5-Pin Protector Modules

Outside Plant for
Business-Critical Continuity

Key Features

- The 5-pin protector modules protect personnel and equipment from excessive voltages and currents
- Modules feature industry standard 5-pin bases for use in central office, remote terminal, building entrance, and customer premises applications
- All modules are available with or without a heat coil to protect against sneak currents
- Carbon Protector Modules feature a carbon air gap and fail-safe mechanism that shorts to ground when a voltage exceeds its rating
- Gas-Tube Protector Modules contain two-electrode high amperage ceramic non radioactive gas-tube surge arresters and a fail-safe mechanism
- Solid-state Modules contain state-of-the-art diodes intended for use with sensitive equipment

Description

The 5-pin protector modules protect personnel and equipment from excessive voltages and currents induced on telephone lines or local ground by lightning and AC power system faults. All modules feature industry standard 5-pin bases for use in central office, remote terminal, building entrance, and customer premises applications. All modules are available with or without a heat coil to protect against sneak currents. When a sneak current is induced on the line, the heat coil responds by permanently grounding the line to prevent damage to line cards and sensitive equipment.

Carbon Protector Modules feature a carbon air gap and fail-safe mechanism that shorts to ground when a voltage exceeds its rating. A detent position disconnects the equipment side while protecting the line side (OSP cable). These modules are used where transients are not frequent or cost is a major factor.

Gas-Tube Protector Modules contain two-electrode high amperage ceramic non radioactive gas-tube surge arresters and a fail-safe mechanism. These are used in areas where frequent transient over voltages are a problem or where tightly controlled breakdown values are required. The gas-tube will recover repeatedly from the overvoltage, providing 30 to 40 times longer life than carbon. The detent position disconnects the equipment side while protecting the line side (OSP cables). Modules are available with a secondary vent-safe backup gap. Modules equipped with patented vent-safe gap are UL Listed (VS in catalog). If a module is specified as a JZ-type, it is a next generation new gas-type version that provides extended life and environmentally robust protection.

Solid-state Modules contain state-of-the-art diodes intended for use with sensitive equipment. They are available with 4 ohm (350mA) or 20 ohm (150 mA) heat coils. The diode is a fast semiconductor switch with operating voltage nearly independent of transient rise time.

“RXXXX” Protector Modules have either a “B” or “C” as the third character in the catalog number to denote special characteristics. Those with a B as the third character, i.e., R3B1E, have a triangular-shaped recess molded into the base to accommodate the raised structure molded into the panel of AT&T® building entrance protectors.

Those modules with a C as the third character, i.e., R3C1E, have two circular holes in the shoulder of the housing to provide access for test points.

Application

These protector modules provide overvoltage and overcurrent protection for central office, remote terminal, and building entrance/customer premises applications. All protector modules provide a vent-safe gap, are fail-safe, and meet UL requirements. Specific models are designed to meet RDUP (formerly RUS) and Telcordia specifications.

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5-Pin Protector Modules

Ordering Information

Housing Color & Size	JZ	Carbon	Low Voltage Solid-State (240V)	Standard Solid-State (300V) R3B1S	Service
Modules for Bell Operating Companies, No Heat Coil, Gold Plated Pins					
Black, S	R3B1EJZ	R3B1A	R3B1FS	R3C1S	Standard
Black w/test point, L	R3C1EJZ		R3C1FS	R3B2S	Standard
Green, S		R3B2A	R3B2FS	R3C2S	Service denial
Green w/test point, L			R3C2FS	R3B3S	Service denial
Red, S	R3B3EJZ	R3B3A	R3B3FS	R3C3S	Special
Red w/test point, L	R3C3EJZ		R3C3FS	R3B4S	Special
Yellow, S		R3B4A	R3B4FS	R3C4S	PBX battery
Yellow w/test point, L			R3C4FS		PBX battery
Gray, S		R3B12A			Continuity only

NOTE: Size: S = short & L = long

Ordering Information

			Low Voltage — Solid-State (240V) —		Standard — Solid-State (300V) —		
Housing Color	**JZ**	**Carbon**	**4 Ohm**	**20 Ohm**	**4 Ohm**	**20 Ohm**	**Service**
Modules for Bell Operating Companies, Long Housing, with 4 or 20 Ohm Heat Coil, Gold Plated Pins							
Black	R4B1EJZ	R4B1C	R4B1FS	RT4B1FS	R4B1S	RT4B1S	Standard
Black w/test point	R4C1EJZ	R4C1C	R4C1FS	RT4C1FS	R4C1S	RT4C1S	Standard
Green		R4B2C	R4B2FS	RT4B2FS	R4B2S	RT4B2S	Service denial
Green w/test point	R4B3EJZ	R4C2C	R4C2FS	RT4C2FS	R4C2S	RT4C2S	Service denial
Red	R4C3EJZ	R4B3C	R4B3FS	RT4B3FS	R4B3S	RT4B3S	Special
Red w/test point	R4B4EJZ	R4C3C	R4C3FS	RT4C3FS	R4C3S	RT4C3S	Special
Yellow		R4B4C	R4B4FS	RT4B4FS	R4B4S	RT4B4S	PBX battery
Yellow with test point		R4C4C	R4C4FS	RT4C4FS	R4C4S	RT4C4S	PBX battery
White		R4B9C	R4B9FS	RT4B9FS	R4B9S	RT4B9S	Reverse tip & ring
White with test point		R4C9C	R4C9FS	RT4C9FS	R4C9S	RT4C9S	Reverse tip & ring
Gray		R4B12C					Continuity
Gray w/test point		R4C12C					Continuity only

