CUI INC
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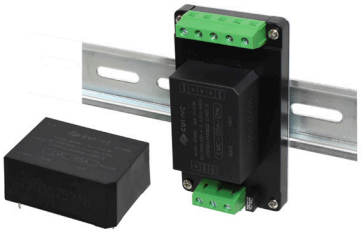
SERIES: EMC-05A | DESCRIPTION: AC POWER LINE FILTER

FEATURES

- reduces emissions to help comply with CISPR22 / EN 55022 Class B
- protects against surge events and Electrical Fast Transients
- wide input voltage range (85 ~ 305 Vac)
- 0.5 A rated current
- -40 to +85°C temperature range
- options for board-mount and DIN-Rail mounting

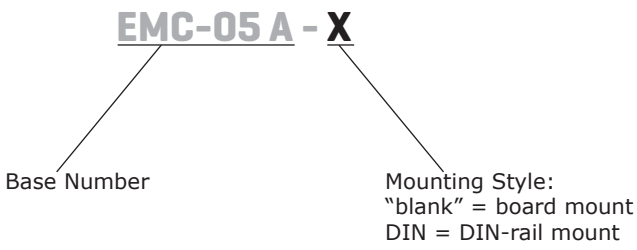


RoHS

SPECIFICATIONS

parameter	conditions/description	min	typ	max	units
input voltage		85		305	Vac
input current				0.5	A
RoHS	yes				
operating temperature		-40		85	°C
storage temperature		-40		105	°C
storage humidity	non-condensing				
case temperature rise	at 220 Vac, 0.05 A at 220 Vac, 0.25 A at 220 Vac, 0.5 A			5 20 30	°C °C °C
leakage current (line to ground)	2000 Vac, tested for 1 minute		2		mA
noise attenuation	150 kHz ~ 1 GHz: EMC-05A		20		dB
EFT	IEC/EN61000-4-4		±4		kV
surge	IEC/EN61000-4-5, +/-2 kV (2 ohms) / +/-4 kV (12 ohms)				

PART NUMBER KEY



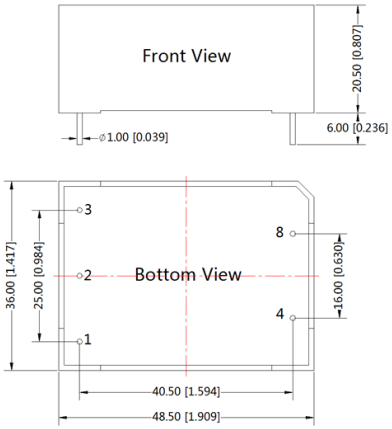
MECHANICAL

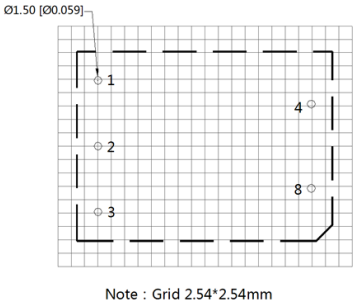
parameter	conditions/description	min	typ	max	units
dimensions	board mount - 48.50 x 36.00 x 20.50 [1.91 x 1.42 x 0.81 inch] DIN-Rail - 96.10 x 54.00 x 33.60 [3.78 x 2.13 x 1.32 inch]				mm
case material	black flame-retardant heat-proof epoxy resin (UL94-V0)				
weight	board mount, DIN-Rail		50/140		g

MECHANICAL DRAWING (BOARD MOUNT-A)

units: mm [inch]
tolerance: ±0.50 [±0.020]
pin diameter tolerance: ±0.10 [±0.004]

PIN-OUT	
PIN	Function
1	GND
2	IN(N)
3	IN(L)
4	OUT(N)
8	OUT(L)





