ACT COMMUNICATIONS™

*The First Name In **Power Quality***

PRODUCT CATALOG

222 N CENTER | BONHAM, TX 75418 | 903.583.8097 | ACT-COMMUNICATIONS.COM | SALES@ACT-COMMUNICATIONS.COM

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ACT COMMUNICATIONS™

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PRODUCT CATEGORIES

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ACT 423 CCTV and Security Camera Protector	DC/Tel	DC/Tel	DC/Tel
ACT 424 Coax Surge Arrestor		DC/Tel	DC/Tel
ACT SS65 DC Series Protection			DC/Tel

AC **AC Products** DC/Tel **DC & Telephone Products**

LETTER FROM THE PRESIDENT

With the past and upcoming economic challenges for manufacturing companies throughout the world, I am very excited and pleased to see that ACT has been able to maintain continued organic growth. I credit much of our success to the fact that we are an engineering-driven company and we strive to get things right the first time. This attitude flows through both management and our employees, and is reflected in the fact that our quality is unparalleled in this or any other industry. ACT has a commitment to purchasing components and designing and manufacturing all our products in the United States. By doing so, we feel we have gained a higher quality product and also gained an edge over our competitors.

I am excited for the future and look forward to the coming years with all our Customers and our new Sales Representatives throughout the country.

Regards,

Greg Glaser
President
www.**act-communications**.com

ACT COMMUNICATIONS™

ACT COMMUNICATIONS: KEY STAFF

ACT Communications, Inc. is a privately held company whose purpose is to develop, manufacture and sell only the highest quality of surge and filter products. We are proud of our corporate commitment and believe we have a real responsibility to ensure that our products are designed and made 100% in the USA.

ACT Communications Inc. employees are well trained in current manufacturing techniques, continuous improvement processes and work under a Quality Management System. Our key employees can be reached by calling our factory phone at (903) 583-8097.

GREG GLASER President | gregglaser@act-communications.com

With a Bachelor of Science degree in Information Systems Technologies and an Associate's degree in Fiber Optic Technologies, Greg has worked in Computer Systems and the telecommunications industry for the past 20 years. As ACT's president, he has continually pushed for innovative customer solutions using industry-recognized production processes and the most current technologies available. As a result of this leadership, ACT demands the highest quality in our manufacturing and fully tests every product before shipping. Not surprisingly, this has resulted in one the highest "out of box" success rates in our industry.

RON GLASER VP of Engineering / Sales | ronglaser@act-communications.com

Holding a Bachelor of Science degree in Electronic Engineering and a MBA in International Marketing, Ron has held multitude VP and senior manager positions in sales and marketing for power quality companies like ACT Communications, General Electric (GE Industrial), Current Technology, Joslyn Protection and Environmental Potential (EP). His engineering experience includes both product development and real field applications, and has driven the development of special solution products which includes being listed by name on six Power Quality and Telecom Surge Protection patents. His extensive experience also allows the ACT engineering team to quickly respond to customer demands with solid product solutions in a cost effective manner.

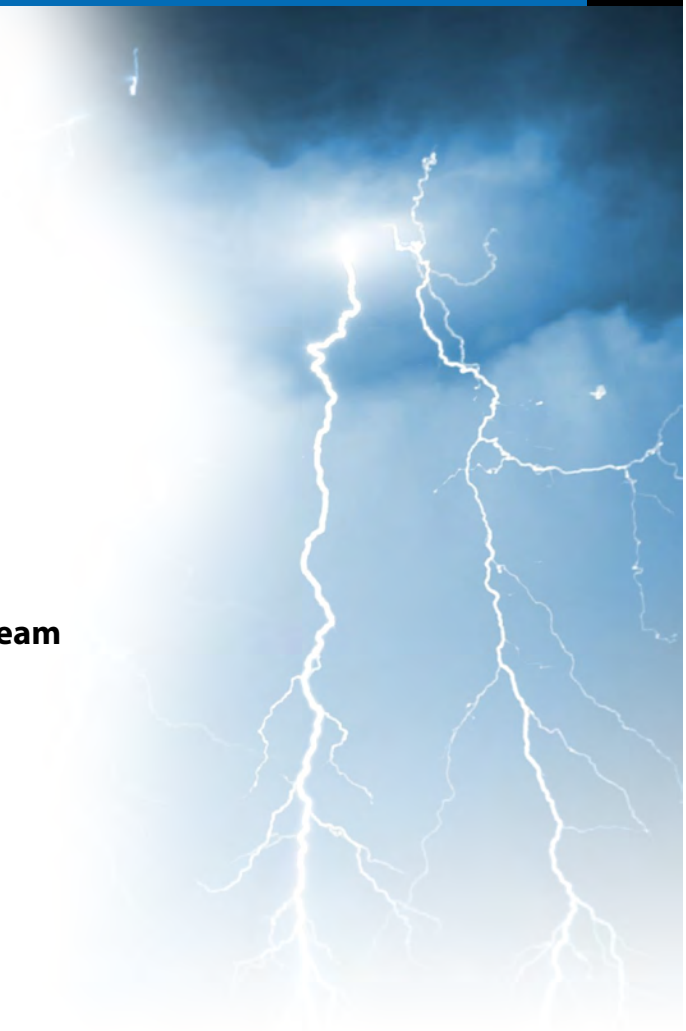
CODY VEST Asst. Operations Manager

Cody holds a Bachelor of Science degree in Business Management. His responsibilities include monitoring the progress of each order through our company, from order placement to shipping out the door in a timely manner. Cody works hard to make sure what you asked for is what arrives at your dock.

STACY GLASER Inside Sales Operator

Stacy is a key part of our Inside Sales Team and also our corporate secretary. She is usually the first voice you will meet at ACT Communications, and can be counted on for connecting you to the right person. She has worked with several other technical sales companies over the years and has been a part of the ACT Team since day one.

WHY YOU NEED SURGE PROTECTION



The Institute of Electrical and Electronics Engineers (IEEE) says a facility should be protected in stages.

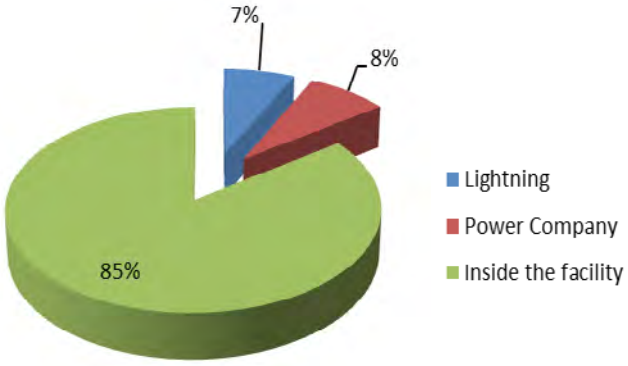
Facility Protection Strategy is all about risk aversion and answering the right questions about your facility:

- **What is the risk to our personnel?**
- **What is the risk of equipment damage?**
- **Is equipment installed on critical power?**
- **Any negative consequence to revenue stream if equipment fails?**
- **Are there any legal ramifications to equipment failure (i.e loss of lights or cameras)?**

Many times the risk to the operation greatly exceeds the cost of the damaged equipment. Make sure when a Return On Investment (ROI) model is done that total cost of equipment damage is realized. In most facilities the cost of proper protection is less than pennies on the dollar to the value of the failed equipment and operation being performed. An easy rule of thumb is to spend no more than 10% of the facility economic risk.

Sources of Transients and Surges

Lightning clearly damages millions of dollars' worth of equipment in a spectacular fashion every year; in reality it is not even the number one source of damage to a facility. Many studies have shown that lightning only accounted for 7% of all power quality events. Instead 85% of the measured power quality events actually had their source from inside the facility. Dirty power caused by switching power supplies found in computers, new lighting and VFD motors.



ACT COMMUNICATIONS™

SIX KEY PRODUCTS FOR SIX KEY LOCATIONS

A Strategic Protection Plan for Any Facility

1 **Capture the lightning strike**
Capture the lightning strike to a known and preferred attachment point using a purpose-designed air terminal system.

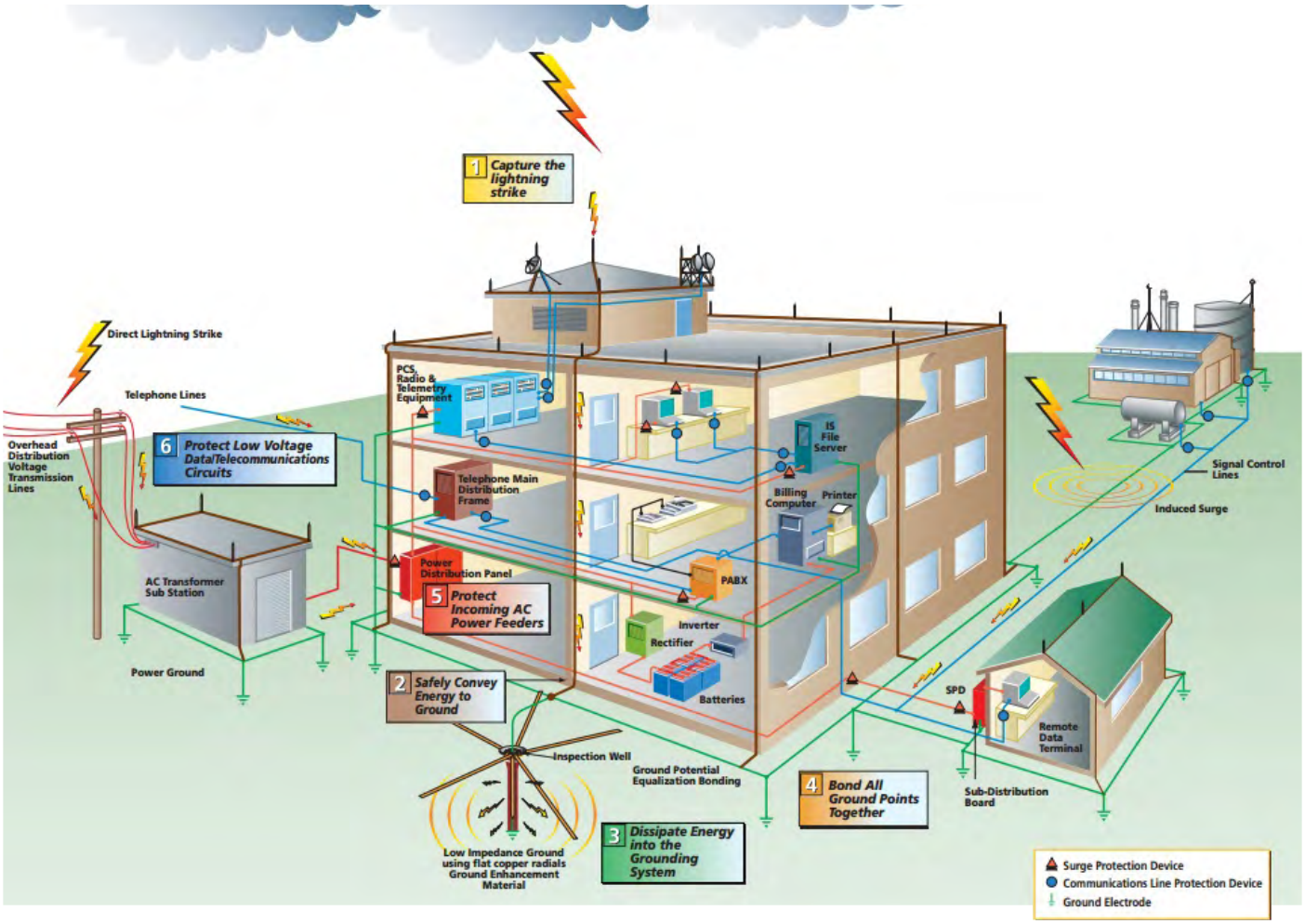
2 **Convey this energy to ground**
Conduct the energy to the ground via a purpose-designed downconductor.

3 **Dissipate the energy into the grounding system**
Dissipate the energy into a low-impedence grounding system.

4 **Bond all ground points together**
Bond all ground points to eliminate ground loops and create an equipotential plane.

5 **Protect incoming AC power feeders**
Protect equipment form surges and transients on incoming power lines to prevent equipment damage and costly operational downtime.

6 **Protect low-voltage data/telecommunications circuits**
Protect equipment from surges and transients on incoming telecomuunications and signal lines to prevent equipment damage and costly operational downtime.



SELECTING THE RIGHT SURGE PROTECTION

Surge protection should be selected by how much real risk is to be found at a specific location.

Where should surge protection be installed?

A primary surge protector should be considered whereever a metal based cable or wire enters or exits a facility, regardless of whether it's AC or DC power, telephone, or security and video.

How should a facility manager select the right SPD for a given location?

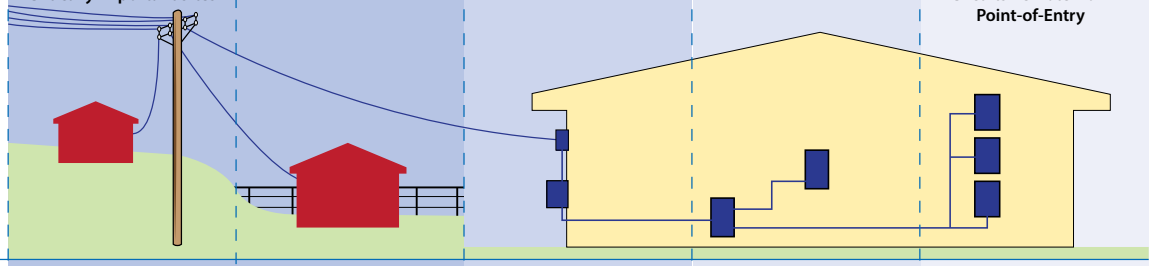
There are 5 general parameters that should be considered to ensure a Surge Protection Device (SPD) is robust enough to do the job for your facility.

1. The SPD selected should have a normal turn on voltage (suppression voltage) set for at least 20% higher than operating voltage. This prevents false operation of the protector.
2. For series devices like the ACT 450LT and any data protector like the SS64 or ACT 422 DLU protector, customers must ensure that the series rating of the load does not exceed the current rating of the SPD.
3. For series devices it is important that the product selected has the correct bandwidth to allow signal to pass with minimum loss. For example telephone or ethernet protector.
4. The connection and mounting method and most importantly the number of lines to be protected should be clearly understood before product is ordered.
5. The SPD surge rating should be appropriate for the intended location. The higher the risk the larger kA of protection should be selected.

ACT manufactures custom designed SPDs to properly protect your facility for any application:

RECOMMENDED SURGE RATINGS (8/20µs)

ANSI/IEEE C62.41			Cat C	Cat B	Cat A
IEC 61643 TEST CLASS	I		I, II	II	III
VDE CLASSIFICATION	A		B	C	D
EXPOSURE	Point-of-Entry Highly Exposed or Critically Important Sites	Point-of-Entry Exposed or Rural Sites	Point-of-Entry Inner City Sites	Sub Circuits or Near to Point-of-Entry	Distributed Circuits, Power Outlets, Circuits Remote from Point-of-Entry
HIGH MEDIUM LOW	100kA 65kA 65kA	70kA 40kA 40kA	40kA 20kA 15kA	20kA 20kA 5kA	10kA 5kA 3kA
MINIMUM LEVELS OF PROTECTION	240kA / 160kA per mode	160kA / 100kA per mode	100kA / 080kA per mode	080kA / 040kA per mode	040kA / 010kA per mode



RECOMMENDED PRODUCTS

ACT PRODUCT SERIES

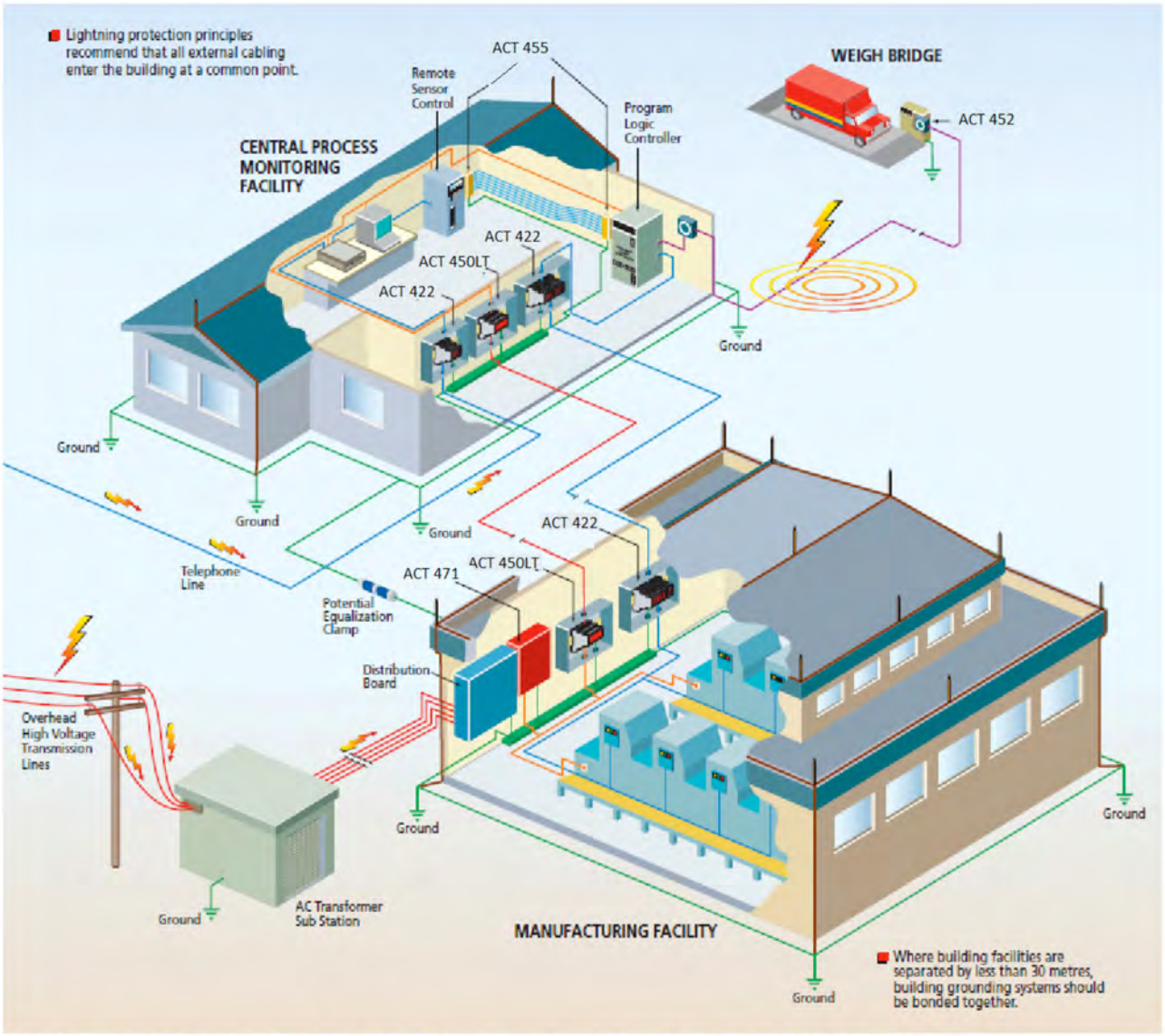
- ACT 471
- ACT 455
- ACT 471-SEL
- ACT 453
- ACT 452
- ACT 450 LT Series Connected
- ACT 450 DIN Protector
- ACT 422

Industrial Facilities Need a Coordinated Plan

Industrial facilities are at great risk to power quality events like transient surges because of the number of cables and conduit that leave a facility to other buildings and externally mounted equipement. A surge protector or line filter is only as good as the earth ground they are connected to. A facility planner must ensure that multi-ground points and differences in potential grounds do not exist. Normally a coordinated ground study is helpful to ensure there are not ground risks at large facilities.

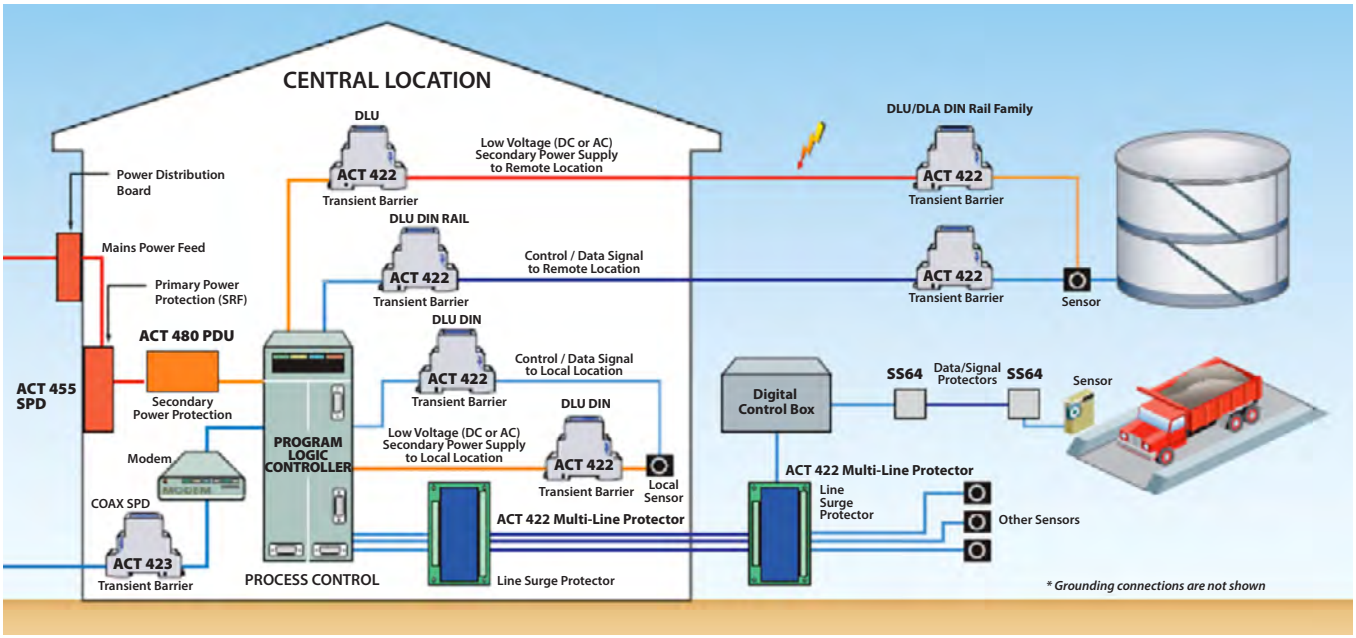
Typical Protection Products Specified

- **AC Power** – ACT 471, 455 and are perfect products for AC Power locations
- **POE Protection** – ACT 450 LT is a series AC or DC protector with filters
- **Telecom/Datacom** – ACT 422 is an ideal protector for any telecom, datacom and alarm type protection.



The Six Point Plan applied to a manufacturing facility. Surge and transient protection principles applied to a total facility rather than individual pieces of equipment.

INDUSTRIAL & COMMERCIAL FACILITIES

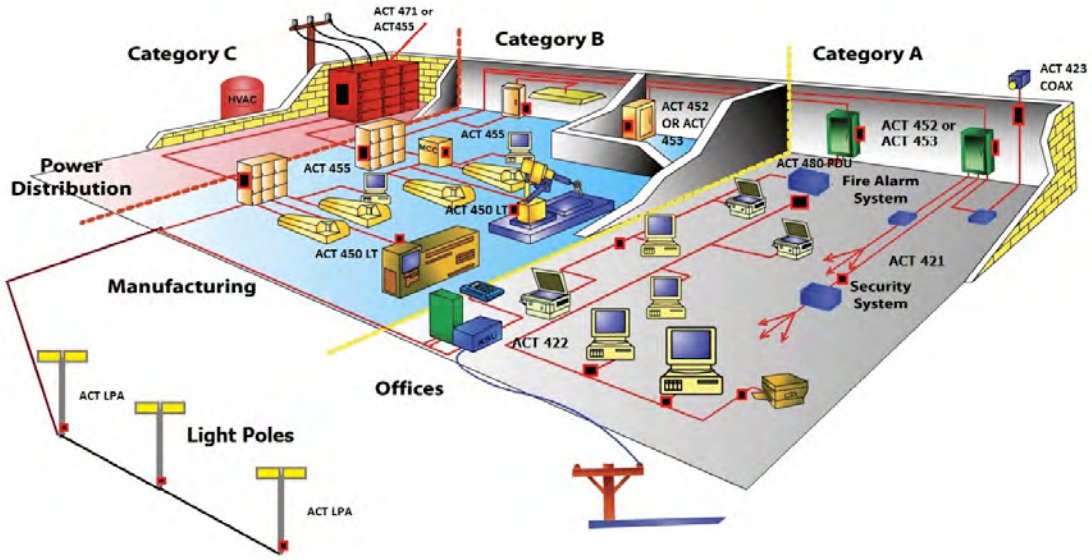


Commercial Facilities Need a Coordinated Plan

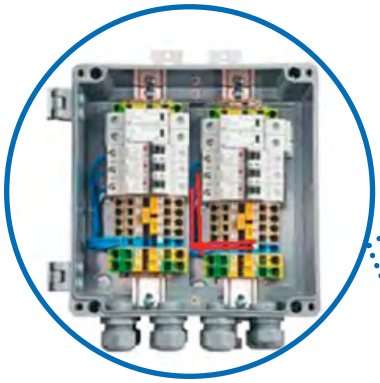
Commercial Facilities are at even greater risk to power quality events like transient surges and harmonics because of the number of highly sensitive electronic based devices. ACT Surge Protection devices in a fifeteen year study with a major big box store has shown a reduction in electrical lightning repairs by 70%, and also reducing HVAC service calls by over 35%.

Typical Protection Products Specified

- **AC Power** – ACT 471, 455 are perfect products for protecting incoming AC Power locations. The ACT 48X Power Distribution Unit not only distributes power in the racks but also provides POE protection.
- **POE Protection** – ACT 450LT is a series AC or DC protector with filters that protect point of equipment.
- **Telecom/Datacom** – ACT 422 is an ideal protector for any telecom, datacom and alarm type protection.



PROTECTED TELECOM CELL TOWER APPLICATION



ACT 490

48V Power Distribution Box

ACT 424

RF Coax Protectors

ACT 422

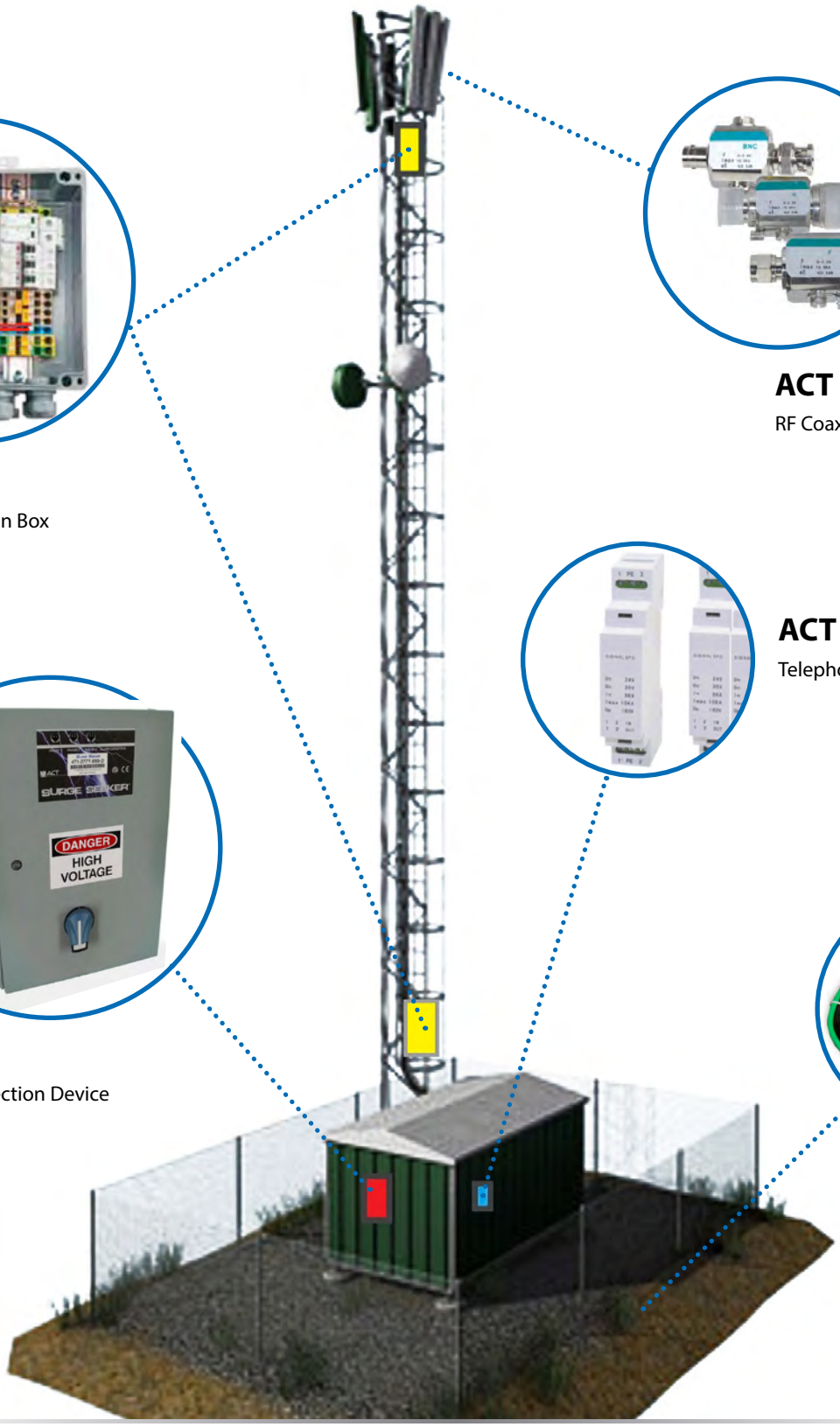
Telephone/Datacom Protector

ACT 471

AC Power Surge Protection Device

ACT 444

Fiber Cable Location Protector and DC Protector



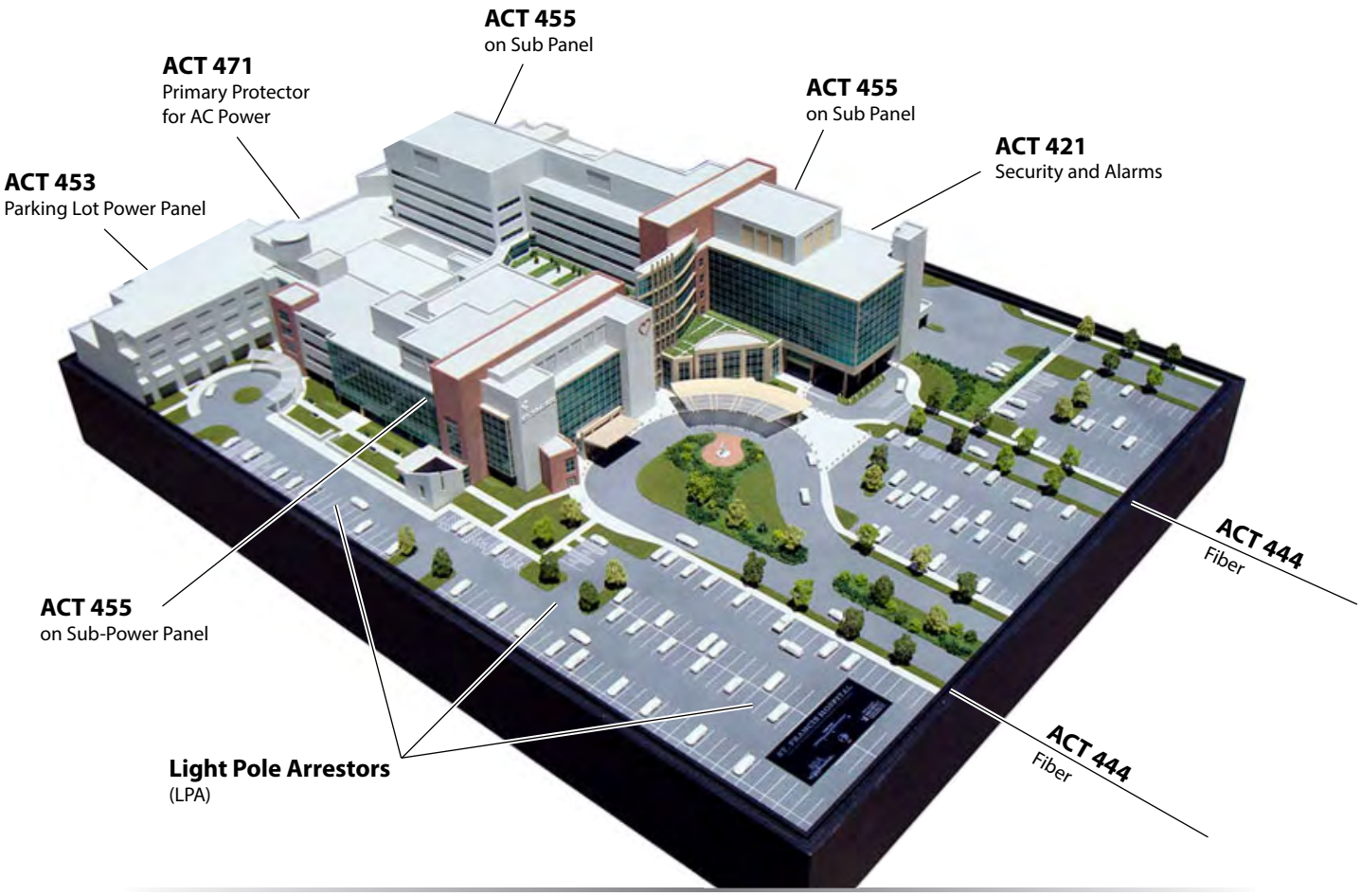
HEALTHCARE FACILITIES

Healthcare Facilities Need a Coordinated Plan

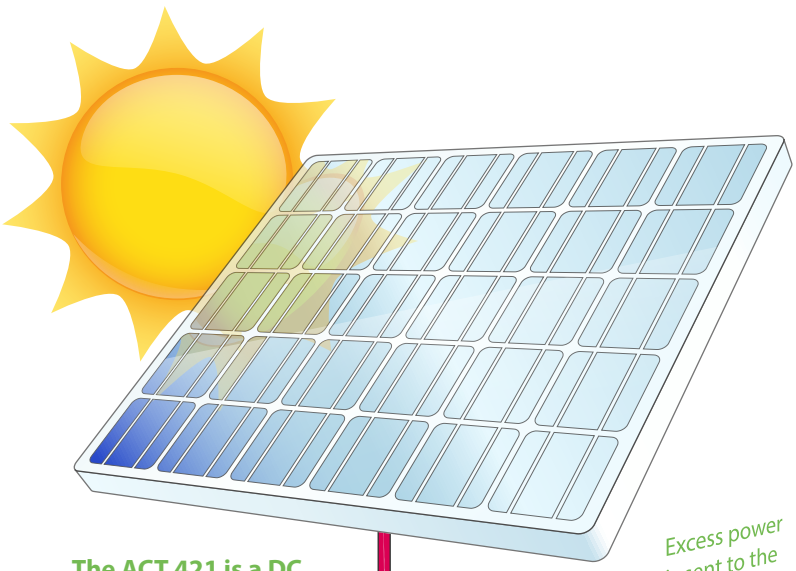
Healthcare facilities protect precious life with sensitive equipment worth millions of dollars. It makes no sense for such a facility not to develop a proper protection strategy for its whole facility.

Typical Protection Products Specified

- **A/C Power** – ACT 471, 455 & LPA and are perfect products for A/C Power locations
- **Secondary A/C Power** – ACT 453 provides excellent secondary protection for parking lot A/C panels
- **Telecom/Datacom** – ACT 422 is an ideal protector for any telecom, datacom and alarm type protection
- **Fiber** – ACT 444 for protecting buried fiber cable



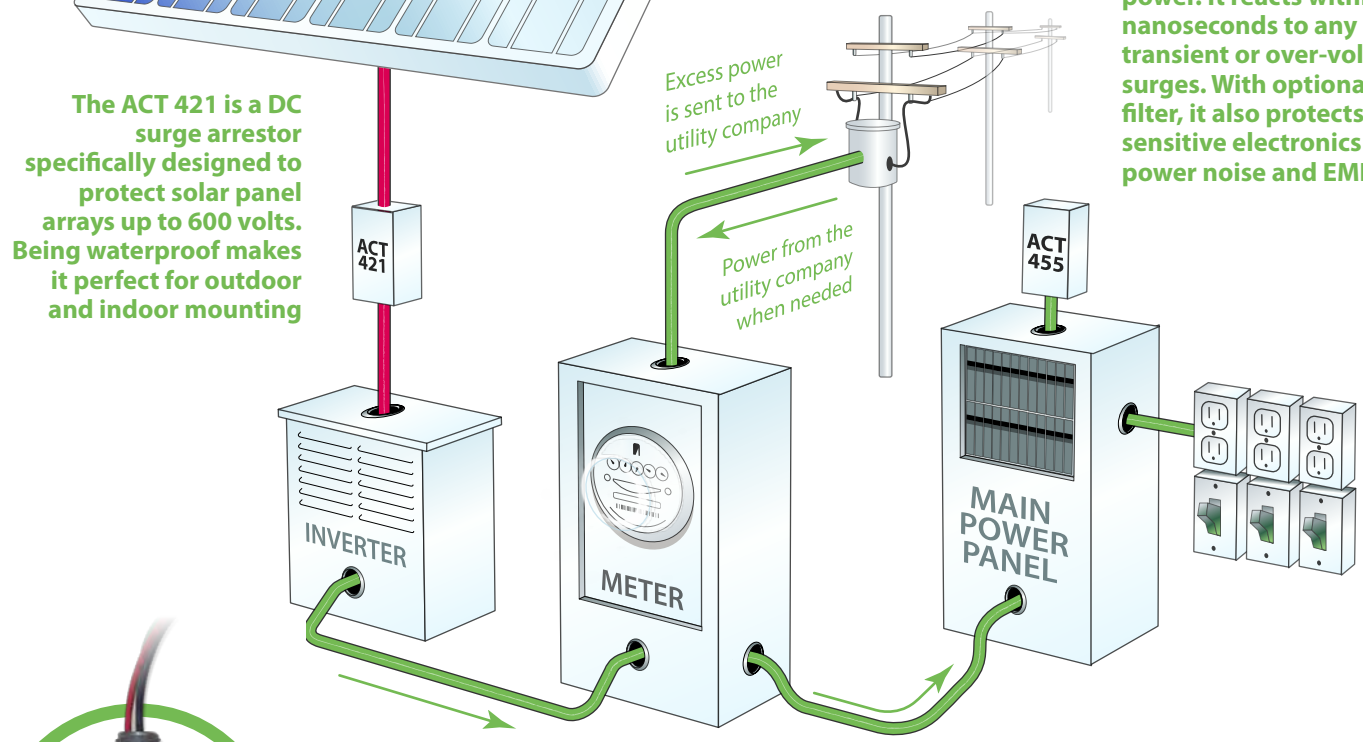
Protect Your Sensitive **GREEN Investments**



ACT 455
Surge Stryker SPD

The ACT 455 is the perfect Surge Protection Device (SPD) for your primary AC power. It reacts within nanoseconds to any transient or over-voltage surges. With optional power filter, it also protects sensitive electronics from power noise and EMI.

The ACT 421 is a DC surge arrestor specifically designed to protect solar panel arrays up to 600 volts. Being waterproof makes it perfect for outdoor and indoor mounting

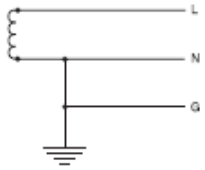
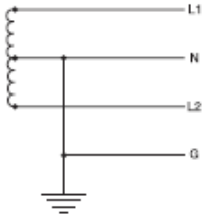
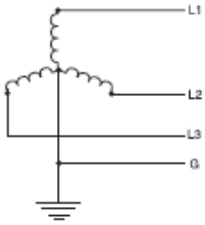
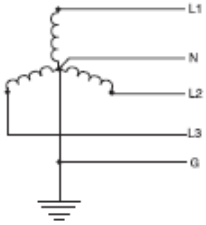
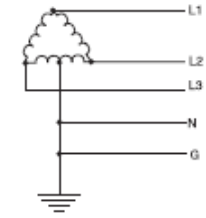
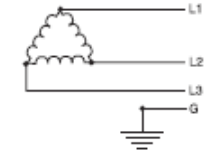
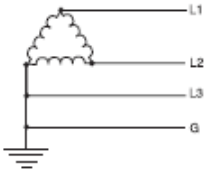


ACT 421
DC Transient Surge Arrestor

ACT COMMUNICATIONS™

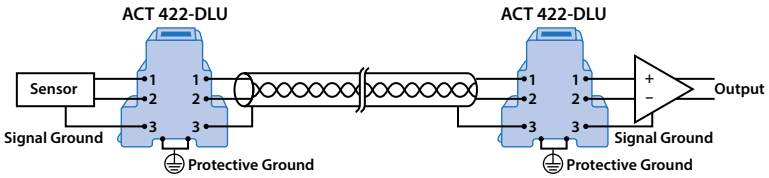
COMMON POWER DISTRIBUTION SYSTEMS

Throughout the world, a number of different power distribution systems are used. This guide identifies the more common of these systems. The individual product specification tables detail system suitability.

