

DB(UL) Series

UL Approved* Normally Closed, High Voltage Relays - 10kV, 7.5kV & 5kV



- Choice of 10kV, 7.5kV or 5kV 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.

A choice of 5kV, 7.5kV and 10kV isolation voltages is available

The Rhodium contact relays have low contact resistance, while 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		7.5kV		5kV	
Contact Form		Rhodium Tungsten		N/C (normally closed)		Rhodium Tungsten	
Contact Material		Rhodium Tungsten		Rhodium Tungsten		Rhodium Tungsten	
Isolation across contacts kV	DC or AC peak	10		7.5		5	
Switching Power Max. W		50		50		50	
Switching Voltage Max. V	DC or AC peak	1000		1000		1000	
Switching Current Max. A	DC or AC peak	3		3		3	
Carry Current Max. A	DC or AC peak	4		4		4	
Capacitance across contacts pF	coil to screen grounded	<0.2		<0.2		<0.2	
Lifetime operations	dry switching	10 ⁹		10 ⁹		10 ⁹	
	50W switching	10 ⁶		10 ⁶		10 ⁶	
Contact Resistance mΩ	max (typical)	50 (15)		50 (15)		50 (15)	
Insulation Resistance Ωmin	(typical)	10 ¹⁰		10 ¹⁰		10 ¹⁰	

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

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		
Isolation contact/coil kV		17
Insulation resistance contact to all terminals Ωmin (typical)		10 ¹⁰ (10 ¹³)
Environmental		
Operating Temp range °C		-20 to +70

*Consult factory for UL ratings

These products have been UL approved for use as per pollution degree 2 classification.

If you require further information as to how this may affect product usage, please contact sales@cynergy3.com.

Part Numbering System

	D	B	T	7	12	10	F	U
Reed Switch Size								
Contact Form B = n/c								
Contact Material T = Tungsten R = Rhodium								
Moulding Ref. No.								
Coil Voltage 05=5Vdc, 12=12Vdc, 24=24Vdc								
Isolation between Contacts 10=10kV 75=7.5kV 05=5kV								
								"U" indicates UL approved
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								
T=PCB mount & coil connection with stud fixing & wire wrap HV connection								

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ISO9001 CERTIFIED

DB(UL) 2019

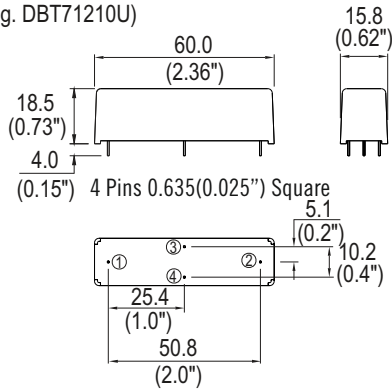


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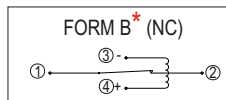
MECHANICAL

STANDARD

(e.g. DBT71210U)



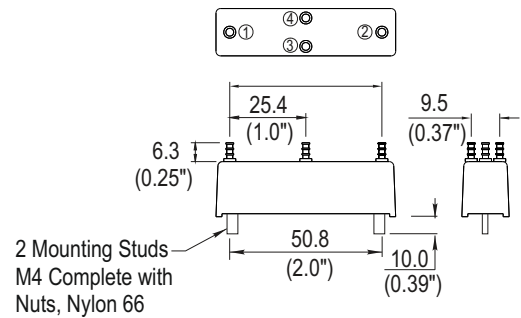
CIRCUIT DIAGRAMS (ALL VARIANTS)



NOTE: COIL POLARITY IS IMPORTANT

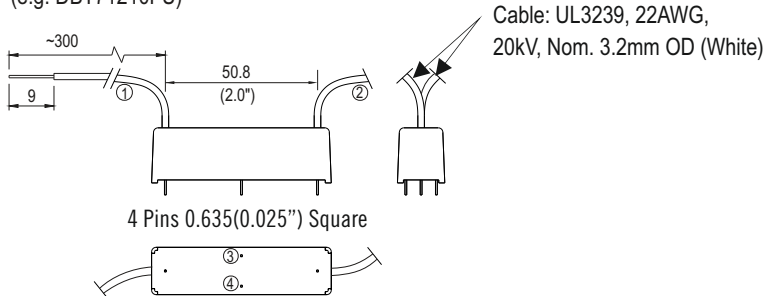
PANEL MOUNT

(e.g. DBT71210PU)



FLYING LEAD

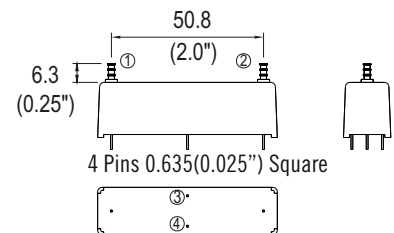
(e.g. DBT71210FU)



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

TURRET (Wire Wrap)

(e.g. DBT71210TU)

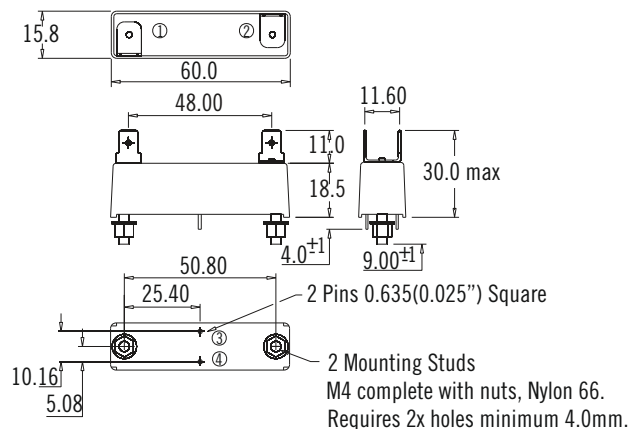


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SPADE TYPE

(e.g. DBT71210SU)

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



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