

HUA 高性能/高電流三相負載端 dU/dt 雜訊抑制濾波器

dU/dt Output Filters for 3-phase frequency Inverter

HUA Series, all-purpose filters to Protection Class A

CONFORMS TO
IEC 60950/ UL 1283
EN 133200

0~480VAC 50/60HZ θ_a 40°C 符合 2006/95/EC, 2004/108/EC **CE** 認證

This family dU/dt output filters reduce the voltage rise rate of inverter output voltage And limits the peak voltage, protecting -the motor winding . high electromagnetic radiated disturbances(EMI) and also acoustic noise. PWM inverter frequency 4-16kHz see application note.

本系列負載端雜訊抑制濾波器能將變頻器輸出端所產生峰值突波電壓減少進而保護馬達線圈避免高電磁波(EMI)損害和聽覺干擾.PWM 變頻器抑制範圍 4-16kHz.

Specification

Test Voltage (2 sec) :L to E 1500VAC/3000VDC

L to L 2250VDC

Insulation Resistance : L to E $\geq 3000M\Omega$

L to L $\geq 2000M\Omega$

Current reduction above 40°C

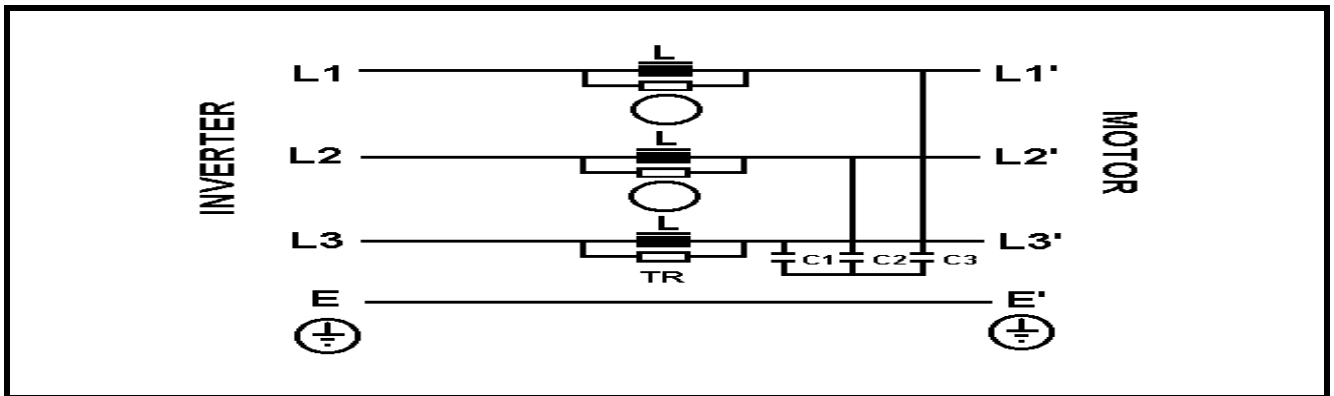
ambient temperature: $I=I_n \sqrt{(85-\theta)/45}$ θ = operating temperature

dU/dt 輸出端電源濾波器/規格&型號&尺寸(Specification & Type & Size)



