

Three phase 500Vac 6 to 300A EMC Filters with high attenuation

https://product.tdk.com/en/products/emc/emc/power-line/tec_data/tdk_nf_RTHN.html

<https://www.emea.lambda.tdk.com/uk/products/r-series>



The RTHN three-phase EMC filters are enclosed in low profile cases. They are rated for 500Vac with multiple current ratings of 6 to 300A enabling the optimum attenuation to match the current rating. The series uses TDK's ferrite core material in a two stage configuration to provide excellent noise attenuation. The connection terminals are integrated into the case with both the screws and terminal covers captive, avoiding dropped or lost hardware. The RTHN 6A to 30A models are UL certified for a short circuit current rating of up to 14kA, the 40A to 100A for 35kA and 10kA for the 150A models with the appropriate breaker.

Features	Benefits
• 6 to 300A Current Ratings	• Optimizes the Attenuation for the Current Rating
• Low Profile Case Sizes	• Space Saving for Cabinets
• Two Stage, High Attenuation	• Lower Noise
• Captive Hardware	• No Lost Screws or Terminal Covers
• Safety Certified	• Global Use

Model Selector							
Model	Rated Current (A)	SCCR (kA) ⁽¹⁾	Leakage Current 500V/60Hz* (mA)	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		
					Common mode at 25dB	Differential mode at 25dB	Weight (g)
RTHN-5006	6	14	5.0	290	0.1 to 10	0.2 to 30	700
RTHN-5010	10	14	5.0	120	0.1 to 10	0.2 to 30	700
RTHN-5020	20	14	5.0	50	0.1 to 10	0.2 to 30	1000
RTHN-5030	30	14	5.0	26	0.2 to 10	0.2 to 30	1000
RTHN-5040	40	35	5.0	20	0.2 to 10	0.2 to 30	2100
RTHN-5050	50	35	5.0	14	0.2 to 10	0.2 to 30	2000
RTHN-5060	60	35	5.0	10	0.2 to 10	0.2 to 30	2000
RTHN-5080	80	35	5.0	10	0.1 to 10	0.2 to 30	7000
RTHN-5100	100	35	5.0	8	0.1 to 10	0.2 to 30	7500
RTHN-5150	150	10	5.0	6	0.1 to 10	0.2 to 30	11600
RTHN-5200	200	-	5.0	4	0.3 to 10	0.2 to 30	15800
RTHN-5250	250	-	5.0	3	0.3 to 10	0.2 to 30	15000
RTHN-5300	300	-	5.0	2	0.5 to 6	0.2 to 30	14300

*2.5mA at 250V/60Hz

RTHN	-	5	006
Series Name		Rated Voltage 5 = 500Vac	Rated Current 006 = 6A 300 = 300A

Related Products

Type	Current Rating (A)	Series	DIN Rail Mount	For use with secondary side inverters
Multipurpose with a low profile	6 - 300	RTEN	Y (Up to 30A)	
High attenuation, narrow package, 2 stage	6 - 150	RTHB		
High attenuation, low profile, 2 stage	6 - 60	RTMN		
High attenuation	3 - 300	RTHN		
Multipurpose with HV pulse protection	6 - 60	RTAN	Y (Up to 30A)	
Compact package size, 1 stage	6 - 300	RTCN	-	Y

[Click here for TDK-Lambda single phase filters](#)

Specification

Model

Input

Rated Voltage (max)	Vac/Vdc	500 (Safety certified for AC input only)
Input Frequency	Hz	47 - 63
Leakage Current (500Vac, 60Hz)	mA	5. (2.5mA 250Vac, 60Hz)
Safety Certifications and Markings	-	UL1283 (up to 150A), EN60939-1/-2 (ENEC14), conforms to RoHS Directive

