

# OVERVIEW

## RADIO INTERFERENCE SUPPRESSION FILTERS

	Type	Voltage range	Low leakage current	Reduced leakage current	IT mains	Electronic apparatuses	General EMI suppression	Systems engineering, weak interferences	Systems engineering, complex structure	Frequency inverter, long motor cable	Frequency inverter, short motor cable	Frequency inverter, short motor cable	Several frequency inverters	Unknown requirements, high suppression	Low frequency disturbance (≠LF) or high frequency (≠HF)	Page
AC 1-phase	HFE 156	0 – 250 Vac		■		■	■	■		■	■	■			HF	494
	HFE 356	0 – 250 Vac	■			■	■	■			■	■			HF	496
	HFE 104	0 – 250 Vac	■			■	■	■							HF	498
	HFE 200	0 – 250 Vac	■			■	■	■							HF	500
	HLE 110	0 – 250 Vac		■		■	■	■	■	■	■	■	■	■	HF	502
	HLE 310	0 – 250 Vac	■			■	■	■			■		■		HF	506
AC 3-phase	HFD 156	0 – 480 Vac		■		■	■	■			■	■			HF	510
	HFD 356	0 – 480 Vac	■			■	■	■			■	■			HF	513
	HLD 103	0 – 3 x 520 Vac				■	■	■	■	■	■	■	■	■	HF	516
	HLD 110	0 – 3 x 520 Vac				■	■	■	■	■	■	■	■	■	HF	519
	HLD 310	0 – 3 x 520 Vac	■	■	■	■	■	■	■		■	■			HF	523
	HLD 710	0 – 3 x 520 Vac		■		■	■	■	■	■	■	■	■	■	HF	527
	HLD 810	0 – 3 x 520 Vac	■		■	■	■	■			■		■		HF	531
	HFD 500	0 – 3 x 520 Vac				■	■	■			■	■			HF	535
	HFD 210	0 – 3 x 480 - 520 Vac				■	■	■	■	■	■	■		■	HF	539
	HFD 510	0 – 3 x 480 - 520 Vac				■	■	■	■	■	■	■		■	HF	543
AC 3-phase + N	HLV 110	0 – 3 x 520 Vac				■	■	■	■	■	■	■	■	■	HF	546
	HLV 310	0 – 3 x 520 Vac	■			■	■	■			■		■		HF	550
	HLV 710	0 – 3 x 520 Vac		■		■	■	■	■	■	■	■	■	■	HF	554
	HLV 810	0 – 3 x 520 Vac	■		■	■	■	■			■		■		HF	558
	HFV 510	0 – 3 x 480 Vac				■	■	■	■	■	■	■	■	■	HF	562



1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

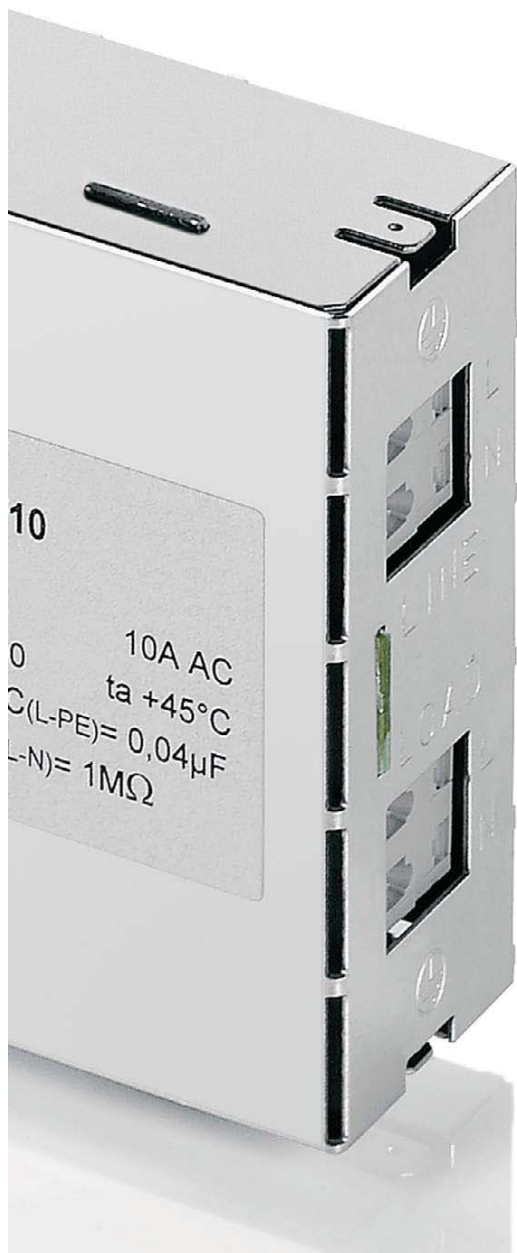
4.0

5.1

5.2

## Radio interference suppression filter, single-phase

### HFE 156



## General Data

Rated voltage 250 Vac
Voltage range 0 - 250 Vac
Rated current 1.00 - 16.00 A
Leakage current 8.00 mA
Ambient temperature max. 45 °C
Degree of protection IP 20

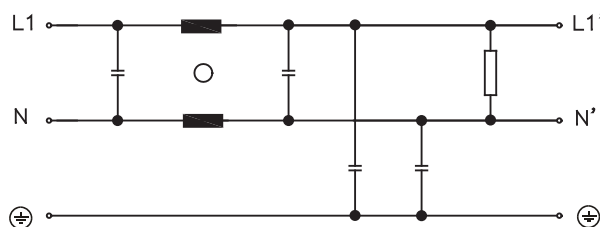
## Advantages

For general requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer
DIN rail mounting

## Applications

Radio interference suppression filter for mains-side interference suppression of power supplies and electronic devices.

## Sample application



## Standards

Radio interference suppression filter to DIN EN 60939-2







## Approvals



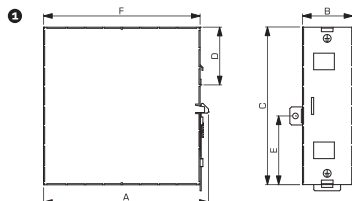


## Radio interference suppression filter, single-phase HFE 156



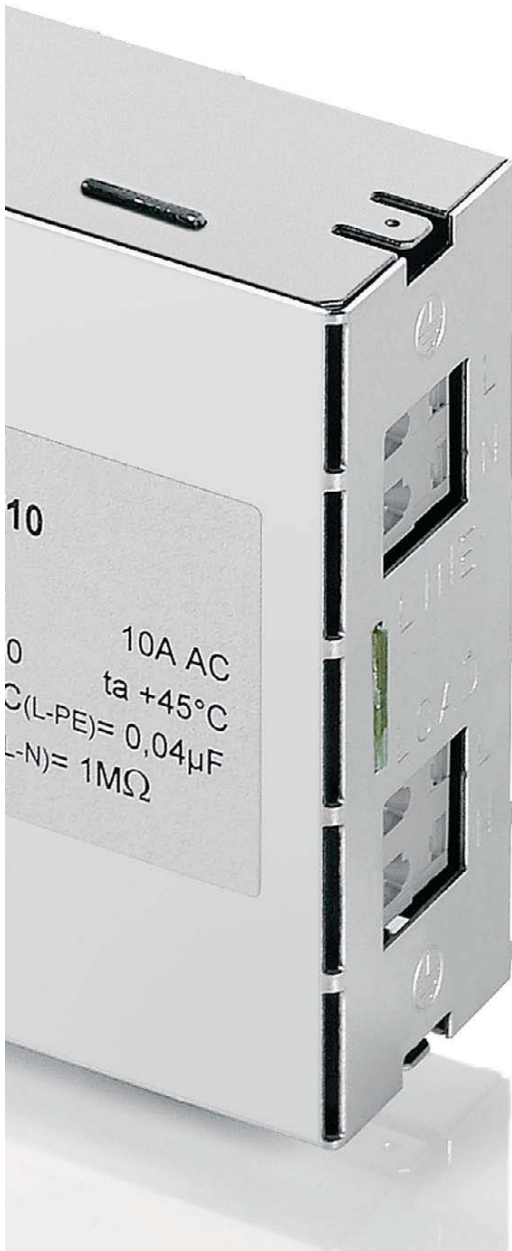
Electrical data	Typ	HFE 156-230/1	HFE 156-230/3	HFE 156-230/6	HFE 156-230/10	HFE 156-230/12	HFE 156-230/16
	Operating data						
	Rated voltage	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac
	Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
	Rated current	1 A	3 A	6 A	10 A	12 A	16 A
	Leakage current (50 Hz)	8 mA	8 mA	8 mA	8 mA	8 mA	8 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	0.9 W	1.8 W	2.6 W	4.0 W	6.2 W	8.9 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Environment	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C
Safety and protection	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE
Order numbers	Order numbers						
	Order Number	HFE 156-230/1	HFE 156-230/3	HFE 156-230/6	HFE 156-230/10	HFE 156-230/12	HFE 156-230/16
Mechanical data	Terminal and mounting						
	Terminals phase	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal
	Terminals PE	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm
	Fixing method	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails
Measures and weights	Measures and weights						
	Weight	0.32 kg	0.33 kg	0.33 kg	0.34 kg	0.56 kg	0.55 kg
	Dimension picture (in mm)						
	A	107	107	107	107	127	127
	B	40	40	40	40	45	45
	C	85	85	85	85	110	110
	D	22	22	22	22	52	52
	E	33	33	33	33	33	33
	F	100	100	100	100	120	120

## Dimension pictures



## Radio interference suppression filter, single-phase, low leakage current

### HFE 356



## General Data

Rated voltage 250 Vac
Voltage range 0 - 250 Vac
Rated current 1.00 - 16.00 A
Leakage current 2 mA
Degree of protection IP 20
DIN Rail mounting

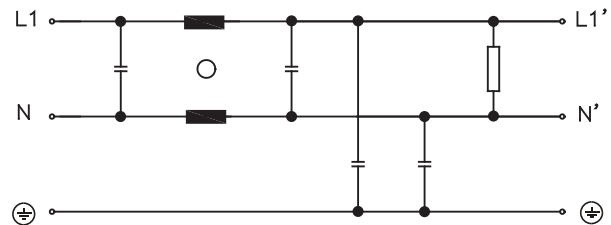
## Advantages

For general requirements
Low leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

## Applications

Radio interference suppression filter for mains-side interference suppression of power supplies and electronic devices.

## Sample application



## Standards

Radio interference suppression filter to DIN EN 60939-2

## Approvals



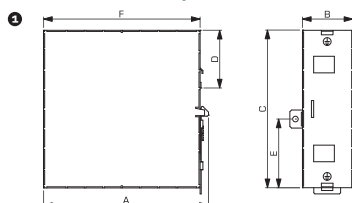


## Radio interference suppression filter, single-phase, low leakage current **HFE 356**



Electrical data	Typ	HFE 356-230/1	HFE 356-230/3	HFE 356-230/6	HFE 356-230/10	HFE 356-230/12	HFE 356-230/16
	Special features						
Electrical data	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data						
	Rated voltage	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac
	Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
	Rated current	1 A	3 A	6 A	10 A	12 A	16 A
	Leakage current (50 Hz)	2 mA	2 mA	2 mA	2 mA	2 mA	2 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	0.9 W	1.8 W	2.6 W	4.0 W	6.2 W	8.9 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Standards						
Mechanical data	Classification	EMI filter	EMI filter	EMI filter	EMI filter	EMI filter	EMI filter
	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE
	Order numbers						
Mechanical data	Order Number	<b>HFE 356-230/1</b>	<b>HFE 356-230/3</b>	<b>HFE 356-230/6</b>	<b>HFE 356-230/10</b>	<b>HFE 356-230/12</b>	<b>HFE 356-230/16</b>
	Terminal and mounting						
	Terminals phase	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal	2.5 mm <sup>2</sup> spring terminal
	Terminals PE	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm
	Fixing method	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails	Panel installation on mounting rails
	Measures and weights						
	Weight	0.32 kg	0.33 kg	0.33 kg	0.34 kg	0.56 kg	0.55 kg
	Dimension picture (in mm)	①	①	①	①	①	①
	A	107	107	107	107	127	127
	B	40	40	40	40	45	45
	C	85	85	85	85	110	110
	D	22	22	22	22	52	52
	E	33	33	33	33	33	33
	F	100	100	100	100	120	120

## Dimension pictures





## Radio interference filter, single-phase, low leakage current **HFE 104**



### General Data

Rated voltage 250 Vac
Voltage range 0 - 250 Vac
Rated current 1.00 - 65.00 A
Leakage current 0.37 mA
Degree of protection IP 00
Flat-pin terminals 6.3 x 0.8 mm

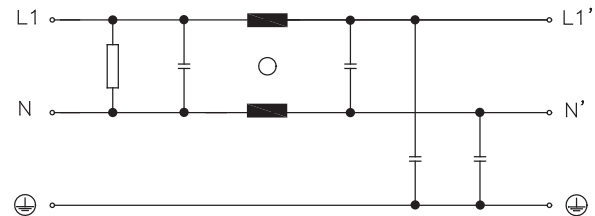
### Advantages

For general requirements
Low leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for mains-side interference suppression of power supplies and electronic devices.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals





