation curves, please refer to our data sheet.

Dimensions

Type	Housing	Connection	PE-Connection	Dimensions [mm]							
				B1	B2	B3	D	H	L1	L2	L3
CNW 103/3	A	Flat plug 6,3x0,8 mm	Flat plug 6,3x0,8 mm	53	---	---	5,3	40	110	100	90
CNW 103/6	A	Flat plug 6,3x0,8 mm	Flat plug 6,3x0,8 mm	53	---	---	5,3	40	110	100	90
CNW 103/10	A	Flat plug 6,3x0,8 mm	Flat plug 6,3x0,8 mm	53	---	---	5,3	40	110	100	90
CNW 103/16	B	Terminals 4 mm ²	Earthing bolt (M5)	98	81	70	5,3	70	172	150	90
CNW 103/25	B	Terminals 6 mm ²	Earthing bolt (M5)	98	81	70	5,3	70	180	150	90
CNW 103/36	B	Terminals 10 mm ²	Earthing bolt (M5)	148	130	120	7,0	70	268	240	160
CNW 103/50	B	Terminals 10 mm ²	Earthing bolt (M6)	148	130	120	7,0	70	268	240	160
CNW 103/80	B	Terminals 25 mm ²	Earthing bolt (M8)	168	150	140	7,0	110	320	240	160
CNW 103/120	B	Terminals 50 mm ²	Earthing bolt (M12)	168	150	140	7,0	110	327	240	160
CNW 103/150	B	Terminals 50 mm ²	Earthing bolt (M12)	168	150	140	7,0	110	327	240	160

REO CNW 103

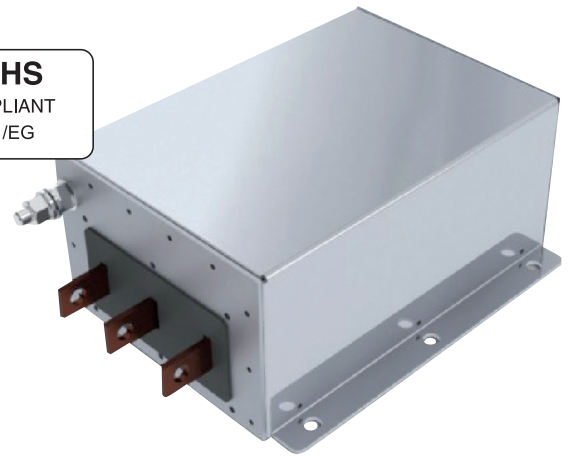


REO CNW 107.3

High current mains filter, three wire



RoHS
COMPLIANT
2011/EG



Series REO CNW 107.3

Benefits

- specifically designed for high performances
- suitable for offshore applications
- compact design
- good heat dissipation
- rail connector
- fast installation

Technical data

Type	Rated voltage [V]	Rated current [A]	Leakage current [mA]	L [μ H]	Σ Cx [μ F]	Σ Cy [μ F]
CNW 107.3/280	3 x 480 / 690	3x280	<300	100	40	3,8
CNW 107.3/500	3 x 480 / 690	3x500	<300	100	40	3,8
CNW 107.3/700	3 x 480 / 690	3x700	<300	100	40	3,8
CNW 107.3/1000	3 x 480 / 690	3x1000	<300	100	40	3,8
CNW 107.3/1600	3 x 480 / 690	3x1600	<300	44	50	3,8
CNW 107.3/2500	3 x 480 / 690	3x2500	<300	44	50	3,8
CNW 107.3/3000	3 x 480 / 690	3x3000	<300	40	50	3,8

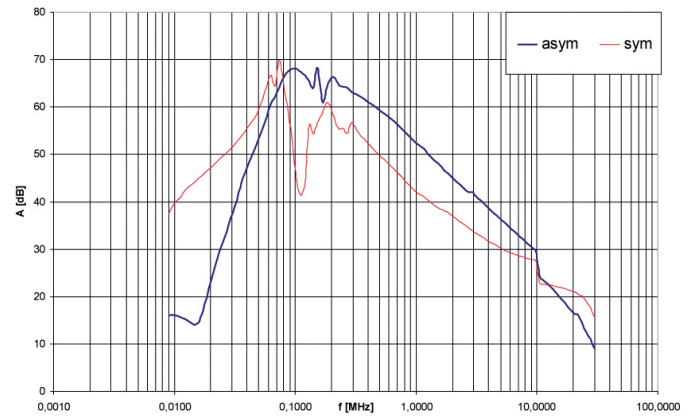
REO CNW 107.3



Typical applications

- Suppression of frequency inverters, Power electronics and general suppression for higher power ratings on wind energy and industrial applications.

Attenuation curve CNW 107.3

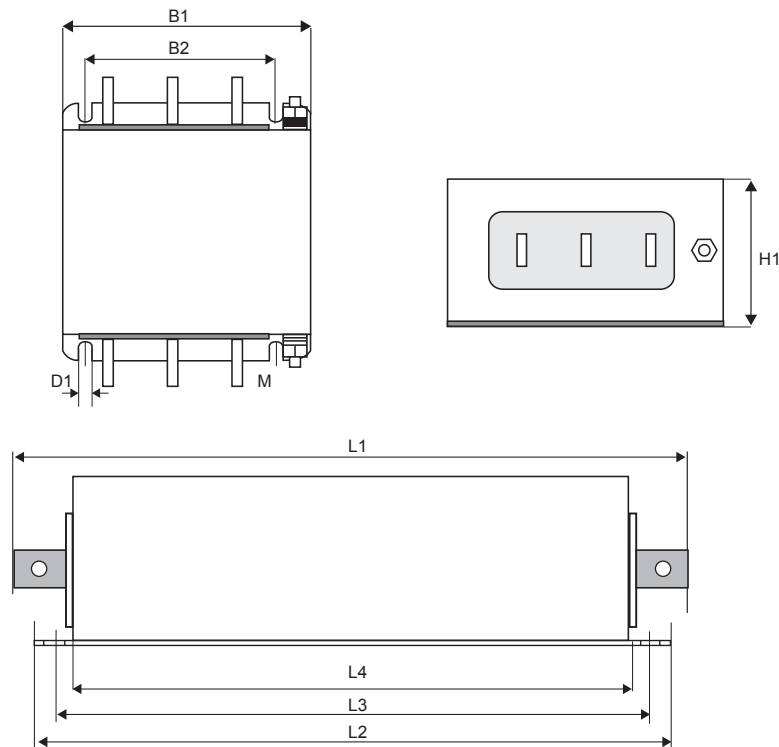


Dimensions

Type	Connection	PE-Connection	Dimensions [mm]						
			L 1	L 2	L 3	L 4	B 1	B 2	H 1
CNW 107.3/280	30x5	M12	420	335	320	296	220	175	135
CNW 107.3/500	40x5	M12	420	335	320	296	220	175	135
CNW 107.3/700	40x10	M12	420	335	320	296	220	175	135
CNW 107.3/1000	40x10	M12	420	335	320	296	220	175	135
CNW 107.3/1600	50 x 10	M12	590	406	340	360	330	300	180
CNW 107.3/2500	80 x 15	M12	590	406	340	360	330	300	180
CNW 107.3/3000	120 x 15	M12	700	506	400	420	390	360	240

REO CNW 107.3

Housing Aluminum oder stainless steel

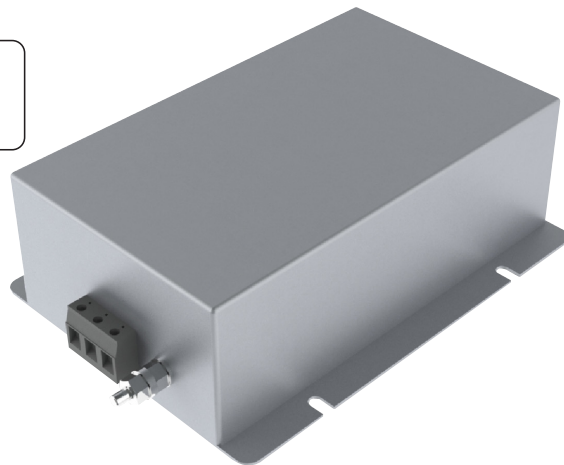


REO CNW 114

Three phase mains filter, single-stage, three wire



RoHS
COMPLIANT
2011/EG






Series REO CNW 114

Benefits

- compact construction
- easy installation
- low temperature rise
- touch-proof terminals
- very good attenuation in a wide frequency spectrum
- IT-versions possible
- UL approval for CNW 114/8 up to CNW 114/600 A (doesn't apply to the 690 V version)

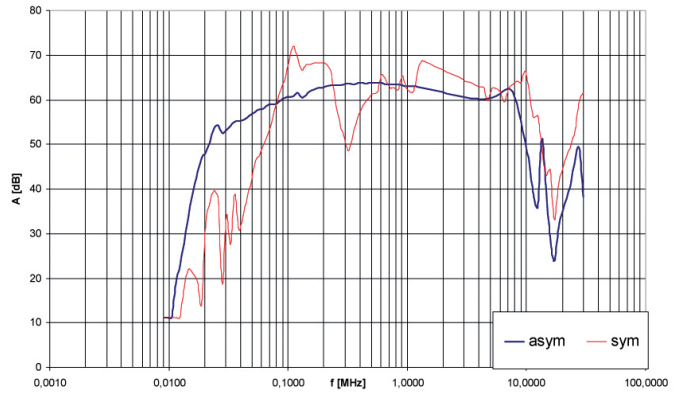
Technical data

Type	Rated voltage [V]	Rated current [A]	Leakage current [mA]	C _x [μF]	C _y [nF]	L [mH]	R [kOhm]
CNW 114/8	3 x 500 / 690	8	<16	1,0	0,2	7,6	560
CNW 114/16		16	<16	2,5	1,6	5,2	560
CNW 114/25		25	<180	2,5	1,6	2,5	560
CNW 114/36		36	<180	2,5	1,6	1,5	560
CNW 114/50		50	<180	2,5	1,6	0,9	560
CNW 114/64		64	<180	2,5	1,6	0,9	560
CNW 114/80		80	<200	3,7	2,4	0,8	560
CNW 114/110		110	<200	3,7	2,4	0,5	560
CNW 114/180		180	<220	3,7	2,4	0,5	560
CNW 114/280		280	<260	7,2	4,6	0,3	560
CNW 114/300 		300	<260	7,2	4,6	0,3	560
CNW 114/450		450	<760	7,6	4,75	0,11	560
CNW 114/600		600	<760	7,6	4,75	0,11	560
CNW 114/900 		900	<760	7,6	4,75	0,05	560
CNW 114/1200 		1200	<760	7,6	4,75	0,05	560

REO CNW 114



Attenuation curve CNW 114/16*



*For additional attenuation curves, please refer to our data sheet.