Environmental

Operating Temperature	°C	-25 to +85, derating above 50. See derating curve below
Storage Temperature	°C	-25 to +85
Humidity (non condensing)	%RH	Operating: 15 - 85, storage: 5 - 85
Cooling	-	Convection
Withstand Voltage	Vac	2,500 input to earth
Isolation Resistance (For 1 minute)	MΩ	>100 at 500Vdc
Vibration	-	10-55Hz Amplitude 0.7mm, Sweep for 1 min. X, Y and Z directions for 0.5 hour each

Other

Weight (Typ)	-	See model selector
Size (LxWxH)	mm	See outline drawings
Size (LxWxH)	Inches	See outline drawings
Connectors	-	See outline drawings
MIL-HDBK-217F NOTICE2	Hours	RTHN-5006: 2,636,853, RTHN-5300: 1,906,069
Warranty	Years	5

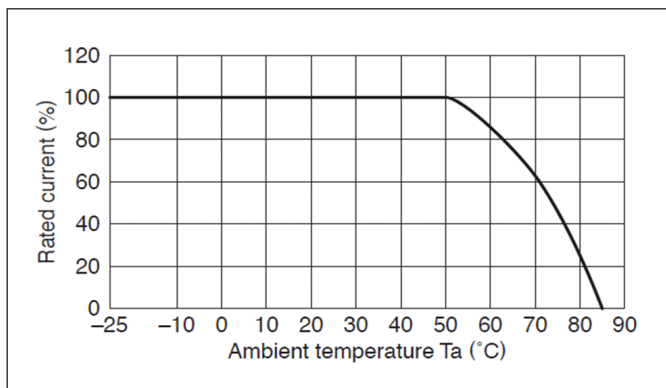
*Notes

(1) With inverse time circuit breaker. See UL report on [website](#)

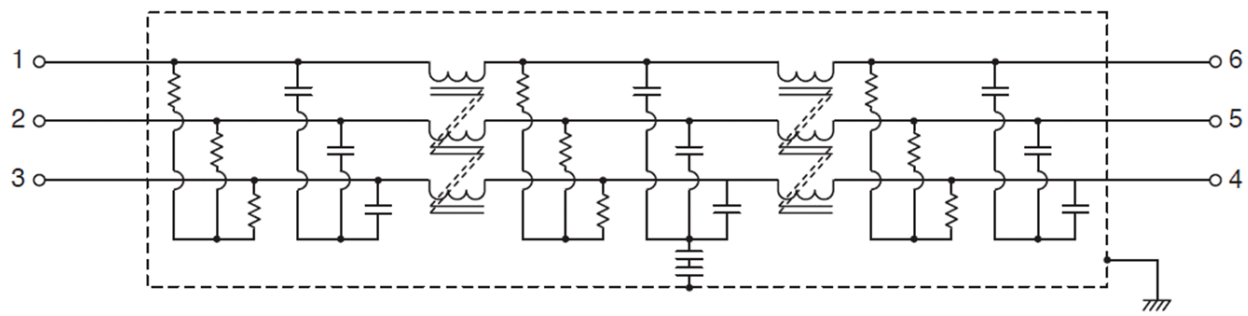
See website for detailed specifications, test methods and [installation manual](#)