Note : Grid 2.54*2.54mm

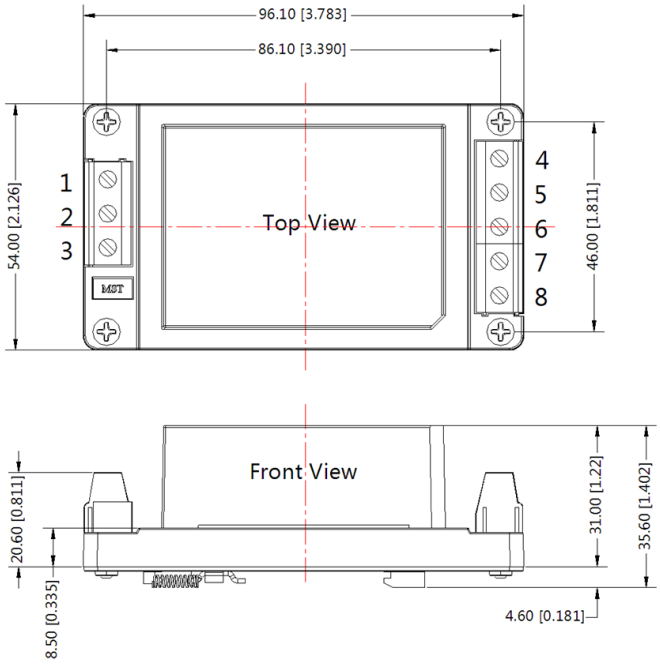
Recommended PCB Layout
Top View

Supporting Product Table						
Model	EMI (without external circuit)	EMI (with EMC filter)	EFT (w/o external circuit)	EFT (with EMC filter)	Surge (w/o external circuit)	Surge (with EMC filter)
VSK-S1	CISPR22/EN55022 CLASS B	-	-	IEC/EN61000-4-4 ±2KV	-	IEC/EN61000-4-5 ±1K /±2KV
VSK-S2	CISPR22/EN55022 CLASS B	-	-	IEC/EN61000-4-4 ±2KV	-	IEC/EN61000-4-5 ±1K /±2KV
VSK-S3	CISPR22/EN55022 CLASS A	CISPR22/EN55022 CLASS B	-	IEC/EN61000-4-4 ±2KV	-	IEC/EN61000-4-5 ±1K /±2KV
VSK-S5	CISPR22/EN55022 CLASS A	CISPR22/EN55022 CLASS B	IEC/EN61000-4-4 ±2KV	IEC/EN61000-4-4 ±4KV	IEC/EN61000-4-5 ±1K /±2KV	IEC/EN61000-4-5 ±2K /±4KV
VSK-S10	CISPR22/EN55022 CLASS A	CISPR22/EN55022 CLASS B	IEC/EN61000-4-4 ±2KV	IEC/EN61000-4-4 ±4KV	IEC/EN61000-4-5 ±1K	IEC/EN61000-4-5 ±2K /±4KV

MECHANICAL DRAWING (DIN-RAIL)

units: mm [inch]
tolerance: ±0.50 [±0.020]
wire range: 24~12 AWG
dimensions: 96.1 x 54 x 33.6 mm

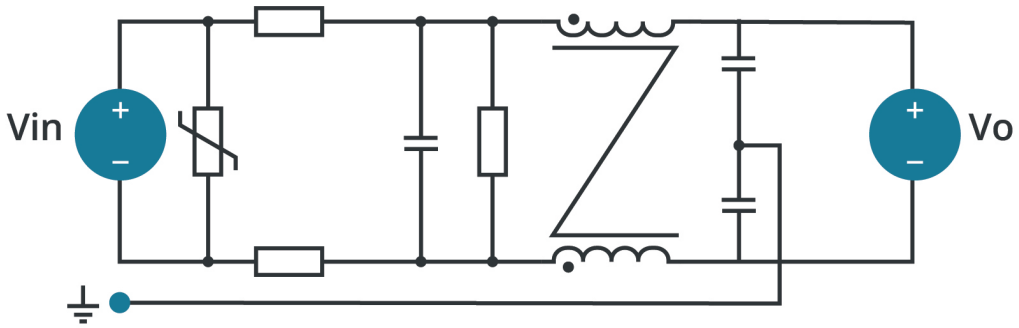
PIN	Function
1	GND
2	IN(N)
3	IN(L)
4	OUT(N)
5	NC
6	NC
7	NC
8	OUT(L)



