

# RIR Series IEC Inlet Filters

## Single Fused - Screw Fix

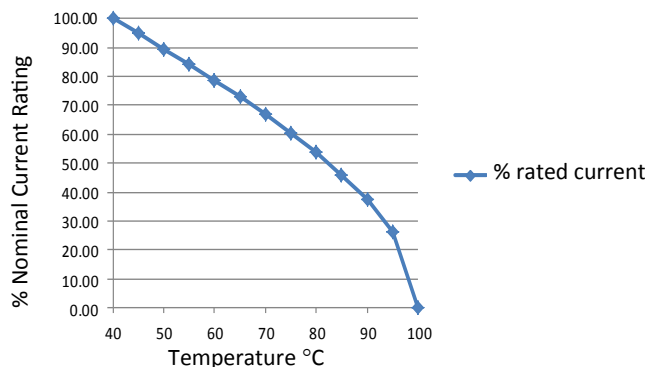
The RIR series of general purpose IEC inlet filters offers good performance for both common mode and differential mode interface, in a standard compact size.

A standard IEC inlet filter available from Roxburgh EMC with quick and easy mounting.

- Current ratings, 2A, 4A and 6A.
- Rated at 250V.
- Also available with increased x and y caps for optimum performance.
- Customisation services available
- Available from UK stock



Temperature Derating Curve for EMC Filters  
Rated at 40°C Ambient and 100°C Maximum



Meets overvoltage category II of IEC60664  
Complies with BS EN 60950  
UL Standard: UL1283  
IEC Standard: IEC 60939-2:2005  
CSA Standard: C22.2  
CSA File No. 207414

### Features:

- UL Approved
- General Purpose
- 2 to 6 Amp Current Ratings
- IEC Inlet with fast-on termination

### Application Examples:

- Digital Equipment
- Point-of-sale equipment
- Printers
- Inverters
- Vending and Gaming machines

### Benefits:

- Quick and easy mounting
- Safety approvals held
- UK stock

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## A. General Specifications

| Model      | Rated Voltage<br>AC,DC[V] | Rated Current<br>[A] | Leakage Current<br>Max. [mA] | Temperature Rise<br>Max. [°C] |
|------------|---------------------------|----------------------|------------------------------|-------------------------------|
| RIR-02*2-* | 250                       | 2                    | 0.35                         | 40                            |
| RIR-02*3-* | 250                       | 2                    | 0.50                         | 40                            |
| RIR-04*D-* | 250                       | 4                    | 0.10                         | 45                            |
| RIR-04*2-* | 250                       | 4                    | 0.35                         | 45                            |
| RIR-04*3-* | 250                       | 4                    | 0.50                         | 45                            |
| RIR-06*2-* | 250                       | 6                    | 0.35                         | 45                            |
| RIR-06*3-* | 250                       | 6                    | 0.50                         | 45                            |

\*Leakage current measuring method

UL 1283(3rd Edition): -26 and Fig 26.1

\*Temperature rise measuring method

VDE 0565-3 : - 2.3.3 and - 4.5

## B. Operating Temperature Range

-25°C to +85°C including temperature rise.

## C. Withstand Voltage

1500V AC for 1 minute between line and ground.

1800V DC for 1 minute between line and line (without bleeder resistor.)

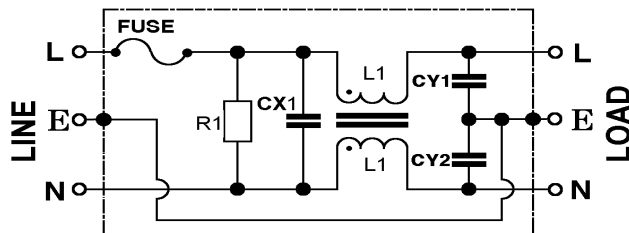
## D. Insulation Resistance

300M $\Omega$  minimum at 500V DC between line and ground.

## E. Voltage Drop

1 volt maximum at rated current.