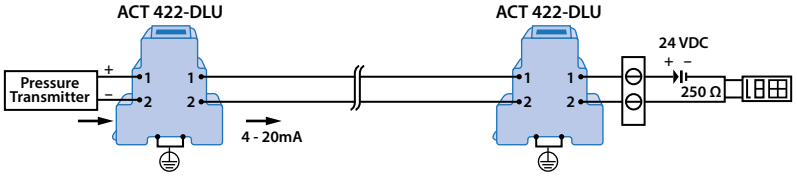
Description	Source Configuration	Typical Supply Voltages	
Single Phase 1Ph, 2W+G		110V 120V 220V 240V	(L-N)
Single Phase 1Ph, 3W+G Also known as Split phase or Edison system		120/240V	(L-N/L-L)
Three Phase WYE without neutral 3Ph Y, 3W+G		480V	(L-L)
Three Phase WYE with neutral 3Ph Y, 4W+G		120/208V 220/380V 230/400V 240/415V 277/480V 347/600V	(L-N/L-L)
Delta High leg 3Ph Δ, 4W+G		120/240V	(L-N/L-L)
Delta Ungrounded 3Ph Δ, 3W+G		240V 480V	(L-L)
Delta Grounded corner 3Ph Δ, 3W+G		240V 480V	(L-L)

Sample Applications for ACT 422-DLU and 422-200 Series

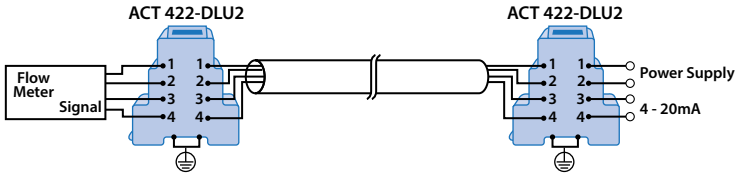
2-Wire Isolated Ground Transducers/Sensors



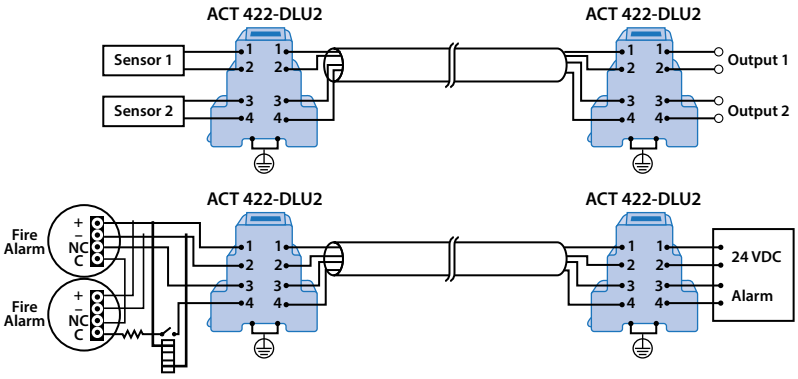
2-Wire Sensors



Powered Sensor Protection



Multiple Sensor or up to 4-Wire Sensor



A/C SURGE PROTECTION

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 471SEL Selenium Hybrid Filter Device

A Full-Featured Primary Surge Protection/Filter Device

Power quality is more important today than ever before and that means not just any surge protector can be relied on to protect your facility properly. The ACT 471 SEL Family is designed to protect all phases and modes against transient surges and limited over voltage events and, with the Advanced Power Filter selected, is able to reduce induced high frequency noise by over 50 dB across a broad frequency spectrum.

Unlike many of our competitors, the ACT hybrid design comes standard with many different alarm options. Add our Power Quality Meter option and no other company can provide this level of Power Quality Diagnostic information. "Transient Snap Shot" and "Time Stamp Data Logger" are included.

No other protection company is offering this breadth of power filtering and monitoring capability in a single package.

RECOMMENDED LOCATION

- Building Entrance / Cat C
- Primary Surge Protection for a Facility
- Switch Gear
- Motor Control Center

FEATURES AND BENEFITS

- Listed Type 1 and Type 2
- 200 kAIC rated Fuse or Optional Fused Disconnect
- Up to 300,000 amps per mode modular protection (600,000 per Phase)
- **BEST IN CLASS** built in Filter options in the market >55dB
  - Advanced filter targets most common transient surges and damaging medium frequency noises
- Copper Bus Connected Surge Modules
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
  – 7 Modes Discrete (L-N, L-G, N-G)
- Dual Surge Counter Options (Continuous and Resettable)
- Microprocessor-Based PQ Meter
- Smart Monitoring
  - Diagnostic board not only tells you Good & Bad Phase protection but also what module needs replaced
  - Selenium Over Voltage Filter is individually monitored
- NO / NC Form C Dry Contacts
  - For remote monitoring & control (250V 5 A rating)
  - Individual Remote Monitoring of both MOV and Selenium Rectifiers
- Individually Fused and Protected MOV Technology
- NEMA 4 & NEMA 12 Painted Steel Enclosure
- 20 Year Standard Warranty –
  Options with extended warranty card

MOST ADVANCED MONITORING SYSTEM ON THE MARKET

- Lights (LED) – Green per Phase, Red - Alarm
- Audible Alarms – STANDARD
- Dual Relays – STANDARD NO / NC Form C Dry Contacts
- Dual Surge Counters (optional)
- Full Microprocessor-Based Power Quality Meter (optional)
- Logging Capability (optional)
- Event Waveform Capture (optional)

STANDARDS MET

- Listed to UL 1449 4th edition March 2016
- Power Filtering – UL 1283
- ANSI/NFPA 70 National Electrical Code
- NEMA LS 1-1992

3RD PARTY TESTED

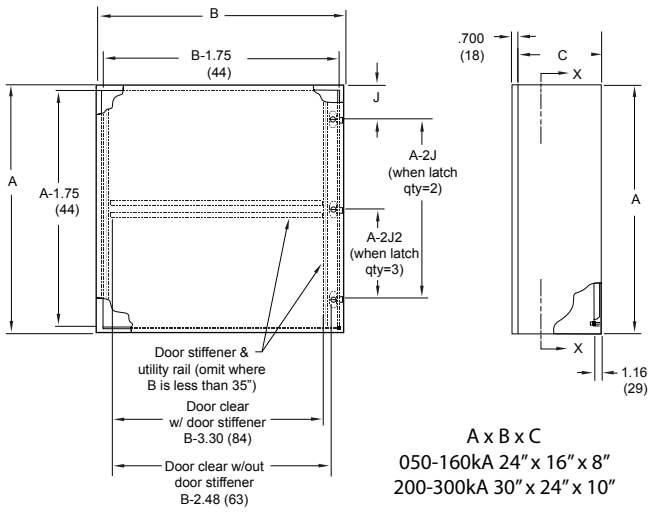
- ACT 471 is tested in all modes at rated currents by independent testing facilities
- Repetitive surge testing per IEEE C62.41.2 C3 combination without any degradation of more than 10% deviation. Greater than 20,000 impulses*

ACT471SEL: 16 07 21

ACT 471SEL Selenium Hybrid Filter Device

A Full-Featured Primary Surge Protection/Filter Device

ACT 471-277Y-270-SEL-D-F2



A x B x C
050-160kA 24" x 16" x 8"
200-300kA 30" x 24" x 10"

*Full mechanical drawings available upon request.

TECHNICAL INFORMATION

MECHANICAL SPECIFICATIONS

Dimensions	050, 100, 160 – 24x16x8 (in) 200, 270, 300 – 30x24x10 (in)
Weight (determined by option)	Up to 110 lbs.
Enclosure	NEMA 12/4 Painted Steel
Operating Temp	-40°F to +140°F -40°C to +65°C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

UL Type 1	with fused disconnect option
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Wired Lugs	Up to 2 AWG
Status Indicators	Working - Green LED's Alarm - Red LED
Dual Alarm Relay Contacts	Form C NC & NO
Audible Alarm	Turn On/Off Switch
Dual Surge Counters	Continuous & Resettable
Filter (3kHz – 10MHz)	>-50dB

Part Number	Configuration	MCOV	VPR (Voltage Protection Rating) – IEEE C62 UL 1449 4th Edition			
			L-N	L-G	N-G	L-L
471-120S-XXX-SEL-YY	120/240 Vac 3W+G	150V	700	700	700	1000
471-120Y-XXX-SEL-YY	120/208 Vac 4W+G	150V	700	700	700	1000
471-277Y-XXX-SEL-YY	277/480 Vac 4W+G	320V	1000	1000	1000	1800
471-240D-XXX-SEL-YY	240 Vac 3W+G, delta	320V	-	1000	-	1800
471-240H-XXX-SEL-YY	120/240 Vac 4W+G, delta HL PHB	150V/320V	700/1000	700/1000	1000	1000/1800
471-480D-XXX-SEL-YY	480 Vac 3W+G, delta	600V	-	1800	-	3000

EXAMPLE: **ACT 471-277Y-160-SEL-D-F-C2-M2**

Industrial Series SPD, 277/480 Vac 4W+G, 160 kA/ Mode, Modular Selenium Hybrid Filter/ Protector at 160kA/Mode, Internal Disconnect, EMI/Noise Filter, 2 Surge Counters, V2 option on the Power Quality Meter

OPTIONS:

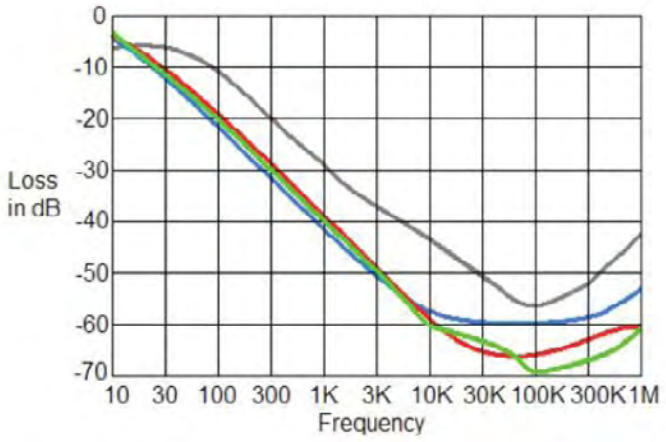
XXX	Surge Rating (kA) by Mode:	050, 080, 100, 125, 160, 200, 270 or 300
SEL		Modular Selenium Hybrid Filter/Protector
YY	Enclosure Type:	NEMA 12/4 (STANDARD) Aluminum - **ALM** Stainless Steel - **SS**
	Internal Disconnect:	600V 100 Amp Quick Fuse- **D**
	Filter(s):	EMI/Noise Filter - **F** Advanced EMI/Noise Filter - **FA1 or FA2**
	Counter(s):	Surge Counter - **CI or C2** Continuous or Resettable
	Microprocessor-based PQ Meter:	**M 2-6** number refers to V option **(See ACT M200 specification sheet)**

ACT 471SEL Selenium Hybrid Filter Device

A Full-Featured Primary Surge Protection/Filter Device

PRODUCT SURGE TEST DATA

Voltage Configuartion	Protection Mode	MCOV	A1 Ring Wave	B3 Ring Wave	B3/C1 Combo	C3 Combo	UL1449 4th edition
			2kV/67A	6kV/500A	6kV/3kA	20kV/10kA	6kV/ 3kA
1P 240V	L-N	320V	46.7	460	932V	1100V	1000 V
	L-G	320V	46.5	472	950V	1200V	1000 V
	N-G	320V	52	468	950V	1150V	1000 V
120/240	L-N	150V	46	460	528V	1000V	700V
	L-G	150V	46.5	472	534V	1050V	700V
	N-G	150V	52	468	580V	1075V	700V
120/240 with 240V High Leg	L-N	150V	46	460	528V	1000V	700V
	L-N High	320V	46.7	547	932V	1100V	1000 V
	N-G	150V	52	468	580V	1075V	700V
120/208	L-N	150V	46	460	528V	1000V	700V
	L-G	150V	46.5	472	534V	1050V	700V
	N-G	150V	52	468	580V	1075V	700V
220/380	L-N	320V	46.7	547	932V	1100V	1000 V
	L-G	320V	47.2	520	950V	1200V	1000 V
	N-G	320V	53	560	950V	1150V	1000 V
277/480	L-N	320V	46.7	547	932V	1100V	1000 V
	L-G	320V	46.5	520	950V	1200V	1000 V
	N-G	320V	52	560	950V	1150V	1000 V
240D	L-G	320V	58	547	950V	1105V	1000 V
	L-L	640V	64	1100	1820V	2390V	1800V
380D	L-G	550V	58	1058	1741V	1924V	1800V
	L-L	1100V	82	2100	2331V	3250V	2500V
480D	L-G	550V	58	1058	1741V	1924V	1800V
	L-L	1100V	82	2100	2331V	3250V	2500V



ACT's Advanced Power Filter system is designed to filter frequencies between 3 kHz to 1 Mhz using a broad spectrum band reject filter that out performs most SPD EMI filters on the market. NEMA LS-1 requires evidence of band rejection across a stated spectrum, be sure your EMI filter specification leaves no frequency holes.

***Red & Green lines represent the Advanced Filter Option when compared to leading filter manufacturers.**

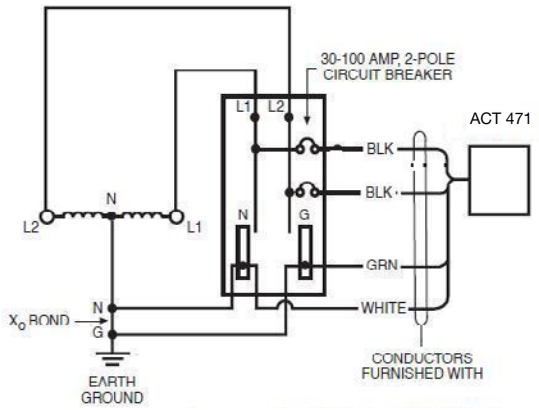
***Tests were conducted with Power Filters installed**

ACT 471SEL Selenium Hybrid Filter Device

A Full-Featured Primary Surge Protection/Filter Device

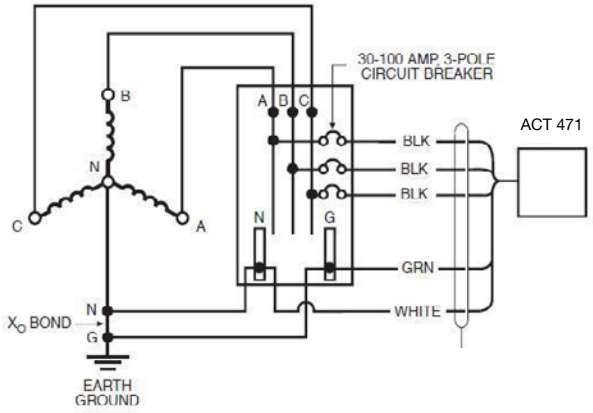
COMMON ELECTRICAL APPLICATIONS

Single Phase, 3-Wire (with Neutral)



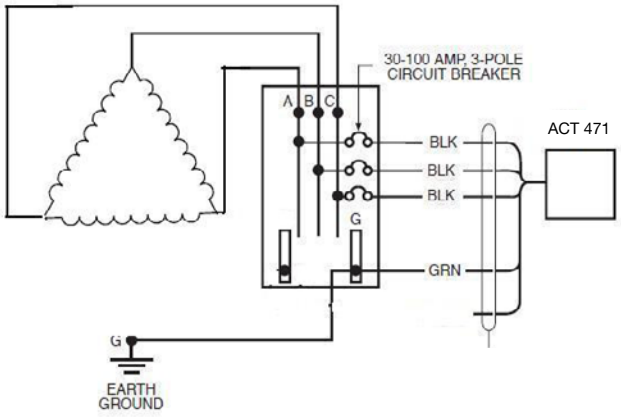
120/240 VRMS

3-Phase, 4-Wire WYE



277/480 VRMS

3-Phase, 3-Wire +Ground DELTA



480V DELTA - No Neutral

CAUTION:

It is extremely important to know the true voltage on any power panel that a Surge Protection Device is being specified for. If Electrical 1 – Lines do not exist, then it is important for an electrician to verify if the power panel to be protected is 277/480V 4W+G verses 480V 3W+G. While both products look similar, they will only operate correctly if installed in its intended voltage application. Placing any SPD on a 480V Delta system that is not designed for it can cause serious damage to both power filters and SPD devices.

ACT COMMUNICATIONS™

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 471 Surge Seeker Family

A Full-Featured Primary Surge Protection/Filter Device

Power quality is more important today than ever before and that means not just any surge protector can be relied on to protect your sensitive equipment. The ACT 471 Surge Seeker Family is the perfect design to protect your sensitive electrical and electronic environments.

This full-featured filter protector protects all phases and modes against transient surges and, with the filter option, is able to reduce induced noise by over 50 dB. **No other company offers as much power quality protection.**

RECOMMENDED LOCATION

- Building Entrance / Cat C
- Primary Surge Protection for a Facility
- Switch Gear
- Motor Control Center

FEATURES AND BENEFITS

- Listed to Type 1 and Type 2
- 200 kAIC rated Fuse or Optional Fused Disconnect
- Up to 300,000 amps per mode modular protection (600,000 per Phase)
- **BEST** built in Filter options in the market
  – Advanced filter targets most common transient surges and damaging medium frequency noises -55dB
- Copper Bus Connected Surge Modules
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
  – 7 Modes Discrete (L-N, L-G, N-G)
- Dual Surge Counter Options (Continuous and Resettable)
- Smart Monitoring
  – Diagnostic board not only tells you Good & Bad Phase protection but also what module needs replaced
- Dual NO / NC Form C Dry Contacts
  - For remote monitoring & control (250V 5A rating)
- Individually Fused and Protected MOV Technology
- NEMA 4 & NEMA 12 Painted Steel Enclosure
- 10 Year Standard Warranty –
  Options with extended warranty card

MOST ADVANCED MONITORING SYSTEM ON THE MARKET

- Lights (LED) – Green per phase, Red - Alarm
- Audible Alarms
- Relay Dual NO / NC Form C Dry Contacts
- Dual Surge Counters (optional)
- Microprocessor-based Power Quality Meter (optional)
- Logging Capability (optional)
- Event Waveform Capture (optional)

STANDARDS MET

- Safety – Listed to UL 1449 4th edition March 2016
- Noise Filtering – UL 1283
- ANSI/NFPA 70 National Electrical Code

3RD PARTY TESTED

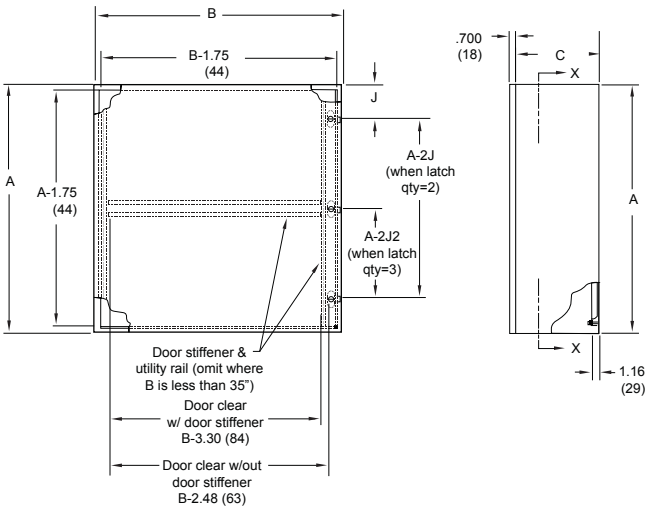
- ACT 471 is tested in all modes at rated currents by independent testing facilities
- Repetitive surge testing per IEEE C62.41.2 C3 combination without any degradation of more than 10% deviation. Greater than 17,000 impulses*

ACT471: 160721

ACT 471 Surge Seeker Family

A Full-Featured Primary Surge Protection/Filter Device

ACT 471-277Y-240-FA1-M6



24x16x8 (in)

TECHNICAL INFORMATION

MECHANICAL SPECIFICATIONS

Dimensions	24x16x8 (in)
Weight (determined by option)	Up to 65 lbs.
Enclosure	NEMA 12/4 Painted Steel
Operating Temp	-40°F to +140°F -40°C to +65°C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

UL Type 1	with fused disconnect option
Connection Method	Parallel
Descrete Protection Modes (7 Modes)	L-N, L-G, N-G
Wired Lugs	Up to 2 AWG
Status Indicators	Working - Green LED's Alarm - Red LED
Dual Alarm Relay Contacts	Form C NC & NO (240V 5A)
Audible Alarm	Turn On/Off Switch
Dual Surge Counters	Continuous & Resettable
Filter (3kHz – MHz)	>-50dB

Part Number	Configuration	MCOV	VPR (Voltage Protection Rating) – IEEE C62 UL 1449 4th Edition			
			L-N	L-G	N-G	L-L
471-120S-XXX-YY	120/240 Vac 3W+G	150V	700	700	700	1000
471-120Y-XXX-YY	120/208 Vac 4W+G	150V	700	700	700	1000
471-277Y-XXX-YY	277/480 Vac 4W+G	320V	1000	1000	1000	1800
471-240D-XXX-YY	240 Vac 3W+G, delta	320V	-	1000	-	1800
471-240H-XXX-YY	120/240 Vac 4W+G, delta HL PHB	150V/320V	700/1000	700/1000	1000	1000/1800
471-480D-XXX-YY	480 Vac 3W+G, delta	600V	-	1800	-	3000

EXAMPLE: **ACT 471-277Y-160-D-F-C2-M2**

Industrial Series SPD, 277/480 Vac 4W+G,
160 kA/ Mode, Internal Disconnect,
EMI/Noise Filter, 2 Surge Counters,
V2 option on the Power Quality Meter

OPTIONS:

XXX	Surge Rating (kA) by Mode:	050, 080, 100, 125, 160, 200, 240 or 300
YY	Enclosure Type:	NEMA 12/4 Painted Steel (STANDARD) Aluminum - **ALM** Stainless Steel - **SS**
	Internal Disconnect:	600V 100 Amp Quick Fuse- **D**
	Filter(s):	EMI/Noise Filter - **F** Advanced EMI/Noise Filter - **FA1 or FA2**
	Counter(s):	Surge Counter - **CI or C2** **(**Continuous or Resettable)
	Microprocessor-based PQ Meter:	**M 2-6** number refers to V option **(See ACT M200 specification sheet)**

ACT 471 Surge Seeker Family

A Full-Featured Primary Surge Protection/Filter Device

PRODUCT SURGE TEST DATA

Voltage Configuartion	Protection Mode	MCOV	A1 Ring Wave	B3 Ring Wave	B3/C1 Combo	C3 Combo	UL1449 4th edition
			2kV/67A	6kV/500A	6kV/3kA	20kV/10kA	6kV/ 3kA
1P 240V	L-N	320V	46.7	460	932V	1100V	1000 V
	L-G	320V	46.5	472	950V	1200V	1000 V
	N-G	320V	52	468	950V	1150V	1000 V
120/240	L-N	150V	46	460	528V	1000V	700V
	L-G	150V	46.5	472	534V	1050V	700V
	N-G	150V	52	468	580V	1075V	700V
120/240 with 240V High Leg	L-N	150V	46	460	528V	1000V	700V
	L-N High	320V	46.7	547	932V	1100V	1000 V
	N-G	150V	52	468	580V	1075V	700V
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277/480	L-N	320V	46.7	547	932V	1100V	1000 V
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240D	L-G	320V	58	547	950V	1105V	1000 V
	L-L	640V	64	1100	1820V	2390V	1800V
380D	L-G	550V	58	1058	1741V	1924V	1800V
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480D	L-G	550V	58	1058	1741V	1924V	1800V
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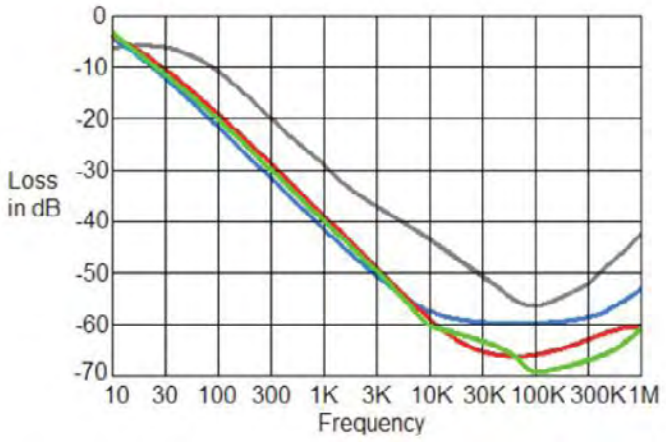


ACT's Advanced Power Filter system is designed to filter frequencies between 3 kHz to 1 Mhz using a broad spectrum band reject filter that out performs most SPD EMI filters on the market. NEMA LS-1 requires evidence of band rejection across a stated spectrum, be sure your EMI filter specification leaves no frequency holes.

*Red & Green lines represent the Advanced Filter Option when compared to leading filter manufacturers.

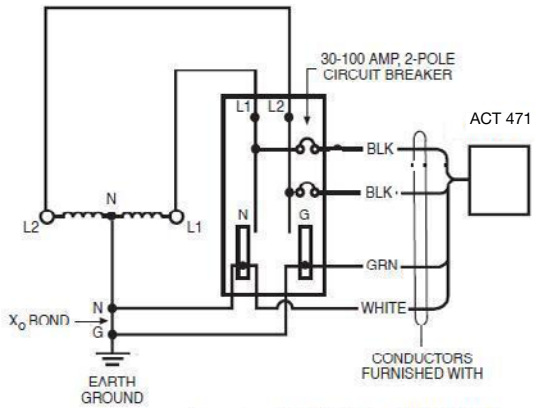
***Tests were conducted with Power Filters installed**

ACT 471 Surge Seeker Family

A Full-Featured Primary Surge Protection/Filter Device

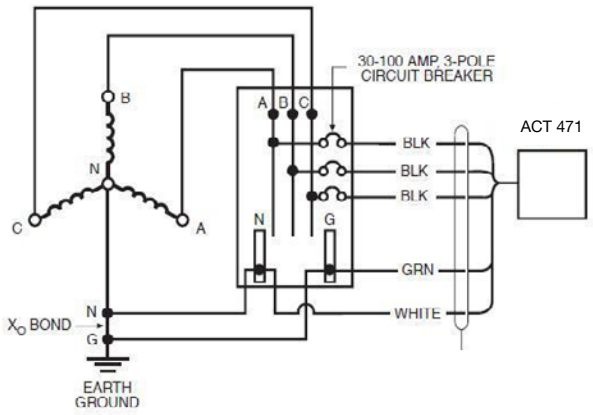
COMMON ELECTRICAL APPLICATIONS

Single Phase, 3-Wire (with Neutral)



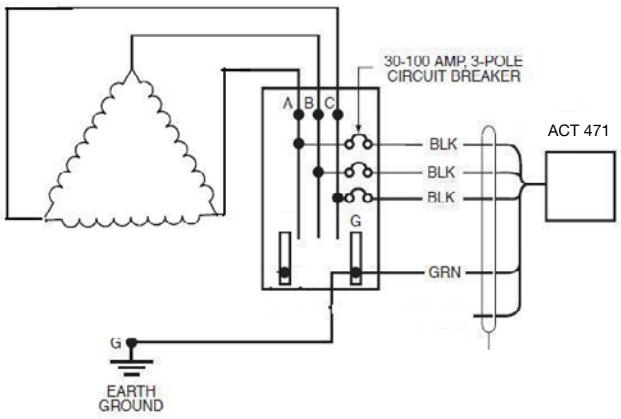
120/240 VRMS

3-Phase, 4-Wire WYE



277/480 VRMS

3-Phase, 3-Wire +Ground DELTA



480V DELTA - No Neutral

CAUTION:

It is extremely important to know the true voltage on any power panel that a Surge Protection Device is being specified for. If Electrical 1 – Lines do not exist, then it is important for an electrician to verify if the power panel to be protected is 277/480V 4W+G verses 480V 3W+G. While both products look similar, they will only operate correctly if installed in its intended voltage application. Placing any SPD on a 480V Delta system that is not designed for it can cause serious damage to both power filters and SPD devices.

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT Surge Stryker 455 Family

7-Mode Hardwired Primary AC Surge Protection Device

The Full Featured Surge Stryker Family is a high performance surge protector designed for critical panel locations. The SPD incorporates high-energy MOVs with the best performing AC filter on the market to provide protection against transients originating from induced lightning strikes, utility switching and facility power noise.

Real-time diagnostics include LED fault indicators for each phase, as well as an optional alarm that includes red LED, dual Form C dry contacts for remote indication and an audible alarm, so you always know the Surge Stryker Protector is at full capacity.

The ACT 455 Family is available for all voltages and configurations up to 480Vac. Housed in a rugged NEMA 12 enclosure, these devices are suitable for harsh indoor or outdoor applications.

RECOMMENDED LOCATION

- Type 2 Location
- Cell Sites, Well Pumps / Cat C
- Distribution Equipment / Cat B
- Branch Panels / Cat B
- Point of Use / Cat A
- Residential / Cat C

AC PANEL PROTECTION

- Available in 050, 080, 100, 160, 200, 300 kA per modes
- 7 modes of discrete protection (L-N, L-G, N-G)
- 10 modes of protection (L-N, L-G, N-G, L-L)
- 200 kAIC Fault Current Rating
- Advanced EMI/RFI Noise Filtering (-45dB) 3kHz - 1MHz
- 5-Year warranty (10-year optional)
- 3rd Party Tested - 15,000 (C3 20 kV/10 kA)
- Optional 30amp fuse allows direct connect to power bus

CHARACTERISTICS

Surge Handling (Imax)	Up to 300 kA/mode 600 kA/phase
7 Modes of Discrete Protection	L-N, L-G, N-G
10 Modes of Protection	L-N, L-G, N-G, L-L
Response Time	<5 nanoseconds MOV Technology
Green LED Indicators	Yes
EMI/RFI Noise Rejection (option)	-45dB and -55dB (see chart)
Surge Counter (s) (option)	8-digit resettable transient counter
Alarms	
Red LED (option)	Yes
Remote Signalling	Form C dry contacts – NC & NO
Audible (option)	With Shut-off Switch

STANDARDS & GUIDELINES

Listed by ETL for UL 1449 4th edition	USA
ANSI/IEEE C62.41	USA
Listed by ETL for UL 1283 Power Filters	USA
3rd Party to IEC61643-11 CE Mark International	

FEATURES AND OPTIONS

EXAMPLE: ACT 455-277Y-100-F-A-C1

Surge Rating (kA) by Mode:	050, 080, 100, 125, 160, 200, 300	
Surge Rating (kA) by Phase:	100, 160, 200, 250, 320, 400, 600	
Enclosure Type:	Painted Steel NEMA 12 Standard no option code	
	Stainless Steel - SS	
Optional Alarms	Alarm LED, Remote Relay & Audible	– A
Optional Filter	-45 dB EMI / Noise Filter	– F
	-55 dB Advanced EMI / Noise Filter	– FA
Optional Counter(s)	Surge Counter(s) – C1 (resettable), C2 (Dual-fixed and resettable)	
Optional External Fused Disconnect *	600V 30Amp fuse – D	
Optional Mounting	Top Feed – T	

*See ACT 455-D Cut Sheet

ACT455: 160426

BACK TO TABLE OF CONTENTS

ACT Surge Stryker 455 Family

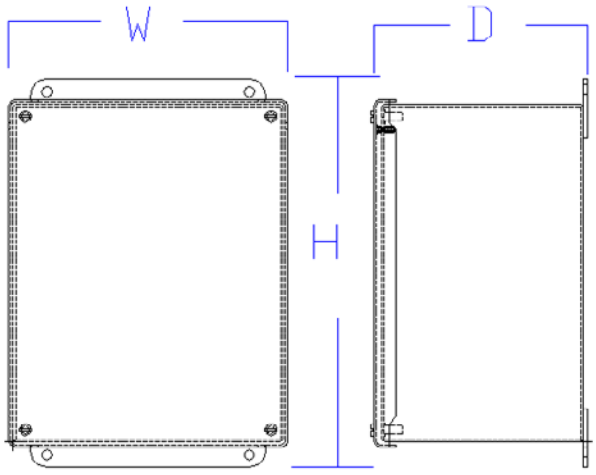
7-Mode Hardwired Primary AC Surge Protection Device

Part Number	Configuration	MCOV	VPR (Voltage Protection Rating) IEEE C62 – UL 1449 4th Edition			
			L-N	L-G	N-G	L-L
455-120S-XXX	120/240 Vac 3W+G	150V	700	700	700	1000
455-120Y-XXX	120/208 Vac 4W+G	150V	700	700	700	1000
455-277Y-XXX	277/480 Vac 4W+G	320V	1000	1000	1000	1800
455-240D-XXX	240 Vac 3W+G, delta	320V	-	1000	-	1800
455-240H-XXX	120/240 Vac 4W+G, delta HL PHB	150V/320V	700/1000	700/1000	1000	1000/1800
455-480D-XXX	480 Vac 3W+G, delta	600V	-	1800	-	3000

7 Mode 455 Model Numbers

Model No.	System Voltage	Service Configuration
455-120-XXX	120 VAC	1 PHASE, 2 WIRE, W/GROUND
455-240-XXX	240 VAC	1 PHASE, 2 WIRE, W/GROUND
455-120S-XXX	120/240 VAC	1 PHASE, 3 WIRE SPLIT PHASE, W/GROUND
455-120Y-XXX	120/208 VAC	3 PHASE, 4 WIRE WYE, W/GROUND
455-220Y-XXX	220/380 VAC	3 PHASE, 4 WIRE WYE, W/GROUND
455-277Y-XXX	277/480 VAC	3 PHASE, 4 WIRE WYE, W/GROUND
455-240H-XXX	120/240 VAC B PHASE IS 208V	3 PHASE, HIGH-LEG DELTA, W/GROUND
455-240D-XXX	240VAC	3 PHASE, 3 WIRE DELTA, W/GROUND
455-380D-XXX	380 VAC	3 PHASE, 3 WIRE DELTA, W/GROUND
455-480D-XXX	480 VAC	3 PHASE, 3 WIRE DELTA, W/GROUND

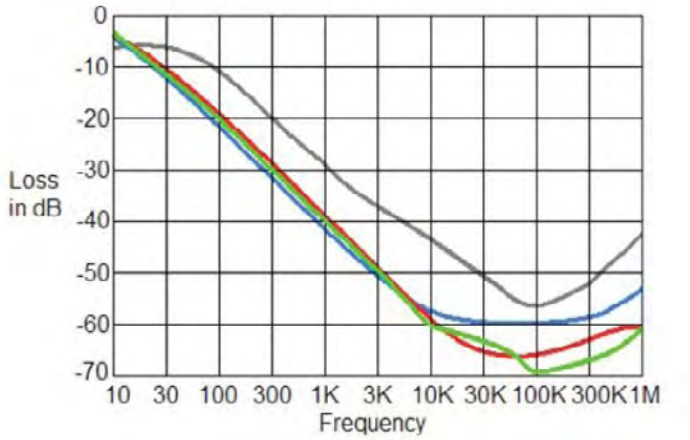
- Power Quality is more important today then ever before and that means not just any surge protector can be relied on to protect your sensitive equipment. The ACT 455 Family of surge protectors is the perfect design to protect your sensitive electrical and electronic environments.



TECHNICAL INFORMATION

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
Discrete Protection Modes (7)	L-N, L-G, N-G
Protection Modes (10 Modes)	L-N, L-G, L-L, N-G
Pre-Wired	36" Stranded #10 AWG
Status Indicators	Green LED
Optional EMI Filter	-45 dB Noise Reduction
Optional Advanced EMI Filter	-55 dB Noise Reduction
Optional Alarm Relay Contacts	Form C NC & NO
Optional Red LED	Indicates Red when unit is in alarm
Optional Audible Alarm with Silence Switch	Piezo Buzzer



Red & Green lines represent the Advanced Filter Option when compared to leading filter manufacturers.

Blue and Grey lines represent popular competitors.

DIMENSIONAL SPECIFICATIONS

Dim	ACT 455 – with Special Options*		Dim	ACT 455 – 50, 80, 100, 125, 160, 200	
H	15.50	(393.7)	H	10.00	(254)
W	12.00	(304.8)	W	8.00	(203.2)
D	6.20	(157.5)	D	6.00	(154.2)

***With Advanced Filter Option AND Fused Disconnect ordered together.**

ALL MEASUREMENTS IN INCHES (MM)

MECHANICAL SPECIFICATIONS

Weight	25 lbs
Standard Enclosure	Painted Steel NEMA 12
Operating Temp	-40C to +65C
Non-condensing Humidity	5% to 95%

Bottom Fed is Standard – Top Fed is Option Code – T

100% Sanded for Increased Safety

ACT Surge Stryker 455 Family

7-Mode Hardwired Primary AC Surge Protection Device

PRODUCT SURGE TEST DATA

Voltage Configuartion	Protection Mode	MCOV	A1 Ring Wave	B3 Ring Wave	B3/C1 Combo	C3 Combo	UL1449 4th Edition
			2kV/67A	6kV/500A	6kV/3kA	20kV/10kA	6kV/ 3kA
1P 240V	L-N	320V	46.7	460	932V	1100V	1000 V
	L-G	320V	46.5	472	950V	1200V	1000 V
	N-G	320V	52	468	950V	1150V	1000 V
120/240	L-N	150V	46	460	528V	1000V	700V
	L-G	150V	46.5	472	534V	1050V	700V
	N-G	150V	52	468	580V	1075V	700V
120/240 with 240V High Leg	L-N	150V	46	460	528V	1000V	700V
	L-N High	320V	46.7	547	932V	1100V	1000 V
	N-G	150V	52	468	580V	1075V	700V
120/208	L-N	150V	46	460	528V	1000V	700V
	L-G	150V	46.5	472	534V	1050V	700V
	N-G	150V	52	468	580V	1075V	700V
220/380	L-N	320V	46.7	547	932V	1100V	1000 V
	L-G	320V	47.2	520	950V	1200V	1000 V
	N-G	320V	53	560	950V	1150V	1000 V
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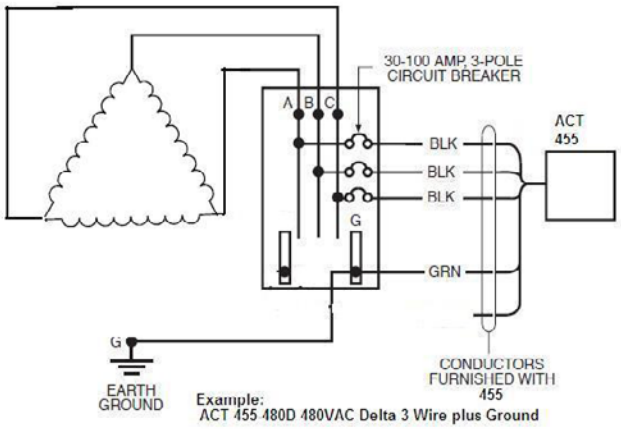
	L-G	320V	46.5	520	950V	1200V	1000 V
	N-G	320V	52	560	950V	1150V	1000 V
240D	L-G	320V	58	547	950V	1105V	1000 V
	L-L	640V	64	1100	1820V	2390V	1800V
380D	L-G	550V	58	1058	1741V	1924V	1800V
	L-L	1100V	82	2100	2331V	3250V	2500V
480D	L-G	550V	58	1058	1741V	1924V	1800V
	L-L	1100V	82	2100	2331V	3250V	2500V

ACT Surge Stryker 455 Family

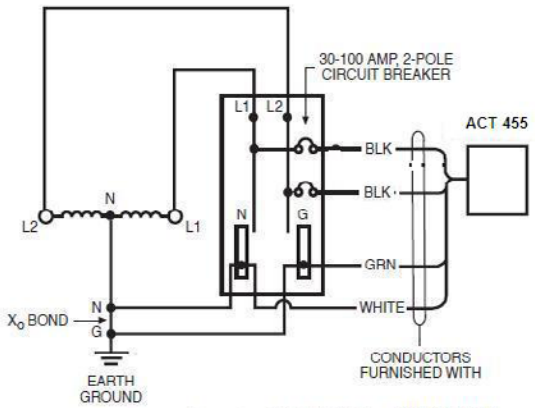
7-Mode Hardwired Primary AC Surge Protection Device

Figure 1 3 Phase Delta 3W +Ground



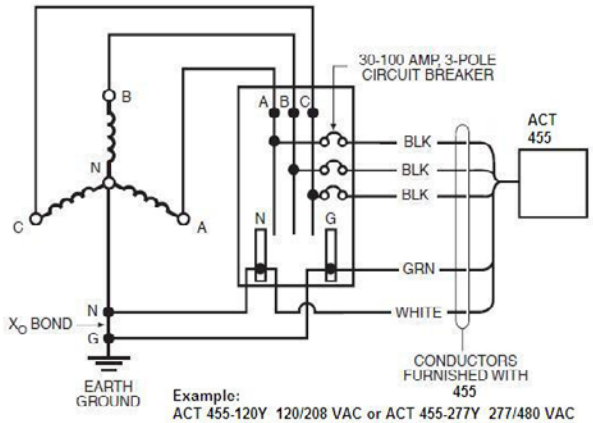
Example:
ACT 455 480D 480VAC Delta 3 Wire plus Ground

FIG. 2: Single Phase, 3-Wire (With Neutral)



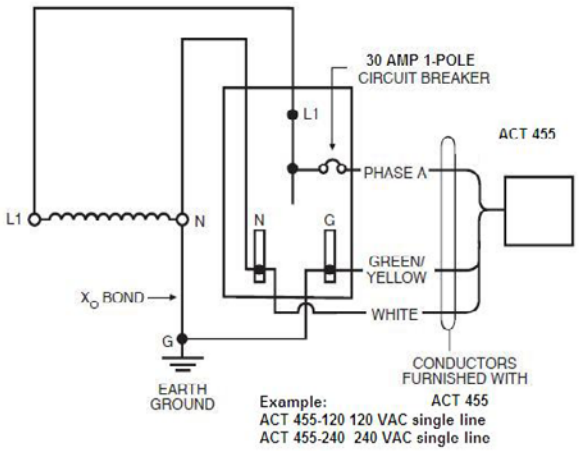
Example: ACT455-120S 120 /240 VAC

FIG. 3: 3-Phase, 4-Wire WYE



Example:
ACT 455-120Y 120/208 VAC or ACT 455-277Y 277/480 VAC

FIG. 4: 1-Phase, 2-Wire (Normal)



Example:
ACT 455-120 120 VAC single line
ACT 455-240 240 VAC single line

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ACT Surge Stryker 455 LT Family

7-Mode Hardwired Primary AC Surge Protection Device

The Surge Stryker LT Family is a high performance surge protector designed for critical panel locations. The SPD incorporates high-energy MOVs with the best performing AC filter on the market to provide protection against transients originating from induced lightning strikes, utility switching and facility power noise.

