

AchieVe Installation Instructions for PSA-12-30 Power Supply



READ INSTRUCTIONS BEFORE INSTALLING OR OPERATING THIS DEVICE. KEEP FOR FUTURE REFERENCE.

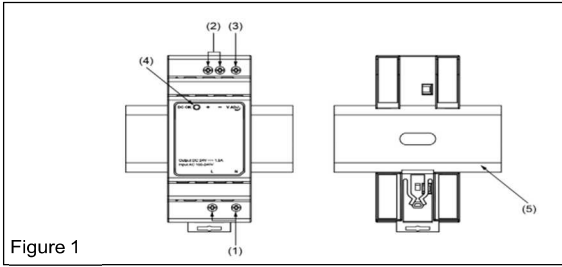


Figure 1

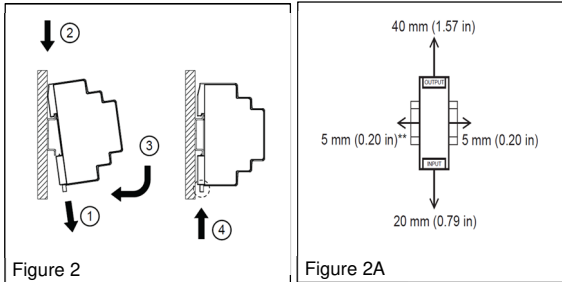


Figure 2

Figure 2A

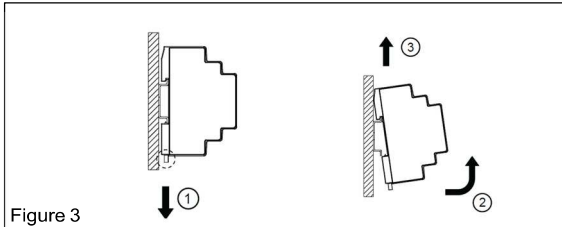


Figure 3

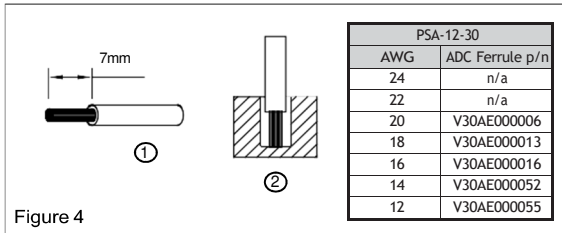


Figure 4

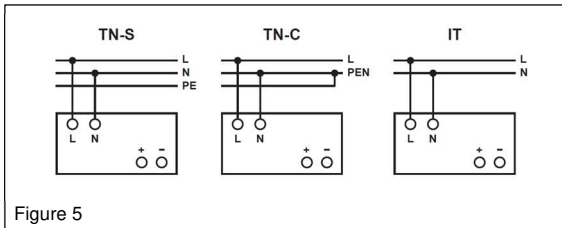


Figure 5

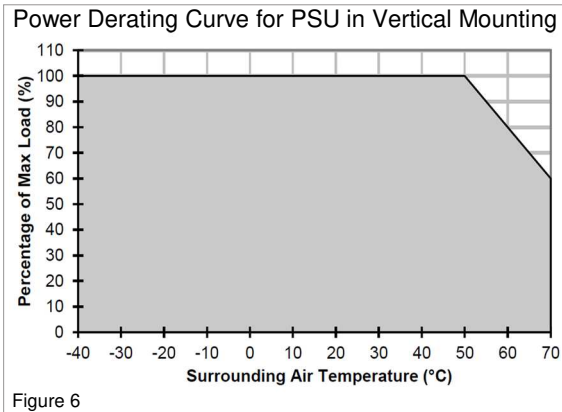


Figure 6

1. Safety instructions

- Switch main power off before connecting or disconnecting the device. Risk of explosion!
- To ensure sufficient convection cooling, maintain a clearance of 40 mm [1.57 in] above, 20 mm [0.79 in] below, and a lateral distance of 5 mm [0.20 in] from other units. See Fig. 2A.
- Note that the enclosure of the device can become very hot depending on the ambient temperature and load of the power supply. Risk of burns!
- The main power must be turned off before connecting or disconnecting wires to the terminals!
- Do not introduce any objects into the unit!
- Dangerous voltage present for at least 5 minutes after disconnecting all sources of power.
- The power supplies are built in units and must be installed in a cabinet or room (condensation free environment and indoor location) that is relatively free of conductive contaminants.
- **CAUTION:** "For use in a controlled environment".

2. Device description (Fig. 1)

- (1) Input terminal block connector
- (2) Output terminal block connector
- (3) DC voltage adjustment potentiometer
- (4) DC OK control LED (green)
- (5) Universal mounting rail system

3. Mounting (Fig. 2)

The power supply unit can be mounted on 35mm DIN rail in accordance with EN60715. The device must be installed with input terminal block at the bottom.

1. Each device is delivered ready to install. Tilt the unit slightly upwards and put it onto the DIN rail.
2. Push downwards until stopped.
3. Press against the bottom front side for locking.
4. Tug on the unit slightly to ensure that it is secured.

4. Dismounting (Fig. 3)

To uninstall, pull or slide down the latch as shown in Fig. 3. Then, slide the power supply unit (PSU) up, release the latch and pull out the PSU from the rail.

5. Connection

The terminal block connectors allow easy and fast wiring.

