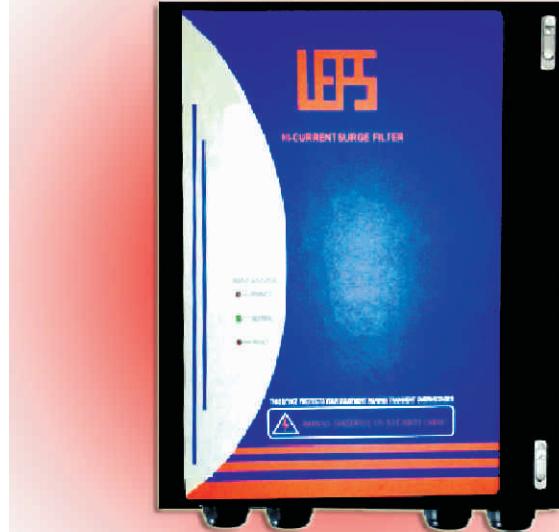


HIGH CURRENT SURGE FILTER



Unsurpassed performance in surges and transients filtering ensures a clean, filtered supply of electricity is provided to all the equipments connected at the output

- ◆ All mode protection
- ◆ Highest safety standard design
- ◆ Multi-stage protection for surges suppression and filtering
- ◆ Exceptional high surge handling capability
- ◆ Redundant protection and staged LED status indication
- ◆ Remote monitoring



All mode protection - HSF series high current surge filters provide unsurpassed surges and transients filtering for main panels used in medium to high exposure areas using any power distribution systems such as TT, TN-C, TN-S etc. They offer all mode(L-N, L-E and N-E) and repeated protection in lightning intense environment.

Highest safety standard design - It has been engineered to the industry's safest criteria for full compliance with IEC 61643 and UL1449 Edition2 &3. Also with its patented thermal and short circuit fusing included, it ensures safe isolation during sustained abnormal over-voltage events and component failure.

Multi-stage protection for surges suppression and filtering - No single technology can provide overall protection, so HSF surge filters utilize multi-stage design. The first stage rapidly diverts excess transient surges to ground. The second stage uses low pass filter to discriminate the noise, harmonics and remaining surges from the normal supply. The third stage ensures the impulses generated by

the connected load will not return to the supply.

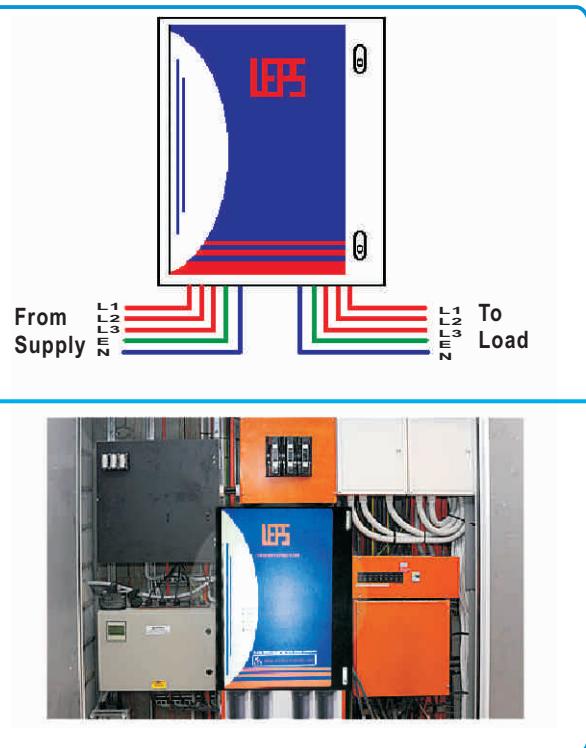
Exceptional high surge handling capability up to 140KA per line - Its 700KA to 1120KA unit total unparalleled surge handling capability makes HSF series protectors the ultimate choice for total facility protection.

Redundant protection and staged LED status indication - Each phase employs two redundant and independent fused and thermal overload protection elements to provide back-up protection for continued equipment survival. There are two LED indicators per phase to monitor the integrity of the protection. This pre-failure warning indication design means you will never be unprotected.

