



RS stock numbers : 1245066, 1245067, 1245068, 1245069, 1245070, 1245071, 1245072, 1245073, 1245074, 1245075, 1245076, 1245077, 1245078, 1245079, 1245080, 1245081, 1245082, 1245083, 1245084, 1245085, 1245086, 1245087, 1245088, 1245089, 1245090, 1245091, 1245092, 1245093, 1245094, 1245095



## D-HR Series

### High Insulation Resistance, High Voltage Relays -10kV & 15kV

- 10kV or 15kV Isolation
- Low Contact Resistance
- 1x10<sup>14</sup> Ohms Minimum Insulation Resistance
- PCB or Flying Leads Connections
- Ideal for sensitive test and measurement circuits which require low leakage current losses



Very high isolation voltages - up to 15kV - are achieved through the use of high vacuum reed switches with either rhodium or tungsten contacts which 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.

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 50W switching	10 <sup>9</sup> 10 <sup>6</sup>	10 <sup>9</sup> 10 <sup>6</sup>	10 <sup>9</sup> 10 <sup>6</sup>	10 <sup>9</sup> 10 <sup>6</sup>	10 <sup>9</sup> 10 <sup>6</sup>
Contact Resistance	mΩ	max (typical)	50 (15)	250(100)	50 (15)	250(100)	250 (100)
Insulation Resistance	Ωmin		1x10 <sup>14</sup>		1x10 <sup>14</sup>		1x10 <sup>14</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	Ω	28	150	780	38	240	925	16	95	350

Relay Specification				
Isolation contact/coil	kV		17	17
Insulation resistance contact to all terminals	Ωmin (typical)		1x10 <sup>14</sup>	1x10 <sup>14</sup>
Environmental				
Operating Temp range	°C		-20 to +70	-20 to +70

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



Made in the UK

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RS Stock No	Standard Part	Contact Form *	Contact Material	Coil Voltage (Vdc)	Isolation between Contacts (kV)	Mount type
1245066	DAR70510-HR	N/O	Rhodium	5	10	PCB
1245067	DAR70510F-HR	N/O	Rhodium	5	10	PCB with flying lead coil connection
1245068	DAR71210-HR	N/O	Rhodium	12	10	PCB
1245069	DAR71210F-HR	N/O	Rhodium	12	10	PCB with flying lead coil connection
1245070	DAR72410-HR	N/O	Rhodium	24	10	PCB
1245071	DAR72410F-HR	N/O	Rhodium	24	10	PCB with flying lead coil connection
1245072	DAT70510-HR	N/O	Tungsten	5	10	PCB
1245073	DAT70510F-HR	N/O	Tungsten	5	10	PCB with flying lead coil connection
1245074	DAT70515-HR	N/O	Tungsten	5	15	PCB
1245075	DAT70515F-HR	N/O	Tungsten	5	15	PCB with flying lead coil connection
1245076	DAT71210-HR	N/O	Tungsten	12	10	PCB
1245077	DAT71210F-HR	N/O	Tungsten	12	10	PCB with flying lead coil connection
1245078	DAT71215-HR	N/O	Tungsten	12	15	PCB
1245079	DAT71215F-HR	N/O	Tungsten	12	15	PCB with flying lead coil connection
1245080	DAT72410-HR	N/O	Tungsten	24	10	PCB
1245081	DAT72410F-HR	N/O	Tungsten	24	10	PCB with flying lead coil connection
1245082	DAT72415-HR	N/O	Tungsten	24	15	PCB
1245083	DAT72415F-HR	N/O	Tungsten	24	15	PCB with flying lead coil connection
1245084	DBR70510-HR	N/C	Rhodium	5	10	PCB
1245085	DBR70510F-HR	N/C	Rhodium	5	10	PCB with flying lead coil connection
1245086	DBR71210-HR	N/C	Rhodium	12	10	PCB
1245087	DBR71210F-HR	N/C	Rhodium	12	10	PCB with flying lead coil connection
1245088	DBR72410-HR	N/C	Rhodium	24	10	PCB
1245089	DBR72410F-HR	N/C	Rhodium	24	10	PCB with flying lead coil connection
1245090	DBT70510-HR	N/C	Tungsten	5	10	PCB
1245091	DBT70510F-HR	N/C	Tungsten	5	10	PCB with flying lead coil connection
1245092	DBT71210-HR	N/C	Tungsten	12	10	PCB
1245093	DBT71210F-HR	N/C	Tungsten	12	10	PCB with flying lead coil connection
1245094	DBT72410-HR	N/C	Tungsten	24	10	PCB
1245095	DBT72410F-HR	N/C	Tungsten	24	10	PCB with flying lead coil connection

\* Form B (n/c) is not available on 15kV models

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D-HR RS 2016

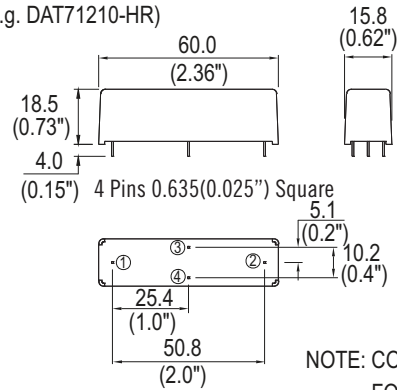
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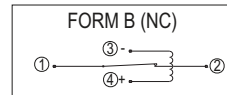
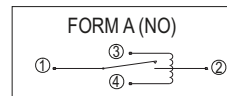
**MECHANICAL**

**STANDARD**

(e.g. DAT71210-HR)



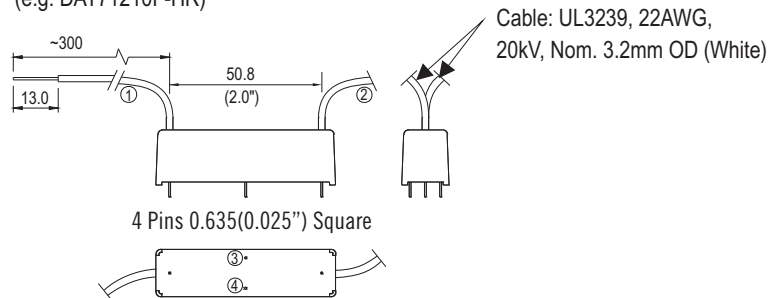
**CIRCUIT DIAGRAMS  
(ALL VARIANTS)**



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

**FLYING LEAD**

(e.g. DAT71210F-HR)



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

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

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