## Radio interference filter, single-phase, low leakage current **HFE 104**



1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

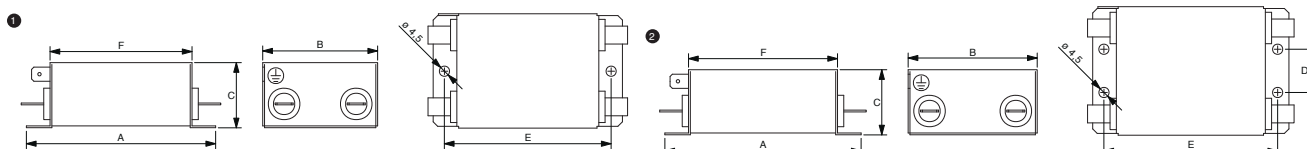
4.0

5.1

5.2

Electrical data	Typ	HFE 104-230/1	HFE 104-230/2	HFE 104-230/3	HFE 104-230/6	HFE 104-230/10	HFE 104-230/20
	Special features						
Electrical data	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data						
	Rated voltage	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac
	Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
	Rated current	1 A	2 A	3 A	6 A	10 A	20 A
	Leakage current (50 Hz)	0.37 mA	0.37 mA	0.37 mA	0.37 mA	0.37 mA	0.37 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Environment	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment						
Safety and protection	Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Order numbers	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE
	Order Number	<b>HFE 104-230/1</b>	<b>HFE 104-230/2</b>	<b>HFE 104-230/3</b>	<b>HFE 104-230/6</b>	<b>HFE 104-230/10</b>	<b>HFE 104-230/20</b>
Mechanical data	Terminal and mounting	HFE 104-230/1	HFE 104-230/2	HFE 104-230/3	HFE 104-230/6	HFE 104-230/10	HFE 104-230/20
	Terminals phase	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm
Mechanical data	Terminals PE	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm
	Fixing method	Mounting lugs	Mounting lugs	Mounting lugs	Mounting lugs	Mounting lugs	Mounting lugs
	Measures and weights						
Mechanical data	Weight	0.16 kg	0.16 kg	0.23 kg	0.23 kg	0.29 kg	0.71 kg
	Dimension picture (in mm)	①	①	①	①	①	②
	A	70	70	84	84	84	118
	B	45	45	51	51	51	84
	C	29	29	29	29	39	38
	D	-	-	-	-	-	51
	E	60	60	74	74	74	108
	F	50	50	63	63	63	99

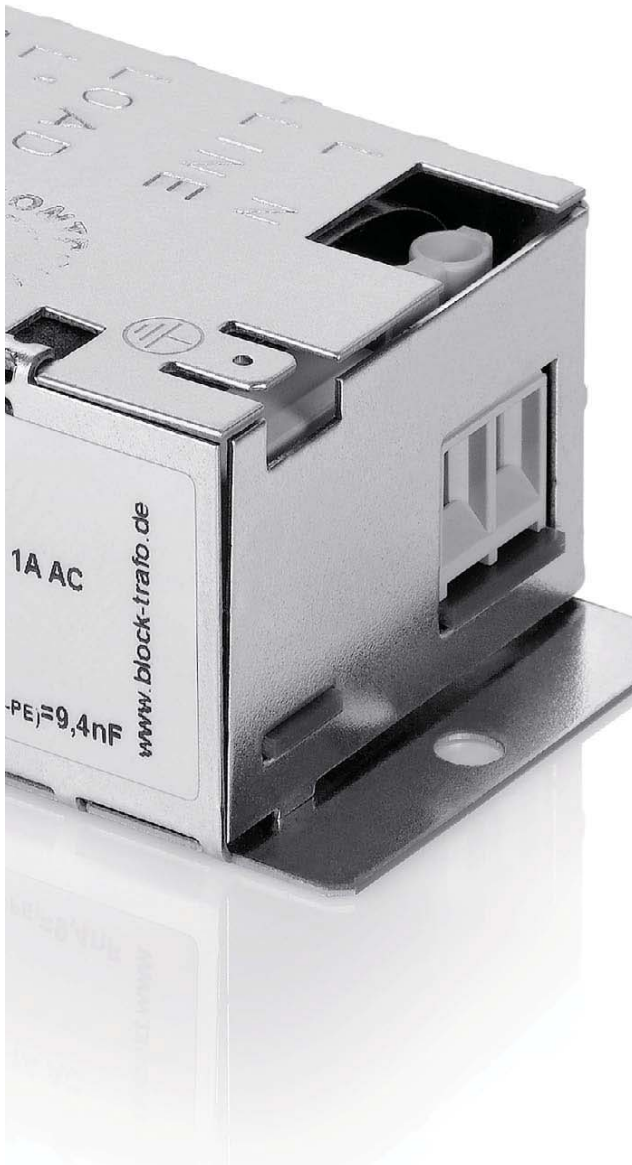
## Dimension pictures





## Radio interference suppression filter, single-phase, low leakage current

### HFE 200



#### General Data

Rated voltage 250 Vac
Voltage range 0 - 250 Vac
Rated current 1.00 - 16.00 A
Leakage current 0.40 mA
Degree of protection IP 20

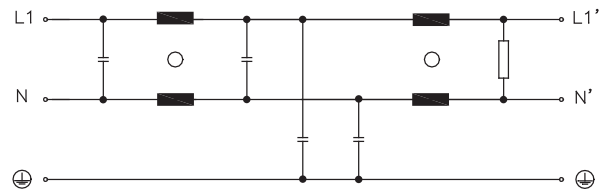
#### Advantages

For enhanced requirements
Low leakage current
Two stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

#### Applications

Radio interference suppression filter for mains-side interference suppression of power supplies and electronic devices.

#### Sample application



#### Standards

Radio interference suppression filter to DIN EN 60939-2

#### Approvals





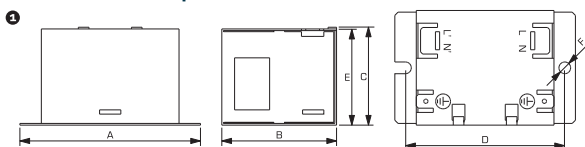
## Radio interference suppression filter, single-phase, low leakage current **HFE 200**



Typ	HFE 200-230/1	HFE 200-230/3	HFE 200-230/6	HFE 200-230/10	HFE 200-230/12	HFE 200-230/16
<b>Electrical data</b>						
Operating data						
Rated voltage	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac
Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
Rated current	1 A	3 A	6 A	10 A	12 A	16 A
Leakage current (50 Hz)	0.4 mA	0.4 mA	0.4 mA	0.4 mA	0.4 mA	0.4 mA
Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
<b>Environment</b>						
Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
<b>Safety and protection</b>						
Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)	I	I	I	I	I	I
Test voltage	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE	1700 Vdc Phase/N, 2700 Vdc Phase/PE
<b>Order numbers</b>						
Order Number	HFE 200-230/1	HFE 200-230/3	HFE 200-230/6	HFE 200-230/10	HFE 200-230/12	HFE 200-230/16

<b>Mechanical data</b>						
Terminal and mounting						
Terminals phase	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>
Terminals PE	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm	Tab connector, 6.3 x 0.8 mm
Fixing method	Mounting lugs	Mounting lugs	Mounting lugs	Mounting lugs	Mounting lugs	Mounting lugs
<b>Measures and weights</b>						
Weight	0.14 kg	0.19 kg	0.37 kg	0.53 kg	0.53 kg	0.58 kg
Dimension picture (in mm)	1	1	1	1	1	1
A	85	85	114	156	156	119
B	54	54	57	58	58	86
C	35	47	55	67	67	69
D	75	75	103	143	143	109
E	34	46	54	66	66	68
F	5.5	5.5	5.5	5.5	5.5	5.5

## Dimension pictures



## Radio interference suppression filter, single-phase

### HLE 110



### General Data

Rated voltage 250 Vac
Voltage range 0 - 250 Vac
Rated current 4 - 55 A
Leakage current 8.50 mA
Degree of protection IP 20

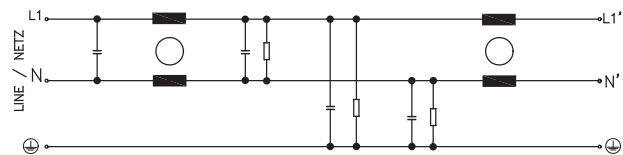
### Advantages

For enhanced requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals





## Radio interference suppression filter, single-phase **HLE 110**



Electrical data	Typ	HLE 110-230/4	HLE 110-230/8	HLE 110-230/12	HLE 110-230/16	HLE 110-230/20	HLE 110-230/25
	Operating data						
	Rated voltage	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac
	Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
	Rated current	4 A	8 A	12 A	16 A	20 A	25 A
	Leakage current (50 Hz)*	8.50 mA	8.50 mA	8.50 mA	8.50 mA	8.50 mA	8.50 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Oversrating Capacity	150 %, short-time	150 %, short-time	150 %, short-time	150 %, short-time	150 %, short-time	150 %, short-time
	Environment						
	Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	Order numbers						
	Order Number	<b>HLE 110-230/4</b>	<b>HLE 110-230/8</b>	<b>HLE 110-230/12</b>	<b>HLE 110-230/16</b>	<b>HLE 110-230/20</b>	<b>HLE 110-230/25</b>

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

### 3 Reactors / EMI filters

#### Single-phase radio interference suppression filters



## Radio interference suppression filter, single-phase **HLE 110**



Electrical data	Typ	HLE 110-230/30	HLE 110-230/42	HLE 110-230/55
	Operating data			
	Rated voltage	250 Vac	250 Vac	250 Vac
	Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
	Rated current	30 A	42 A	55 A
	Leakage current (50 Hz)*	8.50 mA	8.50 mA	8.50 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Overrating Capacity	150 %, short-time	150 %, short-time	150 %, short-time
	Environment			
	Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
	Ambient temperature max.	50 °C	50 °C	50 °C
	Safety and protection			
	Type	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I
	Test voltage	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes			
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	Order numbers			
	Order Number	<b>HLE 110-230/30</b>	<b>HLE 110-230/42</b>	<b>HLE 110-230/55</b>

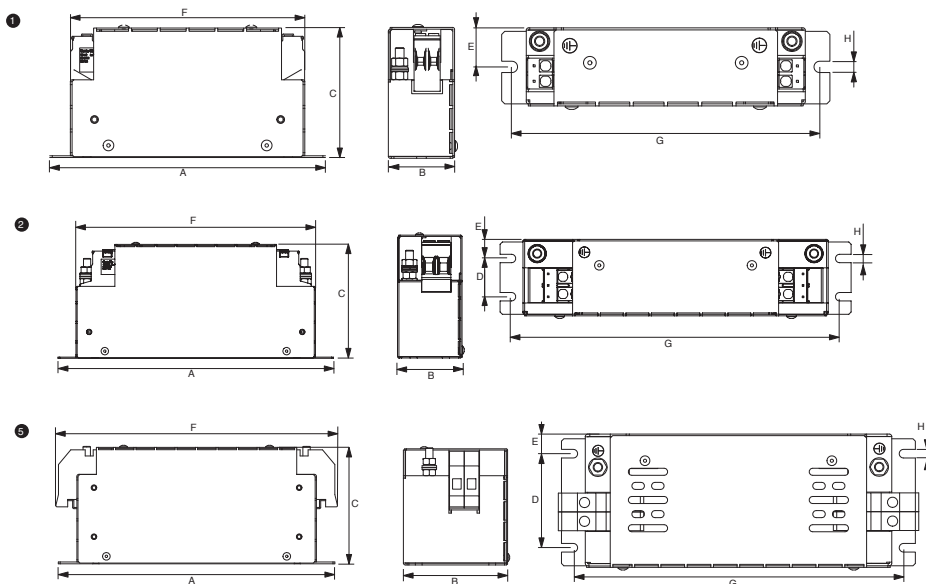


## Radio interference suppression filter, single-phase **HLE 110**



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F	G	H
	HLE 110-230/4	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.52 kg	1	160	38	75	-	19	136	150	5.5
	HLE 110-230/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.58 kg	1	160	38	75	-	19	136	150	5.5
	HLE 110-230/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.78 kg	1	190	38	75	-	19	166	180	5.5
	HLE 110-230/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.78 kg	1	190	38	75	-	19	166	180	5.5
	HLE 110-230/20	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.80 kg	1	190	38	75	-	19	166	180	5.5
	HLE 110-230/25	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	1.30 kg	2	230	50	95	25	12.5	200	215	5.5
	HLE 110-230/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	1.35 kg	2	230	50	95	25	12.5	200	215	5.5
	HLE 110-230/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	1.45 kg	2	230	50	95	25	12.5	200	215	5.5
	HLE 110-230/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.00 kg	3	225	85	95	60	12.5	230	210	5.5

## Dimension pictures



## Radio interference filter, single-phase, low leakage current **HLE 310**



### General Data

Rated voltage 250 Vac
Voltage range 0 - 250 Vac
Rated current 4 - 55 A
Leakage current <3.00 mA
Degree of protection IP 20

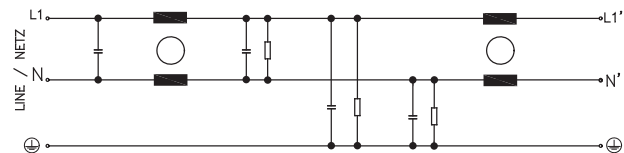
### Advantages

For enhanced requirements
Low leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals







## Radio interference filter, single-phase, low leakage current **HLE 310**



Electrical data	Typ	HLE 310-230/4	HLE 310-230/8	HLE 310-230/12	HLE 310-230/16	HLE 310-230/20	HLE 310-230/25
	Special features						
	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data						
	Rated voltage	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac
	Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
	Rated current	4 A	8 A	12 A	16 A	20 A	25 A
	Leakage current (50 Hz)*	<3.00 mA	<3.00 mA	<3.00 mA	<3.00 mA	<3.00 mA	<3.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment						
	Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
Order numbers							
Order Number		HLE 310-230/4	HLE 310-230/8	HLE 310-230/12	HLE 310-230/16	HLE 310-230/20	HLE 310-230/25

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



### Radio interference filter, single-phase, low leakage current **HLE 310**



Electrical data	Typ	HLE 310-230/30	HLE 310-230/42	HLE 310-230/55
	Special features			
	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data			
	Rated voltage	250 Vac	250 Vac	250 Vac
	Voltage range	0 - 250 Vac	0 - 250 Vac	0 - 250 Vac
	Rated current	30 A	42 A	55 A
	Leakage current (50 Hz)*	<3.00 mA	<3.00 mA	<3.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly
Environment	Environment			
	Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
	Ambient temperature max.	50 °C	50 °C	50 °C
Safety and protection	Safety and protection			
	Type	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I
	Test voltage	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE	1700 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes	Notes			
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
Order numbers				
Order Number		HLE 310-230/30	HLE 310-230/42	HLE 310-230/55

