

## Three Phase General Purpose EMI Filter – Single Stage WYE Configuration

### DATASHEET

Three phase General Purpose Filters designed to be used in wide range of applications.

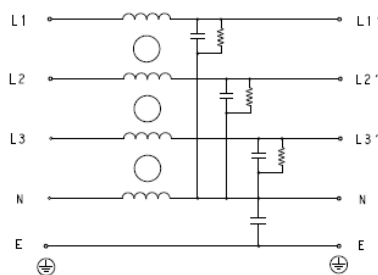


STANDARD



NEW DIN RAIL

### Typical Circuit Diagram



### Approvals & Compliance

UL Recognised

CSA Certified \*

\*30<sup>th</sup> June 2021



### Features

- General Purpose 3 Phase with neutral
- Standard Attenuation Performance
- Chassis mounting, Din Rail Mount

### Applications

- Industrial Automation
- HVAC
- CNC Machines

## Specifications

### Electrical Characteristics

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| Maximum Continuous Operating Voltage | 440/520VAC                                  |
| Current Ratings                      | 1A to 150A @40°C, Din Mount 1A to 60A @40°C |
| Operating Frequency                  | 50/60Hz                                     |
| High Potential Test Voltage -440VAC  | Line to Ground 2632VDC for 1 Minute         |
|                                      | Line to Line 1892VDC for 1 Minute           |
| High Potential Test Voltage -520VAC  | Line to Ground 2856VDC for 1 Minute         |
|                                      | Line to Line 2236VDC for 1 Minute           |
| Overload Capability                  | 135% of Rated current for 15 minutes        |

### Functional Characteristics

|                                           |                                                                     |
|-------------------------------------------|---------------------------------------------------------------------|
| Operating Temperature Range               | -25°C to +85°C                                                      |
| Climatic Category                         | 25/85/21                                                            |
| Termination ( Depends on Current Rating ) | Quick Connect (1-10A)/ Bolt & Nut (15-150A) / Shock Proof (75-100A) |
| Flammability corresponding to             | UL 94 V-0                                                           |

### Reference Standards

|                         |                                 |
|-------------------------|---------------------------------|
| Design Corresponding to | UL 60939-3 and CSA 22.2 No.8-13 |
|-------------------------|---------------------------------|

## Selection Table – Standard Version

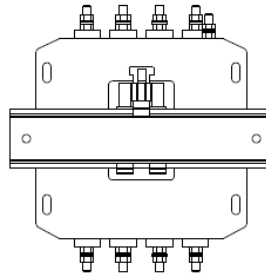


| TE Ordering Number | Catalog Number | Rated Current @40°C | Rated Voltage @40°C | Leakage Current (mA) | Termination                                                                         |                                                                                     |                                                                                     | Weight (Kgs) |
|--------------------|----------------|---------------------|---------------------|----------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------|
|                    |                |                     |                     |                      |  |  |  |              |
| 1-1609966-0        | 1KESS1AFPW     | 1A                  | 440 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 1-1609966-1        | 3KESS1AFPW     | 3A                  | 440 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 1-1609966-2        | 6KESS1AFPW     | 6A                  | 440 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 1-1609966-3        | 10KESS1AFPW    | 10A                 | 440 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 1-1609966-4        | 15KESS6AFPW    | 15A                 | 440 VAC             | 3                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 1-1609966-5        | 20KESS6AFPW    | 16A                 | 440 VAC             | 3                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 1-1609966-6        | 25KESS6AFPW    | 20A                 | 440 VAC             | 5                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 1-1609966-7        | 30KESS6AFPW    | 25A                 | 440 VAC             | 5                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 1-1609966-8        | 40KESS6AFPW    | 30A                 | 440 VAC             | 5                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 1-1609966-9        | 50KESS6AFPW    | 52A                 | 440 VAC             | 5                    |                                                                                     | M6                                                                                  |                                                                                     | 1.2          |
| 2-1609966-0        | 60KESS6AFPW    | 60A                 | 440 VAC             | 5                    |                                                                                     | M6                                                                                  |                                                                                     | 1.2          |
| 2-1609966-1        | 75KESS6AFPW    | 75A                 | 440 VAC             | 6                    |                                                                                     | M8                                                                                  |                                                                                     | 9            |
| 2-1609966-2        | 80KESS6AFPW    | 80A                 | 440 VAC             | 6                    |                                                                                     | M8                                                                                  |                                                                                     | 9            |
| 2-1609966-3        | 100KESS6AFPW   | 100A                | 440 VAC             | 6                    |                                                                                     | M10                                                                                 |                                                                                     | 9            |
| 2-1609966-4        | 125KESS6AFPW   | 125A                | 440 VAC             | 8                    |                                                                                     | M10                                                                                 |                                                                                     | 9            |
| 2-1609966-5        | 150KESS6AFPW   | 150A                | 440 VAC             | 8                    |                                                                                     | M10                                                                                 |                                                                                     | 9            |
| 2-1609966-6        | 75KESS10AFPW   | 75A                 | 440 VAC             | 6                    |                                                                                     |                                                                                     | 16                                                                                  | 9            |
| 2-1609966-7        | 80KESS10AFPW   | 80A                 | 440 VAC             | 6                    |                                                                                     |                                                                                     | 25                                                                                  | 9            |
| 2-1609966-8        | 100KESS10AFPW  | 100A                | 440 VAC             | 6                    |                                                                                     |                                                                                     | 25                                                                                  | 9            |
| 4-1609966-0        | 1KESS1BFPW     | 1A                  | 520 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 4-1609966-1        | 3KESS1BFPW     | 3A                  | 520 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 4-1609966-2        | 6KESS1BFPW     | 6A                  | 520 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 4-1609966-3        | 10KESS1BFPW    | 10A                 | 520 VAC             | 3                    | 6.3 x 0.8                                                                           |                                                                                     |                                                                                     | 0.26         |
| 4-1609966-4        | 15KESS6BFPW    | 15A                 | 520 VAC             | 3                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 4-1609966-5        | 20KESS6BFPW    | 16A                 | 520 VAC             | 3                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 4-1609966-6        | 25KESS6BFPW    | 20A                 | 520 VAC             | 5                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 4-1609966-7        | 30KESS6BFPW    | 25A                 | 520 VAC             | 5                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 4-1609966-8        | 40KESS6BFPW    | 30A                 | 520 VAC             | 5                    |                                                                                     | M5                                                                                  |                                                                                     | 0.7          |
| 4-1609966-9        | 50KESS6BFPW    | 52A                 | 520 VAC             | 5                    |                                                                                     | M6                                                                                  |                                                                                     | 1.2          |
| 5-1609966-0        | 60KESS6BFPW    | 60A                 | 520 VAC             | 5                    |                                                                                     | M6                                                                                  |                                                                                     | 1.2          |
| 5-1609966-1        | 75KESS6BFPW    | 75A                 | 520 VAC             | 6                    |                                                                                     | M8                                                                                  |                                                                                     | 9            |
| 5-1609966-2        | 80KESS6BFPW    | 80A                 | 520 VAC             | 6                    |                                                                                     | M8                                                                                  |                                                                                     | 9            |
| 5-1609966-3        | 100KESS6BFPW   | 100A                | 520 VAC             | 6                    |                                                                                     | M10                                                                                 |                                                                                     | 9            |
| 5-1609966-4        | 125KESS6BFPW   | 125A                | 520 VAC             | 8                    |                                                                                     | M10                                                                                 |                                                                                     | 9            |
| 5-1609966-5        | 150KESS6BFPW   | 150A                | 520 VAC             | 8                    |                                                                                     | M10                                                                                 |                                                                                     | 9            |
| 5-1609966-6        | 75KESS10BFPW   | 75A                 | 520 VAC             | 6                    |                                                                                     |                                                                                     | 16                                                                                  | 9            |
| 5-1609966-7        | 80KESS10BFPW   | 80A                 | 520 VAC             | 6                    |                                                                                     |                                                                                     | 25                                                                                  | 9            |
| 5-1609966-8        | 100KESS10BFPW  | 100A                | 520 VAC             | 6                    |                                                                                     |                                                                                     | 25                                                                                  | 9            |