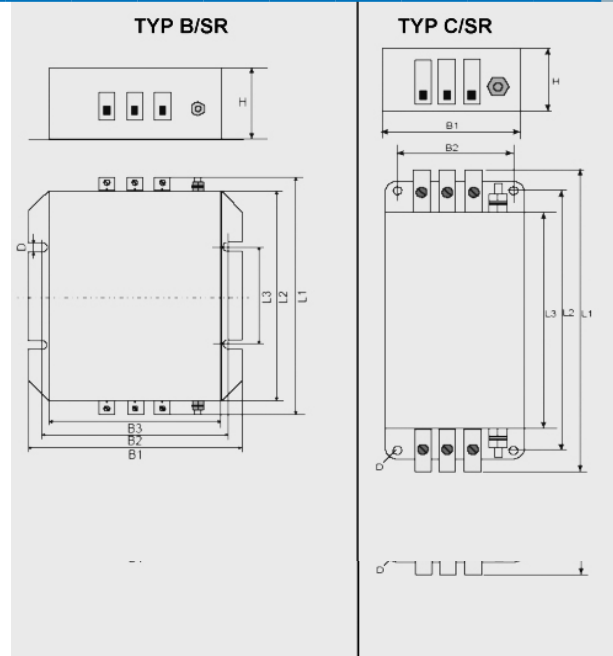
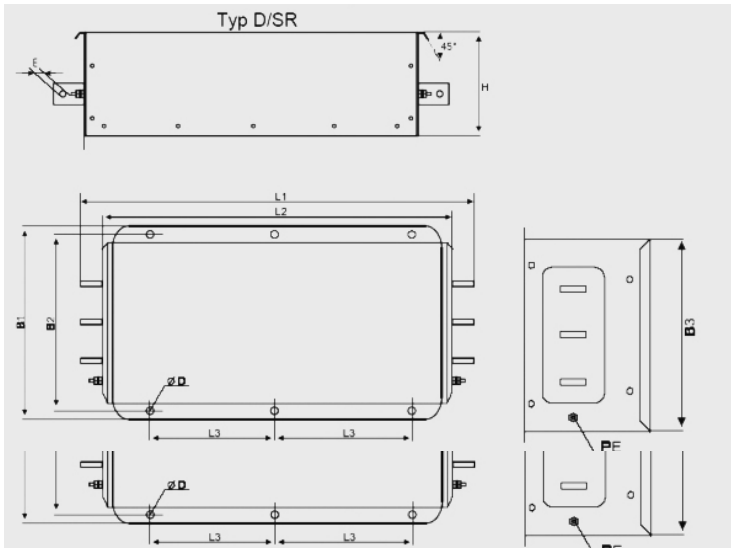
Typical applications

- Frequency converters for motor drives, wind power installations and power supply units

Dimensions

Type	Housing	Connection	PE-Connection	Dimensions [mm]								
				B1	B2	B3	D	E	H	L1	L2	L3
CNW 114/8	B/SR	Terminals 4 mm ²	Earthing bolt (M6)	115	100	85	6,2	-	60	202	180	115
CNW 114/16	B/SR	Terminals 4 mm ²	Earthing bolt (M6)	150	136	120	6,2	-	65	222	200	115
CNW 114/25	B/SR	Terminals 6 mm ²	Earthing bolt (M6)	150	136	120	6,2	-	65	229	200	115
CNW 114/36	B/SR	Terminals 10 mm ²	Earthing bolt (M6)	150	136	120	6,2	-	65	229	200	115
CNW 114/50	B/SR	Terminals 10 mm ²	Earthing bolt (M6)	150	136	120	6,2	-	65	229	200	115
CNW 114/64	B/SR	Terminals 16 mm ²	Earthing bolt (M6)	150	136	120	6,2	-	65	238	200	115
CNW 114/80	C/SR	Terminals 25 mm ²	Earthing bolt (M10)	170	130	-	8,5	-	90	400	373	350
CNW 114/110	C/SR	Terminals 50 mm ²	Earthing bolt (M10)	170	130	-	8,5	-	90	400	373	350
CNW 114/180	C/SR	Terminals 95 mm ²	Earthing bolt (M10)	180	156	-	10,0	-	115	510	470	360
CNW 114/280	C/SR	Terminals 150 mm ²	Earthing bolt (M10)	260	220	-	12,0	-	130	700	660	530
CNW 114/300	C/SR	Terminals 150 mm ²	Earthing bolt (M10)	260	220	-	12,0	-	130	700	660	530
CNW 114/450	D/SR	Bars (25x8)	Earthing bolt (M12)	300	275	250	9,0	10,5	160	610	516	210
CNW 114/600	D/SR	Bars (30x8)	Earthing bolt (M12)	300	275	250	9,0	10,5	160	630	516	210
CNW 114/900	D/SR	Bars (50x10)	Earthing bolt (M12)	300	275	250	9,0	13,0	160	716	516	210
CNW 114/1200	D/SR	Bars (60x10)	Earthing bolt (M12)	300	275	250	9,0	13,0	160	716	516	210

REO CNW 114

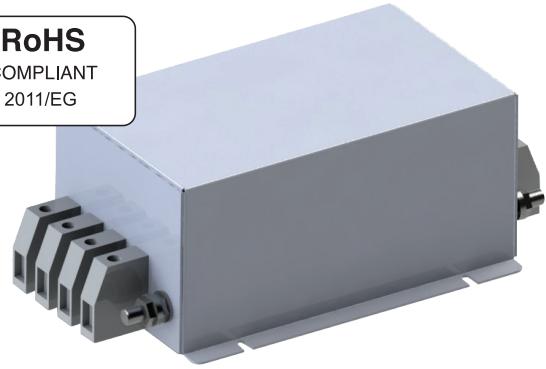


REO CNW 105

Three phase mains filter, single-stage, four wire



RoHS
COMPLIANT
2011/EG



Series REO CNW 105

Benefits

- compact construction
- easy installation
- low temperature rise
- good damping performance at a low leakage current
- touch-proof terminals

Technical data

Type	Rated voltage [V]	Rated current [A]	Leakage current [mA]	C _x [μF]	C _y [nF]	L [mH]	R [kOhm]
CNW 105/3	3x480	4x3	<3,5	0,5	40	4,0	560
CNW 105/6	3x480	4x6	<3,5	0,5	40	2,4	560
CNW 105/10	3x480	4x10	<3,5	0,5	40	1,0	560
CNW 105/16	3x480	4x16	<7	1	43	1,6	560
CNW 105/25	3x480	4x25	<7	1	43	1,4	560
CNW 105/36	3x480	4x36	<7	2,2	44	1,2	560
CNW 105/50	3x480	4x50	<7	2,2	44	0,75	560
CNW 105/80	3x480	4x80	<14	3,5	110	0,5	560
CNW 105/120	3x480	4x120	<14	3,5	110	0,25	560
CNW 105/150	3x480	4x150	<14	3,5	110	0,35	560

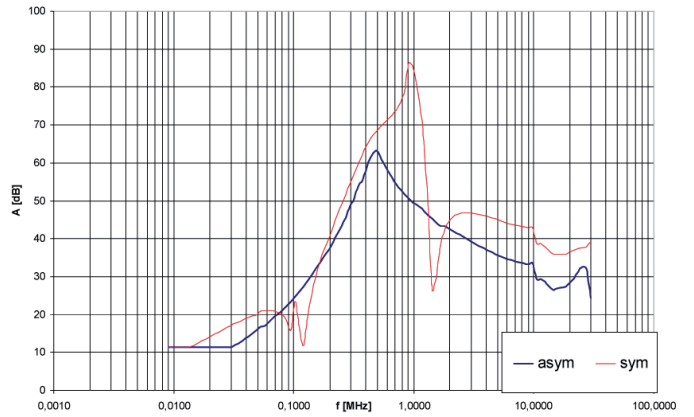
REO CNW 105



Typical applications

- Power supply units for data systems engineering, telecommunications, medical equipment and industrial applications

Attenuation curve CNW 105/16*

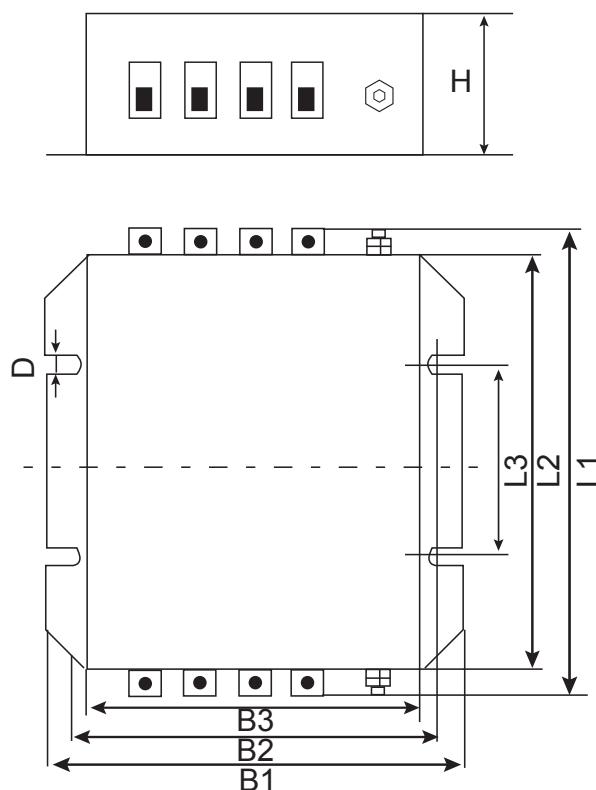


*For additional attenuation curves, please refer to our data sheet.

Dimensions

Type	Housing	Connection	PE-Connection	Dimensions [mm]							
				B1	B2	B3	D	H	L1	L2	L3
CNW 105/3	A	6,3 mm Faston spade	6,3 mm Faston spade	53	---	---	5,3	40	110	100	90
CNW 105/6	A	6,3 mm Faston spade	6,3 mm Faston spade	53	---	---	5,3	40	110	100	90
CNW 105/10	A	6,3 mm Faston spade	6,3 mm Faston spade	53	---	---	5,3	40	110	100	90
CNW 105/16	B	Terminals 4mm ²	Earthing bolt (M5)	98	88	70	5,3	70	172	150	90
CNW 105/25	B	Terminals 6mm ²	Earthing bolt (M5)	98	88	70	5,3	70	179	150	90
CNW 105/36	B	Terminals 10mm ²	Earthing bolt (M5)	148	130	120	7,0	70	270	240	160
CNW 105/50	B	Terminals 25mm ²	Earthing bolt (M6)	148	130	120	7,0	70	278	240	160
CNW 105/80	B	Terminals 25mm ²	Earthing bolt (M8)	168	150	140	7,0	110	278	240	160
CNW 105/120	B	Terminals 50mm ²	Earthing bolt (M12)	168	150	140	7,0	110	327	240	160
CNW 105/150	B	Terminals 50mm ²	Earthing bolt (M12)	168	150	140	7,0	110	327	240	160

REO CNW 105



REO CNW 307

Filter combinations, single-stage



RoHS
COMPLIANT
2011/EG

Benefits

- compact construction
- different connections (Terminals/cables /bars)
- easy and fast installation
- damping of the harmonics
- Attenuation of current harmonics
- limitation of inrush currents
- reduction of mains disturbance, current peaks and voltage drops
- increased life time for IGBT's
- low noise



Series REO CNW 307

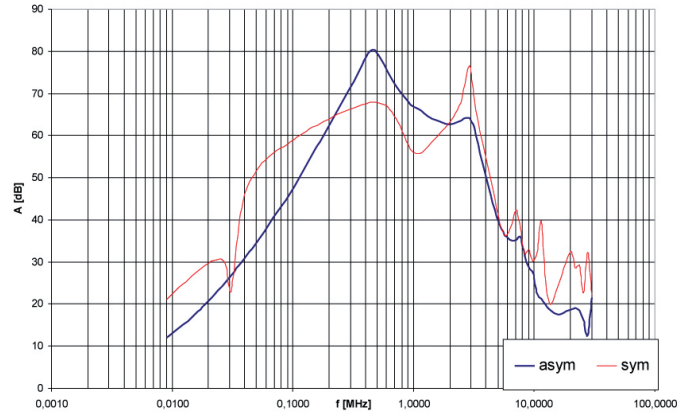
Technical data

Type	Rated voltage [V]	Rated current [A]	Inductance [mH]	Leakage current [mA]	Copper [kg]	Weight [kg]
CNW 307 / 3	up to 3x500	3	9,70	<15	0,7	2,3
CNW 307 / 6	up to 3x500	6	4,88	<15	0,8	2,8
CNW 307 / 10	up to 3x500	10	1,46	<15	1,2	2,8
CNW 307 / 16	up to 3x500	16	0,91	<15	1,9	3,9
CNW 307 / 25	up to 3x500	25	0,58	<15	2,4	5,2
CNW 307 / 36	up to 3x500	36	0,41	<15	3,5	5,8
CNW 307 / 50	Bis 3x500	50	0,29	<30	4,6	9,4

REO CNW 307



Attenuation curve CNW 307/16*



*For additional attenuation curves, please refer to our data sheet.

