

Zelio[®] Relay - Plug-in Relays RSB

Class 8501

Catalog
March

05



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Zelio[®] Relay - Plug-in Relays

Specifications and Characteristics

Relay type		RSB2A080●●	RSB1A120●●	RSB1A160●●
Number and type of contacts		2 C/O	1 C/O	1 C/O
Contact materials		AgNi		
Rated thermal current (I _{th})	For temperature ≤ 104 °F (40 °C)	A 8	12	16
Maximum operating rate		No-load 72000		
In operating cycles/h		Under load 600		
Switching voltage		Minimum	V 5	
		Maximum	V ~ 400 (1), --- 300	
Switching capacity		Minimum	mA 5	
		Maximum	VA 2000	3000
				4000

Coil characteristics

Rated voltage (U _n)	V	6 to 110 Vdc, 24 to 240 Vac, 50/60 Hz		
Average consumption		0.45 W, 0.75 VA		
Permissible voltage variation		See coil characteristics table page 3		
Drop-out voltage threshold		≥ Vdc 0.1 U _n , ≥ Vac 0.15 U _n		

Environment

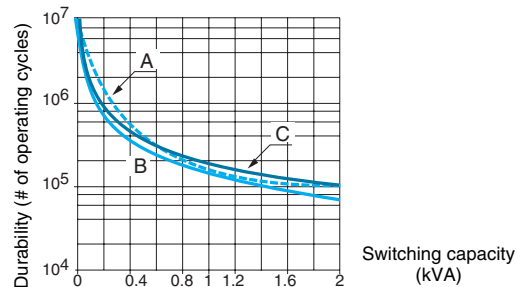
Conforming to standards	Standard version	IEC 61810-1		
Approvals		cURus File: E173076 CNN: NRNT2, NRNT8 / CSA File: 215736 Class: 3211 07 / CE		
Ambient air temperature around the relay	Storage	°F (°C)	- 40 to 185 (- 40 to + 85)	
	Operation	°F (°C)	Vac - 40 to 158 (- 40 to + 70), Vdc - 40 to 185 (- 40 to + 85)	
Vibration resistance	Conforming to IEC 60068-2-6	> 10 gn (10 to 150 Hz)		
Degree of protection		IP 40		
Shock resistance		10 gn (closing), 5 gn (opening)		
Mechanical durability	In millions of operating cycles	≥ 30		
	Between coil energization and making of the On-delay contact	Vac	ms	About 12
Operating time (response time)		Vdc	ms	About 9
	Between coil de-energization and making of the Off-delay contact	Vac	ms	About 10
		Vdc	ms	About 4
Electrical durability ▲	Resistive load		8 A - 250 V : ≥ 0.1	12 A - 250 V : ≥ 0.1
	Inductive load		See curves below	

Insulation characteristics

Rated insulation voltage (U _i)	Conforming to IEC 60947	V	400	
Insulation class	Conforming to VDE 0110		C 250	
Dielectric strength (rms voltage)	Between coil and contact	Vac	5000	
	Between poles	V	2500	
	Between contacts	Vac	1000	

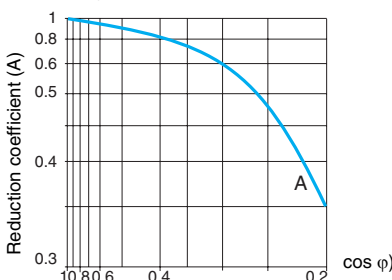
Electrical durability of contacts

Resistive load ~



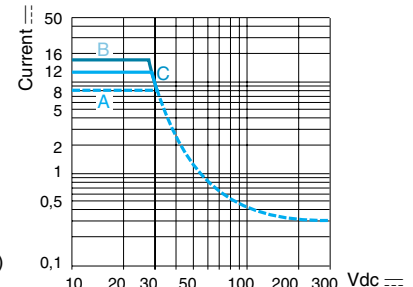
A_ RSB2A080●● B_ RSB1A160●● C_ RSB1A120●●

Reduction coefficient for inductive load ~ (depending on power factor cos φ) ▲



▲ Durability (inductive load) = durability (resistive load) x reduction coefficient.