## Selection Table – Din Rail Mount

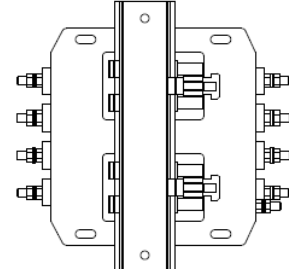


NEW



HORIZONTAL MOUNT

*Note: Din Rail not supplied*



VERTICAL MOUNT

| TE Ordering Number | Catalog Number | Din Type   | Rated Current @40°C | Rated Voltage @40°C | Leakage Current (mA) | Weight (Kgs) | Termination                                                                         |                                                                                     |
|--------------------|----------------|------------|---------------------|---------------------|----------------------|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                    |                |            |                     |                     |                      |              |  |  |
| 3-1609966-0        | 1KESS1AFPWDM   | DUAL       | 1A                  | 440 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 3-1609966-1        | 3KESS1AFPWDM   | DUAL       | 3A                  | 440 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 3-1609966-2        | 6KESS1AFPWDM   | DUAL       | 6A                  | 440 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 3-1609966-3        | 10KESS1AFPWDM  | DUAL       | 10A                 | 440 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 3-1609966-4        | 15KESS6AFPWDM  | DUAL       | 15A                 | 440 VAC             | 3                    | 0.8          |                                                                                     | M5                                                                                  |
| 3-1609966-5        | 20KESS6AFPWDM  | DUAL       | 20A                 | 440 VAC             | 3                    | 0.8          |                                                                                     | M5                                                                                  |
| 3-1609966-6        | 25KESS6AFPWDM  | DUAL       | 25A                 | 440 VAC             | 5                    | 0.8          |                                                                                     | M5                                                                                  |
| 3-1609966-7        | 30KESS6AFPWDM  | DUAL       | 30A                 | 440 VAC             | 5                    | 0.8          |                                                                                     | M5                                                                                  |
| 3-1609966-8        | 40KESS6AFPWDM  | DUAL       | 40A                 | 440 VAC             | 5                    | 0.8          |                                                                                     | M5                                                                                  |
| 3-1609966-9        | 50KESS6AFPWHM  | HORIZONTAL | 50A                 | 440 VAC             | 5                    | 1.3          |                                                                                     | M6                                                                                  |
| 6-1609966-0        | 60KESS6AFPWHM  | HORIZONTAL | 60A                 | 440 VAC             | 5                    | 1.3          |                                                                                     | M6                                                                                  |
| 6-1609966-1        | 50KESS6AFPWVM  | VERTICAL   | 50A                 | 440 VAC             | 5                    | 1.4          |                                                                                     | M6                                                                                  |
| 6-1609966-2        | 60KESS6AFPWVM  | VERTICAL   | 60A                 | 440 VAC             | 5                    | 1.4          |                                                                                     | M6                                                                                  |
| 6-1609966-3        | 1KESS1BFPWDM   | DUAL       | 1A                  | 520 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 6-1609966-4        | 3KESS1BFPWDM   | DUAL       | 3A                  | 520 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 6-1609966-5        | 6KESS1BFPWDM   | DUAL       | 6A                  | 520 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 6-1609966-6        | 10KESS1BFPWDM  | DUAL       | 10A                 | 520 VAC             | 3                    | 0.36         | 6.3 x 0.8                                                                           |                                                                                     |
| 6-1609966-7        | 15KESS6BFPWDM  | DUAL       | 15A                 | 520 VAC             | 3                    | 0.8          |                                                                                     | M5                                                                                  |
| 6-1609966-8        | 20KESS6BFPWDM  | DUAL       | 20A                 | 520 VAC             | 3                    | 0.8          |                                                                                     | M5                                                                                  |
| 6-1609966-9        | 25KESS6BFPWDM  | DUAL       | 25A                 | 520 VAC             | 5                    | 0.8          |                                                                                     | M5                                                                                  |
| 7-1609966-0        | 30KESS6BFPWDM  | DUAL       | 30A                 | 520 VAC             | 5                    | 0.8          |                                                                                     | M5                                                                                  |
| 7-1609966-1        | 40KESS6BFPWDM  | DUAL       | 40A                 | 520 VAC             | 5                    | 0.8          |                                                                                     | M5                                                                                  |
| 7-1609966-2        | 50KESS6BFPWHM  | HORIZONTAL | 50A                 | 520 VAC             | 5                    | 1.3          |                                                                                     | M6                                                                                  |
| 7-1609966-3        | 60KESS6BFPWHM  | HORIZONTAL | 60A                 | 520 VAC             | 5                    | 1.3          |                                                                                     | M6                                                                                  |
| 7-1609966-4        | 50KESS6BFPWVM  | VERTICAL   | 50A                 | 520 VAC             | 5                    | 1.4          |                                                                                     | M6                                                                                  |
| 7-1609966-5        | 60KESS6BFPWVM  | VERTICAL   | 60A                 | 520 VAC             | 5                    | 1.4          |                                                                                     | M6                                                                                  |