Real-time diagnostics include LED fault indicators for each phase, as well as an optional alarm that includes red LED, dual Form C dry contacts for remote indication.

Housed in a rugged resin NEMA 12/4X enclosure, these devices are suitable for harsh indoor or outdoor applications. The ACT 455 LT Family is available for all voltages and configurations up to 480Vac.

EXAMPLE: ACT 455-277Y-100-LT-R
Wall mounted protector at 100kA/mode with remote alarm relay.

RECOMMENDED LOCATION

- Type 2 Location
- Cell Sites, Well Pumps / Cat C
- Distribution Equipment / Cat B
- Branch Panels / Cat B
- Point of Use / Cat A
- Residential / Cat C

AC PANEL PROTECTION

- Available in 050, 080, 100 kA per modes
- All modes of protection (L-N, L-G, N-G, L-L)
- 200 kAIC Fault Current Rating
- Advanced EMI/RFI Noise Filtering (-45dB) 3kHz - 1MHz
- 2-year warranty (5-year optional)
- 3rd Party Tested - 15,000 (C3 20 kV/10 kA)

CHARACTERISTICS

Surge Handling (Imax)	Up to 100 kA/mode 200 kA/phase
All Mode Protection (10 modes)	L-N, L-G, N-G, L-L
Response Time	<5 nanoseconds MOV Technology
Green LED Indicators	Yes
EMI/RFI Noise Rejection (option)	-45dB
Optional Alarms Red LED	Yes
Remote Signalling	Form C dry contacts – NC & NO

STANDARDS & GUIDELINES

Listed by ETL for UL 1449 4th edition	USA
ANSI/IEEE C62.41	USA
Listed by ETL for UL 1283 Power Filters	USA
3rd Party to IEC61643-11 CE Mark International	

FEATURES

Surge Rating (kA) by Mode:	050, 080, 100	
Surge Rating (kA) by Phase:	100, 160, 200	
Enclosure Type:	Resin NEMA 12/4X – Standard no option code	
Optional Alarms	Alarm LED, Remote Relay	– R
Optional Filter	-45 dB EMI / Noise Filter	– F
Optional Mounting	Top Feed	– T

ACT455LT: 16 04 26

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ACT Surge Stryker 455 LT Family

7-Mode Hardwired Primary AC Surge Protection Device

Part Number	Configuration	MCOV	VPR (Voltage Protection Rating) IEEE C62 – UL 4th Edition			
			L-N	L-G	N-G	L-L
455-120S-XXX	120/240 Vac 3W+G	150V	700	700	700	1000
455-120Y-XXX	120/208 Vac 4W+G	150V	700	700	700	1000
455-277Y-XXX	277/480 Vac 4W+G	320V	1000	1000	1000	1800
455-240D-XXX	240 Vac 3W+G, delta	320V	-	1000	-	1800
455-240H-XXX	120/240 Vac 4W+G, delta HL PHB	150V/320V	700/1000	700/1000	1000	1000/1800
455-480D-XXX	480 Vac 3W+G, delta	600V	-	1800	-	3000

7 Mode 455 Model Numbers

Model No.	System Voltage	Service Configuration
455-120-XXX	120 VAC	1 PHASE, 2 WIRE, W/GROUND
455-240-XXX	240 VAC	1 PHASE, 2 WIRE, W/GROUND
455-120S-XXX	120/240 VAC	1 PHASE, 3 WIRE SPLIT PHASE, W/GROUND
455-120Y-XXX	120/208 VAC	3 PHASE, 4 WIRE WYE, W/GROUND
455-220Y-XXX	220/380 VAC	3 PHASE, 4 WIRE WYE, W/GROUND
455-277Y-XXX	277/480 VAC	3 PHASE, 4 WIRE WYE, W/GROUND
455-240H-XXX	120/240 VAC B PHASE IS 208V	3 PHASE, HIGH-LEG DELTA, W/GROUND
455-240D-XXX	240VAC	3 PHASE, 3 WIRE DELTA, W/GROUND
455-380D-XXX	380 VAC	3 PHASE, 3 WIRE DELTA, W/GROUND
455-480D-XXX	480 VAC	3 PHASE, 3 WIRE DELTA, W/GROUND

TECHNICAL INFORMATION

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
Discrete Protection Modes (7)	L-N, L-G, N-G
Protection Modes (10 Modes)	L-N, L-G, L-L, N-G
Pre-Wired	36" Stranded #10 AWG
Status Indicators	Green LED
Optional EMI Filter	-45 dB Noise Reduction
Optional Alarm Relay Contacts	Form C NC & NO
Optional Red LED	Indicates Red when unit is in alarm

DIMENSIONAL SPECIFICATIONS

Dim	ACT 455 – 50, 80, 100, 125, 160, 200	
H	10.00	(254)
W	8.00	(203.2)
D	6.00	(154.2)

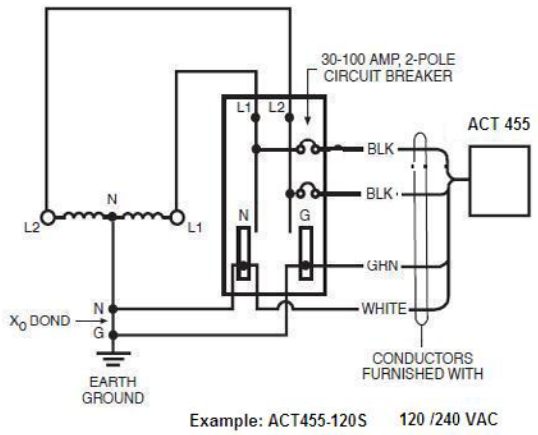
MECHANICAL SPECIFICATIONS

Weight	10 lbs
Standard Enclosure	Resin NEMA 12 / 4X
Operating Temp	-40C to +65C
Non-condensing Humidity	5% to 95%

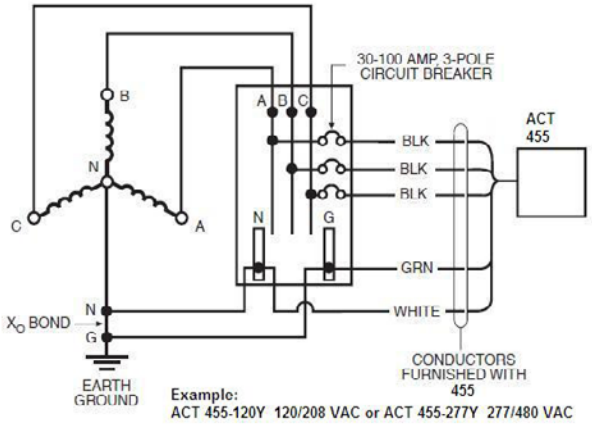
Bottom Fed is Standard – Top Fed is Option Code – T

100% Sanded for Increased Safety

Single Phase, 3-Wire (with neutral)



3-Phase, 4-Wire WYE



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ACT Surge Stryker 453 Family

A Wall Mounted Surge Protection Device

The Full Featured ACT Surge Stryker 453 Family is a high performance surge protector designed for critical panel locations. The SPD incorporates high-energy MOVs with the optional EMI/RFI noise filtering to provide protection against transients originating from induced lightning strikes and utility switching.

Real time diagnostics include LED fault indicators for each phase and optional Form C dry contacts for remote indication allows the customer to always know the ACT 453 is at full capacity.

Housed in a rugged NEMA 12 enclosure these indoor devices are suitable for harsh indoor or covered applications. The ACT 453 Family is available for all voltages and configurations up to 480Vac with per mode surge ratings from 50kA to 100kA and is available with remote signaling contacts and filtering that removes noise down to –40dB.

RECOMMENDED LOCATION

- Cell Sites, Well Pumps / Cat C
- Distribution Equipment / Cat B
- Branch Panels / Cat B
- Point of Use / Cat A
- Residential / Cat C

FEATURES AND BENEFITS

- 4 Modes of Discrete Protection (L-N, N-G)
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
- Green Status indicating Lights per phase
- NO/NC Form C Dry Contact option for remote monitoring
- Optional Filter removes noise down to -40dB @ MHz
- Individually Fused MOV Technology
- 2 –Year Standard Warranty

STANDARDS MET

- Safety – Listed for UL 1449 4th edition
- Safety - Meets UL 1283 when filter is installed
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

3RD PARTY TESTED

- ACT 453 is tested in all modes at rated currents by independent testing facilities
- Repetitive surge testing per IEEE C62.41.2 C3 combination without any degradation of more than 10% deviation. Greater than 10,000 impulses*
- NEMA LS-1 Tested

ACT453: 160426

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ACT TransShield 453 Family

A Wall Mounted Surge Protection Device

TECHNICAL INFORMATION

MECHANICAL SPECIFICATIONS

Dimensions	8"H X 6"W X 3.5"D
Weight	7.5 lbs.
Enclosure	NEMA 4
Operating Temp	-40C to +65C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
Protection Modes (10Modes)	L-N, L-G, L-L, N-G
Discrete Protection	L-N, N-G
Pre-Wired	36" stranded #10 AWG
Status Indicators	Green LED
Optional Alarm Relay Contacts	Form C NC & NO
Optional filter	-40dB noise reduction

EXAMPLE: **ACT 453-120S-100 or ACT 453-277Y-080-R-F**

OPTIONS:

kA rating	50kA	050
	80kA	080
	100kA	100
Alarm Relay Contacts	Form C NC & NO – R	
EMI/Noise Filter	EMI/Noise Filter (>-40db) – F	
Top Fed	Cables oriented from top – T	

Part Number 453-Voltage-kA Rating-Options	Configuration	VPR (Voltage Protection Rating)				MCOV
		L-N	L-G	N-G	L-L	
453-120-XXX	120Vac, 1ph, 2W+G	700	1200	700	1000	150
453-120S-XXX	120/240Vac, 1ph, 3W+G, Split Phase	700	1200	700	1000	150
453-120Y-XXX	120/208Vac, 3ph, 4W+G, Wye	700	1200	700	1000	320
453-220Y-XXX	220/380Vac, 3ph, 4W+G, Wye	1000	1800	1000	1800	150
453-240-XXX	240Vac, 1ph, 2W+G	1000	1800	1000	1800	320
453-240H-XXX	120/220/240Vac, 3ph, 4W+G, Hi-Leg	700/1000	2000	1000	1000/1800	150/320
453-240Y-XXX	240/415Vac, 3ph, 4W+G, Wye	1000	1800	1000	1800	320
453-240D-XXX	240Vac, 3ph, 3W+G, Delta	-	1000	-	1800	320
453-277Y-XXX	277/480Vac, 3ph, 4W+G, Wye	1000	1800	1000	1800	320
453-480-XXX	480Vac, 1ph, 2W+G	1800	3200	1800	3000	575
453-480D-XXX	480Vac, 3ph, 3W+G, Delta	-	1800	-	3000	575

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ACT TransShield 452 Family

A Wall Mounted Surge Protection Device

Power Quality is more important today than ever before and that means not just any surge protector can be relied on to protect your sensitive equipment.

The ACT TransShield 452 type design has been protecting millions of dollars of telecom and commercial equipment for over 20 years and is the perfect product to protect your electrical and electronic environments.

The TransShield protection products are a cost effective solution for any critical location in the facility from high risk sites (Telecom & Petroleum) to the Point of Use equipment like your computers.

When installed with the ACT Surge Stryker 455, you can count on a front to back facility protection system.

RECOMMENDED LOCATION

- Type 2
- Cell Sites, Well Pumps / Cat C
- Distribution Equipment / Cat B
- Branch Panels / Cat B
- Point of Use / Cat A

FEATURES AND BENEFITS

- 4 Modes of Discrete Protection (L-N, N-G)
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
- Green Status indicating Lights per phase
- NO/NC Form C Dry Contact option for remote monitoring
- Individually Fused and Protected MOV Technology
- 1–Year Standard Warranty

STANDARDS MET

- Safety – ETL Recognized to UL1449 4th Edition
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

3RD PARTY TESTED

- Survives 1,000 (C3 6kV / 3kA)

ACT452: 160419

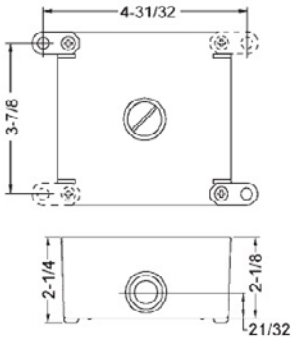
ACT TransShield 452 Family

DIMENSIONS

ACT 452 Single and Split Phase

ACT 452 3-Phase Unit

ACT 452 with "W" Wall mounting option



TECHNICAL INFORMATION

MECHANICAL SPECIFICATIONS

Dimensions	See Drawing
Weight	1.7 lbs.
Enclosure	NEMA 3R
Operating Temp	-40F to +140F -40C to +65C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
Protection Modes (10 Modes)	L-N, L-G. L-L, N-G.
Pre-wired	36" stranded #10 AWG
Status Indicators	Green LED
Optional Alarm Relay Contacts	Form C NC & NO

Model	System Voltage	System Configuration	Protect Mode	MCOV	SVR	VPR
452-120-040	120V	2 Wire + G	L-N	150	500	700
			L-G	300	600	1200
452-240-040	240V	2 Wire + G	L-N	320	800	1000
			L-G	640	1300	1800
452-480-040	480	2 Wire + G	L-N	550	1500	2500
			L-G	1200	3000	3200
452-120S-040	120/240	3 Wire + G	L-N	150	500	700
			L-L	300	600	1200
452-240S-040	240/480	3 Wire + G	L-N	320	800	1000
			L-L	640	1300	1800
452-120Y-040	120/208	4 Wire + G	L-N	150	500	700
			L-G	300	600	1200
452-277Y-040	277/480	4 Wire + G	L-N	320	800	1000
			L-G	640	1300	1800
452-480D-040	480	3 Wire + G	L-G	550	3000	1800
			L-L	1150	1500	3000

EXAMPLE: **ACT 452-120-040**

OPTIONS

Surge Rating Per Mode	040 = 40kA	
Remote Alarms	-R	NC / NO Form C Contacts
Mounting Style	-S	Side (Bottom) Fed – Std product
	-B	Back Fed Option
	- W	Wall Mounted Option

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ACT TransShield 452 P-Series Family

A Wall Mounted Surge Protection Device

ACT 452-120Y-040-P

Power Quality is more important today then ever before and that means not just any surge protector can be relied on to protect your sensitive equipment.

The ACT TransShield 452 type SPD has been protecting millions of dollars of telecom and commercial equipment for over 20 years and is the perfect product to protect your sensitive electrical and electronic environments.

The TransShield protection products are a cost effective solution for any critical location in the facility from high risk sites (Telecom & Petroleum) to the Point of Use equipment like your computers.

When installed with the ACT Surge Stryker 455 Surge Protection Device, you can count on a front to back facility protection system.

RECOMMENDED LOCATION

- Type 2 & Type 3
- Residential Applications
- Commercial Applications
- HVAC Units
- Cell Sites, Well Pumps / Cat C
- Branch Panels / Cat B
- Point of Use / Cat A

FEATURES AND BENEFITS

- Weather-resistent – perfect for outdoor applications
- 4 Modes of Discrete Protection (L-N, N-G)
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
- Green Status indicating Lights per phase
- Individually Fused MOV Technology
- 1–Year Standard Warranty

STANDARDS MET

- Safety – ETL Recognized to UL1449 4th Edition
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

3RD PARTY TESTED

- Survives 1,000 (C3 6kV / 3kA)

TECHNICAL INFORMATION

MECHANICAL SPECIFICATIONS

Dimensions	L 4.38" x W 3.13" x H 2.0" *(See Drawing)*
Weight	1.7 lbs.
Enclosure	NEMA 4X Plastic UL-94 VO
Operating Temp	-40F to +140F -40C to +65C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
4 Modes of Discrete Protection	L-N, N-G
Protection Modes (10 Modes)	L-N, L-G. L-L, N-G
Pre-wired	18" stranded #10 AWG
Status Indicators	Green LED

ACT452P: 16 04 19

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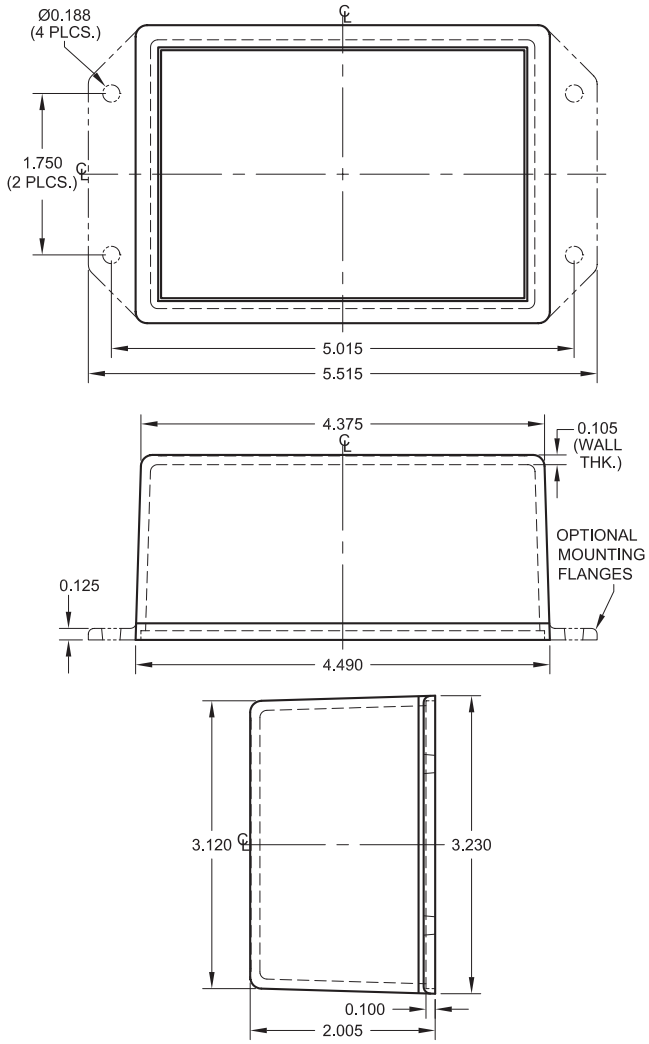
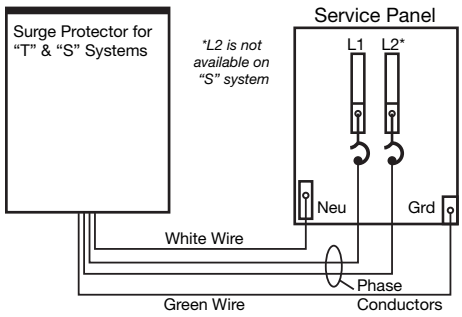
ACT TranShield 452 P-Series Family

DIMENSIONS

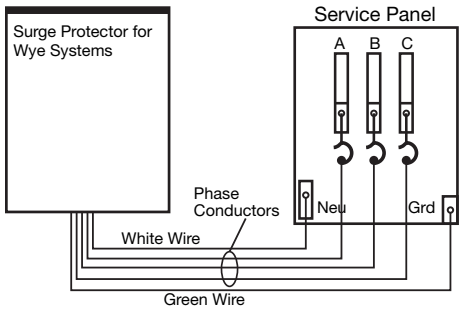


INSTALLATION INSTRUCTIONS

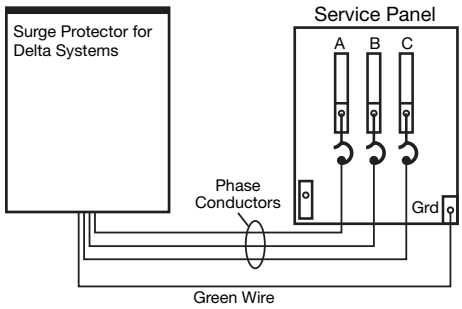
Split Phase 3W + G & Single Phase 2W + G



3 Phase 4W + G, Wye



3 Phase 3W + G, Delta



Model	System Voltage	System Configuration	Protect Mode	MCOV	SVR	VPR
452-120-040-P	120V	2 Wire + G	L-N	150	500	700
			L-G	300	600	1200
452-240-040-P	240V	2 Wire + G	L-N	320	800	1000
			L-G	640	1300	1800
452-480-040-P	480	2 Wire + G	L-N	550	1500	2500
			L-G	1200	3000	3200
452-120S-040-P	120/240	3 Wire + G	L-N	150	500	700
			L-L	300	600	1200
452-240S-040-P	240/480	3 Wire + G	L-N	320	800	1000
			L-L	640	1300	1800
452-120Y-040-P	120/208	4 Wire + G	L-N	150	500	700
			L-G	300	600	1200
452-277Y-040-P	277/480	4 Wire + G	L-N	320	800	1000
			L-G	640	1300	1800
452-480D-040-P	480	3 Wire + G	L-G	550	3000	1800
			L-L	1150	1500	3000

EXAMPLE: **ACT 452-120-040-P**
ACT 452-120Y-040-P-F

OPTIONS

Surge Rating Per Mode	040 = 40kA
Enclosure Type	-P Plastic Enclosure
	-F EMI/Noise Filter (-40 dB @ 1MHz)

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ACT TranShield 452S Series Connected Family

A 30 Amp Series Connected Surge Protection Device

ACT 452S Series Connected All Mode Filter Protector with standard end termination

The ACT 452S Series connected (Kelvin) design with Filter option will not only protect sensitive electronic equipment against all types of transient surges, but with the filter option installed provides one of the lowest let through voltages for Class B & A locations (IEEE C62.45).

Two Mounting options available with standard being all wires through a single Hub. The "I" option allows for a series conduit connection through 2 ½" Hubs.

ACT Protection products are a cost effective solution for any critical location in the facility from high risk sites (like telecom & petroleum) to your sensitive Point of Use equipment.

When installed with the ACT Hard Wire Circuit Protector, you can count on a front to back facility protection system.

RECOMMENDED LOCATIONS (IEEE C62)

- Cell Sites, Well Pumps / Cat C / Type 2
- Distribution Equipment / Cat B / Type 2
- Branch Panels / Cat B / Type 2
- Point of Use / Cat A / Type 3

FEATURES AND BENEFITS

- All Modes of Discrete Protection (L-N, L-G, N-G)
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
- Green Status LED's indicating protection condition
- Hybrid Multi-Stage Design with EMI /RFI Filter Option that protects from 3kHz – 1 MHz
- Individually Fused MOV Technology
- 2-Year Standard Warranty

STANDARDS MET

- Safety – UL 1449 4th Edition March 2016
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

3RD PARTY TESTED

- Survives 5,000 (C3 6kV / 3kA)

ACT452S: 16 04 19

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ACT TranShield 452S Series Connected Family

TECHNICAL INFORMATION

PART NUMBER MATRIX

Model	System Voltage	System Configuration	Protect All Mode	MCOV	SVR (500 A 8x20us)
452S-120-040	120V	2 Wire • G	L-N	150	500
			L-G	150	500
			N-G	150	500
452S-240-040	240V	2 Wire • G	L-N	320	800
			L-G	320	800
			N-G	320	800
452S-120S-040	120/240	3 Wire • G	L-N	150	500
			L-G	150	500
			N-G	150	500
452S-240S-040	240/480	3 Wire • G	L-N	320	800
			L-G	320	800
			N-G	320	800

OPTIONS:

SE is Single Ended	All wires go in and out through single chase nipple
DE is Double Ended	Wires enter one side of protector and exit out opposite side through 2 chase nipples
F	EMI/Noise Filter (-40 dB @ 1 MHz)

PART NUMBER EXAMPLE: 452S-120-040-SE-F

MECHANICAL SPECIFICATIONS

Dimensions	4.5" x 4.5" x 2.0"
Weight	3.2 lbs.
Enclosure	NEMA 12 Cast Aluminum
Hubs (Inch)	½"
Operating Temp	-40F to +140F -40C to +65C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Electrical Rating	30 Amps
Electrical Connection Method	Hardwire Series (Kelvin)
Surge Protection Connection	Parallel
Protection Modes (All Modes)	L-N, L-G. N-G. L-L
Pre-wired	30" stranded #10 AWG
Status Indicators	Green LED
Protection & Filter	Multi-Stage Hybrid MOV & Capacitor
Maximum Surge (8x20 uS)	40,000 Amps/Mode 80,000 Amps/Phase
Surge Response Time (with Filter)	<5 nanoseconds
Listed to UL1449 4th Edition March 2016	ETL
3rd Party Tested	C62.41, C62.45
Strength	5000 C3 8x20us
Noise Filter EMI/RFI Response	>-40 dB -3kHz to 1 MHz
Warranty	2 years

ACT COMMUNICATIONS™

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ACT 450 LT Series Filter Protector

A DIN Rail Mounted Surge Protection Device

Power Quality is more important today than ever before and that means not just any surge protector can be relied on to protect your sensitive equipment.

The ACT 450 LT Series Filter Protector is a cost effective compact design made specifically for commercial and industrial applications like Waste Water, HVAC, Refrigeration, Solar and Wind projects and Industrial Controls.

These UL 4th edition protectors are individually fused for maximum safety with a visual indicator light to show if the product is properly working.

FEATURES AND BENEFITS

- Filter located on all modes of operation
- 7 modes of discrete protection (L-G, L-N and N-G)
- 10 modes of protection (L-N, L-G, N-G, L-L)
- Green status indicating light
- Individually fused MOV technology
- 1-year standard warranty
- Can be wired SERIES, PARALLEL and KELVIN
- 15 and 30 Amp version
  (note: Product must be wired behind 30 Amp breaker or less to meet UL 1449)

STANDARDS MET

- Safety – ETL Recognized to UL1449 4th Edition
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code
- Filter Mil Spec Standard 220B

3RD PARTY TESTED

ACT450LT: 16 04 14

ACT 450 LT Series Filter Protector

A DIN Rail Mounted Surge Protection Device

TECHNICAL INFORMATION

PERFORMANCE SPECIFICATIONS

MODEL NUMBER	MODE	A1 Ring 2kV, 67A	A3 Ring 6kV, 200A	B3/C1 6kV, 3kA
450-LT15-024-030	L-N	58	87	176
5 - 30 VCD/VAC	L-G	48	84	167
15 Amp 30kA	N-G	48	84	167
450-LT15-048-030	L-N	58	123	201
5 - 50 VCD/VAC	L-G	53	111	196
15 Amp 30kA	N-G	53	111	196
450-LT15-120-030	L-N	91	207	486
5 - 150 VCD/VAC	L-G	55	131	433
15 Amp 30kA	N-G	55	131	433
450-LT15-240-030	L-N	183	325	780
5 - 300 VCD/VAC	L-G	63	257	721
15 Amp 30kA	N-G	63	257	721
450-LT30-120-050	L-N	91	207	486
5 - 150 VCD/VAC	L-G	55	131	433
30 Amp 50kA	N-G	55	131	433
450-LT30-240-050	L-N	183	325	780
5 - 300 VCD/VAC	L-G	63	257	721
30 Amp 50kA	N-G	63	257	721

EMI/RFI Filter Attenuation - Mil Standard 220B

FREQUENCY	ATTENUATION IN dB
1 kHz	1.3
10 kHz	11
100 kHz	31
500 kHz	30
1 MHz	31
10 MHz	15
20 MHz	8

MECHANICAL SPECIFICATIONS

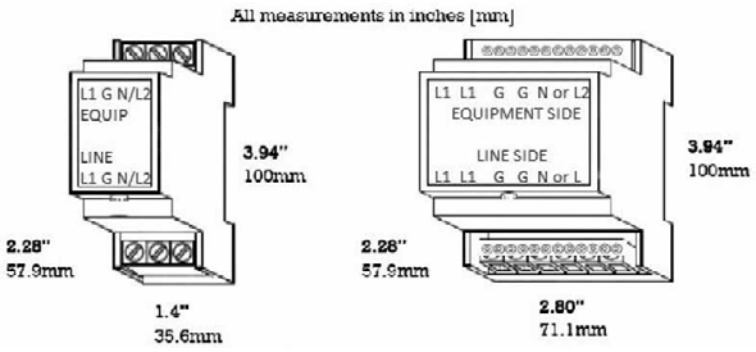
Dimensions	See Drawing
Weight	Approx. 1.0 lbs
Enclosure	ABS Plastic UL94
Operating Temp	-40F to +140F -40C to +65C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Series, Parallel and Kelvin
Protection Modes (7 Modes)	L-N, L-G, L-L, N-G
Wired	#22AWG - #14AWG
Status Indicators	Green LED
Filter - Mil Std 220B	30dB @ 500kHz
100 kAIC short circuit current rating with a 15 amp max class T fuse	
15 and 30 Amp versions	

DIMENSIONS

15 Amp	3.94"H x 1.4"W x 2.28" D
30 Amp	3.94"H x 2.80"W x 2.28"D



ACT COMMUNICATIONS™

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 450 DS Family

A DIN Mounted Surge Protection Device

The ACT 450 DS Din Mounted Surge Protection Device is designed in a multi-polar configuration to protect single phase, split phase, three phases or 3 phase + neutral AC power.

FEATURES AND BENEFITS

- 4 Modes of Discrete Protection(L-N, N-G)
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
- Green Status indicating Lights per phase
- NO/NC Form C Dry Contact standard for remote monitoring
- Individually Fused MOV Technology in a multi-stage protection package
- 1 –Year Standard Warranty

STANDARDS MET

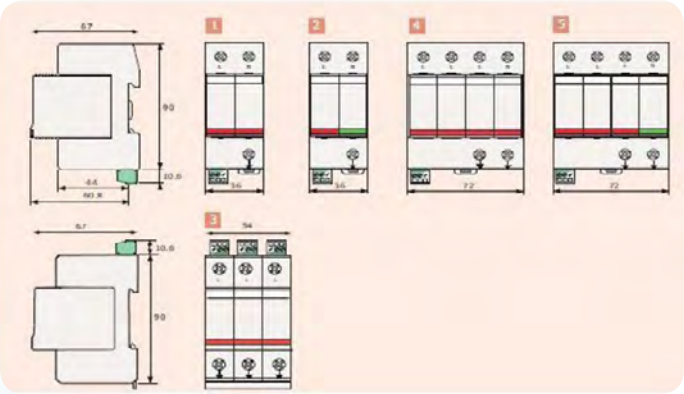
- Safety – recognized to UL 1449 4th Edition Type 2 & Type 3
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

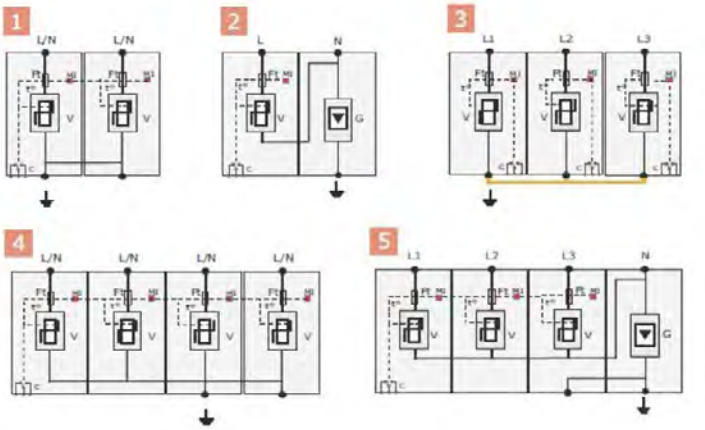
3RD PARTY TESTED

RECOMMENDED LOCATION

- Motors, Well Pumps / Cat C / Type 2
- Distribution Equipment / Cat B / Type 2
- Branch & Industrial Panels / Cat B / Type 2
- Point of Use / Cat A / Type 3

DIMENSIONS & DIAGRAM





Part Number	Voltage	# of Protector Modules	Ipeak 8/20 us (Imax/mode)	Clamp Voltage (500 A 8/20us)	Clamp Voltage (10,000 A 8/20us)	# of surges for In/ mode @ 20kA, 8/20us	Diagram
ACT 450-DS44-277/G	277/480 L-N, N-G	4	40kA	800V	1000V	15	5
ACT 450-DS44-120/G	120/208 L-N, N-G	4	40kA	400V	500V	15	5
ACT 450-DS43-277	277/480 L-G only	3	40kA	800V	1000V	15	3
ACT 450-DS43-120	120/208 L-G only	3	40kA	400V	500V	15	3
ACT 450-DS43-120	120/240 L-G + N-G	3	40kA	400V	500V	15	3
ACT 450-DS43-480	480 Delta L-G only	3	40kA	1000V	1800V	15	3
ACT 450-DS42-120/G	120 L-N + N-G	2	40kA	400V	500V	15	2
ACT 450-DS42-120	120/240 L-G only	2	40kA	400V	500V	15	1
ACT 450-DS41-240	240 L-G only	1	40kA	800V	1000V	15	1/2 of 1
ACT 450-DS41-220	220 L-G only	1	40kA	700V	900V	15	1/2 of 1
ACT 450-DS41-120	120 L-G only	1	40kA	400V	500V	15	1/2 of 1

*Other Voltages are available for quote

ACT450: 16 04 14

ACT COMMUNICATIONS™

222 North Center Street
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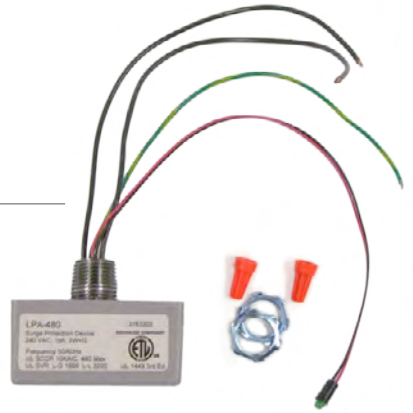
ACT LPA Light Pole Arrestor

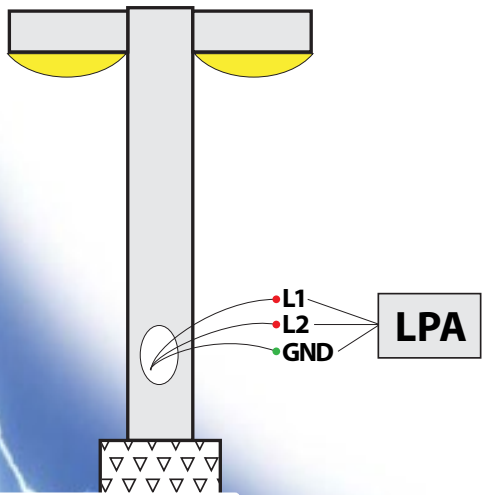


LPA-480-036-RL

INSTALLATION INSTRUCTIONS

1. Remove electrical cover plate screw
2. Pull wires out of Light Pole and identify the following wires: Phase 1, Phase 2, Ground wires
3. Remove twist cap on first phase wire,
4. Connect L1 wire from LPA to Phase 1 wire.
5. Remove twist cap on second phase wire
6. Connect L2 wire from LPA to phase 2 wire
7. Remove twist cap on Ground wire
8. Connect Green Ground wire to Pole Ground wire
9. If mounting remote LED light into light pole
   A. Cut LED Red & Black wire
   B. Drill ¼" hole in light pole electrical cover
   C. Insert LED leads through hole and pull tight until LED snaps in place
   D. Reconnect Red & Black wire using twist caps provided

TYPICAL INSTALLATION



FEATURES AND BENEFITS

- Provides 30kA amps single-pulse surge current Line to Neutral or Line to Ground
- Discrete protection on both Line to Ground and Line to Line
- Protects facilities parking lot lighting against lightning transients
- Protects Point of Equipment like well pumps, motors and computer equipment
- Includes pre-wired pigtails to facilitate quick installations
- Fail Safe Open – Meets UL 1449 4th Edition March 2016
- Indicator Light can be installed remotely
- Remote Relay Option (both NC & NO contacts)
- 1 Year Warranty

MECHANICAL SPECIFICATIONS

Dimensions	3" x 2" x 2"
Weight	15 oz
Enclosure - NEMA 4X	Plastic UL-94VO
Operating Temp	-40C to+60C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
Protection Modes	L-L, L-G
Pre-wired	18" stranded #12 AWG
Status Indicators	Local & Remote LED option
Dry Contacts	Form C NC & NO

Specifications are subject to change without notice

STANDARDS MET

- Safety – ETL recognized to UL1449 4th Edition March 2016
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

MODEL NUMBER	SYSTEM VOLTAGE	SYSTEM CONFIGURATION	PROTECT MODE	MCOV	SVR
LPA-240-036	240V	2 Wire +G	L-L	300	800
			L-G	300	800
LPA-480-036	480V	2 Wire +G	L-L	640	1800
			L-G	640	1800

Options:
-CN ½" Chase Mounting Nipple
-RL Remote Status LED
-RR Remote Relay Board with both NC & NO dry contacts

All tests were performed with 6" lead lengths, positive polarity.
All voltages measured from the zero reference point.

ACTLPA: 16 04 15

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222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT LPA CN Lighting Panel Arrestor

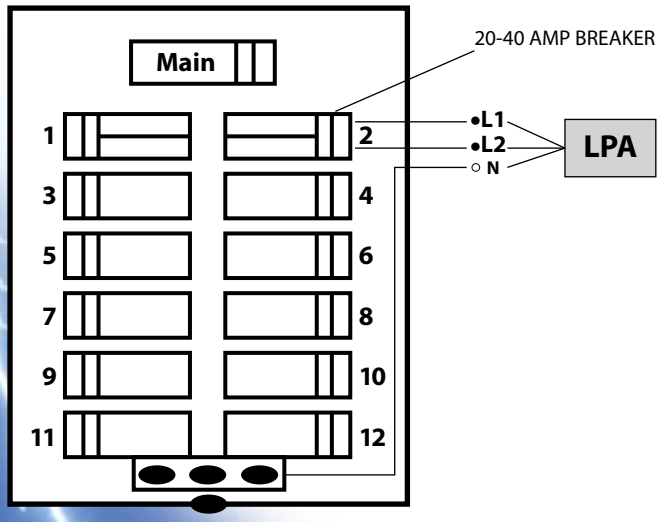
LPA-120-036-CN

Power Quality is an important consideration with so much of the electrical load being electronic equipment.

The ACT Lighting Panel Arrestor is the result of 30 years of protection experience tied into one of the smallest packages on the market.

The LPA small size makes it a perfect product for those common locations where larger surge protection cannot be used and easily installs on any standard Lighting Panel through a "knock-out" and any free breaker sized from 20 -40 Amps. While small in size, it still has industrial strength protection with surge levels up to 36,000 surge amps (8x20us).

TYPICAL INSTALLATION



FEATURES AND BENEFITS

- Provides 36kA amps single-pulse surge current Line to Neutral or Line to Ground
- Discrete protection on both Line to Ground and Line to Line
- Protects facilities lighting panels against lightning and transients
- Protects Point of Equipment like well pumps, motors and computer equipment
- Includes pre-wired pigtails to facilitate quick installations
- Fail Safe OPEN – Listed to UL 1449 4th edition March 2016
- 1 Year Warranty

MECHANICAL SPECIFICATIONS

Dimensions	LPA-120 2" x 2" x 1.5" LPA-120S 3" x 2" x 1.5"
Weight	8 oz & 10 oz
Enclosure – NEMA 4X	Plastic UL-94VO
Operating Temp	-40C to+60C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
Protection Modes	L-G or L-N and L-L
Pre-wired	18" stranded #14 AWG
Surge Rating (8x20 NS)	36kA/mode

Specifications are subject to change without notice

STANDARDS MET

- Safety – ETL recognized to UL 1449 4th edition March 2016
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

RECOMMENDED LOCATIONS

- All commercial and residential lighting panels
- Point of Use or Category A locations
- HVAC and Motor Controlers
- Well Pumps

MODEL NUMBER	SYSTEM VOLTAGE	SYSTEM CONFIGURATION	PROTECT MODE	MCOV	VPR 3000A
LPA-120-036-CN	120V	2 Wire	L-L	300	1000
			L-G or L-N	150	700
LPA-120S-036-CN	120/240V	3 Wire	L-L	300	1000
			L-G or L-N	150	700
Standard – CN ½" Chase Mounting Nipple					

ACTLPA-CN: 16 03 29

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DIN RAIL SURGE PROTECTION

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 450 LT Series Filter Protector

A DIN Rail Mounted Surge Protection Device

Power Quality is more important today than ever before and that means not just any surge protector can be relied on to protect your sensitive equipment.

The ACT 450 LT Series Filter Protector is a cost effective compact design made specifically for commercial and industrial applications like Waste Water, HVAC, Refrigeration, Solar and Wind projects and Industrial Controls.

These UL 4th edition protectors are individually fused for maximum safety with a visual indicator light to show if the product is properly working.

