

# PS-45 series

## 45W Single Output Industrial DIN Rail Power Supply

**Altech Corp.**®

### ■ Features:

- Universal AC input/Full range
- Protections: Short circuit/Over load/Over voltage/Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- UL 508(industrial control equipment)approved
- LED indicator for power on
- 100% full load burn-in test
- Fix switching frequency at 100KHz
- 3 years warranty



### SPECIFICATION

| MODEL                    |                              | PS-4505                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PS-4512      | PS-4515        | PS-4524      |
|--------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|--------------|
| OUTPUT                   | DC VOLTAGE                   | 5V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 12V          | 15V            | 24V          |
|                          | RATED CURRENT                | 5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3.5A         | 2.8A           | 2A           |
|                          | CURRENT RANGE                | 0 ~ 5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0 ~3.5A      | 0 ~ 2.8A       | 0 ~ 2A       |
|                          | RATED POWER                  | 25W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 42W          | 42W            | 48W          |
|                          | RIPPLE & NOISE (max.) Note.2 | 100mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 200mVp-p     | 240mVp-p       | 480mVp-p     |
|                          | VOLTAGE ADJ. RANGE           | 4.75 ~ 5.5V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10.8 ~ 13.2V | 13.5 ~ 16.5V   | 21.6 ~ 26.4V |
|                          | VOLTAGE TOLERANCE Note.3     | ±2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±1.0%        | ±1.0%          | ±1.0%        |
|                          | LINE REGULATION              | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±1.0%        | ±1.0%          | ±1.0%        |
|                          | LOAD REGULATION              | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±1.0%        | ±1.0%          | ±1.0%        |
| SETUP, RISE, HOLD TIME   |                              | 800ms, 60ms, 50ms/230VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |                |              |
| INPUT                    | VOLTAGE RANGE                | 85 ~ 264VAC 120 ~ 370VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                |              |
|                          | FREQUENCY RANGE              | 47~63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |                |              |
|                          | EFFICIENCY (Typ.)            | 72%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 77%          | 77%            | 80%          |
|                          | AC CURRENT                   | 1.5A/115VAC 0.75A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                |              |
|                          | INRUSH CURRENT (max.)        | COLD START 30A/115VAC 60A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                |              |
|                          | LEAKAGE CURRENT              | <1mA/ 240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |                |              |
| PROTECTION               | OVER LOAD                    | 105 ~ 150% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                            |              |                |              |
|                          | OVER VOLTAGE                 | 5.75 ~ 6.75V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 13.8 ~ 16.2V | 17.25 ~ 20.25V | 27.6 ~ 32.4V |
|                          |                              | Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |                |              |
|                          | OVER TEMPERATURE             | Tj 135°C typically (U1) Detect on heat sink of power transistor<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down                                                                                                                                                                                                                                                                                                                                                                   |              |                |              |
| ENVIRONMENT              | WORKING TEMP.                | -10 ~ +50°C (Refer to output load derating curve)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |                |              |
|                          | WORKING HUMIDITY             | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |                |              |
|                          | STORAGE TEMP., HUMIDITY      | -20 ~ +85°C, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                |              |
|                          | TEMP. COEFFICIENT            | ±0.03%/°C (0 ~ 50°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |                |              |
|                          | VIBRATION                    | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |                |              |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS             | UL508, TUV EN60950 Approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                |              |
|                          | WITHSTAND VOLTAGE            | I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                |              |
|                          | ISOLATION RESISTANCE         | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                |              |
|                          | EMI CONDUCTION & RADIATION   | Compliance to EN55011, EN55022 (CISPR22) Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                |              |
|                          | HARMONIC CURRENT             | Compliance to EN61000-3-2, -3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |                |              |
| OTHERS                   | EMS IMMUNITY                 | Compliance to EN61000-4-2,3,4,5,6,8, ENV50204, EN55024, EN61000-6-2 (EN50082-2) Heavy industry level, criteria                                                                                                                                                                                                                                                                                                                                                                                                                   |              |                |              |
|                          | MTBF                         | 364.6K hrs min. MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |                |              |
|                          | DIMENSION                    | 93*78*67mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |                |              |
|                          | PACKING                      | 0.31Kg; 48pcs/14.8Kg/1.3CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |                |              |
| 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 0.1uf & 4.7uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. |              |                |              |