## Connectors Cross Section

|  | 41                  | 10                   | 16                        | 25                 | 50                 |
|-----------------------------------------------------------------------------------|---------------------|----------------------|---------------------------|--------------------|--------------------|
| Wire Section (mm <sup>2</sup> )                                                   | 4mm <sup>2</sup>    | 10 mm <sup>2</sup>   | 16 mm <sup>2</sup>        | 25 mm <sup>2</sup> | 50 mm <sup>2</sup> |
| Wire Section (AWG)                                                                | 12AWG               | 8 AWG                | 6 AWG                     | 4 AWG              | 1/0 AWG            |
| Wire Stripping                                                                    | Max 10mm            | max 13.5 mm          | max 17 mm                 | max 17 mm          | max 20 mm          |
| Max Recommended Torque                                                            | 0.5 Nm / 4.5 in.lbs | 1.2 Nm / 10.8 in.lbs | 2÷2.2 Nm / 18÷19.8 in.lbs | 2 Nm / 18 in.lbs   | 6 Nm / 54 in.lbs   |

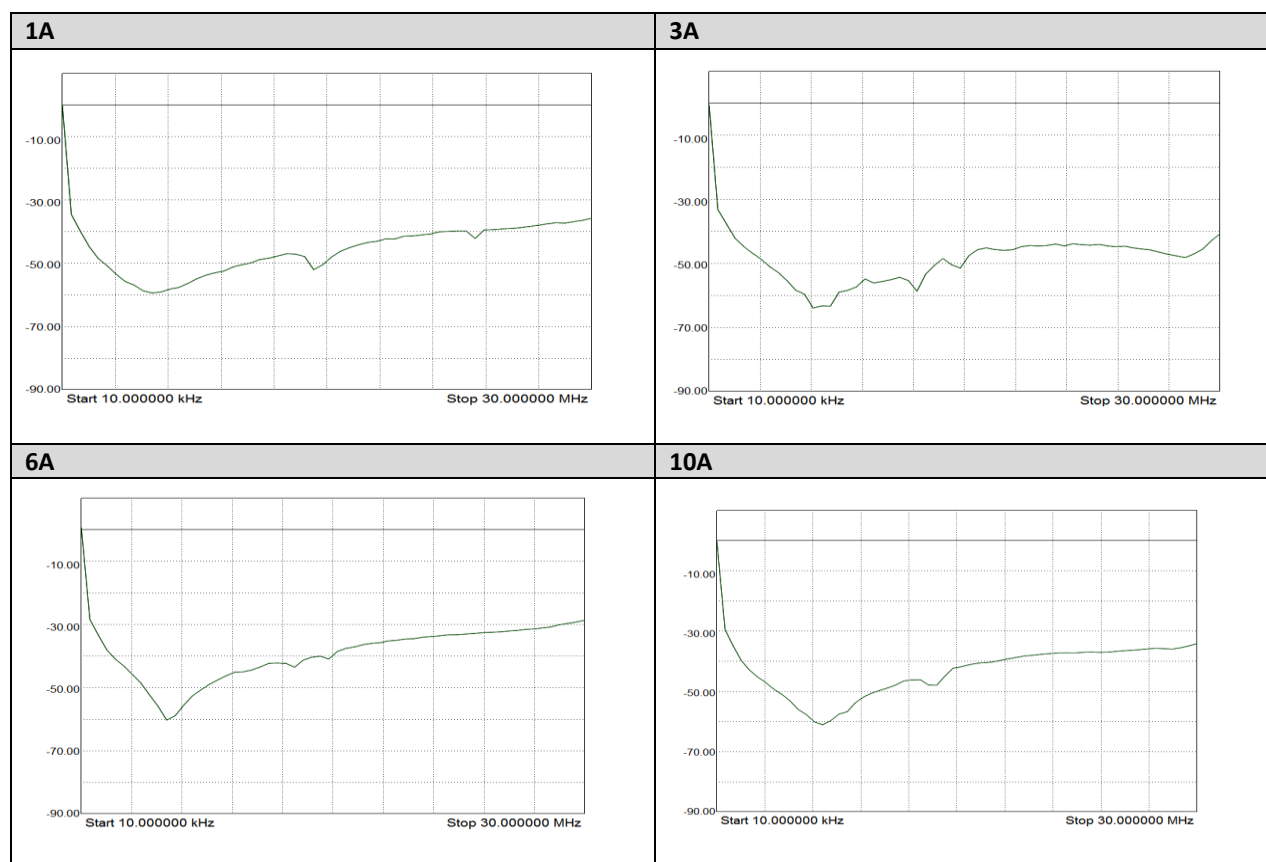
## Insertion Loss (Typical) – Measured in Closed 50Ω System