Typical applications

- Interference suppression of frequency converters with IGBT's and reduction of harmonics PFC (Power Factor Correction) and commutation (current conduction between thyristors) with fast switching semiconductors.
- Reducing of THD (Total Harmonic Distortion)

Dimensions

Type	Options Connection		Dimensions [mm]								
	Terminals Image 1	Cables Image 2	L 1	L 2	L 3	B 1	B 2	H	A 1	A 2	∅ D
CNW307/3	4 mm ²	1,5 mm ²	167	153	136	90	60	175	1500	1000	7
CNW307/6	4 mm ²	1,5 mm ²	167	153	136	90	60	175	1500	1000	7
CNW307/10	4 mm ²	1,5 mm ²	167	153	136	90	60	175	1500	1000	7
CNW307/16	6 mm ²	2,5 mm ²	207	193	176	90	60	175	1500	1000	7
CNW307/25	6 mm ²	4,0 mm ²	307	293	276	90	60	175	1500	1000	7
CNW307/36	10 mm ²	6,0 mm ²	307	293	276	90	60	175	1500	1000	7
CNW307/50	16 mm ²	10 mm ²	387	373	356	90	60	175	1500	1000	7

REO CNW 307

Design 1

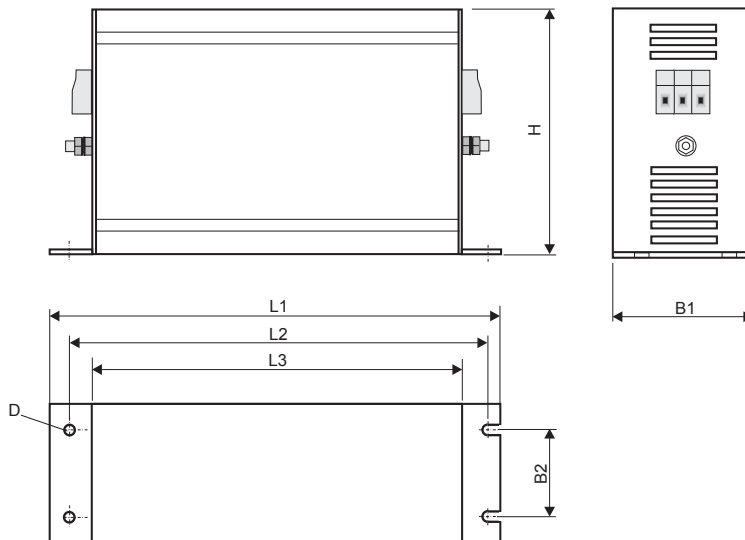
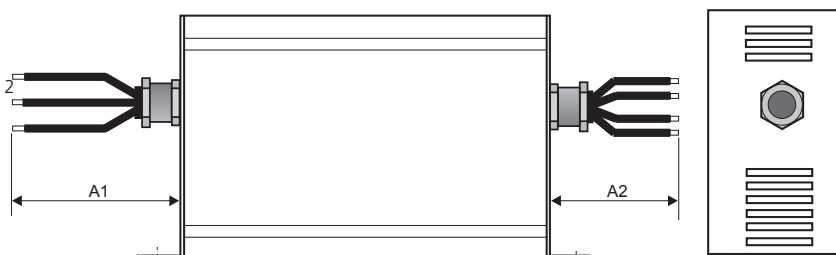


Bild 2

Design 2



REO CNW 304

Filter combinations, single-stage



RoHS
COMPLIANT
2011/EG



Series REO CNW 304

Benefits

- easy installation
- small footprint
- reduction of cable looms in control panels
- attenuation of higher harmonics
- low hum vacuum impregnated choke
- reduced start-up current
- the choke is rated for a short-circuit voltage of 4%, at rated current, as standard

Technical data

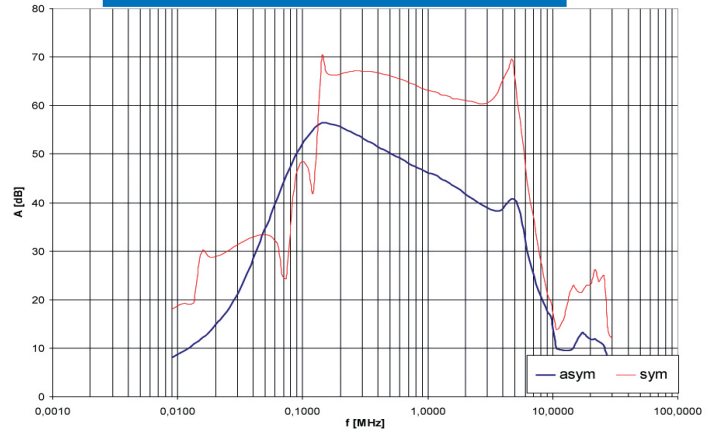
Type	Rated voltage [V]	Rated current [A]	Leakage current [mA]	L [mH]	Cx [μ F]	Cy [nF]	Rx [k]	Ry [k]
CNW 304/80	3x400	80	<35	1,2	1,5	600	560	560
CNW 304/120	3x400	120	<35	0,5	3,5	870	560	560
CNW 304/150	3x400	150	<35	0,6	3,5	870	560	560



Typical applications

- Interference suppression of frequency converters with IGBTs and reduction of harmonics (conforming to VDE 0160/EN 61800-3 class B).

Attenuation curve CNW



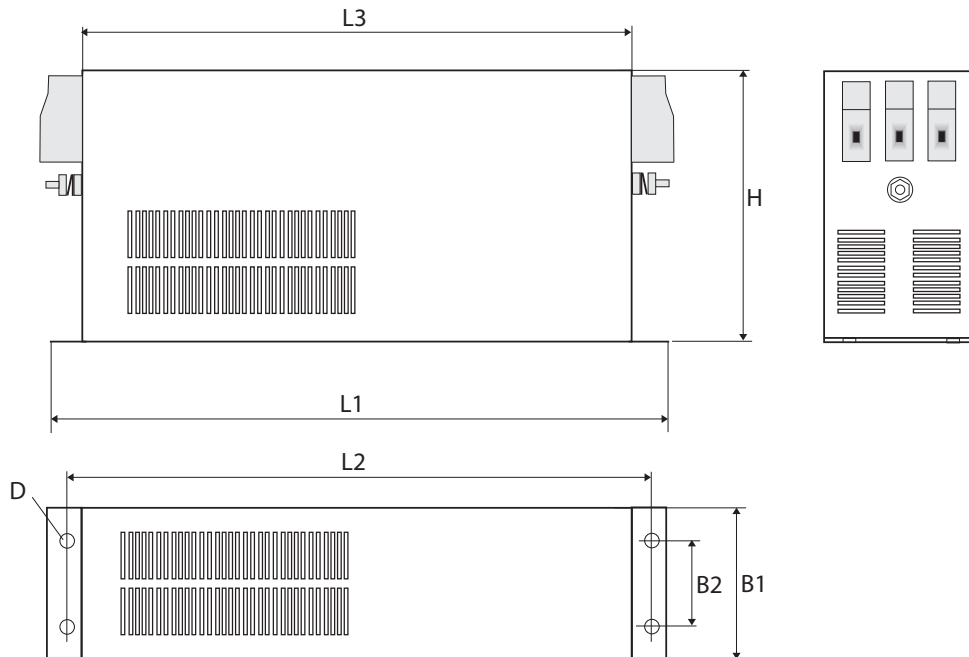
*For additional attenuation curves, please refer to our data sheet.

Type	Connections		Dimensions [mm]					
	Terminals	Earth	L 1	L 2	L 3	B 1	B 2	H 1
CNW 304/80	50 mm ²	M10	330	315	290	190	120	216
CNW 304/120	50 mm ²	M10	440	420	400	280	200	248
CNW 304/150	50 mm ²	M10	440	420	400	280	200	248

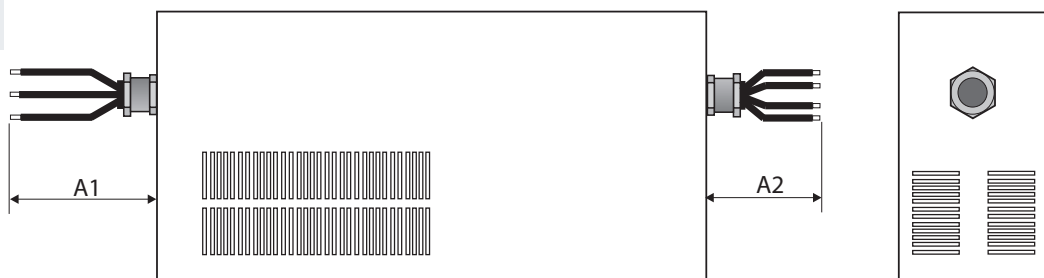
CNW 304

Unit must be mounted to allow 50 mm on all sides for adequate cooling.

Design 1



Design 2





Overview braking resistors

Braking resistors

52 - 66

	● Technical explanation	52 - 53
	● BW 151	54 - 55
	● BW 154	56 - 57
	● BW 155	58 - 59
	● BW 155-Combinations	60 - 61
	● BW 156	62 - 63
Liquid-cooled	● BWD 158 - BWD 330	64 - 65
	● Cover for resistors	66

REOhm Series BW 15X

In industry, the resistors have to work safely for many years under difficult environmental conditions. In addition to the permissible temperature range, the environmental conditions i.e. resistance to common railway pollutants such as vapours, gases, coal dust, oil or brake abrasion, represents a restriction of use. In addition, the penetration of moisture and foreign bodies, such as dust, must be prevented for reliable operation.

Advantages:

The REOhm resistors of the BW 15X series are characterized by high functional reliability and a long service life.

Due to their special design, REOhm resistors offer very high mechanical protection and are not susceptible to vibrations and oscillations. Due to this design, the resistor can absorb higher pulse loads and dissipate them effectively. External environmental influences have very little effect on the resistor, i.e. they are less sensitive to moisture and dirt. Profile resistors emit low levels of audible noise.

Resistor value / temperature dependence

The resistor value changes slightly depending on the winding temperature. This results in resistor changes of approx. +10% compared to the cooled state.

The performance data in the data sheets apply under the following operating conditions:

- maximum ambient temperature 40°C.
- Unimpeded air flow to ensure cooling.
- if the ambient temperature is higher than 40°C, the continuous power must be reduced by 5% per 10K temperature increase.

Operating conditions	
Ambient temperature	-15 °C ... +70°C Operating, storage and transport temperature Over 40°C Reduce continuous power Pd by 5% / 10K
Max. relative humidity 5-85% non-condensing during operation	
Installation altitude	0 ... 4000m üNN over 1000m Reduce continuous power Pd by 5% / 1000m
Installation place	The installation site must correspond to the device characteristics specified in the "General data". Flammable materials or substances must not be in the vicinity of the braking resistor. The heat generated by the braking resistor must be dissipated unhindered.
Mounting position	Vertically suspended with connections at the bottom or horizontal mounting
Installation clearances	top > 200mm below > 100mm lateral > 25mm
General data	
Conformity	CE low voltage directional
Temperature switches	Normally closed version, 200 °C
Switching capacity	250V AC / 0,5A
Insulation resistance > 5 MΩ / at 1000 V	

REOhm Series BW 15X

The resistors are short-circuit proof and self-extinguishing. (All series except REOhm R)

The resistors are designed to convert electrical energy into heat, so heating of the vicinity and adjacent housing parts is unavoidable. It must be ensured that the cooling air flows in and out freely and that sufficient heat is dissipated via cooling surfaces.