You can use flexible (stranded wire) or solid wire size 24-12 AWG. Torque to 0.392 N·m (3.5 lb in). To secure reliable and shock proof connections, the stripping length should be 7mm [0.28 in] (see Fig. 4 (1)). Please ensure that wires are fully inserted into the connecting terminals as shown in Fig. 4 (2).

In accordance to EN 62368 / UL 62368, flexible wires require ferrules.

Use appropriate copper wire that is designed to sustain voltage of 300V and operating temperature of at least 105°C (221°F) or more to fulfill UL requirements.

5.1. Input connection (Fig. 1 (1), Fig. 5)

Use L and N connections of input terminal connector (see Fig. 1 (1)) to establish the 100-240 VAC connection. The unit is protected with internal fuse (not replaceable) at L pin and it has been tested and approved on 20A (UL) and 16A (IEC) branch circuits without additional protection device.



The internal fuse must not be replaced by the user.
In case of internal defect, return the unit for inspection to the manufacturer.

5.2. Output connection (Fig. 1 (2))

Use the "+" and "-" screw connections to establish the 12 VDC connection. The output provides 12 VDC. The green LED DC OK displays correct function of the output (Fig. 1 (3)). The device has a short circuit and overload protection and an over voltage protection limited to < 18 VDC.

5.3. Output characteristic curve




The device functions normal under operating line and load conditions. In the event of a short circuit or over load the output voltage and current collapses ($I_{O/L}$ or $I_{S/C}$ is $> I_{Surge}$ (150%)). The secondary voltage is reduced and cycles on and off until short circuit or overload on the secondary side has been removed.

5.4. Thermal behavior (Fig. 6)

In the case of ambient temperatures above 50°C [122°F], the output capacity has to be reduced by 2.0% per degree Celsius increase in temperature. If the output capacity is not reduced when $T_{Amb} > 50°C$ [122°F] device will switch into thermal protection by switching off i.e. the output voltage will go into latch-off mode until the component temperature cools down and the AC power is recycled.

FOR TECHNICAL ASSISTANCE CALL 770-844-4200

Technical Data For PSA-12-30

Input (AC)	
Nominal input voltage / frequency	100-240 VAC
Voltage range	85-264 VAC
Frequency	47-63 Hz
DC input voltage range ¹	N/A
Nominal current	< 0.7 A @ 115 VAC, < 0.5 A @ 230 VAC
Inrush current limitation (+25°C, cold start)	40 A typ. @ 230 VAC
Mains buffering at nominal load (typ.)	14 ms typ. @ 115 VAC & 70 ms typ. 230 VAC (100% load)
Turn-on time	300 ms typ. @ 115 VAC & 230 VAC
Internal fuse	T3.15A / 250 V
Leakage current	< 0.25 mA @ 240 VAC
Output (DC)	
Nominal output voltage UN	12 VDC ± 1%
Nominal current	2 A
Derating	> 50°C de-rate power by 2% / °C
Startup with capacitive loads	8,000 µF max.
Max. power dissipation: (0% load)	0.1 W typ. @ 115 VAC & 230 VAC
Efficiency	86.5% typ. @ 115 VAC, 87.0% typ. @ 230 VAC
Residual ripple/ peak switching (20 MHz) (at nominal values)	< 120 mVpp @ 0°C to +70°C, < 360 mVpp @ -30°C to 0°C
General Data	
Type of housing	Plastic
Signals	Green LED DC OK
MTBF	> 700,000 hrs I/P: 115 VAC & 230 VAC, O/P: 100% load, Ta: 25°C
Dimensions (L x W x H)	87.5 x 35.0 x 55.0 mm (3.44 x 1.38 x 2.17 inch)
Weight	0.13 kg (0.29 lb)
Connection method	Input & output terminal block connector: Screw connection
Wire size / torque	I/P/O/P: AWG 24-12 / < 4 Kgf.cm. (3.5 lbf.in)
Stripping length	7mm [0.28 in]
Ambient operating temperature	-40°C to +70°C
Storage temperature	-40°C to +85°C
Humidity at +25°C, no condensation	5 to 95% RH
Shock (Non-operating)	IEC 60068-2-27, Half Sine Wave: 50 G for duration of 11 ms; 3 times per direction
Vibration (operating)	IEC 60068-2-6, Sine Wave: 10 Hz to 500 Hz @ 2 G; 10 min per cycle, 60 min for X, Y, Z direction
Pollution degree	2
Altitude (operating)	0 to 5,000 Meters (0 to 16,400 ft.)
Certification and Standards	
Electrical safety (of information technology equipment)	UL/C-UL recognized to UL62368-1 and UL 61010-1/-2-201 CSA C22.2 No. 62368-1 (File no. E197592) CB scheme to IEC 62368-1, IEC/EN/BS 61010-1/-2-201, IEC 60335-1, IEC/EN/BS 61558-1/-2-16
Industrial control equipment	IEC 61010-2-201
Class 2 power supply	UL/cUL recognized: UL 62368-1 and CSA C22.2 No. 62368-1 (File no. E508040)
CE	In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU
ITE	EN55032, EN61000-3-2, EN61000-3-3
Limitation of mains harmonic currents	IEC/EN 61000-3-2
RoHS	Yes
   	
Safety and Protection	
Current limitation at short-circuits approx.	I _{surge} = 150 % of P _{omax} typically
Surge voltage protection against internal surge voltages	Yes
Isolation voltage: Input/output	4.0 kVAC
Protection degree	IP20
Safety class	Class II (No PE connection is required)