FEATURES AND BENEFITS

- Filter located on all modes of operation
- 7 modes of discrete protection (L-G, L-N and N-G)
- 10 modes of protection (L-N, L-G, N-G, L-L)
- Green status indicating light
- Individually fused MOV technology
- 1-year standard warranty
- Can be wired SERIES, PARALLEL and KELVIN
- 15 and 30 Amp version
  (note: Product must be wired behind 30 Amp breaker or less to meet UL 1449)

STANDARDS MET

- Safety – ETL Recognized to UL1449 4th Edition
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code
- Filter Mil Spec Standard 220B

3RD PARTY TESTED

ACT 450 LT Series Filter Protector

A DIN Rail Mounted Surge Protection Device

TECHNICAL INFORMATION

PERFORMANCE SPECIFICATIONS

MODEL NUMBER	MODE	A1 Ring 2kV, 67A	A3 Ring 6kV, 200A	B3/C1 6kV, 3kA
450-LT15-024-030	L-N	58	87	176
5 - 30 VCD/VAC	L-G	48	84	167
15 Amp 30kA	N-G	48	84	167
450-LT15-048-030	L-N	58	123	201
5 - 50 VCD/VAC	L-G	53	111	196
15 Amp 30kA	N-G	53	111	196
450-LT15-120-030	L-N	91	207	486
5 - 150 VCD/VAC	L-G	55	131	433
15 Amp 30kA	N-G	55	131	433
450-LT15-240-030	L-N	183	325	780
5 - 300 VCD/VAC	L-G	63	257	721
15 Amp 30kA	N-G	63	257	721
450-LT30-120-050	L-N	91	207	486
5 - 150 VCD/VAC	L-G	55	131	433
30 Amp 50kA	N-G	55	131	433
450-LT30-240-050	L-N	183	325	780
5 - 300 VCD/VAC	L-G	63	257	721
30 Amp 50kA	N-G	63	257	721

EMI/RFI Filter Attenuation - Mil Standard 220B

FREQUENCY	ATTENUATION IN dB
1 kHz	1.3
10 kHz	11
100 kHz	31
500 kHz	30
1 MHz	31
10 MHz	15
20 MHz	8

MECHANICAL SPECIFICATIONS

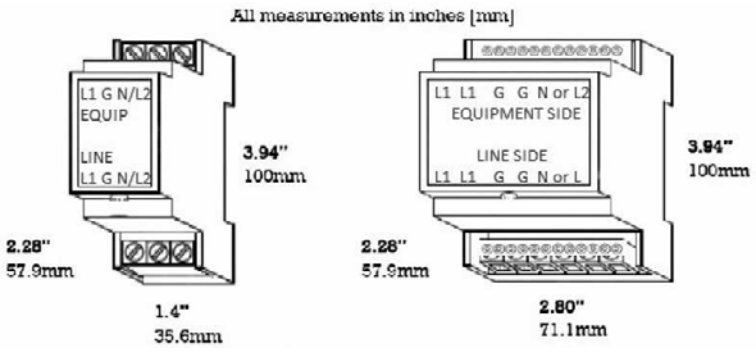
Dimensions	See Drawing
Weight	Approx. 1.0 lbs
Enclosure	ABS Plastic UL94
Operating Temp	-40F to +140F -40C to +65C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Series, Parallel and Kelvin
Protection Modes (7 Modes)	L-N, L-G, L-L, N-G
Wired	#22AWG - #14AWG
Status Indicators	Green LED
Filter - Mil Std 220B	30dB @ 500kHz
100 kAIC short circuit current rating with a 15 amp max class T fuse	
15 and 30 Amp versions	

DIMENSIONS

15 Amp	3.94"H x 1.4"W x 2.28" D
30 Amp	3.94"H x 2.80"W x 2.28"D



222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 450 DS Family

A DIN Mounted Surge Protection Device

The ACT 450 DS Din Mounted Surge Protection Device is designed in a multi-polar configuration to protect single phase, split phase, three phases or 3 phase + neutral AC power.

FEATURES AND BENEFITS

- 4 Modes of Discrete Protection(L-N, N-G)
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
- Green Status indicating Lights per phase
- NO/NC Form C Dry Contact standard for remote monitoring
- Individually Fused MOV Technology in a multi-stage protection package
- 1 –Year Standard Warranty

STANDARDS MET

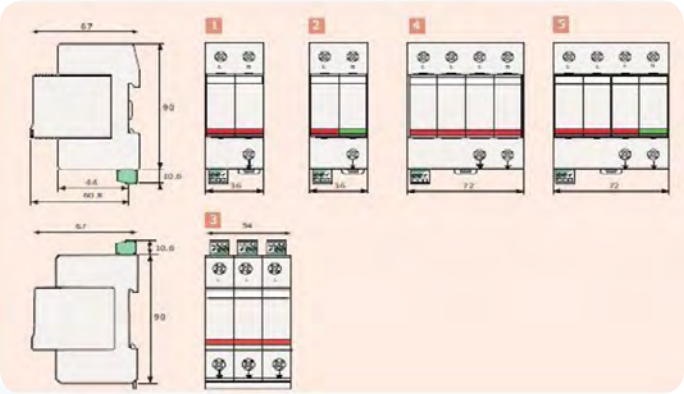
- Safety – recognized to UL 1449 4th Edition Type 2 & Type 3
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

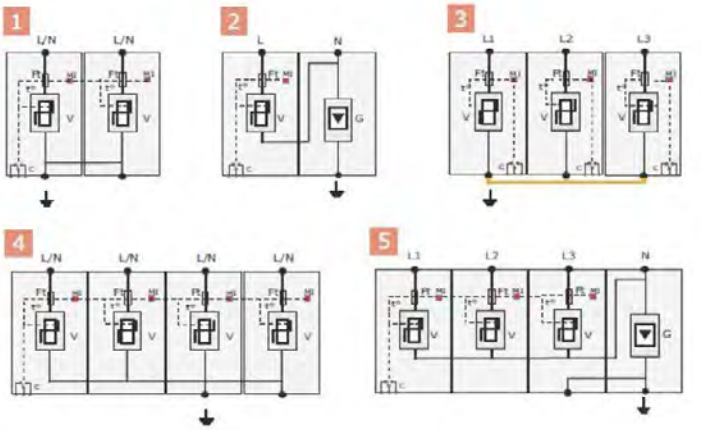
3RD PARTY TESTED

RECOMMENDED LOCATION

- Motors, Well Pumps / Cat C / Type 2
- Distribution Equipment / Cat B / Type 2
- Branch & Industrial Panels / Cat B / Type 2
- Point of Use / Cat A / Type 3

DIMENSIONS & DIAGRAM





Part Number	Voltage	# of Protector Modules	Ipeak 8/20 us (Imax/mode)	Clamp Voltage (500 A 8/20us)	Clamp Voltage (10,000 A 8/20us)	# of surges for In/ mode @ 20kA, 8/20us	Diagram
ACT 450-DS44-277/G	277/480 L-N, N-G	4	40kA	800V	1000V	15	5
ACT 450-DS44-120/G	120/208 L-N, N-G	4	40kA	400V	500V	15	5
ACT 450-DS43-277	277/480 L-G only	3	40kA	800V	1000V	15	3
ACT 450-DS43-120	120/208 L-G only	3	40kA	400V	500V	15	3
ACT 450-DS43-120	120/240 L-G + N-G	3	40kA	400V	500V	15	3
ACT 450-DS43-480	480 Delta L-G only	3	40kA	1000V	1800V	15	3
ACT 450-DS42-120/G	120 L-N + N-G	2	40kA	400V	500V	15	2
ACT 450-DS42-120	120/240 L-G only	2	40kA	400V	500V	15	1
ACT 450-DS41-240	240 L-G only	1	40kA	800V	1000V	15	1/2 of 1
ACT 450-DS41-220	220 L-G only	1	40kA	700V	900V	15	1/2 of 1
ACT 450-DS41-120	120 L-G only	1	40kA	400V	500V	15	1/2 of 1

*Other Voltages are available for quote

ACT450: 160414

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222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 450 DS2XX Family

Din Rail DC Power Surge Protector

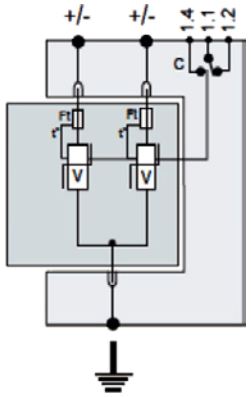
The ACT 450 DS2X0-XX DC Series Protectors is designed to protect equipment connected to DC power supply (or AC) against lightning surges.

These devices are based on high energy varistors (MOV) matched with the DC operating voltage (from 12 to 130 Vdc). The MOV are equipped with internal thermal disconnections in order to provide the safest end of life. The indication of the disconnection status is provided by a mechanical indicator and could be transmitted through a remote signal mechanism (option "S"). The pluggable module allows an easy and fast maintenance.

FEATURES AND BENEFITS

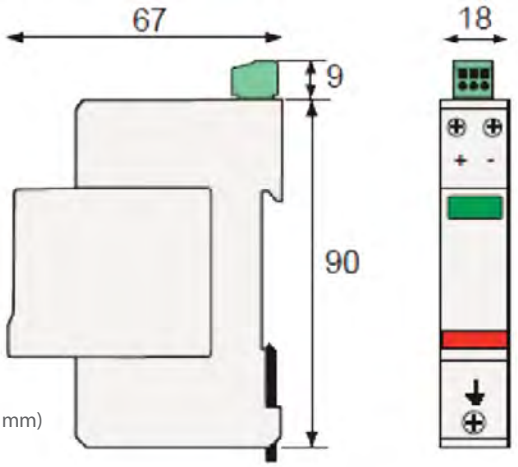
- From 12 to 130Vdc
- Very low Up protection Level
- Compact design
- Imax extremely strong: 20 to 40kA
- IEC 61643-1, EN61643-11, UL 1449 4th Edition Type 3
- 1 Year Standard Warranty

SPECIFICATIONS



C: Remote signalling contact
V: Varistor
Ft: Thermal fuse
t°: Thermal disconnection system

ACT 450-DS2X0S-XXDC
- DC operating range
- Remote signal option
- Maximal discharge current



(in mm)

CHARACTERISTICS

PART NUMBER		DS22012DC	DS220-24DC	DS23048DC	DS24075DC	DS24095DC	DS240110DC	DS240130DC
Nominal DC voltage	Un	12 Vdc	24 Vdc	48 Vdc	75 Vdc	95 Vdc	110 Vdc	130 Vdc
Maximum operating voltage	Uc	24 Vdc	38 Vdc	65 Vdc	100 Vdc	125 Vdc	150 Vdc	180 Vdc
Nominal discharge current	In	10kA	10 kA	15 kA	20 kA	20kA	20 kA	20 kA
Maximal discharge current	Imax	20 kA	20 kA	30 kA	40 kA	40 kA	40 kA	40 kA
Protection Level @ Up	Up	250 V	250 V	300 V	390 V	450 V	500 V	520 V
Protection Level @ 3kA		195 V	195V	230 V	280 V	310 V	370 V	510 V
Thermal disconnector		internal	internal	internal	internal	internal	internal	internal
Protective fuses (if necessary)		20A gG	20A gG	20A gG	50A gG	50 gG	50 gG	50 gG
Dimensions		see drawing						
Wiring to network		by screw terminal - cross section 1,5-10mm² (active wire) and 2,5-25mm² (earthing wire)						
Disconnection indicator		2 mechanical indicators						
Replacement module		pluggable module DSM2x0-xxDC						
Remote signalling		option (DSM2X0-XXDC) - by changeover contact						
Mounting		on symmetrical rail						
Operative temperature		-40/+85°C						
Protection index		IP 20						
Housing material		thermoplastic UL94-V0						

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 422 DLU Family

A DIN Mounted Data / Telephone Protection Device

The ACT 422 DLU and DLU2 family of Din rail mounted surge protectors are resettable and are designed to protect your sensitive datacom, telephone, and instrumentation equipment against harmful lightning surges and electrical transients.

These surge protectors must be installed on a symmetrical DIN rail and are available for transmission lines ranging from 6 -170Vdc and can handle transmission speeds up to 10 Mbps.

These surge protectors utilize a hybrid technology consisting of Gas Tube and fast clamping diodes that combine an ultra-fast response time (<1 ns) and a higher power handling capability of 20 kA.

The DLU protects 1 pair (2 wires) and the DLU2 protects 2 pairs (4wires). These surge protectors protect the shield to ground via gas tube and offer direct earth grounding via the din rail clip.

RECOMMENDED LOCATION

- Commercial & Industrial

FEATURES AND BENEFITS

- DIN Rail Mounting
- All types of Telephone and Data Lines
- Monoblock Housing
- Single and Dual pair versions
- Transmission and protection of shield wire (DLU)
- 1 Year Standard Warranty

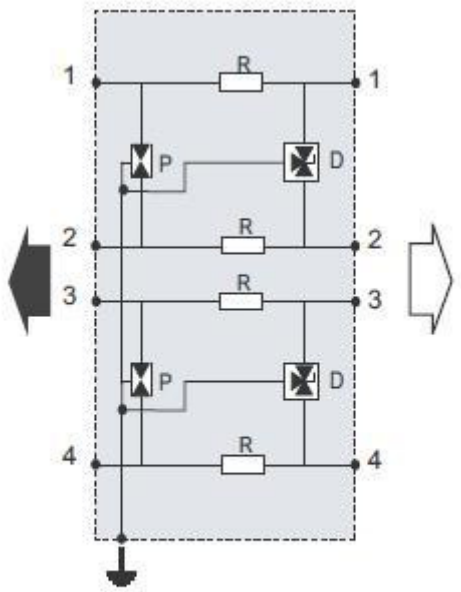
STANDARDS MET

- Safety – UL Listed
- IEC 61643-21 Compliant
- ANSI/IEEE C62.41, C62.45

ACT 422 DLU / DLU2 DIN Mounted Family

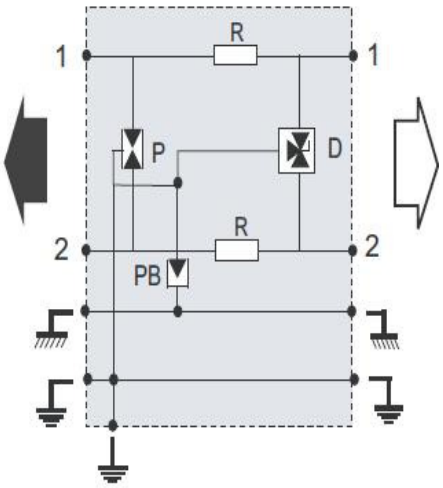
2-pair version: DLU2

Part Number	DLU2-170	DLU2-48D3	DLU2-24D3	DLU2-12D3	DLU2-06D3	DLU2-06DBC
Typical Application	Telephone line ADSL	48 V line	4-20 mA 24 V line	RS232	RS422	T2 - T1 10BaseT
Configuration	2 pairs	2 pairs	2 pairs	4 wires	2 pairs	2 pairs
Nominal line voltage (Un)	150 V	48 V	24 V	12 V	6 V	6 V
Max. line voltage (Uc)	170 V	53 V	28 V	15 V	10 V	10 V
Max. line current	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA
Protection level (Up) 8/20 µs impulse - 5kA	220 V	70 V	70 V	30 V	20 V	25 V
Nominal discharge current (In) 8/20 µs impulse - 10 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Max. discharge current (Imax) 8/20 µs impulse - 1 time	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Impulse current (limp) 10/350 µs impulse - 2 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Type of diagram	D	C	C	C	C	C
End of life	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit
Mechanical characteristics	Monobloc Symmetrical DIN rail mounting Dimensions: See drawing Screw terminal connection - min/max: 22/16 AWG Housing material: Thermoplastic UL 94-V0 Ground connection via DIN rail (DLU, DLU2) and screw terminal (DLU).					



1-pair version: DLU

Part Number	DLU-170	DLU-48D3	DLU-48DBC	DLU-24D3	DLU-12D3	DLU-12DBC	DLU-06D3	DLU-06DBC
Typical Application	Telephone line ADSL	48 V line	Fipway WorldFIP Fieldbus-H2	4-20 mA 24 V line	Profibus-FMS interbus Fieldbus-H1 Batibus	Profibus-DP LONwork	RS485	6 V line high bitrate
Configuration	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield
Nominal line voltage (Un)	150 V	48 V	48 V	24 V	12 V	12 V	6 V	6 V
Max. line voltage (Uc)	170 V	53 V	53 V	28 V	15 V	15 V	10 V	10 V
Max. line current	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA
Protection level (Up) 8/20 µs impulse - 5kA	220 V	70 V	75 V	40 V	30 V	35 V	20 V	25 V
Nominal discharge current (In) 8/20 µs impulse - 10 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Max. discharge current (Imax) 8/20 µs impulse - 1 time	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Impulse current (limp) 10/350 µs impulse - 2 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Type of diagram	D	D	D	D	D	D	C	C
End of life	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit
Mechanical characteristics	Monobloc Symmetrical DIN rail mounting Dimensions: See drawing Screw terminal connection - min/max: 22/16 AWG Housing material: Thermoplastic UL 94-V0 Ground connection via DIN rail (DLU, DLU2) and screw terminal (DLU).							



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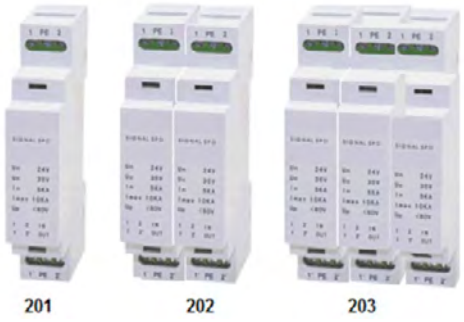
Bonham, TX 75418
(903) 583-8097

ACT 422-XXX-200 Series Protector

Telephone, Data, Control Line and Alarm Protectors



With the increases in the sensitivity of commercial and residential electronic equipment, the ACT 422 200 Series DIN rail protector is perfect for preventing lightning and noise transient surges from entering into your building through the telephone or alarm cables damaging your sensitive IT equipment like computers, industrial controls, faxes and telephone equipment.

The ACT 422 200 Series is a series connected protector with screw terminals on both Line and Equipment side of the protector. is designed with a hybrid multi-stage design that the first stage gas tube robustly protects against heavy lightning surges, while the second stage Diodes insures that only a minimal let-through voltage is passed on to your electronic equipment.

The ACT 422 is an "All Mode" telecom / datacom protector that protects all lines modes of the connector for Tip to Ground, Ring to Ground and Tip to Ring.

RECOMMENDED LOCATION

- Residential & Commercial Telephone
- Alarm Lines
- Datacom and Control Lines

FEATURES AND BENEFITS

- Robust Design – 10kA (8x20uSec)
- Uses dual Hybrid Protection design
- Transient Silicon Diode Technology
- Fast Response Time < 1 nSec
- Extremely low let through voltages
- Absorbs and Dissipates surges within the unit
- All Mode Protection (T-R, T-G, R-G)
- 1 Year Standard Warranty

STANDARDS MET

- UL 497A — ANSI/ IEEE C62
- 3rd Party Tested

TECHNICAL INFORMATION

ACT 422-XXX-201 Single pair protector with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-202 Dual pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-203 Three pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-204 Four pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-206 Six pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

Where XXX = 005, 024, 048, 110, 180 Volts DC

ACT422XXX200: 16 04 14

ACT 422-XXX-200 Series Protector

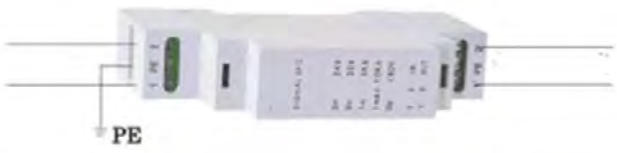
MECHANICAL SPECIFICATIONS

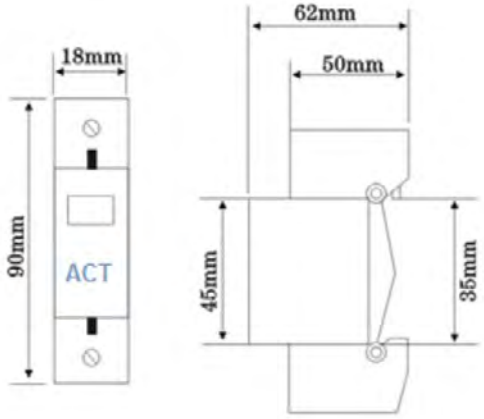
Dimensions: 90 mm x 18 mm x 62 mm
Weight: 150g

ELECTRICAL SPECIFICATIONS

Max Current (8x20us) 10kA
Transfer Speed 10 Mbps
dB Loss <0.5
Connector Type Screw Terminals

Operating Voltage	Nominal Breakdown	Clamp Voltage (8x20 us 3,000 amps)
05V	<15V	70V
24V	<40V	90V
48V	<150	300V
110	<300V	350V
180V	<300V	350V





A/C FILTER DESIGNS

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 320 Power Factor Filter

A Wall and Floor Mounted Energy Savings Device

The ACT Power Factor Filter is designed to increase a lagging Power Factor on a motor back towards unity reducing the natural inefficiencies in supplying power to the motors. Reducing inefficiencies in power delivery lowers wasted energy across the electrical wires, improves motor performance and ultimately lowers electrical bills associated with your motors to up to 8%.

Correcting Power Factor towards unity will free up current normally tied to your existing motors. This means that without having to upgrade your facility power, you can now power other loads like new additional motors, lights and computers.

One of the first indicators of excessive currents in a facility may be failure of fuses and false tripping breakers. Many times over current is experienced because excessive voltages or harmonic voltages are present. The ACT PF filter in conjunction with other fine ACT Power Quality products can reduce harmonic voltages and power pollution that caused facility power problems and damages to the electrical loads.

For locations where the power company charges extra penalties for poor power factor, by correcting the power factor, The ACT PF Filter will reduce these extra penalties potentially saving thousands of dollars per year for these industrial locations.

RECOMMENDED LOCATION

- Waste Water Treatment Facilities
- Hospitals and Health clinics
- Industrial Facilities
- Any standard Motors from ½ to 400 HP
- Facilities being penalized by Power Companies

FEATURES AND BENEFITS

- Conserve Energy – Can be part of your **"Green Initiative"**
- Increases motor and electrical product life
- Better Utilization of Power – Releases System Capacity
- Reduces Utility Charges
- Improves and Stabilizes facility Voltage
- Reduces Power Losses
- Pays for Itself - Quick Return on Investment models
- Surge Protection protects motors and PF filter (Optional)
- Filter Fused to 100kAIC (Optional)
- Contactor disconnect/ connect circuit (Optional)
- Status Indicator (Green LED), each phase alarm (Red LED)
- Form C Remote Alarm NC & NO (Optional)
- 2 Year Warranty

STANDARDS MET

- Safety – UL Listed
- ANSI/IEEE 141 – 1986
- ANSI / IEEE Std 519- 1992
- ANSI/NFPA 70 National Electrical Code

3RD PARTY TESTED

FOR MORE TECHNICAL INFORMATION PLEASE REQUEST THE ACT 320 POWER FACTOR APPLICATION DOCUMENT

ACT 320 Power Factor Filter

TECHNICAL INFORMATION

MECHANICAL SPECIFICATIONS

Enclosure *See ACT 320 Application Guide*	Painted Steel NEMA 12 Figure 00 to 6
Weight *See ACT 320 Application Guide*	11 to 360 lbs
Operating Temp	-20 to +120F
Non-Condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
KVAR	.05 - 400
Fusing	100 kAIC
Breaker (Option)	65 kAIC
Contractors (Optional)	Removes capacitors from circuit when not needed
Status Indicator	Green LED
Blown Fuse Alarm	Red LED
Remote Relay Alarm	Form C Contact (NC & NO) - 240 VAC 6 amps
Surge Protection Device (Optional)	See ACT 452 Specification Sheet

PART NUMBER

ACT 320- VVVV- WWWW- XXX- YY- S-		
VVVV-	**Voltage** 120S 120Y 277Y 240D 480D	 120/240V 120/208V 277/480V 240V Delta 480 Delta
WWW-	**KVAR Size** 000.5 to 400.0	
XXX-	**Fuse/Breaker** FSE BKR	 Fuse Breaker
YY-	**Contactor** CN	 Contactor
S-	**ACT 452 Surge Protector** with surge protector	

EXAMPLE: **ACT320**
480D 010.0 FSE CN S

FOR MORE TECHNICAL INFORMATION PLEASE REQUEST THE
ACT 320 POWER FACTOR APPLICATION DOCUMENT

ACT COMMUNICATIONS™

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ACT 350 Line Reactor Filters

ACT 350-RL Harmonic Compensated Line/Load Reactor Filters are part of a full facility solution that focus is cleaning up the harmonic and high frequency noise generated by your invertors, variable frequency drives (VFD), UPS's and other electronic equipment. These filters are normally installed in Hospitals near elevators, HVAC and X-Ray rooms; At industrial facilities where motors are used on the production lines and Waste Water Treatment Facilities where multiple pumps are needed to move the water.

1 Year Standard Warranty

For more technical information, including mechanical drawings, please see ACT350 Application Document.

PRODUCT SPECIFICATIONS

Standard impedance values	1-1/2%, 2, 3%, 4%, 5% available
Impedance basis	Reactor fundamental current rating
Service Factor *(Continuous)* Reactors rated 1 to 750 Amps Reactors rated above 750 Amps *Note: Select reactor based on fundamental current rating*	 150% of fundamental rating 125% of fundamental rating minimum
Overload Rating	200% of fundamental for 30 minutes 300% of fundamental for 1 minute
Maximum system voltage	600 Volts (units with terminal blocks) 690 Volts (units with box lugs or tab terminals)
Maximum switching frequency	20 KHz
Insulation system	Class N (200º C)
Temperature rise Open or enclosed reactors	 135º C (average)
Ambient temperature Open or enclosed reactors	 45" C (maximum)
Altitude (maximum)	1000 meters
Fundamental frequency Line or Load	 50/60 Hz
Approvals:	CE, UL-508, CSA C22.2
Inductance curve (typical)	100% at 100% current 100% at 150% current 50% at 350% current (minimum)
Inductance tolerance	+/- 10%
Impregnation:	High Bond Strength "Solvent-less" Epoxy, 200º C UL94HB recognized
Dielectric Strength	3000 volts rms (4243 volts peak)
dv/dt Protection	Meets NEMA MG-1, part 31 (same as inverter duty motors)
Protection: meet IP20	 Open reactors with terminal blocks through 45 amps

ACT350: 160414

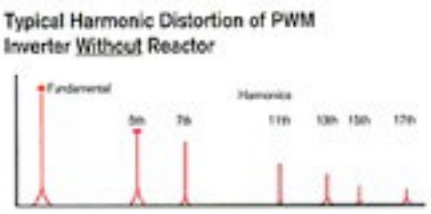
ACT 350 Line Reactor Filters

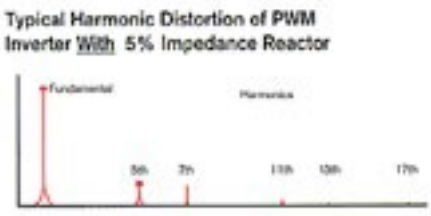
ACT 350-RL Harmonic Compensated Line/Load Reactor Filter are part of a full facility solution that focus is cleaning up the harmonic and high frequency noise generated by your invertors, variable frequency drives (VFD), UPS's and other electronic equipment. These filters are normally installed in Hospitals near elevators, HVAC and X-Ray rooms; At industrial facilities where motors are used on the production lines and Waste Water Treatment Facilities where multiple pumps are needed to move the water.

These robust filters are designed with a MTE RL reactor component as its backbone, the complete ACT filter system provides a power quality solution for any six pulse rectifiers or power conversion units (like used by computer servers). Unlike the competition there is no need to derate the ACT reactors as they are harmonic compensated and IGBT protected to assure optimum performance, and are used specifically to reduce harmful harmonics produced by inverters and VFD drives. ACT are conservatively designed to have higher continuous and overload ratings that offers Reactor / Filters up to 690 VAC with compatible impedance ratings.

TECHNICAL INFORMATION

Percent Harmonics vs Total Line Impedance Total Input Impedance								
Harmonic	3%	4%	5%	6%	7%	8%	9%	10%
5th	40	34	32	30	28	26	24	23
7th	16	13	12	11	10	9	8.3	7.5
11th	7.3	6.3	5.8	5.2	5	4.3	4.2	4
13th	4.9	4.2	3.9	3.6	3.3	3.15	3	2.8
17th	3	2.4	2.2	2.1	0.9	0.7	0.5	0.4
19th	2.2	2	0.8	0.7	0.4	0.3	0.25	0.2
%THID	44.13	37.31	34.96	32.65	30.35	28.04	25.92	24.68
TRMS	1.09	1.07	1.06	1.05	1.05	1.04	1.03	1.03

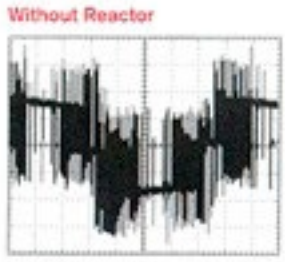


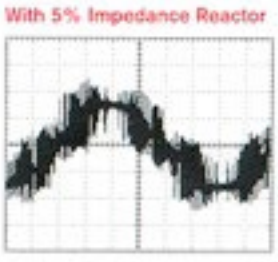


HARMONIC PROTECTION

The Reactor Filter provides a multi-level of protection to the facility.

- Protects the motor itself from harmful damage of harmonic frequencies.
- Protects the motor and drive controller from harmful voltage surges coming into the drive
- Protects the rest of the facility from harmful harmonics generated by each Variable Speed Drive





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ACT 470 Advanced EMI / Noise Filters

ACT 470 EMI / Noise Filter Family are part of a full facility solution that focus is cleaning up medium and high frequency noise (above 1 kHz) on the power line generated by your electrical and electronic equipment. With the dramatic increase in use of energy saving devices like Variable Speed Drives, Switching Power Supplies and even Electronic Ballast, these sensitive devices not only need clean power to operate properly but create a tremendous amount of power pollution that degrades the life of all electrical devices connected to the facility (See IEEE Ballast White Paper). These filters have shown to reduce a facility electrical maintenance by over 70% (see Wal-Mart White Paper). Normally these power filters are installed inside the ACT 471 and ACT 455 Surge Protection Devices but they are also available as a Wall Mounted Stand Alone Product for locations that have already installed surge protection. The ACT 470 Filters are normally installed in any commercial or industrial application at the front of the building at the Service Entrance and downstream on any lighting panels or any power panel feeding computers.

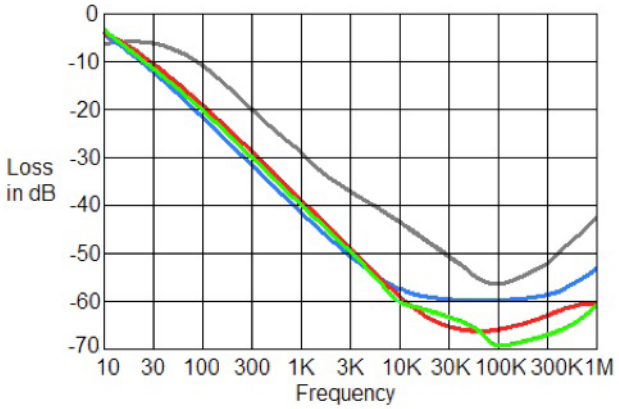
The ACT 470 Advanced EMI/Noise Filter (Red and Green) using NEMA LS-1 1992, out performs all other competitors for parallel connected filters in its class. Power filtering has shown to reduce all facility electrical maintenance and improve power delivery to the loads (which lowers electricity usage).

Unlike other manufacturers who treat power filtering as a "Check Box" solution and only provide a low energy small polypropylene capacitor, ACT uses large oil filled motor start filter capacitors that not only outperform, but has the strength to filter out even the worst noise environments.

While the Advanced Filter is designed to fit in the ACT 471 and ACT 455 Surge Protection Product family, The Advanced Filter also comes in two mechanical styles, Wall Mount and OEM (which is designed to install inside another manufacturer Enclosure) , both to be used by itself as a self-contained product.

FEATURES AND BENEFITS

- **Lower Facility Maintenance Costs** – Filter extends the life of all electrical and electronic products by scrubbing out power pollution from the power line.
- **Cleaner Power Means Lower Electricity Usage** – Filter removes unwanted medium and high frequency noise pollution for electrical wires. This means lower energy loss at transformers and motors.
- **Fast Transient Response** – Filter capacitors react in less than 1 nanosecond to a quick change in voltage (i.e. transient surges)
- **Greater Noise Rejection than other filters** - Greater than -45 dB noise rejection from 3 kHz – 1 MHz
- **Status Good Indicator Light** – Green light tells you if unit is still working within specification
- **2 year Warranty**



Red & Green represent ACT 470 performance when compared to other filter manufacturers.

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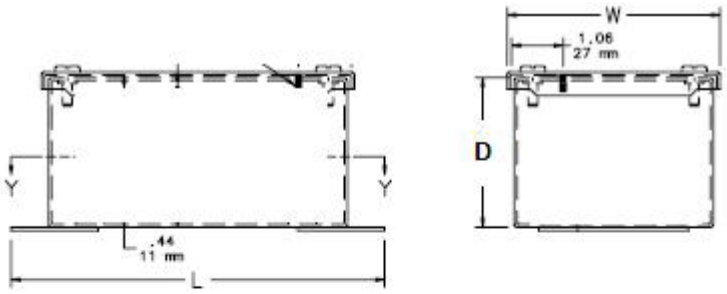
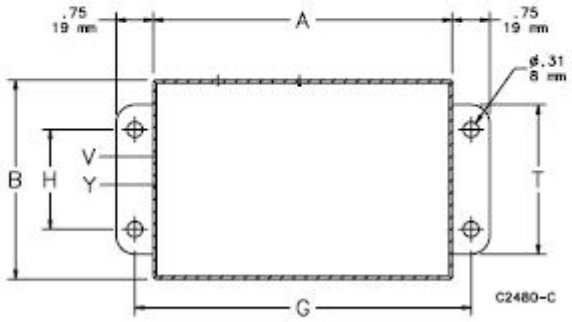
ACT 470 Advanced EMI / Noise Filters

PART NUMBER	DESCRIPTION
ACT 470-120-200	120V Single Phase, -50 dB Heavy duty Noise Filter per module, Wall mounted in a NEMA 12 painted steel enclosure
ACT 470-120S-200	120/240 V Split Phase, -50 dB Heavy duty Noise Filter per module, Wall mounted in a NEMA 12 painted steel enclosure
ACT 470-120Y-200	120/208 V Split Phase, -50 dB Heavy duty Noise Filter per module, Wall mounted in a NEMA 12 painted steel enclosure
ACT 470-277Y-200	277/480 V Split Phase, -50 dB Heavy duty Noise Filter per module, Wall mounted in a NEMA 12 painted steel enclosure
ACT 470-480D-200	277/480 V Split Phase, -50 dB Heavy duty Noise Filter per module, Wall mounted in a NEMA 12 painted steel enclosure





ENCLOSURE DIM L = 7.5" W= 6.28" D = 4"
MOUNTING G = 6.75" H = 4.0"

TECHNICAL INFORMATION

STANDARDS MET

- Safety – designed to meet UL1283
- NEMA LS-1 1992 EMI/Noise Tested
- ANSI /NFPA 70 National Electrical Code
- 3rd Party Performance Tested

MECHANICAL SPECIFICATIONS

Dimensions	7.5"H x 6.28"W x 4"D
Weight	7.5 lbs
Wall Mounted Enclosure	NEMA 12 Painted Steel
OEM Enclosure	Plastic

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel
Filter Modes	L-N, L-G, L-L* (* Voltage dependant)
Pre-Wired	24" stranded #10 AWG
Status Indicator	Green LED indicates if filter is good
Breaker (optional)	15 amp resettable breaker

ACT COMMUNICATIONS™

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ACT SV200 SaveVar Home Power Quality Filter

A Power Quality Filter & Energy Savings Device

The ACT SV200 Home Power Quality Filter is designed to improve the quality of power being fed to all electronic and electrical components in a home. Like dirty water has to be filtered before being used, your power in your home must be as clean as possible to ensure proper operation of your sensitive electronic devices (TV, Computer, Stereo, etc..) and even your important electrical devices like HVAC, Dryers, Freezers, Pool Pump and Refrigerators. Poor power quality means your products have to work harder (meaning wasted electricity) and have a much shorter life than expected.

The ACT Power Quality Filter saves the consumer money by its unique 3 Element design (Patent Pending) that focuses on multiple issues going on in your power. The first part of the design attacks poor Power Factor, by increasing a lagging power factor on any motor in your home towards unity, will reduces the natural inefficiencies in supplying power to any motors in your house (See SaveVar Application brochure).

Reducing inefficiencies in power delivery to your electrical and electronic devices lowers wasted energy across the electrical wires, motor and transformer, which improves the motor performance and ultimately lowers electrical bills associated with your inductive devices like all motors to up to 8%.

The second element of the SaveVar Filter is an industrial sized surge protector capable of protecting your home even up to a single 80,000 amp lightning strike or can handle tens of thousands of smaller normal transient surges seen daily. Transient surges are known to be the number one power quality event that damages both electrical and electronic components.

The third element of the ACT Power Filter is a world class EMI/Low frequency filter. Low frequency power noise (3 kHz to 1 MHz) is actually being generated inside your own home. All electronic devices power in your home creates power noise pollution that harms other electronic devices in your home. Unlike other manufacturers, the ACT Advanced EMI filter focuses on the cleaning up these lower frequencies from 3 kHz to 1 MHz.

RECOMMENDED LOCATION

- "P" versions safely plugs into household driers outlet
- "S" versions provides cable stubs to be hardwired into house or pool power panels

FEATURES AND BENEFITS

- Conserve Energy – Can be part of your Home **"Green Initiative"**
- Quick return on investment with 3% to 8% electrical savings and reduced equipment failure
- Better Utilization of Power – Releases Energy Back Into the System to be used elsewhere
- Improves and Stabilizes Home Voltage – stable power Improves life of electrical devices in home, including computer, TV, refrigerator, freezer, and HVAC
- 80,000 Amp Surge Protector has proven to be strong enough to protect even cellular towers for over 25 years
- Filter is Safely Self-Fused
- 90 day Money Back Guarantee
- 1 Year Replacement Warranty

STANDARDS MET

- Surge Protector is ETL listed to UL1449 4th edition March 2016
- Filter designed to meet UL1283 Power Filter
- Meets ANSI/NFPA 70 National Electrical Code

3RD PARTY TESTED

- Performance tests conducted by 3rd party testing company

FOR MORE TECHNICAL INFORMATION PLEASE REQUEST THE **ACT 320 POWER FACTOR** APPLICATION DOCUMENT

THINK GREEN –THINK SAVEVAR
EASILY CONNECTS TO YOUR DRYER!

ACTSV200: 16 04 15

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ACT SV200 SaveVar Home Power Quality Filter

A Power Quality Filter & Energy Savings Device

3 OR 4 PRONG DRYER PLUG OPTIONS

UNIQUE 3-PART DESIGN FOUND IN NO OTHER PRODUCT

- **Patent Pending on 3 element protection for home**
  - Power Factor Correction
  - EMI / Low Frequency Filter from 3 kHz to 1 Mhz
  - Transient Surge Protection for whole home to 80,000 amps lightning surge per home

TECHNICAL INFORMATION

MECHANICAL SPECIFICATIONS

Enclosure - Metal	8" x 8" x 4"
Weight	10.6 lbs
Operating Temp	0 to +120F
Non-Condensing Humidity	5% to 95%

PART NUMBERS MATRIX

ACT SVR 120S-XXX-YY

XXX = 100 Plastic Enclosure
200 Metal Enclosure

YY = P3 3 prong dryer plug
P4 4 prong dryer plug
S 3 foot cable stub for panel mounting

ELECTRICAL SPECIFICATIONS

Connection Method	Parallel via Dryer Plug or with leads to power panel
20 Amp	20 Amp
Surge Protection Device	
Per Phase Max Surge Current	40 kA 8x20 uSec
Per Unit Max Surge Current	80 kA 8x20 uSec
100 kHz Surge Ring Wave	> 5000 surges

FOR MORE TECHNICAL INFORMATION PLEASE REQUEST
THE **ACT 320 SAVEVAR APPLICATION DOCUMENT**

DC SURGE PROTECTION

222 North Center Street
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ACT 421 DC Transient Surge Arrestor

ACT 421-XXX-040-101

The ACT 421 is a transient surge arrestor capable of protecting DC voltage between 12 - 350 Volts DC. It has been specifically designed to protect sensitive power supply lines from lightning and other surges induced on the input DC power lines. This Surge Protection Device (SPD) is designed with 2 Line low voltage surge suppressers that take advantage of the latest technology available.

As a quality SPD, the ACT 421 is designed and tested to meet UL 497 safety, but the protector is also designed and tested to meet the stringent ANSI/IEEE B3 Impulse performance standards (Over 900 times the UL497 requirement).

Unlike other low voltage line surge suppressers in both performance and surge withstands capability. These surge protectors were developed specifically to protect low voltage supply lines where + and – set of lines needs maximum surge protection.

The ACT 421-XXX-040-100 is designed for indoor or weather resistant protection. The ACT 421-XXX-040-200 is designed in a waterproof enclosure and can be safely buried.

RECOMMENDED LOCATION

- Solar or Wind Generation Systems
- Telecom Battery Systems
- Any application using DC voltages outdoors

FEATURES AND BENEFITS

- Robust Design – 40kA (8x20uSec)
- Extremely low let through voltages
- Fast Response Time < 10 nSec
- Green LED Indicator
- All Mode Protection (+ to Ground, - to Ground, + to -)
- Available in 12 to 350 VDC
- 1 Year Standard Warranty

STANDARDS MET

- UL 497A — IEEE C62 3rd Party Tested

TECHNICAL INFORMATION

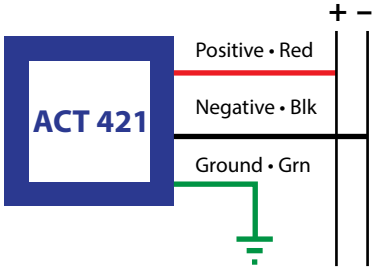
ACT 421-XXX-040-101 40 kA SINGLE Protector designed for indoor and weather resistant locations (+ or – protection to Ground)
ACT 421-XXX-040-102 40 kA DUAL Protector designed for indoor and weather resistant locations (+ AND – to ground)
ACT 421-XXX-040-201 40 kA SINGLE Protector designed for Outdoor / buried locations (+ or – protection to ground)
ACT 421-XXX-040-202 40 kA DUAL Protector designed for Outdoor / buried locations (+ AND – to ground)

MECHANICAL SPECIFICATIONS

Dimensions:	INDOOR	3”x 3”x2” (75 mm x 75mm x 50 mm
	OUTDOOR	4”x4”x2”(100 mm x 100mm x 50 mm)
Weight:		18 oz (510 g) and 32 oz (1.2 kg)

ELECTRICAL SPECIFICATIONS

DC Voltage Levels:	(XXX) 015, 030, 060, 150, 300
Max Current:	(8x20us) 40kA
Technology:	MOV / Gas Tube



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ACT 446 Dual Cable Location Protector

Surge Protector System

ACT 446 Dual Cable Location Outdoor/Indoor Protectors

The ACT 446, as part of the ACT 44X Cable Locating Protection Family, can be installed for both indoors or outdoor applications. The solid-state hybrid surge protection system is installed between the cable sheath and earth ground. Their primary function is to increase the cable locating tone range and efficiency and protect buried cable and personnel from high-energy surges. This unit may be installed either underground (waterproof), above ground (weather proof) or pedestal mounted. Proper installation and location of these devices allows greater than 75 miles of cable location from one transmitter.

