

ACSP2004-IG-GTF Surge Suppressor with Ground Transient Filter (GTF)

Features & Benefits

- All-in-one surge suppressor & ground transient filter.
- ETL Listed 1449-2 Adjunct.
- ANSI C62.41 Compliant.
- GSA Grade **A** - Mode **1** - Class **1** Endurance tested.
- Protects Line to Neutral - No ground wire contamination.
- Defeats surges up to 72,000A using Lowell's TCR (*Triple Clamping Redundancy™*) technology.
- Attenuates damaging high frequency transients.
- Includes (2) duplex outlets (standard or isolated ground).
- Outlets on patented 90° rotating plates for front or side access.
- Easy rear rack installation.

Description

Surge Suppressor / Ground Transient Filter Assembly

Model ACSP2004-IG-GTF is a compact, all-in-one device that features Lowell's UL Listed 20A surge suppressor Model ACSP2004IG with a built-in ground transient filter (GTF). The ETL listed assembly uses Lowell's exclusive GTF filtering technology to eliminate potentially damaging electromagnetic transients / noise on the ground wire. The surge suppressor with GTF is ideal for protecting sensitive equipment such as that used in telecommunications, security, fire, audio/visual, broadcast, sound recording and reinforcement, DSP, data storage, test & monitoring, process control, as well as business/retail PC's and point of sale terminals.

The surge suppressor/ground filter assembly is designed for rear rack or wall installation. The compact 7"W x 8"H x 3"D device features one GTF filter and two 20A isolated ground duplex outlets on rotating 90° plates. Innovative plates (US Patent# D535178S) allow for versatile front or side access to outlets which can be a real benefit in crowded rack environments. Two blank 90° plates are also provided for clean hardware applications. Units include knockouts on all sides and LED status indicators on the front.

Surge Suppressor

The 20A surge suppressor in assembly Model ACSP2004-IG-GTF is UL Listed (1449-2) and endurance tested to meet government GSA Grade **A** - Mode **1** - Class **1** requirements for surge suppressors. It meets ANSI C62.41 and protect Line to Neutral without ground wire contamination. It is ideal for protecting sensitive equipment from transient voltages, spikes and surges. Far exceeding UL requirements, these suppressors defeat surges up to 72,000 amps using Lowell's *Triple Clamping Redundancy™* (TCR) technology and have a response time of less than 5 nanoseconds. Additionally, the surge suppressor ensures reliable performance of connected analog or digital equipment through Transient Noise Reduction (filtering) of 25dB@100kHz, 50dB@1MHz.

Ground Transient Filter (GTF)

Lowell's 20A Ground Transient Filter (GTF) in assembly Model ACSP2004-IG-GTF is a patented and ETL recognized technology. The GTF installs in series with the ground line of electrical circuits to attenuate high frequency transients without impeding 60Hz fault current (see Dia. 2 on page 2). It introduces less than 0.1 ohm at 60Hz to the ground circuit thereby assuring proper operation of any and all overcurrent protection devices (circuit breakers, fuses, etc.).