Maximum switching capacity on a resistive load ---



Socket type		RSZE1S48M	RSBE1S35M
Socket characteristics			
Conventional rated thermal current (I _{th})	A	12	
Insulation class		C 250	
Degree of protection		IP 20	
Approvals		UR File: E17232 CCN: SWIV2 / CSA File: 212916 Class: 3211 07 / CE	
Connection	Solid wire without cable end	AWG	1 wire _ 24 - 12 (0.2 - 3.31 mm ²) / 2 wires _ 24 - 14 (0.2 - 2.08 mm ²)
	Stranded wire without cable end	AWG	1 wire _ 24 - 14 (0.2 - 2.08 mm ²) / 2 wires _ 24 - 16 (0.2 - 1.31 mm ²)
	Stranded wire with cable end	AWG	1 wire _ 24 - 14 (0.2 - 2.08 mm ²) / 2 wires _ 24 - 16 (0.2 - 1.31 mm ²)
Arrangement of coil/contact terminals		Separate	
Tightening torque	lb-in	4.5 (0.5 N•m)	
Type of protection module		RZM type E	
Relay types used	Contacts to be wired in parallel	RSB2A080 and RSB1A160	RSB1A120

▲ The life expressed above is based on average usage and normal operating conditions. Actual operating life will vary with conditions. The above statements are not intended to, nor shall they create any expressed or implied warranties as to product operation or life. For information on the listed warranty offered on this product, refer to the Square D terms and conditions of sale found in the Square D Digest.

(1) ~ 300 V, when used with a socket RSZE1S●●M.

Zelio® Relay - Plug-in Relays Selection



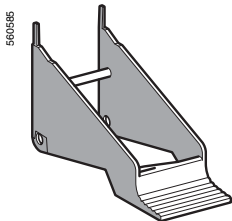
RSB2A080BD + RSZE1S48M



RSB1A120JD + RZM031FPD + RSZE1S35M



IS48M



RSZR215

Relays for standard applications

Number of C/O contacts	Conventional rated thermal current	Sold in lots of (2)	Catalog Number, to be completed by adding the coil voltage code (1) (2)	Weight
	A			lb. (kg)
2	8	10	RSB2A080●●	0.03 (0.014)
1	12	10	RSB1A120●●	0.03 (0.014)
	16	10	RSB1A160●●	0.03 (0.014)

Protection modules

Description	Type	Voltage	Sold in lots of	Catalog Number	Weight
		V			lb. (kg)
Diode	E	6 to 230 Vdc	10	RZM040W	0.006 (0.003)
		6 to 24 Vdc	10	RZM031RB	0.008 (0.004)
Diode + green LED	E	24 to 60 Vdc	10	RZM031BN	0.008 (0.004)
		110 to 230 Vdc	10	RZM031FPD	0.008 (0.004)
Varistor + green LED	E	6 to 24 Vdc	10	RZM021RB	0.011 (0.005)
		24 to 60 Vdc	10	RZM021BN	0.011 (0.005)
		110 to 230 Vdc	10	RZM021FP	0.011 (0.005)
RC circuit	E	24 to 60 Vac	10	RZM041BN7	0.02 (0.010)
		110 to 240 Vac	10	RZM041FU7	0.02 (0.010)

Sockets - 12 A, 300 Vac

Used with	Sold in lots of	Catalog Number	Weight
RSB2A080 and RSB1A160	10	RSZE1S48M	0.11 (0.050)
RSB1A120	10	RSZE1S35M	0.13 (0.060)

Accessories

Description	Sold in lots of	Catalog Number	Weight
Hold Down	10	RSZR215	0.004 (0.002)
Legend	10	RSZL300	0.002 (0.001)