Types of protection

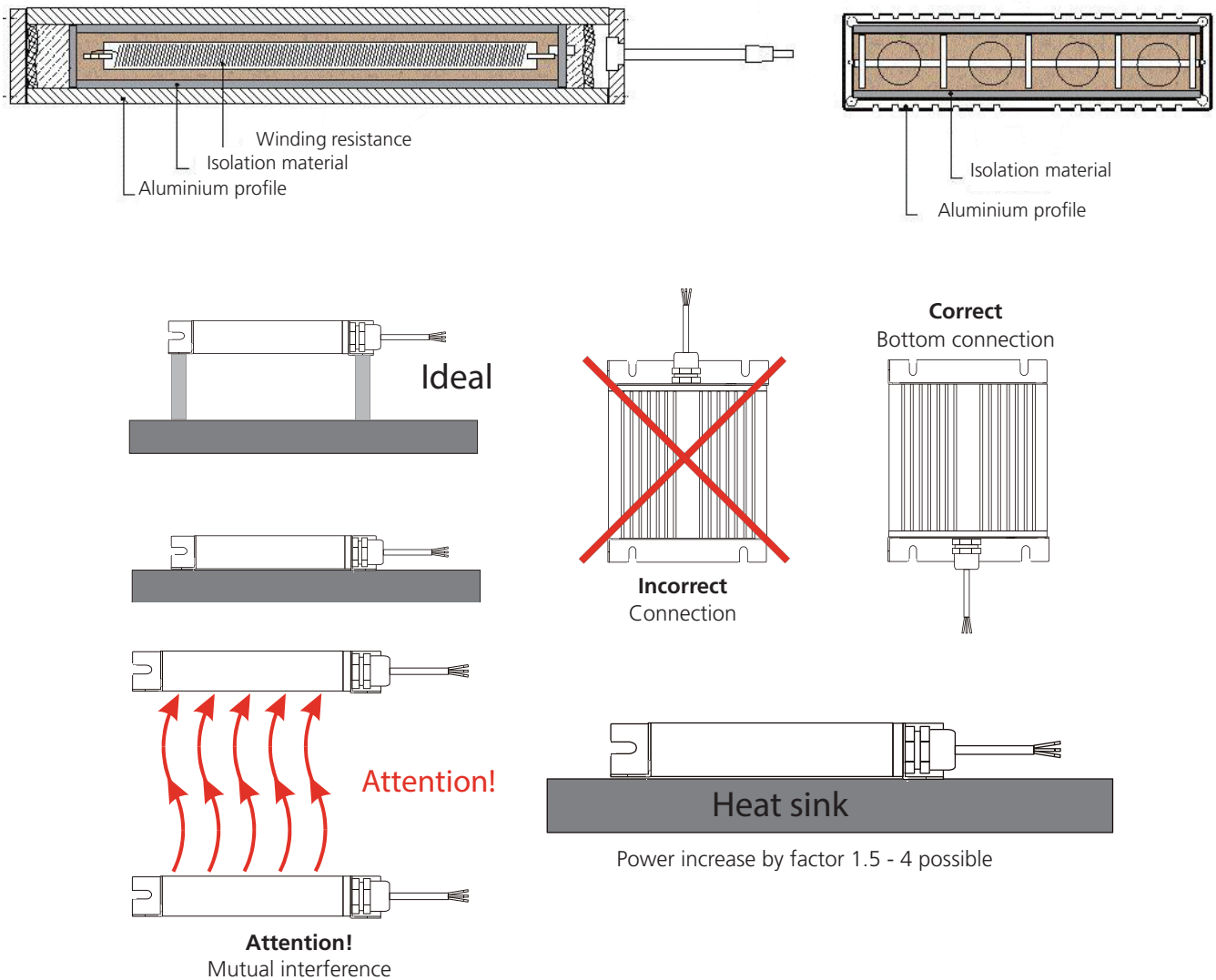
Depending on the design and construction, different degrees of protection can be provided.

For protection class \leq IP20 the temperature increase at the hottest point of the resistor surface must not exceed 300K.

For a higher degree of protection ($>$ IP20), a maximum temperature increase of 200K applies at the hottest point of the resistor surface.

Overheating Protection

It is possible to monitor the temperature of the resistor with a temperature switch. When a nominal temperature is exceeded, the temperature switch opens and triggers a signalling contact. The temperature switch is equipped with two cables ready for connection.



Compact Braking Resistors



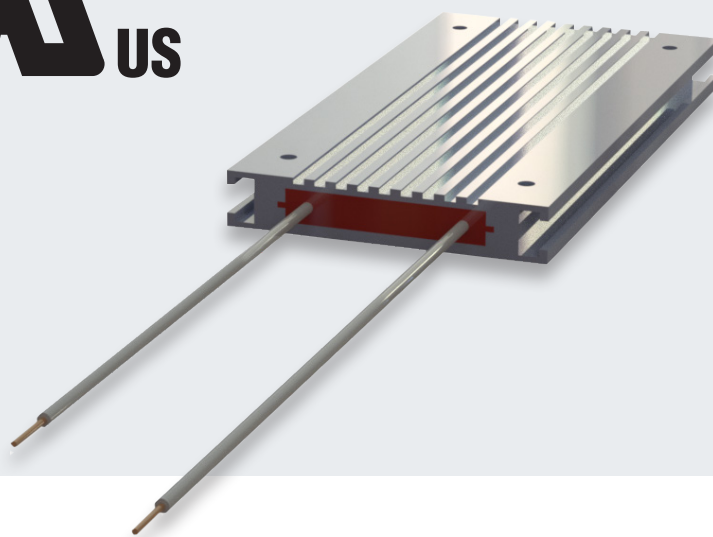
REO[®]
c **REO** US

Series BW 151

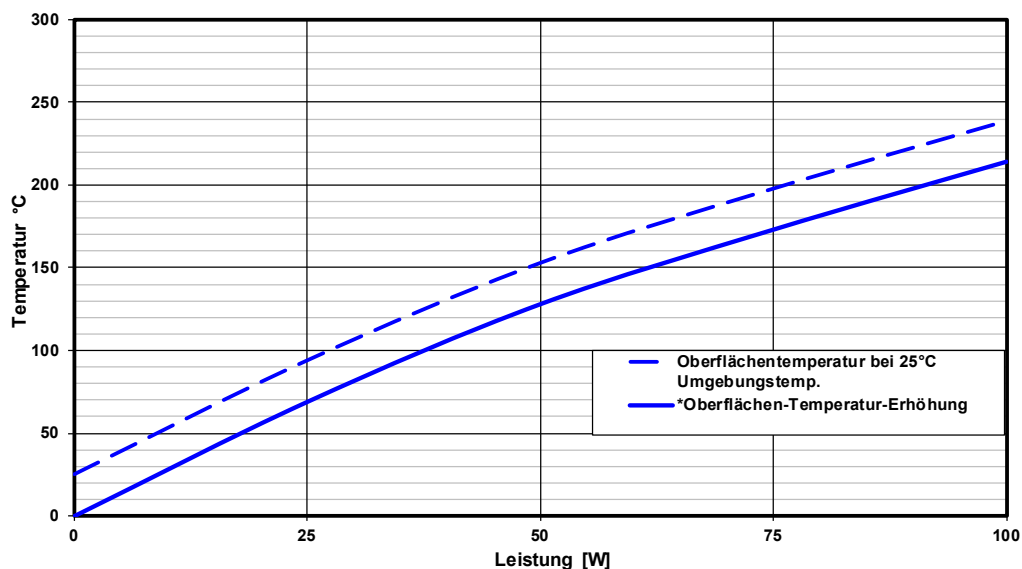
(max continuous power: 300 W)

Braking resistor for drives with frequency converters of low to medium power or as a charging resistor. Mounting close to the frequency inverter.

- protection class IP 20 / IP 54
- higher protection classes on request
- test voltage 2.5 kV AC
- other capacities and mounting dimensions on request



Oberflächentemperatur BW 151 / 100



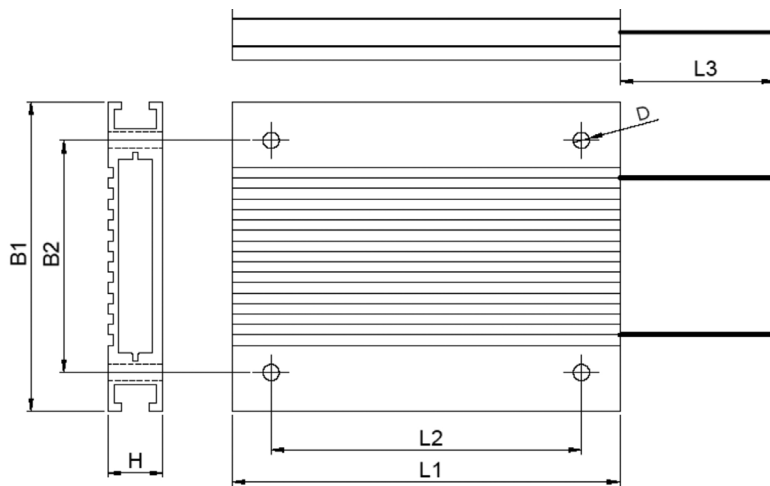
Advantages:

- easily combined
- intrinsically safe
- very flat and compact design with open grooves for vertical mounting
- adaptation to any frequency inverter
- very good heat dissipation, mounting on heat sink possible
- high resistance at overload
- quick connection
- also with UL certification see overview "UL-certified products from REO".

REO[®]
c **REO** US

Type	resistance levels R [Ohm]	Continuous Power [W]	max. operating voltage U [V]
BW 151 / 100	3 - 300	100	900
BW 151 / 150	4 - 150	150	
BW 151 / 200	6-1000	200	

REO BW 151



Type	B1 [mm]	B2 [mm]	H1 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	D [mm]	Connection cable
BW 151/50/ ...	80	60	14	70	50	250	4.2	2 x AWG 18,UL 1659
BW 151/100/ ...	80	60	14	110	80	250	4.2	2 x AWG 18,UL 1659
BW 151/150/ ...	80	60	14	160	130	250	4.2	2 x AWG 18,UL 1659
BW 151/200/ ...	80	60	14	210	180	250	4.2	2 x AWG 18,UL 1659

REO BW 151

In the event of failure, the resistor becomes high-impedance. Each series is available with a temperature switch. The specified performance values were measured at a horizontal position of the resistors in the air with a distance of min. 100mm to the substrate. The power values refer to the standard products with a normal tolerance of +/- 10% at an ambient temperature of 20°C.

We are also happy to produce customer-specific solutions outside our standard portfolio - just contact us!

Compact Braking Resistors

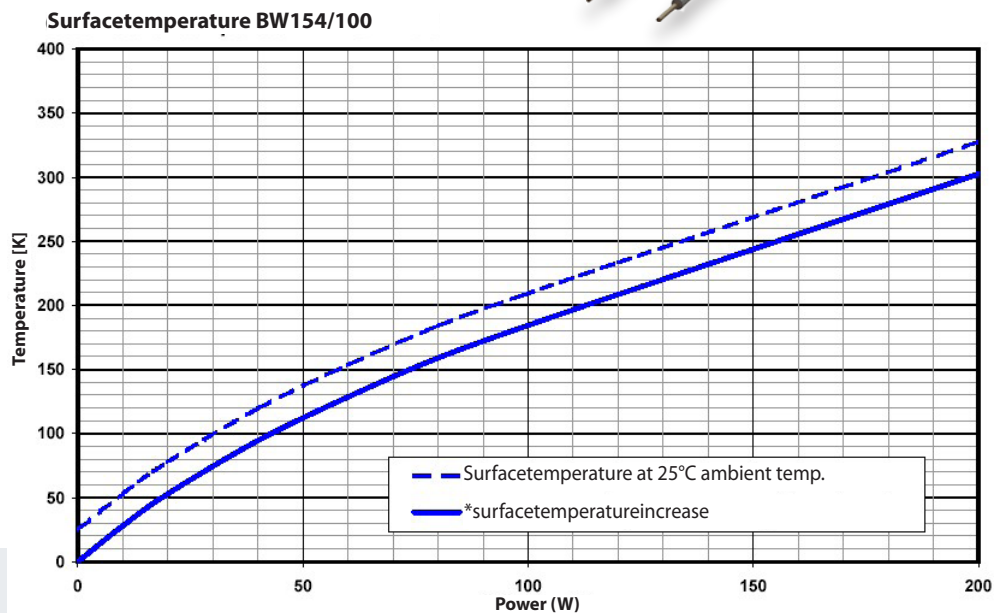


Series BW 154

(max continuous power: 200 W)

Braking resistor for drives with frequency converters of low to medium power or as a charging resistor. Mounting close to the frequency inverter.

