

## 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.

- 10kV or 15kV Isolation
- Low Contact Resistance
- $1 \times 10^{14}$  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	Condition	10kV SPNO		10kV SPNC		15kV SPNO*	
Contact Material			Rhodium	Tungsten	Rhodium	Tungsten	Tungsten	
Isolation across contacts	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	1000	7000	1000	7000	10000	
Switching Current Max.	A	DC or AC peak	3	2	3	2	2	
Carry Current Max	A	DC or AC peak	4	3	4	3	2	
Capacitance across contacts	pF	coil to screen grounded	<0.2	<0.2	<0.2	<0.2	<0.2	
Lifetime	Operations	dry switching	$10^9$	$10^9$	$10^9$	$10^9$	$10^9$	
		50W switching	$10^6$	$10^6$	$10^6$	$10^6$	$10^6$	
Contact Resistance	mΩ	max (typical)	50 (15)	250(100)	50 (15)	250(100)	250 (100)	
Insulation Resistance	Ωmin		$1 \times 10^{14}$		$1 \times 10^{14}$		$1 \times 10^{14}$	

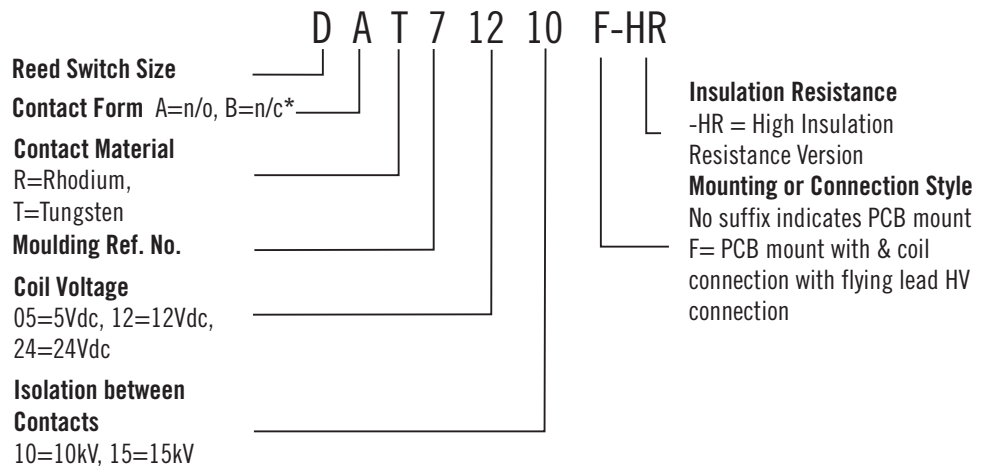
Coil Specification		5V	12V	24V	5V	12V	24V	5V	12V	24V
Must Operate Voltage	V DC	3.7	9	20	3.7	9	20	3.7	9	20
Must Release Voltage	V DC	0.5	1.25	4	0.5	1.25	4	0.5	1.25	4
Operate Time	ms diode fitted	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	3.0
Release Time	ms diode fitted	2.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	2.0
Resistance	Ω	28	150	780	38	240	925	16	95	350

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 Specification		10kV	15kV
Isolation contact/coil	kV	17	17
Insulation resistance contact to all terminals	Ωmin (typical)	$1 \times 10^{14}$	$1 \times 10^{14}$
Environmental			
Operating Temp range	°C	-20 to +70	-20 to +70

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

#### Part Numbering System



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ISO9001 CERTIFIED

D-HR 2018

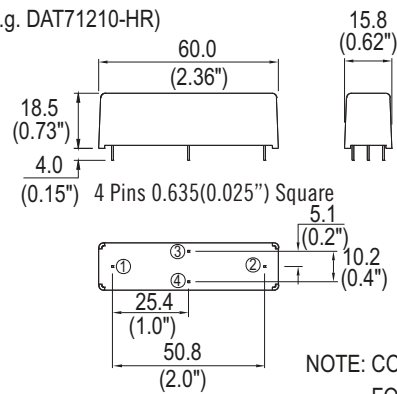
Made in the UK

www.cynergy3.com

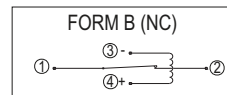
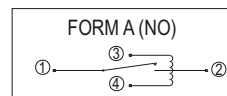
**MECHANICAL**

**STANDARD**

(e.g. DAT71210-HR)



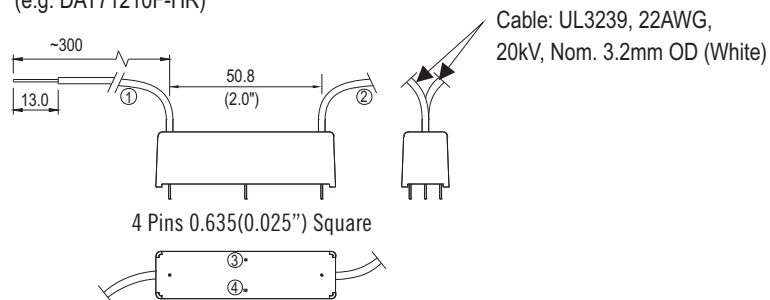
**CIRCUIT DIAGRAMS  
(ALL VARIANTS)**



NOTE: COIL POLARITY IS IMPORTANT FOR FORM B VARIANT ONLY.

**FLYING LEAD**

(e.g. DAT71210F-HR)



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

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