(1) Standard control circuit voltages

Volts	6	12	24	48	60	110	120	220	230	240
≡	RD	JD	BD	ED	ND	FD	-	-	-	-
~ 50/60 Hz	-	-	B7	E7	-	-	F7	M7	P7	U7

(2) To order a relay complete with socket (sold in lots of 20): add suffix **S** to the references selected above. Example: RSB2A080●● becomes RSB2A080●●S

Coil characteristics

Control circuit voltage U _c	d.c. supply				a.c. supply 50/60 Hz			
	Average resistance at 68 °F (20 °C) ± 10%	Coil	Operating voltage limits		Average resistance at 68 °F (20 °C) ± 15 %	Coil	Operating voltage limits	
			Min.	Max.			Min.	Max.
6	90	RD	4.2	15.3	-	-	-	-
12	360	JD	8.4	30.6	-	-	-	-
24	1440	BD	16.8	61.2	400	B7	19.2	26.4
48	5700	ED	33.6	122.4	1550	E7	38.4	57.6
60	7500	ND	42	153	-	-	-	-
110	25 200	FD	77	280	-	-	-	-
120	-	-	-	-	10 200	F7	96	144
220	-	-	-	-	35 500	M7	176	264
230	-	-	-	-	38 500	P7	184	276
240	-	-	-	-	42 500	U7	192	288

Zelio® Relay - Plug-in Relays

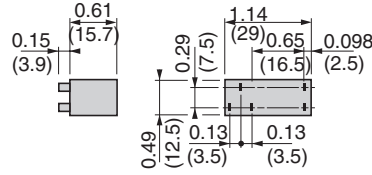
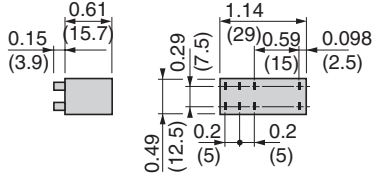
Approximate Dimensions and Wiring

Approximate Dimensions

Interface relays

RSB2A080●●, RSB1A160●●

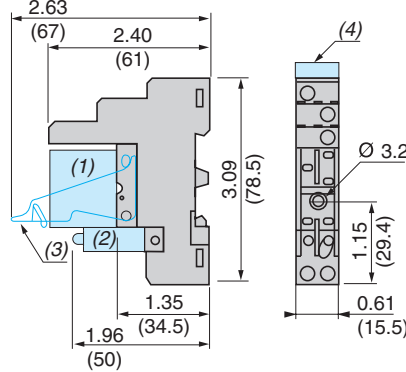
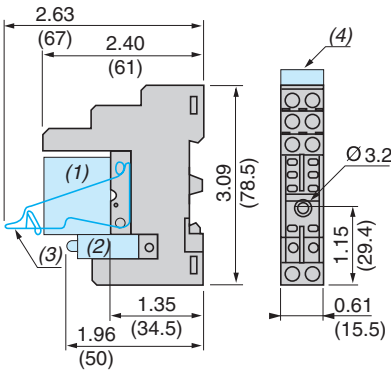
RSB1A120●●



Sockets

RSZE1S48M

RSZE1S35M



Dual Dimensions $\frac{\text{inches}}{\text{mm}}$

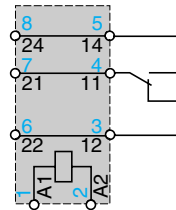
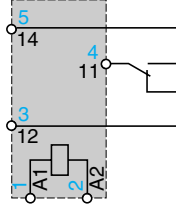
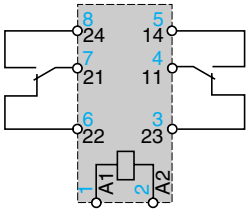
Wiring

Interface relays

RSB2A080●●

RSB1A120●●

RSB1A160●●



When using relay RSB1A160●● with socket RSZE1S48M : terminals 11 and 21, 14 and 24, 12 and 22 must be linked.

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