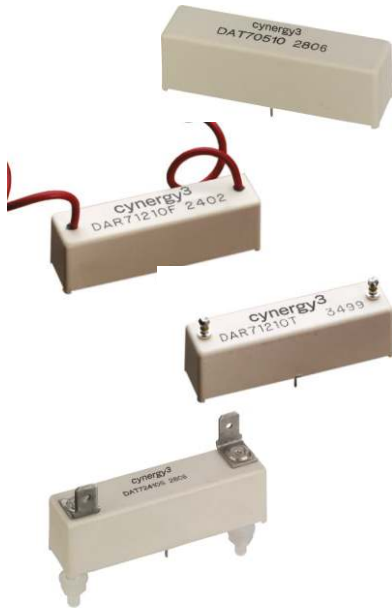


## D Series

### 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 and 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.

PCB or panel mount, via nylon studs, versions are available.

Connection options, for the HV, include PCB, solder turret (wire wrap), flying lead and 0.25" spade terminals.

- 10kV or 15kV Isolation
- Low contact resistance
- PCB or panel mount
- HV connections via flying leads, solder turret (wire wrap), or 1/4" spade terminals
- Excellent AC characteristics

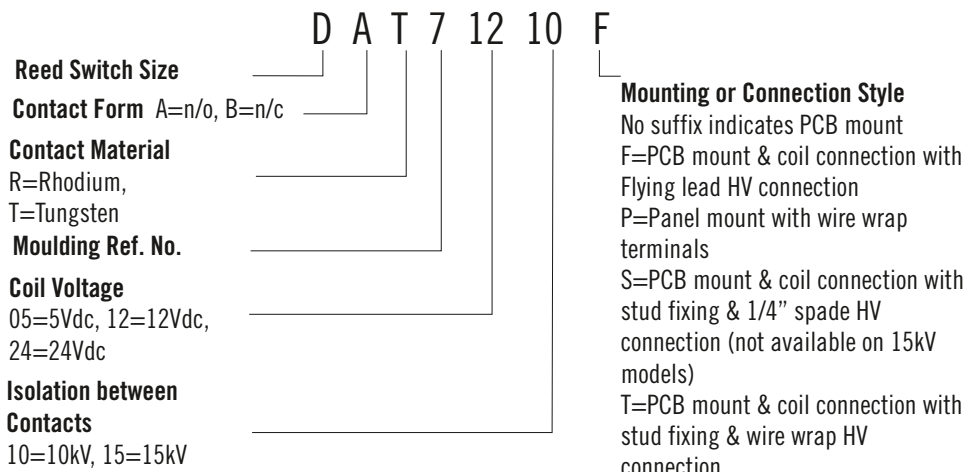
Contact Specification	Unit	Condition	10kV SPNO			10kV SPNC			15kV SPNO		
Contact Material			Rhodium	Tungsten		Rhodium	Tungsten			Tungsten	
Isolation across contacts	kV	DC or AC peak	10	10		10	10			15	
Switching Power Max.	W		50	50		50	50			50	
Switching Voltage Max.	V	DC or AC peak	1000	7000		1000	7000			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 <sup>9</sup>	10 <sup>9</sup>		10 <sup>9</sup>	10 <sup>9</sup>			10 <sup>9</sup>	
		50W switching	10 <sup>6</sup>	10 <sup>6</sup>		10 <sup>6</sup>	10 <sup>6</sup>			10 <sup>6</sup>	
Contact Resistance	mΩ	max (typical)	50 (15)	250(100)		50 (15)	250(100)			250 (100)	
Insulation Resistance	Ωmin	(typical)	10 <sup>10</sup> (10 <sup>13</sup> )			10 <sup>10</sup> (10 <sup>13</sup> )				10 <sup>10</sup> (10 <sup>13</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	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 SPNO			10kV SPNC			15kV SPNO		
Isolation contact/coil	kV	DC or AC peak	17			17			17		
Insulation resistance contact to all terminals	Ωmin	(typical)	10 <sup>10</sup> (10 <sup>13</sup> )			10 <sup>10</sup> (10 <sup>13</sup> )			10 <sup>10</sup> (10 <sup>13</sup> )		
Environmental Operating Temp range	°C		-20 to +70			-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

cynergy3-d-pcb-v2



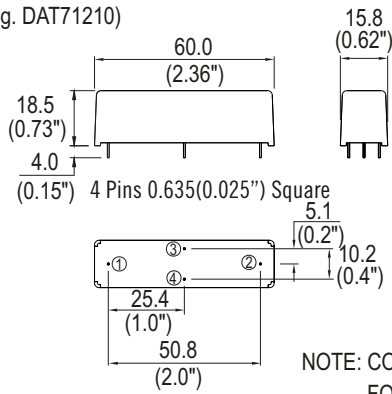
Made in the UK

[www.cynergy3.com](http://www.cynergy3.com)