- protection class IP 20 / IP 54
- higher protection classes on request
- test voltage 2.5 kV AC
- other capacities and mounting dimensions on request



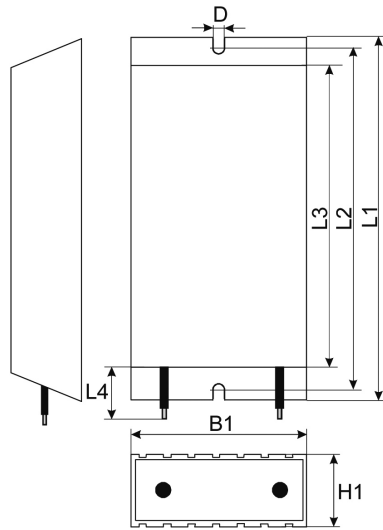
Advantages:

- small dimensions
- quick connection
- intrinsically safe
- adaptation to any frequency inverter
- high power to size ratio
- compact design
- high resistance at overload
- vertical and horizontal construction

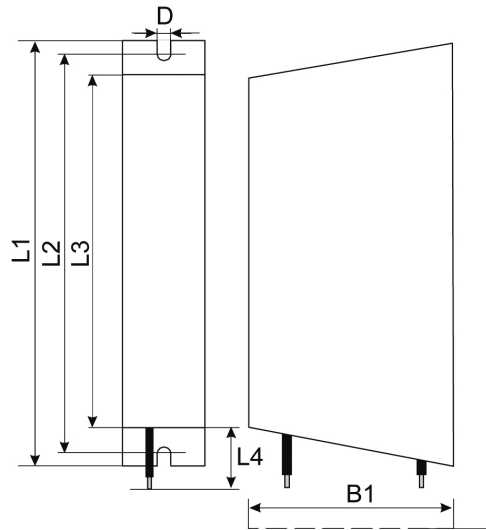
Type	Resistance levels R [Ohm]	Continuous power at 25°C and surface over temperature of P [W]		max. operating voltage U [V]
		200K	250 K	
BW 154 / 100	3 - 500	100	150	900
BW 154 / 150	2,2 - 160	120	160	
BW 154 / 200	5 - 200	140	180	
BW 154 / 250	5 - 250	160	200	

REO BW 154

Ansicht liegend



Ansicht stehend



Type	B1 [mm]	H1 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	D [mm]	Connection cable
BW 154 / 100	40	21	170	155	140	250	5,5	2 x AWG 14,UL 1659
BW 154 / 150	40	21	210	195	180	250	5,5	2 x AWG 14,UL 1659
BW 154 / 200	40	21	250	235	220	250	5,5	2 x AWG 14,UL 1659
BW 154 / 250	40	21	290	275	260	250	5,5	2 x AWG 14,UL 1659

REO BW 154

In the event of destruction, the resistor becomes high-impedance. Each series is available with a temperature switch. The specified performance values were measured at a horizontal position of the resistors in the air with a distance of min. 100mm to the substrate. The power values refer to the standard products with a normal tolerance of +/- 10% at an ambient temperature of 20°C.

We are also happy to produce customer-specific solutions outside our standard portfolio - just contact us!



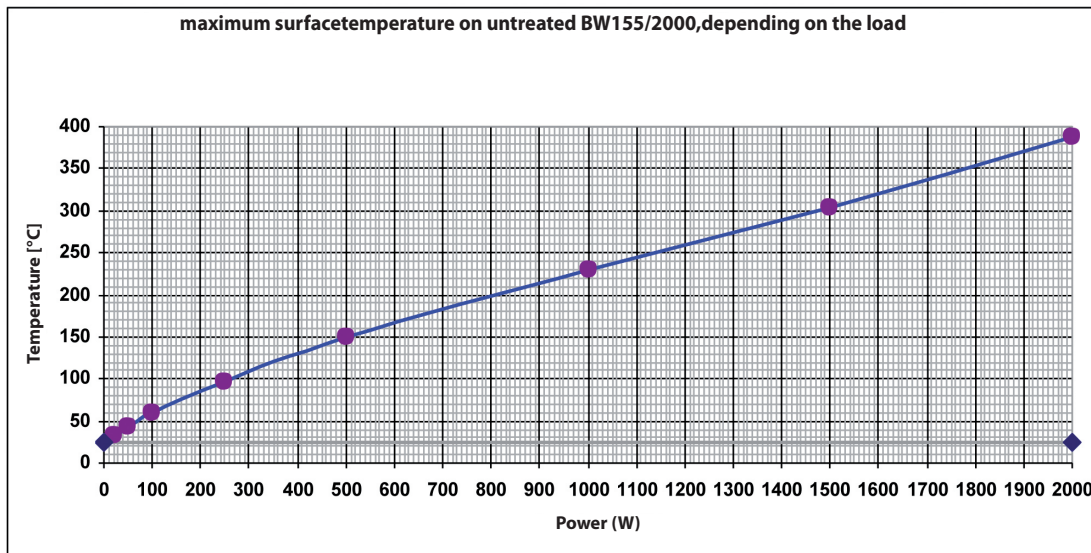
Series BW 155

(max continuous power: 3500 W)



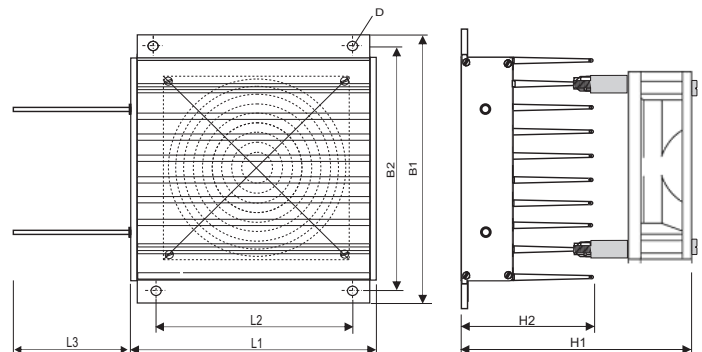
Braking resistor for drives with frequency converters of medium to high power. Mounting inside and outside the control cabinet is possible.

- degree of protection: IP20 / IP65 / IP66
- test voltage: 2.5 kV AC
- ambient temperature: 10+40 °C
- other services on request
- other fastenings on request
- optional with external cooling



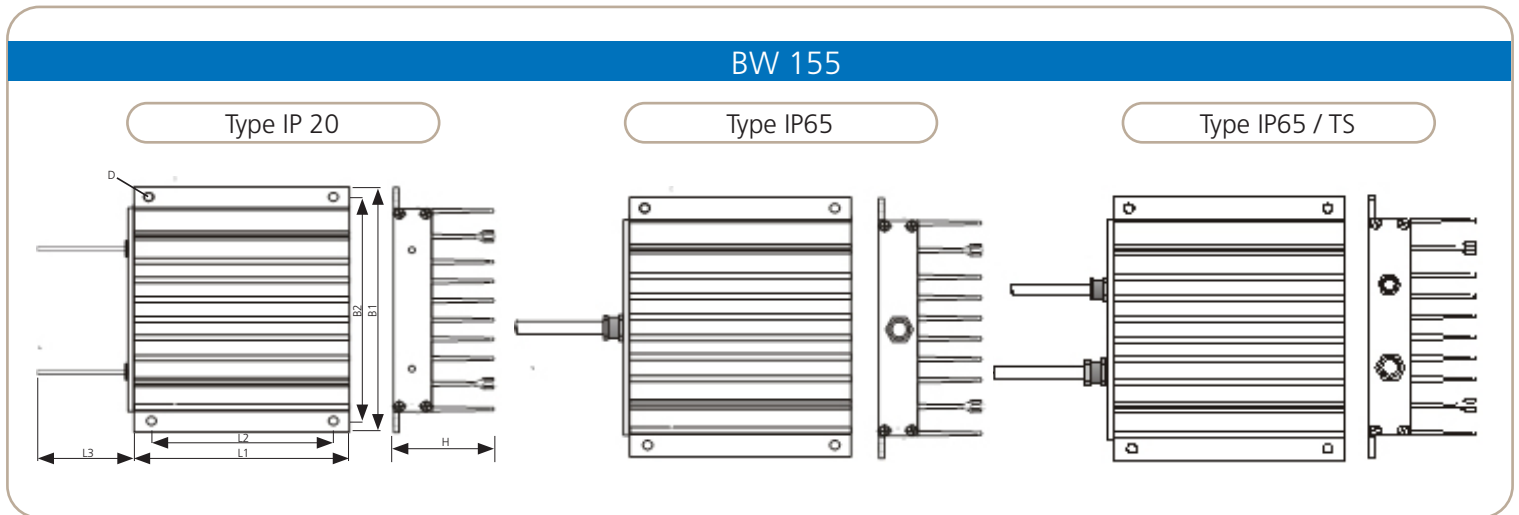
Advantages:

- small dimensions
- quick connection
- adaptation to any frequency inverter
- good power to size ratio
- optional with cover and temperature switch
- optionally also for aggressive environments (e.g. salt mist)
- protection type: IP66



In the event of destruction, the resistor becomes high-impedance. Each series is available with a temperature switch. The specified performance values were measured at a horizontal position of the resistors in the air with a distance of min. 100mm to the substrate. The power values refer to the standard products with a normal tolerance of +/- 10% at an ambient temperature of 20°C.

We are also happy to produce customer-specific solutions outside our standard portfolio - just contact us!
Technical data on contact hazard protection can be found on page 28!



Type	B1 [mm]	B2 [mm]	H [mm]	L1 [mm]	L2 [mm]	L3 [mm]	D [mm]	Connection cable**
BW 155 / 1000 /...	175	165	75	182	120	250	6,5	IP20 PTFE AWG14
BW 155 / 1200 /...	175	165	75	242	180	250	6,5	
BW 155 / 1500 /...	175	165	75	342	280	250	6,5	
BW 155 / 2000 /...	175	165	75	542	500	250	6,5	
BW 155 / 2500 /...	175	165	75	672	630	250	6,5	
BW 155 / 3000 /...	175	165	75	762	720	250	6,5	
BW 155 / 3500 /...	175	165	75	872	830	250	6,5	

Type	B1 [mm]	B2 [mm]	H [mm]	L1 [mm]	L2 [mm]	L3 [mm]	D [mm]	Connection cable**
BW 155 / 1000 /...	175	165	75	182	120	1000	6,5	IP 20 PTFE AWG14 IP 65 shielded Connection cable 3x1,5 mm ² or 3x2,5 mm ²
BW 155 / 1200 /...	175	165	75	242	180	1000	6,5	
BW 155 / 1500 /...	175	165	75	342	280	1000	6,5	
BW 155 / 2000 /...	175	165	75	542	500	1000	6,5	
BW 155 / 2500 /...	175	165	75	672	630	1000	6,5	
BW 155 / 3000 /...	175	165	75	762	720	1000	6,5	
BW 155 / 3500 /...	175	165	75	872	830	1000	6,5	

Type	resistance levels R [Ohm]	continuous performance P [W] IP20	continuous performance P [W] IP65	max. operating voltage U [V]
BW 155 / 1000	1 - 1000	1000	600	900
BW 155 / 1200	1,2 - 300	1200	800	
BW 155 / 1500	1,5 - 280	1500	1000	
BW 155 / 2000	2 - 1440	2000	1500	
BW 155 / 2500	2,5 - 600	2500	1875	
BW 155 / 3000	3 - 750	3000	2250	
BW 155 / 3500	4 - 750	3500	2500	

* For low resistance values, the conductor cross-section is adapted to the current.