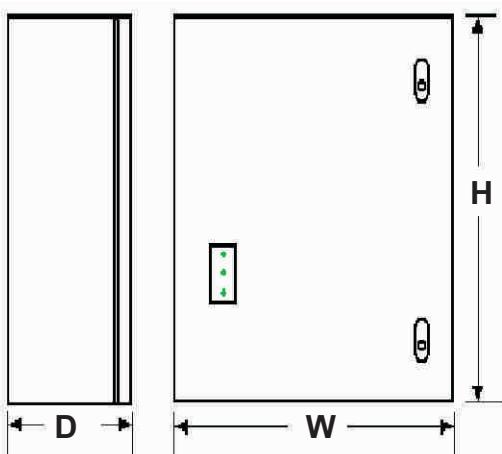
Remote monitoring - All models features voltage free contacts with normal open/normal close contacts which change state to indicate a fault. An optional Remote Monitoring Panel can also be chosen which offers both visual and audible alarm at remote location from the protector.

Installation

The filter is connected in series with the protected system(load) as illustrated below:



Dimensions & weight



MODEL	WEIGHT	D	H	W
HSF3200	~90kg	300	800	600
HSF3315	~108kg	300	800	600
HSF3400	~125kg	300	800	600
HSF3630	~135kg	300	1000	800
HSF3800	~220kg	300	1000	800
HSF31000	~230kg	300	1400	800
HSF31250	~250kg	300	1400	800
HSF31600	~250kg	300	1400	1000
HSF32000	~350kg	300	1400	1000

General Specifications

SPD class(EN/IEC):	Class I+II/Type 1+2
Nominal voltage, Un:	See page 3
Max. working voltage, Uc:	See page 3
Load current, IL:	200A-2000A
Operating frequency:	40-60Hz
Connection type:	Series
Protection stage:	First stage - by MSF surge diverter Second stage - by LC filtering circuit Third stage - by MDD surge diverter
Max. discharge current, Imax:	
HSFx-80	160KA(8/20μs)/phase - First stage
HSFx-140	280KA(8/20μs)/phase - First stage
Impulse discharge current, limp:	
HSFx-80	30KA(10/350μs)/phase - First stage
HSFx-140	50KA(10/350μs)/phase - First stage
Voltage protection level, Up:	See page 3
Overload/short circuit protection:	MCCB/HRC fuse
Protection mode:	L-N, L-E, N-E
Response time, tA:	<5ns
Efficiency:	99%
Frequency response:	3dB (at 800Hz)
Standards compliance:	BS EN/IEC61643-11 AS1768-2007 cat.A.B.C IEEE C62.41 cat.A.B.C CP33-1999 cat.A.B.C UL1449 2nd & 3rd edition
EMC compliance:	BS EN 60950: 2001 BS EN 61000-6-7: 2015
Alarm isolation:	4KV
Status indicator:	LED (Green=OK)
Optional RMP remote alarm:	Siren sound, OK and FAIL LED
Other options:	Surge counter(add "IC")
Alarm(volt free contact):	N/O, N/C(2A @250Vac)
Alarm conductor size:	2.5mm ²
Wiring terminals:	10mm-12mm Stud, input/output
Case material:	Galvanized steel alloy(powder coated)
Mounting:	Back panel screw mount
IP rating:	IP55
Operating temperature, Tu:	-40-85°C
Humidity:	0-95%(R.H.)
Altitude:	0-3650m