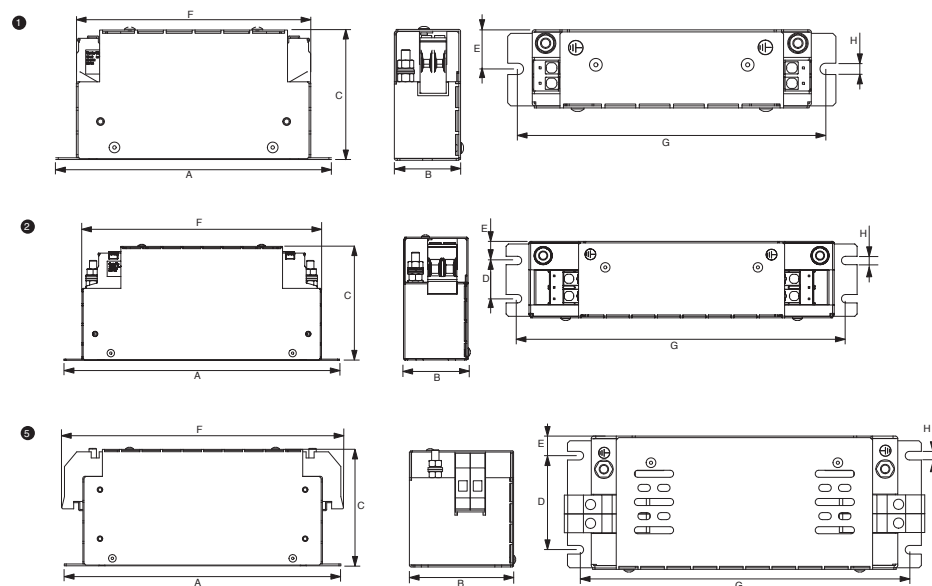


# Radio interference filter, single-phase, low leakage current **HLE 310**



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F	G	H
	HLE 310-230/4	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.52 kg	1	160	38	75	-	19	136	150	5.5
	HLE 310-230/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.58 kg	1	160	38	75	-	19	136	150	5.5
	HLE 310-230/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.78 kg	1	190	38	75	-	19	166	180	5.5
	HLE 310-230/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.78 kg	1	190	38	75	-	19	166	180	5.5
	HLE 310-230/20	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.80 kg	1	190	38	75	-	19	166	180	5.5
	HLE 310-230/25	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	1.30 kg	2	230	50	95	25	12.5	200	215	5.5
	HLE 310-230/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	1.35 kg	2	230	50	95	25	12.5	200	215	5.5
	HLE 310-230/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	1.45 kg	2	230	50	95	25	12.5	200	215	5.5
	HLE 310-230/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.00 kg	3	225	85	95	60	12.5	230	210	5.5

## Dimension pictures



## Radio interference suppression filter, three-phase HFD 156



### General Data

Rated voltage 3 x 480 Vac
Voltage range 3 x 0 - 480 Vac
Rated current 3 x 3 - 3 x 16 A
Leakage current 1.00 mA
Ambient temperature max. 45 °C
Degree of protection IP 20

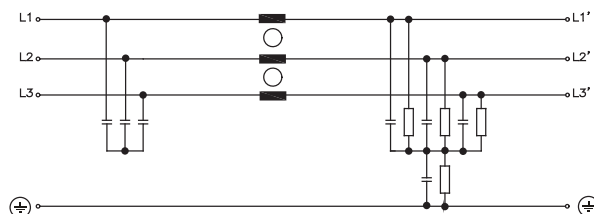
### Advantages

For general requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer
DIN rail mounting

### Applications

Radio interference suppression filter for mains-side interference suppression of power supplies and electronic devices.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals **EAC**



## Radio interference suppression filter, three-phase **HFD 156**



Electrical data	Typ	HFD 156-400/3	HFD 156-400/6	HFD 156-400/10	HFD 156-400/12	HFD 156-400/16
	Operating data					
	Rated voltage	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac
	Voltage range	3 x 0 - 480 Vac	3 x 0 - 480 Vac	3 x 0 - 480 Vac	3 x 0 - 480 Vac	3 x 0 - 480 Vac
	Rated current	3 x 3 A	3 x 6 A	3 x 10 A	3 x 12 A	3 x 16 A
	Leakage current (50 Hz)**	9.00 mA	9.00 mA	9.00 mA	9.00 mA	9.00 mA
	Leakage current (50 Hz)*	1.00 mA	1.00 mA	1.00 mA	1.00 mA	1.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	2.2 W	2.7 W	4.7 W	6.1 W	7.9 W
	Oversrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment					
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	45 °C	45 °C	45 °C	45 °C	45 °C
	Safety and protection					
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I
	Test voltage	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes					
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers					
	Order Number	<b>HFD 156-400/3</b>	<b>HFD 156-400/6</b>	<b>HFD 156-400/10</b>	<b>HFD 156-400/12</b>	<b>HFD 156-400/16</b>

1.1

1.2

1.3

2.1

2.2

3.1


3.2

3.3

4.0


5.1

5.2



# Radio interference suppression filter, three-phase






## HFD 156



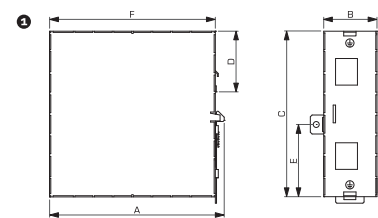
30

mm

Mechanical data

Type	Terminals phase	Terminals PE	Fixing method	Weight	Dimension picture (in mm)	A	B	C	D	E	F
HFD 156-400/3	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.48 kg		127	45	110	52	33	120
HFD 156-400/6	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.49 kg		127	45	110	52	33	120
HFD 156-400/10	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.49 kg		127	45	110	52	33	120
HFD 156-400/12	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.72 kg		147	45	140	52	66	140
HFD 156-400/16	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.73 kg		147	45	140	52	66	140

### Dimension pictures



## Radio interference suppression filter, three-phase, low leakage current **HFD 356**



### General Data

Rated voltage 3 x 480 Vac
Voltage range 0 - 480 Vac
Rated current 3 x 3 - 3 x 16 A
Leakage current 0.50 mA
Degree of protection IP 20
DIN Rail mounting

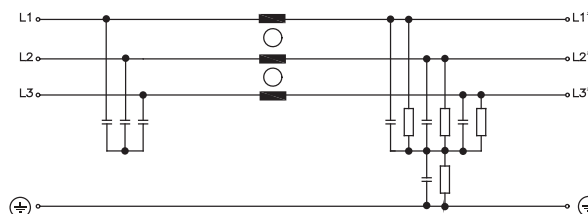
### Advantages

For general requirements
Low leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for mains-side interference suppression of power supplies and electronic devices.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals **ERC**





### Radio interference suppression filter, three-phase, low leakage current **HFD 356**








Electrical data	Typ	HFD 356-400/3	HFD 356-400/6	HFD 356-400/10	HFD 356-400/12	HFD 356-400/16
	Special features					
	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data					
	Rated voltage	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac
	Voltage range	0 - 480 Vac	0 - 480 Vac	0 - 480 Vac	0 - 480 Vac	0 - 480 Vac
	Rated current	3 x 3 A	3 x 6 A	3 x 10 A	3 x 12 A	3 x 16 A
	Leakage current (50 Hz)**	4.00 mA	4.00 mA	5.00 mA	5.00 mA	5.00 mA
	Leakage current (50 Hz)*	0.50 mA	0.50 mA	0.50 mA	0.50 mA	0.50 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	2.2 W	2.7 W	4.7 W	6.1 W	7.9 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment					
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	45 °C	45 °C	45 °C	45 °C	45 °C
	Safety and protection					
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I
	Test voltage	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE	2100 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes					
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers					
	Order Number	<b>HFD 356-400/3</b>	<b>HFD 356-400/6</b>	<b>HFD 356-400/10</b>	<b>HFD 356-400/12</b>	<b>HFD 356-400/16</b>

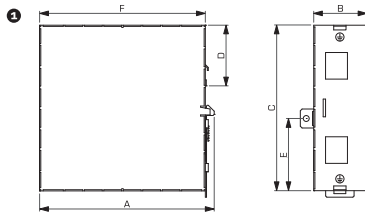


## Radio interference suppression filter, three-phase, low leakage current **HFD 356**

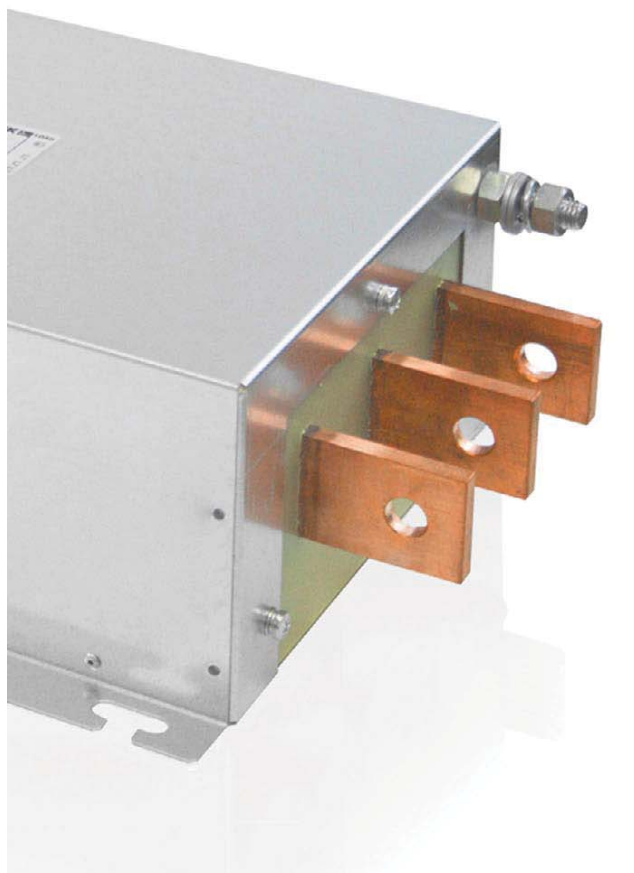


Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Weight	Dimension picture (in mm)						
						A	B	C	D	E	F	
	HFD 356-400/3	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.48 kg		127	45	110	52	33	120
	HFD 356-400/6	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.49 kg		127	45	110	52	33	120
	HFD 356-400/10	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.49 kg		127	45	110	52	33	120
	HFD 356-400/12	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.72 kg		147	45	140	52	66	140
	HFD 356-400/16	2.5 mm <sup>2</sup> spring terminal	Tab connector, 6.3 x 0.8 mm	DIN Rail mounting	0.73 kg		147	45	140	52	66	140

## Dimension pictures



## Radio interference suppression filter, three-phase HLD 103



### General Data

Rated voltage 3 x 520 Vac
Voltage range 3 x 0 - 520 Vac
Rated current 3 x 270 - 3 x 1800 A
Leakage current 60.00 mA
Ambient temperature max. 50 °C
Degree of protection IP 00

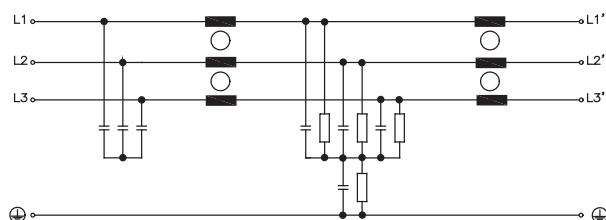
### Advantages

For enhanced requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency inverters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals





## Radio interference suppression filter, three-phase **HLD 103**



Electrical data	Typ	HLD 103-500/270	HLD 103-500/400	HLD 103-500/750	HLD 103-500/1000	HLD 103-500/1800
<b>Operating data</b>						
Rated voltage		3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
Voltage range		3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac
Rated current		3 x 270 A	3 x 400 A	3 x 750 A	3 x 1000 A	3 x 1800 A
Leakage current (50 Hz)*		570.00 mA	570.00 mA	570.00 mA	570.00 mA	570.00 mA
Leakage current (50 Hz)**		60.00 mA	60.00 mA	60.00 mA	60.00 mA	60.00 mA
Rated frequency		50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Oversizing Capacity		150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
<b>Environment</b>						
Climatic category		25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
Ambient temperature max.		50 °C	50 °C	50 °C	50 °C	50 °C
<b>Safety and protection</b>						
Type		Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index		IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)		I	I	I	I	I
Test voltage		2121 Vdc Phase/Phase, 2700 Vdc Phase/PE	2121 Vdc Phase/Phase, 2700 Vdc Phase/PE	2121 Vdc Phase/Phase, 2700 Vdc Phase/PE	2121 Vdc Phase/Phase, 2700 Vdc Phase/PE	2121 Vdc Phase/Phase, 2700 Vdc Phase/PE
<b>Notes</b>						
*		Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
**		Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
<b>Order numbers</b>						
Order Number		<b>HLD 103-500/270</b>	<b>HLD 103-500/400</b>	<b>HLD 103-500/750</b>	<b>HLD 103-500/1000</b>	<b>HLD 103-500/1800</b>

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



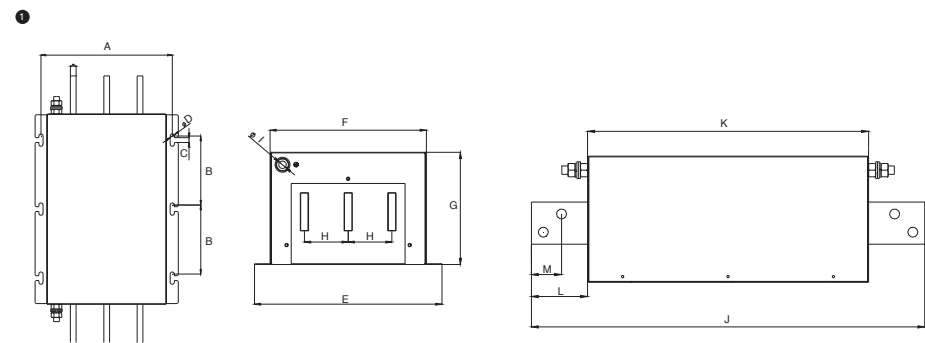
### Radio interference suppression filter, three-phase

#### HLD 103



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)													
								A	B	C	D	E	F	G	H	I	J	K	L	M
	HLD 103-500/270	Flat copper, 20 x 5 mm	Bolt, M12	Mounting lugs	M8	12.60 kg	1	235	120	10	9	260	210	100	60	12	380	300	40	10
	HLD 103-500/400	Flat copper, 25 x 6 mm	Bolt, M12	Mounting lugs	M8	12.90 kg	1	235	120	10	9	260	210	100	60	12	380	300	40	12.5
	HLD 103-500/750	Flat copper, 30 x 10 mm	Bolt, M12	Mounting lugs	M8	15.80 kg	2	235	120	10	9	260	210	110	60	12	390	300	45	15
	HLD 103-500/1000	Flat copper, 40 x 8 mm	Bolt, M12	Mounting lugs	M8	0.00 kg	1	255	145	10	9	280	230	130	60	12	460	350	55	20
	HLD 103-500/1800	Flat copper, 60 x 12 mm	Bolt, M12	Mounting lugs	M8	0.00 kg	2	275	145	10	9	300	250	180	70	12	560	400	80	43

### Dimension pictures



## Radio interference suppression filter, three-phase

### HLD 110



## General Data

Rated voltage 3 x 520 Vac
Voltage range 3 x 0 - 520 Vac
Rated current 3 x 8 - 3 x 250 A
Leakage current 20.00 - 37.00 mA
Ambient temperature max. 50 °C
Degree of protection IP 20

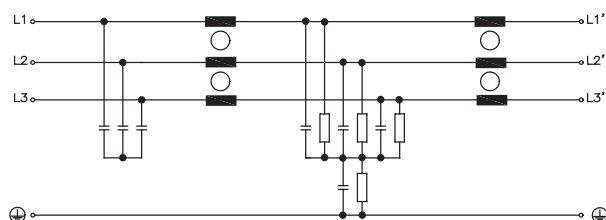
## Advantages

For enhanced requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

## Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency inverters or as group interference suppression.