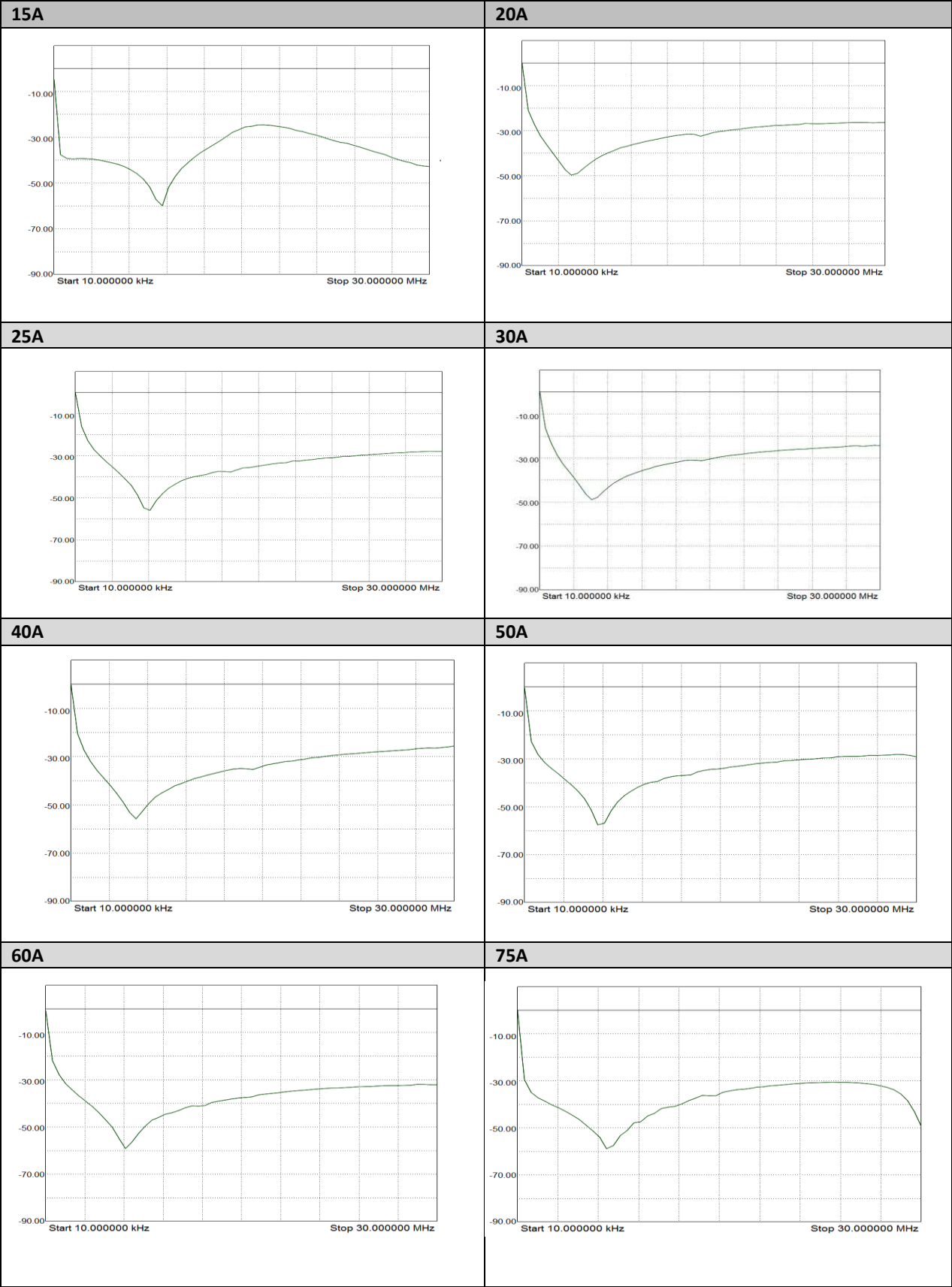
|                |      | Common Mode 50Ω / 50Ω |      |      |     |    |    |    |    |    |
|----------------|------|-----------------------|------|------|-----|----|----|----|----|----|
|                |      | Frequency in MHz      |      |      |     |    |    |    |    |    |
|                |      | 0.01                  | 0.05 | 0.15 | 0.5 | 1  | 3  | 5  | 10 | 30 |
| Current Rating | 1A   | 3                     | 3    | 4    | 11  | 22 | 40 | 35 | 36 | 43 |
|                | 3A   | 2                     | 2    | 19   | 22  | 40 | 38 | 45 | 47 | 32 |
|                | 6A   | 4                     | 5    | 13   | 19  | 28 | 35 | 40 | 45 | 31 |
|                | 10A  | 3                     | 4    | 15   | 25  | 29 | 32 | 30 | 35 | 29 |
|                | 15A  | 4                     | 4    | 9    | 20  | 38 | 36 | 46 | 30 | 23 |
|                | 20A  | 4                     | 5    | 15   | 25  | 45 | 48 | 42 | 40 | 29 |
|                | 25A  | 5                     | 5    | 5    | 18  | 23 | 35 | 40 | 44 | 24 |
|                | 30A  | 4                     | 4    | 9    | 21  | 28 | 42 | 58 | 39 | 20 |
|                | 40A  | 4                     | 5    | 11   | 29  | 34 | 42 | 56 | 39 | 23 |
|                | 50A  | 4                     | 4    | 11   | 24  | 32 | 42 | 48 | 34 | 20 |
|                | 60A  | 4                     | 5    | 10   | 25  | 30 | 39 | 50 | 38 | 24 |
|                | 75A  | 2                     | 3    | 7    | 22  | 29 | 44 | 43 | 30 | 16 |
|                | 80A  | 5                     | 5    | 8    | 15  | 20 | 22 | 35 | 42 | 45 |
|                | 100A | 3                     | 4    | 3    | 17  | 23 | 25 | 20 | 32 | 38 |
|                | 125A | 2                     | 2    | 5    | 15  | 18 | 25 | 30 | 40 | 46 |
|                | 150A | 3                     | 4    | 11   | 25  | 35 | 34 | 28 | 22 | 11 |

