



# DA(UL) Series

## UL Approved \*, Normally Open, High Voltage Relays - 10kV



- 10kV 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



Recently approved by UL, very high isolation voltages (up to 10kV) 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.

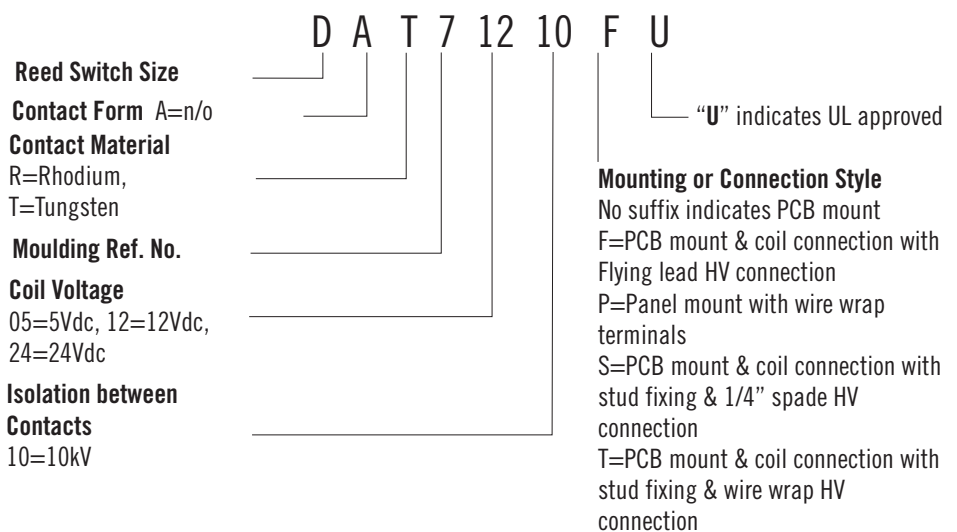
PCB or Panel Mount, via Nylon studs, versions are available.

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

Contact Specification	Unit Condition	10kV SPNO		10kV SPNC			
		Rhodium	Tungsten	Rhodium	Tungsten		
Contact Type		N/O (normally open)		N/O (normally open)			
Contact Material		Rhodium	Tungsten	Rhodium	Tungsten		
Isolation across contacts	kV DC or AC peak	10	10	10	10		
Switching Power Max.	W	50	50	50	50		
Switching Voltage Max.	V DC or AC peak	1000	7000	1000	7000		
Switching Current Max.	A DC or AC peak	3	2 3	2	3		
Carry Current Max	A DC or AC peak	4	3 4	3			
Capacitance across contacts	pF coil to screen grounded	<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>		
	50W switching	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)		
Insulation Resistance	Ωmin (typical)	10 <sup>10</sup>	(10 <sup>13</sup> )	10 <sup>10</sup>	(10 <sup>13</sup> )		
Coil Specification		5V	12V	24V	5V	12V	24V
Must Operate Voltage	V DC	3.7	9	20	3.7	9	20
Must Release Voltage	V DC	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
Release Time	ms diode fitted	2.0	2.0	2.0	3.0	3.0	3.0
Resistance	Ω	28	150	780	38	240	925
Relay Specification							
Isolation contact/coil	kV	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> )		
Environmental Operating Temp range	°C	-20 to +70			-20 to +70		

\*Consult factory for UL ratings

### Part Numbering System



Cynergy3 Components Ltd.  
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Wimborne, Dorset BH21 7PE  
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ISO9001 CERTIFIED

DA(UL) 2016

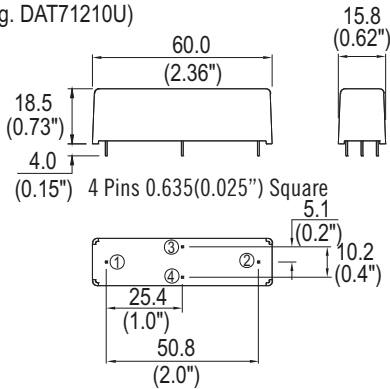
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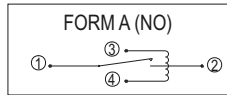
## MECHANICAL

### STANDARD

(e.g. DAT71210U)



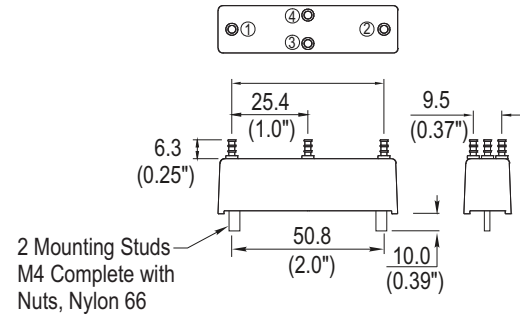
### CIRCUIT DIAGRAMS (ALL VARIANTS)