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Ordering Information

Housing Color	Carbon	Gas	Three Element	Low Voltage Solid-State (240V)	Standard Solid-State (300V)	Specification
Other Modules—Short Housing, No Heat Coil, Tin Plated Pins						
Black	3AB					UL, RDUP (formerly RUS), GTE®
Red			3GURVS			UL
Orange		6A20				RDUP (formerly RUS), GTE®
Black		6A20B				RDUP (formerly RUS), GTE®
Red		6A20R				RDUP (formerly RUS), GTE®
Black			3GB			RDUP (formerly RUS)
Red			3GR			RDUP (formerly RUS)
Orange			3G			RDUP (formerly RUS)
Orange		6U2VS				UL, RDUP (formerly RUS), GTE®
Black		6U2BVS				UL, GTE®
Red		6U2RVS				UL, GTE®
Orange			3GUVS			UL, RDUP (formerly RUS)
Black			3GUBVS			UL
Black				S3ABF	S3AB*	UL, RDUP (formerly RUS)
Red				S3ARF	S3AR	UL
Other Modules—Long Housing, with Heat Coil, Tin Plated Pins						
Black	4AB					UL, GTE®
Red				S4ARF	S4AR	UL
Orange		G4AVS				UL, GTE®
Black		G4ABVS				UL, GTE®
Red		G4ARVS				UL, GTE®
Black				S4ABF	S4AB	UL

* S3AB is RDUP (formerly RUS) accepted in our R399 connector and available for use in connector equivalents.

NOTE 1: See the Reference Standards Chart at the end of this section.

NOTE 2: Designed to meet Telcordia TR-TSY-000070, GR-1361-CORE, GR-974-CORE, and RDUP (formerly RUS) PE-80, PEG-1, PEG-3, PEG-7.

NOTE 3: All RDUP (formerly RUS) modules meet the criteria in Government Publication RDUP (formerly RUS) TE&CM 823.

Ordering Matrix RBOC Catalog Numbers

Pin Type	R	=	Gold pins
	RT	=	Gold pins, 20 Ohm (used with solid-state)
Heat Coil	3	=	Without heat coil
	4	=	With heat coil
Generic Internal Design	B	=	Fail short
	C	=	Has 2 circle-shaped holes for test points
Housing Type	1	=	Black, standard service
	2	=	Green, service denial
	3	=	Red, special service
	4	=	Yellow, PBX
	9	=	White, reverse tip & ring
	10	=	Gray, continuity (switch through)
Technology	A	=	Carbon (short housing)
	C	=	Carbon (standard housing)
	E	=	Gas-tube
	S	=	Standard solid-state
	FS	=	Low voltage solid-state

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OSPDS-110500 / 0705

SuperDuty® JZ380 Series Next Generation Protectors

Outside Plant for Business-Critical Continuity

Key Features

- Extended service life reduces maintenance costs and subscriber complaints
- Vent-safe and fail-safe mechanisms on arresters provide continued surge protection under adverse conditions
- Low noise eliminates noise associated with carbon protectors
- Environmentally robust to provide extended life and protect against induced moisture corrosion per Telcordia Technical Audit Report #AU-148, Iss. 1, September 1994
- Designed to meet Telcordia standards to assure quality performance
- UL Listed, RDUP (formerly RUS) accepted, and CSA Certified to assure quality performance; CAT5 compatible

Description

The SuperDuty® JZ380 Series Next Generation of gas-tube station arresters and protectors incorporate an environmentally robust form of gas-tube technology in applications that have an uncontrolled environment and severe lightning exposure. The electrical surge endurance exceeds 3000 strikes without incidence.

The 1305VSB and R108VSB arresters/protectors feature patented vent-safe and fail-safe mechanisms that insure an automatic short to ground in the event of sustained or high current conditions. The components protect against moisture, corrosion and contaminants to provide an environmentally hardened protector that reduces service calls and extends protector life. The protectors comply with the specifications listed in the Telcordia Technical Audit Report #AU-148, Iss. 1, of September 1994.

SuperDuty® JZ380 series 5-pin gas-tube protector modules are used in areas of frequent transient over voltages with controlled breakdown values, and where adverse environmental conditions are encountered. Gas-tube modules are available with or without heat coils that protect against sneak currents.

Application

The SuperDuty® JZ380 series arresters and protectors provide excellent transient protection for all telecommunications systems. Units are designed to meet specific configurations and voltage requirements at the customer premises, remote cabinets, as well as at the central office.