Mechanical Specification

Derating Curve

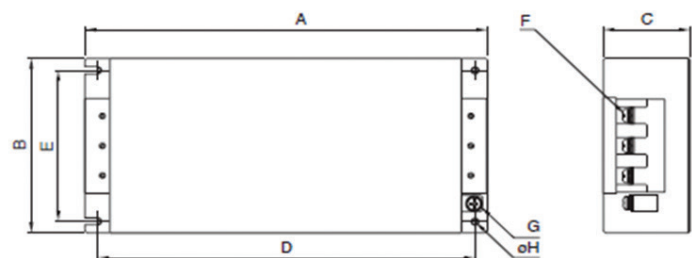


Schematic

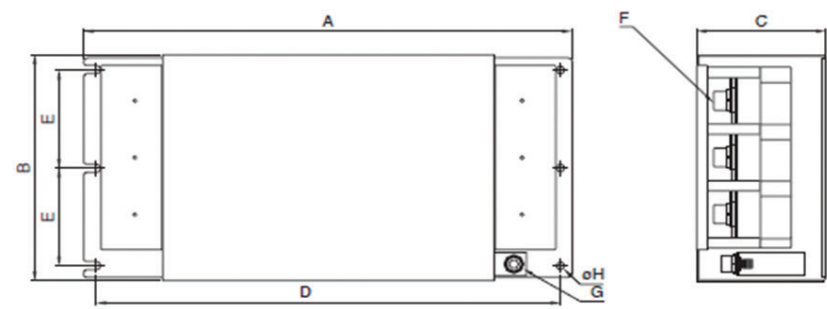


RTHN Outline Drawings

RTHN-5006/5010/5020/5030/5040/5050/5060/5080/5100/5150



RTHN-5200/5250/5300



Dimensions in mm								
Part No.	A	B	C	D	E	F	G	ϕH
RTHN-5006	210	95	50	195	78	M4	M4	4.5
RTHN-5010								
RTHN-5020								
RTHN-5030	240	105	55	225	85	M4	M4	5.5
RTHN-5040								
RTHN-5050								
RTHN-5060	300	128	68	280	102	M5	M4	6.5
RTHN-5080								
RTHN-5100								
RTHN-5150	473	190	88	453	164	M8	M6	6.5
RTHN-5200								
RTHN-5250								
RTHN-5300	593	195	103	573	84.5	M10	M8	6.5

