

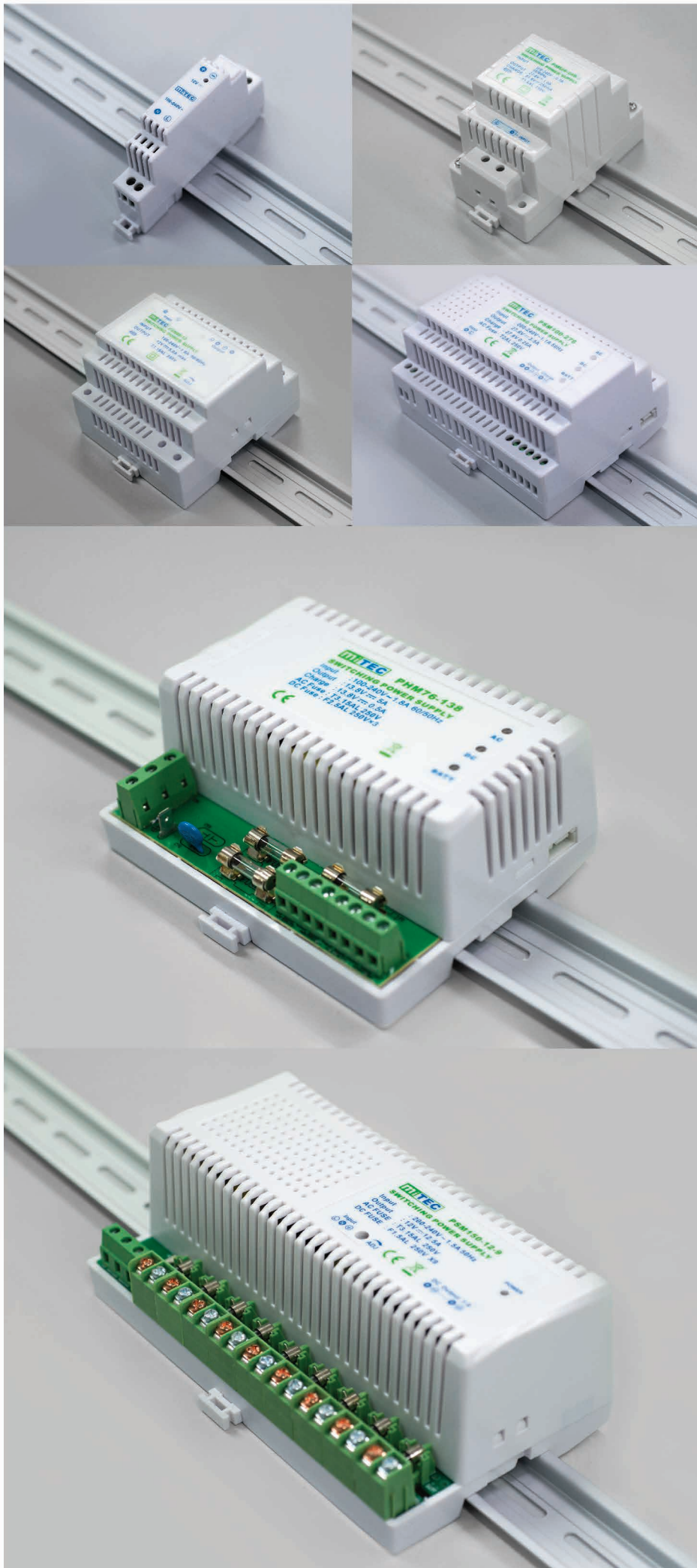


# DIN-RAIL

## Switching Mode Power Supply



Wo Hing Radio Co., Ltd

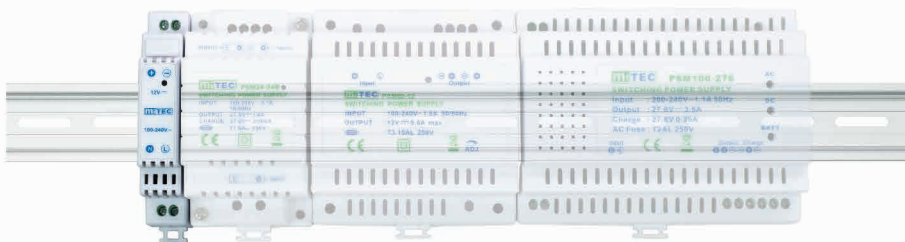


# 1U DIN-RAIL Power Supply

## PSM15, PSM18

1U Din-Rail, fill the gap

- Up To 18W Output Power
- Universal AC Input (AC100 – 240V)
- Cooling by Natural Air Convection
- Built-in Charger For Backup Battery
- Fully Input and Output Protections
- Safety Double Isolation
- LED Indicator For Normal DC Output



