

The R series RIA 12 filters are designed to be used in conjunction with a dc-dc converter or other equipment rated at 150 watts or lower, which will allow it to meet the surge and transient requirements of RIA 12. The input to the module has an extremely rugged input filter with full reverse polarity protection built in as standard. The filter absorbs the surge energy, whilst continuing to provide uninterrupted regulated dc voltage.

Convection cooled, high efficiency

Wide input voltage ranges

Designed to meet RIA12, EN50155 and EN50121

24V, 48V and 110Vdc versions available

Wide operating temperature range

Die-cast case with integral mounting flanges

Robust, keyed, latching, Deutsch connectors

IP66 rated



MODEL SELECTION		
PART NO	CONTINUOUS INPUT	SURGE INPUT
RA-RIA12-FILTER150W-24	14.4 - 36Vdc	84V 20ms
RA-RIA12-FILTER150W-48	28.8 - 70Vdc	182V 20ms
RA-RIA12-FILTER150W-110	43 - 154Vdc	385V 20ms

GENERAL SPECIFICATIONS					
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Insulation resistance	Input/earth @ 500Vdc	1G			Ω
Ambient temperature	Operating at Vi nom, Io nom	-40		+70	$^{\circ}\text{C}$
Case temperature	Operating at Vi nom, Io nom			+85	$^{\circ}\text{C}$
Storage temperature	Non operational	-40		+100	$^{\circ}\text{C}$
Relative humidity	Operating at Vi nom, Io nom	20		95	%RH
MTBF	Operating at Vi nom, Io nom	1000			k hours
Cooling	Free air convection				
Reverse polarity protection	Internal shunt diode				
Shock and vibration	Operating at Vi nom, Io nom				EN61373: 2010 cat 1
Dimensions					139.7 x 63.7 x 55.4 mm
Weight					400g

All specifications typical at nominal line, full load, 25 $^{\circ}\text{C}$ unless stated otherwise.

INPUT SPECIFICATIONS						
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Input voltage range	Ta min ... Ta max, Io nom	24V models	14.4	24	36	Vdc
		48V models	28.8	48	70	Vdc
		110V models	43	72/110	154	Vdc
Max input current ¹	I max	24V			8	A
		48V			5	A
		110V			1.5	A

¹ Max output power should be limited to <180W across all input voltage range

OUTPUT SPECIFICATIONS

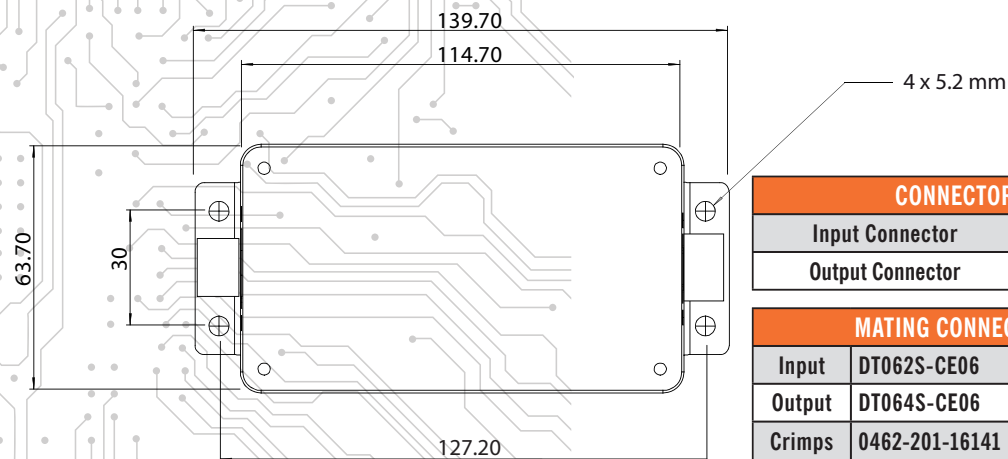
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Max continuous o/p power	Vin min - Vin max range		150	180	W	
o/p clamping trigger voltage	Po max - 150W	24V	36	37	37	V
		48V	71	72	73	V
		110V	158	160	162	V
o/p clamping voltage - steady state	Po max - 150W	24V	27	29	30	V
		48V	62	65	66	V
		110V	146	150	154	V
Voltage drop	24V model, Io = 8A			1000	mV	
	48V model, Io = 5A			1000	mV	
	110V model, Io = 1.5A			500	mV	
Efficiency	Vi nom, Io nom, Po/Pi			>95	%	

ELECTROMAGNETIC IMMUNITY

PHENOMENON	STANDARD	LEVEL	COUPLING MODE ¹	VALUE APPLIED	WAVEFORM	SOURCE IMPED.	TEST PROCEDURE	IN OPER.	PERF. CRIT ²	
Supply related surges	RIA 12	A	+i/-i	3.5 · V _{batt}	2/20/2ms	0.2 Ω	1 positive surge	yes	A	
		B		1.5 · V _{batt}	0.1/1/0.1s					
Direct transients		C	i/c, +i/-i	-0/c, + o/c, -o/-l	960 Vp	10/100 μs	5 Ω	5 positive and 5 negative impulses	yes	A
		D			1800 Vp	5/50 μs				
		E			3600 Vp	0.5/5 μs				
		F			4800 Vp	0.1/1 μs				
		G			8400 Vp	0.5/50 μs				
Indirect coupled transients		H	-0/c, + o/c, -o/-l	-0/c, + o/c, -o/-l	1800 Vp	5/50 μs	100 Ω	5 positive and 5 negative impulses	yes	A
		J			3600 Vp	0.5/5 μs				
		K			4800 Vp	0.1/1 μs				
		L		8400 Vp	0.05/01. μs					

¹ i = input, o = output, c = case

² A = normal operation, no deviation from specs.; B = normal operation, temporary loss of function or deviation from specs possible

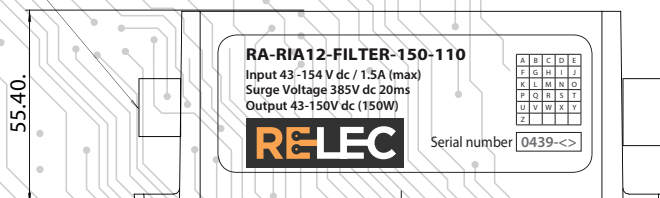


CONNECTORS (DEUTSCH)	
Input Connector	2 Pin DT13-2P
Output Connector	4 Pin DT13-4P

MATING CONNECTORS (DEUTSCH)		
Input	DT062S-CE06	(RS 425-692)
Output	DT064S-CE06	(RS 425-686)
Crimps	0462-201-16141 (RS 425-800) Pack 10	

SK1 INPUT

Pin 1 +VE
Pin 2 0V



SK2 OUTPUT

Pin 1 +VE
Pin 2 +VE
Pin 3 0V
Pin 4 0V