

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 7000V DC/AC 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.

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ISO9001 CERTIFIED

cynergy3-db-ul-v3

| Contact Specification | Unit Condition | 10kV | | 7.5kV | | 5kV | |
|-----------------------------|----------------------------|-----------------------|---------------------|------------------|---------------------|------------------|---------------------|
| Contact Form | | N/C (normally closed) | | | | | |
| Contact Material | | Rhodium | Tungsten | Rhodium | Tungsten | Rhodium | Tungsten |
| Isolation across contacts | kV DC or AC peak | 10 | 10 | 7.5 | 7.5 | 5 | 5 |
| Switching Power Max. | W | 50 | 50 | 50 | 50 | 50 | 50 |
| Switching Voltage Max. | V DC or AC peak | 1000 | 7000 | 1000 | 5000 | 1000 | 3500 |
| Switching Current Max. | A DC or AC peak | 3 | 2 | 3 | 2 | 3 | 2 |
| Carry Current Max | A DC or AC peak | 4 | 3 | 4 | 3 | 4 | 3 |
| Capacitance across contacts | pF coil to screen grounded | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Lifetime operations | dry switching | 10 ⁹ | 10 ⁹ | 10 ⁹ | 10 ⁹ | 10 ⁹ | 10 ⁹ |
| | 50W switching | 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ |
| Contact Resistance | mΩ max (typical) | 50 (15) | 250(100) | 50 (15) | 250(100) | 50 (15) | 250(100) |
| Insulation Resistance | Ωmin (typical) | 10 ¹⁰ | (10 ¹³) | 10 ¹⁰ | (10 ¹³) | 10 ¹⁰ | (10 ¹³) |

| 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)

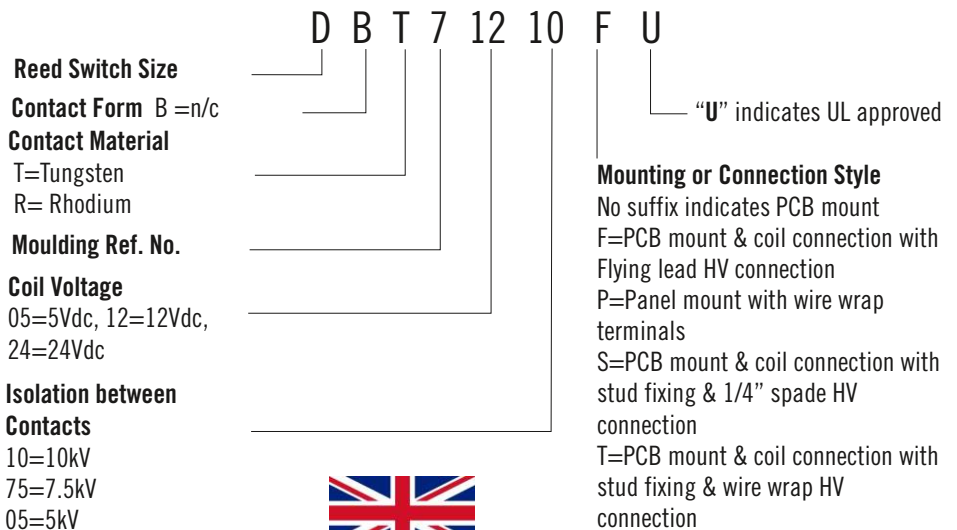
| Relay Specification | | |
|--|------------------|--------------------------------------|
| Isolation contact/coil | kV DC or AC peak | 17 |
| Insulation resistance contact to all terminals | Ωmin (typical) | 10 ¹⁰ (10 ¹³) |
| Environmental | | |
| Operating Temp range | °C | -20 to +70 |

*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



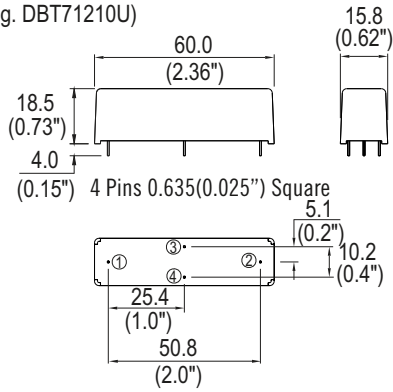
Made in the UK

www.cynergy3.com

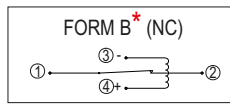
MECHANICAL

STANDARD

(e.g. DBT71210U)



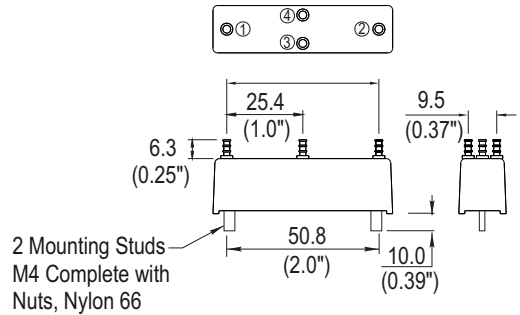
CIRCUIT DIAGRAMS (ALL VARIANTS)



NOTE: COIL POLARITY IS IMPORTANT

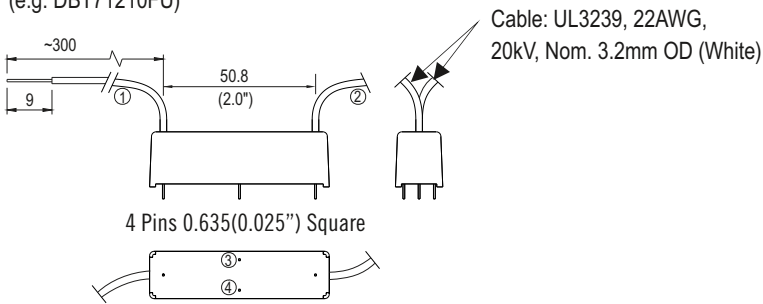
PANEL MOUNT

(e.g. DBT71210PU)



FLYING LEAD

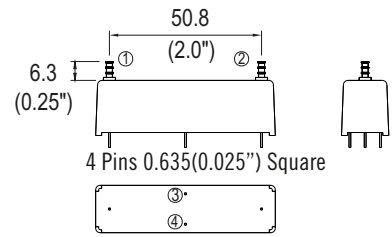
(e.g. DBT71210FU)



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

TURRET (Wire Wrap)

(e.g. DBT71210TU)



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

SPADE TYPE

(e.g. DBT71210SU)

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

