

Protectors

Chapter **7**

Protectors

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Copper

Small Pair Count -
110ANA1

Panels

110ANA1 Protector Panel

The **110ANA1 Multipair Protector Panel** provides indoor station protection for small-pair-count applications using the 3B, 3C, 4B, or 4C Series Protector Units. The unique internal wiring design prevents protector bypass. Designed with 110-Type connecting blocks for input and output terminations, the **110ANA1 Multipair Protector Panel** provides a modular, space-efficient package with quiet-front and simplified installation directly on the wall.



Figure 154
110ANA1
Protector Panel



The individual protector modules should be ordered separately. The **110ANA1 Multipair Protector Panel** is UL Listed.

Physical Specifications

Height: 25.4cm

Width: 9.9cm

Depth: 6.6cm

Product	Comcode	Pair Size	Packaging
110ANA1-25	105736490	25	1/Pkg

Copper

4B1-EW and 4C3S-75 Protector Units

Units

Surge Arrester

SYSTIMAX® SCS **Surge Arresters** are UL-listed five-pin devices that plug into the 110-ANA1 and 489-Type Multipair Protector Panels. Each unit is moulded to glass-reinforced, high-heat-distortion plastic (polybutylene terephthalate). Line pins are gold-plated for long-term, reliable performance and ground pins are solder-plated.

The **3B1-EW** and **4B1-EW Gas-Tube Protector Units** are 31-RL wide-gap, gas-tube surge arresters that provide overvoltage protection. The service life of these wide-gap gas tubes exceeds that of other gas-tube protectors. The **4B1-EW** includes heat coils for sneak current protection.

The **3C1S** and **4C1S Solid-State Protector Units** offer a solid-state alternative to gas-tube protectors. Solid-state protectors provide precision overvoltage protection for more sensitive circuits, and offer unlimited service life as long as the maximum rated impulse discharge current (200 amps) is not exceeded. The **4C1S** includes heat coils for sneak current protection.

The **4C3S-75 Protector Unit** is a solid-state protector for use on circuits which do not normally experience ringing voltages and also includes heat coils for sneak current protection.



Figure 156
4B1-EW Protector Unit



Physical Specifications

4B1-EW	4C3S-75
Height: 5.0cm	Operational Temperature Range: -40 to 65°C
Width: 1.9cm	Pair Size: 1-pair
Depth: 1.3cm	

Electrical Specifications

4C3S-75
DC Breakdown Voltage @ 2kV/sec: 60-90 V
Surge Breakdown Voltage @100 V /µsec: 220-300 V
Insulation Resistance (PE-80): > 100 M Ω
DC Holdover Current: 260 mA/52 V
On-State Voltage @ 75 A: < 10 V
Response Time: < 100 nsec
Rated Impulse Discharge: 100 A
Capacitance(VDC=50 V, f=1 kHz, V AC=1 Vrms): < 100pF
Line Series Resistance: < 4 Ω
Sneak Current Operation (heat coils): 540 mA <210 sec, 1 A <15 sec

Copper

4B1-EW and 4C3S-75
Protector Units

Units

Surge Arrester (contd)

Electrical Specifications (contd)

4B1-EW
DC Breakdown Voltage @ 2 kV/sec: 265-425 V
Surge Breakdown Voltage @ 100 V/μsec: 200-800 V
Insulation Resistance (PE-80): 100 MΩ Typical
DC Holdover Current (ANSI C62.31): 150 V Typical
Vented Breakdown Voltage (surpasses UL requirements): <1000 V
DC Arc Voltage: 20 V Typical
Glow-to-Arc Transition Current (ANSI C62.31): 0.5 A Typical
Capacitance (PE-80): 10 pF
AC Discharge (PE-80): 65 A (11 cycles @ 60 Hz)
Max. Impulse Discharge (PE-80): 20 kA (8x 20 μsec waveform)
Sneak Current Operation (heat coils @ 20°C): 540 mA: <210 sec; 1A: <15 sec
Service Life Characteristics: 1 sec. 1 A AC Burst @ 60 Hz: >60 operations
1 sec. 10 A AC Burst @ 60 Hz: >20 operations
Continuous 0.5 A AC @ 60 Hz: 140 sec.
10 A Surges (10x 1 msec waveform): >1000 operations
100 A Surges (10x 1 msec waveform): >100 operations
300 A Surges (10x 1 msec waveform): >50 operations
For the stated number of operations, VB, VL and RL values remain within required ranges as follows: VB: 265-425 V, VL: <1000V and RL: >10 MΩ

Product	Comcode	Description	Application	Packaging	Colour
3B1-EW	104410147	Gas-tube (wide gap)	Standard Service	1/Pkg	Black
3C1S	105514756	Solid-state	Standard Service	1/Pkg	Black
4C1S	104386545	Solid-state w/heat coils	Standard Service	1/Pkg	Black
4C3S-75	105581086	Solid-state (75V nominal) w/heat coils	Nonringing	1/Pkg circuits	Red
4B1-EW	104401856	Gas-tube (wide gap) w/heat coils	Standard Service	1/Pkg	Black

Copper

Category 5 OSP Protector

Units

Protector

The **CAT 5 OSP Protector** unit is designed to give protection for data circuits entering the building. Each unit protects a 4-pair (8-wire) circuit. When this protector is used with Avaya's Category 5 OSP Cable and Power Sum Components for a complete end-to-end installation, they form a Certified SYSTIMAX SCS installation.

This solid state device protects sensitive network equipment from damage caused by transient voltage surges. UL 497 Listed, this primary protector serves high performance OSP cable between buildings and remote workstations, as well as, hostile industrial environments within buildings. In order to protect data circuits, this protector meets the electrical specifications of Commercial Building Telecommunications Cabling Standard ANSI/TIA/EIA-568-A.



Figure 157
Category 5
OSP Protector



Not for use with voice applications over the CAT 5 OSP cable.

Physical Specifications

- Height: 10.8cm
- Depth: 3.6cm
- Width: 10.8cm

Electrical Specifications

- Protector Type: 100% Solid State
- Clamping Voltage: 16 VAC, nominal
- Maximum Response Time: 2 - 5 nanoseconds
- Grounding Requirements: 10 AWG for primary or 10 AWG for isolated Loop Applications
- Grounding Connection: 8-32 screw to ground plate module

Product	Comcode	Pair Size	Packaging
C5P4T-16	108224874	4	1/Pkg