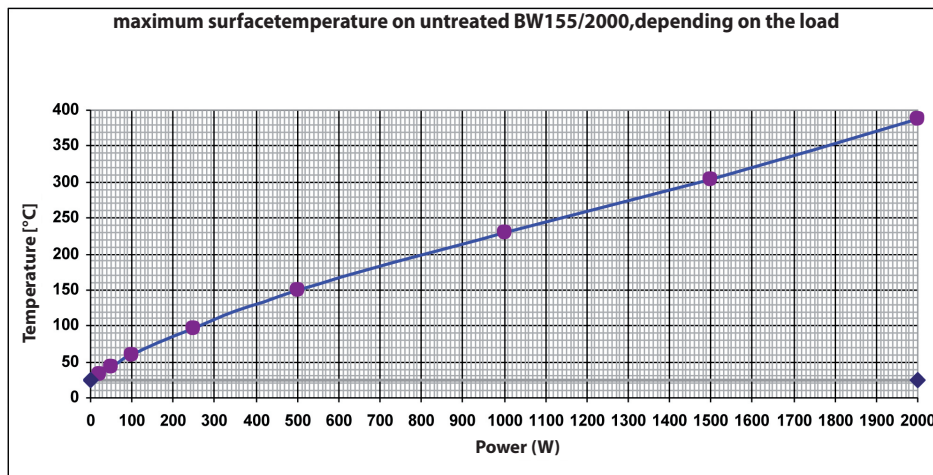
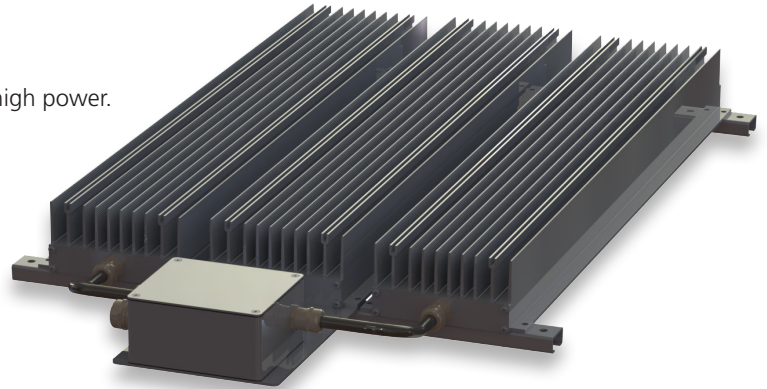


Series BW 155 - Combination

(max continuous power: 30,000 W)

Braking resistor for drives with frequency converters of high power.
Mounting close to the frequency inverter.

- degree of protection: IP 20 / IP 65 / IP 66
- test voltage: 2.5 kV AC
- ambient temperature: 10+40°C
- other services on request
- other mounting dimensions on customer request

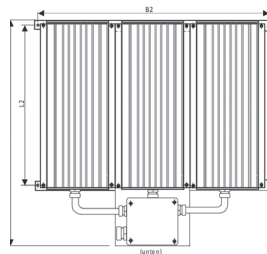


Advantages:

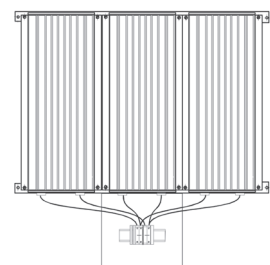
- quick connection
- good heat dissipation
- adaptation to any frequency inverter
- compact, modular design
- high degree of protection up to IP66
- easy to install due to 4-hole mounting
- optional with cover

BW 155 Station Wagon

Type IP65

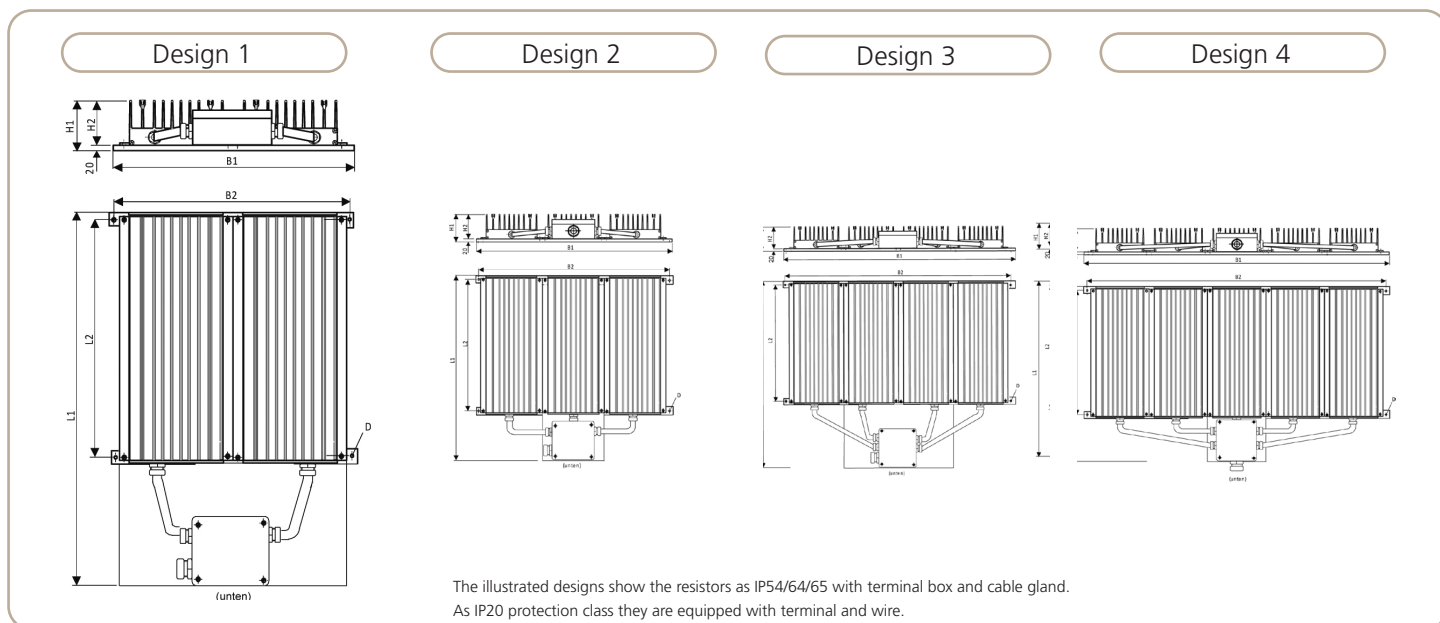


Type IP 20



*For low resistance values, the conductor cross-section is adapted to the current.

Type	Resistance values R [Ohm]	Continuous power P [W] IP 20	Continuous power P [W] IP 54	Type	Resistance values R [Ohm]	Continuous power P [W] IP 20	Continuous power P [W] IP 54	max. operating voltage U [V]
BW 155/4000	1-200	4000	3000	BW 155/15000	1-700	15,000	11250	900
BW 155/5000	2-500	5000	3750	BW 155/18000	1-630	18,000	13500	
BW 155/6000	2-600	6000	4500	BW 155/24000	1-580	24,000	18000	
BW 155/7500	2-600	7500	5600	BW 155/27000	1-600	27,000	20250	
BW 155/9000	2-750	9000	6750	BW 155/30000	1-600	30,000	22500	
BW 155/12000	2-750	12.000	9000					



Type	Dimensions							Cable gland	Connection Terminal	Design type
	L1 [mm]	L2 [mm]	B1 [mm]	B2 [mm]	H1 [mm]	H2 [mm]	D [mm]		Terminal	
BW 155/4000/ ...	750	500	420	390	95	75	8.5	M25	10 mm ²	BF 1
BW 155/5000/ ...	880	630	420	390	95	75	8.5	M25	10 mm ²	BF 1
BW 155/6000/ ...	970	720	420	390	95	75	8.5	M25	10 mm ²	BF 1
BW 155/7500/ ...	880	630	590	560	95	75	8.5	M25	10 mm ²	BF 2
BW 155/9000/ ...	970	720	590	560	95	75	8.5	M25	10 mm ²	BF 2
BW 155/12000/ ...	970	720	770	740	95	75	8.5	M32	16 mm ²	BF 3
BW 155/15000/ ...	970	720	940	910	95	75	8.5	M32	16 mm ²	BF 4
BW 155/18000/ ...	970	720	2x590	2x560	95	75	8.5	M32	35 mm ²	2x BF 2
BW 155/24000/ ...	970	720	2x770	2x740	95	75	8.5	M32	35 mm ²	2x BF 3
BW 155/27000/ ...	970	720	3x590	3x560	95	75	8.5	M32	35 mm ²	3x BF 2
BW 155/30000/ ...	970	720	2x940	2x910	95	75	8.5	M32	35 mm ²	2x BF 4

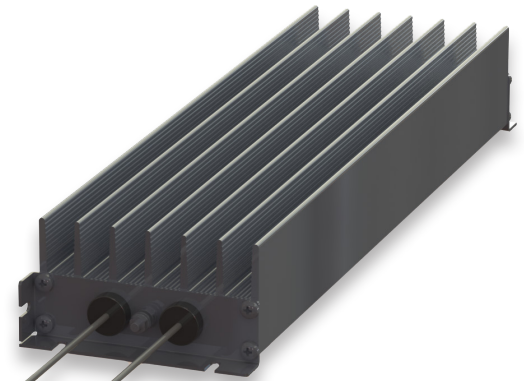


Series BW 156

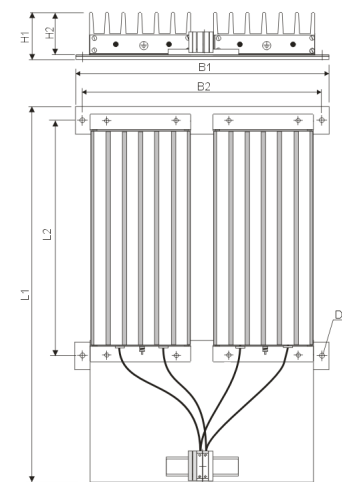
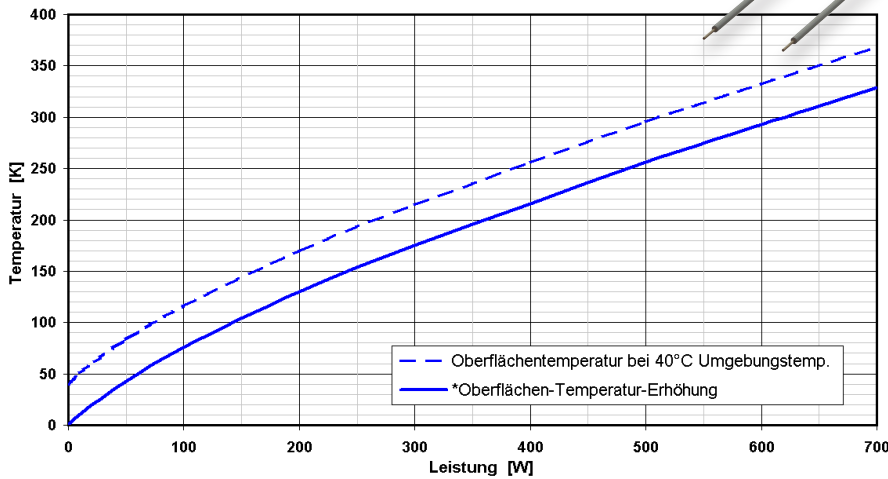
(max continuous power: 1500 W)

Braking resistor for drives with frequency converters of low to medium power. Mounting inside and outside the control cabinet is possible.