## Sample application



## Standards

Radio interference suppression filter complying with  
DIN EN 60939-2, UL 1283, CSA C22.2 No.8

## Approvals



UL 1283 5th edition, CSA 22.2 No 8

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



### Radio interference suppression filter, three-phase **HLD 110**



Electrical data	Typ	HLD 110-500/8	HLD 110-500/12	HLD 110-500/16	HLD 110-500/30	HLD 110-500/42	HLD 110-500/55
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac
	Rated current	3 x 8 A	3 x 12 A	3 x 16 A	3 x 30 A	3 x 42 A	3 x 55 A
	Leakage current (50 Hz)*	20.00 mA	20.00 mA	21.00 mA	29.00 mA	20.00 mA	30.00 mA
	Leakage current (50 Hz)**	190.00 mA	190.00 mA	205.00 mA	280.00 mA	290.00 mA	290.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	6.0 W	9.0 W	12.0 W	15.0 W	22.0 W	30.0 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Approvals							
Approvals		cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
Environment							
Climatic category		25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
Ambient temperature max.		50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
Safety and protection							
SCCR***		100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
Type		Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)		I	I	I	I	I	I
Test voltage		2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes							
*		Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
**		Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
***		with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
Order numbers							
Order Number		<b>HLD 110-500/8</b>	<b>HLD 110-500/12</b>	<b>HLD 110-500/16</b>	<b>HLD 110-500/30</b>	<b>HLD 110-500/42</b>	<b>HLD 110-500/55</b>





## Radio interference suppression filter, three-phase **HLD 110**



Electrical data	Typ	HLD 110-500/75	HLD 110-500/100	HLD 110-500/130	HLD 110-500/180	HLD 110-500/250
	Operating data					
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac	3 x 0 - 520 Vac
	Rated current	3 x 75 A	3 x 100 A	3 x 130 A	3 x 180 A	3 x 250 A
	Leakage current (50 Hz)*	22.00 mA	30.00 mA	22.00 mA	31.00 mA	37.00 mA
	Leakage current (50 Hz)**	210.00 mA	290.00 mA	210.00 mA	300.00 mA	355.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	35.0 W	60.0 W	90.0 W	150.0 W	180.0 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Approvals	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
	Environment					
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection					
	SCCR***	100 kA	100 kA	100 kA	100 kA	100 kA
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes					
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	***	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
	Order numbers					
	Order Number	<b>HLD 110-500/75</b>	<b>HLD 110-500/100</b>	<b>HLD 110-500/130</b>	<b>HLD 110-500/180</b>	<b>HLD 110-500/250</b>

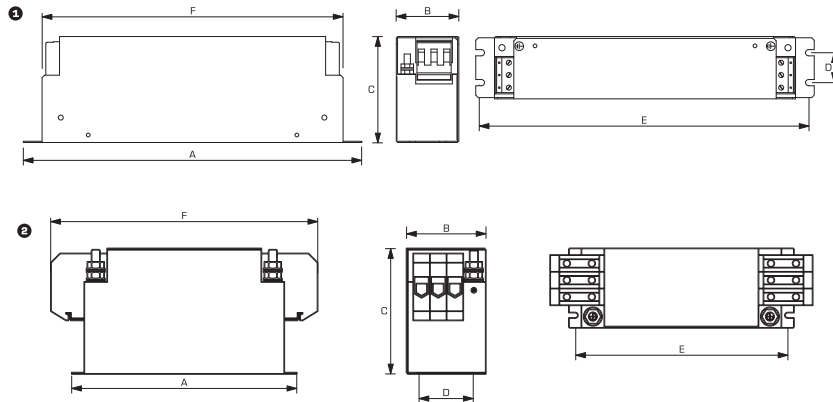


### Radio interference suppression filter, three-phase **HLD 110**



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
	HLD 110-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.8 kg	1	190	45	75	20	180	166
	HLD 110-500/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.0 kg	1	220	45	75	20	210	190
	HLD 110-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.2 kg	1	250	45	75	20	240	220
	HLD 110-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.8 kg	1	270	55	95	30	255	240
	HLD 110-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	2.1 kg	1	310	55	95	30	295	280
	HLD 110-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M5	2.5 kg	2	250	85	95	60	235	255
	HLD 110-500/75	Screw clamp, 35 mm <sup>2</sup>	Bolt, M8	Mounting lugs	M6	4.5 kg	2	270	85	135	60	255	310
	HLD 110-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.2 kg	2	270	95	150	65	255	325
	HLD 110-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.6 kg	2	270	95	150	65	255	325
	HLD 110-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	9.2 kg	2	380	130	181	102	365	440
	HLD 110-500/250	Screw clamp, 150 mm <sup>2</sup>	Bolt, M12	Mounting lugs	M6	12.2 kg	2	450	155	220	125	435	525

### Dimension pictures



## Radio interference suppression filter, three-phase, low leakage current

### HLD 310



## General Data

Rated voltage 3 x 520 Vac
Voltage range 0 - 3 x 520 Vac
Rated current 3 x 8 - 3 x 250 A
Leakage current <0.4 mA
Degree of protection IP 20

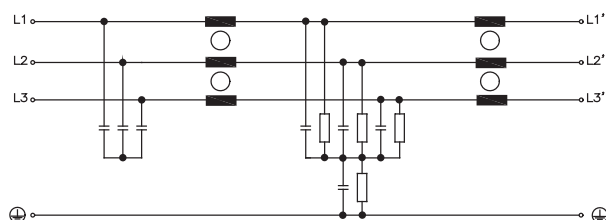
## Advantages

For enhanced requirements
Low leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

## Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

## Sample application



## Standards

Radio interference suppression filter complying with  
DIN EN 60939-2, UL 1283, CSA C22.2 No.8

## Approvals



UL 1283 5th edition, CSA 22.2 No 8

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



### Radio interference suppression filter, three-phase, low leakage current **HLD 310**



Electrical data	Typ	HLD 310-500/8	HLD 310-500/12	HLD 310-500/16	HLD 310-500/30	HLD 310-500/42	HLD 310-500/55
	Special features						
	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 8 A	3 x 12 A	3 x 16 A	3 x 30 A	3 x 42 A	3 x 55 A
	Leakage current (50 Hz)*	<0.40 mA	<0.40 mA	<0.40 mA	<0.40 mA	<0.40 mA	<0.40 mA
	Leakage current (50 Hz)**	<3.50 mA	<3.50 mA	<3.50 mA	<3.50 mA	<3.50 mA	<3.50 mA
	Power loss	6.0 W	9.0 W	12.0 W	15.0 W	22.0 W	30.0 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Input						
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Approvals	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	SCCR***	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	***	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
	Order numbers						
	Order Number	<b>HLD 310-500/8</b>	<b>HLD 310-500/12</b>	<b>HLD 310-500/16</b>	<b>HLD 310-500/30</b>	<b>HLD 310-500/42</b>	<b>HLD 310-500/55</b>



## Radio interference suppression filter, three-phase, low leakage current **HLD 310**



Electrical data	Typ	HLD 310-500/75	HLD 310-500/100	HLD 310-500/130	HLD 310-500/180	HLD 310-500/250
	Special features					
	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data					
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 75 A	3 x 100 A	3 x 130 A	3 x 180 A	3 x 250 A
	Leakage current (50 Hz)*	<0.40 mA	<0.40 mA	<0.40 mA	<0.40 mA	<0.40 mA
	Leakage current (50 Hz)**	<3.50 mA	<3.50 mA	<3.50 mA	<3.50 mA	<3.50 mA
	Power loss	35.0 W	60.0 W	90.0 W	150.0 W	180.0 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Input					
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Approvals	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
	Environment					
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection					
	SCCR***	100 kA	100 kA	100 kA	100 kA	100 kA
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes					
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	***	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
	Order numbers					
	Order Number	<b>HLD 310-500/75</b>	<b>HLD 310-500/100</b>	<b>HLD 310-500/130</b>	<b>HLD 310-500/180</b>	<b>HLD 310-500/250</b>



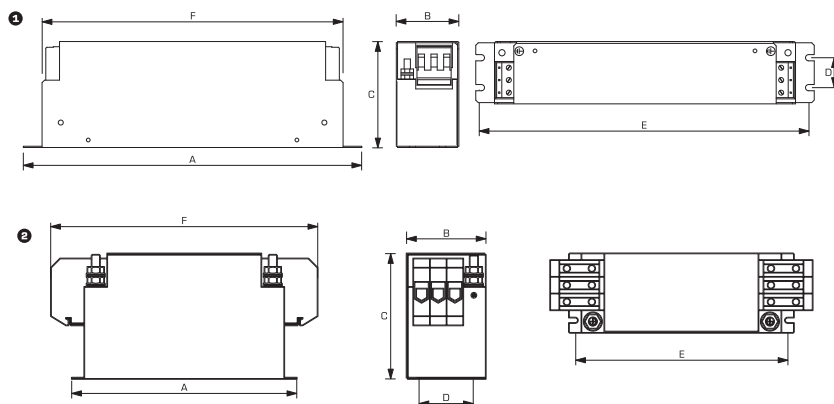
### Radio interference suppression filter, three-phase, low leakage current

## HLD 310



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
	HLD 310-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.78 kg	1	190	45	75	20	180	166
	HLD 310-500/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.20 kg	1	220	45	75	20	210	190
	HLD 310-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.20 kg	1	250	45	75	20	240	220
	HLD 310-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.80 kg	1	270	55	95	30	255	240
	HLD 310-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M5	2.10 kg	1	310	55	95	30	295	280
	HLD 310-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M5	2.50 kg	2	250	85	95	60	235	255
	HLD 310-500/75	Screw clamp, 35 mm <sup>2</sup>	Bolt, M8	Mounting lugs	M6	4.50 kg	2	270	85	135	60	255	310
	HLD 310-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.20 kg	2	270	95	150	65	255	325
	HLD 310-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.60 kg	2	270	95	150	65	255	325
	HLD 310-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	9.20 kg	2	380	130	181	102	365	440
	HLD 310-500/250	Screw clamp, 150 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	12.20 kg	2	450	155	220	125	435	525

### Dimension pictures



## Radio interference suppression filter, three-phase, low leakage current **HLD 710**



### General Data

Rated voltage 3 x 520 Vac
Voltage range 0 - 3 x 520 Vac
Rated current 3 x 8 - 3 x 250 A
Leakage current 6.00 - 7.00 mA
Ambient temperature max. 50 °C
Degree of protection IP 20

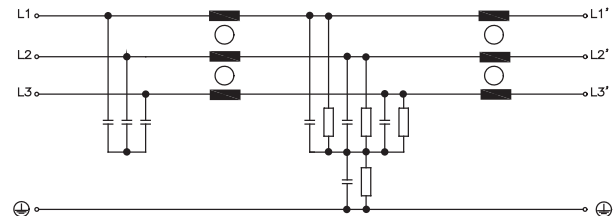
### Advantages

For enhanced requirements
Reduced leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter complying with  
DIN EN 60939-2, UL 1283, CSA C22.2 No.8

### Approvals



UL 1283 5th edition, CSA 22.2 No 8

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



### Radio interference suppression filter, three-phase, low leakage current **HLD 710**



Electrical data	Typ	HLD 710-500/8	HLD 710-500/12	HLD 710-500/16	HLD 710-500/30	HLD 710-500/42	HLD 710-500/55
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
	Rated current	3 x 8 A	3 x 12 A	3 x 16 A	3 x 30 A	3 x 42 A	3 x 55 A
	Leakage current (50 Hz)*	6.00 mA	6.00 mA	6.00 mA	6.50 mA	6.50 mA	6.50 mA
	Leakage current (50 Hz)**	60.00 mA	60.00 mA	60.00 mA	63.00 mA	63.00 mA	63.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	6.0 W	9.0 W	12.0 W	15.0 W	22.0 W	30.0 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Approvals	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	SCCR***	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	***	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
	Order numbers						
	Order Number	<b>HLD 710-500/8</b>	<b>HLD 710-500/12</b>	<b>HLD 710-500/16</b>	<b>HLD 710-500/30</b>	<b>HLD 710-500/42</b>	<b>HLD 710-500/55</b>