M4 : 1.27N · m

M5 : 2.5N · m

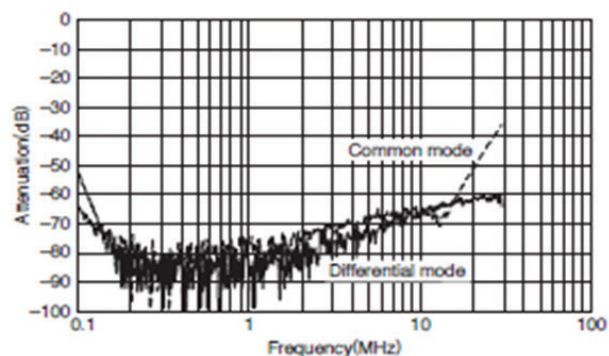
M6 : 4.8N · m

M8 : 7.64N · m

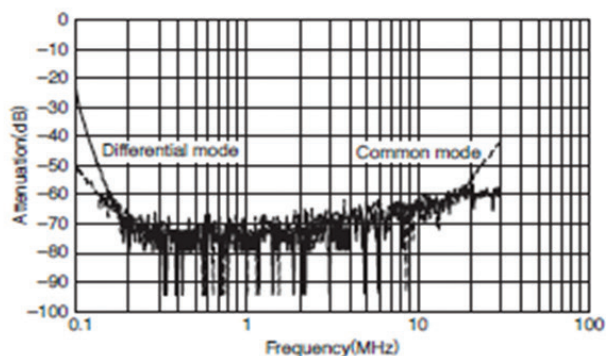
M10 : 11.8N · m

RTHN Attenuation vs. Frequency

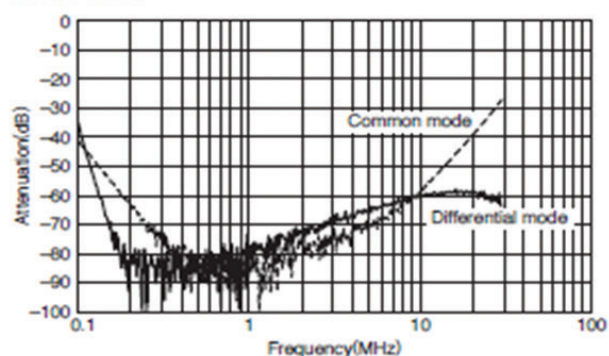
RTHN-5006



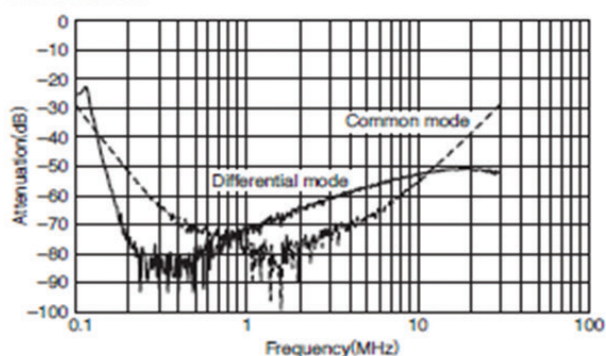
RTHN-5010



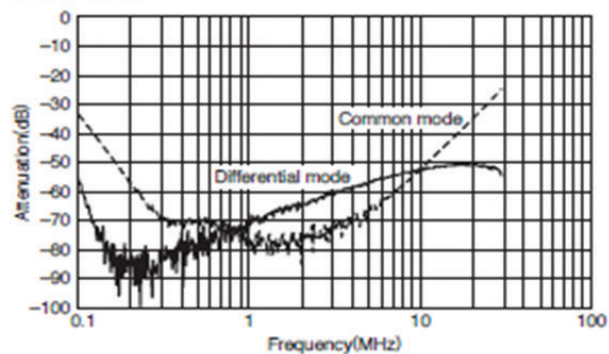
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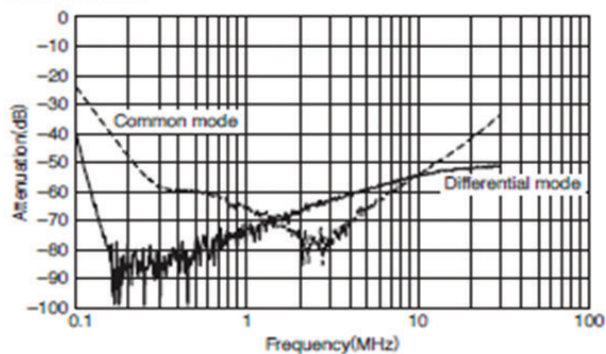
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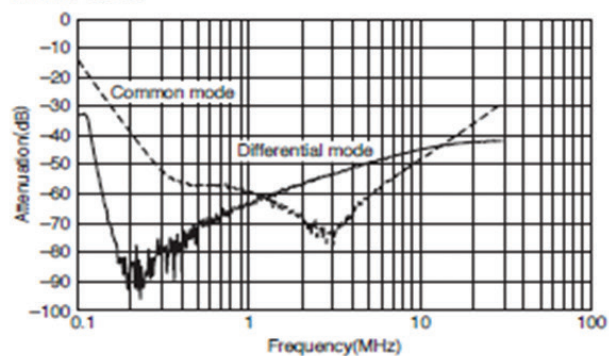
RTHN-5040