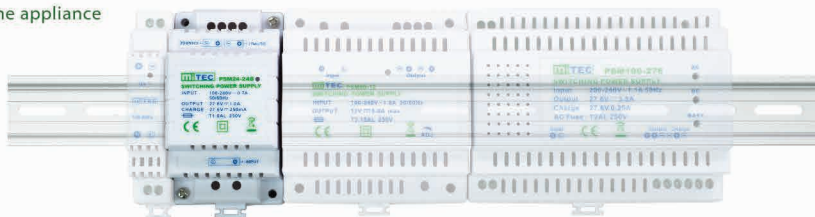
| PRODUCT SPECIFICATIONS                                 |                                                                                      |             |             |                                        |                                                  |
|--------------------------------------------------------|--------------------------------------------------------------------------------------|-------------|-------------|----------------------------------------|--------------------------------------------------|
| MODEL                                                  | PSM15-5                                                                              | PSM18-12    | PSM18-24    | PSM18-138                              | PSM18-276                                        |
| INPUT                                                  |                                                                                      |             |             |                                        |                                                  |
| Rated Voltage (VAC)                                    | 100 – 240                                                                            |             |             |                                        |                                                  |
| Voltage Range (VAC)                                    | 90 – 264                                                                             |             |             |                                        |                                                  |
| Rated Frequency (Hz)                                   | 50 / 60                                                                              |             |             |                                        |                                                  |
| Frequency Range (Hz)                                   | 47 – 63                                                                              |             |             |                                        |                                                  |
| Current (A)                                            | ≤ 0.4                                                                                | ≤ 0.5       | ≤ 0.5       | ≤ 0.5                                  | ≤ 0.5                                            |
| No Load Power Consumption (W)                          | ≤ 0.5                                                                                |             |             | ≤ 1.0                                  |                                                  |
| Energy Efficiency (%)                                  | ≥ 80 at full load                                                                    |             |             |                                        |                                                  |
| OUTPUT                                                 |                                                                                      |             |             |                                        |                                                  |
| Rated Voltage (VDC)                                    | 5                                                                                    | 12          | 24          | 13.8                                   | 27.6                                             |
| Voltage Range (VDC)                                    | 4.75 – 5.25                                                                          | 12.0 – 12.6 | 24.0 – 24.8 | 13.1 – 14.5                            | 26.2 – 28.9                                      |
| Rated Current (A)                                      | 3.0                                                                                  | 1.5         | 0.75        | 1.2                                    | 0.6                                              |
| Current Range (A)                                      | 0 – 3.0                                                                              | 0 – 1.5     | 0 – 0.75    | 0 – 1.2                                | 0 – 0.6                                          |
| Battery Charger<br>(Max. charging current 100 ~ 150mA) | N/A                                                                                  |             |             | For 12V rechargeable<br>battery (1pc.) | For 12V rechargeable<br>battery(2pcs. in series) |
| Rated Power (W)                                        | 15 Max.                                                                              | 18 Max.     | 18 Max.     | 18 Max.                                | 18 Max.                                          |
| Ripple and Noise (mVp-p)     See Note 2.               | 100 Max.                                                                             | 120 Max.    | 150 Max.    | 120 Max.                               | 150 Max.                                         |
| Rise Time (ms)                                         | ≤ 80 at full load                                                                    |             |             |                                        |                                                  |
| Hold Up Time (ms)                                      | ≥ 50 at full load                                                                    |             |             |                                        |                                                  |
| PROTECTION                                             |                                                                                      |             |             |                                        |                                                  |
| AC Input                                               | Current fuse protection                                                              |             |             |                                        |                                                  |
| Output Short-Circuit                                   | Hiccup mode occur and auto-recover without damage when fault conditions are removed. |             |             |                                        |                                                  |
| Output Over Voltage (V)                                | 6 - 8.5                                                                              | 15 – 18     | 28 – 33     | 15 – 18                                | 28 – 33                                          |
| Output Over Current (A)                                | 3.2 – 4.0                                                                            | 1.7 – 2.3   | 0.85 – 1.30 | 1.5 – 2.0                              | 0.85 – 1.15                                      |
| Over Temperature (°C)                                  | 95 ± 5 (output shutdown, reset by recycle AC input)                                  |             |             |                                        |                                                  |
| Battery Low-Voltage (V)                                | N/A                                                                                  |             |             | 9.0 – 10.5                             | 19.0 – 20.5                                      |
| ENVIRONMENT SPECIFICATION                              |                                                                                      |             |             |                                        |                                                  |
| Operating Temperature Range (°C)                       | -20 ~ +60                                                                            |             |             |                                        |                                                  |
| Operating Humidity (%)                                 | 5 ~ 90 RH                                                                            |             |             |                                        |                                                  |
| Storage Temperature (°C) / Humidity (%)                | -25 ~ +70 / 5 ~ 90 RH                                                                |             |             |                                        |                                                  |
| SAFETY                                                 |                                                                                      |             |             |                                        |                                                  |
| Safety Standard                                        | Compliance to CE/LVD                                                                 |             |             |                                        |                                                  |
| Withstand Voltage                                      | Input to Output: 3KVAC                                                               |             |             |                                        |                                                  |
| Isolation Resistance                                   | Input to Output: >20MG/500VDC at 25°C/70%RH                                          |             |             |                                        |                                                  |
| EMC     See Note 3.                                    |                                                                                      |             |             |                                        |                                                  |
| Emission                                               | Compliance to EN55022 Class B                                                        |             |             |                                        |                                                  |
| Immunity                                               | Compliance to EN55024,EN61000-4-2,3,4,5,6,8,11                                       |             |             |                                        |                                                  |
| LED INDICATOR                                          |                                                                                      |             |             |                                        |                                                  |
| Output                                                 | Light up when DC output normal and battery backup mode                               |             |             |                                        |                                                  |
| OTHERS                                                 |                                                                                      |             |             |                                        |                                                  |
| Dimensions (mm)                                        | 17.5(W) × 60(H) × 100.3 (L)                                                          |             |             |                                        |                                                  |
| Weight (g)                                             | 70 approx.                                                                           |             |             | 77 approx.                             |                                                  |

# 3U DIN-RAIL Power Supply

## PSM12, PSM24, PSM36

Compact 3U housing deliver enough power to most stand alone appliance

- Up To 36W Output Power
- Universal AC Input (AC100 – 240V)
- Cooling by Natural Air Convection
- Built-in Charger For Backup Battery
- Fully Input and Output Protections
- Safety Double Isolation
- LED Indicator For Normal DC Output



