# **D-HR Series**



## High Insulation Resistance, High Voltage Relays -10kV & 15kV



Very high isolation voltages - up to 15kV are achieved through the use of high vacuum reed switches with either rhodium or tungsten contacts which make these relays suitable for high reliability applications, such as cardiac defibrillators, test equipment and high voltage power supplies.

The rhodium contact relays have low contact resistance, while the tungsten contact relays can switch higher voltages.

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#### IS09001certified

D-HR 2016

- 10kV or 15kV Isolation
  - Low Contact Resistance
  - 1x10<sup>14</sup> Ohms Minimum Insulation Resistance
  - PCB or Flying Leads Connections
  - Ideal for sensitive test and measurement circuits which require low leakage current losses

Contact Specification	Unit	t Condition	10kV SPNO			10kV SPNC			15kV SPNO*		
Contact Material			Rhodium Tungsten		Rhodium Tungsten			Tungsten			
Isolation across contact	s kV	DC or AC peak	10		10	10	10		15		
Switching Power Max.	W		50		50	50	50		50		
Switching Voltage Max.	V	DC or AC peak			7000	1000 7000		10000			
Switching Current Max.	А	DC or AC peak	3		2	3	2		2		
Carry Current Max	А	DC or AC peak	4		3	4	3		2		
Capacitance across	рF	coil to screen	<0.	2	<0.2	<0.2	<0.2		<0	.2	
contacts		grounded									
Lifetime Operations dry switching		10°		10 <sup>9</sup>	10°	10°		10°			
		50W switching	10 <sup>6</sup>		10 <sup>6</sup>	10 <sup>6</sup>	$10^{6}$		106		
Contact Resistance $m\Omega$ max (typical)			50 (15) 250(100)		50 (15) 250(100)			250 (100)			
Insulation Resistance $\Omega$ min			1x10 <sup>14</sup>			1x10 <sup>14</sup>			1x10 <sup>14</sup>		
Coil Specification			5V	12V	24V	5V	12V	24V	5V	12V	24V
Must Operate Voltage	V	DC	3.7	9	20	3.7	9	20	3.7	9	20
Must Release Voltage	٧	DC	0.5	1.25	4	0.5	1.25	4	0.5	1.25	4
Must Release Voltage Operate Time	V ms	DC diode fitted	0.5 3.0	1.25 3.0	4 3.0		1.25 2.0	4 2.0	0.5 3.0	1.25 3.0	4 3.0
•	•				-	0.5		•			•
Operate Time	ms	diode fitted	3.0	3.0	3.0 2.0	0.5 2.0	2.0	2.0	3.0	3.0	3.0
Operate Time Release Time	ms ms	diode fitted	3.0 2.0	3.0 2.0	3.0 2.0	0.5 2.0 3.0	2.0 3.0	2.0 3.0	3.0 2.0	3.0 2.0	3.0 2.0
Operate Time Release Time	ms ms	diode fitted	3.0 2.0	3.0 2.0	3.0 2.0	0.5 2.0 3.0	2.0 3.0	2.0 3.0	3.0 2.0	3.0 2.0	3.0 2.0
Operate Time Release Time Resistance	ms ms	diode fitted	3.0 2.0	3.0 2.0	3.0 2.0 780	0.5 2.0 3.0	2.0 3.0	2.0 3.0	3.0 2.0	3.0 2.0	3.0 2.0
Operate Time Release Time Resistance Relay Specification	ms ms Ω kV	diode fitted diode fitted	3.0 2.0	3.0 2.0 150	3.0 2.0 780	0.5 2.0 3.0	2.0 3.0 240	2.0 3.0	3.0 2.0	3.0 2.0 95	3.0 2.0
Operate Time Release Time Resistance Relay Specification Isolation contact/coil	ms ms Ω kV ntact	diode fitted diode fitted	3.0 2.0	3.0 2.0 150	3.0 2.0 780	0.5 2.0 3.0	2.0 3.0 240	2.0 3.0 925	3.0 2.0	3.0 2.0 95	3.0 2.0
Operate Time Release Time Resistance Relay Specification Isolation contact/coil Insulation resistance co	ms ms Ω kV ntact	diode fitted diode fitted	3.0 2.0	3.0 2.0 150	3.0 2.0 780	0.5 2.0 3.0	2.0 3.0 240	2.0 3.0 925	3.0 2.0	3.0 2.0 95 17	3.0 2.0
Operate Time Release Time Resistance Relay Specification Isolation contact/coil Insulation resistance co to all terminals	ms ms Ω kV ntact	diode fitted diode fitted	3.0 2.0 28	3.0 2.0 150	3.0 2.0 780	0.5 2.0 3.0	2.0 3.0 240	2.0 3.0 925	3.0 2.0 16	3.0 2.0 95 17	3.0 2.0 350

<u>Please refer to this document for circuit design notes:-</u> http://www.cynergy3.com/blog/application-notes-reed-relays-0

**Part Numbering System** 

7 12 10 F-HR DAT **Reed Switch Size Insulation Resistance** Contact Form A=n/o, B=n/c\* -HR = High Insulation**Contact Material Resistance Version** R=Rhodium, **Mounting or Connection Style** T=Tungsten No suffix indicates PCB mount Moulding Ref. No. F= PCB mount with & coil connection with flying lead HV **Coil Voltage** connection 05=5Vdc, 12=12Vdc, 24=24Vdc **Isolation between Contacts** 10=10kV, 15=15kV

\* Form B (n/c) is not available on 15kV models

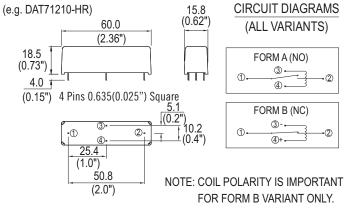
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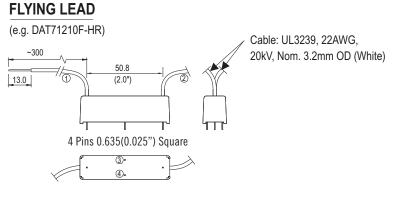
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### MECHANICAL







NOTE: PINS WHICH ARE NOT NUMBERED HAVE NO ELECTRICAL CONNECTION.

<u>Please refer to this document for circuit design notes:-</u> <u>http://www.cynergy3.com/blog/application-notes-reed-relays-0</u>

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### ISO9001 CERTIFIED

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