

Square D General Purpose Relays

Class 8501R miniature control relays

- 8501RS14 standard
- 8501RS24 low level
- 8501RS34 hermetically sealed

Catalog 2014



by Schneider Electric

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General Specifications

Conforming to standards		IEC/EN 61810-1, UL 508, CSA C22-2 n° 14
Product certifications	8501RS(D)14●●●	cULus File E3190 CCN NLDX, NLDX7; cURus File E3190 CCN NLDX2, NLDX8; CSA; CE; RoHS compliant
	8501RS(D)24●●●	
	8501RS(D)34●●●	cULus File E123950 CCN NLDX, NLDX7; cURus File E123950 CCN NLDX2, NLDX8; CE; RoHS compliant; UL approved for Class I Division 2 Hazardous Locations per ANSI/ISA 12.12.01
Ambient air temperature around the device	Storage	°C (F) - 40 to + 85 (-40 to +185)
	Operation	°C (F) - 40 to + 55 (-40 to +131)
Vibration resistance conforming to IEC/EN 60068-2-6	In operation	3 gn (35 to 150 Hz) and ± 1 mm (10 to 35 Hz) with and without retention clip
	Not operating	5 gn (35 to 150 Hz) and ± 1 mm (10 to 35 Hz) with and without retention clip
Degree of protection	Conforming to IEC/EN 60529	8501RS(D)14●●●, 8501RS(D)24●●● : IP40
	Per ISA 12.12.01	8501RS(D)34●●● : Hermetically sealed
Shock resistance conforming to IEC/EN 60068-2-27	In operation	10 gn (11 ms)
	Not operating	30 gn (11 ms)
Protection category		8501RS(D)14●●●, 8501RS(D)24●●● : RT I
		8501RS(D)34●●● : RT V
Mounting position		Any

Insulation Specifications

Rated insulation voltage (Ui)	V	250 (IEC), 300 (UL, CSA)
Rated impulse withstand voltage (Uimp)	kV	2.5 (1.2/50 µs)
Dielectric strength (rms voltage)	Between coil and contact	Vac 2000
	Between poles	Vac 2000
	Between contacts	Vac 1300

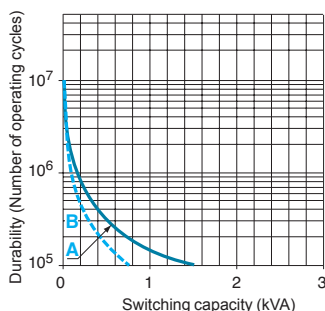
Contact Specifications

Relay type				8501RS14●●● 8501RSD14●●●	8501RS24●●● 8501RSD24●●●	8501RS34●●● 8501RSD34●●●	
Number and type of contacts					4 C/O	4 C/O low level - bifurcated	4 C/O
Contact materials					Ag alloy with Au flash	Ag with Au flash -bifurcated	Ag Alloy
Conventional thermal current (Ith)	For ambient temperature ≤ 55°C		A	6	3	5	
	Rated operational current	Conforming to IEC in utilization categories AC-1 and DC-1	NO	A	6 at 250 Vac / 28 Vdc	2 at 250 Vac / 28 Vdc	—
		NC	A	3 at 250 Vac / 28 Vdc	1 at 250 Vac / 28 Vdc	—	
Conforming to UL		Resistive	A	6 at 277 Vac (200k cycles) 8 at 120 Vac (200k cycles) 8 at 30 Vdc (200k cycles)	3 at 277 Vac (100k cycles) ⁽¹⁾ 3 at 120 Vdc (100k cycles) ⁽¹⁾ 3 at 30 Vdc (100k cycles) ⁽¹⁾	5 at 240 Vac (100k cycles) 5 at 120 Vac (100k cycles) 5 at 30 Vdc (100k cycles)	
		Motor	HP	1/3 at 120 Vac (6k cycles) 1/2 at 277 Vac (6k cycles)	1/16 at 120 Vac (6k cycles) ⁽¹⁾ 2.8 A FLA at 120 Vac	—	
		Pilot Duty		B300	5 A make, 0.5 A break, 3 A continuous at 120 Vac ⁽¹⁾	—	
Minimum switching requirement				mA	10 at 17 Vdc	3 at 5 Vdc	100 at 5 Vdc
Maximum switching voltage				V	250 Vac / 28 Vdc (IEC); 300 Vac / 30 Vdc (UL)		240 Vac / 30 Vdc (UL)
Switching capacity	Maximum	Vac	VA	1500	750	1200	
		Vdc	W	168	84	150	
	Minimum	mW	170	15	500		
Maximum operating rate In operating cycles/hour	No-load			18,000			
	Under load			1200			
Utilization coefficient					20%		
Mechanical durability				Cycles	10,000,000		
Electrical durability Operating cycles	Resistive load			100,000 (unless otherwise specified)			
	Inductive load			See curve below			

