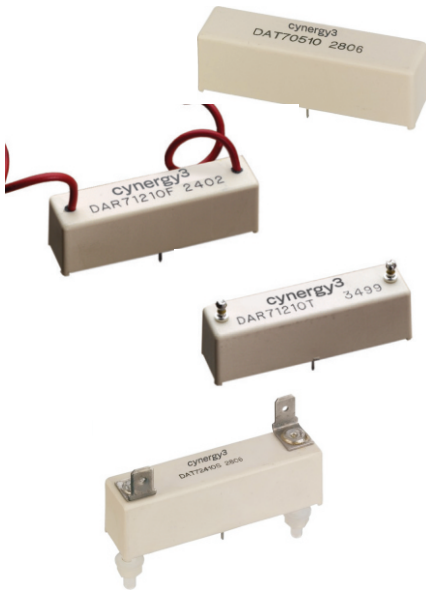




## D Series

### High Voltage relays 10kV & 15kV



- **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**

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.

| Contact Specification                          | Unit Condition             | 10kV SPNO                            |                 |     | 10kV SPNC                            |                 |     | 15kV SPNO                            |      |     |
|------------------------------------------------|----------------------------|--------------------------------------|-----------------|-----|--------------------------------------|-----------------|-----|--------------------------------------|------|-----|
| Contact Material                               |                            | Rhodium                              | Tungsten        |     | Rhodium                              | Tungsten        |     | Tungsten                             |      |     |
| Isolation across contacts                      | kV DC or AC peak           | 10                                   | 10              |     | 10                                   | 10              |     | 15                                   |      |     |
| Switching Power Max.                           | W                          | 50                                   | 50              |     | 50                                   | 50              |     | 50                                   |      |     |
| Switching Voltage Max.                         | V DC or AC peak            | 1000                                 | 7000            |     | 1000                                 | 7000            |     | 10000                                |      |     |
| Switching Current Max.                         | A DC or AC peak            | 3                                    | 2               |     | 3                                    | 2               |     | 2                                    |      |     |
| Carry Current Max                              | A DC or AC peak            | 4                                    | 3               |     | 4                                    | 3               |     | 2                                    |      |     |
| Capacitance across contacts                    | pF coil to screen grounded | <0.2                                 | <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> |     | 10 <sup>9</sup>                      |      |     |
|                                                | 50W switching              | 10 <sup>6</sup>                      | 10 <sup>6</sup> |     | 10 <sup>6</sup>                      | 10 <sup>6</sup> |     | 10 <sup>6</sup>                      |      |     |
| Contact Resistance                             | m max (typical)            | 50 (15)                              | 250(100)        |     | 50 (15)                              | 250(100)        |     | 250 (100)                            |      |     |
| Insulation Resistance                          | 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> ) |      |     |
| Coil Specification                             |                            | 5V                                   | 12V             | 24V | 5V                                   | 12V             | 24V | 5V                                   | 12V  | 24V |
| Must Operate Voltage                           | V DC                       | 3.7                                  | 9               | 20  | 3.7                                  | 9               | 20  | 3.7                                  | 9    | 20  |
| Must Release Voltage                           | V 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                                     |                            | 28                                   | 150             | 780 | 38                                   | 240             | 925 | 16                                   | 95   | 350 |
| Relay Specification                            |                            |                                      |                 |     |                                      |                 |     |                                      |      |     |
| Isolation contact/coil                         | kV                         | 17                                   |                 |     | 17                                   |                 |     | 17                                   |      |     |
| Insulation resistance contact to all terminals | 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 Operating Temp range             | °C                         | -20 to +70                           |                 |     | -20 to +70                           |                 |     | -20 to +70                           |      |     |

#### Part Numbering System

|                                                                                                                                                                                                                                                                                                                                                                        | D | A | T | 7 | 12 | 10 | F |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|----|----|---|
| <b>Reed Switch Size</b>                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |    |    |   |
| <b>Contact Form</b> A=n/o, B=n/c                                                                                                                                                                                                                                                                                                                                       |   |   |   |   |    |    |   |
| <b>Contact Material</b><br>R=Rhodium,<br>T=Tungsten                                                                                                                                                                                                                                                                                                                    |   |   |   |   |    |    |   |
| <b>Moulding Ref. No.</b>                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |    |    |   |
| <b>Coil Voltage</b><br>05=5Vdc, 12=12Vdc,<br>24=24Vdc                                                                                                                                                                                                                                                                                                                  |   |   |   |   |    |    |   |
| <b>Isolation between Contacts</b><br>3=3kV, 5=5kV,<br>10=10kV, 15=15kV                                                                                                                                                                                                                                                                                                 |   |   |   |   |    |    |   |
| <b>Mounting or Connection Style</b><br>No suffix indicates PCB mount<br>F=PCB mount & coil connection with Flying lead HV connection<br>P=Panel mount with wire wrap terminals<br>S=PCB mount & coil connection with stud fixing & 1/4" spade HV connection (not available on 15kV models)<br>T=PCB mount & coil connection with stud fixing & wire wrap HV connection |   |   |   |   |    |    |   |

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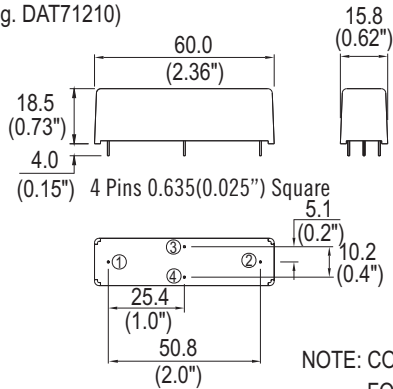
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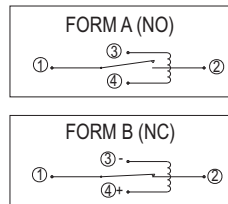
## MECHANICAL

### STANDARD

(e.g. DAT71210)



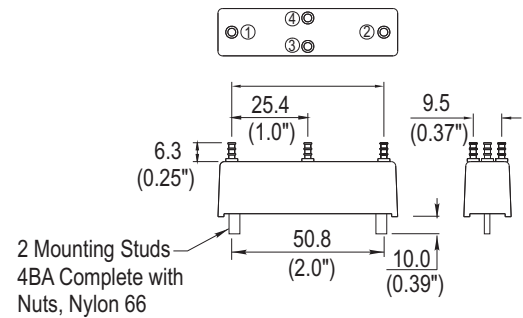
### CIRCUIT DIAGRAMS (ALL VARIANTS)



NOTE: COIL POLARITY IS IMPORTANT FOR FORM B VARIANT ONLY.

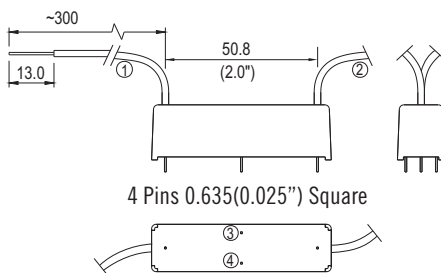
### PANEL MOUNT

(e.g. DAT71210P)



### FLYING LEAD

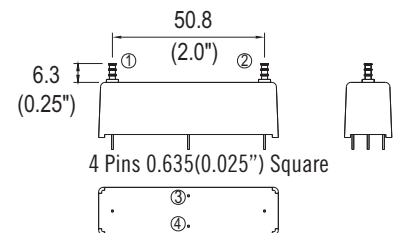
(e.g. DAT71210F)



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

### 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, 4BA fixing bolts and Epoxy potting.