## Radio interference suppression filter, three-phase, low leakage current **HLD 710**



Electrical data	Typ	HLD 710-500/75	HLD 710-500/100	HLD 710-500/130	HLD 710-500/180	HLD 710-500/250
	Operating data					
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
	Rated current	3 x 75 A	3 x 100 A	3 x 130 A	3 x 180 A	3 x 250 A
	Leakage current (50 Hz)*	6.50 mA	6.50 mA	6.50 mA	7.00 mA	7.00 mA
	Leakage current (50 Hz)**	63.00 mA	63.00 mA	63.00 mA	65.00 mA	65.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Power loss	35.0 W	60.0 W	90.0 W	150.0 W	180.0 W
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Approvals	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
	Environment					
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection					
	SCCR***	100 kA	100 kA	100 kA	100 kA	100 kA
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes					
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	***	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
	Order numbers					
	Order Number	<b>HLD 710-500/75</b>	<b>HLD 710-500/100</b>	<b>HLD 710-500/130</b>	<b>HLD 710-500/180</b>	<b>HLD 710-500/250</b>

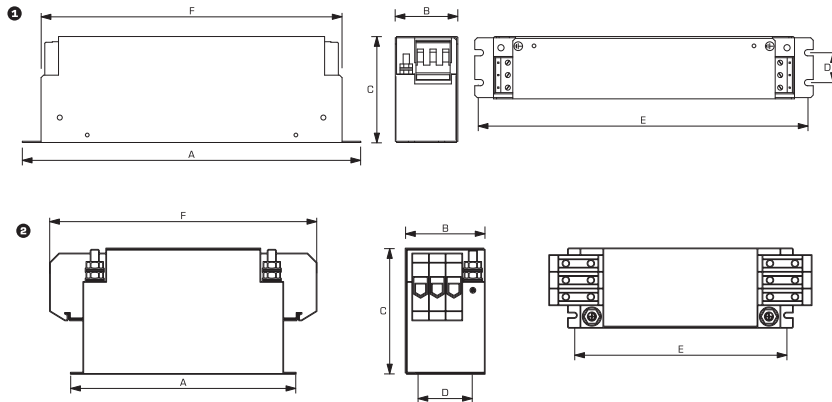


### Radio interference suppression filter, three-phase, low leakage current **HLD 710**



Mechanical data	Typ	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
	HLD 710-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.78 kg	1	190	45	75	20	180	166
	HLD 710-500/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.00 kg	1	220	45	75	20	210	190
	HLD 710-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.20 kg	1	250	45	75	20	240	220
	HLD 710-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.80 kg	1	270	55	95	30	255	240
	HLD 710-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M5	2.10 kg	1	310	55	95	30	295	280
	HLD 710-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M5	2.50 kg	2	250	85	95	60	235	255
	HLD 710-500/75	Screw clamp, 35 mm <sup>2</sup>	Bolt, M8	Mounting lugs	M6	4.50 kg	2	270	85	135	60	255	310
	HLD 710-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.20 kg	2	270	95	150	65	255	325
	HLD 710-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.60 kg	2	270	95	150	65	255	325
	HLD 710-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	9.20 kg	2	380	130	181	102	365	440
	HLD 710-500/250	Screw clamp, 150 mm <sup>2</sup>	Bolt, M12	Mounting lugs	M6	12.20 kg	2	450	155	220	125	435	525

### Dimension pictures



## Radio interference suppression filter, three-phase, for IT Network

### HLD 810



### General Data

Rated voltage 3 x 520 Vac
Voltage range 0 - 3 x 520 Vac
Rated current 3 x 8 - 3 x 250 A
Ambient temperature max. 50 °C
Degree of protection IP 20
Leakage current 0 mA

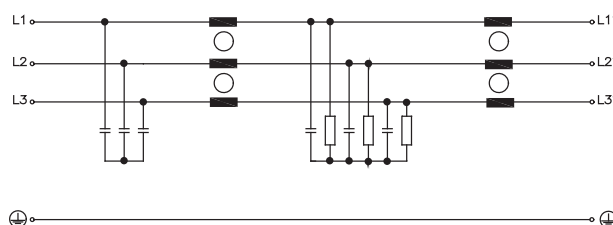
### Advantages

For enhanced requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter complying with  
DIN EN 60939-2, UL 1283, CSA C22.2 No.8

### Approvals



UL 1283 5th edition, CSA 22.2 No 8

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



### Radio interference suppression filter, three-phase, for IT Network **HLD 810**



Electrical data	Typ	HLD 810-500/8	HLD 810-500/12	HLD 810-500/16	HLD 810-500/30	HLD 810-500/42	HLD 810-500/55
	Operating data						
Voltage range		0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
Rated voltage		3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
Rated current		3 x 8 A	3 x 12 A	3 x 16 A	3 x 30 A	3 x 42 A	3 x 55 A
Rated frequency		50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Power loss		6.0 W	9.0 W	12.0 W	15.0 W	22.0 W	30.0 W
Oversrating Capacity		150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Leakage current (50 Hz)		0 mA	0 mA	0 mA	0 mA	0 mA	0 mA
Approvals							
Approvals		cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8
Environment							
Climatic category		25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
Ambient temperature max.		50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
Safety and protection							
SCCR*		100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
Type		Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)		I	I	I	I	I	I
Test voltage		2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes							
*		with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
Order numbers							
Order Number		<b>HLD 810-500/8</b>	<b>HLD 810-500/12</b>	<b>HLD 810-500/16</b>	<b>HLD 810-500/30</b>	<b>HLD 810-500/42</b>	<b>HLD 810-500/55</b>



## Radio interference suppression filter, three-phase, for IT Network **HLD 810**



Electrical data	Typ	HLD 810-500/75	HLD 810-500/100	HLD 810-500/130	HLD 810-500/180	HLD 810-500/250
	Operating data					
Voltage range		0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
Rated voltage		3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
Rated current		3 x 75 A	3 x 100 A	3 x 130 A	3 x 180 A	3 x 250 A
Rated frequency		50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Power loss		35.0 W	60.0 W	90.0 W	150.0 W	180.0 W
Oversrating Capacity		150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Leakage current (50 Hz)		0 mA	0 mA	0 mA	0 mA	0 mA
Approvals						
Approvals		cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8	cURus, UL 1283 5th edition, CSA C22.2 No.8
Environment						
Climatic category		25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
Ambient temperature max.		50 °C	50 °C	50 °C	50 °C	50 °C
Safety and protection						
SCCR*		100 kA	100 kA	100 kA	100 kA	100 kA
Type		Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index		IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)		I	I	I	I	I
Test voltage		2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes						
*		with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse	with corresponding preliminary fuse
Order numbers						
Order Number		<b>HLD 810-500/75</b>	<b>HLD 810-500/100</b>	<b>HLD 810-500/130</b>	<b>HLD 810-500/180</b>	<b>HLD 810-500/250</b>

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0












5.1

5.2

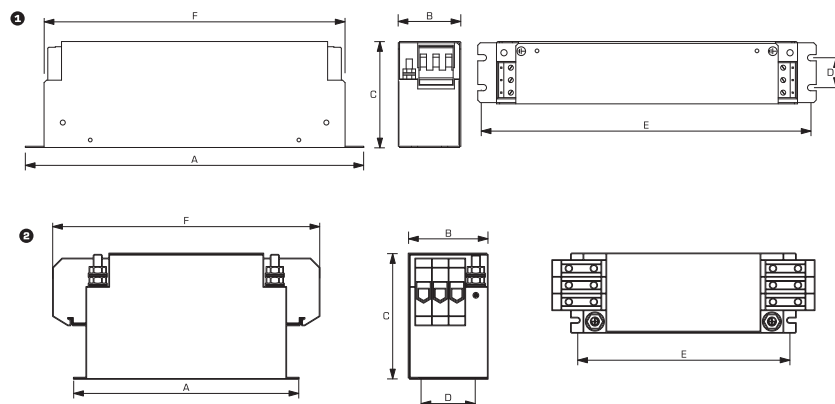


### Radio interference suppression filter, three-phase, for IT Network **HLD 810**



Mechanical data	30	Typ	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)		A	B	C	D	E	F	
		HLD 810-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.78 kg		190	45	75	20	180	166		
		HLD 810-500/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.00 kg		220	45	75	20	210	190		
		HLD 810-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.20 kg		250	45	75	20	240	220		
		HLD 810-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.80 kg		270	55	95	30	255	240		
		HLD 810-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M5	2.10 kg		310	55	95	30	295	280		
		HLD 810-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M5	2.50 kg		250	85	95	60	235	255		
		HLD 810-500/75	Screw clamp, 35 mm <sup>2</sup>	Bolt, M8	Mounting lugs	M6	4.50 kg		270	85	135	60	255	310		
		HLD 810-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.20 kg		270	95	150	65	255	325		
		HLD 810-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	5.60 kg		270	95	150	65	255	325		
		HLD 810-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	9.20 kg		380	130	181	102	365	440		
		HLD 810-500/250	Screw clamp, 150 mm <sup>2</sup>	Bolt, M12	Mounting lugs	M6	12.20 kg		450	155	220	125	435	525		

### Dimension pictures



## Radio interference suppression filter, three-phase **HFD 500**



### General Data

Rated voltage 3 x 520 Vac
Voltage range 0 - 3 x 520 Vac
Rated current 3 x 8 - 3 x 110 A
Leakage current 18.00 - 66.00 mA
Degree of protection IP 20
DIN Rail mounting

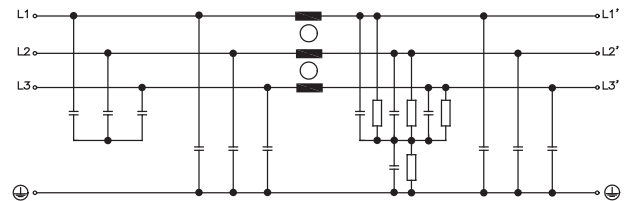
### Advantages

For general requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for mains-side interference suppression of power supplies and electronic devices.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals **ERC**

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

### 3 Reactors / EMI filters

#### Three-phase radio interference suppression filters



## Radio interference suppression filter, three-phase

### HFD 500



Electrical data	Typ	HFD 500/8	HFD 500/16	HFD 500/25	HFD 500/36	HFD 500/50	HFD 500/80
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 8 A	3 x 16 A	3 x 25 A	3 x 36 A	3 x 50 A	3 x 80 A
	Leakage current (50 Hz)*	18.00 mA	18.00 mA	34.00 mA	34.00 mA	34.00 mA	66.00 mA
	Leakage current (50 Hz)**	6.00 mA	6.00 mA	175.00 mA	175.00 mA	175.00 mA	220.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Oversizing Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment						
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers						
	Order Number	HFD 500/8	HFD 500/16	HFD 500/25	HFD 500/36	HFD 500/50	HFD 500/80





## Radio interference suppression filter, three-phase **HFD 500**



Electrical data	Typ	HFD 500/110
	Operating data	
	Rated voltage	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac
	Rated current	3 x 110 A
	Leakage current (50 Hz)*	66.00 mA
	Leakage current (50 Hz)**	220.00 mA
	Rated frequency	50 - 60 Hz
	Overrating Capacity	150 %, shortly
	Environment	
Safety and protection	Ambient temperature max.	40 °C
	Climatic category	25/085/21 (in accordance with EN 60068-1)
	Type	Metal enclosure
	Protection index	IP 20
Notes	Safety class (prepared)	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Order numbers	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases
	Order numbers	
	Order Number	HFD 500/110

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

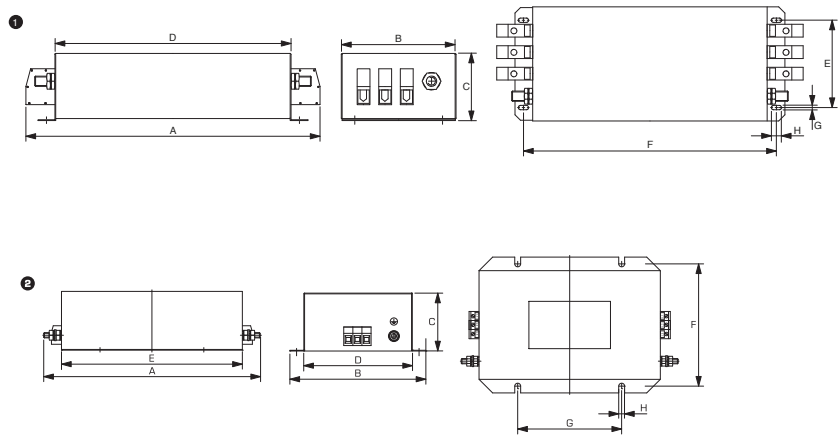


Radio interference suppression filter, three-phase  
**HFD 500**



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Weight	Dimension picture (in mm)								
							A	B	C	D	E	F	G	H
	HFD 500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M6	Mounting lugs	1.85 kg	2	219	115	60	85	180	100	115	6.5
	HFD 500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M6	Mounting lugs	3.10 kg	2	239	150	65	120	200	135	115	6.5
	HFD 500/25	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	3.15 kg	2	250	150	65	120	200	135	115	6.5
	HFD 500/36	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	3.22 kg	2	250	150	65	120	200	135	115	6.5
	HFD 500/50	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	3.30 kg	2	250	150	65	120	200	135	115	6.5
	HFD 500/80	Screw clamp, 25 mm <sup>2</sup>	Bolt, M6	Mounting lugs	9.50 kg	1	427	170	90	350	130	375	6.5	15
	HFD 500/110	Screw clamp, 50 mm <sup>2</sup>	Bolt, M6	Mounting lugs	10.20 kg	1	436	170	100	350	130	375	6.5	15

### Dimension pictures



## Radio interference suppression filter, three-phase **HFD 210**



### General Data

Rated voltage 3 x 480 - 3 x 520 Vac
Voltage range 0 - 3 x 480 - 520 Vac
Rated current 3 x 7 - 3 x 180 A
Leakage current 12.00 - 18.00 mA
Protection index IP 20

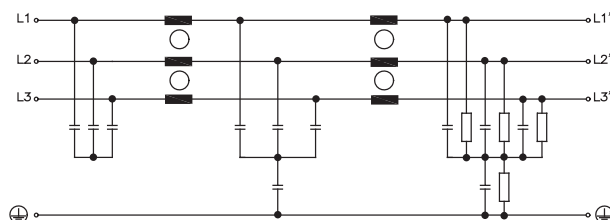
### Advantages

For enhanced requirements
Two-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals