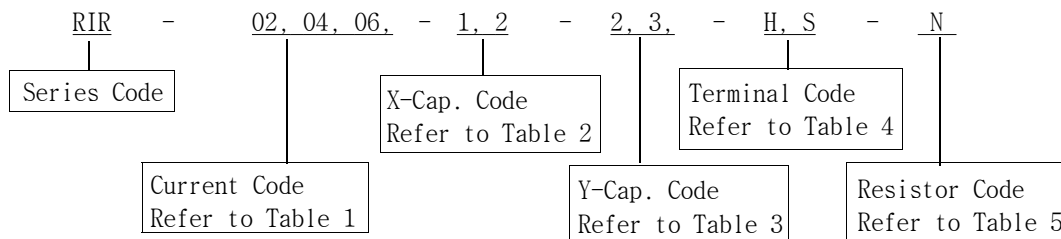
F. Circuit Diagram and Component Value



| Model No.    | Fuse-Rated Current [A] | Inductance L1[mH], +50, -30% | X-Capacitor CX1[ $\mu$ F] $\pm$ 20% | Y-Capacitor CY1, 2[ pF] $\pm$ 20% | Resistor R1[ $\Omega$ ] $\pm$ 10% |
|--------------|------------------------|------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|
| RIR-0212-H,S | 2                      | 6.5                          | 0.1                                 | 2200                              | 1M, 1/2W                          |
| RIR-0213-H,S |                        |                              |                                     | 3300                              |                                   |
| RIR-0222-H,S |                        |                              | 0.22                                | 2200                              |                                   |
| RIR-0223-H,S |                        |                              |                                     | 3300                              |                                   |
| RIR-041D-H,S | 4                      | 2.4                          | 0.1                                 | 470                               |                                   |
| RIR-0412-H,S |                        |                              |                                     | 2200                              |                                   |
| RIR-0413-H,S |                        |                              |                                     | 3300                              |                                   |
| RIR-0422-H,S |                        |                              | 0.22                                | 2200                              |                                   |
| RIR-0423-H,S |                        |                              |                                     | 3300                              |                                   |
| RIR-0612-H,S | 6.3                    | 1.1                          | 0.1                                 | 2200                              |                                   |
| RIR-0613-H,S |                        |                              |                                     | 3300                              |                                   |
| RIR-0622-H,S |                        |                              | 0.22                                | 2200                              |                                   |
| RIR-0623-H,S |                        |                              |                                     | 3300                              |                                   |
| RIR-**1**-*N | *                      | *                            | 0.1                                 | *                                 | None                              |

※ " \* " in the suffix of model number means 'Regardless'.

Construction of Model No.



\* Table 1 : Current Code

| Suffix  | 02  | 04  | 06  |
|---------|-----|-----|-----|
| Current | 2 A | 4 A | 6 A |

\* Table 2 : X-Capacitor Code

| Suffix      | 1           | 2            |
|-------------|-------------|--------------|
| X-Capacitor | 0.1 $\mu$ F | 0.22 $\mu$ F |

\* Table 3 : Y-Capacitor Code

| Suffix      | 2      | 3      |
|-------------|--------|--------|
| Y-Capacitor | 2200pF | 3300pF |

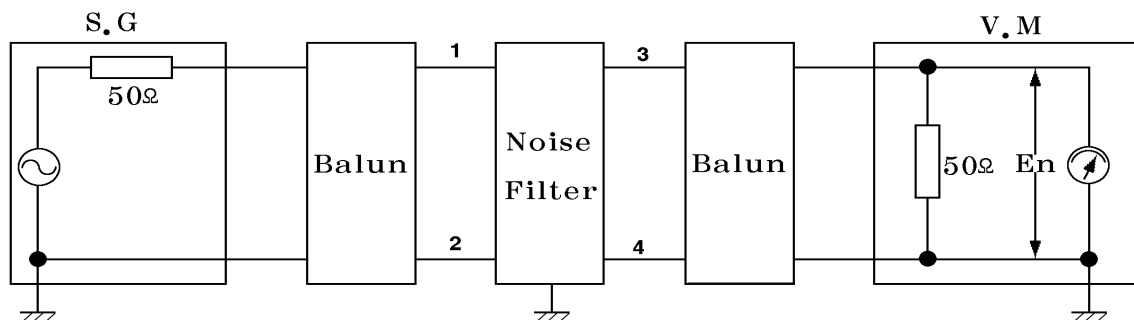
\* Table 4 : Terminal Code

| Suffix   | H               | S             |
|----------|-----------------|---------------|
| Terminal | Faston Tab #250 | Soldering Lug |

\* Table 5 : Resistor Code

| Suffix   | " "         | N           |
|----------|-------------|-------------|
| Resistor | 1M $\Omega$ | No Resistor |