NOTE: COIL POLARITY IS NOT SIGNIFICANT

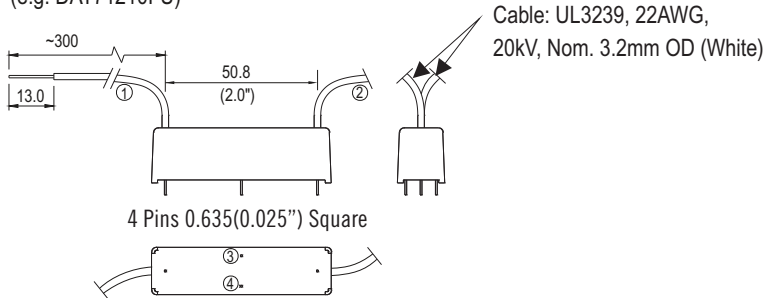
### PANEL MOUNT

(e.g. DAT71210PU)



### FLYING LEAD

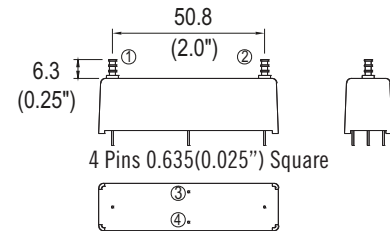
(e.g. DAT71210FU)



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

### TURRET (Wire Wrap)

(e.g. DAT71210TU)

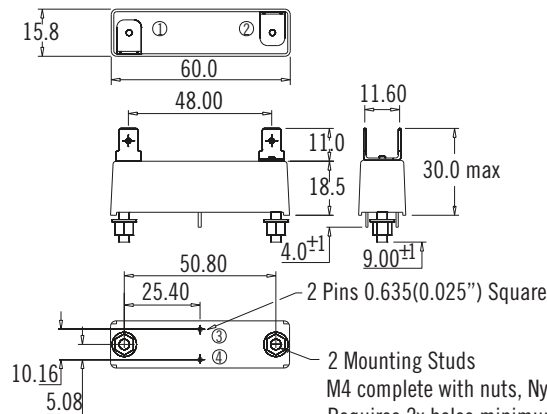


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### SPADE TYPE

(e.g. DAT71210SU)

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



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# DB(UL) Series

## UL Approved\* Normally Closed, High Voltage Relays - 10kV



- 10kV 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



Recently approved by UL, very high isolation voltages (up to 10kV) are achieved through the use of high vacuum reed switches with Tungsten contacts and make these relays suitable for high reliability applications, such as cardiac defibrillators, test equipment and high voltage power supplies.

The Tungsten contact relays can switch higher voltages, up to 7000Vdc/ac peak to peak

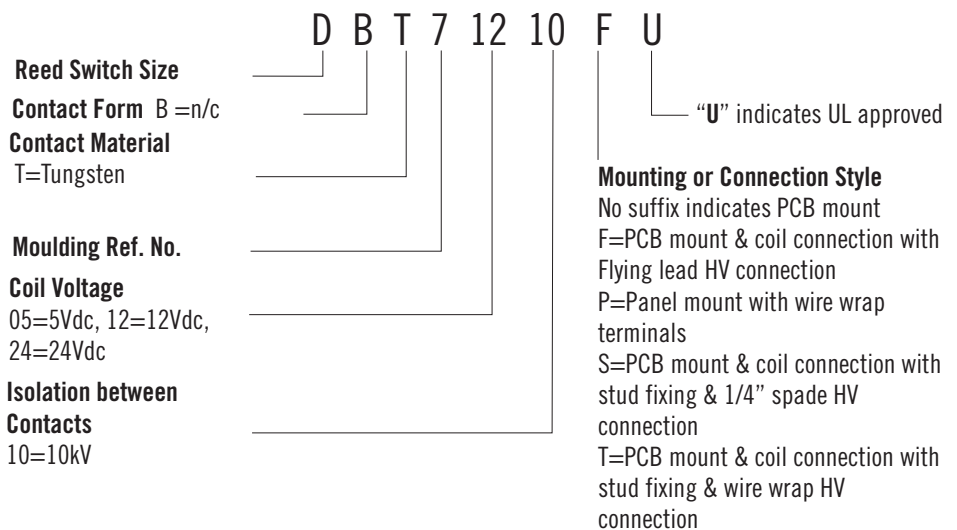
PCB or Panel Mount, via Nylon studs, versions are available.