UL 1283 5th edition, CSA 22.2 No 8



### Radio interference suppression filter, three-phase HFD 210



Electrical data	Typ	HFD 210-500/7	HFD 210-500/16	HFD 210-500/30	HFD 210-500/42	HFD 210-500/55	HFD 210-500/75
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 7 A	3 x 16 A	3 x 30 A	3 x 42 A	3 x 55 A	3 x 75 A
	Leakage current (50 Hz)*	13.00 mA	14.00 mA	16.00 mA	16.00 mA	16.00 mA	16.00 mA
	Leakage current (50 Hz)**	130.00 mA	133.00 mA	154.00 mA	154.00 mA	154.00 mA	154.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Approvals	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
Environment	Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
Safety and protection	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
Order numbers		HFD 210-500/7	HFD 210-500/16	HFD 210-500/30	HFD 210-500/42	HFD 210-500/55	HFD 210-500/75
Order Number		HFD 210-500/7	HFD 210-500/16	HFD 210-500/30	HFD 210-500/42	HFD 210-500/55	HFD 210-500/75



## Radio interference suppression filter, three-phase **HFD 210**



Electrical data	Typ	HFD 210-500/100	HFD 210-500/130	HFD 210-500/180
	Operating data			
Rated voltage		3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
Voltage range		0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
Rated current		3 x 100 A	3 x 130 A	3 x 180 A
Leakage current (50 Hz)*		16.00 mA	18.00 mA	18.00 mA
Leakage current (50 Hz)**		154.00 mA	173.00 mA	173.00 mA
Rated frequency		50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Oversizing Capacity		150 %, shortly	150 %, shortly	150 %, shortly
Approvals				
Approvals		cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8	cURus, UL 1283 5th edition, CSA 22.2 No.8
Environment				
Climatic category		25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
Ambient temperature max.		50 °C	50 °C	50 °C
Safety and protection				
Type		Metal enclosure	Metal enclosure	Metal enclosure
Protection index		IP 20	IP 20	IP 20
Safety class (prepared)		I	I	I
Test voltage		2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes				
*		Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
**		Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
Order numbers				
Order Number		<b>HFD 210-500/100</b>	<b>HFD 210-500/130</b>	<b>HFD 210-500/180</b>

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

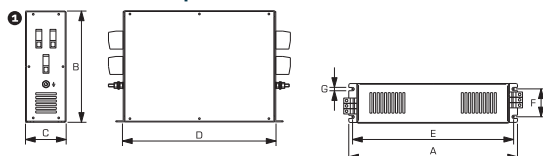


### Radio interference suppression filter, three-phase HFD 210



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Weight	Dimension picture (in mm)	A	B	C	D	E	F	G
	HFD 210-500/7	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	1.10 kg		255	126	50	225	240	25	6.5
	HFD 210-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	1.70 kg		305	142	55	275	289	30	6.5
	HFD 210-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	1.80 kg		335	150	60	305	320	35	6.5
	HFD 210-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	2.70 kg		329	185	70	300	314	45	6.5
	HFD 210-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	3.50 kg		329	185	80	300	314	55	6.5
	HFD 210-500/75	Screw clamp, 25 mm <sup>2</sup>	Bolt, M6	Mounting lugs	4.40 kg		329	220	80	300	314	55	6.5
	HFD 210-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	5.60 kg		379	220	90	350	364	65	6.5
	HFD 210-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	6.80 kg		429	240	110	400	414	80	6.5
	HFD 210-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	10.00 kg		438	240	110	400	414	80	6.5

### Dimension pictures



## Radio interference filter, three-phase **HFD 510**



### General Data

Rated voltage 3 x 480 - 3 x 520 Vac
Voltage range 0 - 3 x 480 - 520 Vac
Rated current 3 x 8 - 3 x 180 A
Leakage current 4.00 - 43.00 mA
Degree of protection IP 20

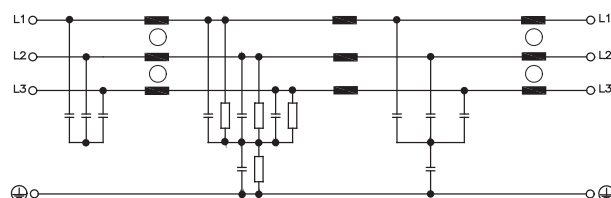
### Advantages

For the highest requirements
Two-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals **EMC**



### Radio interference filter, three-phase HFD 510



Electrical data	Typ	HFD 510-500/8	HFD 510-500/16	HFD 510-500/25	HFD 510-500/50	HFD 510-500/80	HFD 510-500/130
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 8 A	3 x 16 A	3 x 25 A	3 x 50 A	3 x 80 A	3 x 130 A
	Leakage current (50 Hz)*	4.00 mA	20.00 mA	18.00 mA	20.00 mA	33.00 mA	42.00 mA
	Leakage current (50 Hz)**	40.00 mA	193.00 mA	175.00 mA	188.00 mA	320.00 mA	402.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Oversrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers						
	Order Number	HFD 510-500/8	HFD 510-500/16	HFD 510-500/25	HFD 510-500/50	HFD 510-500/80	HFD 510-500/130





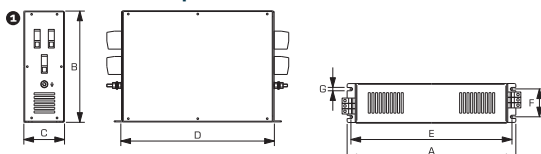
## Radio interference filter, three-phase HFD 510



Electrical data	Typ	HFD 510-500/180
	Operating data	
	Rated voltage	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac
	Rated current	3 x 180 A
	Leakage current (50 Hz)*	43.00 mA
	Leakage current (50 Hz)**	417.00 mA
	Rated frequency	50 - 60 Hz
	Oversrating Capacity	150 %, shortly
	Environment	
Safety and protection	Climatic category	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	40 °C
	Type	Metal enclosure
	Protection index	IP 20
Notes	Safety class (prepared)	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	* Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	
Order numbers	** Leakage current by loss of two phases	
	Order Number	HFD 510-500/180

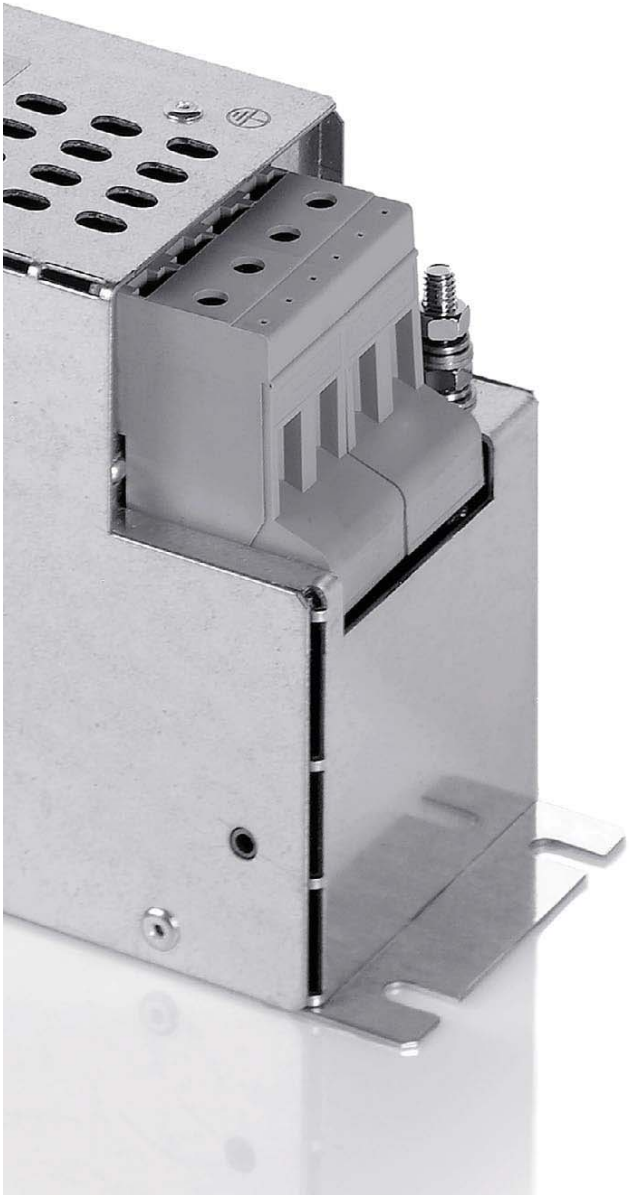
Mechanical data	Typ	Terminals phase	Terminals PE	Fixing method	Weight	Dimension picture (in mm)	A	B	C	D	E	F	G
	HFD 510-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	1.10 kg	1	255	125	50	225	240	25	6.5
	HFD 510-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	1.90 kg	2	305	142	55	275	290	27	6.5
	HFD 510-500/25	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	1.90 kg	3	329	185	70	300	314	45	6.5
	HFD 510-500/50	Screw clamp, 16 mm <sup>2</sup>	Bolt, M8	Mounting lugs	3.10 kg	4	429	240	110	400	414	80	6.5
	HFD 510-500/80	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	4.00 kg	5	429	240	110	400	414	80	6.5
	HFD 510-500/130	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	6.80 kg	6	438	240	110	400	414	80	6.5
	HFD 510-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	7.00 kg	7	536	300	116	500	512	90	8.5

## Dimension pictures



## Radio interference suppression filter, three-phase with neutral conductor

### HLV 110



### General Data

Rated voltage 3 x 520 Vac
Voltage range 0 - 3 x 520 Vac
Rated current 3 x 8 - 3 x 250 A+N
Leakage current 19.00 - 37.00 mA
Ambient temperature max. 50 °C
Degree of protection IP 20

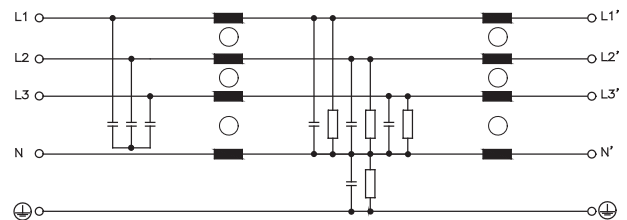
### Advantages

For enhanced requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency inverters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter complying with  
DIN EN 60939-2, UL 1283, CSA C22.2 No.8

### Approvals



UL 1283 5th edition, CSA 22.2 No 8



## Radio interference suppression filter, three-phase with neutral conductor **HLV 110**



Electrical data	Typ	HLV 110-500/8	HLV 110-500/12	HLV 110-500/16	HLV 110-500/30	HLV 110-500/42	HLV 110-500/55
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
	Rated current	3 x 8 A+N	3 x 12 A+N	3 x 16 A+N	3 x 30 A+N	3 x 42 A+N	3 x 55 A+N
	Leakage current (50 Hz)*	19.00 mA	19.00 mA	21.00 mA	21.00 mA	30.00 mA	22.00 mA
	Leakage current (50 Hz)**	187.00 mA	187.00 mA	200.00 mA	200.00 mA	285.00 mA	208.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Approvals	-	-	cURus,UL 1283 5th edition, CSA 22.2 No.8	-	-	-
	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers						
	Order Number	<b>HLV 110-500/8</b>	<b>HLV 110-500/12</b>	<b>HLV 110-500/16</b>	<b>HLV 110-500/30</b>	<b>HLV 110-500/42</b>	<b>HLV 110-500/55</b>



## Radio interference suppression filter, three-phase with neutral conductor

### HLV 110



Type	HLV 110-500/75	HLV 110-500/100	HLV 110-500/130	HLV 110-500/180	HLV 110-500/250
<b>Electrical data</b>					
Operating data					
Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
Voltage range	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
Rated current	3 x 75 A+N	3 x 100 A+N	3 x 130 A+N	3 x 180 A+N	3 x 250 A+N
Leakage current (50 Hz)*	30.00 mA	22.00 mA	22.00 mA	31.00 mA	37.00 mA
Leakage current (50 Hz)**	285.00 mA	207.00 mA	207.00 mA	296.00 mA	351.00 mA
Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Approvals					
Approvals	-	-	-	-	-
Environment					
Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C
Safety and protection					
Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)	I	I	I	I	I
Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes					
*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
Order numbers					
Order Number	HLV 110-500/75	HLV 110-500/100	HLV 110-500/130	HLV 110-500/180	HLV 110-500/250