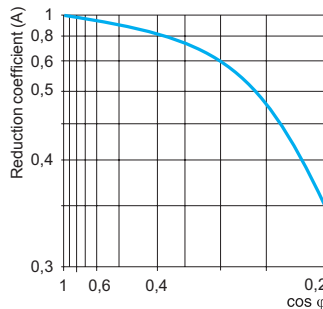
(1) When mounted horizontally

Performance curves (for 8501RS(D)14●●● and 8501RS(D)24●●● only)

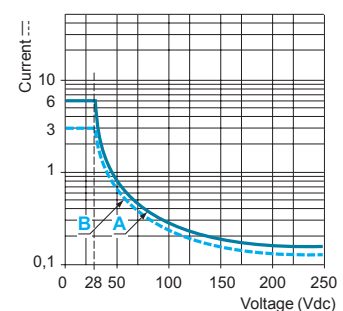
Electrical durability of contacts
Resistive load (AC)



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



Maximum switching capacity on resistive load
(DC)



A 8501RS(D)14●●● B 8501RS(D)24●●● Durability (inductive load) = durability (resistive load) x reduction coefficient.

Square D General Purpose Relays

Class 8501R miniature control relays

Coil specifications

			8501RS14●●●, 8501RS24●●●, 8501RSD14●●●, 8501RSD24●●●							8501RS34●●●, 8501RSD34●●●							
Average consumption	AC	VA	0.9–1.2							0.9–1.2							
	DC	W	0.8–1.1							0.8–1.1							
Drop-out voltage threshold	AC		≥ 0.15 Uc							≥ 0.3 Uc							
	DC		≥ 0.1 Uc							≥ 0.1 Uc							
Response time	Operate time	AC	ms	20 (max.)							20 (max.)						
		DC	ms	20 (max.)							20 (max.)						
	Release time	AC	ms	20 (max.)							20 (max.)						
		DC	ms	20 (max.)							20 (max.)						
Control circuit voltage Uc		V	6	12	24	48	110	120	240	6	12	24	48	110	120	240	
Relay control voltage codes			–	V51	V53	V56	V60	–	–	V50	V51	V53	V56	V60	–	–	
DC supply	Average resistance at 20 °C ± 10%	Ω	–	160	650	2560	13440	–	–	40	160	650	2600	11000	–	–	
	Operating voltage limits	Min.	Vdc	–	9.6	19.2	38.4	88	–	–	4.5	9	18	36	82.5	–	–
		Max.	Vdc	–	13.2	26.4	52.8	121	–	–	6.6	13.2	26.4	52.8	121	–	–
Relay control voltage codes			–	–	V14	V17	–	V20	V24	V35	V36	V14	V17	–	V20	V24	
AC supply	Average resistance at 20 °C ± 15%	Ω	–	–	177	708	–	3630	17720	10.5	43	160	668	–	3900	9100	
	Operating voltage limits	Min.	Vac	–	–	19.2	38.4	–	96	192	4.8	9.6	19.2	38.4	–	96	192
		Max.	Vac	–	–	26.4	52.8	–	132	264	6.6	13.2	26.4	52.8	–	132	264