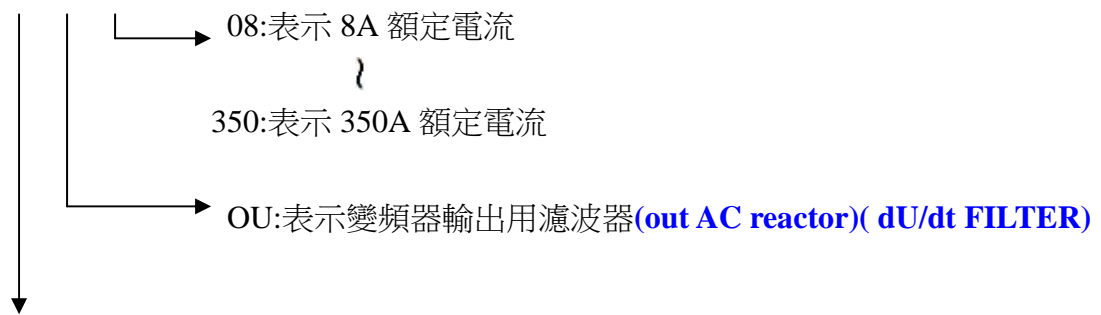
TYPE	In @ $\delta_a 40^\circ C$ [A]	U _{max} 50/60Hz [v]	Overload Current	Resistance L-L' $\pm 15\%$ [m Ω]	Max. leakage current @ 250v/60Hz In3-phasesystem [mA]	Temperature Rise [°C]	Temperature Range [°C]	Fig
HUA-9010-OU06	3×06	480	1.2×In 1 min. per hour	24.1	≤ 0.5	≤ 30	-25~+85	A
HUA-9010-OU08	3×08			24.1		≤ 30	-25~+85	A
HUA-9010-OU10	3×10			22.3		≤ 30	-25~+85	A
HUA-9010-OU16	3×16			20.2		≤ 30	-25~+85	A
HUA-9010-OU20	3×20			15		≤ 30	-25~+85	A
HUA-9010-OU25	3×25			11.5		≤ 30	-25~+85	A
HUA-9010-OU30	3×30			10		≤ 30	-25~+85	A
HUA-9020-OU40	3×40			9.6		≤ 30	-25~+85	B
HUA-9020-OU50	3×50			8.7		≤ 30	-25~+85	B
HUA-9020-OU64	3×64			8.3		≤ 30	-25~+85	B
HUA-9020-OU80	3×80			7.51		≤ 30	-25~+85	B
HUA-9020-OU100	3×100			7.3		≤ 30	-25~+85	B
HUA-9020-OU110	3×110			7.2		≤ 30	-25~+85	C
HUA-9020-OU125	3×125			7.1		≤ 30	-25~+85	C
HUA-9020-OU150	3×150			7		≤ 30	-25~+85	C
HUA-9020-OU180	3×180			6.53		≤ 30	-25~+85	C
HUA-9020-OU200	3×200	6.51	≤ 30	-25~+85	C			
HUA-9020-OU250	3×250	6.5	≤ 30	-25~+85	C			
HUA-9020-OU300	3×300	6.	≤ 30	-25~+85	C			

Circuit diagram (電路圖)



Order Types (訂購型號說明)

型號:HUA - □- OU □



9010:表示 30A 以下額定電流

9020:表示 30A 以上額定電流

PS:選用 dU/dt 濾波器請以變頻器標示全載電流為主要考量, 變頻器工作中由於頻率快速切換關係

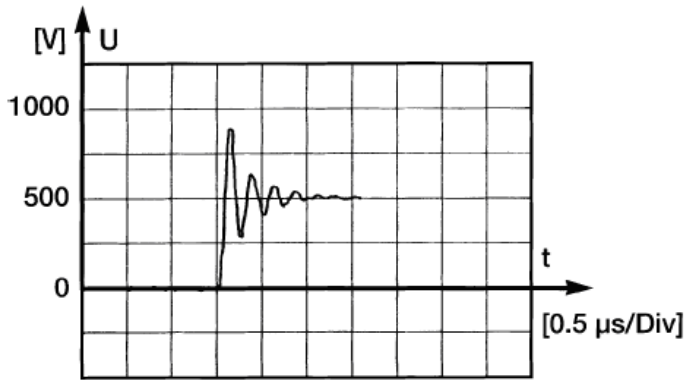
dU/dt 濾波器可能有快速且溫昇較高情形,裝置於盤內請務必加裝散熱風,加強通風設備.