RECOMMENDED LOCATIONS

- Buried Fiber Locations
- Pedestal Locations
- Indoor Locations

FEATURES AND BENEFITS

- Extends Cable Locations over 75 miles
- MOV/Gas Tube Hybrid Technology
- 5–Year Standard Warranty

STANDARDS MET

- Safety – Meets UL497
- ANSI/IEEE C62.41, C62.45

3RD PARTY TESTED

PART NUMBERS

Model	Enclosure Type	System
ACT 446-XXX-	212	Dual Protector in Weatherproof enclosure with shorting bar 4"x4"x2" Enclosure
ACT 446-XXX-	302	Dual protector for Waterproof (Potted) with 6' 6 awg cable stubs 4"x4"x2" Enclosure
ACT 446-XXX-	400	Dual Protector for pedestal mount 3"x3"x2" Enclosure Comes WITHOUT shorting bar
ACT 446-XXX-	410	Dual Protector with shorting bar for pedestal mount 3"x3"x2" Enclosure

Part Number Example: ACT 446-150-410
*Custom voltage and cable configurations are available

ACT 446M is optional mounting plate available for ACT 446 - 400 series products

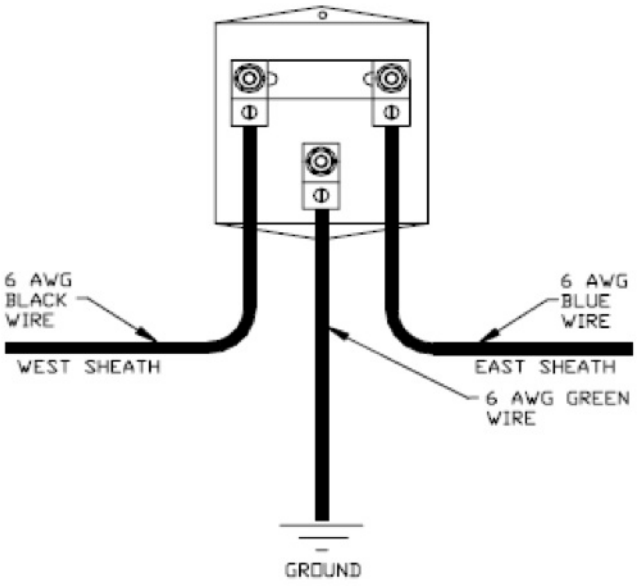
*Also use ACT 4400-150 System

ACT446: 160414

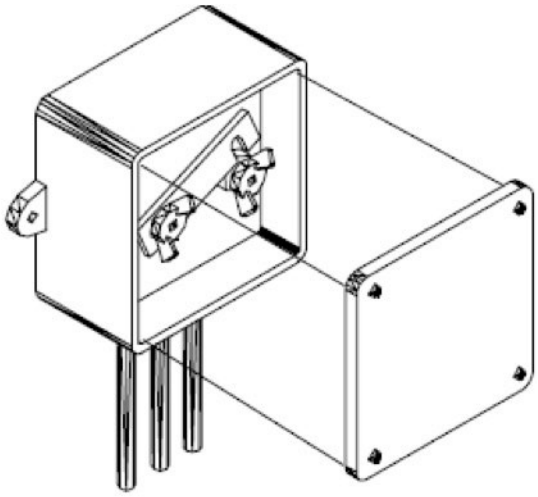
ACT 446 Dual Cable Location Protectors

Surge Protector System

ACT 446-150-410 – Pedestal Mount



Weather Proof Enclosure



ACT 446-XXX-212

TECHNICAL INFORMATION

PHYSICAL SPECIFICATIONS

ACT 446-XXX-2YZ family	Installed in 4"x4"x 2" weather resistant enclosures
ACT 446-XXX-3YZ family	Installed in 4"x4"x2" waterproof closures
ACT 446-XXX-4YZ families	Installed in a 3"x3"x2" indoor enclosure *Requires installation inside a pedestal if installed outside*

XXX – Option signifies voltage application (050V, 150V, 350V)

Y – Option	"0" No shorting bar	"1" with shorting bar
Z – Option	"0" No cable	"2" 6 foot of 6 AWG stranded cable (Black & Green)

ELECTRICAL SPECIFICATIONS

Voltage Applications RMS:	50V, 150V, 350V, 650V
Clamping Voltage (@ 1mA DC): (+10% voltage variance)	95V, 210V, 430V, 720V
Peak Current (8x20µS):	42,000 Amps
Energy Dissipation (10x1000µS):	1600 joules
Response Time:	1.5 Nanoseconds
Capacitance @ 5KHz:	4004pf

ACT 446 M option is a 16 awg aluminum back mounting plate for the ACT 446-150-410 module. Mounting Plate sold separately.

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ACT SS64 & SS65 Data/Signal Line Family

Industrial Data Protection Device

The ACT SS64 & SS65 Stainless steel Pipe enclosed protection device is designed to protect data and signal lines in the harshest industrial environments.

This hybrid device combines the strength of gas tube protection with silicon avalanche technology as designed by Bell Labs. In rush current protection is provided by resettable fuses (PTC). This means accidental fault current does not destroy this protector.

This unit is fully encapsulated and is waterproof inside a stainless steel pipe providing an extremely safe installation package.

The ACT SS64 & SS65 is designed to protect any 4-20 mA alarm or control lines.

Two Protection Styles:
The SS64 is a two wire protector.
The SS65 is a two wire and ground protector.

RECOMMENDED LOCATION

- Waste Water Treatment Facility
- Petroleum Locations
- Outdoor Alarm Systems
- Electronic Lock Locations
- Cell Sites
- Well Pumps

FEATURES AND BENEFITS

- **2 Modes of Discrete Protection:**
  SS64 protects a single pair T-R; SS65 protects single pair plus cable shield(drainwire) T-R&G
- **Two mounting applications:**
  End to End and End to Cap configuration
- Multi-Stage Hybrid (Gas Tube & Diode) Technology
- 5 –Year Standard Warranty

STANDARDS MET

- Safety tested to UL487B
- ANSI/IEEE C62.41, C62.45

3RD PARTY TESTED

- Survives 1,000 (C2 6kV / 500A)

GENERAL TECHNICAL SPECIFICATIONS

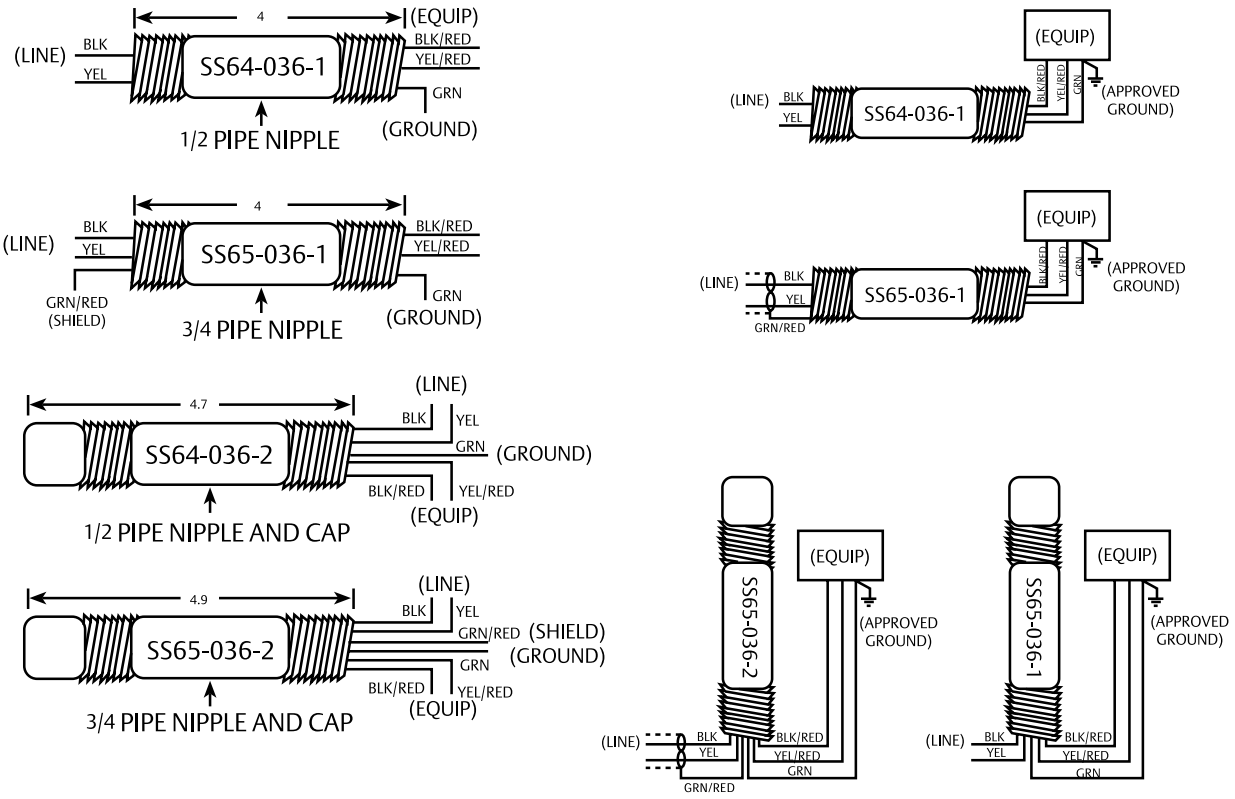
Response Time:	< 1 Nanosecond
Maximum Signal Voltage:	28 V Max
DC Clamping Level (L-G):	36 V ±10%
DC Clamping Level (L-L):	72 V ±10%
Peak Surge Current:	10 kA (8x20 µs)
Maximum let-thru Voltage:	
Line-to-Ground (10x700 µs)	44V @ 400 A
Maximum let-thru Voltage:	
Line-to-Line (10x700 µs)	90 V @ 400 A
Series Resistance (per conductor)	5V (typical)
Capacitance:	
(Zero Volts Bias)	(L-L) 600 pf typical (L-G) 1200 pf typical
Number of Occurrences:	400 @ 500 Amps (10x1000 µs)

***Caution**: The hybrid design of tis product includes series resistance. Do not place this product in service on any signal lines capable of supplying more than 150 milliamperes continuously.*

ACT SS64 & SS65 Data/Signal Line Family

Industrial Data Protection Device

TYPICAL APPLICATIONS



PART NUMBERS

ACT SS64-036-10-01 Dual line 10kA surge data protector in 1/2" pipe end to end
ACT SS64-036-10-02 Dual line 10kA surge data protector in 1/2" pipe Capped end
ACT SS65-036-10-01 Dual line with Ground 10kA surge data protector in 3/4" pipe leaded end to end
ACT SS65-036-10-02 Dual line with Ground 10kA surge data protector in 3/4" pipe capped leaded end

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ACT 450 LT Series Filter Protector

A DIN Rail Mounted Surge Protection Device

Power Quality is more important today than ever before and that means not just any surge protector can be relied on to protect your sensitive equipment.

The ACT 450 LT Series Filter Protector is a cost effective compact design made specifically for commercial and industrial applications like Waste Water, HVAC, Refrigeration, Solar and Wind projects and Industrial Controls.

These UL 4th edition protectors are individually fused for maximum safety with a visual indicator light to show if the product is properly working.

FEATURES AND BENEFITS

- Filter located on all modes of operation
- 7 modes of discrete protection (L-G, L-N and N-G)
- 10 modes of protection (L-N, L-G, N-G, L-L)
- Green status indicating light
- Individually fused MOV technology
- 1-year standard warranty
- Can be wired SERIES, PARALLEL and KELVIN
- 15 and 30 Amp version
  (note: Product must be wired behind 30 Amp breaker or less to meet UL 1449)

STANDARDS MET

- Safety – ETL Recognized to UL1449 4th Edition
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code
- Filter Mil Spec Standard 220B

3RD PARTY TESTED

ACT 450 LT Series Filter Protector

A DIN Rail Mounted Surge Protection Device

TECHNICAL INFORMATION

PERFORMANCE SPECIFICATIONS

MODEL NUMBER	MODE	A1 Ring 2kV, 67A	A3 Ring 6kV, 200A	B3/C1 6kV, 3kA
450-LT15-024-030	L-N	58	87	176
5 - 30 VCD/VAC	L-G	48	84	167
15 Amp 30kA	N-G	48	84	167
450-LT15-048-030	L-N	58	123	201
5 - 50 VCD/VAC	L-G	53	111	196
15 Amp 30kA	N-G	53	111	196
450-LT15-120-030	L-N	91	207	486
5 - 150 VCD/VAC	L-G	55	131	433
15 Amp 30kA	N-G	55	131	433
450-LT15-240-030	L-N	183	325	780
5 - 300 VCD/VAC	L-G	63	257	721
15 Amp 30kA	N-G	63	257	721
450-LT30-120-050	L-N	91	207	486
5 - 150 VCD/VAC	L-G	55	131	433
30 Amp 50kA	N-G	55	131	433
450-LT30-240-050	L-N	183	325	780
5 - 300 VCD/VAC	L-G	63	257	721
30 Amp 50kA	N-G	63	257	721

EMI/RFI Filter Attenuation - Mil Standard 220B

FREQUENCY	ATTENUATION IN dB
1 kHz	1.3
10 kHz	11
100 kHz	31
500 kHz	30
1 MHz	31
10 MHz	15
20 MHz	8

MECHANICAL SPECIFICATIONS

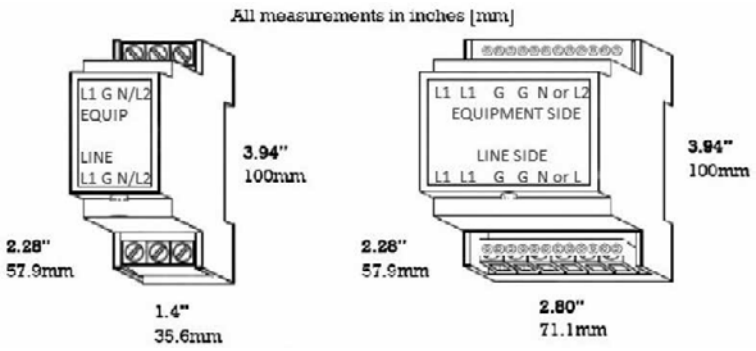
Dimensions	See Drawing
Weight	Approx. 1.0 lbs
Enclosure	ABS Plastic UL94
Operating Temp	-40F to +140F -40C to +65C
Non-condensing Humidity	5% to 95%

ELECTRICAL SPECIFICATIONS

Connection Method	Series, Parallel and Kelvin
Protection Modes (7 Modes)	L-N, L-G, L-L, N-G
Wired	#22AWG - #14AWG
Status Indicators	Green LED
Filter - Mil Std 220B	30dB @ 500kHz
100 kAIC short circuit current rating with a 15 amp max class T fuse	
15 and 30 Amp versions	

DIMENSIONS

15 Amp	3.94"H x 1.4"W x 2.28" D
30 Amp	3.94"H x 2.80"W x 2.28"D



TELECOM / DATA PROTECTION

ACT COMMUNICATIONS™

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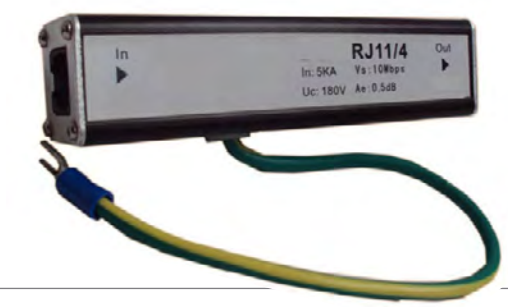
ACT 422 Telephone and Alarm Protector



Available in three versions:

ACT 422-180-RJ11 series is the most common configuration for telephones

ACT 422-005-RJ45 is the most common configuration for Alarms and Data line protection under +05 volts

ACT 422-060-PoE is most common for Power over Ethernet and Alarm circuit applications

ELECTRICAL SPECIFICATIONS

Model	Telephone	Data	PoE
Nominal Working Voltage **Un**	180V	5V	48V
Max. Continuous Operating Voltage **Uc**	250V	7.5V	70V
Nominal Load Current **IL**	10A		
Nominal Discharge Current **In** (8/20 μs)	2.5Ka		
Max Discharge Current **Imax** (8/20 μs)	10Ka		
Limiting Voltage **Up**	<300V	≤15v	≤0.25KV
Response Time **ta**	≤1ns		
Data Rate **Vs**	1Mbps	100Mbps	
Insertion Loss **Ae**	≤0.5dB		
Connector Type	RJ11	RJ45	
Protection Pin		Pin1/2, 3/6	Pin4/5, 7/8
Dimensions	4.09 X 1.57 X .98 inches (104x40x25mm)		
Working Environment	-40°C ~ +80°C, Relative humidity : ≤95%		
Protection Level	IP20		

FEATURES AND BENEFITS

- Robust Design – 10kA (8x20uSec)
- Uses dual Hybrid Protection design
- Transient Silicon Diode Technology
- Fast Response Time < 1 nSec
- Extremely low let through voltages
- Absorbs and Dissipates surges within the unit
- All Mode Protection (T-R, T-G, R-G)
- 1 Year Standard Warranty
- All units shipped with male-to-male patch cord

STANDARDS MET

- UL 497A
- ANSI/IEEE C62
- 3rd Party Tested

TECHNICAL INFORMATION

ACT 422-180-RJ11 4-Wire Telephone
RJ-11 Socket to RJ-11 Socket

ACT 422-005-RJ45 8-Wire Ethernet, Data and Alarm
RJ-45 Socket to RJ-45 Socket

ACT 422-060-PoE 8-Wire Power over Ethernet
RJ-45 Socket to RJ-45 Socket

All units shipped with 12" male-to-male patch cord.

MECHANICAL SPECIFICATIONS

Dimensions: 4"x 1"x1" (100 mm x 25mm x 25 mm)
Weight: 6 oz (170 g)

RECOMMENDED LOCATION

- Residential & Commercial Telephone
- Alarm Lines
- Datacom lines

ACT422 : 16 06 09

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ACT 422 D-sub Serial Surge Protection Device

ACT 422 D-sub Serial Surge Protection Device is capable of connecting in series with any DB-Sub cable including EIA/RS485, V.24/RS232, V.11/RS422, providing full protection on all pins used in industrial and commercial serial communication systems.

RECOMMENDED LOCATION

- Residential and Commercial
- Alarm Lines

STANDARDS MET

- Designed to meet:
  - » EIA RS485, RS232, RS422
  - » UL497, UL497A, UL497B
  - » UL1459
  - » IEC 61643-21

FEATURES AND BENEFITS

- Robust Design - 3Ka (8x20uSec)
- Solid State Protection
- Fast Response <1 nSec
- Absorbs and Dissipates surges within the unit
- 1 Year Standard Warranty

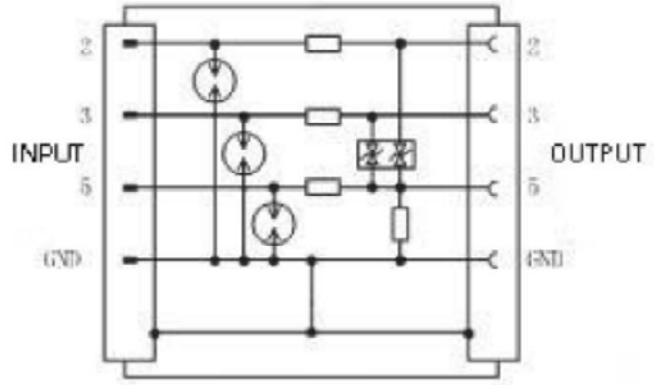
TECHNICAL DATA

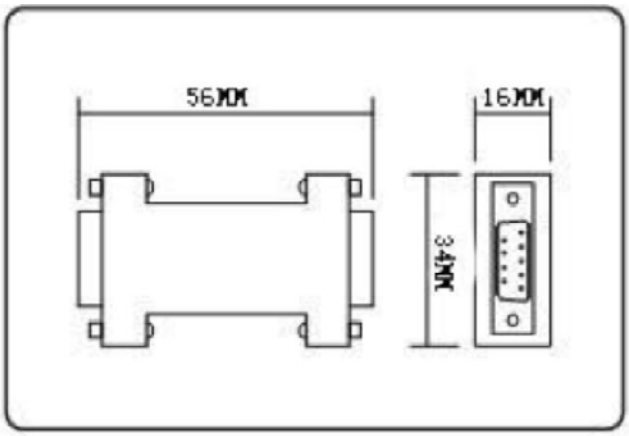
Model	ACT 422-024-DB9	ACT 422-024-DB15	ACT 422-024-DB25
Nominal operating: voltage: Un	24V		
Max. continuous operating voltage: Uc	30V		
Nominal discharge current: In (C2)	300A		
Max. discharge current: Imax (C2)	1000A		
Voltage protection level: (C2) Up	L-L: ≤27V L-PE: ≤300V		
Response time: ta	≤1nS		
Signal transmission rate: Vs	40Mbps		
Insertion loss: Ae	≤0.3dB		
Dimensions	2.20 x 1.34 x 0.63 Inches (56x34x16mm)		2.48 x 2.2 x .66 Inches(63×56×17mm)
Housing material	ABS flame retardant plastics~ UL94-V0		
Housing color	Milky White Black		
Working environment	Temperature: I 40°C~ + 85°C~ Relative humidity: ≤95%		
Shell protection grade	IP20		

ACT422DSUB : 16 06 23

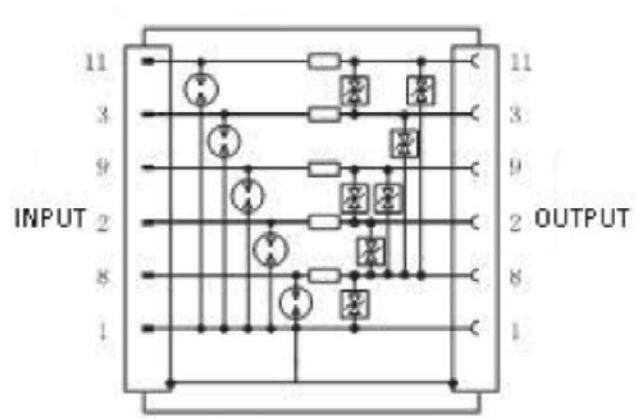
ACT 422 D-sub Serial Surge Protection Device

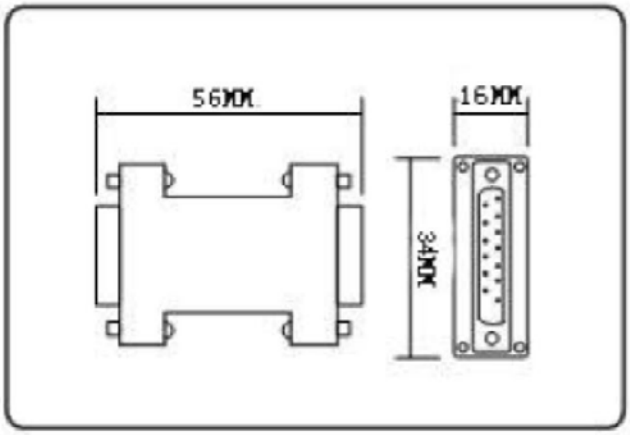
DIMENSIONS AND ELECTRICAL DIAGRAM





ACT 422-024-DB9





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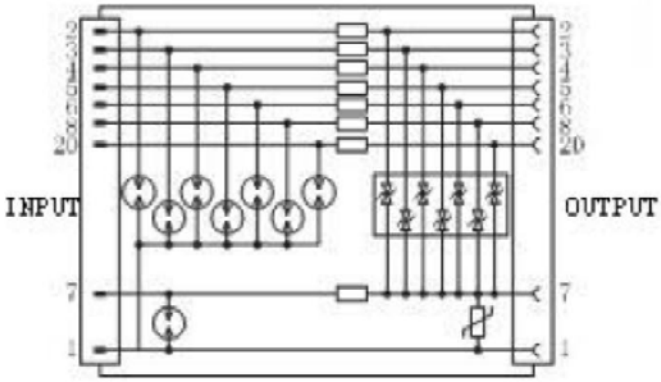

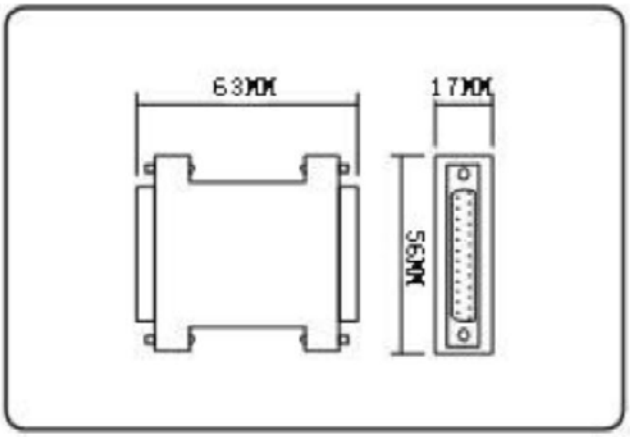

ACT 422-024-DB25

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ACT 422-XXX-200 Series Protector

Telephone, Data, Control Line and Alarm Protectors

With the increases in the sensitivity of commercial and residential electronic equipment, the ACT 422 200 Series DIN rail protector is perfect for preventing lightning and noise transient surges from entering into your building through the telephone or alarm cables damaging your sensitive IT equipment like computers, industrial controls, faxes and telephone equipment.

The ACT 422 200 Series is a series connected protector with screw terminals on both Line and Equipment side of the protector. is designed with a hybrid multi-stage design that the first stage gas tube robustly protects against heavy lightning surges, while the second stage Diodes insures that only a minimal let-through voltage is passed on to your electronic equipment.

The ACT 422 is an "All Mode" telecom / datacom protector that protects all lines modes of the connector for Tip to Ground, Ring to Ground and Tip to Ring.

RECOMMENDED LOCATION

- Residential & Commercial Telephone
- Alarm Lines
- Datacom and Control Lines

FEATURES AND BENEFITS

- Robust Design – 10kA (8x20uSec)
- Uses dual Hybrid Protection design
- Transient Silicon Diode Technology
- Fast Response Time < 1 nSec
- Extremely low let through voltages
- Absorbs and Dissipates surges within the unit
- All Mode Protection (T-R, T-G, R-G)
- 1 Year Standard Warranty

STANDARDS MET

- UL 497A — ANSI/ IEEE C62
- 3rd Party Tested

TECHNICAL INFORMATION

ACT 422-XXX-201 Single pair protector with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-202 Dual pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-203 Three pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-204 Four pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

ACT 422-XXX-206 Six pair protectors with screw terminal post at both Line and Equipment side. **DIN Rail Mounting**

Where XXX = 005, 024, 048, 110, 180 Volts DC

ACT422XXX200: 16 04 14

ACT 422-XXX-200 Series Protector

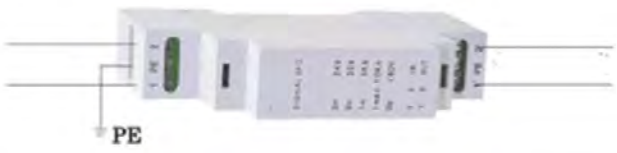
MECHANICAL SPECIFICATIONS

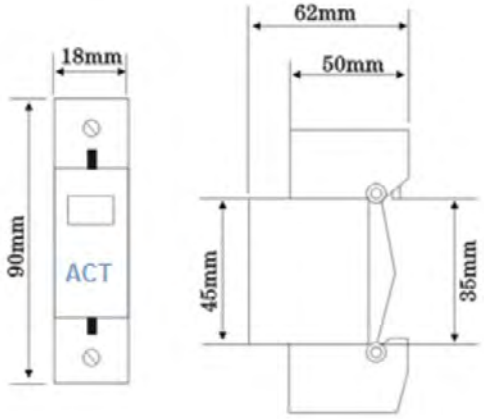
Dimensions: 90 mm x 18 mm x 62 mm
Weight: 150g

ELECTRICAL SPECIFICATIONS

Max Current (8x20us) 10kA
Transfer Speed 10 Mbps
dB Loss <0.5
Connector Type Screw Terminals

Operating Voltage	Nominal Breakdown	Clamp Voltage (8x20 us 3,000 amps)
05V	<15V	70V
24V	<40V	90V
48V	<150	300V
110	<300V	350V
180V	<300V	350V





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ACT 422 DLU Family

A DIN Mounted Data / Telephone Protection Device

The ACT 422 DLU and DLU2 family of Din rail mounted surge protectors are resettable and are designed to protect your sensitive datacom, telephone, and instrumentation equipment against harmful lightning surges and electrical transients.

These surge protectors must be installed on a symmetrical DIN rail and are available for transmission lines ranging from 6 -170Vdc and can handle transmission speeds up to 10 Mbps.

These surge protectors utilize a hybrid technology consisting of Gas Tube and fast clamping diodes that combine an ultra-fast response time (<1 ns) and a higher power handling capability of 20 kA.

The DLU protects 1 pair (2 wires) and the DLU2 protects 2 pairs (4wires). These surge protectors protect the shield to ground via gas tube and offer direct earth grounding via the din rail clip.

RECOMMENDED LOCATION

- Commercial & Industrial

FEATURES AND BENEFITS

- DIN Rail Mounting
- All types of Telephone and Data Lines
- Monoblock Housing
- Single and Dual pair versions
- Transmission and protection of shield wire (DLU)
- 1 Year Standard Warranty

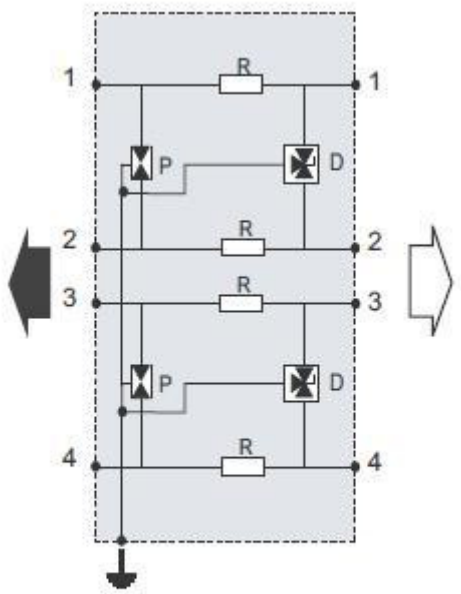
STANDARDS MET

- Safety – UL Listed
- IEC 61643-21 Compliant
- ANSI/IEEE C62.41, C62.45

ACT 422 DLU / DLU2 DIN Mounted Family

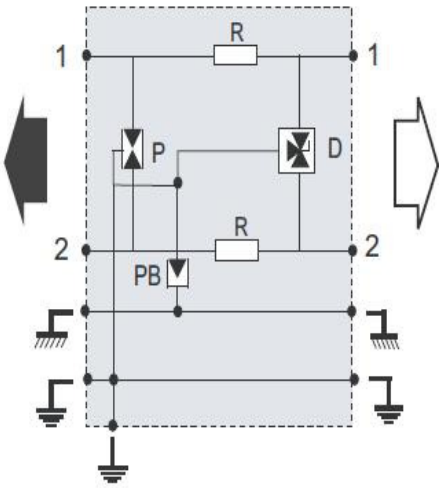
2-pair version: DLU2

Part Number	DLU2-170	DLU2-48D3	DLU2-24D3	DLU2-12D3	DLU2-06D3	DLU2-06DBC
Typical Application	Telephone line ADSL	48 V line	4-20 mA 24 V line	RS232	RS422	T2 - T1 10BaseT
Configuration	2 pairs	2 pairs	2 pairs	4 wires	2 pairs	2 pairs
Nominal line voltage (Un)	150 V	48 V	24 V	12 V	6 V	6 V
Max. line voltage (Uc)	170 V	53 V	28 V	15 V	10 V	10 V
Max. line current	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA
Protection level (Up) 8/20 µs impulse - 5kA	220 V	70 V	70 V	30 V	20 V	25 V
Nominal discharge current (In) 8/20 µs impulse - 10 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Max. discharge current (Imax) 8/20 µs impulse - 1 time	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Impulse current (limp) 10/350 µs impulse - 2 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Type of diagram	D	C	C	C	C	C
End of life	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit
Mechanical characteristics	Monobloc Symmetrical DIN rail mounting Dimensions: See drawing Screw terminal connection - min/max: 22/16 AWG Housing material: Thermoplastic UL 94-V0 Ground connection via DIN rail (DLU, DLU2) and screw terminal (DLU).					



1-pair version: DLU

Part Number	DLU-170	DLU-48D3	DLU-48DBC	DLU-24D3	DLU-12D3	DLU-12DBC	DLU-06D3	DLU-06DBC
Typical Application	Telephone line ADSL	48 V line	Fipway WorldFIP Fieldbus-H2	4-20 mA 24 V line	Profibus-FMS interbus Fieldbus-H1 Batibus	Profibus-DP LONwork	RS485	6 V line high bitrate
Configuration	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield	1 pair + shield
Nominal line voltage (Un)	150 V	48 V	48 V	24 V	12 V	12 V	6 V	6 V
Max. line voltage (Uc)	170 V	53 V	53 V	28 V	15 V	15 V	10 V	10 V
Max. line current	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA	300 mA
Protection level (Up) 8/20 µs impulse - 5kA	220 V	70 V	75 V	40 V	30 V	35 V	20 V	25 V
Nominal discharge current (In) 8/20 µs impulse - 10 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Max. discharge current (Imax) 8/20 µs impulse - 1 time	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Impulse current (limp) 10/350 µs impulse - 2 times	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Type of diagram	D	D	D	D	D	D	C	C
End of life	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit	Short-circuit
Mechanical characteristics	Monobloc Symmetrical DIN rail mounting Dimensions: See drawing Screw terminal connection - min/max: 22/16 AWG Housing material: Thermoplastic UL 94-V0 Ground connection via DIN rail (DLU, DLU2) and screw terminal (DLU).							



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Bonham, TX 75418
(903) 583-8097

ACT 423 Coax / Video Surge Arrestors

Coax Transient Surge Arrestor

The ACT 423 is a series coax transient surge arrestor specifically designed for closed circuit television monitoring, security systems and satellite communications systems. This series connector surge arrestor is designed to monitor the video signal and coaxial signal transmission level and to quickly react to any over voltages that may be caused by transient surges. This Gas Tube / Diode Hybrid protector has been specifically designed to protect sensitive electronic equipment like video cameras and video drivers from lightning and other surges induced on the coax line. With the secondary stage having diodes, this small protector is able to respond to transient surge in less than one nanosecond.

This Coax Protection family comes in three families, single coax protector, Coax and DC protector and Coax, DC and Cradle Head Control protection.

RECOMMENDED LOCATION

- Solar or Wind Generation Systems
- Telecom Battery Systems
- Any application using DC voltages outdoors

FEATURES AND BENEFITS

- Robust Design – 10kA (8x20uSec)
- Extremely low let through voltages
- Fast Response Time < 1 nSec
- Up to 10 Mbps Transfer Speeds
- Hybrid Design uses Gas Tube / Diodes
- 1 Year Standard Warranty

3RD PARTY TESTED

- UL 497A
- IEEE C62

TECHNICAL INFORMATION

ACT 423-005-10X	Single Coax protector with two female BNC (01) or N (02) type connectors
ACT 423-005-201	Coax protector with DC power protector, includes two female BNC (01) type connectors and screw terminal block for DC power
423-005-301	Coax protector with both DC power and Cradle Head power/control and includes two female BNC (01) type connectors and screw terminal block for DC power

MECHANICAL SPECIFICATIONS

Dimensions:

BNC or N Coax Protector
3.5"x 1" (90 mm x 25mm)

BNC Coax & DC Protector
5"x2.5"x1 3/4"(125mm x 65mm x 47mm)

BNC Coax, DC and Cradle
5"x4.5"x2"(125mm x 115mm x 50mm)

Weight: 18 oz (510 g) to 36 oz (1.2 kg)

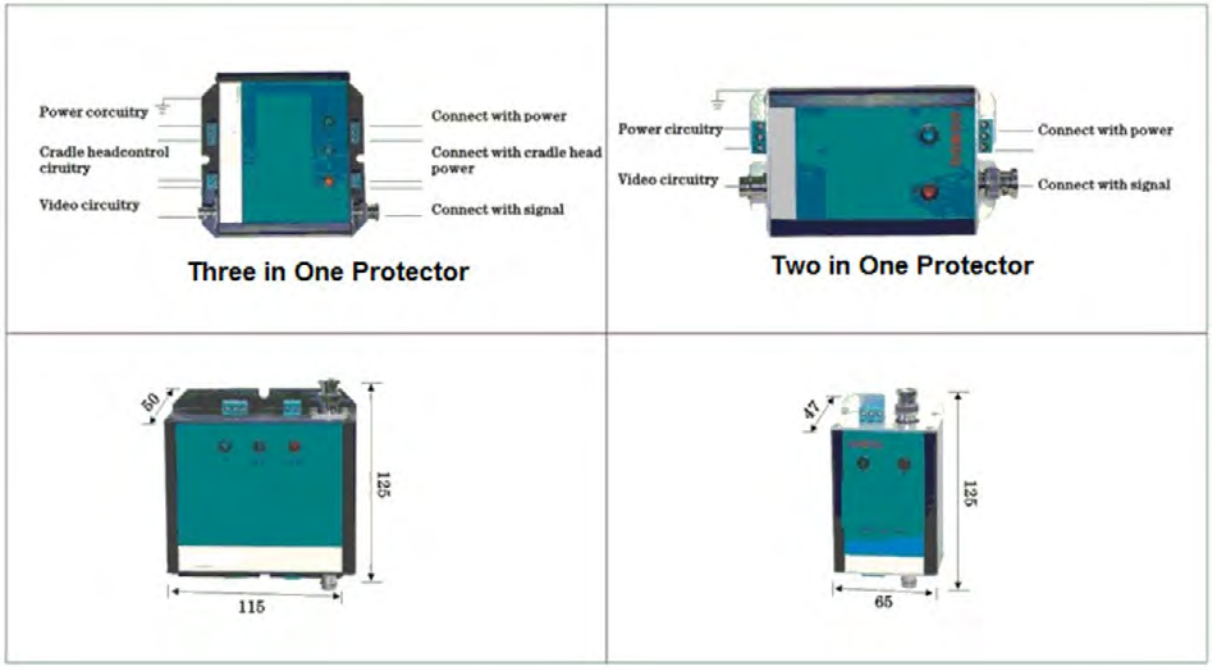
ACT 423 Coax / Video Surge Arrestors

ELECTRICAL SPECIFICATIONS

Max Current (8x20us) 10kA
Transfer Speed 10 Mbps
dB Loss <0.5
Connector Type Screw Terminals

	Video Coax Protector	DC Power	Cradle Head Control
Working Voltage	5V	24	24
Continuous Voltage	8V	40	40
Standard Discharge (qty 10)	5 kA	10 kA	10 kA
Maximum Discharge (qty 1)	10 kA	20 kA	20 kA
Transfer Speed	10 Mbps	N/A	N/A
Loading Current	N/A	SA	SA
Plug In Loss (dB)	<0.2	N/A	N/A

ACT 423-005-101 (BNC)



ACT 423-005-201 (BNC)
ACT 423-005-301 (BNC)

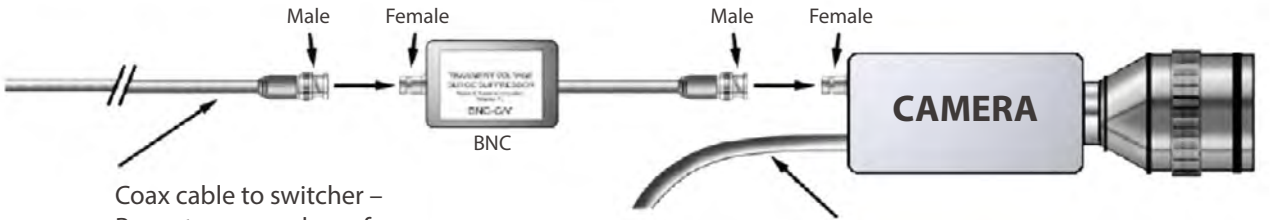
ACT 423 Installation Instructions

The BNC (01) and N (02) connector models can be used with any coaxial cable system. The following diagram is an example. Disconnect existing male BNC connector cable connected on the camera female BNC. Connect the ACT 423 Cable Protector to camera and then connect the coax cable male connector to the ACT 423 Female BNC. Verify proper operation by checking the picture quality of camera output.

ACT 423-005-101 BNC Video Protector

1 Connect the Male BNC connector of the existing coax to the Female BNC connector on the BNC-C/V

2 Connect the BNC-C/V Male end to the Female connector on the camera



Coax cable to switcher – Repeat process above for installation of BNC-C/V from head device equipment. i.e. switcher, monitor, recorder, etc.

Camera AC/DC Power Connection – See install instructions for appropriate required TVSS surge protection device.

ACT 423-005-201 BNC Video and DC Power Protector

1 Connect the Male BNC connector of the existing coax to the Female BNC connector on the BNC-C/V

2 Connect the BNC-C/V Male end to the Female connector on the camera

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ACT 424-GT Series

Gas Tube RF

With the increases in the sensitivity of telecom and cellular equipment, the ACT 424-GT is a coax surge arrestor built to pass DC voltage while sustaining multiple lightning surges and quickly restoring itself back to normal for the next surge.

The ACT 424 is a primary series connected surge arrestor with a choice of BNC, N, F, TNC, and SMA type connectors (Male to Female). The Coax Protector protection technology is designed with a robust gas tube design that allows both signal and dc to pass through the protector.