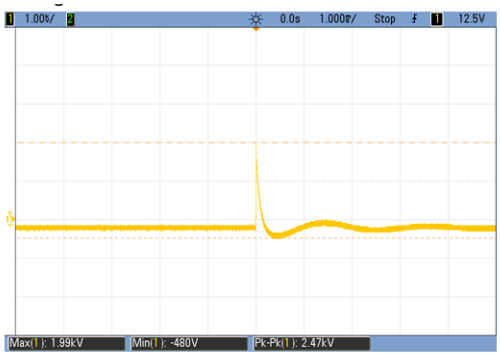
EMC SPECIFICATIONS

Adding the EMC-05A upstream from the AC/DC module can ensure surge level requirements are met according to IEC/EN61000-4-5 ±2KV (2Ω internal resistance)/±4KV (12Ω internal resistance). This model assists in meeting EMI requirements according to CISPR22 /EN 55022 Class B.

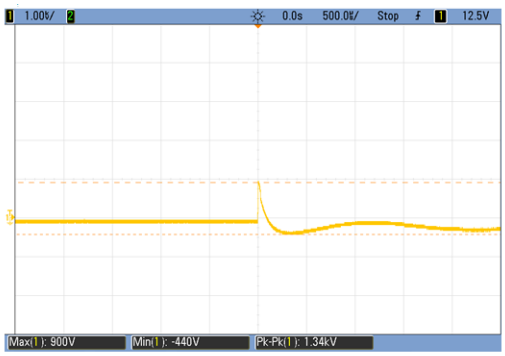
Figure 1
Internal Circuit



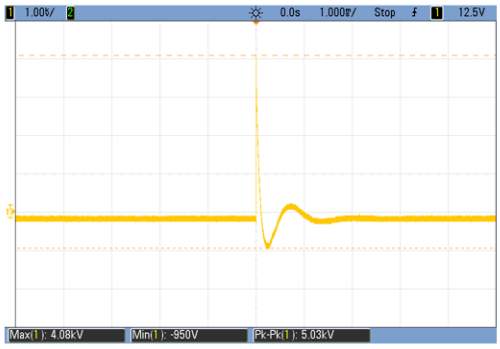
EMC-05A



Input voltage waveform (Differential mode 1.99KV)



Output voltage waveform (0.9 KV)

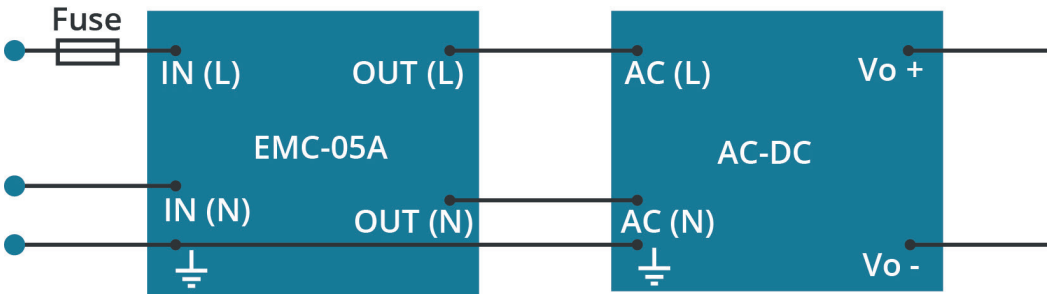


Input voltage waveform (Common mode 4.084.62KV)

Output voltage waveform(0.71 KV)

APPLICATION CIRCUIT

Figure 2
Application Circuit



REVISION HISTORY

rev.	description	date
1.0	initial release	12/10/2019
1.01	chassis mount model removed	04/09/2021
1.02	circuit figures updated	01/12/2022

The revision history provided is for informational purposes only and is believed to be accurate.

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