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

Contact Specification	Unit	Condition	10kV SPNC		
Contact Form			N/C (normally closed)		
Contact Material			Tungsten		
Isolation across contacts	kV	DC or AC peak	10		
Switching Power Max.	W		50		
Switching Voltage Max.	V	DC or AC peak	7000		
Switching Current Max.	A	DC or AC peak	2		
Carry Current Max	A	DC or AC peak	3		
Capacitance across contacts	pF	coil to screen grounded	<0.2		
Lifetime operations		dry switching	10 <sup>9</sup>		
		50W switching	10 <sup>6</sup>		
Contact Resistance	mΩ	max (typical)	250(100)		
Insulation Resistance	Ω	min (typical)	(10 <sup>15</sup> )		
Coil Specification			5V	12V	24V
Must Operate Voltage	V	DC	3.7	9	20
Must Release Voltage	V	DC	0.5	1.25	4
Operate Time	ms	diode fitted	2.0	2.0	2.0
Release Time	ms	diode fitted	3.0	3.0	3.0
Resistance	Ω		38	240	925
Relay Specification					
Isolation contact/coil	kV		17		
Insulation resistance contact to all terminals	Ω	min (typical)	10 <sup>10</sup> (10 <sup>15</sup> )		
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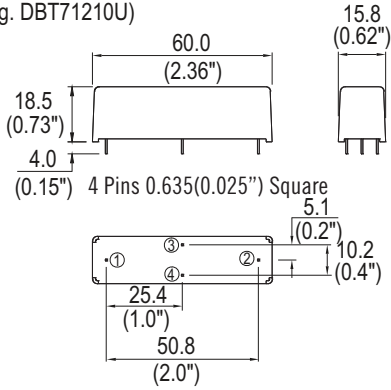
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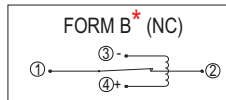
## MECHANICAL

### STANDARD

(e.g. DBT71210U)



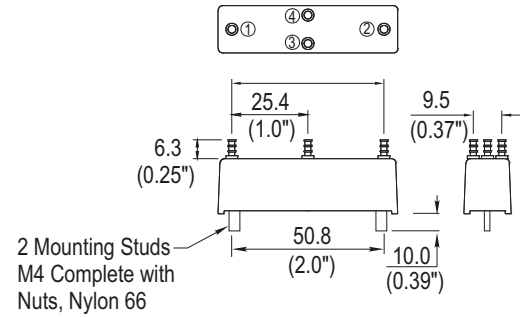
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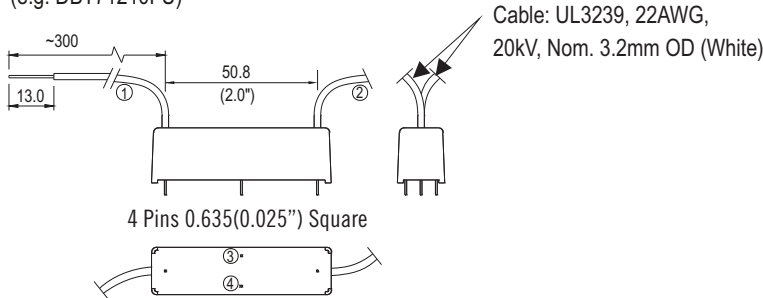
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(e.g. DBT71210PU)



### FLYING LEAD

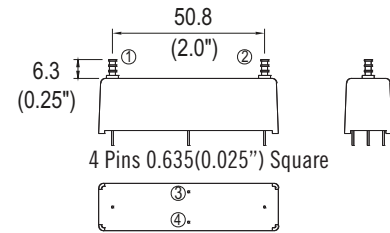
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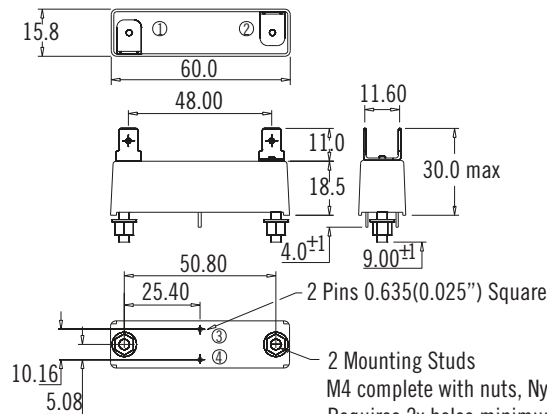


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