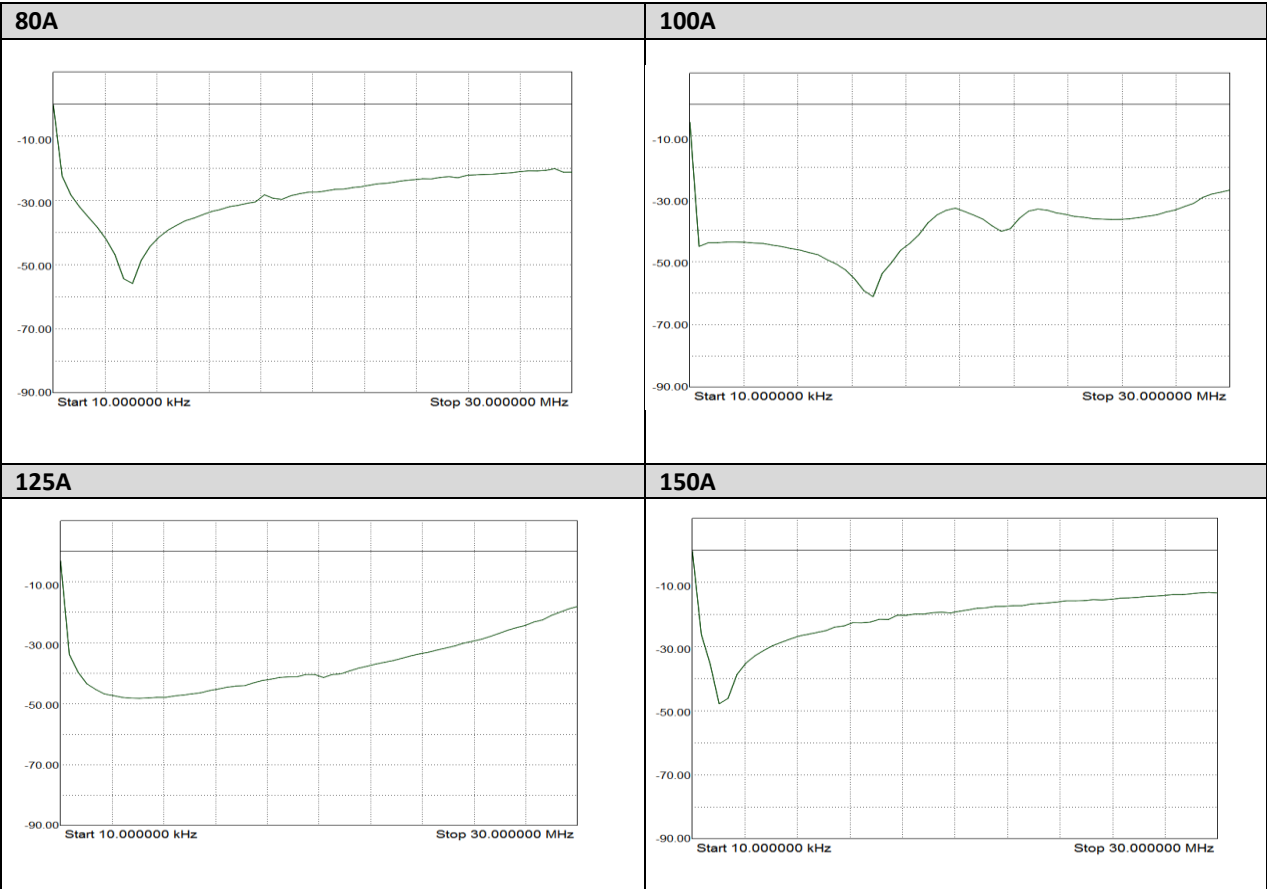
Differential Mode 50Ω / 50Ω

|                |      | Frequency in MHz |      |      |     |    |    |    |    |    |
|----------------|------|------------------|------|------|-----|----|----|----|----|----|
|                |      | 0.01             | 0.05 | 0.15 | 0.5 | 1  | 3  | 5  | 10 | 30 |
| Current Rating | 1A   | 3                | 4    | 6    | 19  | 27 | 30 | 36 | 38 | 49 |
|                | 3A   | 4                | 5    | 26   | 32  | 29 | 35 | 37 | 46 | 44 |
|                | 6A   | 4                | 3    | 15   | 25  | 30 | 38 | 45 | 51 | 49 |
|                | 10A  | 4                | 5    | 17   | 26  | 30 | 31 | 32 | 36 | 40 |
|                | 15A  | 6                | 8    | 12   | 16  | 30 | 33 | 40 | 38 | 47 |
|                | 20A  | 3                | 5    | 10   | 20  | 28 | 36 | 29 | 23 | 19 |
|                | 25A  | 4                | 4    | 19   | 22  | 26 | 32 | 48 | 50 | 52 |
|                | 30A  | 17               | 18   | 22   | 39  | 46 | 29 | 26 | 20 | 16 |
|                | 40A  | 17               | 18   | 21   | 34  | 43 | 40 | 29 | 19 | 33 |
|                | 50A  | 14               | 20   | 28   | 42  | 50 | 30 | 26 | 20 | 22 |
|                | 60A  | 11               | 18   | 22   | 39  | 45 | 28 | 24 | 17 | 15 |
|                | 75A  | 37               | 39   | 46   | 53  | 41 | 31 | 27 | 19 | 17 |
|                | 80A  | 5                | 6    | 10   | 20  | 24 | 30 | 36 | 38 | 42 |
|                | 100A | 8                | 9    | 14   | 37  | 40 | 44 | 35 | 30 | 40 |
|                | 125A | 3                | 3    | 9    | 17  | 19 | 31 | 35 | 42 | 42 |
|                | 150A | 34               | 39   | 57   | 40  | 33 | 24 | 20 | 15 | 10 |