Socket specifications

Socket type		8501NR45		RXZE2S114S	
Relay types used		8501RS(D)14●●● 8501RS(D)24●●● 8501RS(D)34●●●		8501RS(D)14●●● 8501RS(D)24●●● 8501RS(D)34●●●	
Contact terminal arrangement		Separate			
Wire connection method		Screw clamp terminals		Spring clamp terminals	
Product certifications		cURus File E66924 CCN SWIV2, SWIV8; CSA; CE; RoHS compliant		cURus File E172326 CCN SWIV2, SWIV8; CSA; CE; RoHS compliant	
Conforming to standards		IEC 61984, UL 508, CSA 22.2 No. 14			

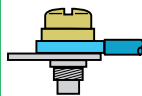
Electrical specifications

Conventional thermal current (I _{th})	A	10 at 300 Vac (UL)	6 at 250 Vac (UL / IEC)
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Insulation specifications

Between adjacent output contacts	V _{rms}	2000	2500
Between input and output contacts	V _{rms}	2000	2500
Between contacts and DIN rail	V _{rms}	2000	2500

General specifications

Ambient air temperature around the device	Storage	°C (°F)	- 40 to + 85 (- 40 to + 185)	
	Operation	°C (°F)	- 40 to + 55 (- 40 to + 131)	
Degree of protection	Conforming to IEC/EN 60529		IP 20	
Connection	Solid wire without cable end	1 conductor	0.5 to 2.5 mm² - AWG 20 to AWG 14	0.5 to 1.5 mm² AWG 20 to AWG 16
		2 conductors	0.5 to 2.5 mm² - AWG 20 to AWG 14	
	Flexible wire with cable end	1 conductor	0.5 to 2.5 mm² - AWG 20 to AWG 14	0.5 to 1.5 mm² AWG 20 to AWG 16
		2 conductors	0.5 to 2.5 mm² - AWG 20 to AWG 14	0.5 to 1.5 mm² AWG 20 to AWG 16
Maximum tightening torque / Screw size		Lb-ft (N•m)	0.6-0.7 (0.8-1) / M3 screw	–
Mounting			On 35 mm DIN rail / on panel	
Mounting on DIN rail			By plastic clip	By metal compression spring
Terminal referencing			IEC, NEMA	
Compatible with hold down clip			Yes	No
Compatible with restraining strap			Yes	No
Wire connection method			Screw clamp terminals	Spring clamp terminals
				

Square D General Purpose Relays

Class 8501R miniature control relays



8501RS14V20



8501RSD24P14V60



8501RS34V20

References

Control circuit voltage	Number and type of contacts - Thermal current (Ith)			
	4 C/O - 6 A		4 C/O - 3 A	
	Unit reference	Weight kg/lb	Unit reference	Weight kg/lb
Miniature control relays with standard cover (sold in lots of 1)				
12 Vdc	8501RSD14V51	0.037/0.082	8501RSD24V51	0.037/0.082
24 Vdc	8501RSD14V53	0.037/0.082	8501RSD24V53	0.037/0.082
48 Vdc	8501RSD14V56	0.037/0.082	8501RSD24V56	0.037/0.082
110 Vdc	8501RSD14V60	0.037/0.082	8501RSD24V60	0.037/0.082
24 Vac	8501RS14V14	0.037/0.082	8501RS24V14	0.037/0.082
120 Vac	8501RS14V20	0.037/0.082	8501RS24V20	0.037/0.082
240 Vac	8501RS14V24	0.037/0.082	8501RS24V24	0.037/0.082
Miniature control relays with standard cover and LED (sold in lots of 1)				
12 Vdc	8501RSD14P14V51	0.037/0.082	8501RSD24P14V51	0.037/0.082
24 Vdc	8501RSD14P14V53	0.037/0.082	8501RSD24P14V53	0.037/0.082
48 Vdc	8501RSD14P14V56	0.037/0.082	8501RSD24P14V56	0.037/0.082
110 Vdc	8501RSD14P14V60	0.037/0.082	8501RSD24P14V60	0.037/0.082
24 Vac	8501RS14P14V14	0.037/0.082	8501RS24P14V14	0.037/0.082
120 Vac	8501RS14P14V20	0.037/0.082	8501RS24P14V20	0.037/0.082
240 Vac	8501RS14P14V24	0.037/0.082	8501RS24P14V24	0.037/0.082