RECOMMENDED LOCATION

- Rail Road
- Commercial Telephone
- Wireless Telephone
- Cable Television

FEATURES AND BENEFITS

- Passes DC-25GHz
- Robust Design – 20kA (8x20uSec)@ <550V
- Uses Gas Tube Protection design
- Fast Response Time < 100 nSec
- Extremely low insertion loss <0.2 dB
- Absorbs and Dissipates surges through ground
- 1 Year Standard Warranty

STANDARDS MET

- UL 497A
- ANSI/ IEEE C62
- 3rd Party Tested

TECHNICAL INFORMATION

ACT 424-GT-XXX-YYY-MF	XXX	Voltage	65V, 90V, 350V
	YYY	Connector Type	BNC TNC F SMA
	MF	MALE to FEMALE	

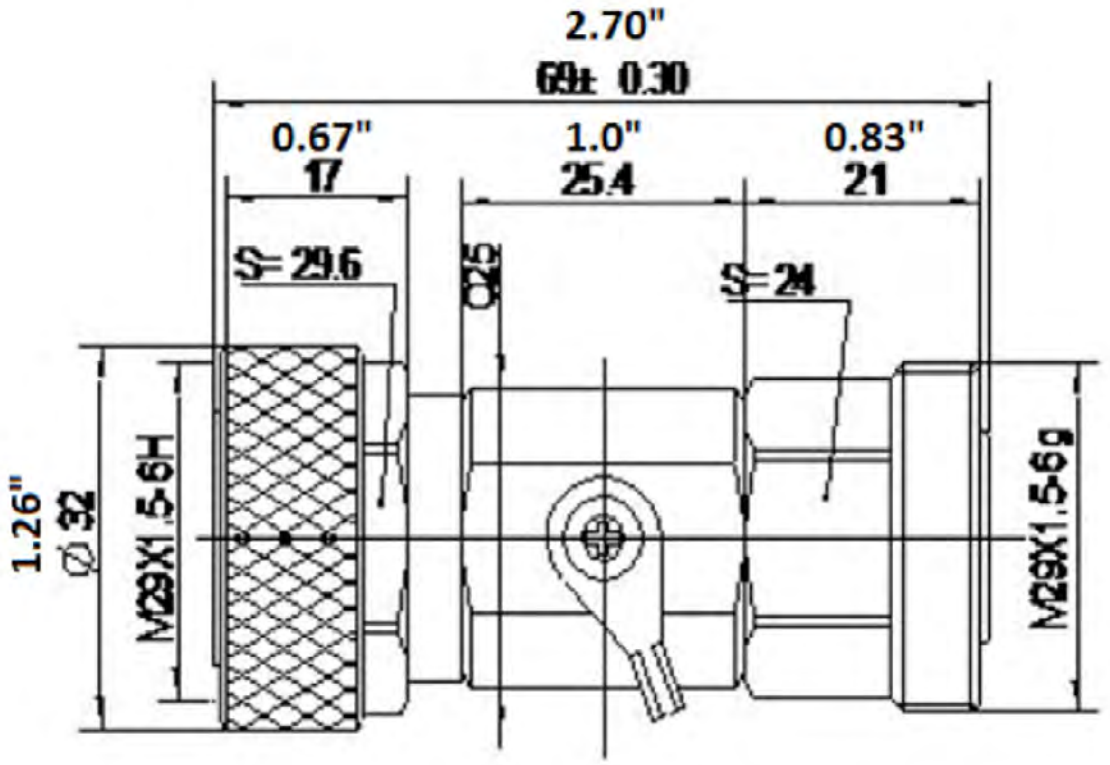
ELECTRICAL & MECHANICAL SPECIFICATIONS

Connector Type	BNC	TNC	F	SMA	N
Working Frequency (GHz)	0-2.5G	0-2.5G	0-2.5G	0-2.5G	0-2.5G
Impedence (Ohms)	75	50	75	75	50
Nominal Breakdown Voltage	65-90	65-90	65-90	65-90	65-90
Max Discharge Current (8x20uS)	20kA	20kA	20kA	20kA	20kA
Max Voltage Breakdown	<550V	<550V	<550V	<550V	<550V
Insertion Loss (dB)	<0.2	<0.2	<0.2	<0.2	<0.2
Working Temperature (deg C)	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85
Typical Size (mm)	69.0 x 32 x 32	69.0 x 32 x 32	69.0 x 32 x 32	69.0 x 32 x 32	69.0 x 32 x 32
Continuous Power	60W	60W	60W	60W	60W

Inspected and Tested in the USA

ACT 424-GT Series

Gas Tube RF



TYPICAL SPECIFICATIONS

Connector:	Male / Female
Frequency Range:	DC – 2500 MHz
Impedance (Connector Dependent):	50 Ω
Insertion Loss	≤ 0.2dB
Rated D.C. Voltage:	90/230/350 DC
Discharge Capacity:	20 kA
Contact Resistance (in ohms):	≤ Ω 0.4 m
Voltage Standing Wave Ratio:	≤ 1.2
Continuous Power (Watts):	60 W
Temperature Range (in C):	-40 - +85 deg C

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ACT 424-1/4W Quarterwave Protector

RF Coax Surge Arrestor

With the increases in the sensitivity of telecom and cellular equipment, the ACT 424-1/4 is a coax surge arrestor built to sustain multiple lightning surges and quickly restore itself back to normal for the next surge.

The ACT 424-1/4 is a robust, primary series connected surge arrestor with a choice of BNC, N, F, TNC, and SMA type connectors (Male to Female). The Coax Protector protection technology is designed with a 800-2,500 MHz design that allows signal and dc to pass through the protector.

RECOMMENDED LOCATION

- Rail Road
- Commercial Telephone
- Wireless Telephone
- Cable Television

FEATURES AND BENEFITS

- Robust Design – 40kA (8x20uSec)@ <550V
- Uses Robust 1/4 Wave Protection Design
- Fast Response Time < 100 nSec
- Extremely Low Insertion Loss ≤.25 dB
- Absorbs and Dissipates Surges Through Ground
- 1 Year Standard Warranty

STANDARDS MET

- UL 497A
- ANSI/ IEEE C62
- 3rd Party Tested

TECHNICAL INFORMATION

ACT 424-1/4W-XXX-MF	XXX	Connector Type	BNC TNC F SMA
	MF	MALE to FEMALE	

ELECTRICAL & MECHANICAL SPECIFICATIONS

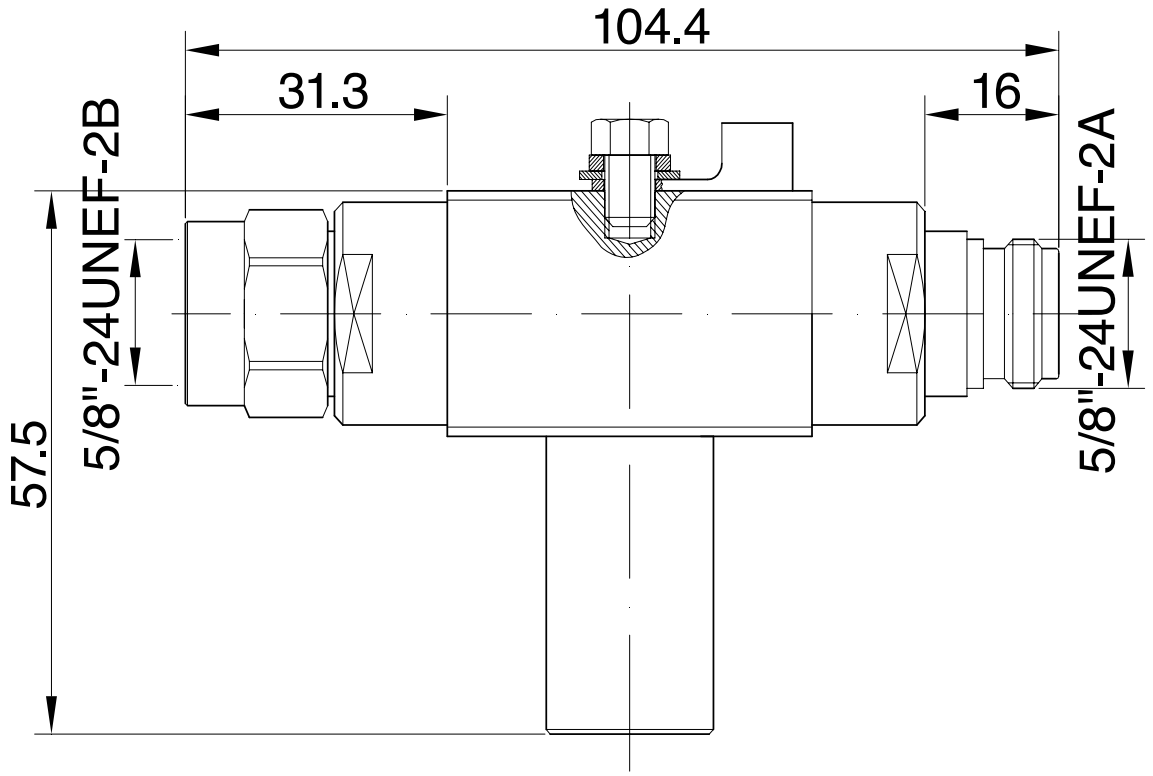
Connector Type	BNC	TNC	F	SMA	N
Working Frequency (GHz)	800-2.5G	800-2.5G	800-1G	800-1G	800-2.5G
Impedence (Ohms)	75	50	75	75	50
Wattage	200W	200W	200W	200W	200W
Max Discharge Current (8x20uS)	40kA	40kA	40kA	40kA	40kA
Max Voltage Breakdown	<550V	<550V	<550V	<550V	<550V
Insertion Loss (dB)	≤.25	≤.25	≤.25	≤.25	≤.25
Working Temperature (deg C)	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85
Typical Size (mm)	104.4 x 57.5 x 32	104.4 x 57.5 x 32	104.4 x 57.5 x 32	104.4 x 57.5 x 32	104.4 x 57.5 x 32
Continuous Power	60W	60W	60W	60W	60W

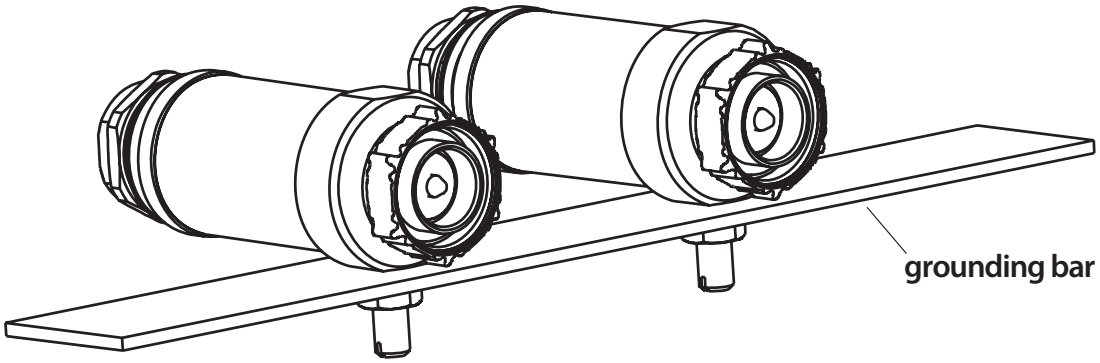
Inspected and Tested in the USA

ACT424_1/4W: 16 04 14

ACT 424-1/4W Quarterwave Protector

RF Coax Surge Arrestor





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(903) 583-8097

ACT SS64 & SS65 Data/Signal Line Family

Industrial Data Protection Device

The ACT SS64 & SS65 Stainless steel Pipe enclosed protection device is designed to protect data and signal lines in the harshest industrial environments.

This hybrid device combines the strength of gas tube protection with silicon avalanche technology as designed by Bell Labs. In rush current protection is provided by resettable fuses (PTC). This means accidental fault current does not destroy this protector.

This unit is fully encapsulated and is waterproof inside a stainless steel pipe providing an extremely safe installation package.

The ACT SS64 & SS65 is designed to protect any 4-20 mA alarm or control lines.

Two Protection Styles:
The SS64 is a two wire protector.
The SS65 is a two wire and ground protector.

RECOMMENDED LOCATION

- Waste Water Treatment Facility
- Petroleum Locations
- Outdoor Alarm Systems
- Electronic Lock Locations
- Cell Sites
- Well Pumps

FEATURES AND BENEFITS

- **2 Modes of Discrete Protection:**
  SS64 protects a single pair T-R; SS65 protects single pair plus cable shield(drainwire) T-R&G
- **Two mounting applications:**
  End to End and End to Cap configuration
- Multi-Stage Hybrid (Gas Tube & Diode) Technology
- 5 –Year Standard Warranty

STANDARDS MET

- Safety tested to UL487B
- ANSI/IEEE C62.41, C62.45

3RD PARTY TESTED

- Survives 1,000 (C2 6kV / 500A)

GENERAL TECHNICAL SPECIFICATIONS

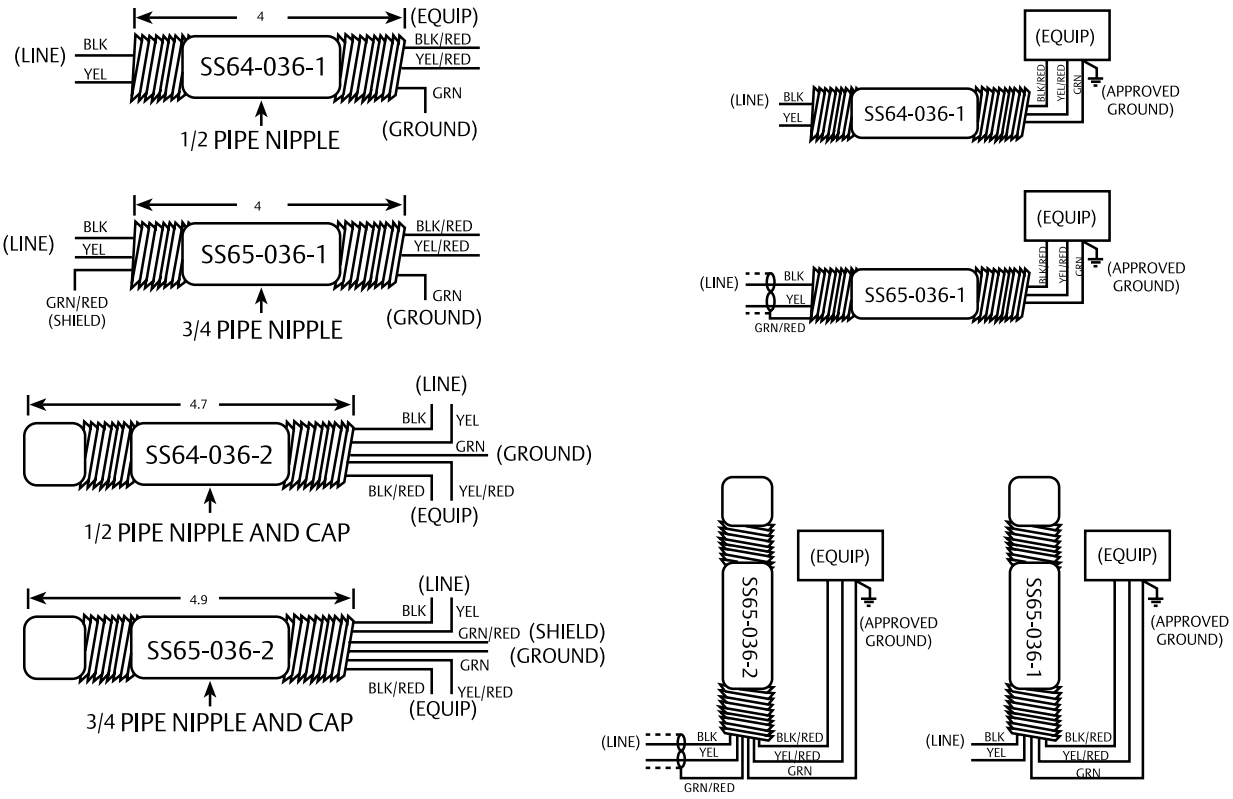
Response Time:	< 1 Nanosecond
Maximum Signal Voltage:	28 V Max
DC Clamping Level (L-G):	36 V ±10%
DC Clamping Level (L-L):	72 V ±10%
Peak Surge Current:	10 kA (8x20 µs)
Maximum let-thru Voltage:	
Line-to-Ground (10x700 µs)	44V @ 400 A
Maximum let-thru Voltage:	
Line-to-Line (10x700 µs)	90 V @ 400 A
Series Resistance (per conductor)	5V (typical)
Capacitance:	
(Zero Volts Bias)	(L-L) 600 pf typical (L-G) 1200 pf typical
Number of Occurrences:	400 @ 500 Amps (10x1000 µs)

***Caution**: The hybrid design of tis product includes series resistance. Do not place this product in service on any signal lines capable of supplying more than 150 milliamperes continuously.*

ACT SS64 & SS65 Data/Signal Line Family

Industrial Data Protection Device

TYPICAL APPLICATIONS



PART NUMBERS

ACT SS64-036-10-01 Dual line 10kA surge data protector in 1/2" pipe end to end
ACT SS64-036-10-02 Dual line 10kA surge data protector in 1/2" pipe Capped end
ACT SS65-036-10-01 Dual line with Ground 10kA surge data protector in 3/4" pipe leaded end to end
ACT SS65-036-10-02 Dual line with Ground 10kA surge data protector in 3/4" pipe capped leaded end

AC & DC POWER DISTRIBUTION PANELS

222 North Center Street
Bonham, TX 75418
(903) 583-8097

ACT 481 DC 1U

Power Distribution Panel

In today's power applications, rack mounted power distribution panels must be flexible to handle the many changing customer needs. The ACT 481 1U Power Distribution Panels offer a wide range of features to allow specific customization at off the shelf pricing.

The ACT 481 DC Panel has flexible options that allows Front or Back Feed Access, Single Feed (up to 8 breakers) or Double Feed Input (4/4 breakers).

While the standard unit is designed for the popular 19" rack, we also offer a 23" mounting bracket option. A full range of features are also offered, including remote alarms (–A) (red LED and NC/NO Form C Contact), an alarm trips anytime a breaker trips. An optional heavy duty surge protector (-S) protects the whole power bus while safely being wired behind Breaker 8, tripping offline when surge protector fails.

RECOMMENDED LOCATION

- Telecom Cabinets
- Waste Water Treatment Cabinets
- Remote Shelters or Cabinets

FEATURES AND BENEFITS

- Floated Bus - battery and return
- Front or Back Load Options
- Single or Dual Fed Bus
- Alarms - NC/NO Contacts and Red LED
- 19" & 23" Rackmount Options
- Optional Surge Protector
- Selectable Breaker Quantity and Size
- Airpax Listed Breakers
- Finished Aluminum – lightweight while providing strength
- 2–Year Standard Warranty

STANDARDS MET

- Safety – Panel Designed to UL 1801
- Designed to UL60950-1, EN60950-1, EN 60934-2001
- ANSI/ IEEE 1100
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code
- Breakers Listed to UL1077, CSA and VDE

ACT481DC: 160415

ACT 481 DC 1U Specifications

MECHANICAL

Dimensions (Standard)	19"W x 1.75"H x 5.0"D
Weight (Dependent on no. of breakers)	8.5 lbs (fully loaded with breakers)
Short Term Op Temp	-5C to 55C
Ambient	Up to 25C
Store Temp	-40C to 70C
Non-condensing humidity	5% to 95%
Enclosure	Painted - Black standard
Rack Mounting	19" Std or 23 " optional

ELECTRICAL

Input Connections	Crimp Type on 1/4-20 stud 5/8" Spacing	
Input Wire Size	Up to 2 Awg	
Max. Terminal Width	.46"	
Output Connections	Barrier Terminal Strips	
Output Wire Size	12-24 AWG	
Max. Terminal Width	.33"	
Number of poles /breakers	1- Pole - 8 Max.	
Voltage Type	48V 24V 12V	42 - 60VDC 21-30VDC 105-15VDC
Availible Breaker Amperage	5A, 10A, 15A, 20A	For panel loading info contact ACT Communications
Polarity	Floated Bus - Battery & Return	
Breaker Type	Airpax SNAPAK	
Breaker Types	1A to 30A	
Alarm Indicator	Standard Optional-A	Power On Green LED Tripped Breaker - Red LED NO / NC Remote Alarm Contacts - Wire Wrap
Bus Capacity	100 Amps	
Ampere Rating	30, 20, 15, 10, and 5 Amp	
Short Circuit Rating	DC 65V 1000A	

SAFETY STANDARDS

Panels designed to:	UL 1801, UL60950-1 ,EN60-950-1, EN 60934-2001
Breakers listed to:	UL1087, CSA and VDE

PART NUMBER

ACT481-XXX-YY-ZZZZ	1 U Power Distribution Panel		
Where:	XXX YY	Voltage type Number of Breakers	012, 024, 048, 120, 120S 01 to 08
Options	-A -F or -B -D -23 -S -SS - ZZZZ	Remote Alarm Front or Back Load Single or Dual Fed Bus 23" Mounting Brackets Surge Protector Safety Shield Customer Build Code	Alarm Red LED and Form C relay contact NC / NO Single Fed Standard, -D for dual fed buses Breaker Fed Surge Protector - Protects whole bus Plexiglass shield over all open bus connections A-Z, 1-9
Example: ACT481-048-08-AF05	1U DC Distribution Panel at 48V, 8 breakers with alarm and Front Load option with customer build code of 05		

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ACT 481 DC 1U 150 Amp

16-Breaker Dual Feed Power Distribution Panel

In today's power applications, rack mounted power distribution panels must be flexible to handle the many changing customer needs. The ACT 481 1U Power Distribution Panels offer a wide range of features to allow specific customization at off the shelf pricing.

The ACT 481 DC Panel has flexible options that allows Front or Back Feed Access, Single Feed (up to 16 breakers) or Double Feed Input (8/8 breakers).

While the standard unit is designed for the popular 19" rack, we also offer a 23" mounting bracket option. A full range of features are also offered, including remote alarms (A+B) (red LED and a consolidated NC/NO Form C Contact), an alarm trips anytime a breaker trips. An optional heavy duty surge protector (-S) protects the whole power bus while safely being wired behind Breaker 8, tripping offline when surge protector fails.

RECOMMENDED LOCATION

- Telecom Cabinets
- Waste Water Treatment Cabinets
- Remote Shelters or Cabinets
- Solar Panels

FEATURES AND BENEFITS

- Floated Bus - battery and return
- Front or Back Load Options
- Single or Dual Fed Bus
- Alarms - NC/NO Contacts and A and B Red LED
- 19" & 23" Rackmount Options
- Optional Surge Protector
- Selectable Breaker Quantity and Size – up to 16 breakers
- Airpax Listed Breakers
- Black Finished Aluminum – lightweight while providing strength
- 2–Year Standard Warranty

STANDARDS MET

- Safety – Panel Designed to UL 1801
- Designed to UL60950-1, EN60950-1, EN 60934-2001
- ANSI/ IEEE 1100
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code
- Breakers Listed to UL1077, CSA and VDE

ACT481Airbus: 160415

ACT 481 DC 1U 150 Amp Specifications

MECHANICAL

Dimensions (Standard)	19"W x 1.75"H x 5.0"D
Weight (Dependent on no. of breakers)	8.5 lbs (fully loaded with breakers)
Op Temp	-5C to 55C
Ambient	Up to 25C
Store Temp	-40C to 85C
Non-condensing humidity	0% to 95%
Enclosure	Aluminum - Painted - Black standard
Rack Mounting	19" Std or 23 " optional

ELECTRICAL

Input Connections	Crimp Type on 1/4-20 stud 5/8" (0.625") Spacing
Input Wire Size	Up to 2 Awg
Max. Terminal Width	.46"
Output Connections	Barrier Terminal Strips
Output Wire Size	12-24 AWG
Max. Terminal Width	.33"
Number of poles /breakers	1- Pole (8 Per Side - 16 Total)
Voltage Type *Unit is not polarity-sensitive*	48V 42 - 60 VDC 24V / 12V 10.5 - 30 VDC
Availible Breaker Amperage	5A, 10A, 15A, 20A, 30A For panel loading info contact ACT Communications
Polarity	Floated Bus - Battery & Return *Unit is not polarity-sensitive*
Breaker Type	Airpax SNAPAK
Alarm Indicator	Standard Power On Green LED Optional-A Tripped Breaker - Red LED NO / NC Remote Alarm Contacts
Bus Capacity	150 Amps Per Side (A+B)
Short Circuit Rating	DC 65V 1000A

SAFETY STANDARDS

Panels designed to:	UL 1801, UL60950-1 ,EN60-950-1, EN 60934-2001
Breakers listed to:	UL1087, CSA and VDE

PART NUMBER

ACT481-XXX-YY-ZZZZ	1 U Power Distribution Panel		
Where:	XXX	Voltage type	12/24, 48, 120, 120S
	YY	Number of Breakers	01 to 16
Options	-A	Remote Alarm	Alarm Red LED and Form C relay contact NC / NO
	-F or -B	Front or Back Load	
	-D	Single or Dual Fed Bus	Single Fed Standard, -D for dual fed buses
	-23	23" Mounting Brackets	
	-S	Surge Protector	Breaker Fed Surge Protector - Protects whole bus
	-SS	Safety Shield	Plexiglass shield over all open bus connections
	- ZZZZ	Customer Build Code	A-Z, 1-9
Example Part Numbers:	**ACT481-048-16-A-B-D-AB01** **ACT481-12/24-16-A-B-D-AB01**		

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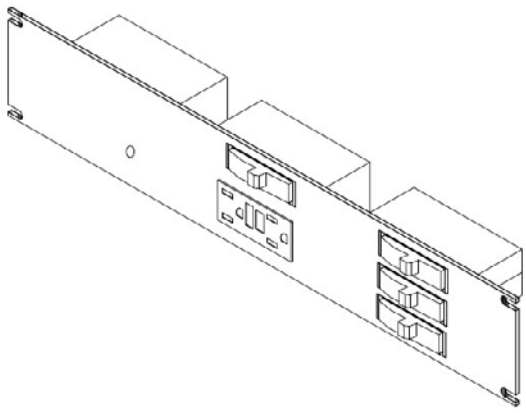
ACT 482 2U Rack Mounted AC Load Panel Family

Power Distribution Panel



ACT 482-120-4101-S01

In today's applications, rack mounted power distribution panels must be flexible to handle the many changing customer needs. The ACT 482 2U Power Distribution Panels offer a wide range of options to allow specific customization at off the shelf pricing.

Optional features include number and size of breakers, surge protection, power filtering and end terminated power cables for your generator and downstream loads.

RECOMMENDED LOCATION

- Telecom Cabinets
- Waste Water Treatment Cabinets
- Remote Shelters or Cabinets

FEATURES AND BENEFITS

- 1 – 30 Amp Main breaker
- 3- 15 Amp breakers
- Square D QOU type breakers
- Finished Aluminum – light weight while providing strength
- GFI outlet option allows technicians an easy access point for power
- 40,000 amp Surge Protection Device
- 2 –Year Standard Warranty

STANDARDS MET

- Safety – Panel Designed to UL 67
- Breakers – UL 489 Listed – CSA 22.2 #5.1
- IEEE 1100
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

SPECIFICATIONS

MECHANICAL

Dimensions:	19" x 3.468" x 5.0"
Weight:	4.5 lbs
Operating Temp:	-40F to 140F
Non-condensing humidity:	5% to 95%

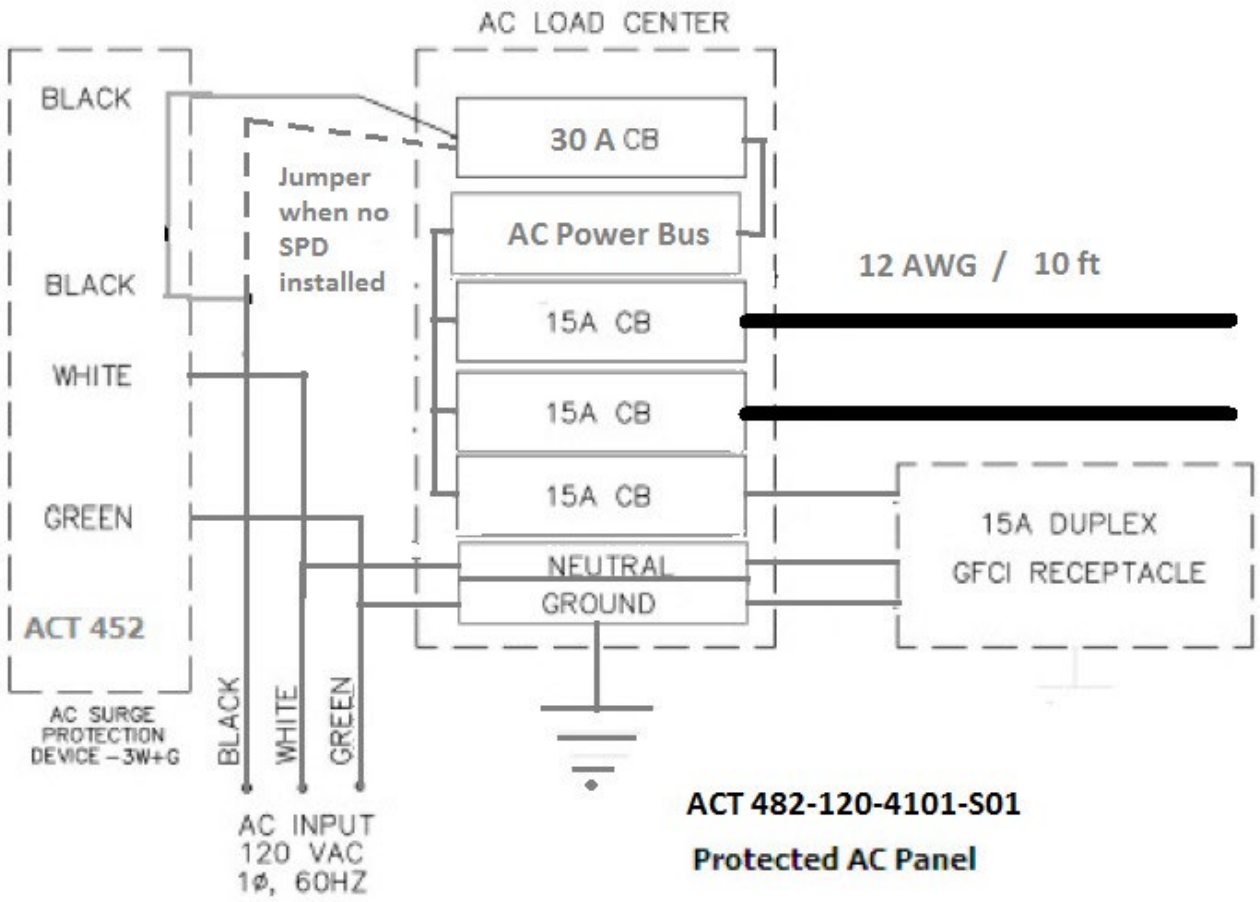
ELECTRICAL

Wire Size:	#14 - 2 Awg
Number of poles/breakers:	1-Pole
Short Circuit Current Rating:	10kA@120/240 VAC
Breaker Type:	Square D QOU
Approval on Breakers:	UL 489 Listed, CSA 22.2 #5.1 Certified
Ampere Rating:	30, 20, 15 Amp
Cord Connections:	All cords and connectors specifications are considered custom and must be specified by the customer in writing.

PART NUMBER DESCRIPTION

ACT 482-UUU-VWXX-YZZ		2U Rack Mounting
UUU	120	Single Phase
	120S	120/240 Split Phase
	120Y	120/208 Three Phase
V	1-6	Number of Breakers
W	0	No GFI
	1	Internal GFCI
	2	External GFCI
XX	00 - 99	Custom Options
Y	N	No Surge Protection Device
	S	40kA Surge Protection Device
ZZ	00 - 99	Custom Options

ACT 482 2U Rack Mounted AC Load Panel



ACT 482-120-4101-S01

Protected AC Panel

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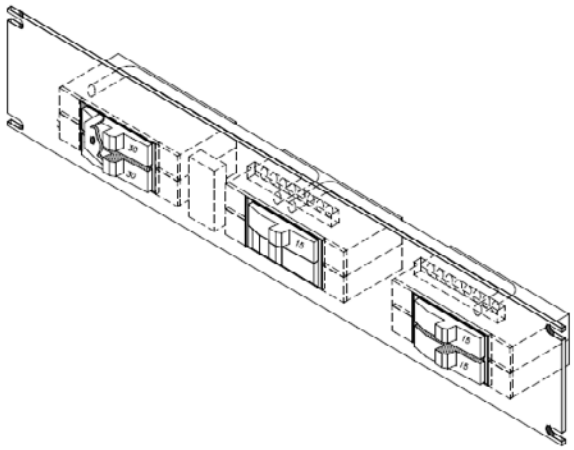
(903) 583-8097

ACT 482 2U Rack Mounted AC Load Panel Family

Power Distribution Panel



ACT 482-120-6002-N00

In today's applications, rack mounted power distribution panels must be flexible to handle the many changing customer needs. The ACT 482 2U Power Distribution Panels offer a wide range of options to allow specific customization at off the shelf pricing.

Optional features include number and size of breakers, surge protection, power filtering and end terminated power cables for your generator and downstream loads.

RECOMMENDED LOCATION

- Telecom Cabinets
- Waste Water Treatment Cabinets
- Remote Shelters or Cabinets

FEATURES AND BENEFITS

- Selectable Breaker Quantity and Size
- Generator / Main interlock mechanism
- Square D QOU type breakers
- Finished Aluminum – light weight while providing strength
- GFI outlet option allows technicians an easy access point for power
- 2 –Year Standard Warranty

STANDARDS MET

- Safety – Panel Designed to UL 67
- Breakers – UL 489 Listed – CSA 22.2 #5.1
- IEEE 1100
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

SPECIFICATIONS

MECHANICAL

Dimensions:	19" x 3.468" x 5.0"
Weight:	4.5 lbs
Operating Temp:	-40F to 140F
Non-condensing humidity:	5% to 95%

ELECTRICAL

Wire Size:	#14-3 AWG
Number of poles/breakers:	1-Pole
Short Circuit Current Rating:	10kA@120/240 VAC
Breaker Type:	Square D QOU
Approval on Breakers:	UL 489 Listed, CSA 22.2 #5.1 Certified
Ampere Rating:	30, 20, 15 Amp
Cord Connections:	All cords and connectors specifications are considered custom and must be specified by the customer in writing.

ACT 482 2U Rack Mounted AC Load Panel

CAUTION: The ACT 482 ground bus must be connected to cabinet ground plate. All wiring should be according to NFPA 70 National Electric Code.

Each panel is shipped with a breaker interlock between the MAIN and Generator breaker, this interlock must never be defeated or removed. To do so would present a dangerous hazard to the user or the user's equipment

INSTALLATION NOTES *Reference Figure 2.0*

1. All neutral lines must terminate to the Neutral bus bar
2. All Ground lines must be terminated to the Ground bus bar
3. The lacing bar (*not shown in drawing*) is to be used to conveniently route and secure the cables and wiring to the power panel
4. Cable length must allow for proper bend radius per UL 67
5. Cable routing and cable dress to termination points must comply with UL 67

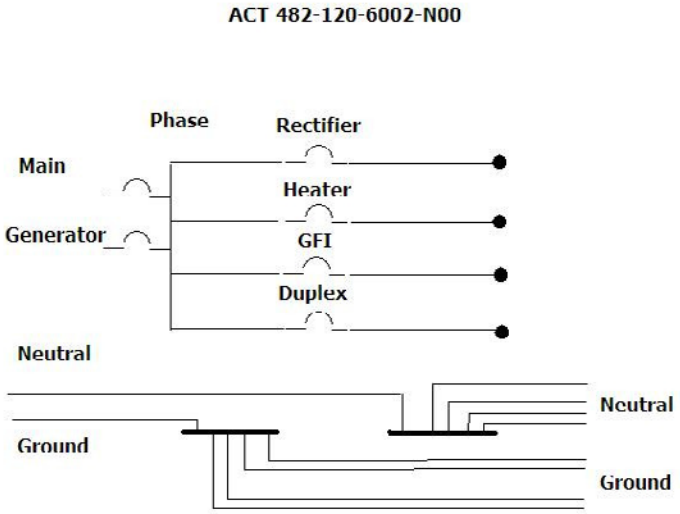


FIGURE 1.0

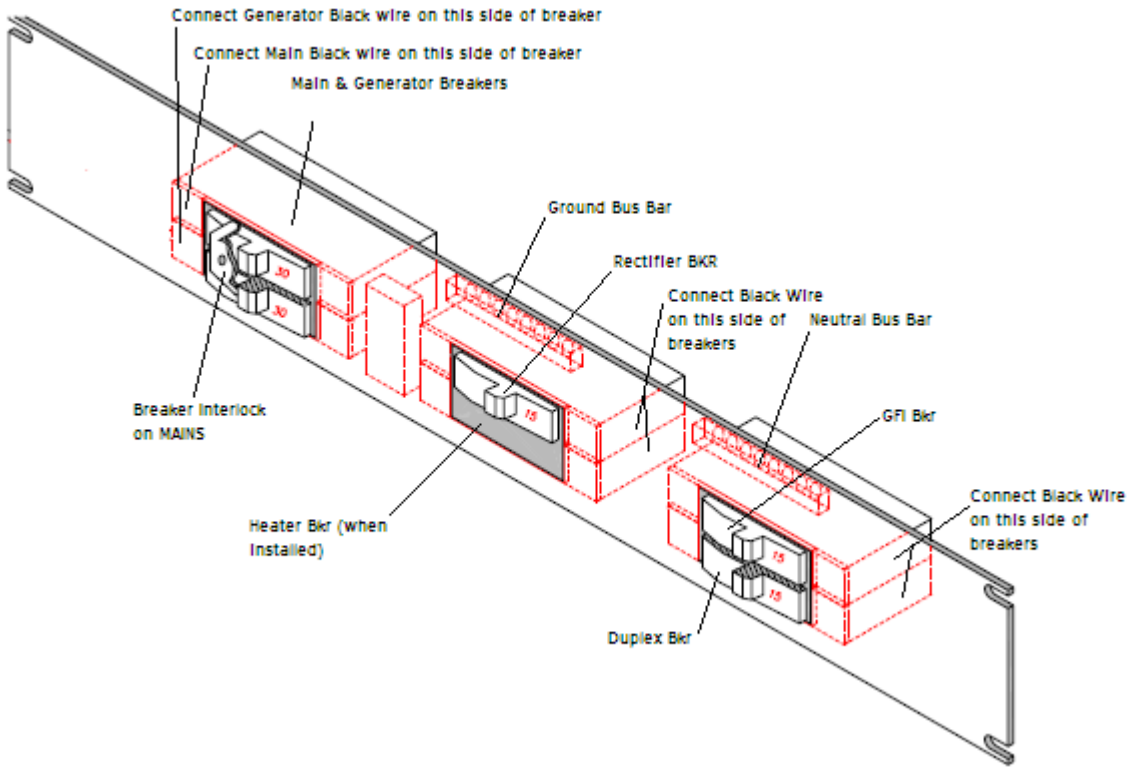


FIGURE 2.0

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ACT 482 2U Rack Mounted AC Load Panel

Power Distribution Panel

In today's applications, rack mounted power distribution panels must be flexible to handle the many changing customer needs. The ACT 482-120S-3103-S00 19" - 2U Power Distribution Panels offer a wide range of options to allow specific customization at off the shelf pricing.

Optional features include molded Plexi glass safety hood.

RECOMMENDED LOCATION

- Telecom Cabinets
- Waste Water Treatment Cabinets
- Remote Shelters or Cabinets

FEATURES AND BENEFITS

- 120 /240V Split Phase Panel
- 1- 15 Amp Breaker to GFI outlet option allows technicians an easy access point for power
- 2-30 Amp Breaker that can be used individually for 120V or ganged to trip 240V together
- Square D QOU type quality breakers
- Finished Aluminum – light weight while providing strength
- 2 –Year Standard Warranty

STANDARDS MET

- Safety – Panel Designed to UL 67
- Breakers – UL 489 Listed – CSA
- 22.2 #5.1
- IEEE 1100
- ANSI/IEEE C62.41, C62.45
- ANSI/NFPA 70 National Electrical Code

SPECIFICATIONS

MECHANICAL

Dimensions:	19" x 3.468" x 5.0"
Weight:	4.5 lbs
Operating Temp:	-40F to 140F
Non-condensing humidity:	5% to 95%

ELECTRICAL

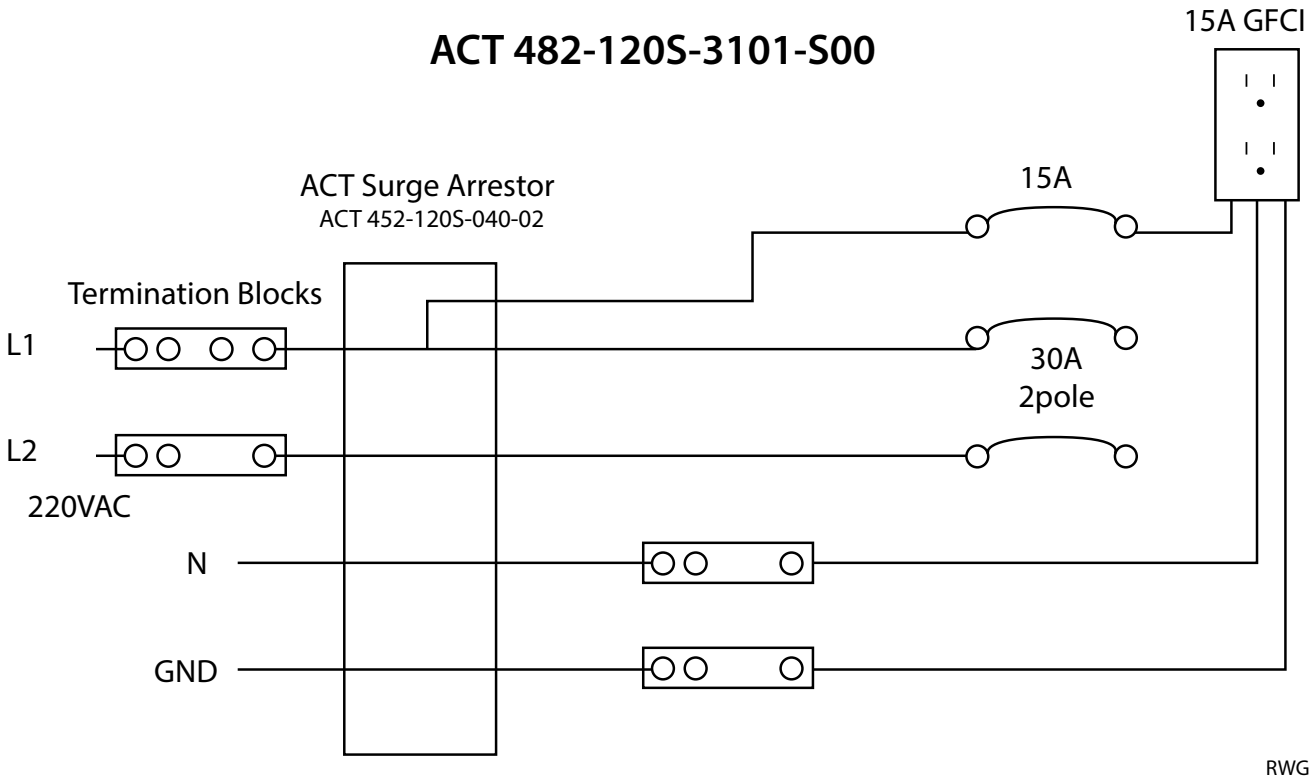
Wire Size:	#14 - 2 Awg
Number of poles/breakers:	1-Pole
Short Circuit Current Rating:	10kA@120/240 VAC
Breaker Type:	Square D QOU
Approval on Breakers:	UL 489 Listed, CSA 22.2 #5.1 Certified
Ampere Rating:	30, 20, 15 Amp
Cord Connections:	All cords and connectors specifications are considered custom and must be specified by the customer in writing.