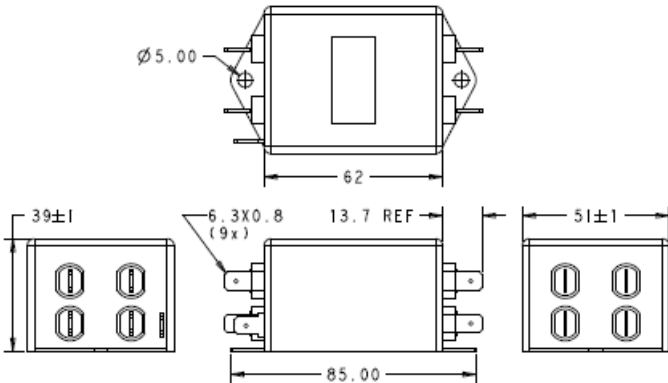
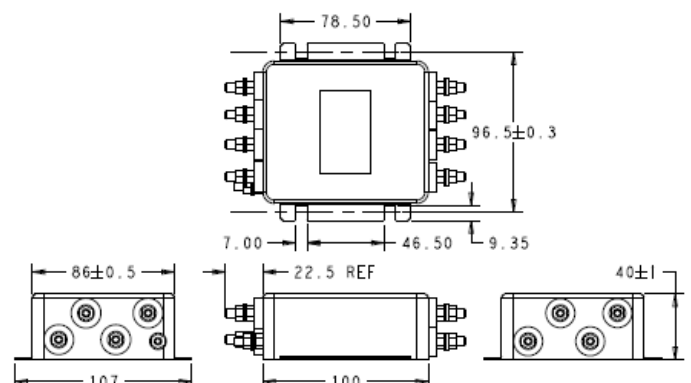
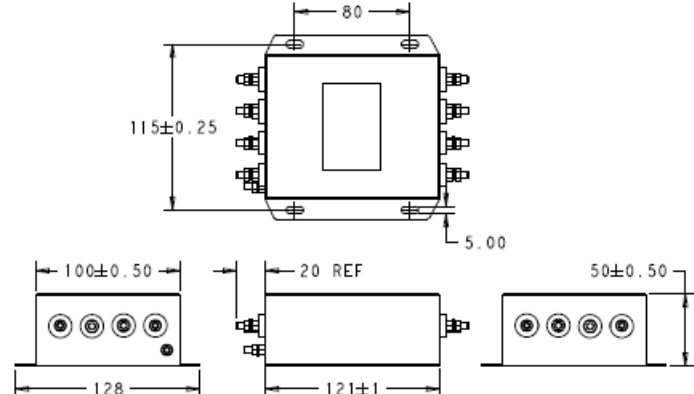
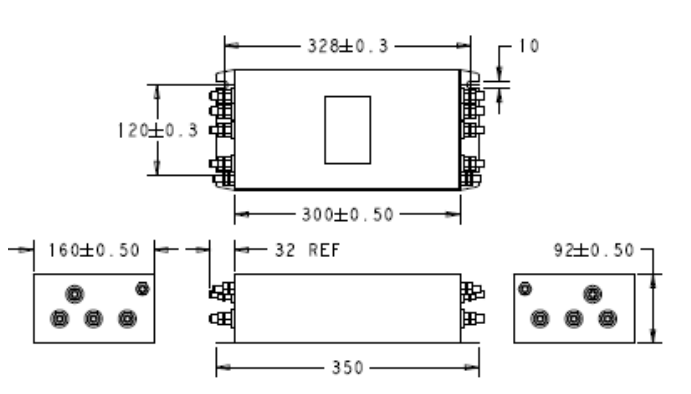
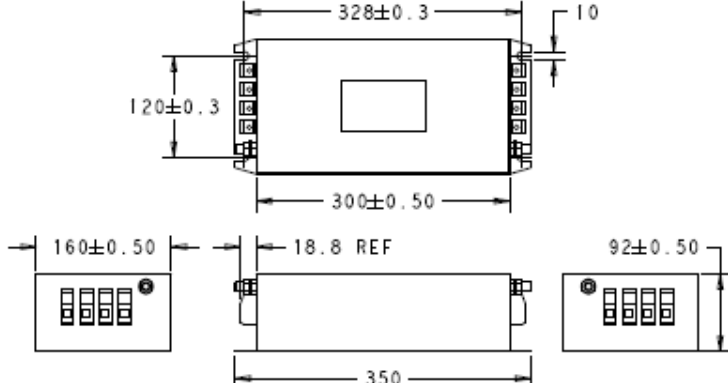
Common Mode Insertion Loss (Typical in dB – refer to Table above)







## Case Dimensions - Standard

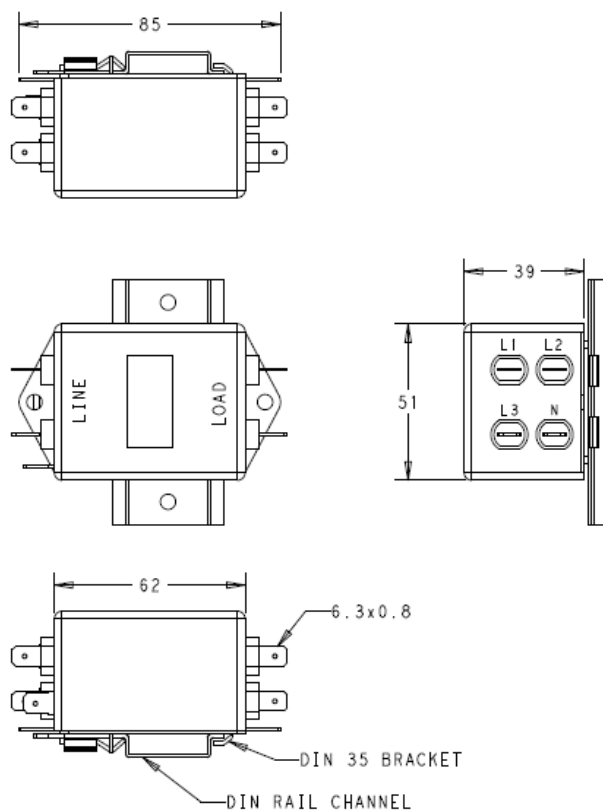
| 1 to 10A Quick Connect (6.35 mm) Types                                               | 15A to 40A Nut & Bolt Types                                                         |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|     |   |
| 50A to 60A Nut & Bolt Types                                                          | 75A to 150A Nut & Bolt Types                                                        |
|    |  |
| 75A to 150A Shock Proof Types                                                        |                                                                                     |
|  |                                                                                     |

