



## Description

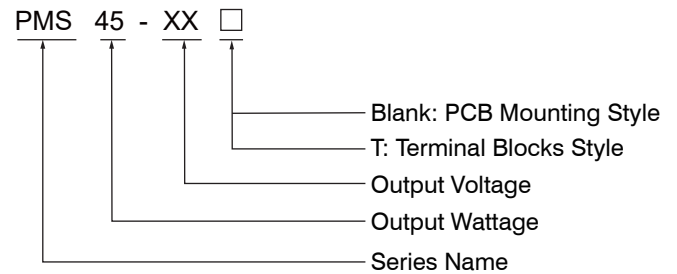
PMS45 is a 45 W miniature (87\*52\*30mm) AC-DC module-type power supply, ready to be soldered onto the PCB boards of various kinds of electronic instruments or industrial automation equipments. This product allows the universal input voltage range of 85~305VAC.



## Features

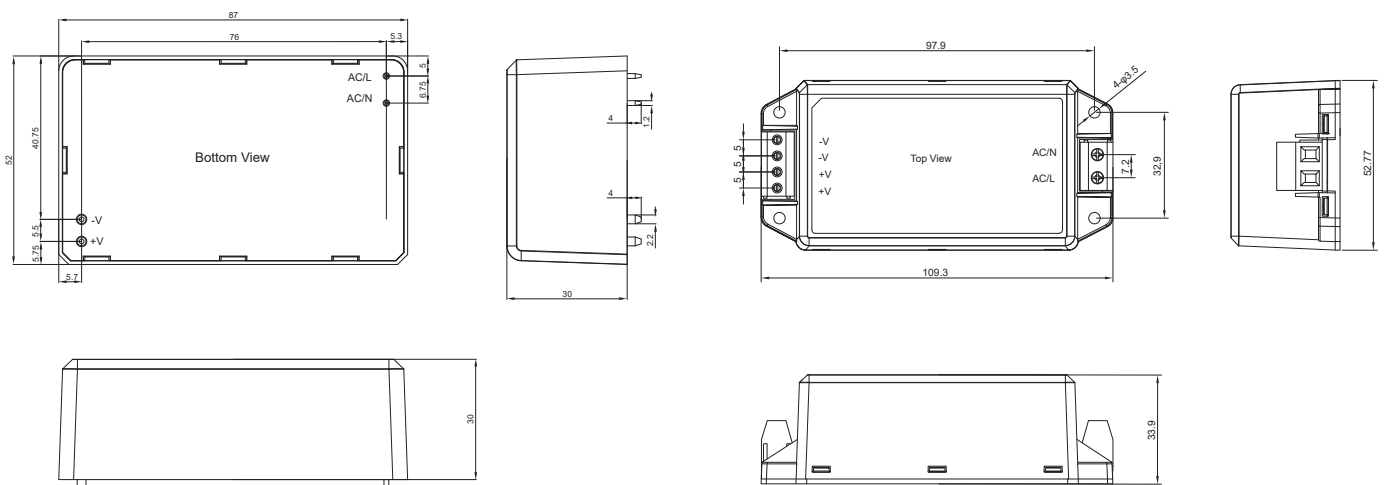
- Universal AC Input/ Full Range
- No load power consumption < 0.15W
- Wide operating temperature range -30~85° C
- High efficiency up to 91%
- Protections: Short circuit/Over load/Over voltage
- Isolation Class II
- Three years warranty

## Model Description



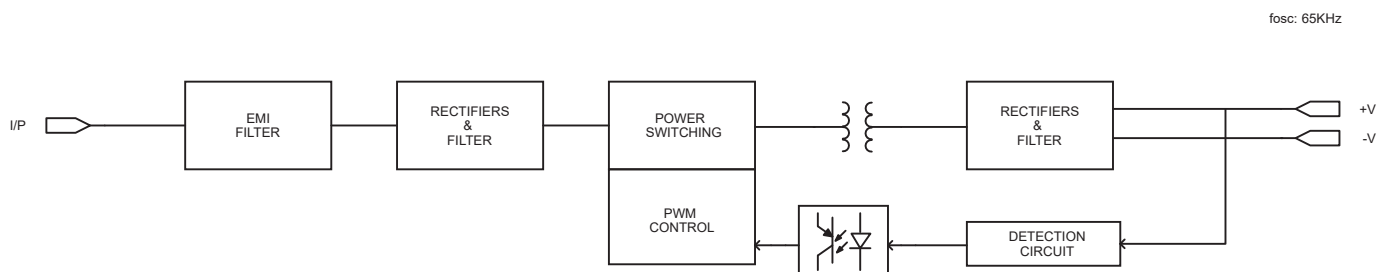
## Dimensions and installation

(Unit: mm , tolerance: ±0.5mm)



