

ONEAC ADSL Line Protection for customer and carrier premise

equipment: Businesses world-wide are installing Asymmetrical Digital Subscriber Line (ADSL) -based carrier services to make efficient use of existing copper telephone lines for simultaneous high-speed Internet access. To protect expensive termination equipment and avoid system problems, ONEAC employs a unique patented technology in its ONEAC protector. Protection specifically engineered to satisfy demanding ADSL applications.

Ultimate assurance of system reliability

Leading telecommunications companies employ ONEAC communication line protectors in their installations for good reason: because ONEAC protectors provide greater assurance of system uptime and lower service costs than conventional protectors.

Patented SwitchedFilter™ technology

System lockups, dropped calls, mis-dials, system memory loss, "no trouble found" service calls, service outages, shortened component life — these problems result from high frequency interference.

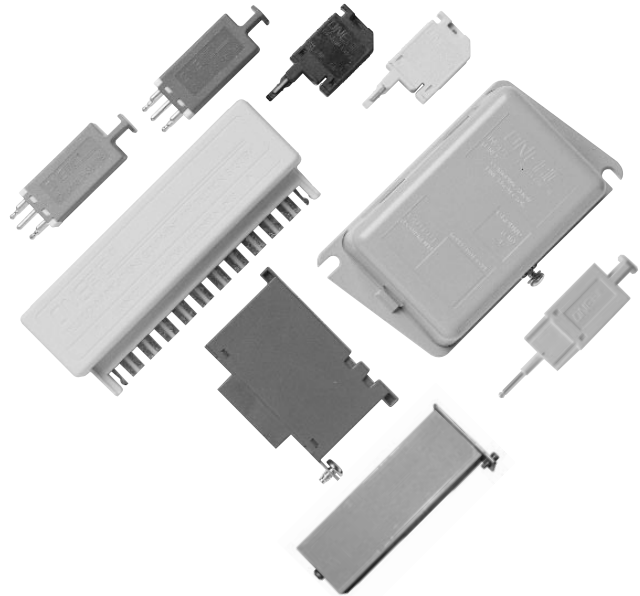
ONEAC protectors with patented SwitchedFilter technology have the unique ability to discriminate between harmful and desired signals. This allows ONEAC protectors to prevent fast-edged transients from entering your system, yet allow lower frequency ring voltages and lower voltage voice and data signals to pass through unobstructed.

Last longer on the job

ONEAC communication line protectors feature a more robust design than others so they are better able to withstand current and voltage surges. They also include self-resetting sneak current protection — to eliminate the cost and downtime of replacement due to nuisance failures.

Proven to reduce service costs

By removing electrical transients, ONEAC improves system reliability. Look at actual evidence — installers switching over to a protection scheme using ONEAC protectors with ONEAC power conditioners report an over 50% reduction in total trouble calls; 83% fewer service calls due to hardware problems; 70% fewer system resets; and 43% fewer calls in which no trouble was found.



- **Global variations:** simple, country-specific solutions
- **Simple installations:** plug-in models for popular interconnect blocks, rackmount and wallmount styles for flexible installation
- **Robust/solid-state overvoltage protection:** last longer in the field
- **Patented SwitchedFilter technology:** allows exceptionally low let-through performance for optimum protection of electronic systems
- **Convenient test points:** for faster, easier line testing
- **Self-resetting sneak current protection:** eliminates overcurrent problems without creating unnecessary fuse replacements
- **100 A surge impulse design:** provides longer lasting protection
- **Safety approvals:** UL, cUL Oftel and country specific listings as required
- **5-year warranty:** the best assurance of product quality and performance in the industry

ONEAC ADSL Line Protection: Specifications

ADSL applications

ADSL service, as defined in ANSI standard T1.413, provides North American carriers an efficient method of delivering both standard analog telephone service and high-speed digital services on the same copper twisted pair. Similar ADSL electrical standards have been adopted by carriers in other geographic areas throughout the world.

ADSL technology is particularly suited for internet service, as download speeds are typically 10 times the upload rate. Line protection devices for customer premise equipment must simultaneously tolerate the presence of high-voltage ring signals while filtering both electrical surges and high-frequency transients.