All dimensions in mm; Tolerances according: ISO2768-m

## Case Dimensions – Din Rail Mount

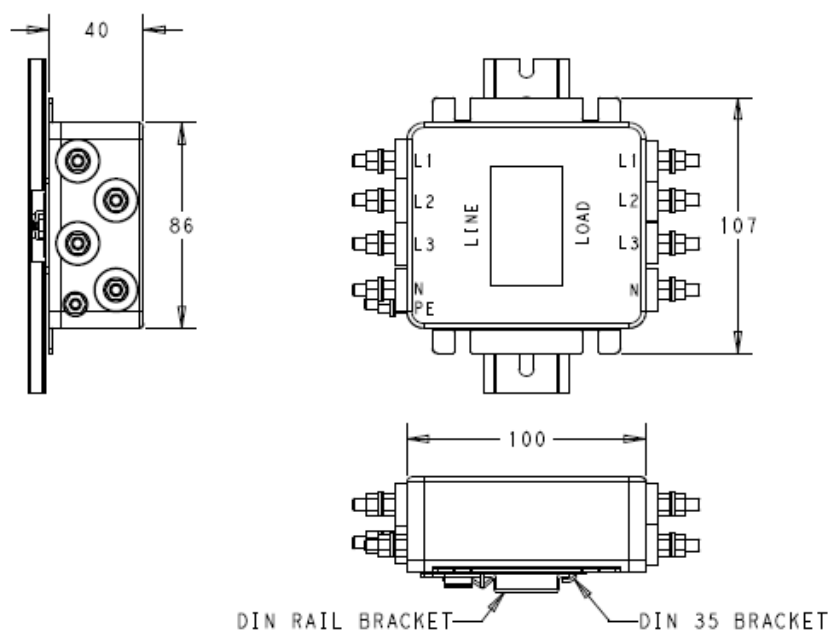
### 1 to 10A Quick Connect (6.35mm) Types – Dual Mount

*Note: Din Rail not supplied*



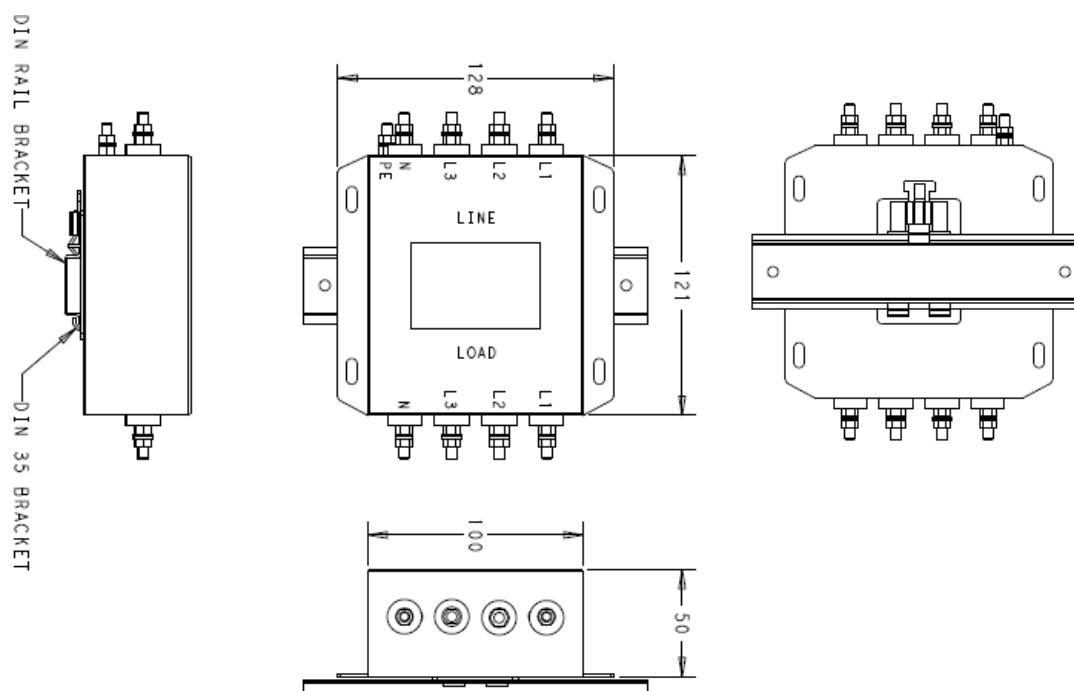
### 15A to 40A Nut & Bolt Types - Dual Mount