### G. Attenuation Measuring Method



OSC Level : 0dB

$$\text{Insertion loss} = -20\log(E1/E2)[\text{dB}]$$

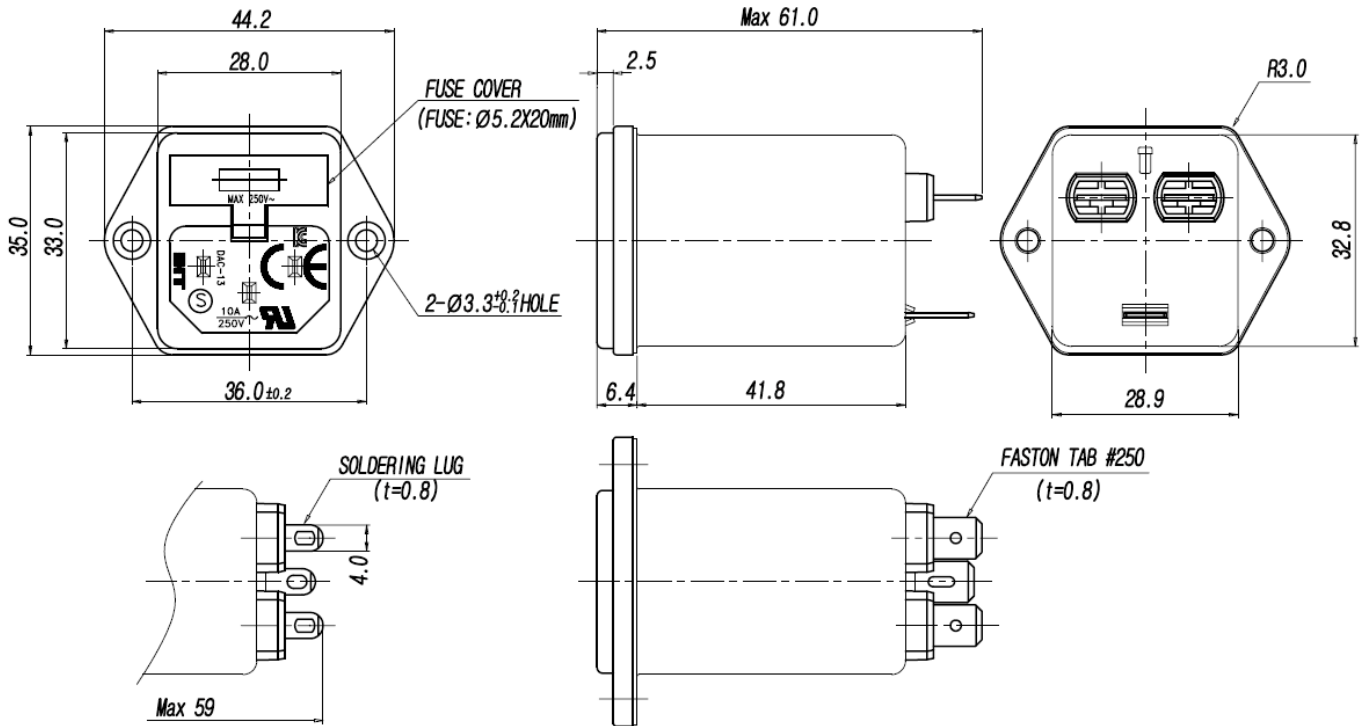
E1 : Level with the Noise Filter in the circuit.

E2 : Level without the Noise Filter in the circuit

### H. Guaranteed Minimum Attenuation In [dB]

| Model      | Common mode [MHz] |      |    |    |    |    |    | Normal mode [MHz] |      |    |    |    |    |    |
|------------|-------------------|------|----|----|----|----|----|-------------------|------|----|----|----|----|----|
|            | 0.15              | 0.45 | 1  | 2  | 5  | 10 | 30 | 0.15              | 0.45 | 1  | 2  | 5  | 10 | 30 |
| RIR-0212-* | 31                | 45   | 48 | 44 | 43 | 44 | 44 | 15                | 27   | 38 | 45 | 50 | 60 | 50 |
| RIR-0213-* | 31                | 48   | 49 | 46 | 45 | 46 | 45 | 15                | 25   | 38 | 50 | 55 | 60 | 50 |
| RIR-0222-* | 31                | 46   | 43 | 42 | 41 | 42 | 45 | 22                | 35   | 40 | 40 | 46 | 57 | 50 |
| RIR-0223-* | 31                | 47   | 48 | 45 | 44 | 45 | 45 | 22                | 33   | 44 | 45 | 52 | 62 | 50 |
| RIR-041D-* | 18                | 27   | 32 | 33 | 28 | 28 | 45 | 10                | 20   | 32 | 33 | 28 | 35 | 50 |
| RIR-0412-* | 22                | 34   | 41 | 44 | 44 | 45 | 48 | 15                | 25   | 33 | 41 | 43 | 50 | 50 |
| RIR-0413-* | 22                | 35   | 45 | 48 | 48 | 50 | 48 | 15                | 24   | 30 | 45 | 50 | 58 | 60 |
| RIR-0422-* | 21                | 34   | 41 | 43 | 43 | 44 | 45 | 21                | 32   | 40 | 35 | 42 | 51 | 55 |
| RIR-0423-* | 21                | 35   | 45 | 48 | 48 | 49 | 45 | 21                | 32   | 40 | 38 | 45 | 55 | 60 |
| RIR-0612-* | 16                | 27   | 34 | 40 | 42 | 44 | 50 | 15                | 25   | 31 | 37 | 40 | 48 | 60 |
| RIR-0613-* | 16                | 28   | 36 | 42 | 47 | 49 | 50 | 15                | 26   | 31 | 39 | 44 | 51 | 60 |
| RIR-0622-* | 15                | 27   | 33 | 40 | 42 | 43 | 50 | 21                | 33   | 40 | 33 | 39 | 48 | 51 |
| RIR-0623-* | 15                | 28   | 35 | 44 | 48 | 49 | 45 | 21                | 33   | 40 | 34 | 45 | 54 | 54 |

