Square D
General Purpose Relays

Class 8501R miniature control relays

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

Catalog
2014

SQUARE D™
by Schneider Electric

Square D™ General Purpose Relays
Class 8501R miniature control relays

Square D General Purpose Relays
Class 8501R miniature control relays

General Specifications

Conforming to standards			IEC/EN 61810-1, UL 508, CSA C22-2 n° 14
Product certifications	**8501RS(D)14●●●** **8501RS(D)24●●●**		cULus File E3190 CCN NLDX, NLDX7; cURus File E3190 CCN NLDX2, NLDX8; CSA; CE; RoHS compliant
	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

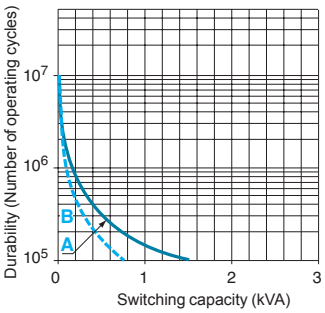
Contact Specifications

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		

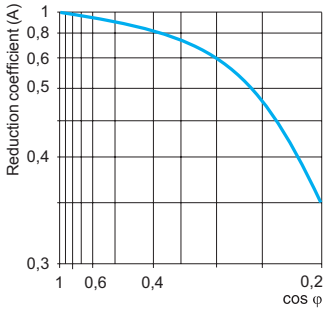
(1) When mounted horizontally

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

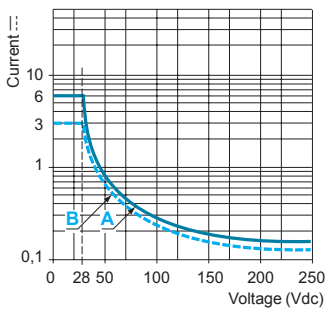
Electrical durability of contacts
Resistive load (AC)



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.

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	

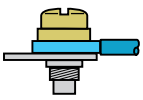
Electrical specifications

Conventional thermal current (Ith)	**A**	10 at 300 Vac (UL)	6 at 250 Vac (UL / IEC)

Insulation specifications

Between adjacent output contacts	**Vrms**	2000	2500
Between input and output contacts	**Vrms**	2000	2500
Between contacts and DIN rail	**Vrms**	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●●● 8501RS(D)24●●● 8501RS(D)34●●●	1	**8501NR45**	0.050/*0.110*
		8501RS(D)14●●● 8501RS(D)24●●● 8501RS(D)34●●●	10	**8501NR45B**(1)	0.050/*0.110*
	Spring clamp terminals	8501RS(D)14●●● 8501RS(D)24●●● 8501RS(D)34●●●	10	**RXZE2S114S**	0.070/*0.154*

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

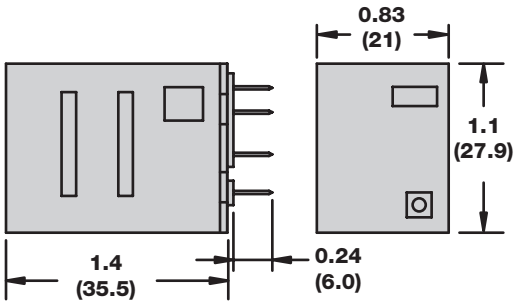
Accessories

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*

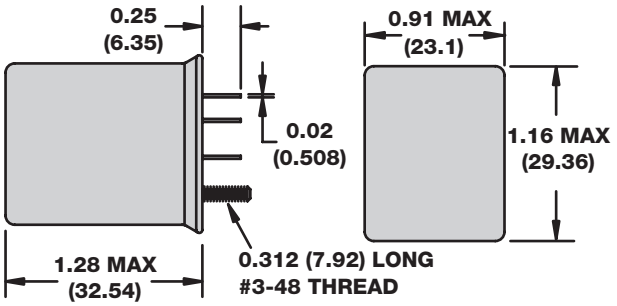
Dimensions: inches (mm)