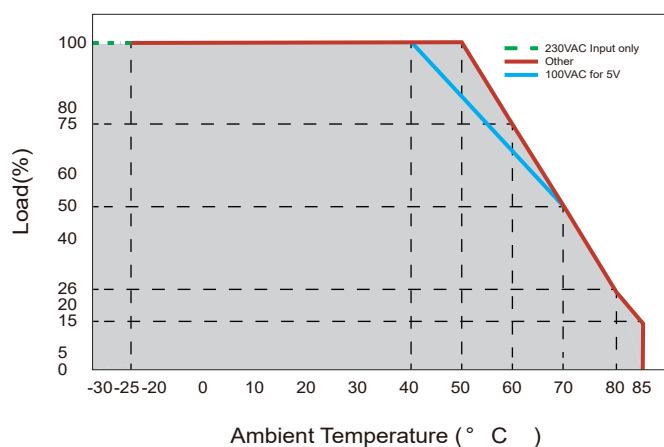
| Model         | Safety Model No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | PMS45-5□                                                                                                                                                                          | PMS45-12□                                                                         | PMS45-15□    | PMS45-24□                                                              | PMS45-48□  |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------|------------|
| Output        | DC Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 5V                                                                                                                                                                                | 12V                                                                               | 15V          | 24V                                                                    | 48V        |
|               | Rated Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 8A                                                                                                                                                                                | 3.8A                                                                              | 3A           | 1.9A                                                                   | 0.94A      |
|               | Rated Power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 40W                                                                                                                                                                               | 45.6W                                                                             | 45W          | 45.6W                                                                  | 45.12W     |
|               | Ripple & Noise(max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 80mVp-p                                                                                                                                                                           | 120mVp-p                                                                          | 120mVp-p     | 150mVp-p                                                               | 240mVp-p   |
|               | Voltage Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±2.5%                                                                                                                                                                             | ±2.5%                                                                             | ±2.5%        | ±2.5%                                                                  | ±2.5%      |
|               | Line Regulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±0.5%                                                                                                                                                                             | ±0.5%                                                                             | ±0.5%        | ±0.5%                                                                  | ±0.5%      |
|               | Load Regulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±1.0%                                                                                                                                                                             | ±1.0%                                                                             | ±0.5%        | ±0.5%                                                                  | ±0.5%      |
|               | Max.Capactive Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20000uF                                                                                                                                                                           | 8000uF                                                                            | 5000uF       | 4200uF                                                                 | 800uF      |
|               | Setup,Rise,Hold up Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.0s,35ms,50ms/230VAC(at full load)2.0s,35ms,12ms/115VAC(at full load)                                                                                                            |                                                                                   |              |                                                                        |            |
| Input         | Rated Voltage Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 100-277VAC                                                                                                                                                                        |                                                                                   |              |                                                                        |            |
|               | Voltage Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 85-305VAC/120-430VDC                                                                                                                                                              |                                                                                   |              |                                                                        |            |
|               | Frequency Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 47-63Hz                                                                                                                                                                           |                                                                                   |              |                                                                        |            |
|               | AC Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1.5A/115VAC                                                                                                                                                                       | 0.9A/230VAC                                                                       | 0.75A/277VAC |                                                                        |            |
|               | Inrush Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Cold Start 65A/2000us at 230VAC 50HzCold Start 30A/2000us at 115VAC 50Hz                                                                                                          |                                                                                   |              |                                                                        |            |
|               | Leakage Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <0.25mA/277VAC                                                                                                                                                                    |                                                                                   |              |                                                                        |            |
|               | Efficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 83%                                                                                                                                                                               | 88%                                                                               | 88%          | 89.5%                                                                  | 90%        |
|               | No Load Power Consumption                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <0.15W                                                                                                                                                                            |                                                                                   |              |                                                                        |            |
|               | Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Over Load                                                                                                                                                                         | 115~180%<br>Hiccup mode, recovers automatically after fault condition is removed. |              |                                                                        |            |
| Short Circuit |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hiccup mode, recovers automatically after fault condition is removed.                                                                                                             |                                                                                   |              |                                                                        |            |
| Over Voltage  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5.25 ~ 8V                                                                                                                                                                         | 12.6 ~ 16.5V                                                                      | 15.75 ~ 24V  | 25.2 ~ 34V                                                             | 50.4 ~ 65V |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hiccup mode, recovers automatically after fault condition is removed.                                                                                                             |                                                                                   |              |                                                                        |            |
| Ambient       | Working TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -30 ~ +85° C (Refer to"Derating Curve".)                                                                                                                                          |                                                                                   |              |                                                                        |            |
|               | Working Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 20 ~ 90%RH Non-condensing                                                                                                                                                         |                                                                                   |              |                                                                        |            |
|               | Storage TEMP. Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -40 ~ +85 ,10 ~ 95%RH Non-condensing                                                                                                                                              |                                                                                   |              |                                                                        |            |
|               | TEMP. Coefficient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±0.03%/(0 ~ 40° C )                                                                                                                                                               |                                                                                   |              |                                                                        |            |