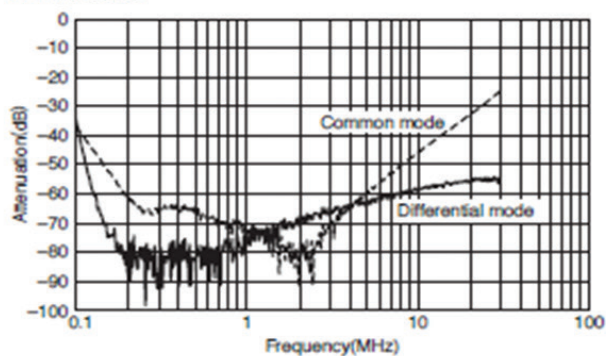
RTHN-5050



RTHN-5060

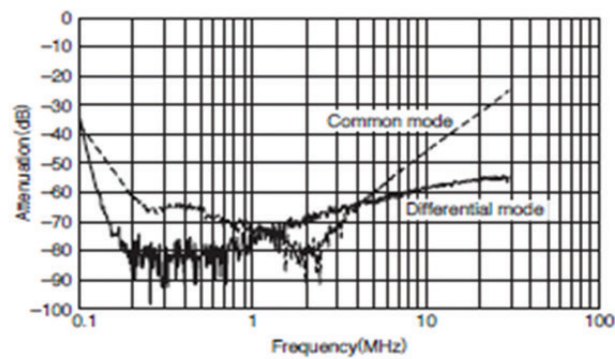


RTHN-5080

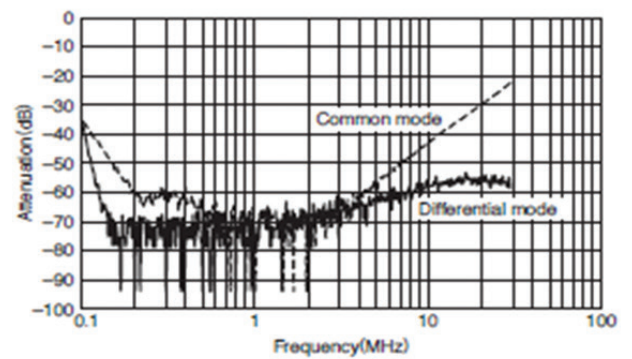


RTHN Attenuation vs. Frequency

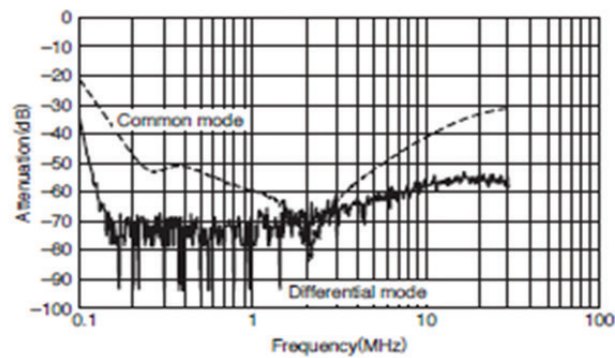
RTHN-5100



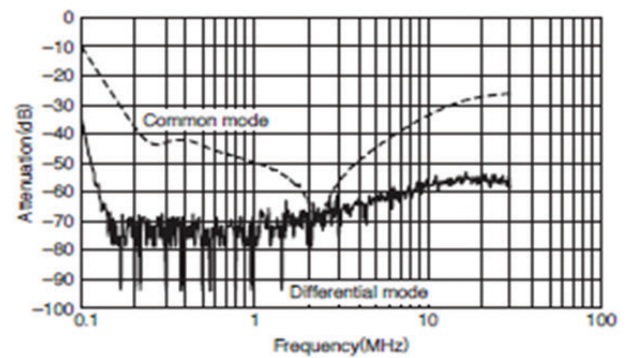
RTHN-5150



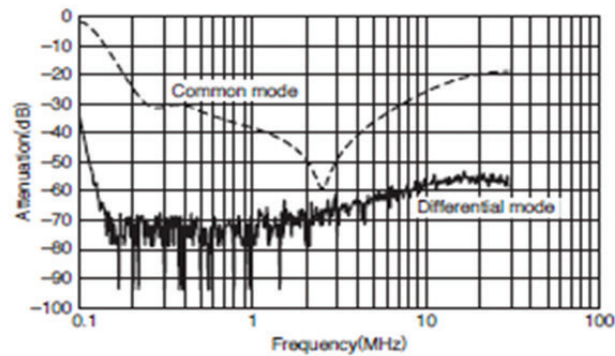
RTHN-5200



RTHN-5250



RTHN-5300



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