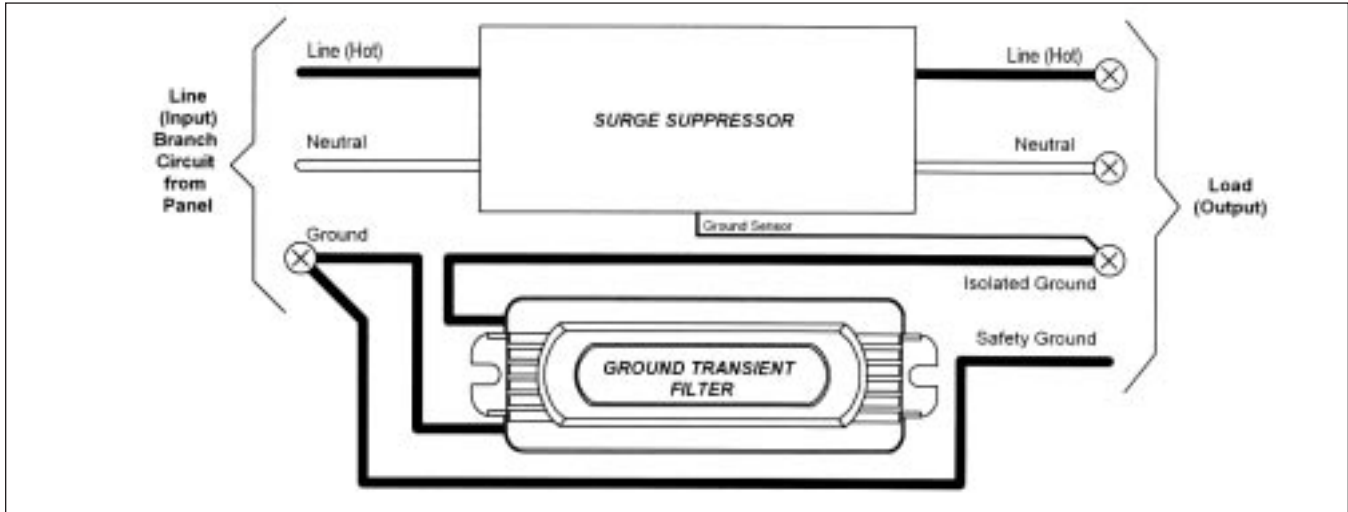
At higher frequencies however, where the most damaging transients exist; the GTF provides significant attenuation. At 1MHz, for example, the GTF attenuates ground noise by 25dB which can be the difference between a sensitive system functioning continuously or having an interruption or 'reset/reboot' occurrence. As illustrated in Dia. 2, Lowell's ACSP2004-IG-GTF Surge Suppressor with Ground Transient Filter (GTF) provides a cost effective and easy-to-install 20A *CleanPowerSolution* for sensitive equipment of all types.



ACSP2004-IG-GTF

20A Single-circuit Surge Suppressor with Ground Transient Filter

POWER



ACSP2004-IG-GTF Block Diagram

AC Rackmount 19" EIA

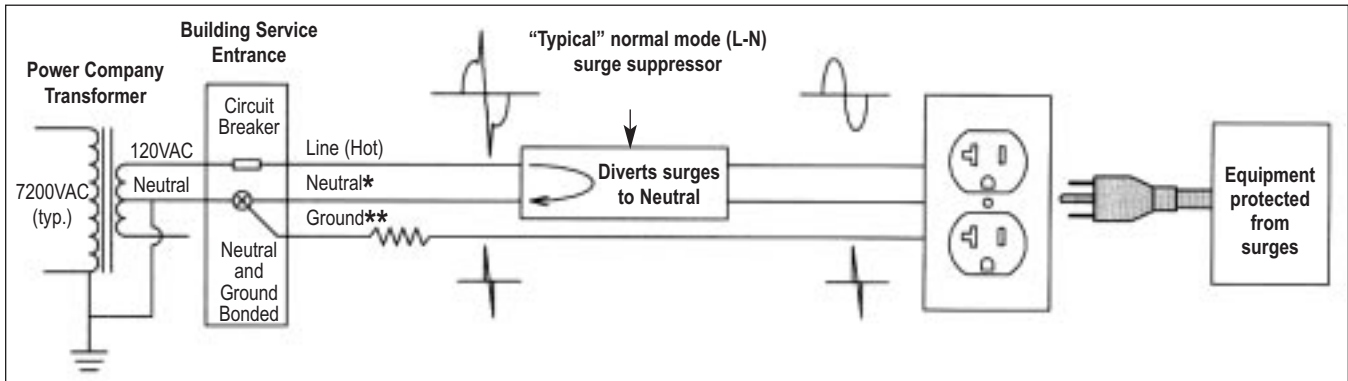
AC Strips Rackmount Vertical

AC Loadcenters (sequenced)