Control circuit voltage	Number and type of contacts - Thermal current (Ith)	
	4 C/O - 5 A	
	Unit reference	Weight kg/lb
Hermetically sealed miniature control relays (sold in lots of 1)		
6 Vdc	8501RSD34V50	0.045/0.099
12 Vdc	8501RSD34V51	0.045/0.099
24 Vdc	8501RSD34V53	0.045/0.099
48 Vdc	8501RSD34V56	0.045/0.099
110 Vdc	8501RSD34V60	0.045/0.099
6 Vac	8501RS34V35	0.045/0.099
12 Vac	8501RS34V36	0.045/0.099
24 Vac	8501RS34V14	0.045/0.099
48 Vac	8501RS34V17	0.045/0.099
110 Vac	8501RS34V20	0.045/0.099
240 Vac	8501RS34V24	0.045/0.099



8501NR45 +
Relay 8501RS14V20



8501NR45 +
Relay 8501RSD24P14V60



8501NH45

References (continued)					
Sockets					
Contact terminal arrangement	Connection	Relay type	Sold in lots of	Unit reference	Weight kg/lb
Separate	Screw clamp terminals	8501RS(D)14●●●	1	8501NR45	0.050/0.110
		8501RS(D)24●●●			
		8501RS(D)34●●●			
	Spring clamp terminals	8501RS(D)14●●●	10	8501NR45B ⁽¹⁾	0.050/0.110
		8501RS(D)24●●●			
		8501RS(D)34●●●			
		8501RS(D)14●●●	10	RXZE2S114S	0.070/0.154
		8501RS(D)24●●●			
		8501RS(D)34●●●			

(1) Please note that the “B” suffix only designates quantities of 10 and is not printed on the socket.

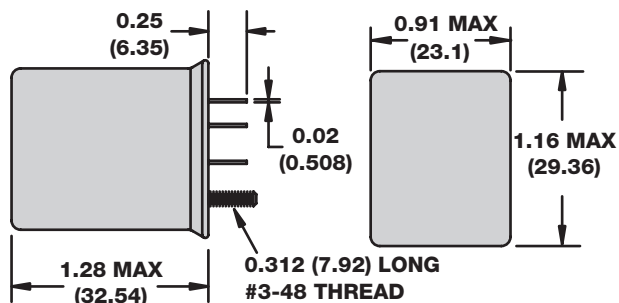
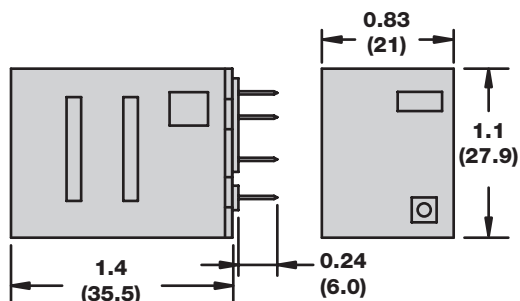
Accessories				
Description	For use with	Sold in lots of	Unit reference	Weight kg/lb
Metal hold-down clip	8501NR45 socket	10	8501NH45	0.001/0.002
Clip-in ID tags	RXZE2S114S socket	10	RSZL300	0.001/0.002

Dimensions: inches (mm)

Miniature control relays

8501RS(D)14... / 8501RS(D)24...