- protection class IP 20- IP 65
- test voltage 2.5 kV AC (900 V nominal voltage)
- higher protection classes on request
- other services on request
- other mounting dimensions on customer request



UL up to 7,5 kW



BW 156 Combination

Advantages:

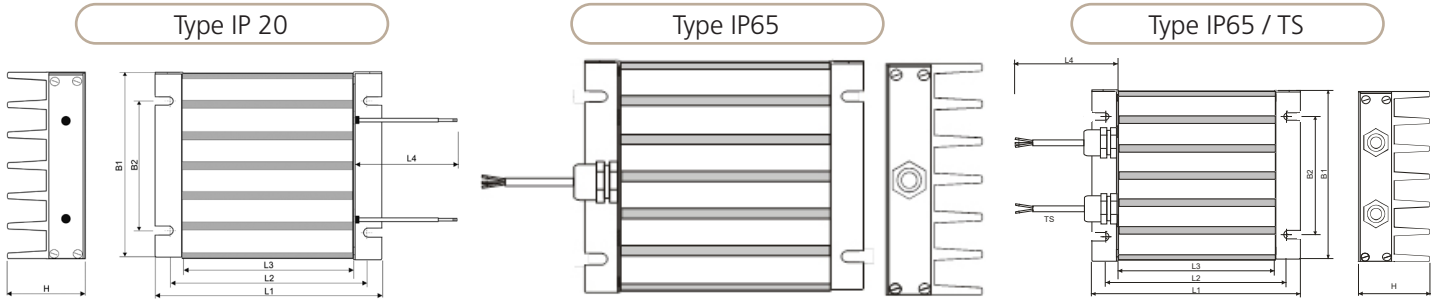
- quick connection
- short-circuit protected
- small dimensions with high performance
- very good heat dissipation
- high resistance at overload
- optionally with contact protection and temperature switch
- optionally also for aggressive environments (e.g. salt mist)
- installation also possible outside the control cabinet compact
- also with UL certification see overview "UL-certified products from REO".



Type	resistance levels R [Ohm]	continuous performance P [W] IP 20	continuous performance P [W] IP 54	max. operating voltage U [V]
BW 156/400/ ...	1 - 1000	400	300	900
BW 156/600/ ...	1 - 250	600	400	900
BW 156/800/ ...	1 - 620	800	500	900
BW 156/1000/ ...	1,5 - 500	1000	600	900
BW 156/1200	2 - 400	1200	700	900
BW 156/1500	2 - 500	1500	800	1000

REO BW 156

BW 156



Type	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	B1 [mm]	B2 [mm]	H [mm]	D [mm]	Connection cable
BW 156/400/ ...	170	155	140	500	104	70	53	4.5	IP20 PTFE AWG14
BW 156/600/ ...	230	215	200	500	104	70	53	4.5	
BW 156/800/ ...	300	285	270	500	104	70	53	4.5	
BW 156/1000/ ...	370	355	340	500	104	70	53	4.5	
BW 156/1200/ ...	450	435	420	500	104	70	53	4.5	
BW 156/1500/ ...	600	585	570	500	104	70	53	4.5	
BW 156/400/ ...	174	159	140	1000	104	70	53	4.5	IP65 shielded connection cable 3x1.5mm ²
BW 156/600/ ...	234	219	200	1000	104	70	53	4.5	
BW 156/800/ ...	304	289	270	1000	104	70	53	4.5	
BW 156/1000/ ...	374	359	340	1000	104	70	53	4.5	
BW 156/1200/ ...	454	439	420	1000	104	70	53	4.5	
BW 156/1500/ ...	604	589	570	1000	104	70	53	4.5	

REO BW 156

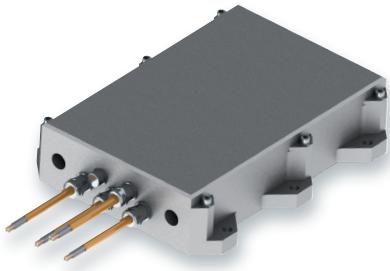
In the event of destruction, the resistor becomes high-impedance. Each series is available with a temperature switch. The specified performance values were measured at a horizontal position of the resistors in the air with a distance of min. 100mm to the substrate. The power values refer to the standard products with a normal tolerance of +/- 10% at an ambient temperature of 20°C.

We are also happy to produce customer-specific solutions outside our standard portfolio - just contact us!

Technical data on contact hazard protection can be found on page 28!



Liquid-cooled braking resistors



BW D 330 series

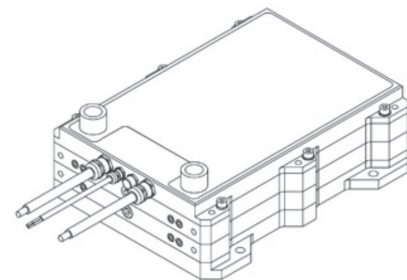
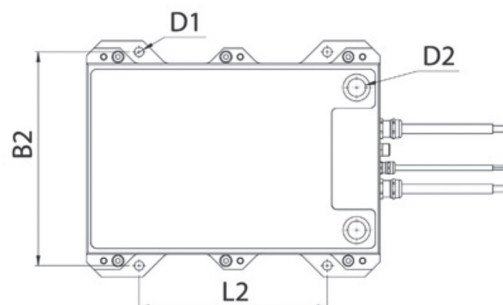
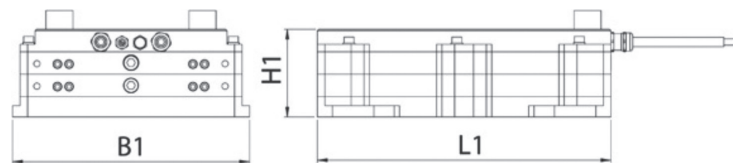
(max continuous output: 60.000 W)

The REO braking resistor converts excess braking energy into useful heat and is thus ideally suitable for electrical or hybrid drives. The water cooling makes an additional space saving of up to 88% possible as compared to a traditional air-cooled braking resistor. As an extra feature, the resistor can easily be connected with drip-free quick fasteners.

Benefits:

- Protection class IP67
- 88% space saving
- Non-drip quick-release connectors
- Water-cooled
- Low weight
- Low surface temperature

Type	Resistance values [Ohm]	Continuous output [W]	Operating voltage [V]
BW D 330 / 15.000	4,2 - 43,5	15000	800
BW D 330 / 30.000	2,1 - 21,5	30000	
BW D 330 / 45.000	1,4 - 14,5	45000	
BW D 330 / 60.000	1,6 - 11	60000	



Type	L1 [mm]	L2 [mm]	B1 [mm]	B2 [mm]	D1Ø [mm]	D2 Ø [mm]	H1 [mm]
BW D 330 / 15.000	390	250	315	285	12,5	G3/4	57
BW D 330 / 30.000	390	250	315	285	12,5	G3/4	87
BW D 330 / 45.000	390	250	315	285	12,5	G3/4	117
BW D 330 / 60.000	390	250	315	285	12,5	G3/4	147

In the event of a sustained overload, the resistor becomes high-impedance, and therefore, every series can be supplied with a temperature switch, ensuring application safety. The given output values were recorded with a horizontal position of the resistors in the air at a distance of min. 100mm to the substrate.

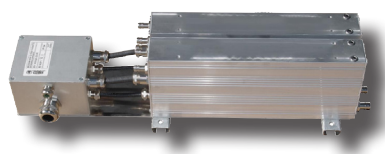
Performance values refer to the standard products with a standard tolerance of +/- 10% with an ambient temperature of 20 ° C.

We are happy to provide customized solutions apart from our standard portfolio - please contact us!



Series BW D 158

(max continuous output: 60.000 W)



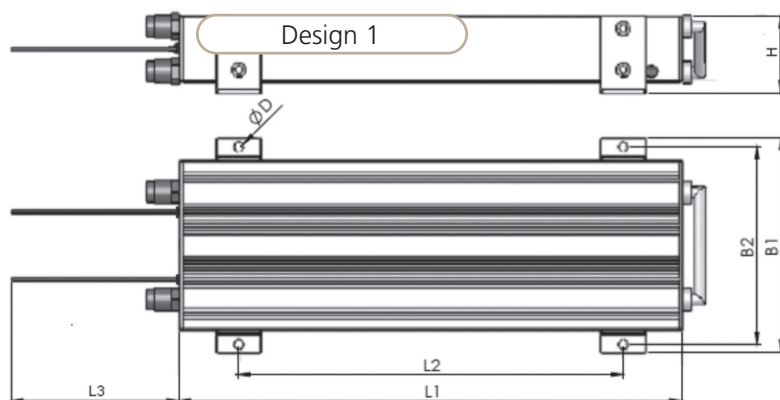
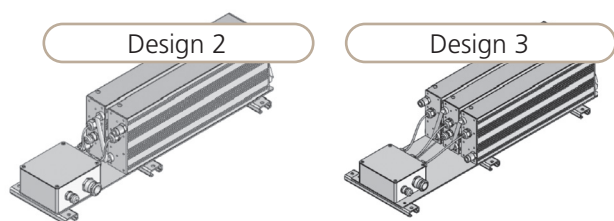
for use as braking or load resistor for drive technology, industrial applications, test beds and railway engineering with integrated water cooling. Thanks to localised, optimised cooling, high outputs can be generated in the smallest space with low heat generation. It is also possible to deploy it in areas with high ambient temperatures.

Benefits:

- very compact construction
- high protection class up to IP65
- use also possible at higher ambient temperatures
- optimised cooling for high ratings
- very low enclosure overtemperature
- suitable for standard cooling fluids (water/glycol)
- operating pressure of the cooling circuit up to 4bar (test pressure 10bar)
- also as BW D 160 with cooling channels of Cu or Cu-Ni alloy (then, even salt water can be used as coolant)

- Protection class: IP 20 to IP 65
- Test voltage: 2.5kV AC
- Enclosure overtemperature max.: 50k
- Ambient temperature: -15 to +40°C
- Other fastening dimensions and ratings upon request

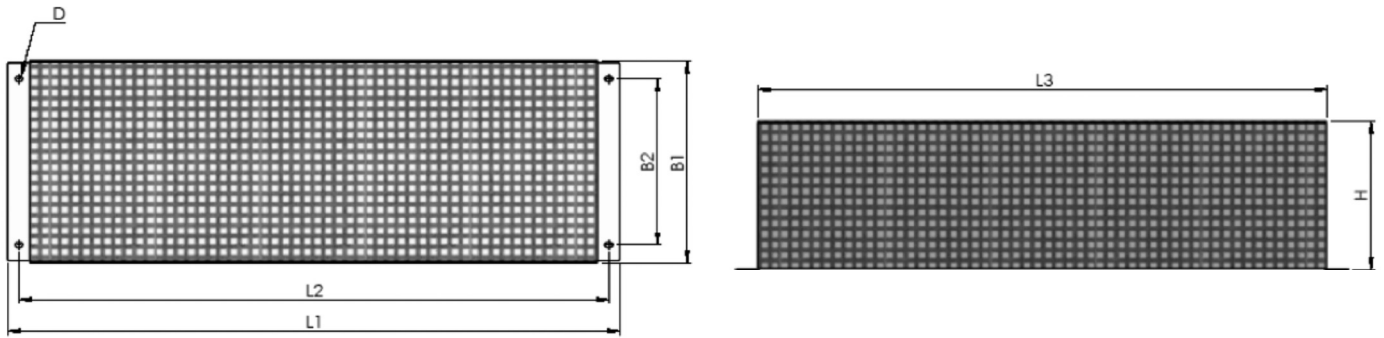
Type	Resistance values R [Ohm]	Continuous output P [W]	max. operating voltage U [V]
BW D 158 /3000 / ...	10 - 200	3.000	1000
BW D 158 /5000 / ...	10 - 200	5.000	
BW D 158 /6000 / ...	10 - 200	6.000	
BW D 158 /10000 / ...	6 - 500	10.000	
BW D 158 /15000 / ...	4 - 600	15.000	
BW D 158 /20000 / ...	3 - 600	20.000	
BW D 158 /30000 / ...	2,1 - 750	30.000	
BW D 158 /45000 / ...	2,1 - 800	45.000	
BW D 158 /60000 / ...	2 - 850	60.000	