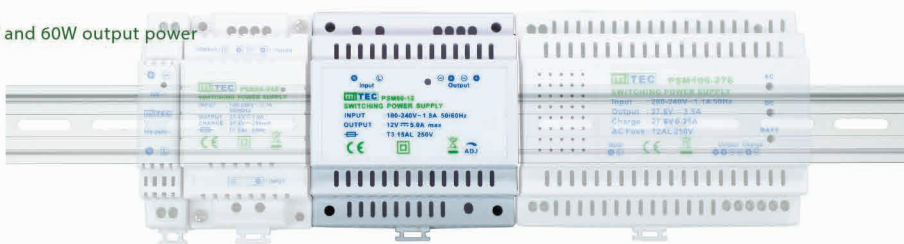
| PRODUCT SPECIFICATIONS                        |                                                                                      |             |                                               |             |             |
|-----------------------------------------------|--------------------------------------------------------------------------------------|-------------|-----------------------------------------------|-------------|-------------|
| MODEL                                         | PSM12-12B                                                                            | PSM24-12B   | PSM24-24B                                     | PSM36-12    | PSM36-24    |
| INPUT                                         |                                                                                      |             |                                               |             |             |
| Rated Voltage (VAC)                           | 100 - 240                                                                            |             |                                               |             |             |
| Voltage Range(VAC)                            | 90 - 264                                                                             |             |                                               |             |             |
| Rated Frequency (Hz)                          | 50 / 60                                                                              |             |                                               |             |             |
| Frequency Range (Hz)                          | 47 - 63                                                                              |             |                                               |             |             |
| Current (A)                                   | ≤ 0.4                                                                                | ≤ 0.6       | ≤ 0.6                                         | ≤ 1.0       | ≤ 1.0       |
| No Load Power Consumption (W)                 | ≤ 1.0                                                                                |             |                                               |             |             |
| Energy Efficiency (%)                         | ≥ 80 at full load                                                                    |             |                                               |             |             |
| OUTPUT                                        |                                                                                      |             |                                               |             |             |
| Rated Voltage (VDC)                           | 13.8                                                                                 | 13.8        | 27.6                                          | 12.0        | 24.0        |
| Voltage Range (VDC)                           | 13.1 – 14.5                                                                          | 13.1 – 14.5 | 26.2 – 28.9                                   | 12.0 – 12.6 | 24.0 – 24.8 |
| Voltage Adjust Range (VDC)                    | N/A                                                                                  | N/A         | N/A                                           | 10.8 – 13.2 | 21.6 – 26.4 |
| Rated Current (A)                             | 1.0                                                                                  | 2.0         | 1.0                                           | 3.0         | 1.5         |
| Current Range (A)                             | 0 – 1.0                                                                              | 0 – 2.0     | 0 – 1.0                                       | 0 – 3.0     | 0 – 1.5     |
| Battery Charger (Max. charging current 250mA) | For 12V rechargeable battery (1pc.)                                                  |             | For 12V rechargeable battery(2pcs. in series) | N/A         | N/A         |
| Rated Power (W)                               | 13.8 Max.                                                                            | 27.6 Max.   | 27.6 Max.                                     | 36 Max.     | 36 Max.     |
| Ripple and Noise (mVp-p) See Note 2.          | 120 Max.                                                                             | 120 Max.    | 150 Max.                                      | 120 Max.    | 150 Max.    |
| Rise Time (ms)                                | ≤ 80 at full load                                                                    |             |                                               |             |             |
| Hold Up Time (ms)                             | ≥ 50 at full load                                                                    |             |                                               |             |             |
| PROTECTION                                    |                                                                                      |             |                                               |             |             |
| AC Input                                      | Current fuse protection                                                              |             |                                               |             |             |
| Output Short-Circuit                          | Hiccup mode occur and auto-recover without damage when fault conditions are removed. |             |                                               |             |             |
| Output Over Voltage (V)                       | 15 – 18                                                                              | 15 – 18     | 29 – 33                                       | 15 – 18     | 29 – 33     |
| Output Over Current (A)                       | 1.1 – 1.5                                                                            | 2.2 – 3.0   | 1.1 – 1.5                                     | 3.3 – 4.0   | 1.7 – 2.0   |
| Over Temperature (°C)                         | 95 ± 5 (output shutdown, reset by recycle AC input)                                  |             |                                               |             |             |
| Battery Low-Voltage (V)                       | 8.5 – 10.0                                                                           |             | 18.5 – 21.5                                   | N/A         | N/A         |
| ENVIRONMENT SPECIFICATION                     |                                                                                      |             |                                               |             |             |
| Operating Temperature Range (°C)              | -20 ~ +60                                                                            |             |                                               |             |             |
| Operating Humidity (%)                        | 5 ~ 90 RH                                                                            |             |                                               |             |             |
| Storage Temperature (°C) / Humidity (%)       | -25 ~ +70 / 5 ~ 90 RH                                                                |             |                                               |             |             |
| SAFETY                                        |                                                                                      |             |                                               |             |             |
| Safety Standard                               | Compliance to CE/LVD                                                                 |             |                                               |             |             |
| Withstand Voltage                             | Input to Output: 3KVAC                                                               |             |                                               |             |             |
| Isolation Resistance                          | Input to Output: >20MH/500VDC at 25°C/70%RH                                          |             |                                               |             |             |
| EMC See Note 3.                               |                                                                                      |             |                                               |             |             |
| Emission                                      | Compliance to EN55022 Class B                                                        |             |                                               |             |             |
| Immunity                                      | Compliance to EN55024,EN61000-4-2,3,4,5,6,8,11                                       |             |                                               |             |             |
| LED INDICATOR                                 |                                                                                      |             |                                               |             |             |
| DC                                            | Light up at normal DC output and battery backup mode                                 |             |                                               |             |             |
| OTHERS                                        |                                                                                      |             |                                               |             |             |
| Dimensions (mm)                               | 53(W) × 65(H) × 99 (L)                                                               |             |                                               |             |             |
| Weight (g)                                    | 180 approx.                                                                          | 220 approx. | 220 approx.                                   | 175 approx. | 175 approx. |

# 5U DIN-RAIL Power Supply

## PSM40, PSM60

5U Din-Rail Housing provide flexibility for both 40W and 60W output power

- Up To 60W Output Power
- Universal AC Input (100 ~ 240VAC)
- Cooling by Natural Air Convection
- Built-in Charger For Backup Battery
- Fully Input and Output Protections
- Safety Double Isolation
- LED Indicator For Normal DC Output



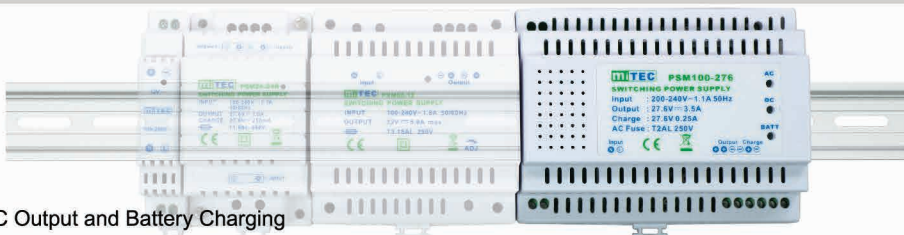
### PRODUCT SPECIFICATIONS

| MODEL                                         | PSM40-12B                                                                            | PSM60-12B   | PSM60-24B                                     | PSM60-12    | PSM60-24    |
|-----------------------------------------------|--------------------------------------------------------------------------------------|-------------|-----------------------------------------------|-------------|-------------|
| INPUT                                         |                                                                                      |             |                                               |             |             |
| Rated Voltage (VAC)                           | 100 ~ 240                                                                            |             |                                               |             |             |
| Voltage Range (VAC)                           | 90 ~ 264                                                                             |             |                                               |             |             |
| Rated Frequency (Hz)                          | 50 / 60                                                                              |             |                                               |             |             |
| Frequency Range (Hz)                          | 47 ~ 63                                                                              |             |                                               |             |             |
| Current (A)                                   | ≤ 0.6                                                                                | ≤ 1.0       | ≤ 1.4                                         | ≤ 1.2       | ≤ 1.2       |
| No Load Power Consumption (W)                 | ≤ 1.0                                                                                |             |                                               |             |             |
| Energy Efficiency (%)                         | ≥ 80 at full load                                                                    |             |                                               |             |             |
| OUTPUT                                        |                                                                                      |             |                                               |             |             |
| Rated Voltage (VDC)                           | 13.8                                                                                 | 13.8        | 27.6                                          | 12.0        | 24.0        |
| Voltage Range (VDC)                           | 13.1 ~ 14.5                                                                          | 13.1 ~ 14.5 | 26.2 ~ 28.9                                   | 12.0 ~ 12.6 | 24.0 ~ 24.8 |
| Voltage Adjust Range (VDC)                    | N/A                                                                                  | N/A         | N/A                                           | 10.8 ~ 13.2 | 21.6 ~ 26.4 |
| Rated Current (A)                             | 2.90                                                                                 | 4.35        | 2.20                                          | 5.00        | 2.50        |
| Current Range (A)                             | 0 ~ 2.90                                                                             | 0 ~ 4.35    | 0 ~ 2.20                                      | 0 ~ 5.00    | 0 ~ 2.50    |
| Battery Charger (Max. charging current 150mA) | For 12V rechargeable battery (1pc.)                                                  |             | For 12V rechargeable battery(2pcs. in series) | N/A         | N/A         |
| Rated Power (W)                               | 40.0 Max.                                                                            | 60.0 Max.   | 60.0 Max.                                     | 60.0 Max.   | 60.0 Max.   |
| Ripple and Noise (mVp-p)     See Note 2.      | 120 Max.                                                                             | 120 Max.    | 150 Max.                                      | 120 Max.    | 150 Max.    |
| Rise Time (ms)                                | ≤ 80 at full load                                                                    |             |                                               |             |             |
| Hold Up Time (ms)                             | ≥ 50 at full load                                                                    |             |                                               |             |             |
| PROTECTION                                    |                                                                                      |             |                                               |             |             |
| AC Input                                      | Current fuse protection                                                              |             |                                               |             |             |
| Output Short-Circuit                          | Hiccup mode occur and auto-recover without damage when fault conditions are removed. |             |                                               |             |             |
| Output Over Voltage (V)                       | 15 ~ 18                                                                              | 15 ~ 18     | 29 ~ 33                                       | 15 ~ 18     | 29 ~ 33     |
| Output Over Current (A)                       | 3.2 ~ 4.0                                                                            | 4.8 ~ 6.1   | 3.2 ~ 4.0                                     | 5.5 ~ 6.5   | 3.0 ~ 3.6   |
| Over Temperature (°C)                         | 95 ± 5 (output shutdown, reset by recycle AC input)                                  |             |                                               |             |             |
| Battery Low-Voltage (V)                       | 8.5 ~ 10.0                                                                           |             | 18.5 ~ 21.5                                   | N/A         | N/A         |
| ENVIRONMENT SPECIFICATION                     |                                                                                      |             |                                               |             |             |
| Operating Temperature Range (°C)              | -20 ~ +60                                                                            |             |                                               |             |             |
| Operating Humidity (%)                        | 5 ~ 90 RH                                                                            |             |                                               |             |             |
| Storage Temperature (°C) / Humidity (%)       | -25 ~ +70 / 5 ~ 90 RH                                                                |             |                                               |             |             |
| SAFETY                                        |                                                                                      |             |                                               |             |             |
| Safety Standard                               | Compliance to CE/LVD                                                                 |             |                                               |             |             |
| Withstand Voltage                             | Input to Output: 3KVAC                                                               |             |                                               |             |             |
| Isolation Resistance                          | Input to Output: >20MG/500VDC at 25°C/70%RH                                          |             |                                               |             |             |
| EMC     See Note 3.                           |                                                                                      |             |                                               |             |             |
| Emission                                      | Compliance to EN55022 Class B                                                        |             |                                               |             |             |
| Immunity                                      | Compliance to EN55024,EN61000-4-2,3,4,5,6,8,11                                       |             |                                               |             |             |
| LED INDICATOR                                 |                                                                                      |             |                                               |             |             |
| DC                                            | Light at normal DC output and battery backup mode                                    |             |                                               |             |             |
| OTHERS                                        |                                                                                      |             |                                               |             |             |
| Dimensions (mm)                               | 87.5(W) × 60(H) × 93 (L)                                                             |             |                                               |             |             |
| Weight (kg)                                   | 0.4 approx.                                                                          |             |                                               |             |             |