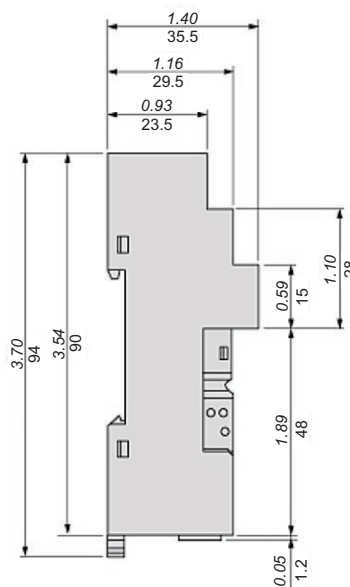
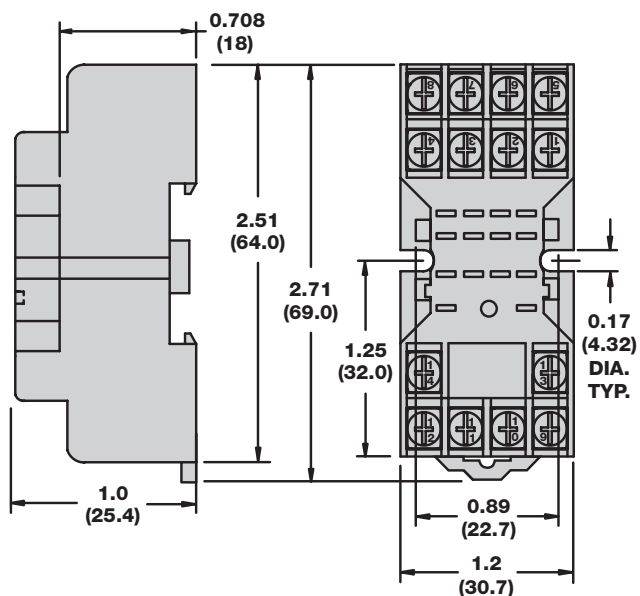
8501RS(D)34...



Sockets

8501NR45

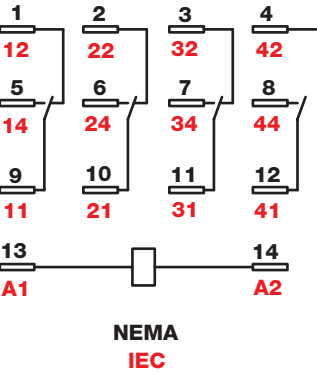
RXZE2S114S



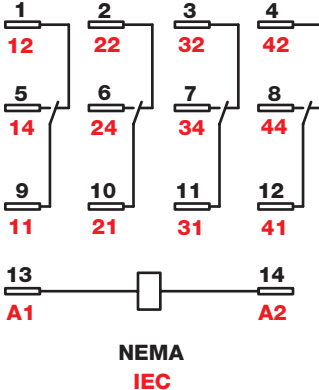
Wiring diagrams

Miniature control relays

8501RS(D)14... / 8501RS(D)24...

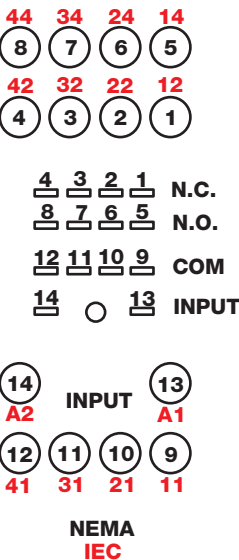


8501RS(D)34...

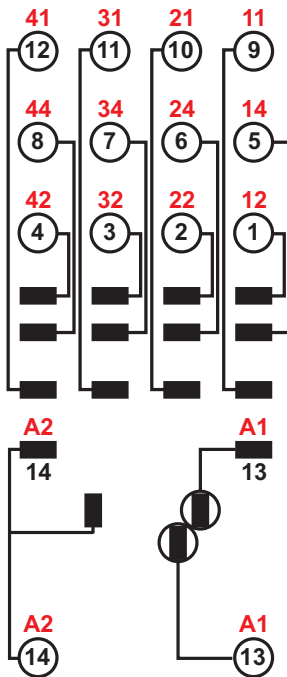


Sockets

8501NR45



RXZE2S114S



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