Combinations protection class IP65

Type	Dimensions						Connections		Design
	L1 [mm]	L2 [mm]	L3 [mm]	B1 [mm]	B2 [mm]	H [mm]	Cable gland	Clamps	
BW D 158 / 3000 / ...	320	213	500	190	175	68	M20	6 mm ²	Design1
BW D 158 / 5000 / ...	450	343	500	190	175	68	M20	6 mm ²	Design1
BW D 158 / 6000 / ...	550	443	500	190	175	68	M20	6 mm ²	Design1
BW D 158 / 10000 / ...	680	343	265	176	156	170	M25	10 mm ²	Design2
BW D 158 / 15000 / ...	680	343	265	245	225	170	M32	10 mm ²	Design3
BW D 158 / 20000 / ...	680	343	265	2x176	2x156	170	M32	10 mm ²	2 x Design2
BW D 158 / 30000 / ...	680	343	265	2x245	2x225	170	M32	10 mm ²	2 x Design3
BW D158 / 45000 / ...	680	343	265	3x245	3x225	170	M32	16 mm ²	3 x Design3
BW D158 / 60000 / ...	680	343	265	4x245	4x225	170	M32	16 mm ²	4 x Design3

Cover for resistors



Technical Data Contact Protection BW155 combi and BW156

Type	Dimensions						Quantity
	L1 [mm]	L2 [mm]	B1 [mm]	B2 [mm]	H [mm]	D [mm]	
BW 156/400/ ...	300	270	200	150	140	7.0x10.0	1
BW 156/600/ ...	360	330	200	150	140	7.0x10.0	1
BW 156/800/ ...	430	400	200	150	140	7.0x10.0	1
BW 156/1200/ ...	580	550	200	150	140	7.0x10.0	1
BW 156/1500/ ...	730	700	200	150	140	7.0x10.0	1
BW 155/4000/ ...	700	620	520	500	200	7.0x10.0	1
BW 155/5000/ ...	800	720	520	500	200	7.0x10.0	1
BW 155/6000/ ...	900	820	520	500	200	7.0x10.0	1
BW 155/7500/ ...	800	720	690	670	200	7.0x10.0	1
BW 155/9000/ ...	900	820	690	670	200	7.0x10.0	1
BW 155/12000/ ...	900	820	870	850	200	7.0x10.0	1
BW 155/1000/ ...	470	440	275	225	200	7.0x10.0	
BW 155/1200/ ...	530	500	275	225	200	7.0x10.0	
BW 155/1500/ ...	630	600	275	225	200	7.0x10.0	
BW 155/2000/ ...	830	800	275	225	200	7.0x10.0	
BW 155/2500/ ...	960	930	275	225	200	7.0x10.0	
BW 155/3000/ ...	1050	1020	275	225	200	7.0x10.0	

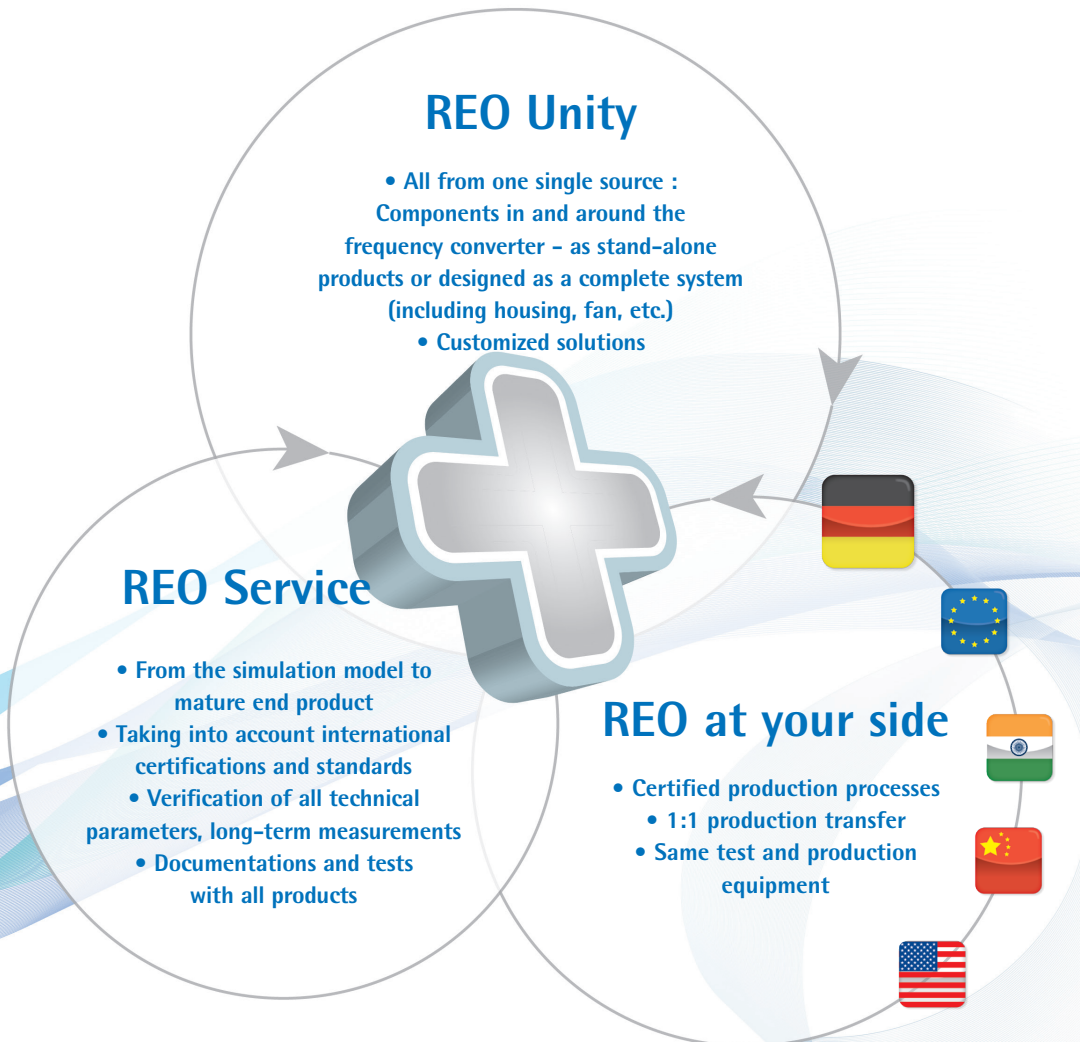
*Other covers are available on request.

Worldwide Sales Network

With a worldwide sales network and comprehensive product portfolio, REO can react rapidly to your wishes anywhere in the world - no matter what language you speak. Besides our wide selection of standard products, we can of course offer you tailor-made solutions, developed specially to meet your wishes. Our production facilities in China, India and the USA are equipped in exactly the same way as those in Germany, and designed to provide the same product at the same quality.

Using the same software and with development and design in Germany we ensure that REO products are always up to the latest state of the art.

Wherever you are, even after the 1000th production run, a REO product always has the same quality.





www.reohm.de

REO
Resistors

Home Products Technology Download Contact

REO - the resistance

REOHM Resistors - since 1925 the partner on your side.

Find the right product without clicking through our whole range. Just use the [REO Productfinder](#). In a few seconds you can find out which resistance from our range is the right for you and your matter of concern.

If you do not know the rated power, our [Power calculator](#) will help you quick and easy. Should you still need personal help, our support team will be there for you.

Support-Hotline: +49 (0) 212 8804-0

[+ Power calculator](#)

REO Productfinder

Rated output (W)

Protection class

Resistance (Ohm)

Certified

Thermal switch

[Search >](#)

Welcome

The REOhm braking, damping and charging resistors are characterised by a high degree of functional safety and a long life.

REO braking resistor wires are wound on a frame and encapsulated. This provides a very high degree of mechanical protection and no susceptibility to vibrations and oscillations. This construction enables the resistor to absorb higher pulse loads and store them temporarily.

Our resistors are available with protection ratings up to IP65.

Damping- and charging resistors are used to damp over-voltages or to dissipate excess energy which occurs, for example, on braking or starting up. Applications can be found in railway engineering, electric vehicles or commercial vehicles.

Liquid-cooled resistors - compared to air-cooled resistors - can minimize the size up to 80%.





REO AG

Brühler Straße 100 · D-42657 Solingen
Tel.: +49 (0)212 8804 0 · Fax: +49 (0)212 8804 188

E-Mail: info@reo.de
Internet: www.reo.de

REO Vibratory Feeding and Power Electronics Division
Brühler Straße 100 · D-42657 Solingen
Tel.: +49 (0)212 8804 0 · Fax: +49 (0)212 8804 188
E-Mail: info@reo.de

REO Train Technologies Division
Erasmusstraße 14 · D-10553 Berlin
Tel.: +49 (0)30 3670236 0 · Fax: +49 (0)30 3670236 10
E-Mail: zentrale.berlin@reo.de

REO Drives Division
Holzhausener Straße 52 · D-16866 Kyritz
Tel.: +49 (0)33971 485 0 · Fax: +49 (0)33971 485 90
E-Mail: zentrale.kyritz@reo.de

REO Medical and Current Transformer Division
Schuldholzinger Weg 7 · D-84347 Pfarrkirchen
Tel.: +49 (0)8561 9886 0 · Fax: +49 (0)8561 9886 40
E-Mail: zentrale.pfarrkirchen@reo.de

REO Test and PowerQuality Division
Brühler Straße 100 · D-42657 Solingen
Tel.: +49 (0)212 8804 0 · Fax: +49 (0)212 8804 188
E-Mail: info@reo.de

China
REO Shanghai Inductive Components Co., Ltd
E-Mail: info@reo.cn · Internet: www.reo.cn

India
REO GPD INDUCTIVE COMPONENTS PVT. LTD
E-Mail: info@reogpd.com · Internet: www.reo-ag.in

USA
REO-USA, Inc.
E-Mail: info@reo-usa.com · Internet: www.reo-usa.com

France
REO VARIAC S.A.R.L.
E-Mail: reovariac@reo.fr · Internet: www.reo.fr

Great Britain
REO (UK) Ltd.
E-Mail: main@reo.co.uk · Internet: www.reo.co.uk

Italy
REO ITALIA S.r.l.
E-Mail: info@reoitalia.it · Internet: www.reoitalia.it

Poland
REO CROMA Sp.zo.o
E-Mail: croma@croma.com.pl · Internet: www.croma.com.pl

Spain
REO ESPAÑA 2002 S.A.
E-Mail: info@reospain.com · Internet: www.reospain.com

Switzerland
REO ELEKTRONIK AG
E-Mail: info@reo.ch · Internet: www.reo.ch

Turkey
REOTURKEY ELEKTRONIK San. ve Tic. Ltd. ti.
E-Mail: info@reo-turkey.com · Internet: www.reo-turkey.com