*Note: Din Rail not supplied*



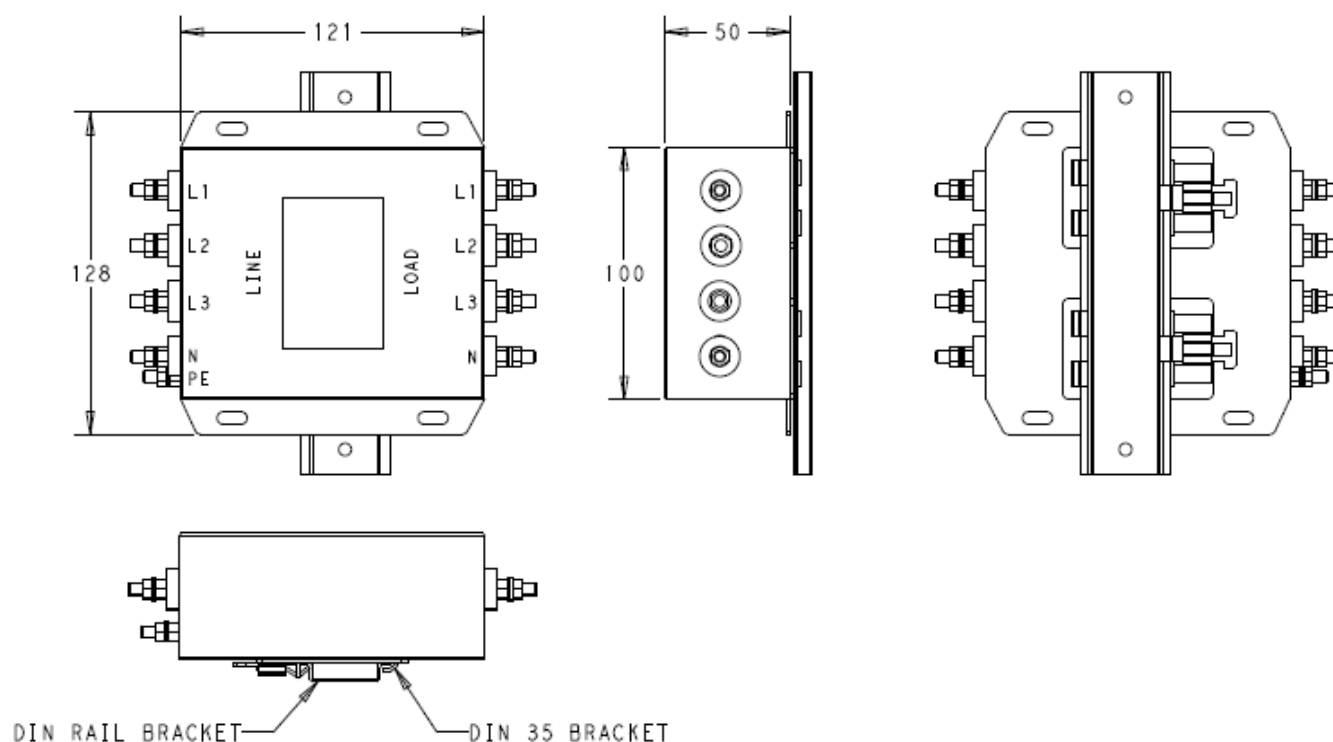
## 50A to 60A Nut & Bolt Types – Horizontal Mount

Note: Din Rail not supplied



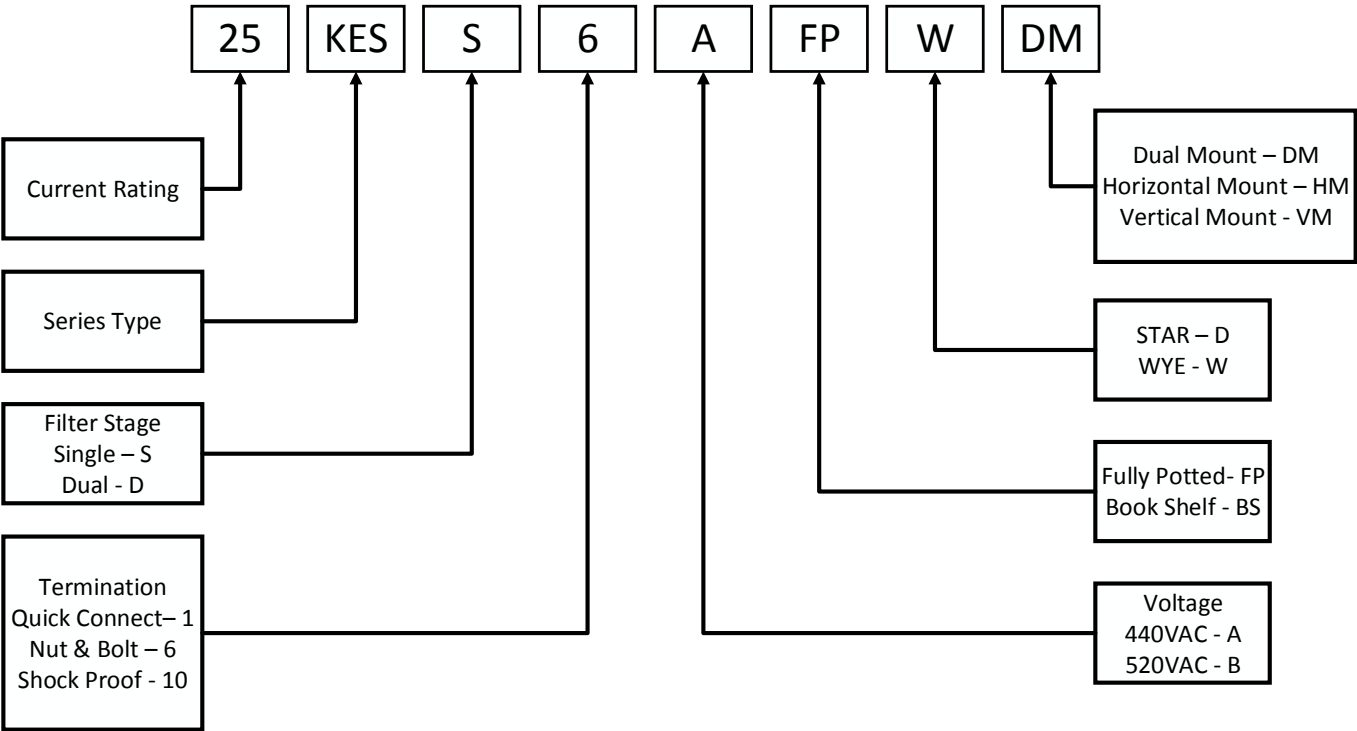
## 50A to 60A Nut & Bolt Types – Vertical Mount

Note: Din Rail not supplied



All dimensions in mm; Tolerances according: ISO2768-m

How to Order



# Mouser Electronics

Authorized Distributor

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