Miniature control relays

8501RS(D)14●●● / 8501RS(D)24●●●

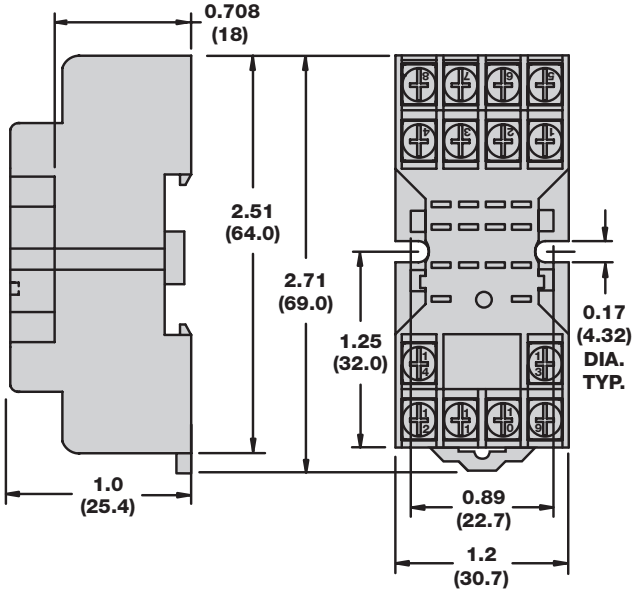


8501RS(D)34●●●

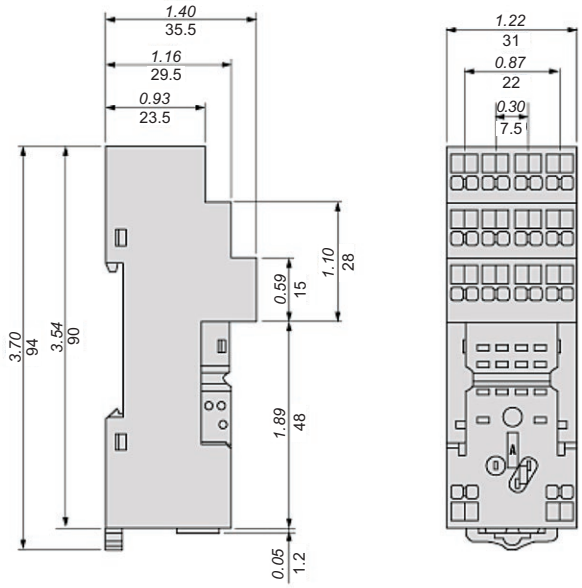


Sockets

8501NR45



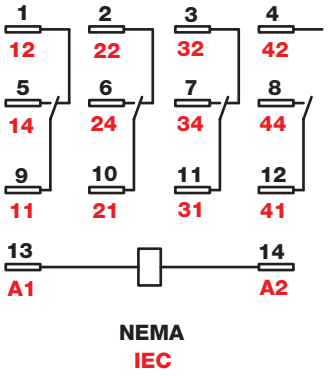
RXZE2S114S



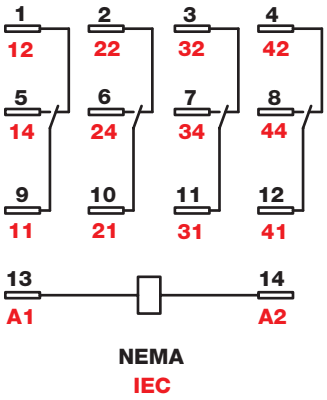
Wiring diagrams

Miniature control relays

8501RS(D)14●●● / 8501RS(D)24●●●

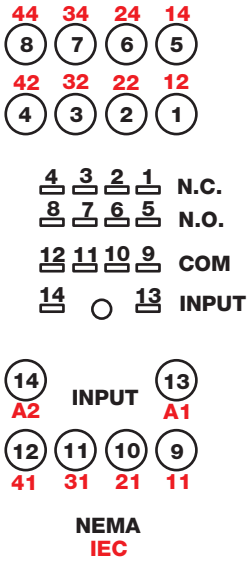


8501RS(D)34●●●

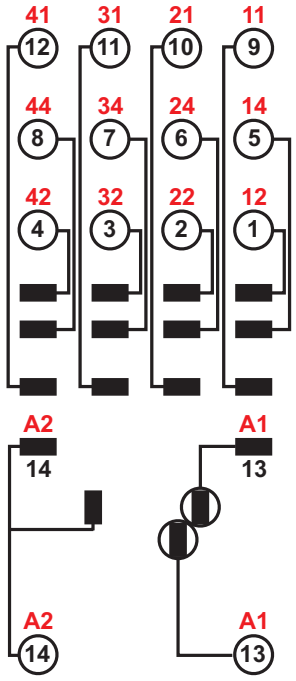


Sockets

8501NR45



RXZE2S114S



Schneider Electric USA, Inc.
8001 Knightdale Blvd.
Knightdale, NC 27545
Tel: 888-778-2733
www.schneider-electric.com

8501CT1407, 09/2014
Replaces 8501CT0301R07/08, 08/2008