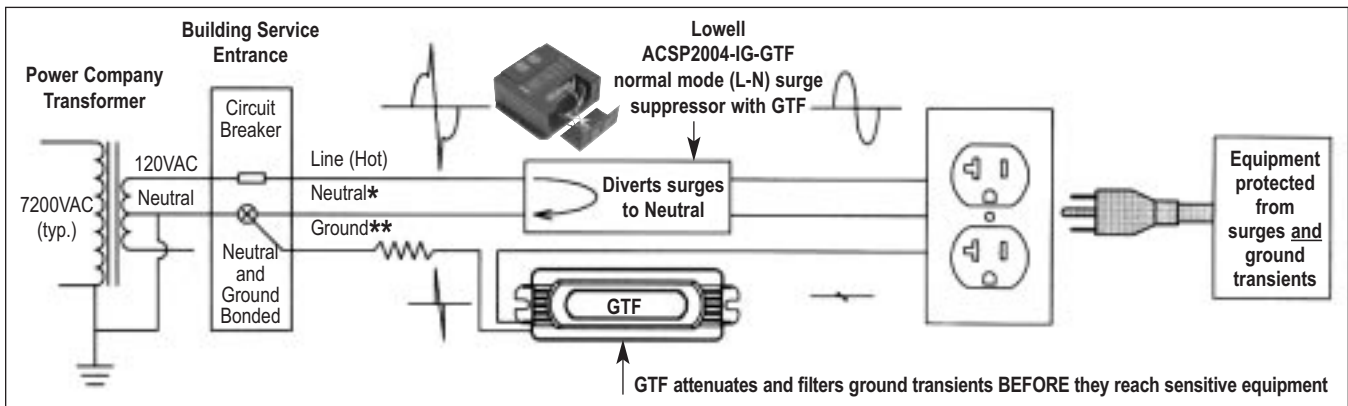


AC Remotely Controlled

Low Voltage Sequencers Accessories



Dia. 1: Power Flow - Normal Mode (L-N) Surge Suppressor WITHOUT GTF - (Typical)



Dia. 2: Power Flow - Normal Mode (L-N) Surge Suppressor WITH GTF (Lowell ACSP2004-IG-GTF)

GTF technology attenuates high frequency transients without impeding 60Hz fault current.

- * Neutral is a dedicated "current carrying, grounded conductor". It is bonded directly to the center tap of the power company transformer which is bonded to the grounded side of the supply line.
- ** Ground does not carry current except during a 'fault' condition. Ground connections inside a building may be made through metal conduit, junction boxes, building structural steel, water pipes, etc. They are NOT always a direct connection to the service entrance, therefore the impedance of the ground can be much higher than the neutral. Transients CAN be induced on ground circuits and CAN find their way into sensitive equipment.

Single Circuit Surge



ACSP2004-IG-GTF

20A Single-circuit Surge Suppressor with Ground Transient Filter

Specifications

Surge Suppressor

Operating Voltage	0-130 VAC nominal
Operating Current	20A hardwired, 16A w/receptacles(s) per NEC 210.21(B)(2), 210.23(A)(1).
Maximum Surge Current	72,000A (exceeds UL1449-2 6000V, 3000A).
Initial Clamping Voltage	205V, UL rating 330V
Endurance	IEEE C62.41-1991, B3 (C1), Pulses (lifetime): 1kv≥1,000,000; 3kv≥100,000; 6kv≥5000
Transient Noise Reduction	25dB@100kHz, 50dB@1MHz
Response Time	Less than 5 nanoseconds
Protection Mode	Line to neutral, zero ground leakage
UL1449-2 Adjunct Results	1000 surges, 6000 volts, 3000A, C1 and B3 waveforms (IEEE C62.41), No failures
Federal GSA specs (1996)	Grade A, Class 1, Mode 1
Diagnostic LED's	Top (Green): On = Ground verified, Center (Green): On = Protection active, Bottom (Red): On = Protection reduced*.
Applicable Standards	IEEE standard 587-80 A & B, IEEE standard C62.41-1991, IEC 1000-4-5-1995 (IEC 801-5).
Safety Agency Approvals	Assembly is ETL Listed to UL1449 2nd Edition; rev 2/2005 (US and Canada).