# 7U DIN-RAIL Power Supply

## PSM100

- Up To 100W Output Power
- Wide AC Input (AC200 – 240V)
- Cooling by Natural Air Convection
- Built-in Charger For Backup Battery
- Fully Input and Output Protections
- Safety Double Isolation
- LED Indicator For AC Power on, Normal DC Output and Battery Charging



### PRODUCT SPECIFICATIONS

| MODEL                                    | PSM100-12                                                                            | PSM100-24   | PSM100-138                      | PSM100-276  |
|------------------------------------------|--------------------------------------------------------------------------------------|-------------|---------------------------------|-------------|
| INPUT                                    |                                                                                      |             |                                 |             |
| Rated Voltage (VAC)                      | 200 ~ 240                                                                            |             |                                 |             |
| Voltage Range (VAC)                      | 180 ~ 264                                                                            |             |                                 |             |
| Rated Frequency (Hz)                     | 50                                                                                   |             |                                 |             |
| Current (A)                              | ≤ 1.1                                                                                |             |                                 |             |
| No Load Power Consumption (W)            | ≤ 1.0                                                                                |             | ≤ 2.0                           |             |
| Energy Efficiency (%)                    | ≥ 85 at full load                                                                    |             |                                 |             |
| OUTPUT                                   |                                                                                      |             |                                 |             |
| Rated Voltage (VDC)                      | 12.0                                                                                 | 24.0        | 13.8                            | 27.6        |
| Voltage Range (VDC)                      | 11.4 ~ 12.6                                                                          | 22.8 ~ 25.2 | 13.1 ~ 14.5                     | 26.2 ~ 28.9 |
| Voltage Adjust Range (VDC)               | 10.8 ~ 13.2                                                                          | 21.6 ~ 26.4 | N/A                             | N/A         |
| Rated Current (A)                        | 8.4                                                                                  | 4.2         | 7.0                             | 3.5         |
| Current Range (A)                        | 0 ~ 8.4                                                                              | 0 ~ 4.2     | 0 ~ 7.0                         | 0 ~ 3.5     |
| Battery Charger Charging Current (mA)    | N/A                                                                                  | N/A         | 500 max.                        | 250 max.    |
| Rated Power (W)                          | 100                                                                                  | 100         | 103                             | 103         |
| Ripple and Noise (mVp-p)     See Note 2. | 100 max.                                                                             | 120 max.    | 120 max.                        | 150 max.    |
| Rise Time (ms)                           | ≤ 80 at full load                                                                    |             |                                 |             |
| Hold Up Time (ms)                        | ≥ 50 at full load                                                                    |             |                                 |             |
| PROTECTION                               |                                                                                      |             |                                 |             |
| AC Input                                 | Current fuse protection                                                              |             |                                 |             |
| Output Short-Circuit                     | Hiccup mode occur and auto-recover without damage when fault conditions are removed. |             |                                 |             |
| Output Over Voltage (V)                  | 15 ~ 18                                                                              | 28 ~ 33     | 15 ~ 18                         | 28 ~ 33     |
| Output Over Current (A)                  | 9.2 ~ 12.6                                                                           | 4.6 ~ 6.3   | 8.3 ~ 11.3                      | 4.1 ~ 5.6   |
| Over Temperature (°C)                    | 110 ± 5 (output shutdown, reset by recycle AC input)                                 |             |                                 |             |
| Battery Low-Voltage (V)                  | N/A                                                                                  | N/A         | 9.0 ~ 10.5                      | 19.0 ~ 20.5 |
| Battery Connection Polarity Reverse      | N/A                                                                                  | N/A         | ✓                               | ✓           |
| ENVIRONMENT SPECIFICATION                |                                                                                      |             |                                 |             |
| Operating Temperature Range (°C)         | -20 ~ +60                                                                            |             |                                 |             |
| Operating Humidity (%)                   | 5 ~ 90 RH                                                                            |             |                                 |             |
| Storage Temperature (°C) / Humidity (%)  | -25 ~ +70 / 5 ~ 90 RH                                                                |             |                                 |             |
| SAFETY                                   |                                                                                      |             |                                 |             |
| Safety Standard                          | Compliance to CE/LVD                                                                 |             |                                 |             |
| Withstand Voltage                        | Input to Output: 3KVAC                                                               |             |                                 |             |
| Isolation Resistance                     | Input to Output: >20MH/500VDC at 25°C/70%RH                                          |             |                                 |             |
| EMC     See Note 3.                      |                                                                                      |             |                                 |             |
| Emission                                 | Compliance to EN55022 Class B                                                        |             |                                 |             |
| Immunity                                 | Compliance to EN55024,EN61000-4-2,3,4,5,6,8,11                                       |             |                                 |             |
| LED INDICATOR                            |                                                                                      |             |                                 |             |
| AC                                       | N/A                                                                                  |             | Light up when AC power on       |             |
| DC                                       | Light up at normal DC output and battery backup mode                                 |             |                                 |             |
| BATT                                     | N/A                                                                                  |             | Light up at battery is charging |             |
| OTHERS                                   |                                                                                      |             |                                 |             |
| Dimensions (mm)                          | 123(W) × 61(H) × 99(L)                                                               |             |                                 |             |
| Weight (g)                               | 370 approx.                                                                          |             | 380 approx.                     |             |

# 10U DIN-RAIL Power Supply

## PSM150

Multiple Output with individual fuse protection, ideal for CCTV application.