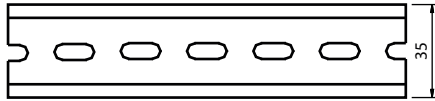
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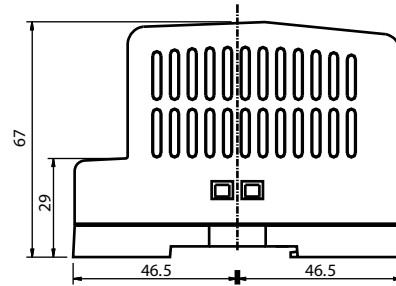
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## Mechanical Specification

Case No. 918A Unit:mm

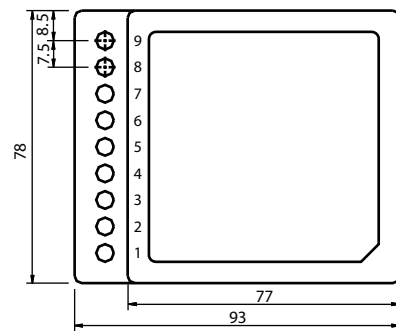


Install DIN rail TS 35/7.5 or TS 35/15



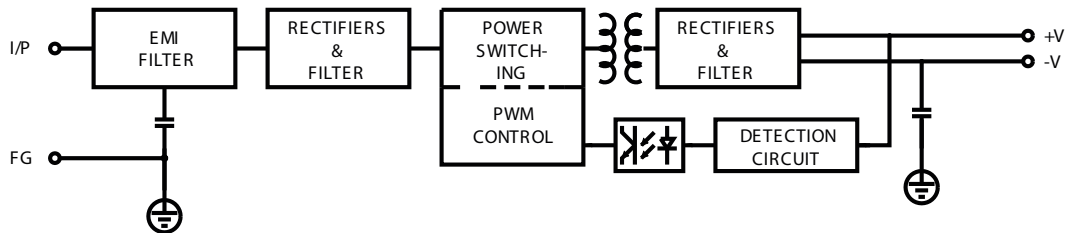
Terminal Pin. No Assignment

| Pin No. | Assignment   | Pin No. | Assignment   |
|---------|--------------|---------|--------------|
| 1       | AC/L         | 6,7     | DC OUTPUT +V |
| 2       | AC/N         | 8       | LED          |
| 3       | FG ⊕         | 9       | +V ADJ.      |
| 4,5     | DC OUTPUT -V |         |              |

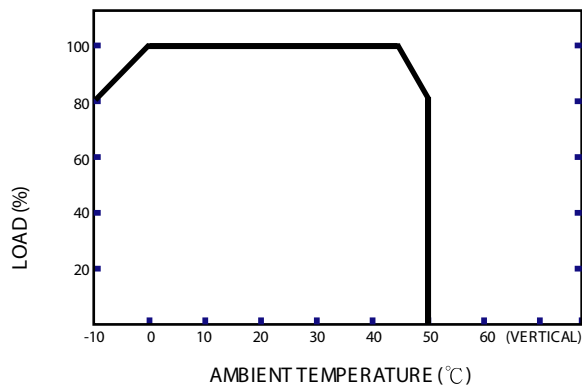


## Block Diagram

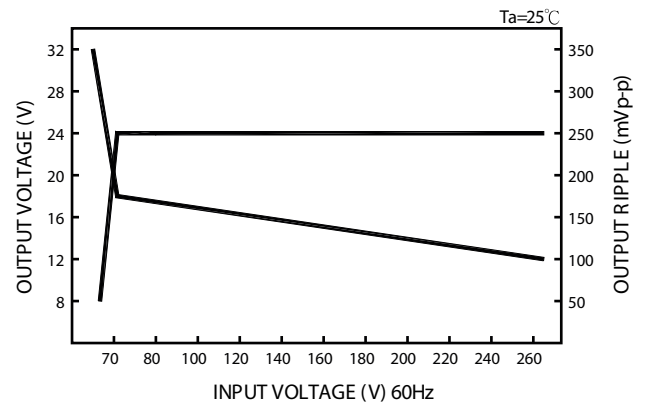
fosc : 100KHz



## Output Derating



## Static Characteristics (24V)



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