VOLTAGE RATINGS & POWER SOURCE CONFIGURATIONS



XX = 80KA, 100KA, 120KA, 140KA, 160KA, 200KA

Power Source Configurations	Model Voltage Code	Nominal System Voltage, U_n (Vac)			MCOV, U_c (Vac)	Voltage protection level, Up (V) @ 3KA, 8/20μs
		L-N	L-L	L-E		
 Split Phase, 3W+E	HSF3-xxL/S	100	173-200	100	150(L-N)	195
		110	190-220	110		
		120	208-240	120		
		127	220-254	127		
	HSF3-xxM/S	220	380-440	220	275(L-N)	350
		230	400-460	230		
		240	415-480	240		
	HSF3-xxH/S	277	480-554	277	350(L-N)	455
		305	525	305		
	HSF3-xxU/S	347	600	347	460(L-N)	600
		380	657	380		
 Three Phase Wye, 4W+E	HSF3-xxL	100	173	100	150(L-N)	195
		110	190	110		
		120	208	120		
		127	220	127		
	HSF3-xxM	220	380	220	275(L-N)	350
		230	400	230		
		240	415	240		
	HSF3-xxH	277	480	277	350(L-N)	455
		305	525	305		
	HSF3-xxU	347	600	347	460(L-N)	600
		380	657	380		
 Three Phase Wye, 3W+E	HSF3-xxL/Y	-----	173	100	150(L-E)	195
		-----	190	110		
		-----	208	120		
		-----	220	127		
	HSF3-xxM/Y	-----	380	220	275(L-E)	350
		-----	400	230		
		-----	415	240		
	HSF3-xxH/Y	-----	480	277	350(L-E)	455
		-----	525	305		
	HSF3-xxU/Y	-----	600	347	460(L-E)	600
		-----	657	380		
 Three Phase Delta Hi Leg, 4W+E	HSF3-xxL/H	120	240	120	150(L-N)	195
	HSF3-xxM/D	-----	200	200	275(L-E)	350
		-----	208	208		
		-----	220	220		
		-----	230	230		
	HSF3-xxE/D	-----	240	240		
		-----	380	380		
		-----	400	400		
		-----	415	415		
		-----	440	440		
		-----	480	480		

Notes:

- (1) For other voltages or source configurations, consult LEPS
- (2) Ensure the model selected is compatible with the voltage level and source configuration in use
- (3) MCOV = Maximum Continuous Operating Voltage

ORDERING INFORMATION





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MODEL	PRODUCT DESCRIPTION	PHOTO/DRAWING
HIGH-CURRENT SURGE FILTERS-AC POWERLINE PROTECTION		
Main Switch Board (MSB) 80kA – 200kA per mode, High Load Current(200A-2000A), 277/305V(L-N), 480/525V(L-L)		
HSF3200-80H	High-current Surge Filter, active tracking & filtering, 200A, 3ph for 4W+E of Y system, 277/305V(L-N), 80KA, metal enclosure and watertight cable gland	
HSF3200-140H	High-current Surge Filter, active tracking & filtering, 200A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF3400-80H	High-current Surge Filter, active tracking & filtering, 400A, 3ph for 4W+E of Y system, 277/305V(L-N), 80KA, metal enclosure and watertight cable gland	
HSF3400-140H	High-current Surge Filter, active tracking & filtering, 400A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF3630-80H	High-current Surge Filter, active tracking & filtering, 630A, 3ph for 4W+E of Y system, 277/305V(L-N), 80KA, metal enclosure and watertight cable gland	
HSF3630-140H	High-current Surge Filter, active tracking & filtering, 630A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF3800-80H	High-current Surge Filter, active tracking & filtering, 800A, 3ph for 4W+E of Y system, 277/305V(L-N), 800KA, metal enclosure and watertight cable gland	
HSF3800-140H	High-current Surge Filter, active tracking & filtering, 800A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF31000-80H	High-current Surge Filter, active tracking & filtering, 1000A, 3ph for 4W+E of Y system, 277/305V(L-N), 80KA, metal enclosure and watertight cable gland	
HSF31000-140H	High-current Surge Filter, active tracking & filtering, 1000A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF31250-80H	High-current Surge Filter, active tracking & filtering, 1250A, 3ph for 4W+E of Y system, 277/305V(L-N), 80KA, metal enclosure and watertight cable gland	
HSF31250-140H	High-current Surge Filter, active tracking & filtering, 1250A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF31600-80H	High-current Surge Filter, active tracking & filtering, 1600A, 3ph for 4W+E of Y system, 277/305V(L-N), 80KA, metal enclosure and watertight cable gland	
HSF31600-140H	High-current Surge Filter, active tracking & filtering, 1600A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF32000-80H	High-current Surge Filter, active tracking & filtering, 2000A, 3ph for 4W+E of Y system, 277/305V(L-N), 80KA, metal enclosure and watertight cable gland	
HSF32000-140H	High-current Surge Filter, active tracking & filtering, 2000A, 3ph for 4W+E of Y system, 277/305V(L-N), 140KA, metal enclosure and watertight cable gland	
HSF3200-80H/Y	High-current Surge Filter, active tracking & filtering, 200A, 3ph for 3W+E of Y system, 277/305V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF3200-140H/Y	High-current Surge Filter, active tracking & filtering, 200A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF3400-80H/Y	High-current Surge Filter, active tracking & filtering, 400A, 3ph for 3W+E of Y system, 277/305V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF3400-140H/Y	High-current Surge Filter, active tracking & filtering, 400A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF3630-80H/Y	High-current Surge Filter, active tracking & filtering, 630A, 3ph for 3W+E of Y system, 277/305V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF3630-140H/Y	High-current Surge Filter, active tracking & filtering, 630A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF3800-80H/Y	High-current Surge Filter, active tracking & filtering, 800A, 3ph for 3W+E of Y system, 277/305V(L-E), 800KA, metal enclosure and watertight cable gland	
HSF3800-140H/Y	High-current Surge Filter, active tracking & filtering, 800A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF31000-80H/Y	High-current Surge Filter, active tracking & filtering, 1000A, 3ph for 3W+E of Y system, 277/305V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF31000-140H/Y	High-current Surge Filter, active tracking & filtering, 1000A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF31250-80H/Y	High-current Surge Filter, active tracking & filtering, 1250A, 3ph for 3W+E of Y system, 277/305V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF31250-140H/Y	High-current Surge Filter, active tracking & filtering, 1250A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF31600-80H/Y	High-current Surge Filter, active tracking & filtering, 1600A, 3ph for 3W+E of Y system, 277/305V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF31600-140H/Y	High-current Surge Filter, active tracking & filtering, 1600A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF32000-80H/Y	High-current Surge Filter, active tracking & filtering, 2000A, 3ph for 3W+E of Y system, 277/305V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF32000-140H/Y	High-current Surge Filter, active tracking & filtering, 2000A, 3ph for 3W+E of Y system, 277/305V(L-E), 140KA, metal enclosure and watertight cable gland	