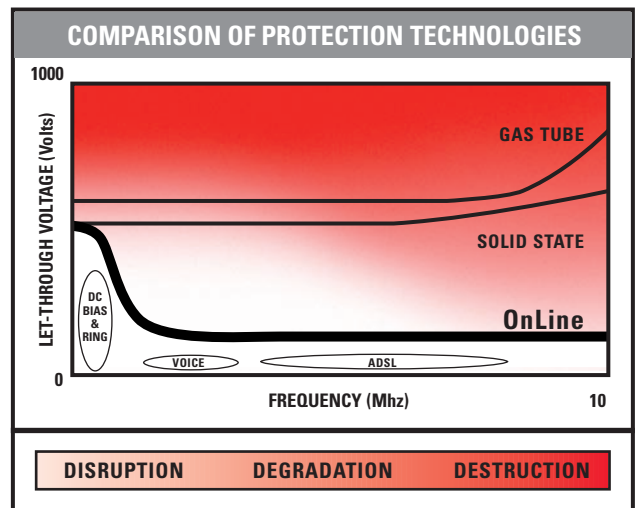
ONEAC's unique solutions

ONEAC pioneered ADSL protection with its patented SwitchedFilter technology. A technology that allows exceptionally low let-through performance for optimum protection of electronic systems.

ONEAC offers a variety of ADSL line protection devices tailored for the range of breakdown voltages needed to pass the ring and DC carrier signals of the Plain Old Telephone Service (POTS) in your area which may be superimposed on the ADSL service.

ONEAC breaks the "Ring and DC bias barrier"

Conventional protectors (gas tube or solid state) are designed to activate above the operating DC bias and ring signal voltage level. The ONEAC protector's ability to differentiate high frequency transients from lower voltage or lower frequency signals permit the desired signals to pass while preventing transients from damaging sensitive electronic circuits.

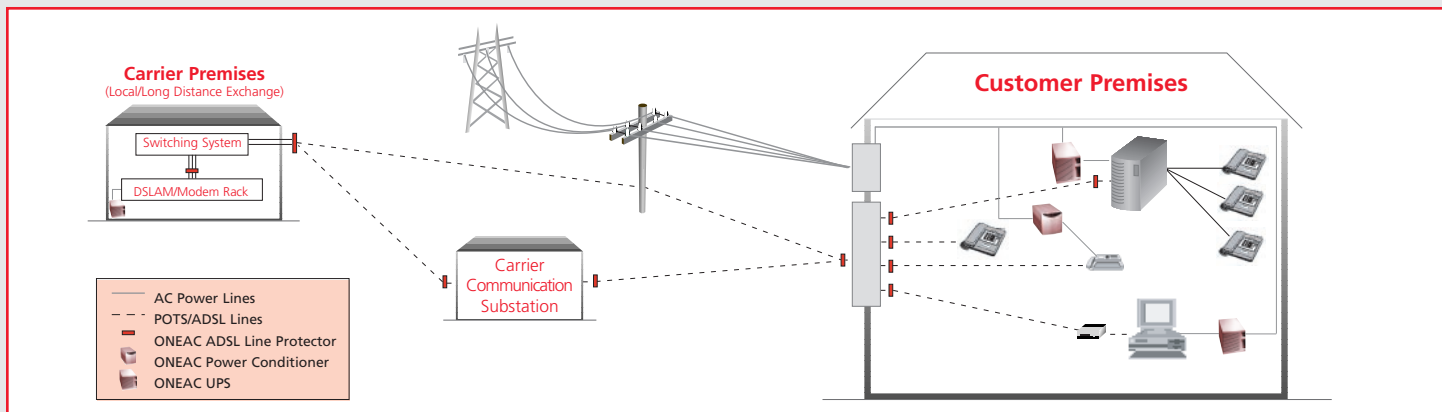


Common specifications for all stock varieties of ONEAC ADSL protectors: Customer Premise Carrier Premise*