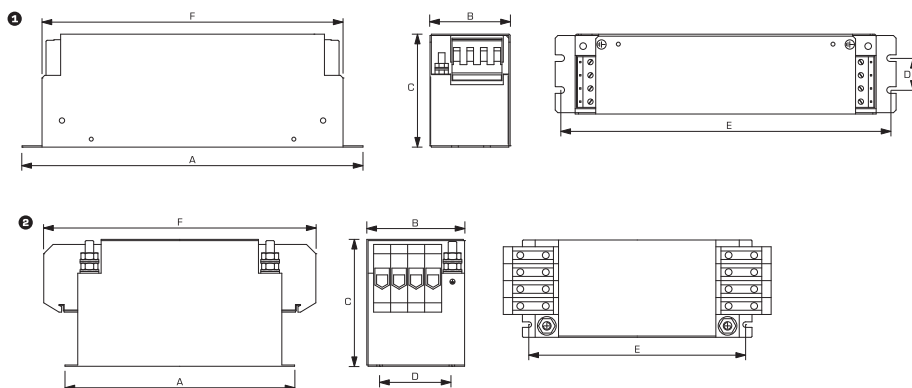


## Radio interference suppression filter, three-phase with neutral conductor **HLV 110**

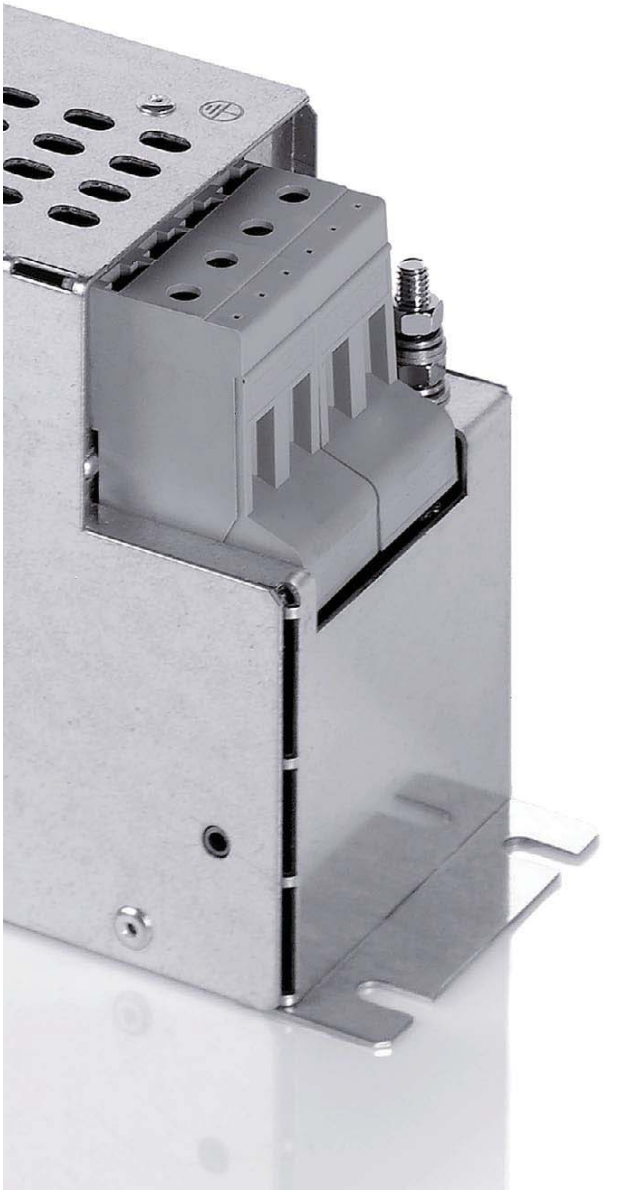


Mechanical data	Type	Terminals phase	Terminals phase/N	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
	HLV 110-500/8	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>	Mounting lugs	M5	0.83 kg	1	190	55	75	30	178	165
	HLV 110-500/12	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>	Mounting lugs	M5	0.97 kg	1	220	55	75	30	208	190
	HLV 110-500/16	Screw clamp, 4 mm <sup>2</sup>	Screw clamp, 4 mm <sup>2</sup>	Mounting lugs	M5	1.20 kg	1	250	55	75	30	240	220
	HLV 110-500/30	Screw clamp, 10 mm <sup>2</sup>	Screw clamp, 10 mm <sup>2</sup>	Mounting lugs	M5	1.80 kg	1	270	70	95	45	255	240
	HLV 110-500/42	Screw clamp, 10 mm <sup>2</sup>	Screw clamp, 10 mm <sup>2</sup>	Mounting lugs	M6	2.20 kg	1	310	70	95	40	295	280
	HLV 110-500/55	Screw clamp, 16 mm <sup>2</sup>	Screw clamp, 16 mm <sup>2</sup>	Mounting lugs	M6	2.90 kg	2	250	100	95	70	233	255
	HLV 110-500/75	Screw clamp, 35 mm <sup>2</sup>	Screw clamp, 35 mm <sup>2</sup>	Mounting lugs	M6	4.80 kg	2	270	100	150	70	255	298
	HLV 110-500/100	Screw clamp, 50 mm <sup>2</sup>	Screw clamp, 50 mm <sup>2</sup>	Mounting lugs	M6	6.20 kg	2	320	115	150	85	307	370
	HLV 110-500/130	Screw clamp, 50 mm <sup>2</sup>	Screw clamp, 50 mm <sup>2</sup>	Mounting lugs	M6	6.90 kg	2	320	115	150	85	307	370
	HLV 110-500/180	Screw clamp, 95 mm <sup>2</sup>	Screw clamp, 95 mm <sup>2</sup>	Mounting lugs	M6	11.10 kg	2	380	150	180	125	365	445
	HLV 110-500/250	Screw clamp, 150 mm <sup>2</sup>	Screw clamp, 150 mm <sup>2</sup>	Mounting lugs	M6	15.10 kg	2	450	186	220	155	435	420

## Dimension pictures



Radio interference suppression filter,  
three-phase with neutral conductor,  
low leakage current  
**HLV 310**



## General Data

Rated voltage 3 x 520 Vac
Voltage range 0 - 3 x 520 Vac
Rated current 3 x 8 - 3 x 250 A+N
Leakage current <1.0 mA
Degree of protection IP 20

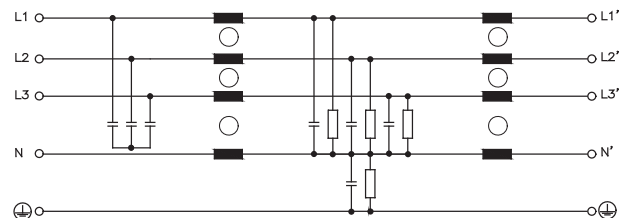
## Advantages

For enhanced requirements
Low leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

## Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

## Sample application



## Standards

Radio interference suppression filter to DIN EN 60939-2

## Approvals





Radio interference suppression filter,  
three-phase with neutral conductor,  
low leakage current  
**HLV 310**



Electrical data	Type	HLV 310-500/8	HLV 310-500/12	HLV 310-500/16	HLV 310-500/30	HLV 310-500/42	HLV 310-500/55
	Special features						
	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 8 A+N	3 x 12 A+N	3 x 12 A+N	3 x 30 A+N	3 x 42 A+N	3 x 55 A+N
	Leakage current (50 Hz)*	<1.0 mA	<1.0 mA	<1.0 mA	<1.0 mA	<1.0 mA	<1.0 mA
	Leakage current (50 Hz)**	<3.5 mA	<3.5 mA	<3.5 mA	<3.5 mA	<3.5 mA	<3.5 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers						
	Order Number	HLV 310-500/8	HLV 310-500/12	HLV 310-500/16	HLV 310-500/30	HLV 310-500/42	HLV 310-500/55

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



## Radio interference suppression filter, three-phase with neutral conductor, low leakage current **HLV 310**



Electrical data	Type	HLV 310-500/75	HLV 310-500/100	HLV 310-500/130	HLV 310-500/180	HLV 310-500/250
	Special features					
	Characteristics	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field	Suitable for the medical field
	Operating data					
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 75 A+N	3 x 100 A+N	3 x 130 A+N	3 x 180 A+N	3 x 250 A+N
	Leakage current (50 Hz)*	<1.0 mA	<1.0 mA	<1.0 mA	<1.0 mA	<1.0 mA
	Leakage current (50 Hz)**	<3.5 mA	<3.5 mA	<3.5 mA	<3.5 mA	<3.5 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Overrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Environment						
Climatic category		25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
Ambient temperature max.		50 °C	50 °C	50 °C	50 °C	50 °C
Safety and protection						
Type		Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index		IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)		I	I	I	I	I
Test voltage		2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes						
*		Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
**		Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
Order numbers						
Order Number		<b>HLV 310-500/75</b>	<b>HLV 310-500/100</b>	<b>HLV 310-500/130</b>	<b>HLV 310-500/180</b>	<b>HLV 310-500/250</b>



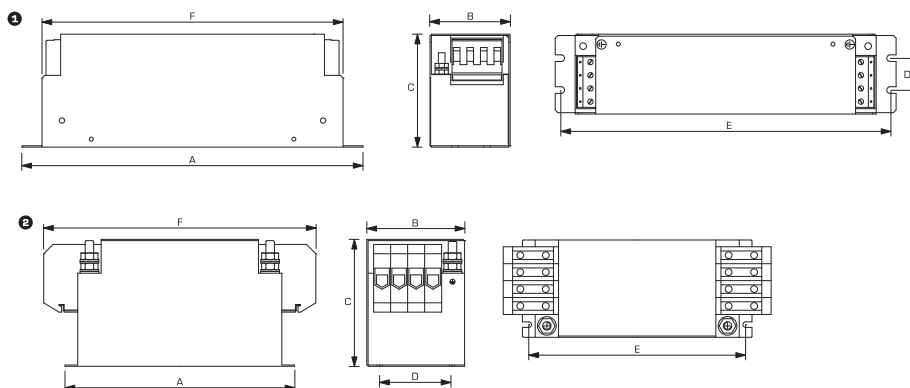


## Radio interference suppression filter, three-phase with neutral conductor, low leakage current **HLV 310**

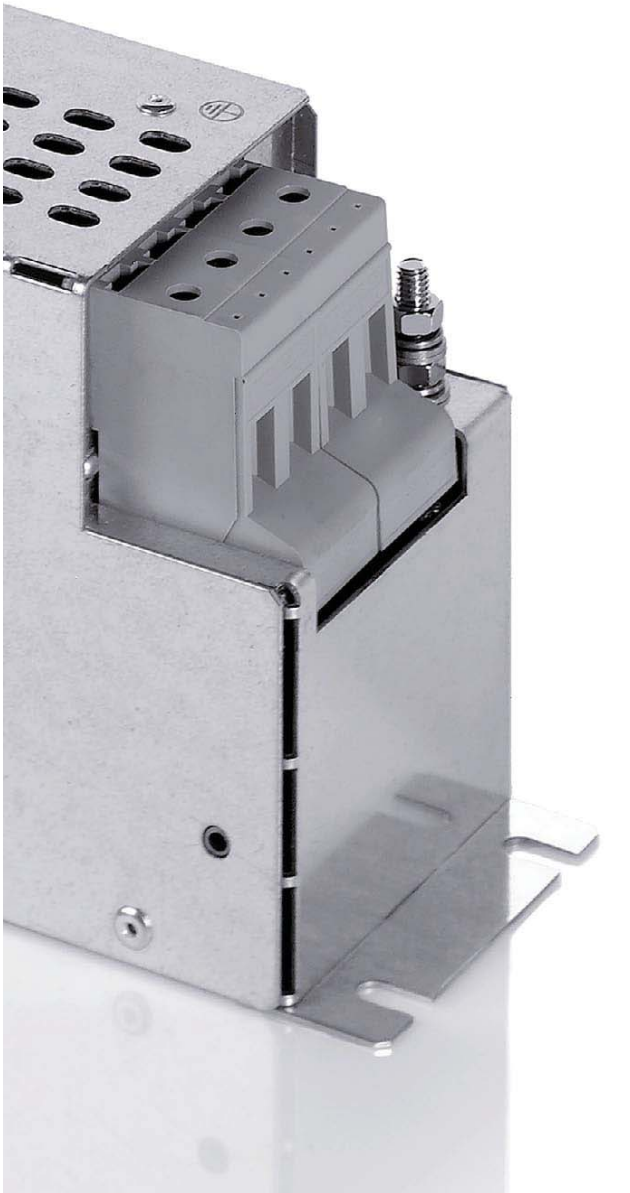


Mechanical data	Type	Terminals phase/N	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
	HLV 310-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.83 kg	1	190	55	75	30	178	165
	HLV 310-500/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.97 kg	1	220	55	75	30	208	190
	HLV 310-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.20 kg	1	250	55	75	30	240	220
	HLV 310-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.80 kg	1	270	70	95	45	255	240
	HLV 310-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.20 kg	1	310	70	95	40	295	280
	HLV 310-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.90 kg	2	250	100	95	70	233	255
	HLV 310-500/75	Screw clamp, 35 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	4.80 kg	2	270	100	150	70	255	298
	HLV 310-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	6.20 kg	2	320	115	150	85	307	370
	HLV 310-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	6.90 kg	2	320	115	150	85	307	370
	HLV 310-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	11.10 kg	2	380	150	180	125	365	445
	HLV 310-500/250	Screw clamp, 150 mm <sup>2</sup>	Bolt, M12	Mounting lugs	M6	15.10 kg	2	450	186	220	155	435	420

## Dimension pictures



Radio interference suppression filter,  
three-phase with neutral conductor,  
low leakage current  
**HLV 710**



## General Data

Rated voltage 3 x 520 Vac
Voltage range 0 - 3 x 520 Vac
Rated current 3 x 8 - 3 x 250 A+N
Leakage current 6.00 - 7.00 mA
Degree of protection IP 20

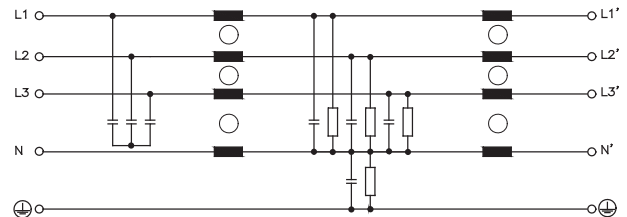
## Advantages

For enhanced requirements
Reduced leakage current
Single-stage filter concept
Efficient filter effect against line-bound interference emissions

## Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

## Sample application



## Standards

Radio interference suppression filter to DIN EN 60939-2

## Approvals





## Radio interference suppression filter, three-phase with neutral conductor, low leakage current **HLV 710**



Electrical data	Typ	HLV 710-500/8	HLV 710-500/12	HLV 710-500/16	HLV 710-500/30	HLV 710-500/42	HLV 710-500/55
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 8 A+N	3 x 12 A+N	3 x 16 A+N	3 x 30 A+N	3 x 42 A+N	3 x 55 A+N
	Leakage current (50 Hz)*	6.00 mA	6.00 mA	6.00 mA	6.50 mA	6.50 mA	6.50 mA
	Leakage current (50 Hz)**	60.00 mA	60.00 mA	60.00 mA	63.00 mA	63.00 mA	63.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Oversizing Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment						
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes						
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers						
	Order Number	HLV 710-500/8	HLV 710-500/12	HLV 710-500/16	HLV 710-500/30	HLV 710-500/42	HLV 710-500/55

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



## Radio interference suppression filter, three-phase with neutral conductor, low leakage current **HLV 710**



Type	HLV 710-500/75	HLV 710-500/100	HLV 710-500/130	HLV 710-500/180	HLV 710-500/250
<b>Electrical data</b>					
Operating data					
Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
Rated current	3 x 75 A+N	3 x 100 A+N	3 x 130 A+N	3 x 180 A+N	3 x 250 A+N
Leakage current (50 Hz)*	6.50 mA	6.50 mA	6.50 mA	7.00 mA	7.00 mA
Leakage current (50 Hz)**	63.00 mA	63.00 mA	65.00 mA	65.00 mA	65.00 mA
Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Oversizing Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Environment					
Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C
Safety and protection					
Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)	I	I	I	I	I
Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Notes					
*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
Order numbers					
Order Number	HLV 710-500/75	HLV 710-500/100	HLV 710-500/130	HLV 710-500/180	HLV 710-500/250

