



# **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			Rhod	lium Tur	nacton	Rhodiur	n Tuna	etan	Tun	acton	
Isolation across contacts kV DC or AC peak			Rhodium Tungsten 10 10		Rhodium Tungsten			Tungsten 15			
Switching Power Max.	S N V	DG UI AG PEAK	50	50		50	50		50		
•		DC ACI			20					00	
Switching Voltage Max.	٧	DC or AC peak	1000		JU	1000	7000		100	00	
Switching Current Max.		DC or AC peak	3	2		3	2		2		
Carry Current Max	Α_	DC or AC peak	4	3		4	3		2	_	
Capacitance across	pF	coil to screen	<0.2	<0	.2	<0.2	< 0.2		<0.	2	
contacts		grounded									
Lifetime operations		dry switching	10°	10°	1	10°	10°		10°		
		50W switching	10 <sup>6</sup>	10 <sup>6</sup>	i	10 <sup>6</sup>	$10^6$		10 <sup>6</sup>		
Contact Resistance	mΩ	max (typical)	50 (1	.5) 250	0(100)	50 (15)	250(10	0)	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		191	5V	12V	24V	5V	12V	24V	5V	12V	24V
Must Operate Voltage	٧	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
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	arous rittou	28	150	780	38	240	925	16	95	350
Note. The operate / release volta		coil resistance will cha			,				1 -0		
Relay Specification	8								,		<u>′</u>
Isolation contact/coil	kV	DC or AC peak	17				17		17		
Insulation resistance contact											
to all terminals $\Omega$ min (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											

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

## **Part Numbering System**

		D	Α	Τ	7	12	10
Reed Switch Size		Ū	Ì				Ī
Contact Form A=n/o, B	=n/c						
Contact Material R=Rhodium, T=Tungsten Moulding Ref. No.							
Coil Voltage 05=5Vdc, 12=12Vdc, 24=24Vdc							
Isolation between Contacts 10–10kV 15–15kV							

# IS09001 CERTIFIED

cynergy3-d-pm-v2

# **Mounting or Connection Style**

No suffix indicates PCB mount F=PCB mount & coil connection with Flying lead HV connection P=Panel mount with wire wrap terminals S=PCB mount & coil connection with stud fixing & 1/4" spade HV connection (not available on 15kV models) T=PCB mount & coil connection with stud fixing & wire wrap HV

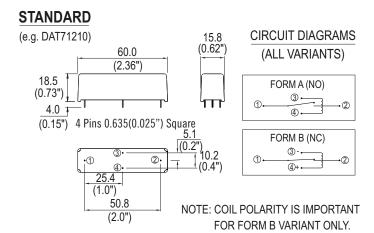
connection





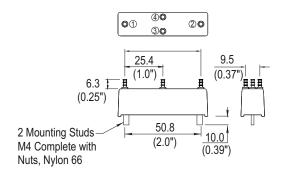


## **MECHANICAL**

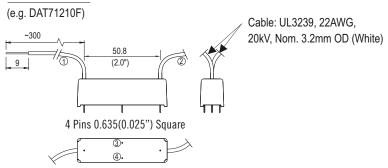


#### PANEL MOUNT

(e.g. DAT71210P)



## **FLYING LEAD**

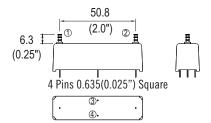


HAVE NO ELECTRICAL CONNECTION.

NOTE: PINS WHICH ARE NOT NUMBERED

# **TURRET (Wire Wrap)**

(e.g. DAT71210T)

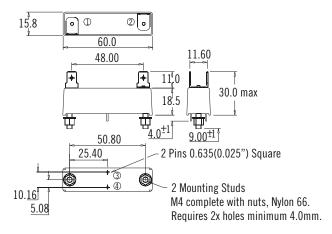


NOTE: PINS WHICH ARE NOT NUMBERED HAVE NO ELECTRICAL CONNECTION.

### **SPADE TYPE**

(e.g. DAT71210S)

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



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