Ground Transient Filter (GTF)

Operating Voltage	125 VAC
Operating Current	20A
Frequency	60Hz
Impedance@60Hz	0.06 Ohms
Applicable Standards	Electromagnetic Interference filters (ANSI/UL 1283 - 4th Edition, 6/1998; rev 2/2004), and (CSA C22.2 No. 8 - M1986).

Mechanical

Dimensions	7"W x 8"H x 3"D
Weight	7 lbs.
Input Connections	Hardwired pigtail leads, 12 gauge minimum.
Output Connections	(2) Duplex receptacles mounted on 90° rotatable plates or hardwire pigtail leads (2) blank 90° cover plates are included for hardwire use.
Chassis	Steel with black powder epoxy paint finish.
Mounting Options	Compact for rear rack installation to mounting rail supports or solid surface using flanges.

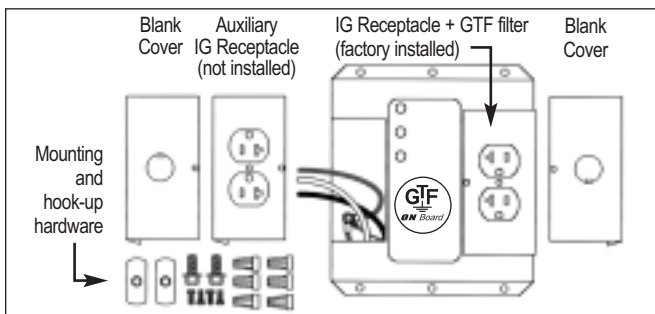
*Lowell's Triple Clamping Redundancy is exactly that - triple clamping for triple protection. This means that if one section of the suppressor has 'reduced protection', there are two additional sections available to safeguard equipment. Device is endurance tested and verified: Grade A, Class 1, Mode 1.

A & E Specifications

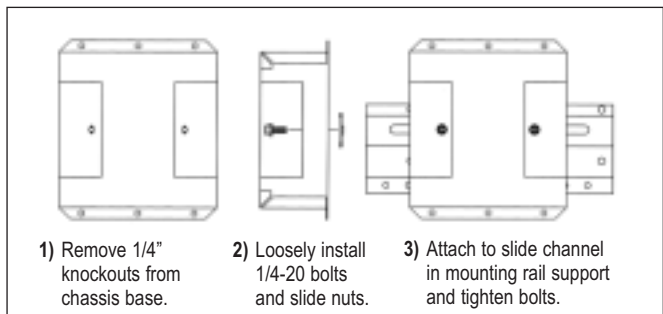
The 20A single circuit surge protection device shall be Lowell Model ACSP2004IG-GTF with ground transient filter and (2) duplex isolated ground outlets. The surge suppressor/ground filter assembly shall be ETL listed (1449-2) and endurance tested to meet government GSA Grade A - Mode 1 - Class 1 requirements for surge suppressors. It shall meet ANSI C62.41 and protect line to neutral without ground wire contamination. It shall be capable of protecting audio, video, broadcast, computer, DSP, sound recording and reinforcement equipment from transient voltages, spikes and surges. It shall include Lowell's Triple Clamping Redundancy™ (TCR) technology to defeat surges up to 72,000 amps and have a response time of less than 5 nanoseconds. It shall include Transient Noise Reduction (filtering) of 25dB@100kHz, 50dB@1MHz.

Additionally, it shall include Lowell's patented GTF ground filter technology to attenuate high frequency transients. The filter shall be compliant with the Standards for Electromagnetic Interference filters (ANSI/UL 1283 - 4th Edition, 6/1998; rev 2/2004) and Electromagnetic Interference filters (CSA C22.2 No. 8 - M1986). The filter shall have a current rating of 20A and impedance of 0.06 ohms at 60Hz.