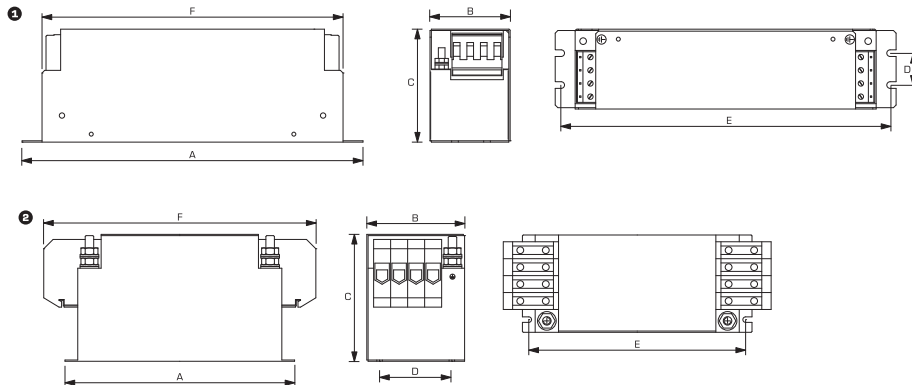


Radio interference suppression filter,  
three-phase with neutral conductor,  
low leakage current  
**HLV 710**



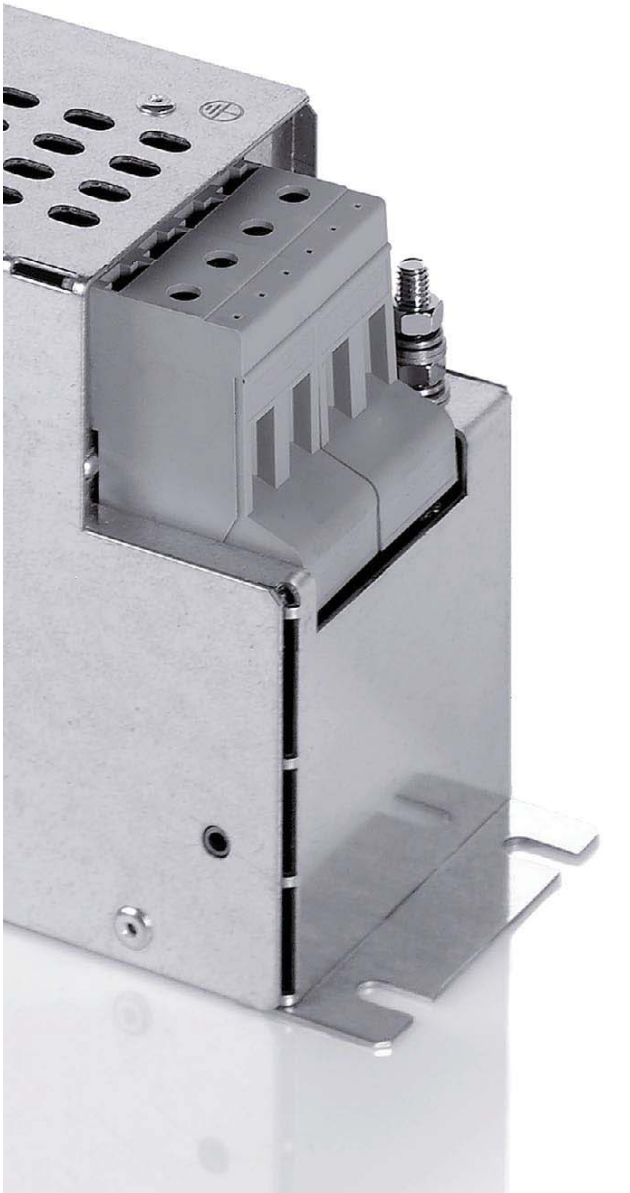
Mechanical data	Type	Terminals phase/N	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
	HLV 710-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.83 kg	1	190	55	75	30	178	165
	HLV 710-500/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.97 kg	1	220	55	75	30	208	190
	HLV 710-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.20 kg	1	250	55	75	30	240	220
	HLV 710-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.80 kg	1	270	70	95	45	255	240
	HLV 710-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.20 kg	1	310	70	95	40	295	255
	HLV 710-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.90 kg	2	250	100	95	70	233	255
	HLV 710-500/75	Screw clamp, 35 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	2.90 kg	2	270	100	150	70	255	298
	HLV 710-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	6.20 kg	2	320	115	150	85	307	370
	HLV 710-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	6.90 kg	2	320	115	150	85	307	370
	HLV 710-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	11.10 kg	2	380	150	180	125	365	445
	HLV 710-500/250	Screw clamp, 150 mm <sup>2</sup>	Bolt, M12	Mounting lugs	M6	15.10 kg	2	450	186	220	155	435	420

Dimension pictures



## Radio interference suppression filter, three-phase with neutral conductor, no leakage current

### HLV 810



#### General Data

Rated voltage	3 x 520 Vac
Voltage range	0 - 3 x 520 Vac
Rated current	3 x 8 - 3 x 250 A+N
Degree of protection	IP 20
Leakage current	0 mA

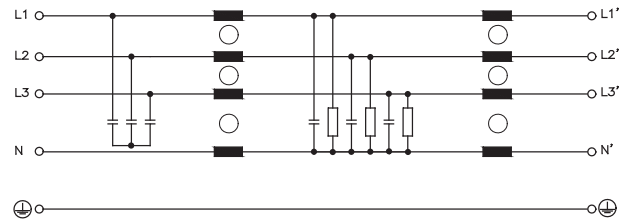
#### Advantages

For enhanced requirements
Single-stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

#### Applications

Radio interference suppression filter for line-side interference suppression of single devices or frequency converters.

#### Sample application



#### Standards

Radio interference suppression filter to DIN EN 60939-2

#### Approvals





## Radio interference suppression filter, three-phase with neutral conductor, no leakage current **HLV 810**



Electrical data	Typ	HLV 810-500/8	HLV 810-500/12	HLV 810-500/16	HLV 810-500/30	HLV 810-500/42	HLV 810-500/55
	Operating data						
	Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
	Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
	Rated current	3 x 8 A+N	3 x 12 A+N	3 x 16 A+N	3 x 30 A+N	3 x 42 A NBN	3 x 55 A+N
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Oversrating Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Leakage current (50 Hz)	0 mA	0 mA	0 mA	0 mA	0 mA	0 mA
	Environment						
	Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
	Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Order numbers						
	Order Number	<b>HLV 810-500/8</b>	<b>HLV 810-500/12</b>	<b>HLV 810-500/16</b>	<b>HLV 810-500/30</b>	<b>HLV 810-500/42</b>	<b>HLV 810-500/55</b>

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



## Radio interference suppression filter, three-phase with neutral conductor, no leakage current **HLV 810**



Type	HLV 810-500/75	HLV 810-500/100	HLV 810-500/130	HLV 810-500/180	HLV 810-500/250
<b>Electrical data</b>					
Operating data					
Rated voltage	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac	3 x 520 Vac
Voltage range	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac	0 - 3 x 520 Vac
Rated current	3 x 75 A+N	3 x 100 A+N	3 x 130 A+N	3 x 180 A+N	3 x 250 A+N
Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Oversizing Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
Leakage current (50 Hz)	0 mA	0 mA	0 mA	0 mA	0 mA
Environment					
Climatic category	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]	25/085/21 [in accordance with EN 60068-1]
Ambient temperature max.	50 °C	50 °C	50 °C	50 °C	50 °C
Safety and protection					
Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
Safety class (prepared)	I	I	I	I	I
Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
Order numbers					
Order Number	<b>HLV 810-500/75</b>	<b>HLV 810-500/100</b>	<b>HLV 810-500/130</b>	<b>HLV 810-500/180</b>	<b>HLV 810-500/250</b>



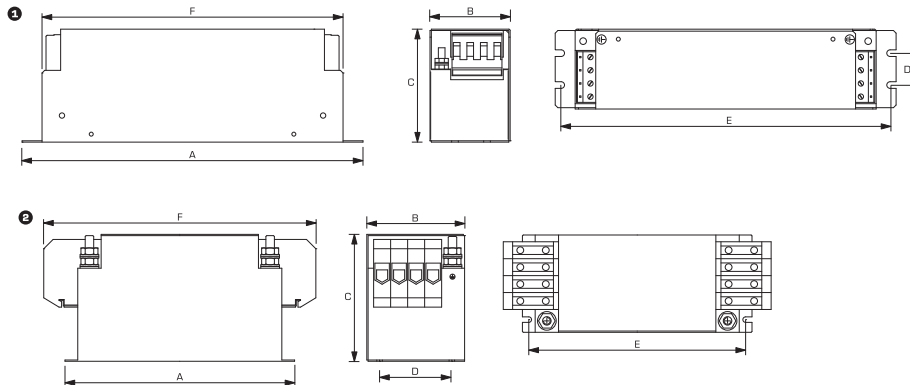


## Radio interference suppression filter, three-phase with neutral conductor, no leakage current **HLV 810**



Mechanical data	Type	Terminals phase/N	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
	HLV 810-500/8	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.83 kg	1	190	55	75	30	178	165
	HLV 810-500/12	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	0.97 kg	1	220	55	75	30	208	190
	HLV 810-500/16	Screw clamp, 4 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.20 kg	1	250	55	75	30	240	220
	HLV 810-500/30	Screw clamp, 10 mm <sup>2</sup>	Bolt, M5	Mounting lugs	M5	1.80 kg	1	270	70	95	45	255	240
	HLV 810-500/42	Screw clamp, 10 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.20 kg	1	310	70	95	40	295	255
	HLV 810-500/55	Screw clamp, 16 mm <sup>2</sup>	Bolt, M6	Mounting lugs	M6	2.90 kg	2	250	100	95	70	233	255
	HLV 810-500/75	Screw clamp, 35 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	4.80 kg	2	270	100	150	70	255	298
	HLV 810-500/100	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M5	6.20 kg	2	320	115	150	85	307	370
	HLV 810-500/130	Screw clamp, 50 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	6.90 kg	2	320	115	150	85	307	370
	HLV 810-500/180	Screw clamp, 95 mm <sup>2</sup>	Bolt, M10	Mounting lugs	M6	11.10 kg	2	380	150	180	125	365	445
	HLV 810-500/250	Screw clamp, 150 mm <sup>2</sup>	Bolt, M12	Mounting lugs	M6	15.10 kg	2	450	186	220	155	435	420

### Dimension pictures



## Radio interference suppression filter, three-phase with neutral conductor

### HFV 510



### General Data

Rated voltage 3 x 480 Vac
Voltage range 0 - 3 x 480 Vac
Rated current 3 x 16 - 3 x 80 A+N
Leakage current 15.00 - 22.00 mA
Degree of protection IP 20

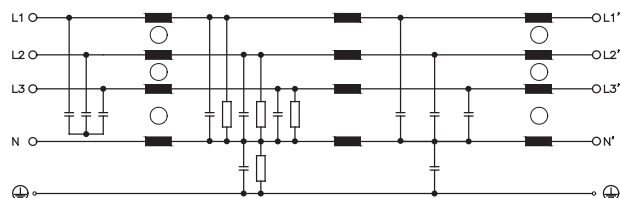
### Advantages

For the highest requirements
Two stage filter concept
Efficient filter effect against line-bound interference emissions
Increase in the interference immunity of the connected consumer

### Applications

Radio interference suppression filter for line-side interference suppression of single devices, frequency converters or as group interference suppression.

### Sample application



### Standards

Radio interference suppression filter to DIN EN 60939-2

### Approvals





## Radio interference suppression filter, three-phase with neutral conductor **HFV 510**



Electrical data	Typ	HFV 510-400/16	HFV 510-400/25	HFV 510-400/35	HFV 510-400/50	HFV 510-400/80
	Operating data					
	Rated voltage	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac	3 x 480 Vac
	Voltage range	0 - 3 x 480 Vac	0 - 3 x 480 Vac	0 - 3 x 480 Vac	0 - 3 x 480 Vac	0 - 3 x 480 Vac
	Rated current	3 x 16 A+N	3 x 25 A+N	3 x 35 A+N	3 x 50 A+N	3 x 80 A+N
	Leakage current (50 Hz)*	15.00 mA	17.00 mA	22.00 mA	17.00 mA	19.00 mA
	Leakage current (50 Hz)**	145.00 mA	161.00 mA	215.00 mA	161.00 mA	178.00 mA
	Rated frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
	Oversizing Capacity	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly	150 %, shortly
	Environment					
	Climatic category	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)	25/085/21 (in accordance with EN 60068-1)
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C
	Safety and protection					
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I
	Test voltage	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE	2150 Vdc Phase/Phase, 2700 Vdc Phase/PE
	Notes					
	*	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %	Leakage current measured against the maximum permissible input voltage fluctuation in accordance with IEC 38 ±10 %
	**	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases	Leakage current by loss of two phases
	Order numbers					
	Order Number	HFV 510-400/16	HFV 510-400/25	HFV 510-400/35	HFV 510-400/50	HFV 510-400/80

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



### Radio interference suppression filter, three-phase with neutral conductor

#### HFV 510



Mechanical data	Type	Terminals phase/N	Terminals PE	Fixing method	Weight	Dimension picture (in mm)						
						A	B	C	D	E	F	G
	HFV 510-400/16	Screw clamp, 4 mm²	Bolt, M5	Mounting lugs with fixing holes	1.70 kg	305	55	142	290	30	295	6.5
	HFV 510-400/25	Screw clamp, 10 mm²	Bolt, M5	Mounting lugs with fixing holes	1.80 kg	329	70	185	314	45	300	6.5
	HFV 510-400/35	Screw clamp, 10 mm²	Bolt, M5	Mounting lugs with fixing holes	2.80 kg	329	70	185	314	45	300	6.5
	HFV 510-400/50	Screw clamp, 16 mm²	Bolt, M8	Mounting lugs with fixing holes	3.10 kg	429	110	240	414	80	400	6.5
	HFV 510-400/80	Screw clamp, 25 mm²	Bolt, M10	Mounting lugs with fixing holes	4.00 kg	633	110	240	618	80	600	6.5

### Dimension pictures

