



**INSTALLATION  
INSTRUCTIONS  
&  
USER MANUAL  
AT87 SERIES**

AT87001-AT87005

AT87012

AT87024

AT87120

1-in-1, 2-in-1, and 3-in-1

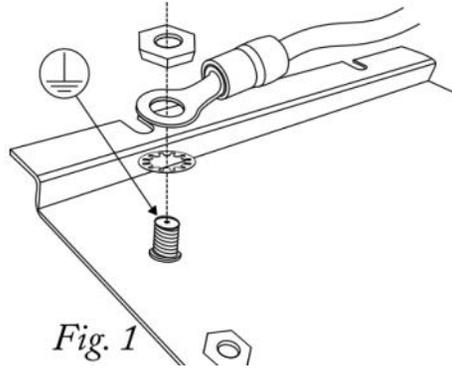
Power, A/V Coax and PTZ MODULES

CCTV PROTECTION SYSTEM

**Adhering to these instructions guarantees maximum performance of this Protection Device.**

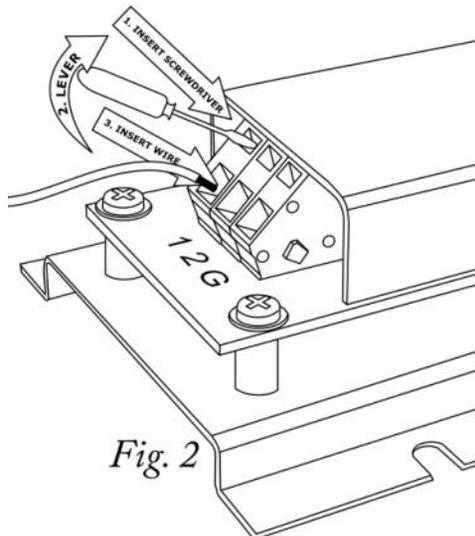
**IMPORTANT SAFETY INSTRUCTIONS CAUTION:**

1. Never install CCTV wiring during a lightning storm.
2. This product is intended for INDOOR USE ONLY.
3. **Risk of Electric Shock** - Protector is not to be used if physically damaged.



2.2 Connect the incoming line to the AT87 module, using either the grey/green terminal blocks (see section 2.3) or the 3.5mm socket (PS models only). Run cable from the AT87 module, using either orange/green terminal blocks or male 3.5mm plug to the equipment meant to be protected. See *Wiring Guide* for more information.

2.3 **AT87 MODULES WITH CAGE CLAMP TERMINALS:** The cage clamp mechanism used on these modules offers THE MOST SECURE wire connection available. The quality of connection is significantly better than standard screw terminals.



**1. INSTALLATION**

1.1 Read and understand all instructions.

1.2 The 1-in-1 AT87 modules can be installed individually, grounding the unit using the ground stud on the underside of the mounting plate. Multiple AT87 modules can also be installed on 2-in-1 and 3-in-1 mounting plates, all sharing a common ground through the grounding stud, suitable for surface mount installations. In planning an installation, location of the AT87 unit in close proximity to the correct ground point is essential for protection performance. The correct ground point is defined as the ground reference used by the system to be protected. In most applications, this is AC power ground. MINIMIZE the distance between the AT87 unit and the identified ground point as much as possible.

**2. STAND-ALONE POWER MODULE INSTALLATION**

2.1 To install 1-in-1 AT87 12V 24V or 120V modules as stand-alone units, attach a minimum #14 AWG ground wire with the supplied nut, washer, and ring terminal to the ground stud on the underside of the mounting plate (see figure 1). The metallic ground stud is the unit's Earth connection.

2.3.1 Insert a small screwdriver into the upper hole of the terminal block (see figure 2).

2.3.2 Push screwdriver in and lever away from the lower hole with moderate force. This will visibly open the cage clamp in the lower hole.

2.3.3 Insert wire stripped at 0.250" into the lower hole. Once wire is positioned correctly, remove screwdriver from the upper hole. The wire is now secure.

**3. AT87 2-IN-1 AND 3-IN-1 INSTALLATION**

3.1 Multiple AT87 modules can be combined onto a single mounting plate, all sharing a common source of ground for proper surge protection. Attach a minimum #10 AWG ground wire with the supplied nut, washer, and ring terminal to the ground stud on the underside of the mounting plate (see figure 1). The metallic ground stud is the unit's Earth connection.

**3.2 POWER MODULE INSTALLATION**

Connect the incoming line to the AT87 module, using either the grey/green terminal blocks (see section 2.3) or the 3.5mm socket (PS models only). Run cable from the AT87 module, using either orange/green terminal blocks or male 3.5mm plug to the equipment meant to be protected. See *Wiring Guide* for more information.

**3.3 COAX MODULE INSTALLATION**

Connect the incoming line to the port marked "LINE" on the AT87 coax module. Run cable from the AT87 port marked "EQUIP" to the equipment meant to be protected. See *Wiring Guide* for more information.