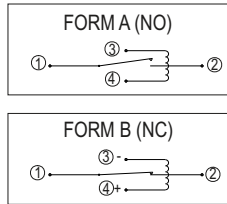
## MECHANICAL

### STANDARD

(e.g. DAT71210)



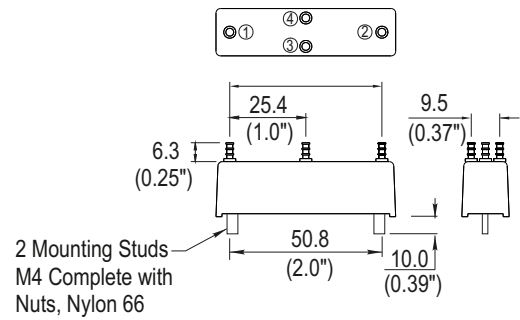
### CIRCUIT DIAGRAMS (ALL VARIANTS)



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

### PANEL MOUNT

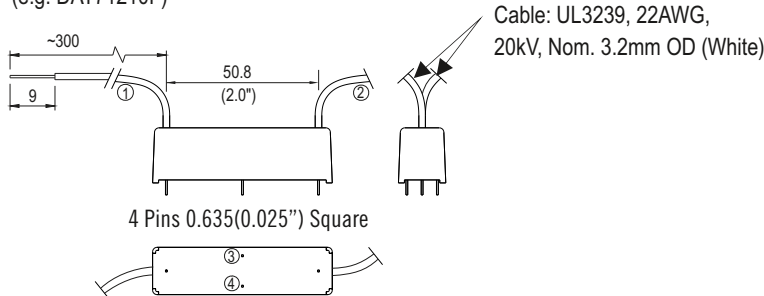
(e.g. DAT71210P)



2 Mounting Studs  
M4 Complete with  
Nuts, Nylon 66

### FLYING LEAD

(e.g. DAT71210F)

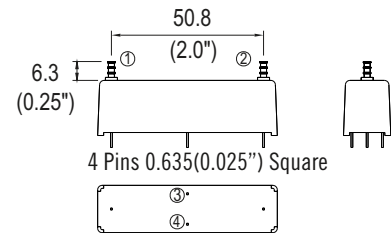


Cable: UL3239, 22AWG,  
20kV, Nom. 3.2mm OD (White)

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

### TURRET (Wire Wrap)

(e.g. DAT71210T)

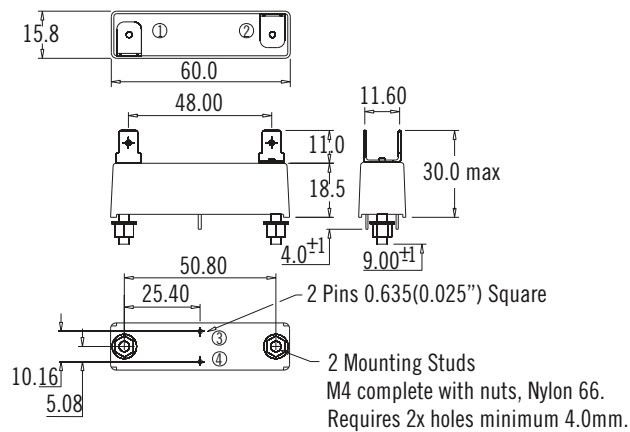


NOTE: PINS WHICH ARE NOT NUMBERED  
HAVE NO ELECTRICAL CONNECTION.

### SPADE TYPE

(e.g. DAT71210S)

'S' Suffix denotes the 0.250" 'Push On'  
blade connectors, M4 fixing bolts and Epoxy potting.



2 Mounting Studs  
M4 complete with nuts, Nylon 66.  
Requires 2x holes minimum 4.0mm.

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