|               | Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PCB Mounting: 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes<br>Terminal Blocks: 10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes |                                                                                   |              |                                                                        |            |
|               | Soldering Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Wave soldering:265° C ,5s(max.); Manual soldering:390° C ,3s(max.)                                                                                                                |                                                                                   |              |                                                                        |            |
|               | Over Voltage Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OVC III                                                                                                                                                                           |                                                                                   |              |                                                                        |            |
| Safety        | Safety Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | EN60335-1, EN62368-1,UL62368-1                                                                                                                                                    |                                                                                   |              |                                                                        |            |
|               | Withstand Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | I/P-O/P: 3KVAC/1min                                                                                                                                                               |                                                                                   |              |                                                                        |            |
|               | Isolation Resistance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | I/P-O/P:100M Ohms / 500VDC / 25° C / 70% RH                                                                                                                                       |                                                                                   |              |                                                                        |            |
| EMC           | EMC Emission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Parameter                                                                                                                                                                         | Standard                                                                          |              | Test Level                                                             |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Conducted                                                                                                                                                                         | EN55014-1                                                                         |              | CLASS B                                                                |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Radiated                                                                                                                                                                          | EN55014-2                                                                         |              | CLASS B                                                                |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Harmonic Current                                                                                                                                                                  | EN61000-3-2                                                                       |              | CLASS A                                                                |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Voltage flicker                                                                                                                                                                   | EN61000-3-3                                                                       |              | .....                                                                  |            |
|               | EMC Immunity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EN55014-1,EN55014-2                                                                                                                                                               |                                                                                   |              |                                                                        |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter                                                                                                                                                                         | Standard                                                                          |              | Test Level                                                             |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ESD                                                                                                                                                                               | EN61000-4-2                                                                       |              | Level 3, 8KV air,Level 2, 4KV contact criteria B                       |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Radiated Susceptibility                                                                                                                                                           | EN61000-4-3                                                                       |              | Level 3, criteria A                                                    |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EFT/Burest                                                                                                                                                                        | EN61000-4-4                                                                       |              | Level 3, criteria B                                                    |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Surge                                                                                                                                                                             | EN61000-4-5                                                                       |              | Level 3, 1KV/L-N, criteria B                                           |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Conducted                                                                                                                                                                         | EN61000-4-6                                                                       |              | Level 3, criteria A                                                    |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Magnetic Field                                                                                                                                                                    | EN61000-4-8                                                                       |              | Level 4, criteria A                                                    |            |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Voltage Dips and interruptions                                                                                                                                                    | EN61000-4-11                                                                      |              | 95% dip 0.5 periods, 30% dip 25 periods, 95% interruptions 250 periods |            |
| Others        | Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PCB Mounting: 210g/pcs; Terminal Blocks: 277g/pcs                                                                                                                                 |                                                                                   |              |                                                                        |            |
|               | Packing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PCB Mounting: 48×27.5x16cm 50pcs/Cartron; Terminal Blocks: 31.5×24.5x22cm 50pcs/Cartron                                                                                           |                                                                                   |              |                                                                        |            |
|               | Dimension (LxWxH)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PCB Mounting: 87 × 52 x 30 mm; Terminal Blocks: 109.3 × 52.77 x 33.9 mm                                                                                                           |                                                                                   |              |                                                                        |            |
|               | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 755.4Khrs min. MIL-HDBK-217F(25° C )                                                                                                                                              |                                                                                   |              |                                                                        |            |
| Note          | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25° C of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF & 47μF parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The ambient temperature derating of 3.5° C/1000m with fanless models and of 5° C /1000m with fan models for operating altitude higher than 2000m(6500ft).<br>5. The power supply is considered as an independent unit ,but the final equipment still need to re-confirm that the whole system complies with the EMC directives.For guidance on how to perform these EMC tests,please refer to "EMI testing of component power supplies". |                                                                                                                                                                                   |                                                                                   |              |                                                                        |            |

## Block Diagram



## Engineering Data

Derating Curve



Static Characteristics