R3B1EJZ

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5-Pin Protector Modules Without Heat Coil

Catalog Number	Part Number	Specifications	Test Point	Housing Color	Service	Pin Plating	Solid-State Upgrade
R3B1EJZ	F014031	Telcordia, UL, CSA		Black	Standard	Gold	R3B1S
R3C1EJZ	F013445	Telcordia, UL	√	Black	Standard	Gold	R3C1S
R3B3EJZ	F013456	Telcordia, UL		Red	Special service	Gold	R3B3S
R3C3EJZ	F013446	Telcordia, UL	√	Red	Special service	Gold	R3C3S
R3B1E90JZ	F013808	Telcordia, UL		Black	Standard	Gold	
R3B3E90JZ	F013982	Telcordia, UL		Red	Special service	Gold	
R3B1ET1JZ	F014002	Telcordia, UL		Red	Special service	Gold	S3AB

NOTE 1: See the Reference Standards Chart at the end of this section.

NOTE 2: Designed to meet Telcordia TR-TSY-000070, TR-TSY-000072, GR-1361-CORE, and GTE® GTS-8345.

5-Pin Protector Modules With Heat Coil

Catalog Number	Part Number	Specifications	Test Point	Housing Color	Service	Pin Plating	Solid-State Upgrade
R4B1EJZ	F013450	Telcordia, UL, CSA		Black	Standard	Gold	R4B1S
R4C1EJZ	F013440	Telcordia, UL	√	Black	Standard	Gold	R4C1S
R4B3EJZ	F013451	Telcordia, UL		Red	Special service	Gold	R4B3S
R4C3EJZ	F013444	Telcordia, UL	√	Red	Special service	Gold	R4C3S
R4B4EJZ	F013453	Telcordia, UL		Yellow	PBX battery	Gold	R4B4S

NOTE 1: See the Reference Standards Chart at the end of this section.

NOTE 2: Designed to meet Telcordia TR-TSY-000070, TR-TSY-000072, GR-1361-CORE, and RDUP (formerly RUS) PE-80, and GTE® GTS-8345.

NOTE 3: All RDUP (formerly RUS) modules meet the criteria in Government Publication RDUP (formerly RUS) TE&CM 823.

NOTE 4: Heat coil R4_ _ _ Series = 4 Ohms.

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Reference Standards Chart

Outside Plant for
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Specifications

Electrical Specifications	VSB-types Telcordia Specs TR-TSY-000070 & GR-1361-CORE		VSR2-types RDUP (formerly RUS) & GTE® Specs PE-80 & GTS	T-types Telcordia Specs GR-974-CORE	International Specs South America Pacific Rim
	Standard Gas	JZ Performance	Standard & JZ Performance	Standard Solid-State	Standard Low Voltage Gas
DC Breakdown @ ≤ 2000V/s	265V-600V (400V nominal)	265V-600V (350V-380V nom)	300V-500V (350V-400V nom)	265V-400V @ 1 mA (300V nominal)	200V-300V (250V-260V nom)
Impulse @ 100V/µs	1000V max.	650V max.	300V-750V	400V max.	700V max.
DC Holdover @ 150V min.	< 150 ms Typical < 10 ms	< 150 ms Typical < 10 ms	< 150 ms Typical < 10 ms	< 150 ms Typical < 10 ms	N/A
DC Holdover @ 115V min.	N/A	N/A	N/A	N/A	< 200 ms Typical < 200 ms
Insulation Resistance	> 100 MΩ	> 100 MΩ	> 100 MΩ	> 100 MΩ	> 100 MΩ
Capacitance	< 5 pf <30 pf	< 5 pf < 20 pf	< 5 pf < 30 pf	N/A < 200 pf	N/A < 20 pf
Impulse Life LTS = Surges @ (10/1000 µs) @ (10/250 µs) @ (20/100 µs) @ (8/20 µs)	1000 LTS @ 10A 100 LTS @ 100A 50 LTS @ 300A 25 LTS @ 2000A 2 LTS @ 5000A 1 LTS @ 20KA	*Unlimited @ 10A 300 LTS @ 100A 50 LTS @ 300A 25 LTS @ 2000A 2 LTS @ 5000A 1 LTS @ 20KA	400 LTS @ 500A	*Unlimited @ 10A *Unlimited @ 100A Failsafe @ 10KA	N/A
AC Surge Life	0.5Arms 30s 10Arms 1s, 60Hz 1Arms 1s, 60Hz	0.5Arms 30s 65Arms 11 cycles 10Arms 1s, 60Hz 1Arms 1s, 60Hz	65Arms 11 cycles	0.5Arms 30s 10Arms 1s, 60Hz 1Arms 1s, 60Hz	0.5Arms 30s 65Arms 11 cycles 15Arms 15 min.
End Life Limits	<10 MΩ <265V or >750V >1000V	<10 MΩ <265V or >600V >800V	<1 MΩ <180V or >600V >900V	<10 MΩ <265V >400V	<10 MΩ <200V >900V
Vented (back-up) Breakdown	>1000V (95%) 1200V max. @ 100V/µs	>1000V (95%) 1200V max. @ 100V/µs	<1500V (avg. 1000V-1200V)	N/A	N/A

*Unlimited ≥3000 surges

NOTE: Models are designed to meet various industry reference standards.

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