



## S SERIES

### HIGH VOLTAGE RELAYS



The S series relay was developed for the high voltage ATE market, where printed circuit board space is at a premium.

The S series high voltage relay offers a 3kV or 5kV\* isolation performance in a 30mm package.

Low contact resistance, through the use of Rhodium contact reed switches, makes the S series suitable for many high voltage applications at DC and low frequency, where performance and reliability are paramount.

### Features

- Compact footprint
- Designed specifically for High Voltage ATE
- Rhodium contacts for Low Contact Resistance
- 3kV or 5kV\* Isolation between contacts and 5kV isolation between contacts and coil
- Excellent lifetime characteristics



## SPECIFICATIONS

Contact	Unit	Condition	3kV SPNO			5kV SPNO		
<b>Contact Material</b>			Rhodium			Rhodium		
<b>Isolation Across Contacts</b>	kV	DC or AC peak	3			5*		
<b>Switching Power Max.</b>	W		10			10		
<b>Switching Voltage Max.</b>	V	DC or AC peak	20			20		
<b>Switching Current Max.</b>	A	DC or AC peak	0.5			0.5		
<b>Carry Current Max</b>	A	DC or AC peak	1.5			1.5		
<b>Capacitance Across Contacts</b>	pF	coil to screen grounded	<0.1			<0.1		
<b>Lifetime Operations</b>	dry switching		10 <sup>9</sup>			10 <sup>9</sup>		
	10W switching		10 <sup>6</sup>			10 <sup>6</sup>		
<b>Contact Resistance</b>	mΩ max (typical)		80 (30)			80 (30)		
<b>Insulation Resistance</b>	Ω min (typical)		10 <sup>10</sup> (10 <sup>13</sup> )			10 <sup>10</sup> (10 <sup>13</sup> )		
<b>*DC only, Pin 3 at high voltage</b>								
<b>Coil Specification at 20°C</b>			<b>5V</b>	<b>12V</b>	<b>24V</b>	<b>5V</b>	<b>12V</b>	<b>24V</b>
<b>Must Operate Voltage</b>	V	DC	3.7	9	20	3.7	9	20
<b>Must Release Voltage</b>	V	DC	0.5	1.25	4	0.5	1.25	4
<b>Operate Time</b>	ms	diode fitted	1.0	1.0	1.0	1.0	1.0	1.0
<b>Release Time</b>	ms	diode fitted	0.5	0.5	0.5	0.5	0.5	0.5
<b>Resistance</b>	Ω		140	600	1000	140	600	1000

Note. The operate / release voltage and coil resistance will change at a rate of 0.4% per degree C. Values are stated at room temperature (20 degrees C)

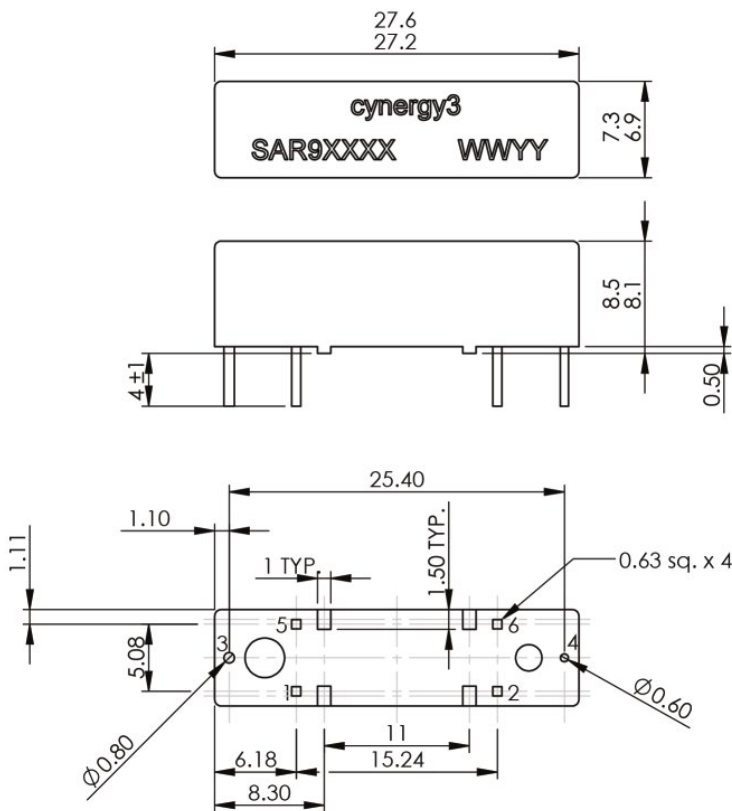
Relay	Unit	Condition	3kV SPNO	5kV SPNO
Isolation Contact/Coil	kV		5	5
Insulation Resistance Contact to all Terminals	$\Omega$ min (typical)		$10^{10}(10^{13})$	$10^{10}(10^{13})$
Environmental Conditions				
Operating Temperature Range	$^{\circ}\text{C}$		-20 to +70	-20 to +70
Weight	gm		3.1	3.1