**3.4 PTZ MODULE INSTALLATION**

Connect the incoming line to the side marked "UNPROTECTED" on the AT87 PTZ module. Run cable from the AT87 port marked "PROTECTED" to the equipment meant to be protected. For wire insertion instructions, see section 2.3 "AT87 MODULES WITH CAGE CLAMP TERMINALS." See *Wiring Guide* for more information.

3.5 **CAUTION:** The current-limiting features of CCTV surge protectors could be rendered inoperable if improperly installed or not properly grounded

**GROUNDING**

The mounting plate must be connected to the ground reference used by the system being protected. In a headend environment, this grounding point may be the ground bar in the AC power panel. Ground leads longer than 12" are not suggested.

**INDEPENDENT GROUNDS**

Surge protection devices must not be connected to independently derived grounds.

**WARNING**

The grounding lead must be as short as is practically possible. Minimize length to the inch. The ground wire should be a minimum #14 AWG for single-module installations and #10 AWG for multi-module installations.

**4. WIRING GUIDE**

**4.1 ALL MODULES:**

Ensure all modules are oriented with protected ends toward the equipment and unprotected ends towards the incoming line. See *ground wire installation instructions* in section 2.1 for 1-in-1 models and 3.1 for 2-in-1 and 3-in-1 models.

**4.2 POWER MODULES:**

AT87 power protection modules use colored terminal blocks to determine ground and protected/unprotected ends. Connect field cables to the end with unprotected GREY terminal blocks. Connect cables from the equipment to be protected to the end with ORANGE terminal blocks. Connect the ground wires to the GREEN terminal blocks on their respective ends. For AT78120 modules, use "1" for "LINE," "2" for "NEUTRAL," and "G" for "Ground" on both incoming and outgoing wires. For AT87012 and AT87024 modules, use "1" for negative (-), "2" for positive (+), and "G" for "Ground" on both incoming and outgoing wires. (see figure 3 on reverse side).

**4.3 COAX MODULES:**

AT87 coax modules are labeled with one end marked as “EQUIP” and the other end marked as “LINE.” Connect cables from the field to the unprotected end marked “LINE.” Connect cables from the equipment to be protected to the “EQUIP” end (see figure 4).

**4.4 PTZ CONTROL MODULES:**

AT87 Pan-Tilt-Zoom control signal modules are labeled with one end “PROTECTED” and the other end labeled “UNPROTECTED.” Connect cables from the field to the end labeled “UNPROTECTED.” Connect cables from equipment intended to be protected to the “PROTECTED” end (see figure 5).

**4.5 PLUG/SOCKET POWER MODULES:**

Plug and Socket models of the AT87 power modules are available in 12VAC/DC and 24VAC/DC. Connect field cables to the female socket end. Connect the male plug end to the equipment meant to be protected (see figure 6).

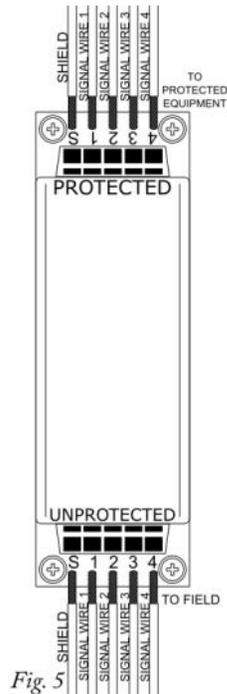


Fig. 5

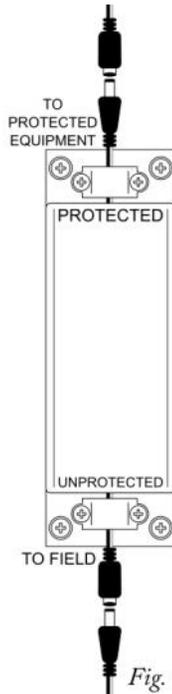


Fig. 6

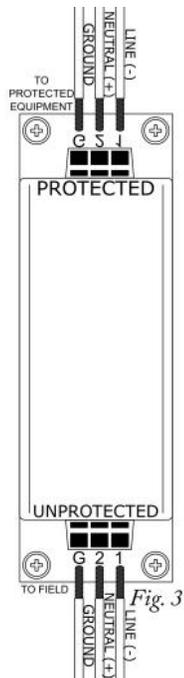


Fig. 3

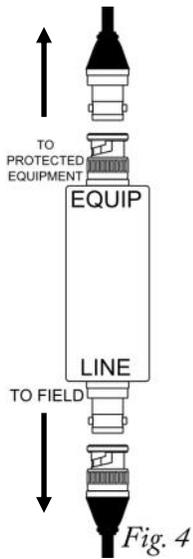


Fig. 4

**SAVE THESE INSTRUCTIONS**

A copy of these instructions can be located online at:

[www.atsurge.com/cctv/support.html](http://www.atsurge.com/cctv/support.html)

Or scan the QR Code below for a direct link.



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