**I. Mechanical Dimension** Unit : mm



\* Alternate Terminal for IR-\*\*\*\*S

\* Alternate Terminal for IR-\*\*\*\*H

※ General Tolerance : ± 0.5 mm

**J. Marking**

1. Trademark.
2. Model No.
3. Rated voltage and current.
4. Operating temperature range.
5. Circuit diagram and component value.
6. Lot No.
7. UL, CSA mark.

**K. Material List**

- Refer to attached Appendix page A1.

**K. Packing**

- Refer to attached Appendix page A2.

## ※ . Packing Specification

### 1. Quantity & Weight

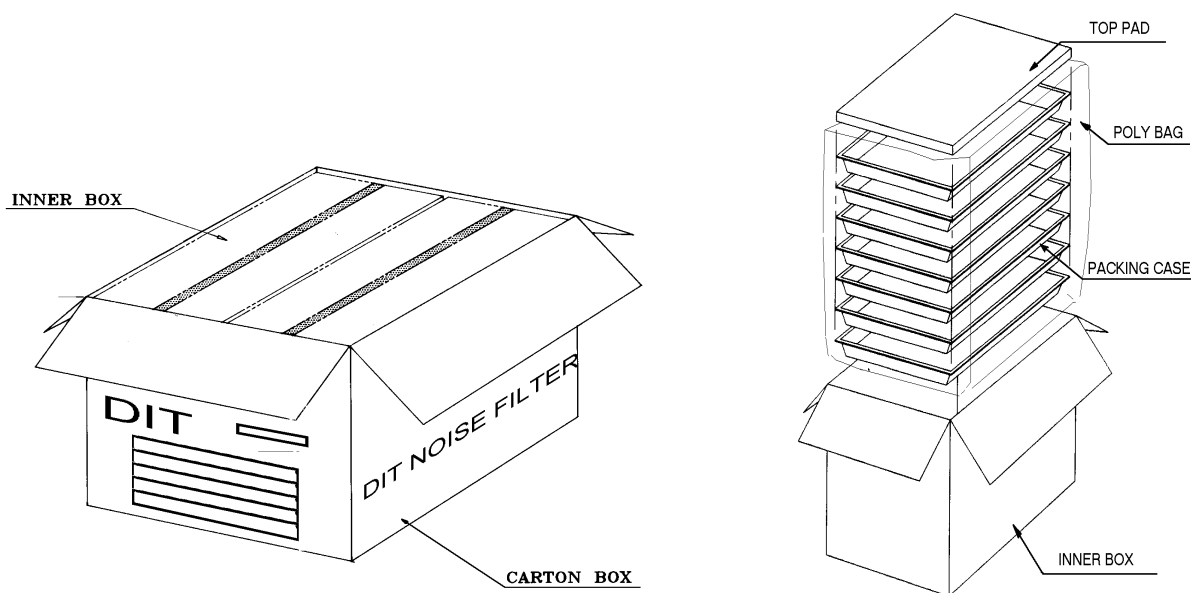
| Packing Case | Q'ty/ 1 Box | Gross Weight(kg) |
|--------------|-------------|------------------|
| CARTON BOX   | 200         | 16               |
| INNER BOX    | 100         | 8                |

### 2. Packing Case

| Packing Case | Q'ty  | Material      | Dimension(W×L×H)mm   |
|--------------|-------|---------------|----------------------|
| CARTON BOX   | 1/200 | SK3SA         | 425×363×243(outside) |
| INNER BOX    | 1/100 | SKSA B Type   | 208×335×215(inside)  |
| PACKING CASE | 1/20  | P.E.T         | 325.3×201×0.5        |
| TOP PAD      | 1/100 | STYROFOAM(PS) | 193×317×8.0          |
| POLY BAG     | 1/100 | PE SHEET      | 450×550              |

### 3. Marking

- 1) Model No.
- 2) Q'ty of products
- 3) Lot No.



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