全載輸出電流*1.2~1.5=濾波器安全電流(三相電源請勿除 $\sqrt{3}$)

變頻器馬力 X 746 / 工作電壓 = 工作電流 (INV(HP) X 746(W) / V = A)

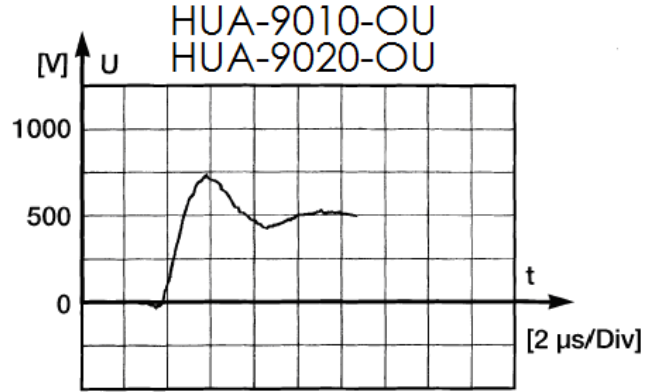
安裝(dU/dt 輸出端濾波器) 前後比較波形圖

未加裝輸出dU/dt濾波器



$(dU/dt)_{max} = 11 \text{ kV/us}$

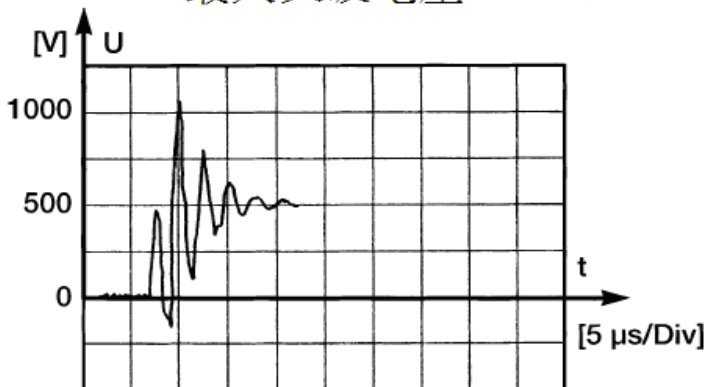
加裝輸出dU/dt濾波器



$(dU/dt)_{max} = 480 \text{ V/us}$

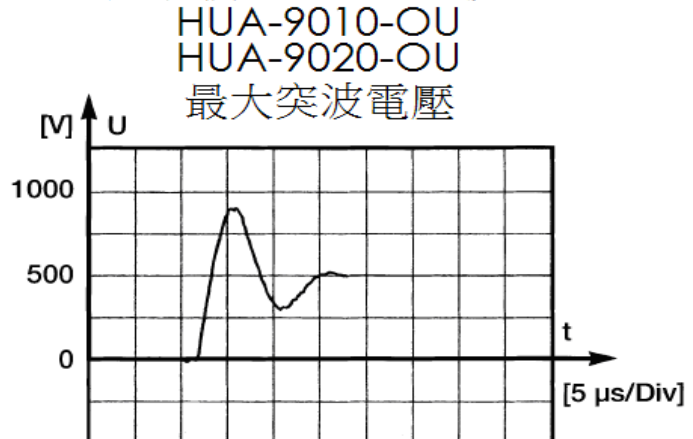
PS: 最大 dU/dt 是在變頻器運行在 14kHz 的頻率, 5 m 屏蔽電纜, 電機馬達滿載運轉時。