- Up To 150W Output Power
- Wide AC Input (AC200 – 240V)
- Cooling by Natural Air Convection
- Built-in Charger for Backup Battery
- Fully Input and Output Protections
- Individual Current Fuse with State LED Indicator for Each Output Channel
- LED Indicator for AC Power On, Normal DC Output and Battery Charging



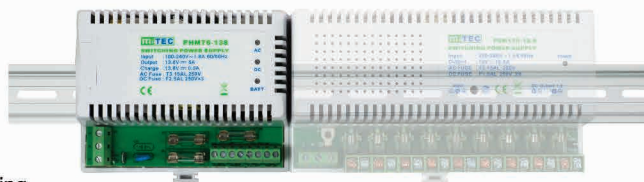
### PRODUCT SPECIFICATIONS

| MODEL                                    | PSM150-12-9                                                                          | PSM150-24-9 | PSM150-138-9                    | PSM150-276-9 |
|------------------------------------------|--------------------------------------------------------------------------------------|-------------|---------------------------------|--------------|
| INPUT                                    |                                                                                      |             |                                 |              |
| Rated Voltage (VAC)                      | 200 ~ 240                                                                            |             |                                 |              |
| Voltage Range (VAC)                      | 180 ~ 264                                                                            |             |                                 |              |
| Rated Frequency (Hz)                     | 50                                                                                   |             |                                 |              |
| Current (A)                              | ≦ 1.5                                                                                |             |                                 |              |
| No Load Power Consumption (W)            | ≦ 1.0                                                                                |             | ≦ 2.0                           |              |
| Energy Efficiency (%)                    | ≧ 85 at full load                                                                    |             |                                 |              |
| OUTPUT                                   |                                                                                      |             |                                 |              |
| Rated Voltage (VDC)                      | 12.0                                                                                 | 24.0        | 13.8                            | 27.6         |
| Voltage Range (VDC)                      | 11.4 ~ 12.6                                                                          | 22.8 ~ 25.2 | 13.1 ~ 14.5                     | 26.2 ~ 28.9  |
| Voltage Adjust Range (VDC)               | 10.8 ~ 13.2                                                                          | 21.6 ~ 26.4 | N/A                             | N/A          |
| Rated Current (A)                        | 12.5                                                                                 | 6.2         | 10.0                            | 5.0          |
| Current Range (A)                        | 0 ~ 12.5                                                                             | 0 ~ 6.2     | 0 ~ 10.0                        | 0 ~ 5.0      |
| Battery Charger Charging Current (mA)    | N/A                                                                                  | N/A         | 800 max.                        | 800 max.     |
| Rated Power (W)                          | 150                                                                                  | 150         | 150                             | 150          |
| Ripple and Noise (mVp-p)     See Note 2. | 120 max.                                                                             | 150 max.    | 120 max.                        | 150 max.     |
| Rise Time (ms)                           | ≦ 80 at full load                                                                    |             |                                 |              |
| Hold Up Time (ms)                        | ≧ 50 at full load                                                                    |             |                                 |              |
| PROTECTION                               |                                                                                      |             |                                 |              |
| AC Input                                 | Current fuse protection                                                              |             |                                 |              |
| Output Short-Circuit                     | Hiccup mode occur and auto-recover without damage when fault conditions are removed. |             |                                 |              |
| Output Over Voltage (V)                  | 15 ~ 18                                                                              | 28 ~ 33     | 15 ~ 18                         | 28 ~ 33      |
| Output Over Current (A)                  | 13.5 ~ 16.5                                                                          | 6.8 ~ 8.0   | 11.0 ~ 13.0                     | 5.5 ~ 6.5    |
| Over Temperature (°C)                    | 110 ± 5 (output shutdown, reset by recycle AC input)                                 |             |                                 |              |
| Battery Low-Voltage (V)                  | N/A                                                                                  | N/A         | 9.0 ~ 10.5                      | 19.0 ~ 20.5  |
| Battery Connection Polarity Reverse      | N/A                                                                                  | N/A         | √                               | √            |
| ENVIRONMENT SPECIFICATION                |                                                                                      |             |                                 |              |
| Operating Temperature Range (°C)         | -20 ~ +60                                                                            |             |                                 |              |
| Operating Humidity (%)                   | 5 ~ 90 RH                                                                            |             |                                 |              |
| Storage Temperature (°C) / Humidity (%)  | -25 ~ +70 / 5 ~ 90 RH                                                                |             |                                 |              |
| SAFETY                                   |                                                                                      |             |                                 |              |
| Safety Standard                          | Compliance to CE/LVD                                                                 |             |                                 |              |
| Withstand Voltage                        | Input to Output: 3KVAC                                                               |             |                                 |              |
| Isolation Resistance                     | Input to Output: >20MH/500VDC at 25°C/70%RH                                          |             |                                 |              |
| EMC     See Note 3.                      |                                                                                      |             |                                 |              |
| Emission                                 | Compliance to EN55022 Class B                                                        |             |                                 |              |
| Immunity                                 | Compliance to EN55024,EN61000-4-2,3,4,5,6,8,11                                       |             |                                 |              |
| LED INDICATOR                            |                                                                                      |             |                                 |              |
| AC                                       | N/A                                                                                  |             | Light up when AC power on       |              |
| DC / POWER                               | Light up at normal DC output and battery backup mode                                 |             |                                 |              |
| BATT                                     | N/A                                                                                  |             | Light up at battery is charging |              |
| OTHERS                                   |                                                                                      |             |                                 |              |
| Dimensions (mm)                          | 175(W) x 61(H) x 99(L)                                                               |             |                                 |              |
| Weight (g)                               | 520 approx.                                                                          |             | 550 approx.                     |              |

# PHM DIN-RAIL Switching Mode Power Supply

## PHM21, PHM35, PHM48, PHM76

- Up To 69W Output Power
- Universal AC Input (AC100 – 240V)
- Cooling by Natural Air Convection
- Built-in Charger For Backup Battery
- Fully Input and Output Protections
- Extra Current Fuse For Individual DC Output Rail
- Safety Double Isolation
- LED Indicator For AC Power On, Normal DC Output and Battery Charging