PART NUMBER DESCRIPTION

ACT 482	2U Rack Mounting	
UUU	120	Single Phase
	120S	120/240 Split Phase
	120Y	120/208 Three Phase
V	1-6	Number of Breakers
W	0	No GFI
	1	Internal GFCI
	2	External GFCI
XX	00 - 99	Custom Options
Y	N	No Surge Protection Device
	S	40kA Surge Protection Device
ZZ	00 - 99	Custom Options

Note: ZZ = 01 for Plexiglass Safety Shield

ACT 482-120S-3101-S00



RWG 06/18/2012

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ACT 488 PowerSeptic PDU

Conditioned Power Distribution Unit

ACT 488-120-106-SF0

The ACT PowerSeptic is the anti-septic system that scrubs your power clean. As a Conditioned Power Distribution Unit (CPDU), the PowerSeptic provides managers with the ability to send clean and safe power to 6 AC outlets while monitoring the total power with an easy to read amp meter. Unlike many other PDU's, the PowerSeptic CPDU actually conditions the power against high frequency noise found both on the Power and Neutral wires, while focusing on removing harmful ground noises.

The ACT CPDU also uses solid state Metal Oxide Varistors that provide industrial strength surge protection on all wires, on each output jack. Using a transparent system; damaging transient surges and fast over voltages are no longer a problem. This unseen protection is not found at this protection level in most other comparable PDU's.

The 6 power outlets are also protected with a built in, 15 Amp breaker Switch, ensuring the quickest response to a shorted condition, saving your sensitive electronic equipment against power failures.

This 1U panel arrives ready for 19" rack installation or with a few screw removals can easily be configured for stacking, wall mount, and under-counter mounting.

Includes: 6 rear facing NEMA 5-15R Outlets,, 15-ft. AC power cord, 15 amp breaker, Surge Protection Device (SPD), EMI Noise and Ground Filter.

FEATURES

- 6 Power Conditioned AC Outlets
- 120V 15Amp Breaker Switch
- Highest Surge Protection in its class (25,000 amps)
- Filters installed on both Power, Neutral and Ground
- 1U Housing allows Rack, Wall or Stack mounting

CERTIFICATIONS & STANDARDS

- UL60950-1
- CAN/CSA C22.2 No.60950-1-03
- ETL 1449 3rd edition for ACT452 SPD

RECOMMENDED LOCATIONS

The ACT PowerSeptic CPDU is used for protecting electronic equipment needing clean power.

- IT Departments and Computer Servers
- Music Industry for Sound Equipment and Recording Studios

PRODUCT SPECIFICATIONS

Product Name:	PowerSeptic PDU
Product Model:	ACT 488-120-106-SF0
Product Type:	Power Conditioned PDU
Warranty:	2 Year

MECHANICAL

Form:	1U Rack-mountable, wallmount, undershelf
Input:	1 x NEMA 5-15P
Cord Length:	15ft
Output:	6 x NEMA 5-15R
Dimensions:	1.75"H x 17.50" W x 4.50" D

ELECTRICAL

Input Voltage:	120 VAC
Output Voltage:	120 VAC
Circuit Breaker Switch:	15 A
Frequency:	50 - 60 Hz
Surge Protection:	24,000 Amps (8x20uS)
EMI Filter:	250 kHz - 10 MHz

ACT488PDU: 16 04 19

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ACT 488 PowerSeptic Pro™

Conditioned Power Distribution Unit

ACT 488-120-113-SFM

The ACT PowerSeptic Pro is the anti-septic system that scrubs your power clean. As a Conditioned Power Distribution Unit (CPDU), the PowerSeptic Pro provides managers with the ability to send clean and safe power to 13 AC outlets while monitoring the total power with an easy to read amp meter. Unlike many other PDU's, the PowerSeptic CPDU actually conditions the power against high frequency noise found both on the Power and Neutral wires, while focusing on removing harmful ground noises.

The ACT CPDU also uses solid state Metal Oxide Varistors that provide industrial strength surge protection on all wires, on each output jack. Using a transparent system; damaging transient surges and fast over voltages are no longer a problem. This unseen protection is not found at this protection level in most other comparable PDU's.

The 13 power outlets are also protected with a built in, 15 Amp breaker, ensuring the quickest response to a shorted condition, saving your sensitive electronic equipment against power failures.

This 1U panel arrives ready for 19" rack installation or with a few screw removals can easily be configured for stacking, wall mount, and under-counter mounting.

Includes: 12 rear facing NEMA 5-15R Outlets, and one front facing outlet, 15-ft. AC power cord, 15 amp breaker, Surge Protection Device (SPD), EMI Noise and Ground Filter.

FEATURES

- 13 Power Conditioned AC Outlets
- 20V 15AmpBreaker
- Easy to read Amp Meter
- Highest Surge Protection in its class (25,000 amps)
- Filters installed on both Power, Neutral and Ground
- 1U Housing allows Rack, Wall or Stack mounting

CERTIFICATIONS & STANDARDS

- UL60950-1
- CAN/CSA C22.2 No. 60950-1-03
- ETL 1449 3rd Edition for ACT452 SPD

RECOMMENDED LOCATIONS

The ACT PowerSeptic Pro is used for protecting electronic equipment needing clean power.

- IT Departments and Computer Servers
- Music Industry for Sound Equipment and Recording Studios

PRODUCT SPECIFICATIONS

Product Name:	PowerSeptic Pro
Product Model:	ACT 488-120-113-SFM
Product Type:	Power Conditioned PDU
Warranty:	2 Year

MECHANICAL

Form:	1U Rack-mountable, wallmount, undershelf
Input:	1 x NEMA 5-15P
Cord Length:	15ft
Output:	13 x NEMA 5-15R
Dimensions:	1.75"H x 17.50"W x 4.50"D

ELECTRICAL

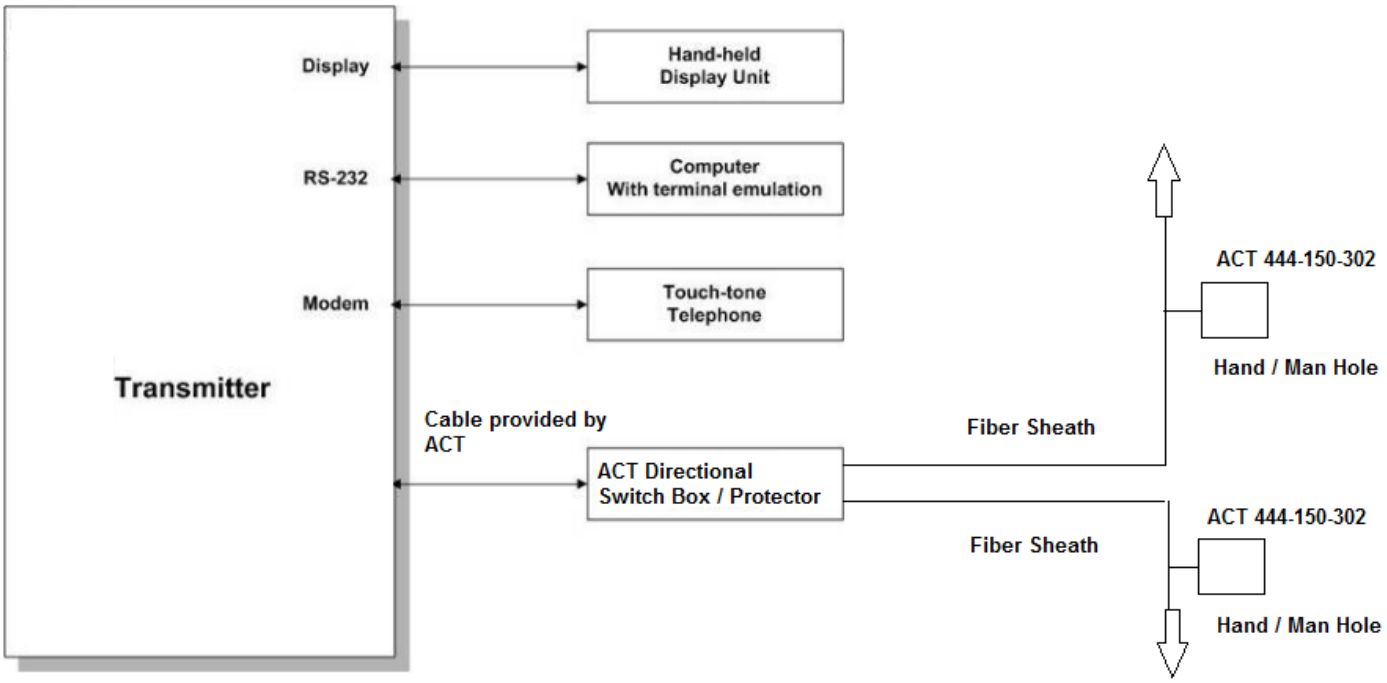
Input Voltage:	120 VAC
Output Voltage:	120 VAC
Circuit Breaker Switch:	15 A
Frequency:	50 - 60 Hz
Surge Protection:	24,000 Amps (8x20uS)
EMI Filter:	250 kHz - 10 MHz

ACT488Pro: 160419

CABLE LOCATION PROTECTION

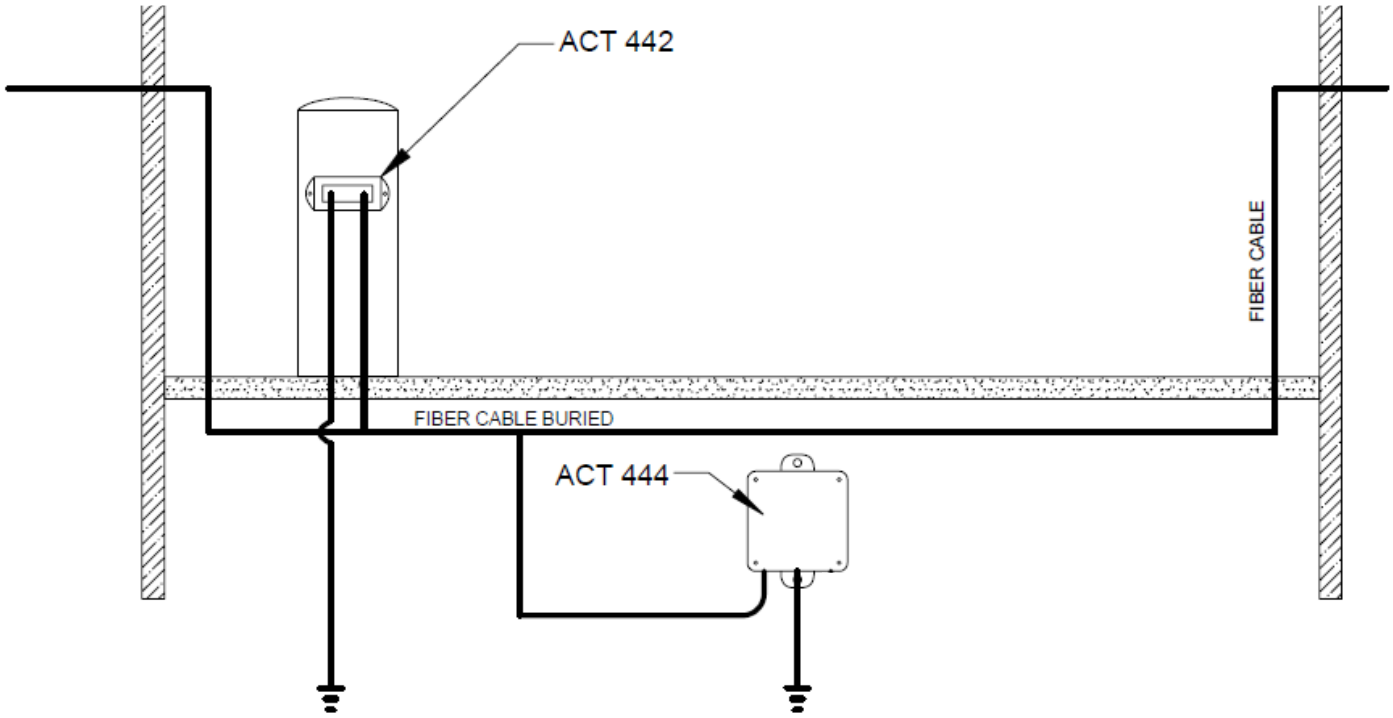
CABLE LOCATION TRAINING

ACT Protection System Starts at the Transmitter

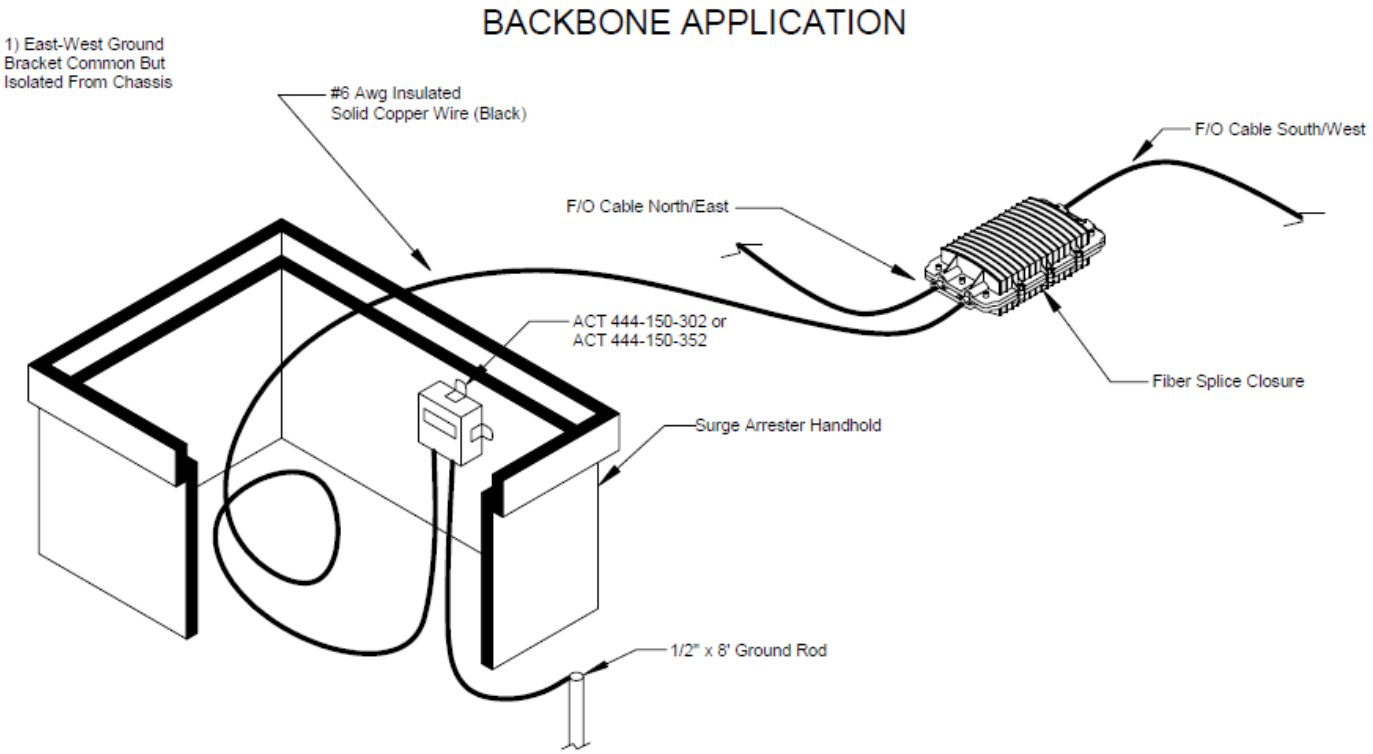


Protection Locations

ACT 442 goes **ABOVE** ground, ACT 444 goes **BELOW** ground.



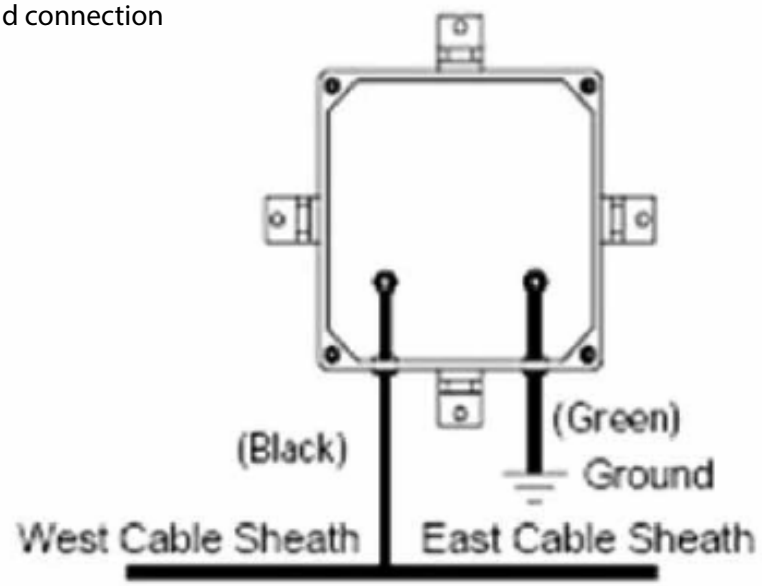
ACT 444 is the PRIMARY Fiber Cable Protector



ACT 444-150-302 or ACT 444-150-352 Spur Application

ACT 444 & 442 Family Connections are the Same

2 leads, sheath and ground connection



ACT 444

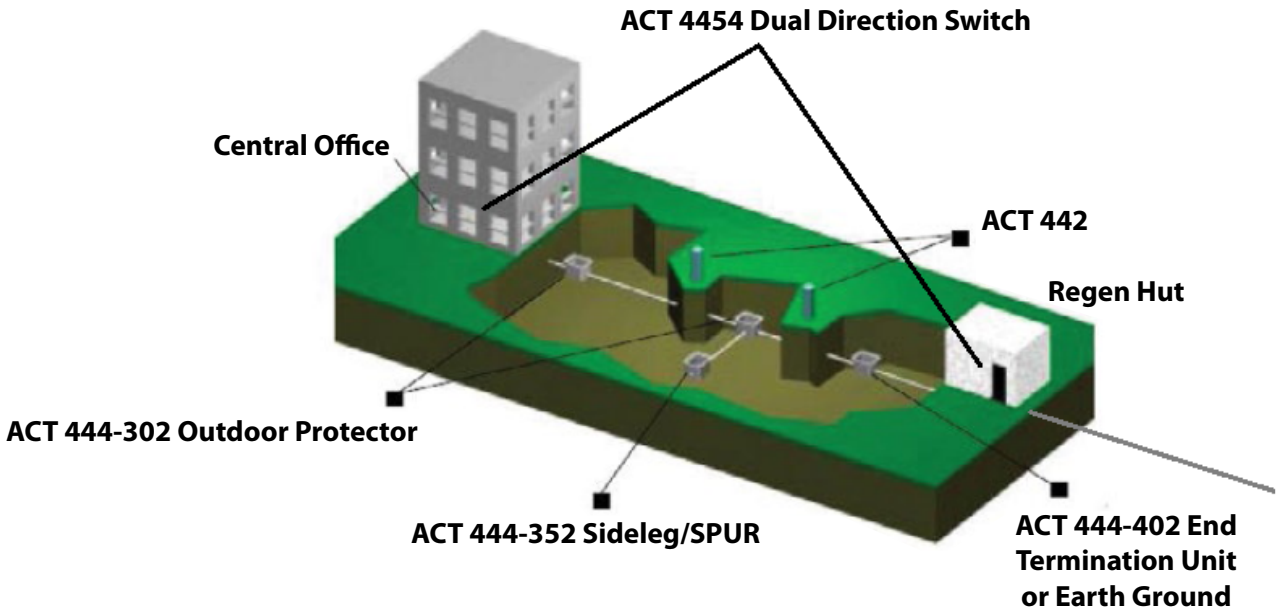
2 leads, sheath and ground connection

- **302 Back Bone SPD** – Used at every splice point
- **352 Side Leg SPD** – Used at each "T" splice or end of a SPUR
- **402 End Termination SPD** – Used at end of a short haul backbone (5 miles or less)

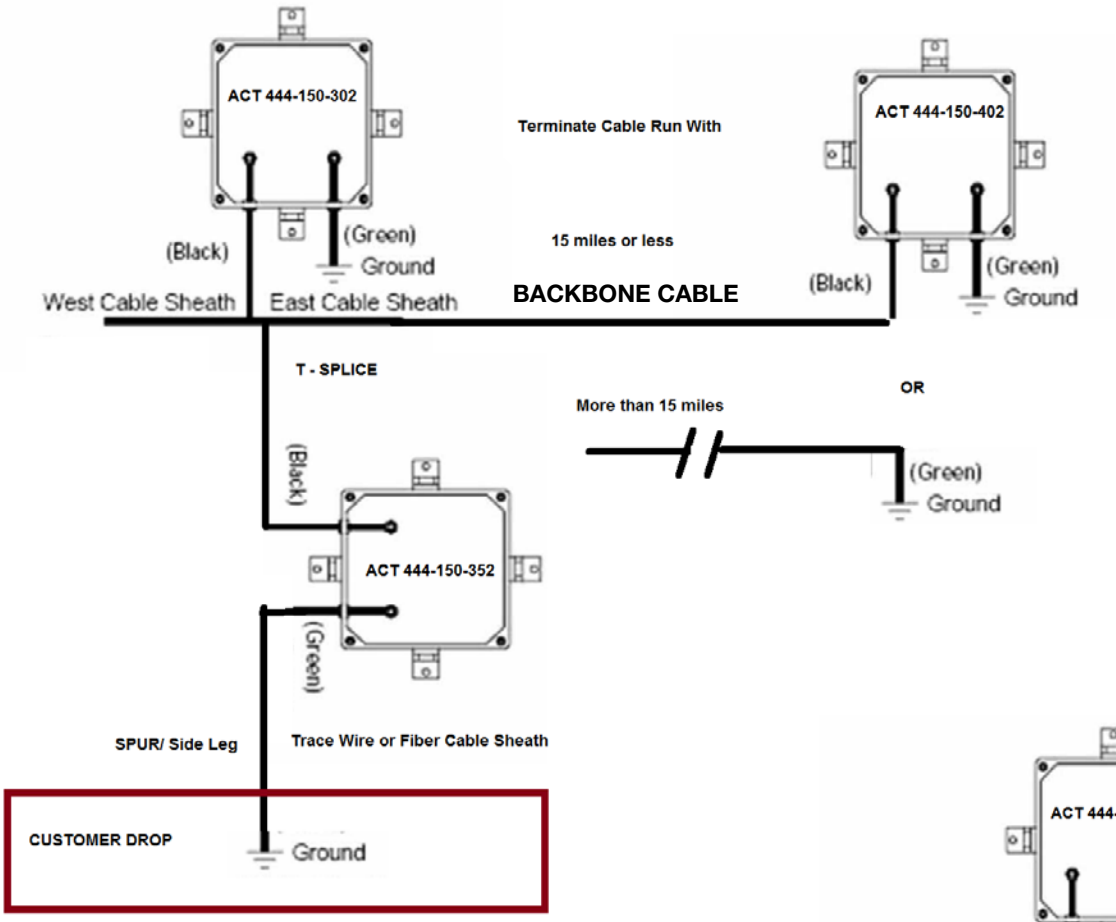
Example Setup

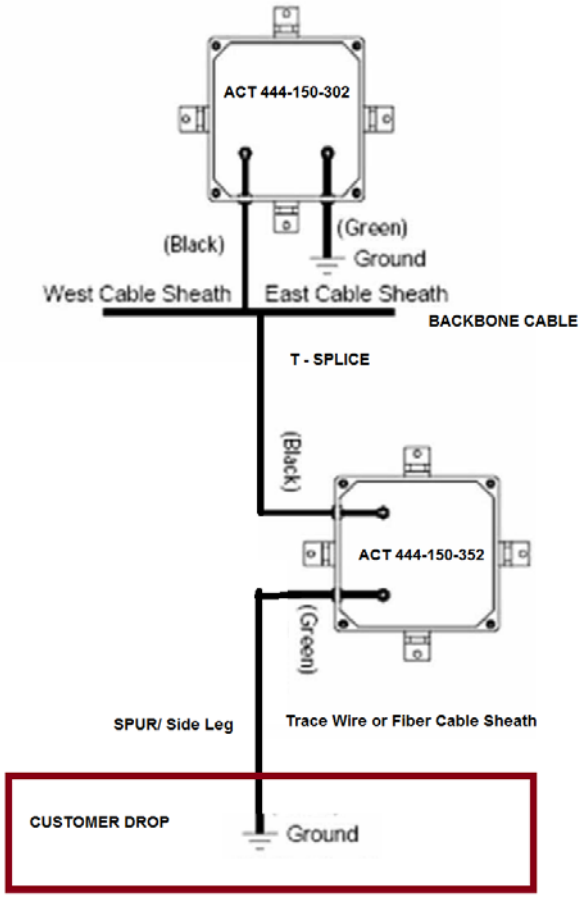
From Rack Transmitter, a signal is sent to a Directional Switch with Protectors

From ACT Switchbox the tone is sent on Fiber Sheath to distant GROUND or ACT 444-150-402 End Termination Unit



Typical Installation

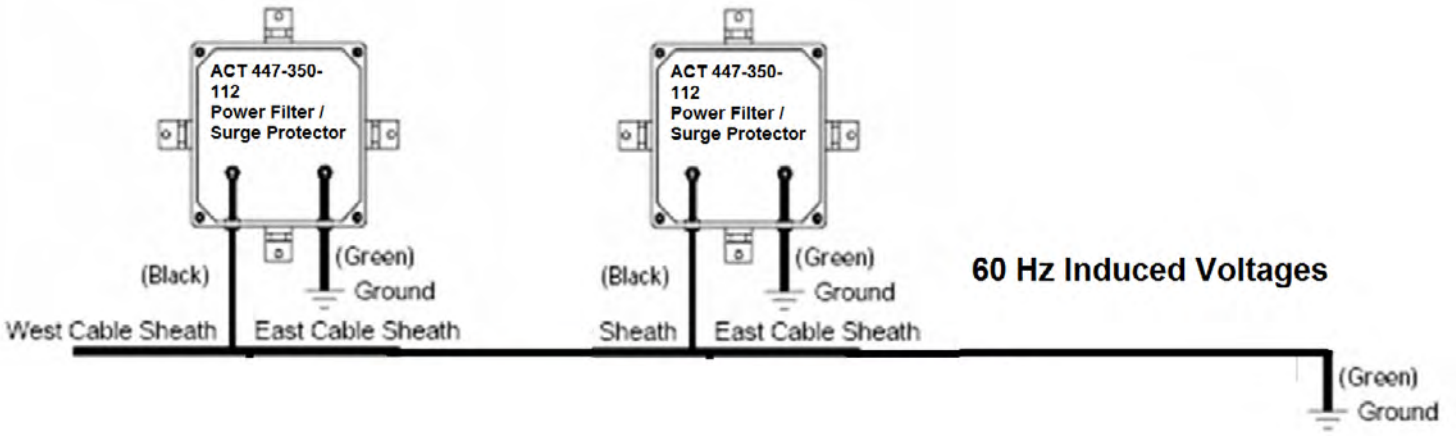




Side leg Protector is ALWAYS installed in SERIES with Trace/Fiber cable and can be installed at the "T" splice or anywhere downstream at customer drop

CABLE LOCATION TRAINING

ACT 447 Induced Power Notch Filter



Induced 60 Hz voltages can kill personel and damage equipment

Long Haul Protection - Common Applications

ALL LONG LINE MANAGEMENT SYSTEMS

- **ACT 4454-150** 2 direction switch box and protector, with control harness to LMS
- **ACT 4456-150** 4 direction switch box and protectors, with control harness to LMS
- **ACT 4457-150** 16 direction switch box and protectors, with control harness to LMS

POINT TO POINT PROTECTION SYSTEMS

- **ACT 442-150-200** Pedestal mount only, terminal post. Access to shield
- **ACT 446-150-200** Pedestal mount only, terminal post. Dual Directional Access to shield
- **ACT 444-150-302** Underground or buried protector, waterproof box. No access to shield
- **ACT 447-350-112** Underground or buried protector and 60Hz filter, waterproof box. No access to shield.
- **ACT 447-350-132** Underground or buried protector and 60Hz 3 Amp AC filter, waterproof box. No access to shield.

Metro / SPUR Protection

SIDE LEG (SPUR) PROTECTION SYSTEMS

- **ACT 444-150-302** Underground or buried protector, waterproof box. No access to shield
- **ACT 444-150-352** Protector & Impedence Spur Point to Ground, waterproof box. No access to shield
- **ACT 447-350-112** Underground or buried protector and 60Hz filter, waterproof box. No access to shield
- **ACT 447-350-132** Underground or buried protector and 60Hz 3 Amp AC filter, waterproof box. No access to shield

CITY RING PROTECTION SYSTEMS / TRAFFIC SIGNALING

- **ACT 444-150-352** Protector & Impedance Spur Point to Ground, waterproof box. No access to shield
- **ACT 444-150-402** Protector & Impedance End Point to Ground, waterproof box. No access to shield
- **ACT 444-150-302** Underground or buried protector, waterproof box. No access to shield
- **ACT 447-350-112** Underground or buried protector and 60Hz filter, waterproof box. No access to shield
- **ACT 447-350-132** Underground or buried protector and 60Hz 3 Amp AC filter, waterproof box. No access to shield

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ACT 442 & 444 Cable Location Protectors

Surge Protector System

The ACT 442 and 444 Cable Location Protection Family can be installed for both indoor or outdoor applications. The solid-state hybrid surge protection system is installed between the cable sheath and earth ground. Their primary function is to increase the cable locating tone range, efficiency and protect buried cable and personnel from high-energy surges. This unit may be installed either underground (waterproof), above ground (weather proof) or pedestal mounted. Proper installation and location of these devices allows greater than 75 miles of cable location from one transmitter.

RECOMMENDED LOCATION

- Buried Fiber Locations
- Pedestal Locations
- Indoor Locations

FEATURES AND BENEFITS

- Extends Cable Locations over 75 miles
- MOV/Gas Tube Hybrid Technology
- Fail Safe Short / Belcore Tested
- Auto-resets through life of product
- 5–Year Standard Warranty

PHYSICAL SPECIFICATIONS

ACT 442-XXX-2YZ Family:	Installed in 4”x2”x1.5” Indoor Enclosure
ACT 444-XXX- 2YZ Family:	Installed in 4”x4”x2” Weather-resistant Enclosure
ACT 444-XXX-3YZ Family:	Installed in 4”x4”x2” Waterproof Closure

XXX option signifies voltage application (050V, 150V, 350V)

Y option 0 - No Shorting Bar 1 - Shorting Bar

Z option includes a #6AWG stranded wires feeding through the box that connect (green) to ground and (black) to the cable sheath(s).

ELECTRICAL SPECIFICATIONS

Surge Element Patented Hybrid Voltage Applications RMS:	Gas Tube/MOV 50V, 150V, 350V
Clamping Voltage (@ 1mA DC): (+10% voltage variance)	95V, 210V, 430V
Peak Current (8x20µS): Life (8x20uS) 1000A	42,000 Amps min 1,000 surges
Energy Dissipation (10x1000µS):	1600 joules
Response Time: Insulation Resistance	1.5 Nanoseconds 1000 Mohm @100VDC
Capacitance @ 5KHz:	4004pf

STANDARDS MET

- Safety – Meets UL497
- ANSI/IEEE C62.41, C62.45

3RD PARTY TESTED

ACT442-444: 16 04 14

ACT 442 & 444 Cable Location Protectors

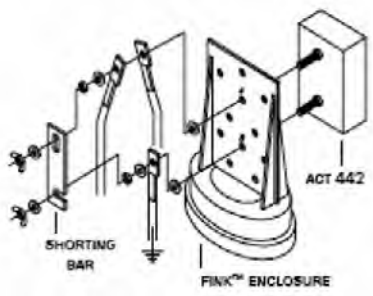
Surge Protector System

TECHNICAL INFORMATION

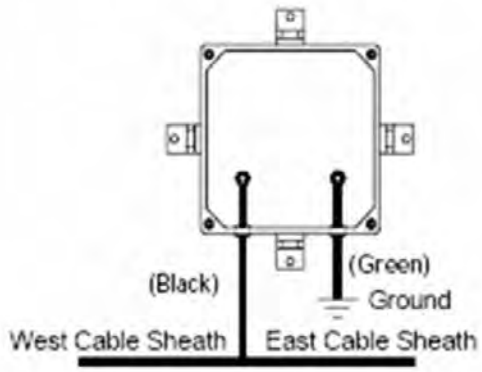
Model	System
ACT 442-XXX-2Y0	Single protector 4"x2"x1.5" Design for FINK or Pedestal
ACT 442-XXX-2Y2	Single protector for Indoor With 6 ft 6 AWG cable stubs 4"x2"x1.5"
ACT 442-XXX-400	***Discontinued and replaced by the new ACT 442-XXX-200 Series protector***
ACT 444-XXX-2Y0	Single Protector for Outdoor WEATHERPROOF 4"x4"x2" USED AS TEST PORT
ACT 444-XXX-2Y2	Single protector for Outdoor With 6 ft 6 AWG cable stubs WEATHERPROOF 4"x4"x2" USED AS TEST PORT
ACT 444-XXX-3Y2	Single protector for outdoor With 6 ft 6 AWG cable stubs WATERPROOF 4"x4"x2" USED FOR BACKBONE
ACT 444-XXX-352	Single protector for outdoor With 6 ft 6 AWG cable stubs WATERPROOF 4"x4"x2" USED FOR METRO / SPUR
ACT 444-XXX-402	Single protector for outdoor With 6 ft 6 AWG cable stubs WATERPROOF 4"x4"x2" USED FOR METRO-END TERMINATION
-XXX	050, 150, 350 Volts
Y	0 = No Shorting Bar 1= Shorting Bar

Part Number Example: ACT 444-150-302
*Custom voltage and cable configurations are available

ACT 442-150-410 (Fink/Pedestal)



ACT 444-150-3Y2 Weather Resistant or Waterproof



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ACT 445X Cable Location Protection

A Switch and Protector System

The ACT 445X Switch and Cable Locating Protection System is made up of a remote switching device controlled by a Cable Location Transmitter System. In addition the ACT 445X system is built with a high-energy surge protector. The surge protector provides a low impedance path to ground for high-energy transients (Lightning, temporary over voltage TOV, etc.); and a high impedance path for low energy signals (cable locating tones).

A multiple heavy-duty relay is installed in this unit allowing the cable sheath to remain grounded while de- energized.

When a 48 volt D.C. signal is applied from the transmitter, it lifts the earth ground off the cable and connects the transmitter tone to the cable sheath and also connects the protector from the sheath to ground.

RECOMMENDED LOCATION

- Central Office
- Regen Huts

FEATURES AND BENEFITS

- Multiple Switching Directions (2, 4 and 16 directions)
- Green Status indicating Lights
- NO/NC Form C Dry Contacts for remote monitoring
- MOV/Gas Tube Hybrid Technology
- 5–Year Standard Warranty

PHYSICAL SPECIFICATIONS

The ACT 445X is available for two, four or sixteen way switch cable access in one box.

For two and four way cable access (labeled 1,2,3,&4) a 12”x10”x6” box is used.

For sixteen-cable access a 16”x14”x6” wall or rack mountable box is used. This unit is sold with control cable harness ACT 445-S18-040.

Both boxes provide an internal screw terminal block for use with trace wires. Both units are sold with the control cable harness (ACT 445-S12-040) for connection to the tone transmitter.

ELECTRICAL SPECIFICATIONS

Voltage Applications:	150V, 350V
Clamping Voltage (@ 1mA DC): (+10% voltage variance)	212V, 510V
Peak Current (8x20µS):	42,000 Amps
Energy Dissipation (10x1000µS):	1600 joules
Response Time:	1.5 Nanoseconds
Capacitance @ 5KHz:	4004pf
Relay Coil Voltage:	48 Volts DC
Relay Coil Rating:	5 Amp continuous
Signal Connector:	DB24 (other cable connector options available on request)

STANDARDS MET

- Safety – Meets UL497
- ANSI/IEEE C62.41, C62.45

3RD PARTY TESTED

ACT445X: 16 04 22

ACT 445X Cable Location Protection

A Switch and Protector System

TECHNICAL INFORMATION

Model	RMS	System	Protect	DC MCOV
ACT 4454- 150	150	2 way Switch Box with 40' cable	East - G	212
			West-G	212
ACT 4454- 350	350	2 way Switch Box with 40' cable	East - G	510
			West-G	510
ACT 4456- 150	150	4 way Switch Box with 40' cable	East - G / West-G	212
			North – G / South - G	212
ACT 4456- 350	350	4 way Switch Box with 40' cable	East - G / West-G	510
			North – G / South - G	510
ACT 4457- 150	150	16 way Switch Box with 40' cable	East - G / West-G	212
			North – G / South - G	212
ACT 4457- 350	350	16 way Switch Box with 40' cable	East - G / West-G	510
			North – G / South - G	510

Part Number Example: ACT 4454-150 *Custom voltage and cable configurations are available

ACT 445 Electronic Switch Box
(only used in ACT 4454 / ACT 4456 /
ACT 4457 systems – Box not sold by itself)

ACT 445–XXX–ZZZ XXX – Protection Voltage
150 DC clamp voltage
350 DC clamp voltage
ZZZ – Box Type

500 2 Direction switch box E/W 24 pin bulkhead connectors with three terminal posts for ground and cable sheath connection. 600 4 Direction switch box E/W 24 pin pc board connector and five terminal posts for ground and 4 direction cable sheath connections

700 16 Direction switch box E/W 36 pin pc board connector and 17 terminal posts for ground and 16 direction cable sheath connections

Part Number Example: ACT 445-150-500

***CABLE HARNESS**

ACT 445-S12-040 DB24 connectorized cable, 40 feet in length, connects ACT54 & ACT56 units to Logline Maintenance Systems tone transmitters.

ACT 445-S18-040 DB36 connectorized cable, 40 feet in length, connects ACT57 units to Longline Maintenance Systems tone transmitters.

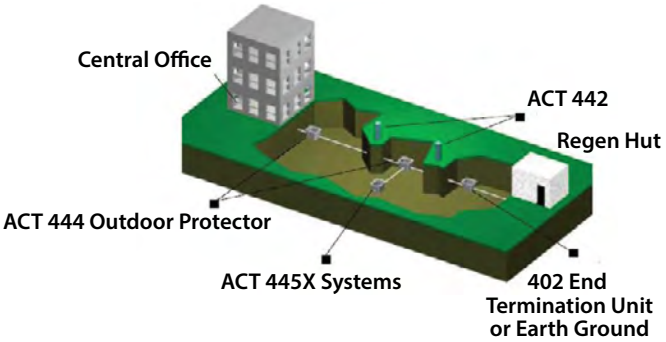
All switch box systems are sold as system numbers when combined with cable harness.

ACT 4454-ZZZ SYSTEM 2 direction, consists of:
ACT 445-ZZZ-500 & (1) ACT 445-S12-040 cable.
Where ZZZ = 150v or 350v protection level

Part Number Example: ACT 4454-150

ACT 4456-ZZZ SYSTEM 4 direction, consists of:
ACT 445-ZZZ-600, (1) ACT 4454-S12-040 cable.
Where ZZZ = 150v or 350v protection level

Part Number Example: ACT 4456-150



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ACT 446 Dual Cable Location Protector

Surge Protector System

ACT 446 Dual Cable Location Outdoor/Indoor Protectors

The ACT 446, as part of the ACT 44X Cable Locating Protection Family, can be installed for both indoors or outdoor applications. The solid-state hybrid surge protection system is installed between the cable sheath and earth ground. Their primary function is to increase the cable locating tone range and efficiency and protect buried cable and personnel from high-energy surges. This unit may be installed either underground (waterproof), above ground (weather proof) or pedestal mounted. Proper installation and location of these devices allows greater than 75 miles of cable location from one transmitter.