	Customer Premise	Carrier Premise*
Transient Voltage Performance (1uS, 200V peak, 1kΩ source impedance) Let-through voltage - line to line (typical/max)	32 V/42 V	32 V/42 V
Response Time	<1 nS	<1 nS
DC Holdover at 25°C	150 mA	200 mA or 260 mA*
ON State Voltage at 1 A	<5 V	<5 V
Line Resistance at 25°C - each leg balanced with +/-0.5 Ω (typical/max)	4 Ω/5 Ω	4 Ω/5 Ω
Insertion Loss 100 Hz to 10 MHz, -10 dBm signal, 100 Ω system	<0.5 dB	<0.5 dB
Resettable Sneak Current Protection at 25°C	300 mA	300 mA
Capacitance at 50 VDC, 1 VAC, 10 kHz - 1 MHz	<200 pF	<200 pF
Insulation Resistance	>100 MΩ	>100 MΩ
Service Life with 10/1000 μS, 100 A Impulses	unlimited	unlimited
Storage Temperature/Operating Temperature	-40°C to +85°C/-40°C to +65°C	-40°C to +85°C/-40°C to +65°C

* High holding current may be required for carrier premise applications and may require a custom special order ADSL protection device. Contact ONEAC for more information on custom ADSL solutions. Please note that special order requests are subject to availability and minimum purchase requirements.

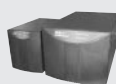
ONEAC ADSL Line Protection: Specifications



ONEAC's Total Protection Solutions protect all paths by which power disturbances can enter a system. Providing protection for communication lines (analog, digital or high-speed data) and power protection with or without battery backup. An ONEAC Total Protection Solution assures increased system reliability with far fewer interruptions or outages.



Communication Line Protectors



Power Conditioners



Uninterruptible Power Supplies (UPS)

ONEAC ADSL I line protector specifications for service at customer or carrier premises

In the U.S.A. and regions with peak operating voltage less than 270V, ONEAC recommends using ONEAC ADSL I line protection devices. ADSL I protectors utilize StarBalanced™ overvoltage protection circuitry and feature the fast reaction time of solid-state crowbar type voltage suppression devices, resettable sneak-current protection via ceramic Positive Temperature Coefficient (PTC) thermistors, low insertion loss, and ONEAC's patented SwitchedFilter technology.

Available in the stock models shown here, ONEAC ADSL protectors may also be customized* for various combinations of telephone characteristics and ADSL parameters.

* Contact ONEAC for more information on custom ADSL solutions. Please note that special order requests are subject to availability and minimum purchase requirements.

ONEAC ADSL I specifications: for U.S. and regions with peak operating voltage <270 V

Impulse Voltage Performance 10/1000 μS, 1500 V, 100 A Impulses

Let-through voltage - line to line (typical/max.)	180 V/230 V
Let-through voltage - line to earth (typical/max.)	320 V/370 V

DC Breakdown Voltage:

Line to line (typical/range)	320 V/270 V-370 V
Line to earth (typical/range)	320 V/270V-370 V

Non-resetting Overcurrent Protection (5-pin models) (6, RJ, RM Series)

Fail-safe shorting mechanism
1 A time delay fuse

ONEAC ADSL I protection devices are available in stock models to fit the following connection types:

Connection Type	AT&T 5 Pin (1 pr) Black, Tin Pin	AT&T 5 Pin (1 pr) Black, Tin Pin	66 BLOCK (1 pr) Black	RJ11 (1 pr)	Rackmount (2 pr) Black
Approvals	UL Primary	UL Primary	UL Primary/Secondary	UL Primary/Secondary	UL Primary/Secondary
Model Number	5S-AD-CP	5S-AD-CB**	6-AD***	RJ-AD11	RM-AD11
Dimensions▷ - HxWxL - in. (mm)	1.96 x 0.5 x 0.75 (49.8 x 12.7 x 19)	1.96 x 0.5 x 0.75 (49.8 x 12.7 x 19)	1.58x0.39x3.5 (40.1x9.39x88.9)	1.43x2.5x4.5 (36.3x63.5x114.3)	3.9x1x1.7 (99x25x43)
Protector					
Installation				Hardwired	

** Features attached 50 foot cables for connecting ADSL equipment.

*** Requires one ground bar (ONEAC part number 350-032) for each 66 type M1-50 connection block.

▷ See the final page of this document for dimensions diagram.