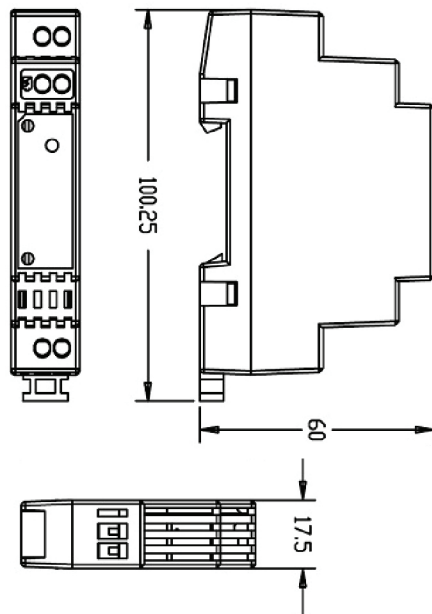


| PRODUCT SPECIFICATIONS                         |                                                                                       |             |             |             |                                                |             |
|------------------------------------------------|---------------------------------------------------------------------------------------|-------------|-------------|-------------|------------------------------------------------|-------------|
| MODEL                                          | PHM21-138                                                                             | PHM35-138   | PHM48-138   | PHM76-138   | PHM-48-276                                     | PHM76-276   |
| INPUT                                          |                                                                                       |             |             |             |                                                |             |
| Rated Voltage (VAC)                            | 100 – 240                                                                             |             |             |             |                                                |             |
| Voltage Range (VAC)                            | 90 – 264                                                                              |             |             |             |                                                |             |
| Rated Frequency (Hz)                           | 50 / 60                                                                               |             |             |             |                                                |             |
| Frequency Range (Hz)                           | 47 – 63                                                                               |             |             |             |                                                |             |
| Current (A)                                    | ≤ 0.6                                                                                 | ≤ 1.0       | ≤ 1.2       | ≤ 1.8       | ≤ 1.2                                          | ≤ 1.8       |
| No Load Power Consumption (W)                  | ≤ 1.0                                                                                 |             |             |             |                                                |             |
| Energy Efficiency (%)                          | ≥ 82 at full load                                                                     |             |             |             |                                                |             |
| OUTPUT                                         |                                                                                       |             |             |             |                                                |             |
| Rated Voltage (VDC)                            | 13.8                                                                                  | 13.8        | 13.8        | 13.8        | 27.6                                           | 27.6        |
| Voltage Range (VDC)                            | 13.1 – 14.5                                                                           | 13.1 – 14.5 | 13.1 – 14.5 | 13.1 – 14.5 | 26.2 – 28.9                                    | 26.2 – 28.9 |
| Rated Current (A)                              | 1.0                                                                                   | 2.0         | 3.0         | 5.0         | 1.5                                            | 2.5         |
| Current Range (A)                              | 0 – 1.0                                                                               | 0 – 2.0     | 0 – 3.0     | 0 – 5.0     | 0 – 1.5                                        | 0 – 2.5     |
| Output Port (Way)                              | 1                                                                                     | 1           | 2           | 3           | 2                                              | 3           |
| Battery Charger (Max. charging current 500mA ) | For 12V rechargeable battery (1pc.)                                                   |             |             |             | For 12V rechargeable battery (2pcs. in series) |             |
| Rated Power (W)                                | 13.8 Max.                                                                             | 27.6 Max.   | 41.4 Max    | 69.0 Max.   | 41.4 Max                                       | 69.0 Max    |
| Ripple and Noise (mVp-p)     See Note 2.       | 150 Max.                                                                              |             |             |             | 150 Max.                                       |             |
| Rise Time (ms)                                 | ≤ 80 at full load                                                                     |             |             |             |                                                |             |
| Hold Up Time (ms)                              | ≥ 50 at full load                                                                     |             |             |             |                                                |             |
| PROTECTION                                     |                                                                                       |             |             |             |                                                |             |
| AC Input                                       | Current fuse protection                                                               |             |             |             |                                                |             |
| Output Short-Circuit                           | Hiccup mode occur and auto-recovery without damage when fault conditions are removed. |             |             |             |                                                |             |
| Output Over Voltage (V)                        | 15 – 18                                                                               | 15 – 18     | 15 – 18     | 15 – 18     | 29 – 33                                        | 29 – 33     |
| Output Over Current (A)                        | 1.7 – 2.3                                                                             | 2.8 – 3.8   | 3.8 – 5.3   | 6.1 – 8.3   | 1.9 – 2.6                                      | 3.0 – 4.1   |
| Over Temperature (°C)                          | 95 ± 5                                                                                |             |             |             |                                                |             |
| Battery Low-Voltage (V)                        | 9.0 – 10.5                                                                            |             |             |             | 19.0 – 21.5                                    |             |
| ENVIRONMENT SPECIFICATION                      |                                                                                       |             |             |             |                                                |             |
| Operating Temperature Range (°C)               | -20 ~ +60                                                                             |             |             |             |                                                |             |
| Operating Humidity (%)                         | 5 ~ 90 RH                                                                             |             |             |             |                                                |             |
| Storage Temperature (°C) / Humidity (%)        | -25 ~ +70 / 5 ~ 90 RH                                                                 |             |             |             |                                                |             |
| SAFETY                                         |                                                                                       |             |             |             |                                                |             |
| Safety Standard                                | Compliance to CE/LVD                                                                  |             |             |             |                                                |             |
| Withstand Voltage                              | Input to Output : 3KVAC                                                               |             |             |             |                                                |             |
| Isolation Resistance                           | Input to Output: >20MG/500VDC at 25°C/70%RH                                           |             |             |             |                                                |             |
| EMC     See Note 3.                            |                                                                                       |             |             |             |                                                |             |
| Emission                                       | Compliance to EN55022 Class B                                                         |             |             |             |                                                |             |
| Immunity                                       | Compliance to EN55024,EN61000-4-2,3,4,5,6,8,11                                        |             |             |             |                                                |             |
| LED INDICATOR                                  |                                                                                       |             |             |             |                                                |             |
| AC                                             | Light up when AC power on                                                             |             |             |             |                                                |             |
| DC                                             | Light up at normal DC output and battery backup mode                                  |             |             |             |                                                |             |
| BATT                                           | Light up at battery is charging                                                       |             |             |             |                                                |             |
| OTHERS                                         |                                                                                       |             |             |             |                                                |             |
| Dimensions (mm)                                | 123(W) × 50 (H) × 95(L)                                                               |             |             |             |                                                |             |
| Weight (kg)                                    | 0.3 approx                                                                            |             |             |             |                                                |             |