未加裝輸出dU/dt濾波器
最大突波電壓



OVER-SWING 105%

加裝輸出dU/dt濾波器

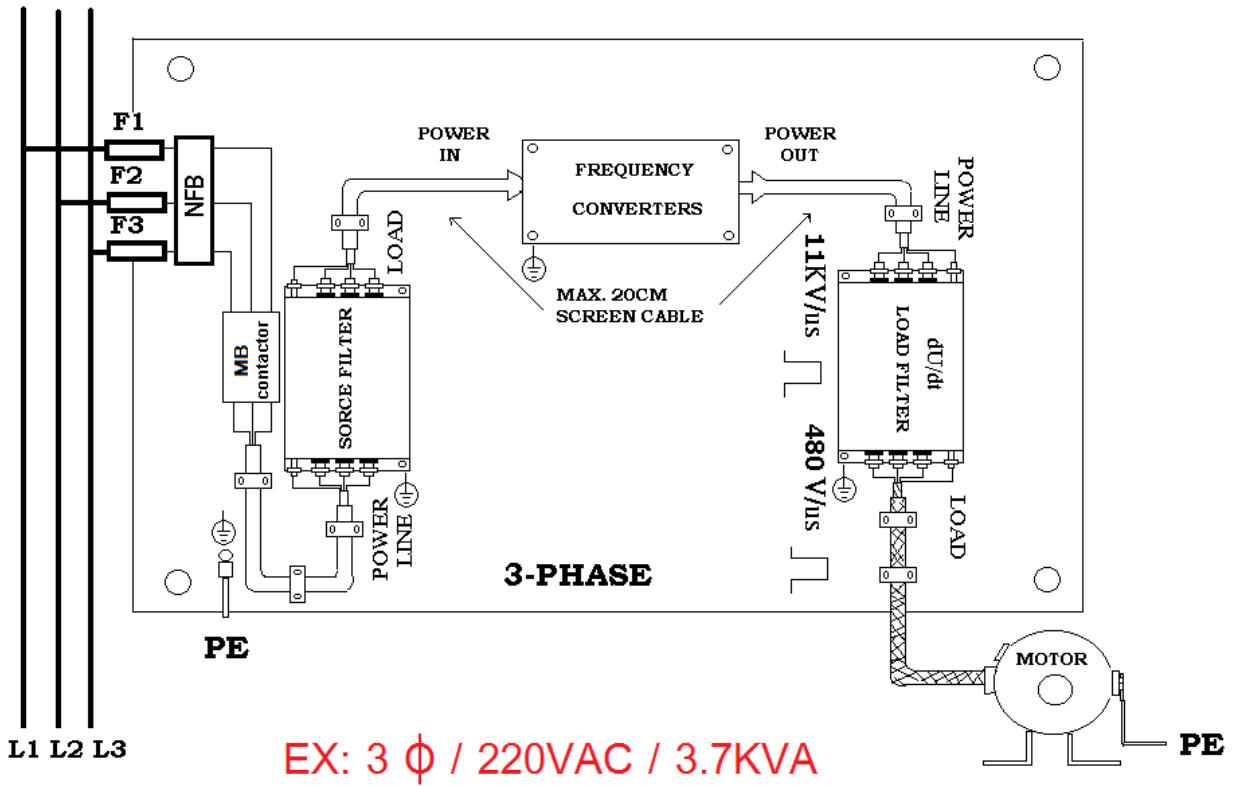


OVER-SWING 70%

PS: 最大突波電壓是在變頻器運行 14kHz 的頻率, 80 米屏蔽電纜, 電機馬達空轉時。

Wiring diagram (接線圖)