ONEAC ADSL Line Protection: Specifications

ONEAC Series ADSL II line protector specifications for service at customer or carrier premises

In Europe and regions where local equipment faults may have connected 220V - 240V power mains onto the local grounding system, protectors with low longitudinal breakdown voltages can allow the mains voltage to backfeed through the protector onto the telephone line, causing telecommunications equipment damage.

For these circumstances, ONEAC recommends using its Series ADSL II line protection devices. ADSL II protectors utilize StarBalanced overvoltage

protection circuitry and feature the fast reaction time of solid-state crowbar type voltage suppression devices, resettable sneak-current protection via ceramic Positive Temperature Coefficient (PTC) thermistors, low insertion loss, and ONEAC's patented SwitchedFilter technology.

Available in the stock models shown here, ONEAC ADSL protectors may also be customized* for various combinations of telephone characteristics and ADSL parameters.

* Contact ONEAC for more information on custom ADSL solutions. Please note that special order requests are subject to availability and minimum purchase requirements.

ONEAC ADSL II specifications: for U.K. and European regions with 220V-240V power systems



Impulse Voltage Performance 10/1000 µS, 1500 V, 100 A Impulses:

Let-through voltage - line to line (typical/max.)	155 V/195 V
Let-through voltage - line to earth (typical/max.)	510 V/560 V

DC Breakdown Voltage:

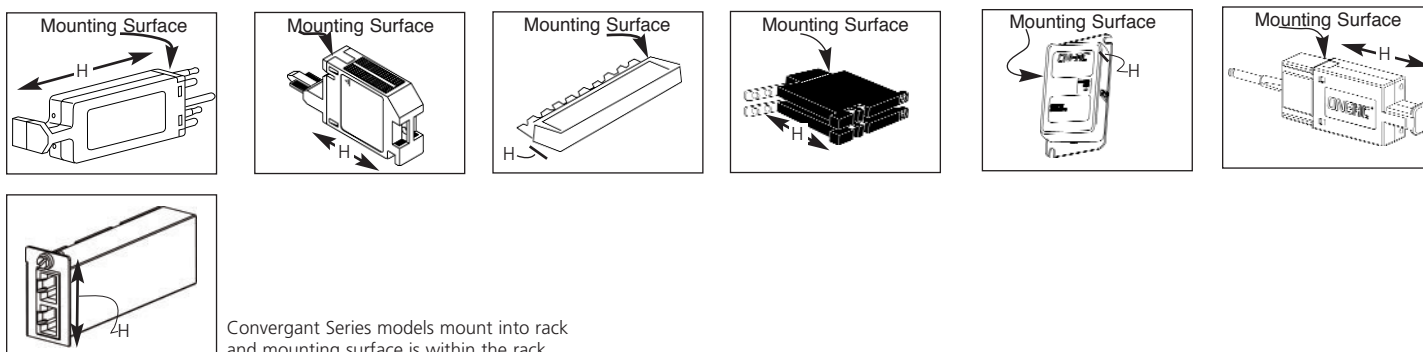
Line to line (typical/range)	280 V/240 V-320 V
Line to earth (typical/range)	510 V/420 V-560 V

ONEAC ADSL II protection devices are available in stock models to fit the following connection types:

Connection Type	KRONE LSA237A (1 pr)			
Approvals	Ofitel			
Part Number	10AD-1E			
Dimensions▷ - HxWxL - in. (mm)	1.2 x 0.38 x 0.87 (30.5 x 9.7 x 22.1)			
Protector				
Installation				

†† Single line Krone protector installation requires one of the following ground bars, ONEAC part # 350-139 (10-position model) or ONEAC part #350-140 (8-position model).

▷ Height dimension is measured from the mounting surface, out, except the Convergant Series models which mounts into a rack.



ONEAC is a registered trademark and StarBalanced and SwitchedFilter are trademarks of ONEAC Corporation. All other trademarks are the property of their respective companies.

A CHLORIDE POWER PROTECTION COMPANY

ONEAC is a UL/BSI registered corporation — Certification No. A2900



(800) 327 8801 OPT. 2 in USA AND CANADA

27944 N. Bradley Road, Libertyville, IL 60048 Phone 847 816-6000 FAX 847 680-5124

+44 (0) 2380 610311 in UK AND EUROPE

George Curl Way, Southampton, Hampshire SO18 2RY, UK FAX +44 0 2380 612039