ORDERING INFORMATION

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MODEL	PRODUCT DESCRIPTION	PHOTO/DRAWING
HIGH-CURRENT SURGE FILTERS-AC POWERLINE PROTECTION-FOR 3W+E of DELTA SYSTEM		
<i>Main Switch Board (MSB) 80kA - 200kA per mode, High Load Current(200A-2000A), 380/400/415/440/480V(L-E)</i>		
HSF3200-80E/D	High-current Surge Filter, active tracking & filtering, 200A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF3200-140E/D	High-current Surge Filter, active tracking & filtering, 200A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF3400-80E/D	High-current Surge Filter, active tracking & filtering, 400A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF3400-140E/D	High-current Surge Filter, active tracking & filtering, 400A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF3630-80E/D	High-current Surge Filter, active tracking & filtering, 630A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF3630-140E/D	High-current Surge Filter, active tracking & filtering, 630A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF3800-80E/D	High-current Surge Filter, active tracking & filtering, 800A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 800KA, metal enclosure and watertight cable gland	
HSF3800-140E/D	High-current Surge Filter, active tracking & filtering, 800A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF31000-80E/D	High-current Surge Filter, active tracking & filtering, 1000A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF31000-140E/D	High-current Surge Filter, active tracking & filtering, 1000A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF31250-80E/D	High-current Surge Filter, active tracking & filtering, 1250A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF31250-140E/D	High-current Surge Filter, active tracking & filtering, 1250A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF31600-80E/D	High-current Surge Filter, active tracking & filtering, 1600A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF31600-140E/D	High-current Surge Filter, active tracking & filtering, 1600A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
HSF32000-80E/D	High-current Surge Filter, active tracking & filtering, 2000A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 80KA, metal enclosure and watertight cable gland	
HSF32000-140E/D	High-current Surge Filter, active tracking & filtering, 2000A, 3ph for 3W+E of Δ system, 380/400/415/440/480V(L-E), 140KA, metal enclosure and watertight cable gland	
OPTIONS		
/C	Add "/C" at the model suffix for built-in digital surge counter, 8-digit LCD display	
* Other surge ratings: 100KA, 120KA, 160KA, 200KA are available on request		



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