



# 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.

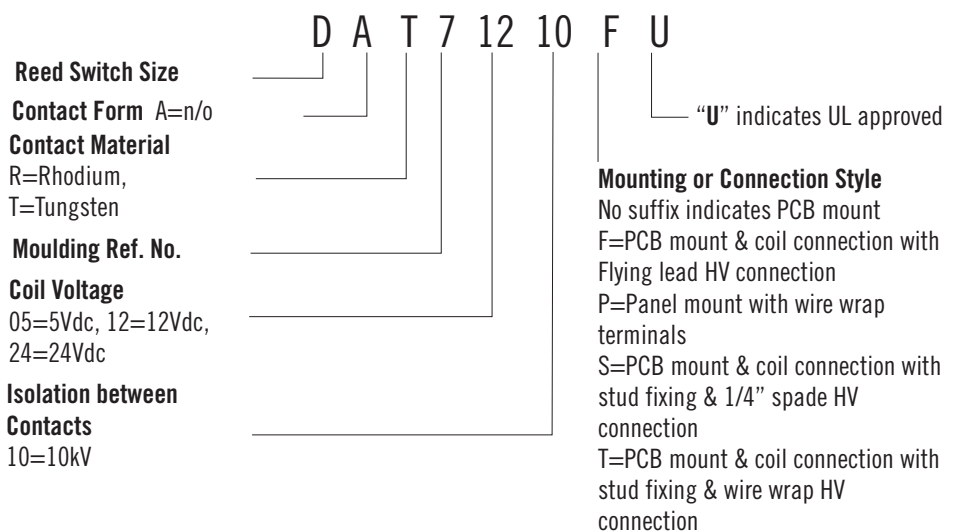
PCB or Panel Mount, via Nylon studs, versions are available.

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



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ISO9001 CERTIFIED

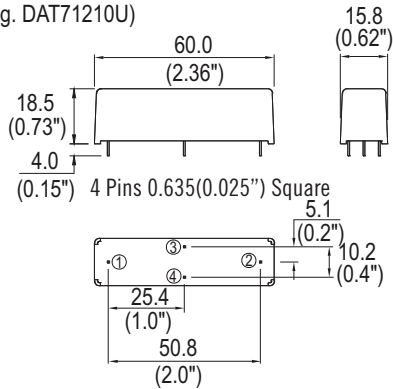
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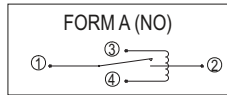
## MECHANICAL

### STANDARD

(e.g. DAT71210U)



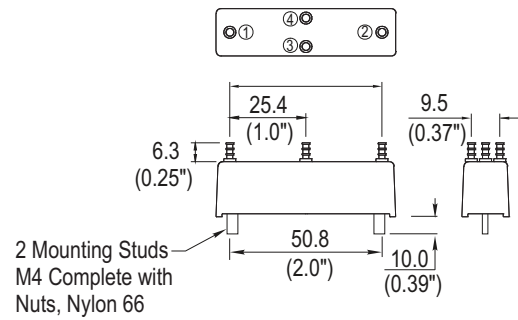
### CIRCUIT DIAGRAMS (ALL VARIANTS)



NOTE: COIL POLARITY IS NOT SIGNIFICANT

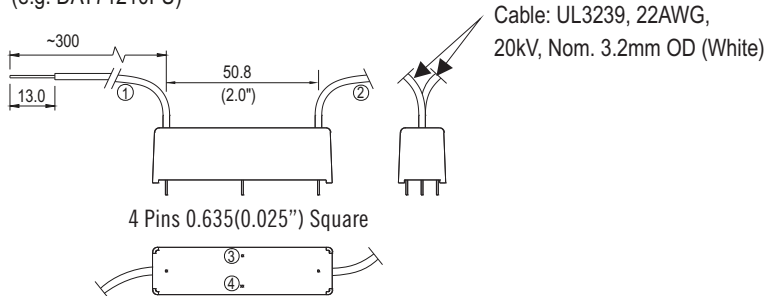
### PANEL MOUNT

(e.g. DAT71210PU)



### FLYING LEAD

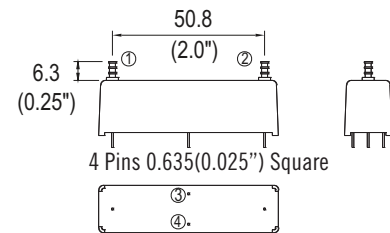
(e.g. DAT71210FU)



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

### TURRET (Wire Wrap)

(e.g. DAT71210TU)



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

### SPADE TYPE

(e.g. DAT71210SU)

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