The assembly shall rack mount and include (2) duplex isolated ground outlets mounted on 90° plates that can be rotated for front or side access plus blank plates for hardwire applications. The front shall include three LED's for visual ground verification and diagnostics.



ACSP2004-IG-GTF Carton Contents



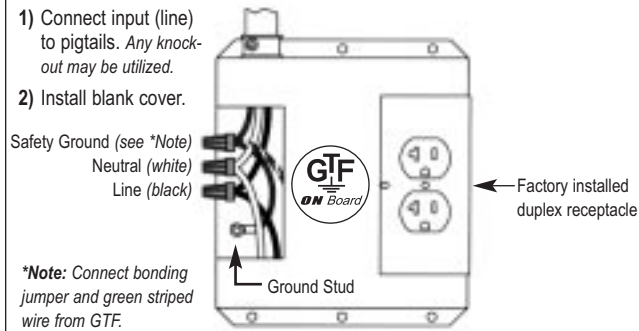
ACSP2004-IG-GTF Installation to Rack Mounting Rail Supports



ACSP2004-IG-GTF

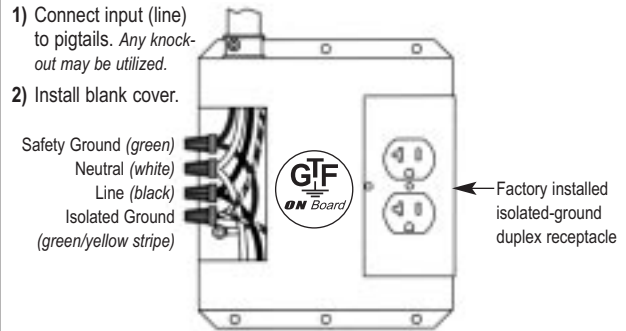
20A Single-circuit Surge Suppressor with Ground Transient Filter

Typical Wiring ACSP2004IG-GTF (with safety ground only)

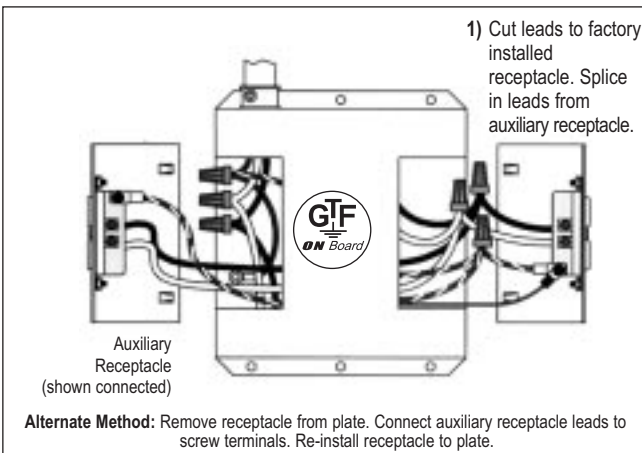


ACSP2004-IG-GTF wiring using only factory-installed receptacle

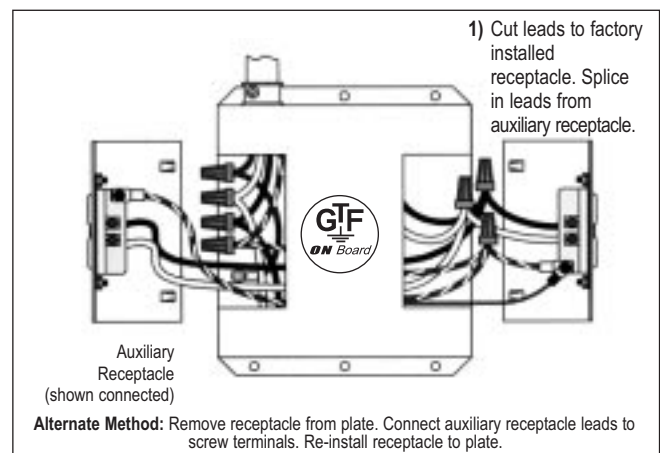
Typical Wiring ACSP2004IG-GTF (with independent isolated ground)