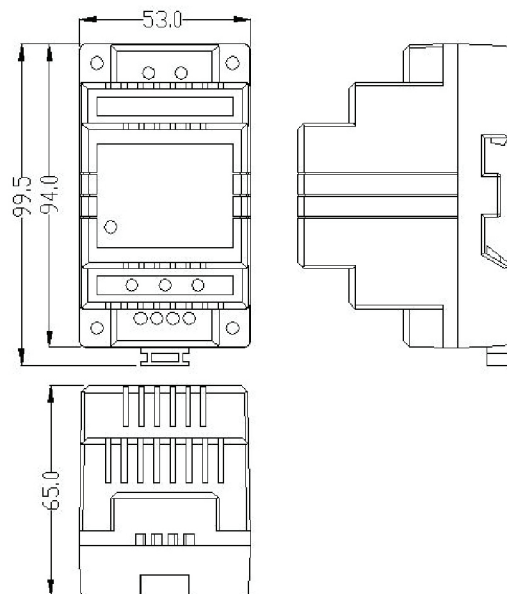
# DIN-RAIL Switching Mode Power Supply

## Dimensions (mm)

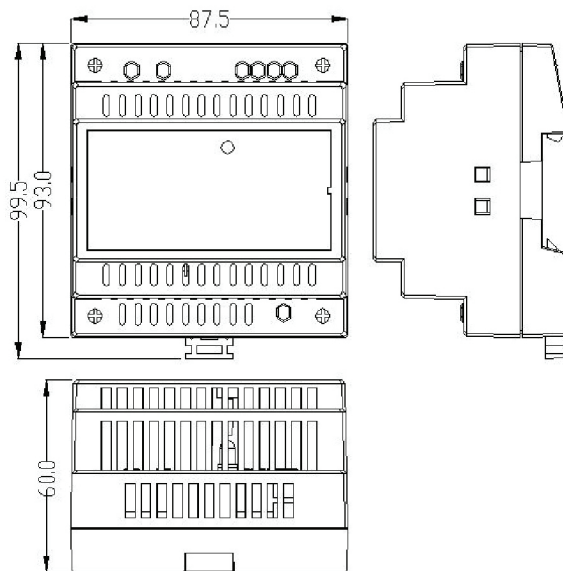
PSM15, PSM18



PSM12, PSM24, PSM36



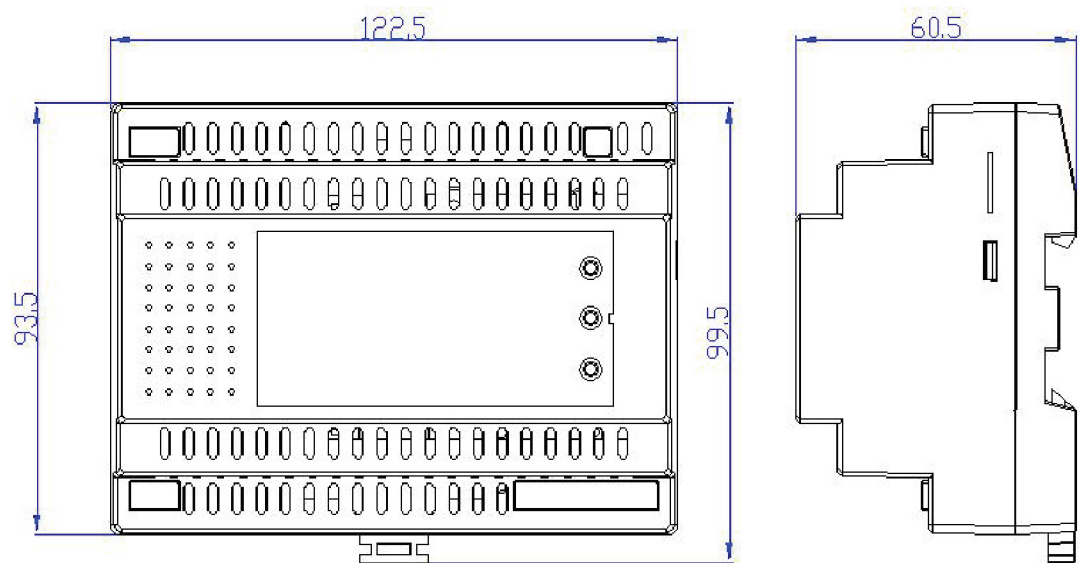
PSM40, PSM60



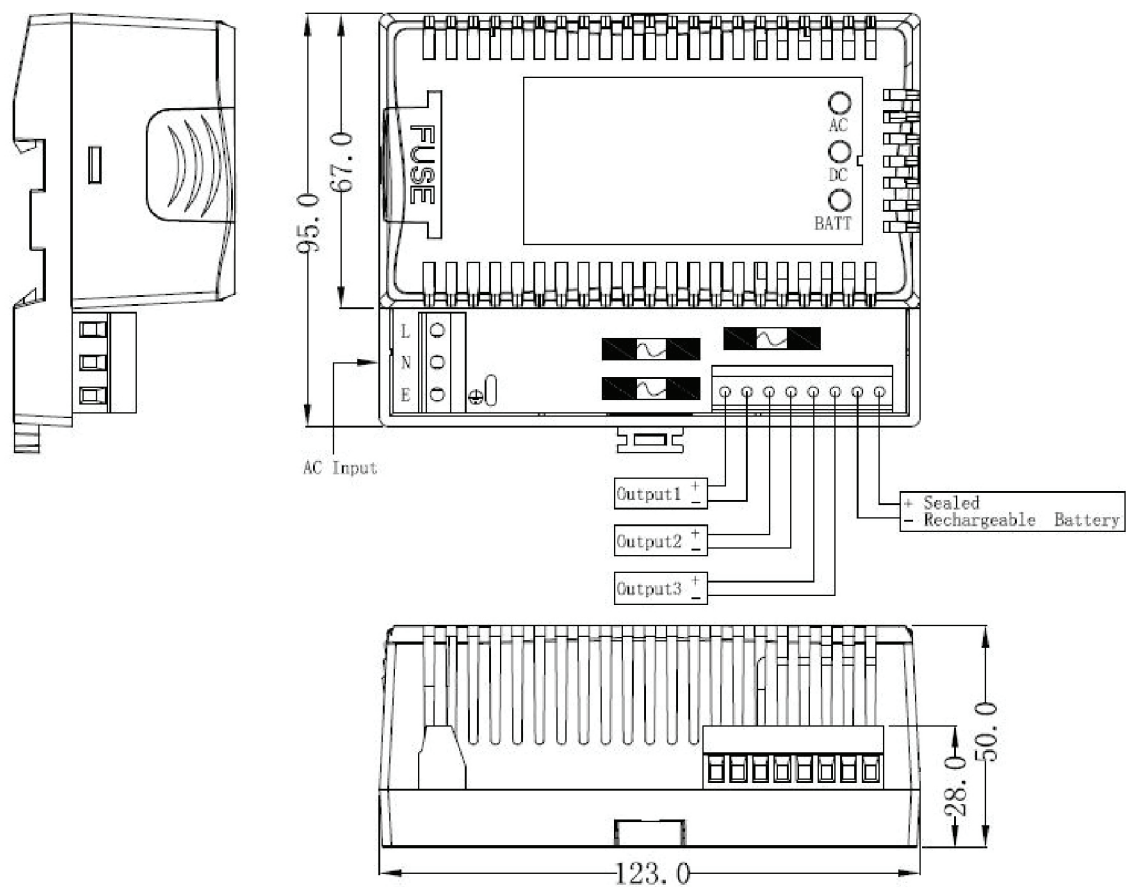
# DIN-RAIL Switching Mode Power Supply

## Dimensions (mm)

PSM100



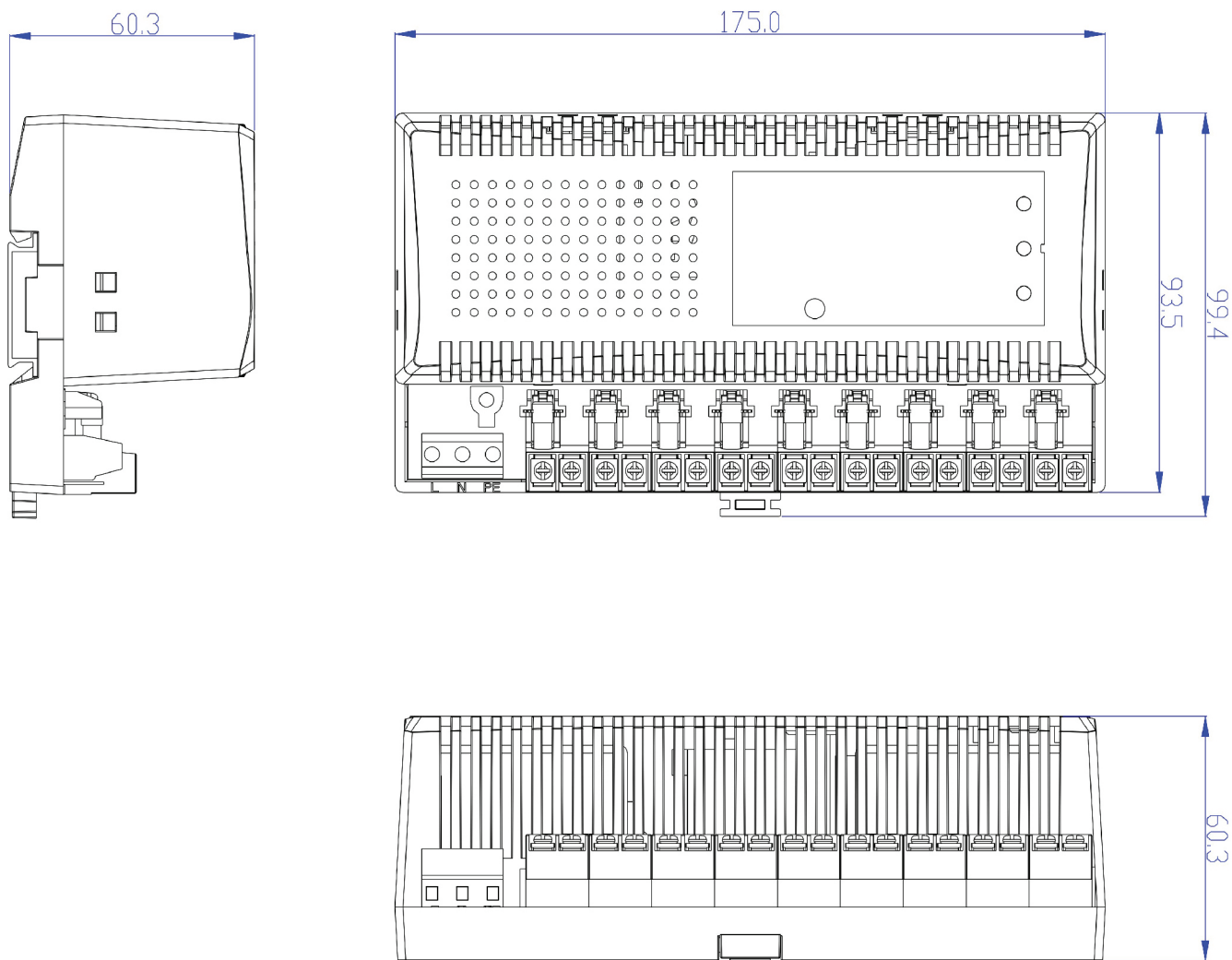
PHM21, PHM35, PHM48, PHM76



# DIN-RAIL Switching Mode Power Supply

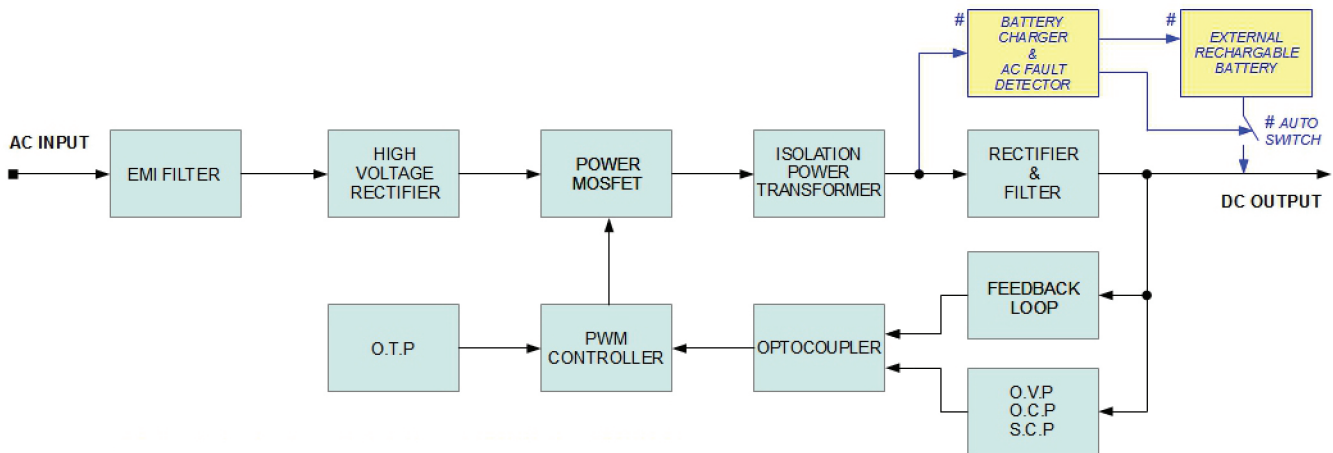
## Dimensions (mm)

PSM150



# DIN-RAIL Switching Mode Power Supply

## Block Diagrams



### Note:

1. Battery backup function not included in model PSM15-5, PSM18-12, PSM18-24, PSM36-12, PSM36-24, PSM60-12, PSM60-24, PSM100-12, PSM100-24, PSM150-12-9, PSM150-24-9.
2. Rechargeable battery is not included.
3. These drawings and specifications are the property of Wo Hing Radio Co.,Ltd and should not be reproduced or copied, or using as the basis for the manufacture or sale of apparatus or devices without permission.
4. Peak to Peak voltage measured at 20MHz bandwidth by using a 10 $\mu$ F electrolytic capacitor in parallel with a 0.1 $\mu$ F ceramic capacitor at the point of output terminals.
5. The power supply is considered a component which will be installed into a end-equipment product. The end-equipment product should be re-confirmed that it still meets EMC directives.
6. Design and specifications are subject to change without notice.



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