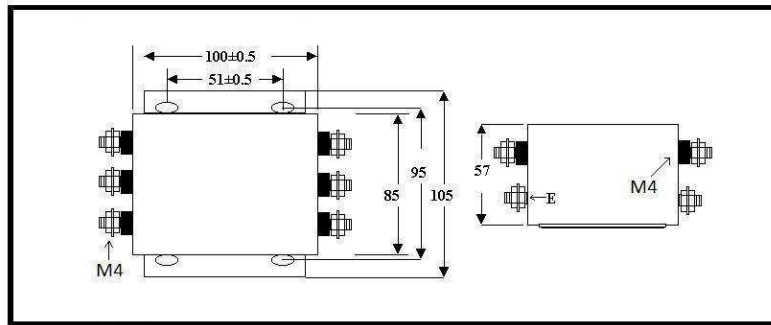
降低 $dU/dt < 1KV/\mu s$ 以下



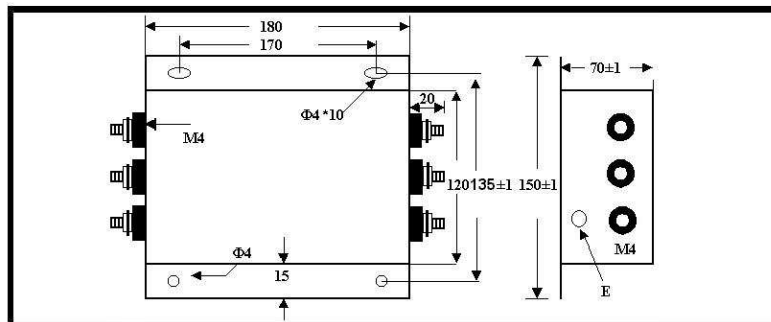
安裝	電流波形	I THD%	PF	A
未安裝		65	0.66	20.5
輸入電抗器		36.5	0.88	15.5
電源濾波器		5.5	0.97	11.8

安裝	電壓波形
未安裝	
輸出電抗器	
dU/dt 濾波器	

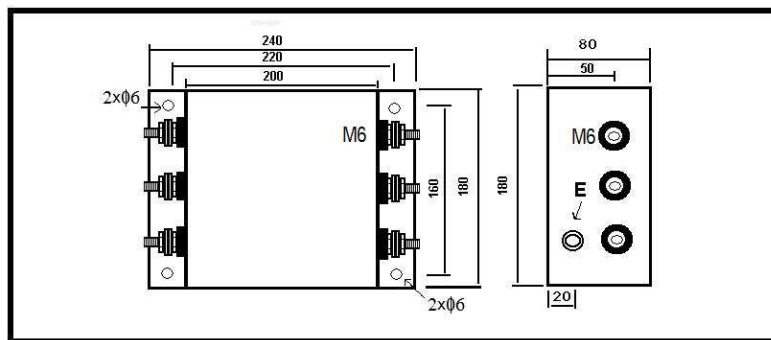
Dimension (外形尺寸圖)



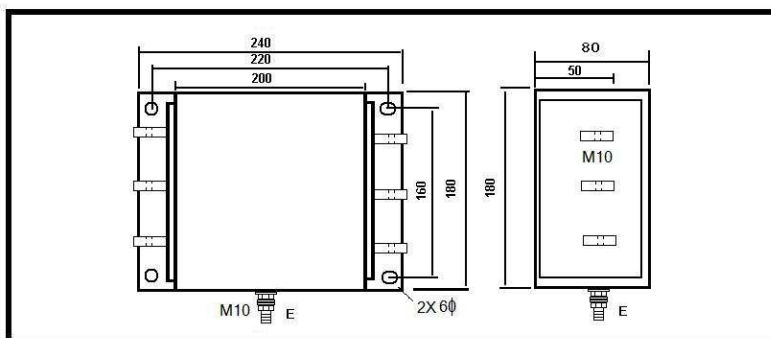
CASE: FIG A 單位:mm



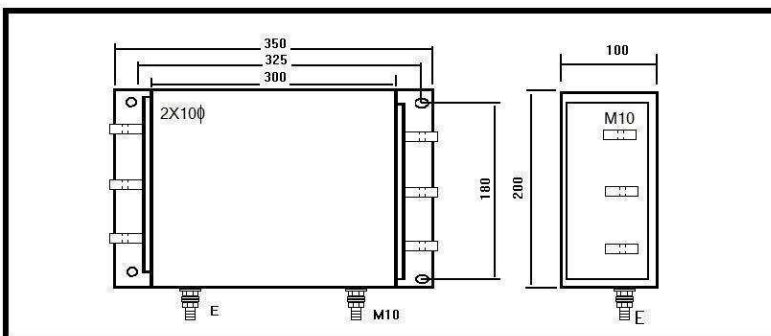
CASE: FIG B 單位:mm



CASE: FIG C 單位:mm



CASE: FIG D 單位:mm



CASE: FIG E 單位:mm