RECOMMENDED LOCATIONS

- Buried Fiber Locations
- Pedestal Locations
- Indoor Locations

FEATURES AND BENEFITS

- Extends Cable Locations over 75 miles
- MOV/Gas Tube Hybrid Technology
- 5–Year Standard Warranty

STANDARDS MET

- Safety – Meets UL497
- ANSI/IEEE C62.41, C62.45

3RD PARTY TESTED

PART NUMBERS

Model	Enclosure Type	System
ACT 446-XXX-	212	Dual Protector in Weatherproof enclosure with shorting bar 4"x4"x2" Enclosure
ACT 446-XXX-	302	Dual protector for Waterproof (Potted) with 6' 6 awg cable stubs 4"x4"x2" Enclosure
ACT 446-XXX-	400	Dual Protector for pedestal mount 3"x3"x2" Enclosure Comes WITHOUT shorting bar
ACT 446-XXX-	410	Dual Protector with shorting bar for pedestal mount 3"x3"x2" Enclosure

Part Number Example: ACT 446-150-410
*Custom voltage and cable configurations are available

ACT 446M is optional mounting plate available for ACT 446 - 400 series products

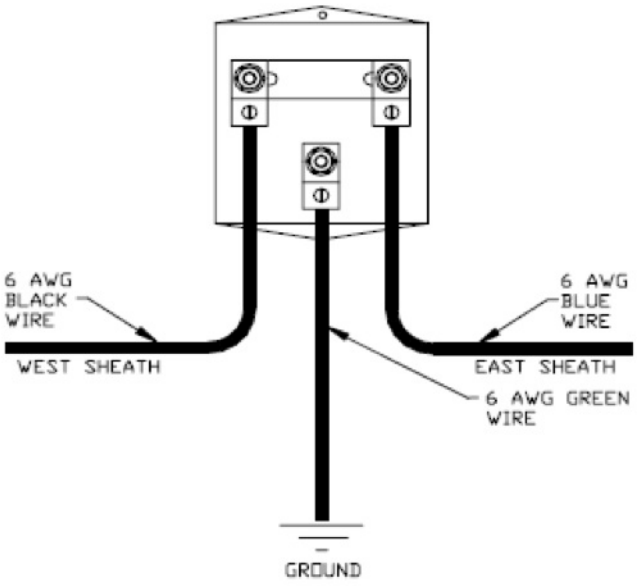
*Also use ACT 4400-150 System

ACT446: 160414

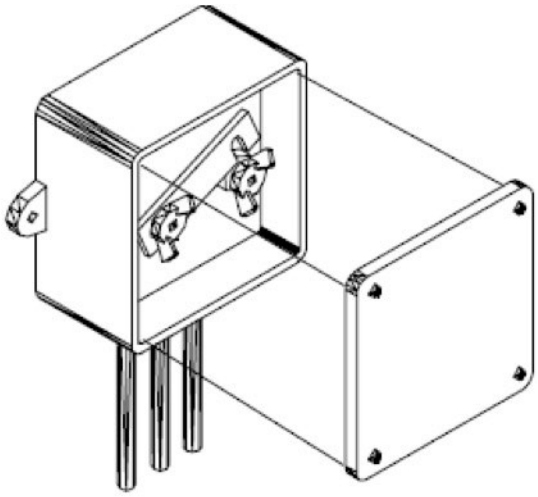
ACT 446 Dual Cable Location Protectors

Surge Protector System

ACT 446-150-410 – Pedestal Mount



Weather Proof Enclosure



ACT 446-XXX-212

TECHNICAL INFORMATION

PHYSICAL SPECIFICATIONS

ACT 446-XXX-2YZ family	Installed in 4"x4"x 2" weather resistant enclosures
ACT 446-XXX-3YZ family	Installed in 4"x4"x2" waterproof closures
ACT 446-XXX-4YZ families	Installed in a 3"x3"x2" indoor enclosure *Requires installation inside a pedestal if installed outside*

XXX – Option signifies voltage application (050V, 150V, 350V)

Y – Option	"0" No shorting bar	"1" with shorting bar
Z – Option	"0" No cable	"2" 6 foot of 6 AWG stranded cable (Black & Green)

ELECTRICAL SPECIFICATIONS

Voltage Applications RMS:	50V, 150V, 350V, 650V
Clamping Voltage (@ 1mA DC): (+10% voltage variance)	95V, 210V, 430V, 720V
Peak Current (8x20µS):	42,000 Amps
Energy Dissipation (10x1000µS):	1600 joules
Response Time:	1.5 Nanoseconds
Capacitance @ 5KHz:	4004pf

ACT 446 M option is a 16 awg aluminum back mounting plate for the ACT 446-150-410 module. Mounting Plate sold separately.

ACT COMMUNICATIONS™

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ACT 447 60hz Filter/ Protector Family

Band Reject Filtering System

ACT 447-350-112 60 Hz Filter / Protector

ACT Outdoor Filter/Protector Family

The ACT 447 Band Reject Filtering System is a two stage protection system installed between the cable sheath and earth ground. The ACT 447 is designed to increase cable locating or cable monitoring range while protecting buried cable from high energy surges and any 60 Hz induced voltages.

This hybrid design uses patented surge protection technology and the second stage of the filter utilizes a 60 Hz band reject filter. The ACT 447 can increase cable-locating efficiency and allows more than 50 miles of cable to be located with one transmitter in a single direction.

RECOMMENDED LOCATIONS

- Buried Fiber Locations
- Pedestal Locations
- Indoor Locations

SYSTEM FEATURES

- No other filter on the market can safely discharge as much energy
- Fast Response Time - <10 nS
- Hybrid Filter- MOV/Gas Tube AND 60 Hz filter
- Filter Protector turns on at 1mA
- Just two easy connections
- 2 Years Standard Warranty

PART NUMBERS

ACT 447-350-1XX-A
350 Protection for 350Vrms
150 Protection for 150Vrms

1XX

112 Series
60Hz 1 Amp: <100 ohms typical at 60 Hz, waterproof with standard 6 AWG stranded cable.

132 Series
60Hz 3 Amp: <50 ohms typical at 60 Hz, waterproof with standard 6 AWG stranded cable.
Note: Filter is designed for continuous operation up to 110vrms @ 1 amp or 3 amps operation at 60 Hz.

-A Option
Option code reserved for all projects using AT&T standards or specifications. Design includes all leads being specified to 6 AWG solid copper.

Example Part Numbers:
ACT 447-150-112
ACT 447-350-112-A

Made In The USA

ACT447 : 16 04 14

ACT 447 60hz Filter/ Protector Family

Band Reject Filtering System

PHYSICAL SPECIFICATIONS

The **ACT 447–112 Series** comes in a 5" diameter X 9" long cylinder

The unit weighs approximately 13 pounds.

The **ACT 447–132 Series** comes in a 7.5" diameter X 10.5" long cylinder

The unit weighs approximately 31 pounds.

ELECTRICAL SPECIFICATIONS

Voltage Applications:	150, 350VDC
Clamping Voltage (@ 1mA DC): (+10% voltage variance)	220, 430VDC
Power Rating:	Unlimited
Peak Current (8x20µS):	*70,000 Amps
Energy Dissipation (10x1000µS):	1600 joules
Response Time:	<10 Nanoseconds
Capacitance @ 5KHz:	4004pf
Operating Temperature:	-40C to +60C
Frequency Rejection Level:	>60db @ 60Hz

INSTALLATION

All Outside Plant practices for safety must be followed while installing the Cable Locating Protection System. Of particular importance is Electrical Hazard Safety.

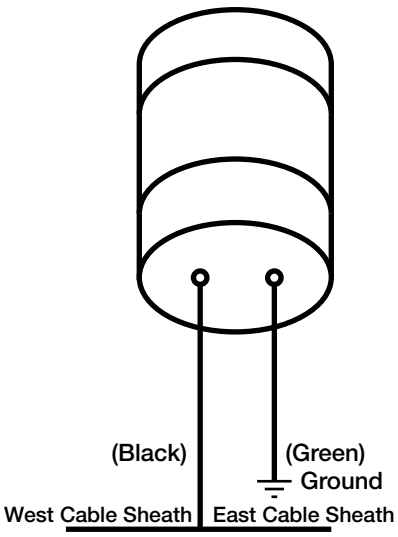
1. DO NOT TOUCH the cable sheath or wire terminals connected to the sheath with a bare hand.
2. Use Dielectric Insulated Gloves when handling any cable sheath and grounding system.
3. Use only tools that have Dielectric Insulated handles
4. **TO ENSURE SAFETY TO EQUIPMENT AND PERSONNEL, ACT SUGGEST THAT A FILTER BE INSTALLED WHEREVER INDUCED VOLTAGE EXCEEDS 50 VOLTS AS MEASURED FROM SHEATH TO GROUND. MULTIPLE FILTERS WILL BE REQUIRED ACROSS THE CABLE RUN TO INSURE INDUCED VOLTAGES OF LESS THAN 50 VRMS IS MAINTAINED ACCORDING TO NEC CODE.**

TESTING

Pretest cable sheaths at each location to determine if AC voltage exists.

Install the **ACT 447 Filter Isolators** at any location where induced AC voltage exceed 50 volts.

ACT447 Filter Protector Connection



WARNING:

To ensure National Electrical Code is met, and to operate product in the safest environment possible, it is essential that multiple filters be installed throughout the cable backbone until the overall induced voltage on a floated cable is 50 volts rms or less (seen on the cable mid-point and at the location switch box).

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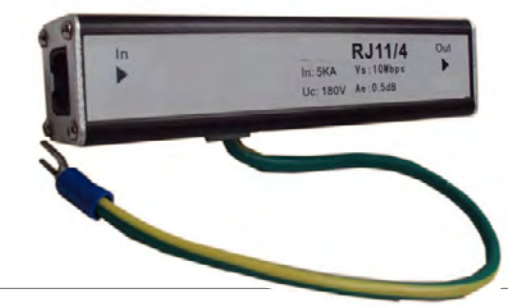
ACT 422 Telephone and Alarm Protector



Available in three versions:

ACT 422-180-RJ11 series is the most common configuration for telephones

ACT 422-005-RJ45 is the most common configuration for Alarms and Data line protection under +05 volts

ACT 422-060-PoE is most common for Power over Ethernet and Alarm circuit applications

ELECTRICAL SPECIFICATIONS

Model	Telephone	Data	PoE
Nominal Working Voltage **Un**	180V	5V	48V
Max. Continuous Operating Voltage **Uc**	250V	7.5V	70V
Nominal Load Current **IL**	10A		
Nominal Discharge Current **In** (8/20 μs)	2.5Ka		
Max Discharge Current **Imax** (8/20 μs)	10Ka		
Limiting Voltage **Up**	<300V	≤15v	≤0.25KV
Response Time **ta**	≤1ns		
Data Rate **Vs**	1Mbps	100Mbps	
Insertion Loss **Ae**	≤0.5dB		
Connector Type	RJ11	RJ45	
Protection Pin		Pin1/2, 3/6	Pin4/5, 7/8
Dimensions	4.09 X 1.57 X .98 inches (104x40x25mm)		
Working Environment	-40°C ~ +80°C, Relative humidity : ≤95%		
Protection Level	IP20		

FEATURES AND BENEFITS

- Robust Design – 10kA (8x20uSec)
- Uses dual Hybrid Protection design
- Transient Silicon Diode Technology
- Fast Response Time < 1 nSec
- Extremely low let through voltages
- Absorbs and Dissipates surges within the unit
- All Mode Protection (T-R, T-G, R-G)
- 1 Year Standard Warranty
- All units shipped with male-to-male patch cord

STANDARDS MET

- UL 497A
- ANSI/IEEE C62
- 3rd Party Tested

TECHNICAL INFORMATION

ACT 422-180-RJ11 4-Wire Telephone
RJ-11 Socket to RJ-11 Socket

ACT 422-005-RJ45 8-Wire Ethernet, Data and Alarm
RJ-45 Socket to RJ-45 Socket

ACT 422-060-PoE 8-Wire Power over Ethernet
RJ-45 Socket to RJ-45 Socket

All units shipped with 12" male-to-male patch cord.

MECHANICAL SPECIFICATIONS

Dimensions: 4"x 1"x1" (100 mm x 25mm x 25 mm)
Weight: 6 oz (170 g)

RECOMMENDED LOCATION

- Residential & Commercial Telephone
- Alarm Lines
- Datacom lines

ACT422 : 16 06 09

CELL TOWER POWER DISTRIBUTION

222 North Center Street
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ACT 490 Family

Power To Antenna (PTA) Distribution Panel

The ACT 490 Power To Antenna (PTA) Distribution Panel is a DIN rail mounted, DC Distribution Panel with replaceable plug in module Surge Protectors, and optional breakers.

This protection family is specifically designed to protect the power to your sensitive Cellular and Antenna equipment against harmful lightning surges and electrical transient surges that are so common on a cell tower.

The ACT 490 Cellular PDP Family can utilize either a hybrid protection circuit consisting of MOV technology DIN Protectors (standard product) or optional high energy Gas Discharge Tubes (GDT's) with fast clamping MOV DIN Protectors. Both solutions offer an ultra-fast response time and are very high power handling capability of 50 kA 8/20us surge wave per power line (100kA per power pair). Unlike many of the other DC protector companies, these units automatically reset after each surge event.

RECOMMENDED LOCATION

- **ACT 491 – Radio Unit**
  Mounted near the Radios at top of tower. Surge Protection on both + and – voltage, includes DIN Power Distribution
- **ACT 492 – Base Unit**
  Mounted near base of tower or close to the Rectifier units. SPD and Optional Breaker Protection only on the – Neg voltage side

FEATURES AND BENEFITS

- **Full Range of Voltage Levels**
  Perfect for any Cellular or Telephone Application
- **Powers up to 24 Radio Heads**
- **Hybrid (MOV and Gas Tube) and MOV only technology**
- **Broad bandwidth**
  Low Power Loss
- **DIN makes for easy installation**
  Hot Swap Modular makes for easy and quick repairs
- **Remote Status Alarm Option**
  No more guessing if each protector is working.
- **Circuit Breaker Options**
  Locally protect DC voltage feeding equipment
- **Surge Protector is UL 497 Listed**
- **2 Year Standard Warranty**

ACT490: 160415

ACT 490 Family

Power To Antenna (PTA) Distribution Panel

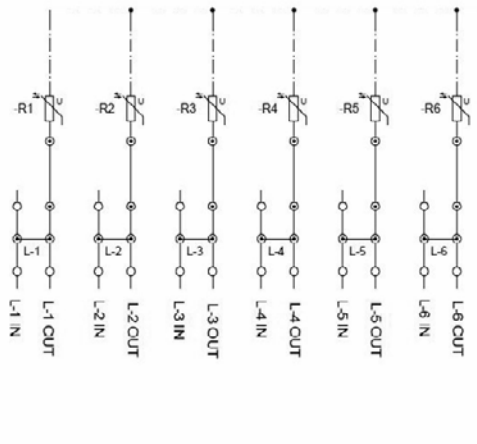
ACT 450-DS240 DIN Protector	ELECTRICAL									
Nominal DC Voltage Un	12	24	48	75	95	110	130	220	280	350
Max DC Operating Uc	24	38	65	100	125	150	180	275	350	460
Nominal discharge current per line in kA	10	10	15	20	20	20	20	20	20	20
Max discharge current Imax in kA	20	20	30	40	40	40	40	40	40	40
Protection level at In Up-in VDC	250	250	300	390	450	500	620	900	1200	1400
UL 1449 3rd edition VPR	330	330	330	400	—	—	600	—	—	—
Thermal Disconnector	internal	internal	internal	internal	internal	internal	internal	internal	internal	internal
Fuses (if necessary)	20A	20A	20A	50A	50A	50A	50A	50A	50A	50A
Circuit Breaker Option	One per Radio unit typically 10A dc current rating									
Status Indicator	By mechanical flag and remote alarm									
Protector Module	Replaceable - Plugable									
Standards Compliance	IEC61643-11 international			Low voltage SPD - Test Class II						
	UL 1449 3rd Edition USA			Type 4						
	UL 94-V0									
	MECHANICAL									
Overall Dimensions	14.13 x 12.26 x 6.13 inches									
Weight	Changes with model number									
Material	Molded fiberglass polyester enclosure with matching cover. Enhanced UV inhibitors protect against outdoor weathering.									
Standards Compliance	UL 508 Type 1, 2, 3, 4, 4X, 12, and 13									
Complies with	NEMA Type 1, 2, 3, 4, 4X, 12 and 13									

ACT 490 FAMILY PART NUMBERS	
ACT 49X-YYY-UVV-R	
ACT 49X where X =	
ACT 491	Mounted near radios
ACT 492	Base Unit - Mounted near DC Rectifiers or Bus
Where YYY = DC Voltage	
024	
048	
075	Typically used on -48 vdc for telephone
Where U =	
0	Standard - No Breakers
B	Breakers installed in Base Unit
Where VV = Number of protected pairs	
04	
06	
08	
12	
Where R option = Remote alarm option	
Example Part Number	ACT 491-075-006-R Power to Antenna PDP with 6 paired lines and 75V protectors
	ACT 492-B75-006 **Base Unit PDP with 6 paired lines and 75V protectors on –voltage side, with breaker option**

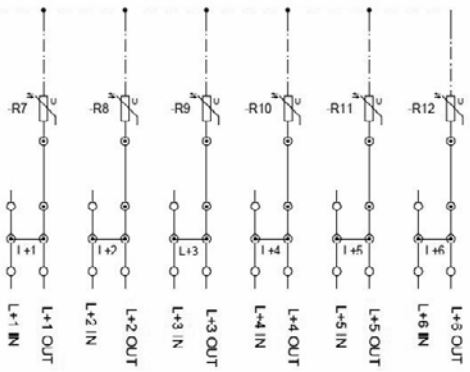
ACT 490 Family

Power To Antenna (PTA) Distribution Panel

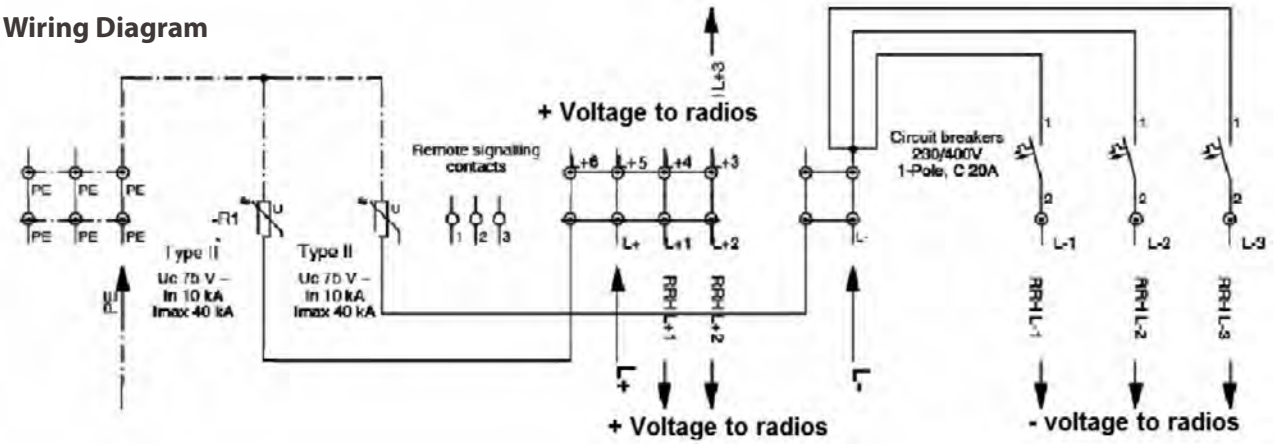
Negative Voltage



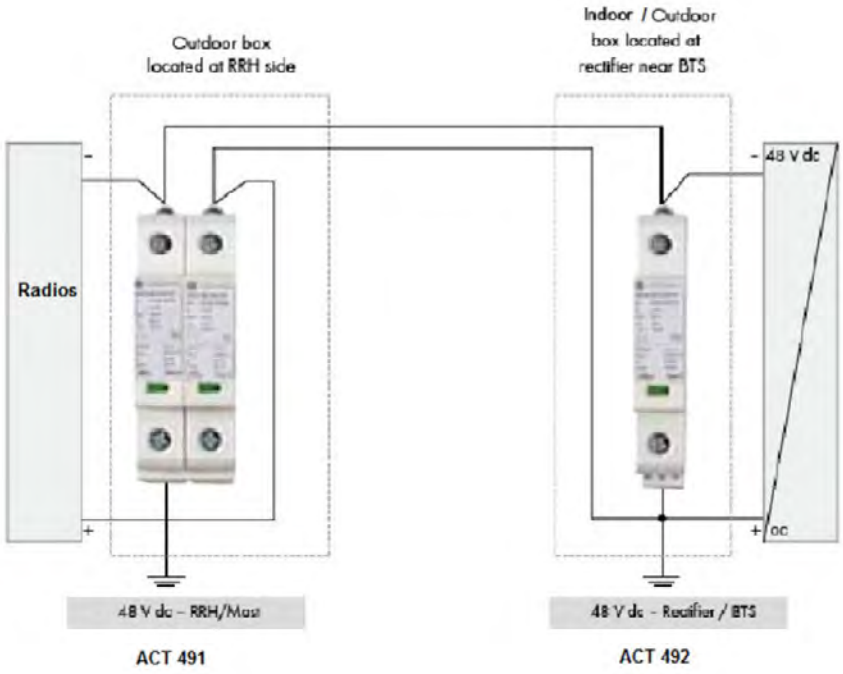
Positive Voltage



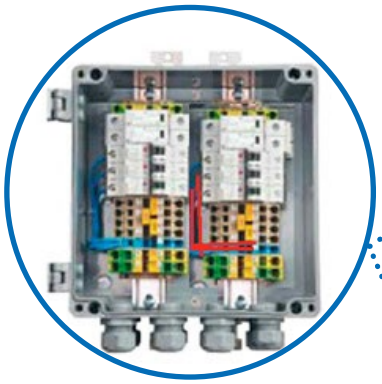
Base Unit Wiring Diagram



-48V Power to the Antenna Distribution Panels



Protected Telecom Cell Tower Application



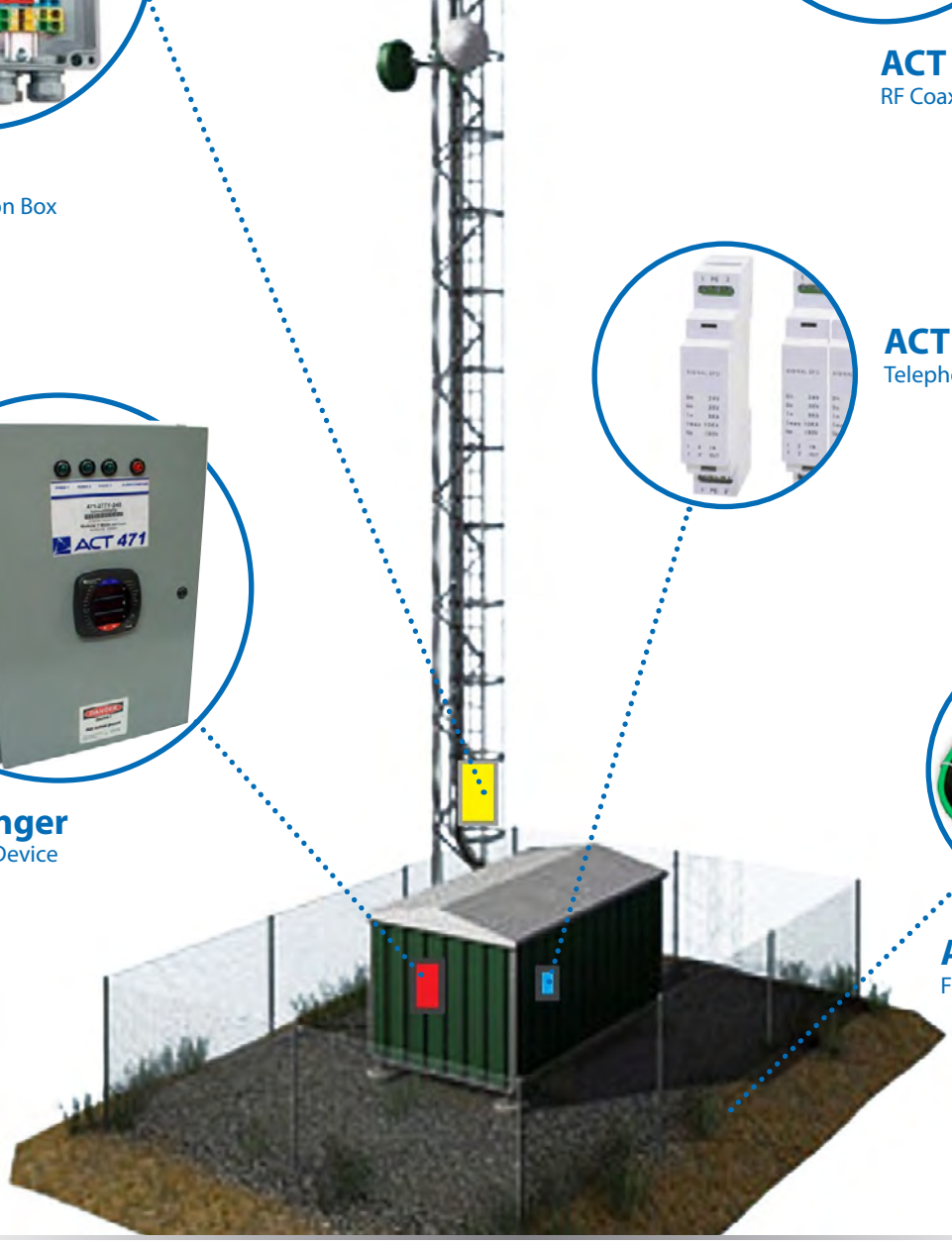
ACT 490
48V Power Distribution Box

ACT 424
RF Coax Protectors

ACT 422
Telephone/Datacom Protector

ACT 471 Avenger
AC Surface Protection Device

ACT 444
Fiber Cable Location Protector



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ACT 491 Power To Antenna (PTA)

Distribution System

ACT 491-075-006-R

The ACT 491 Power To Antenna (PTA) Distribution Panel is a DIN rail mounted, DC Distribution Panel with replaceable plug in module Surge Protectors, and optional breakers.

This protection family is specifically designed to protect the power to your sensitive Cellular and Antenna equipment against harmful lightning surges and electrical transient surges that are so common on a cell tower, while allowing easy distribution of your DC power to the Antennas.

The ACT 491 Cellular PTA Family can utilize either a hybrid protection circuit consisting of MOV technology DIN Protectors (standard product) or an optional high energy Gas Discharge Tubes (GDT's) with fast clamping MOV DIN Protectors. Both solutions offer an ultra-fast response time and are very high power handling capability of 50 kA 8/20us surge wave per power line (100kA per power pair). Unlike many of the other DC protector companies, these units automatically reset after each surge event. These protectors also allows hot swappable plug in protectors, so you never have to turn off the power to service the unit.

Radio unit – Mounted up the tower near the radios and offers surge protection on both the + and – voltage and includes DC Power Distribution up to 24 radios.

Base Unit - Mounted near base of the tower or close to the rectifier units. SPD and Optional Breaker Protection are typical.

FEATURES

- Full Range of Voltage Levels - Perfect for any Cellular or Telephone Application
- Powers up to 24 Radio Heads
- Hybrid (MOV and Gas Tube) and MOV only (typical) Technology
- Broad bandwidth – Low Power Loss
- DIN mounting makes for easy installation – Hot Swap Modular SPD makes for easy and quick repairs
- Remote Status Alarm Option – No more guessing if each protectors on the tower are working.
- Circuit Breaker Options – Locally protect DC voltage feeding equipment
- Surge Protector is UL 497 Listed
- Made in the USA
- 2 Year Standard Warranty

ACT491: 160415

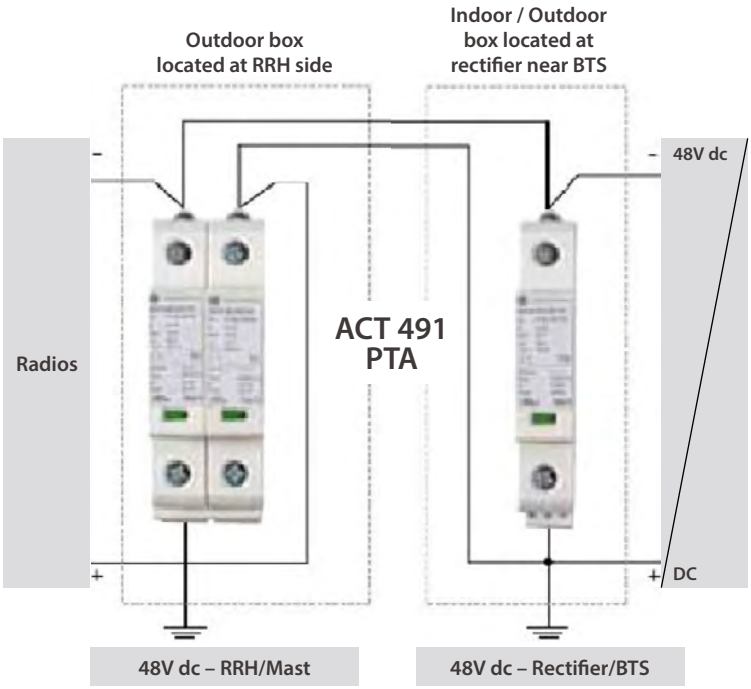
ACT 491 Power To Antenna (PTA)

MECHANICAL

Overall Dimensions:	14.13 x 12.26 x 6.13 inches
Weight:	Changes with model number
Material:	Molded fiberglass polyester enclosure with matching cover. Enhanced UV inhibitors protect against outdoor weathering
Standards Compliance:	UL 508 Type 1,2,3,4,4X,12, and 13
Complies with:	NEMA Type 1,2,3,4,4X,12, and 13

TYPICAL TWO BOX SYSTEM PER RADIO

-48V Power to the Antenna Distribution Panels

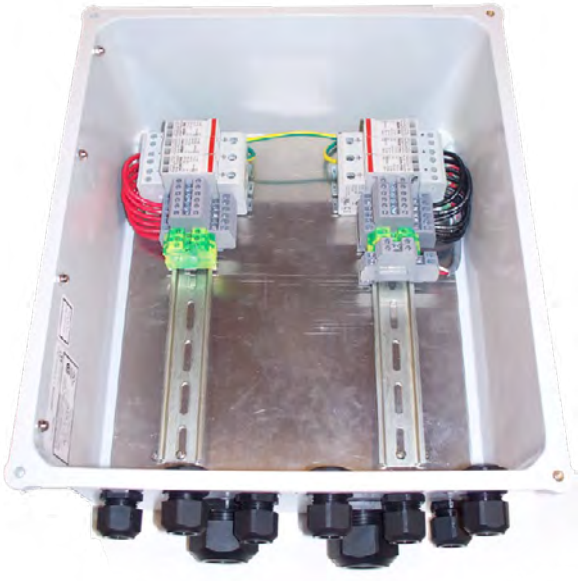


ELECTRICAL

ACT 450-DS240 DIN Protector

Nominal DC Voltage Un	12	24	48	75	95	110	130	220	280	350
Max DC Operating Uc	24	38	65	100	125	150	180	275	350	460
Nominal discharge current per line in kA In	10	10	15	20	20	20	20	20	20	20
Max discharge Current Imax in kA	20	20	40	40	40	40	40	40	40	40
Protection level at In Up-In VCD	250	250	390	390	450	500	620	900	1200	1400
UL 1449 4th edition VPR	330	330	400	400	–	–	600	–	–	–
Thermal Disconnector	internal	internal	internal	internal	internal	internal	internal	internal	internal	internal
Fuses (if necessary)	20A	20A	20A	50A	50A	50A	50A	50A	50A	50A
Circuit Breaker Option	One per Radio Unit typically 10A dc current rating									
Status Indicator	By mechanical flag and remote alarm									
Protector Module	Replaceable - Plugable									
Standards Compliance	IEC61643-11 International			Low voltage SPD - Test Class II						
	UL 1449 4th Edition USA			Type 4						
	UL 94-VO									

ACT 491 Power To Antenna (PTA)

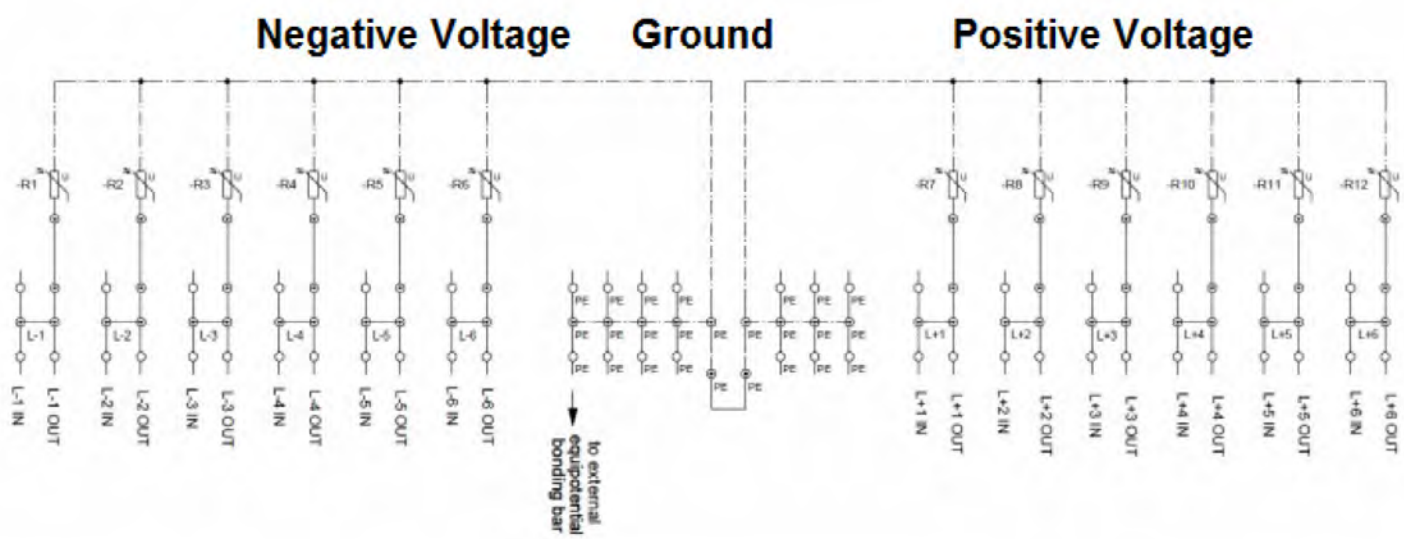


PART NUMBER AND OPTIONS

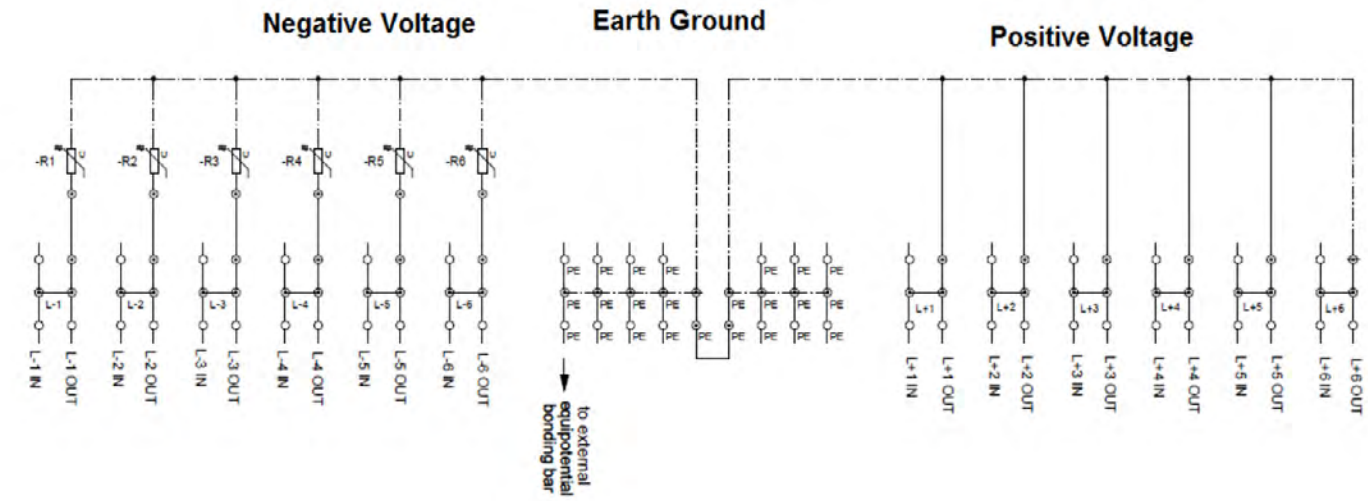
ACT 491-YYY-UVV-Z

Where YYY= DC Voltage	24	24vdc
	48	48vdc
	75	Typically used on a -48vdc system like telephone
Where U = Top or Bottom of Tower	0	Standard unit near antenna, surge protection on both + positive and – negative DC supply voltage
	1	Standard unit at base of the tower, surge protection only on – negative DC supply voltage
Where VV = Number of radios to be powered	04	
	06	
	08	
	12	
Where Z = Options	R	Remote Relay Alarms (typically at antenna unit)
	B	Breakers installed (typically at base unit)

On top of tower near radios:



PTA - Mounted at base of tower:



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ACT 492 Hybrid Cable RRHD

Remote Radio Head Distribution Panel

The ACT 492 Hybrid Cable Remote Radio Head Distribution (RRHD) Panel, is a Fiber and DC Power Distribution Panel with replaceable plug in module Surge Protectors, and a wide selection of Fiber distribution connector options.

This system is specifically designed to not only protect and distribute the power to your sensitive Cellular and Antenna equipment against harmful lightning surges and electrical transient surges, but also acts as your fiber distribution panel.

Power Distribution – The ACT 492 Hybrid RRH Family can utilize either a hybrid protection circuit consisting of MOV technology DIN Protectors (standard product) or an optional high energy Gas Discharge Tubes (GDT's) with fast clamping MOV DIN Protectors. Both solutions offer an ultra-fast response time and are very high power handling capability of 50 kA 8/20us surge wave per power line (100kA per power pair). Unlike many of the other DC protector companies, these units automatically reset after each surge event. These protectors also allows hot swappable plug in protectors, so you never have to turn off the power to service the unit. Power Distribution DIN Connectors are installed to provide easy power cable connection for up to 12 radios.

Fiber Distribution – provides easy signal distribution in a wide range of connectors. This allows either fusion splice or connector organization for up to 12 radios.

ACT 492-075-006-0-12-FT

FEATURES

- Wide Range of Fiber Distribution – Fusion Splices, LC & SC connectors
- Full Range of Voltage Levels – Perfect for any Cellular or Telephone Application
- Power and Signals up to 12 Radio Heads
- Hybrid (MOV and Gas Tube) and MOV only (typical) Technology
- DIN mounting for Power makes for easy installation – Hot Swap Modular SPD makes for easy and quick repairs
- Remote Status Alarm Option – No more guessing if each protector on the tower is working.
- Surge Protector is UL 497 Listed
- Made in the USA
- 2 Year Standard Warranty

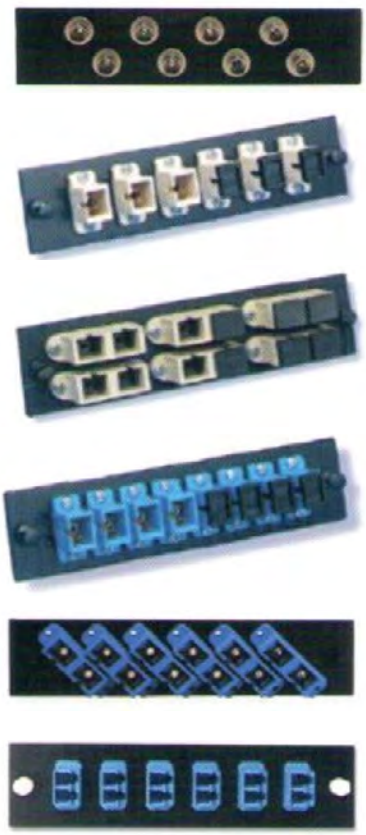
ACT492: 160415

ACT 492 Hybrid Cable RRHD

PART NUMBER AND OPTIONS

ACT 492-UUU-VWW-X-YY-ZZ

Where UUU = DC Voltage	024	24vdc
	048	48vdc
	075	Typically used on a -48vdc system like telephone
Where V = Top or Bottom of Tower	0	Standard unit near antenna, surge protection on both + positive and – negative DC supply voltage
Where WW = Number of radios to be powered	04	
	06	
	08	
	12	
Where X = Options	R	Remote Relay Alarms (typically at antenna unit)
	B	Breakers installed (typically at base unit)
Where YY = Number of individual fiber cables	12	
	24	
	48	
Where ZZZ = Fiber connector type	FT	Fusion Splice Tray
	LCS	LC Single Mode Distribution Panel
	LCM	LC Multi Mode Distribution Panel
	SCS	SC Single Mode Distribution Panel
	SCM	SC Multi Mode Distribution Panel



TYPICAL PART NUMBERS

ACT 492-075-012-0-24-FT

Remote Radio Head Distribution System – With surge protection and power distribution for both +/- 48 vdc for 12 Radios. Fiber distribution for 24 fibers (2 per radio).

ACT 492-075-012-R-24-LCS

Remote Radio Head Distribution System – With surge protection and power distribution for both +/- 48 vdc for 12 Radios, surge protection has remote relay contacts. Fiber Distribution for 24 Fibers with 12 LC Duplex Single mode Connectors.

See ACT 491 for details on DC Power Distribution Specifications

ACT COMMUNICATIONS™

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