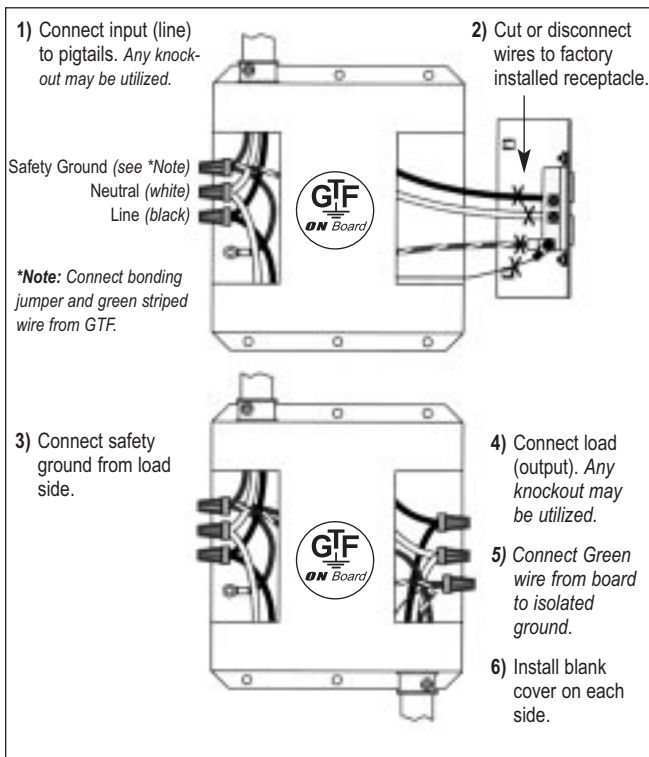
ACSP2004-IG-GTF wiring using only factory-installed IG receptacle



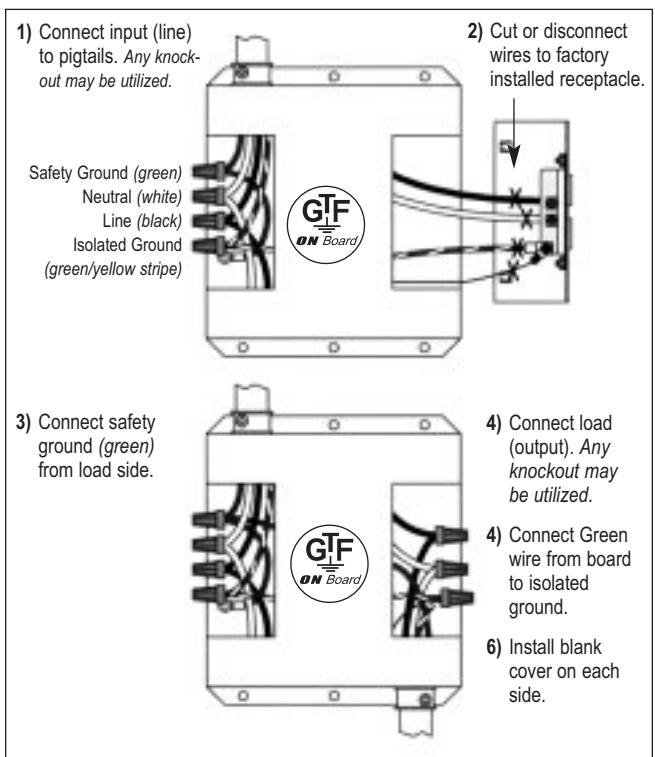
ACSP2004-IG-GTF wiring using factory-installed receptacle + aux. receptacle



ACSP2004-IG-GTF wiring using factory-installed IG receptacle + aux IG receptacle



ACSP2004-IG-GTF wiring for permanent (hardwire) installation (no receptacles)



ACSP2004-IG-GTF wiring for permanent (hardwire) installation (no receptacles)