Please refer to this document for circuit design notes:  
<https://www.cynergy3.com/blog/reed-relay-application-notes>

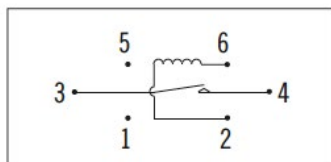


## DIMENSIONS

All dimensions are in millimeters.



### Relay Circuit Diagram



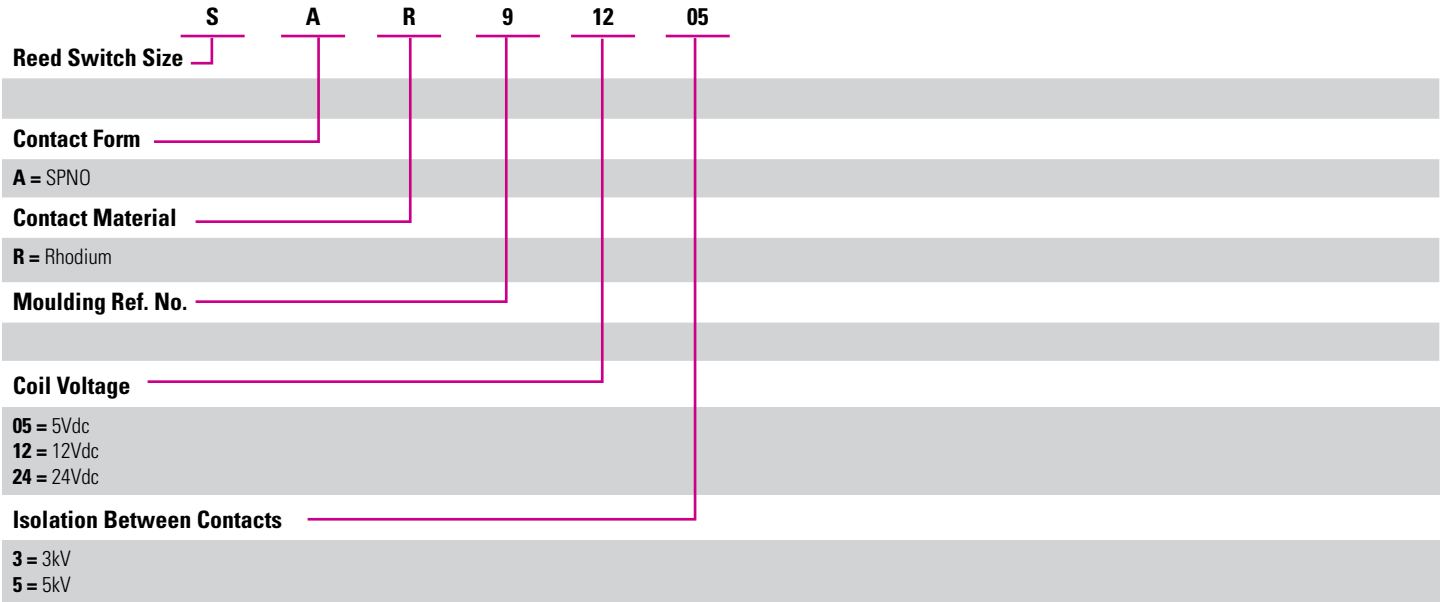
(Viewed from Underside)

Pin 1 is top left, when viewed from above, with respect to part marking



# ORDERING OPTIONS

Example : SAR91205



Made in the UK

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at [www.sensata.com](http://www.sensata.com) SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

## CONTACT US

+44 (0)1202 897969  
 c3w\_sales@sensata.com  
 Cynergy3 Components Ltd.  
 7 Cobham Road,  
 Ferndown Industrial Estate,  
 Wimborne, Dorset,  
 BH21 7PE, United Kingdom