

## CMOS Drive SIL Reed Relays

Direct drive from 74HC or HCT

**New  
3 Volt  
Version**

### FEATURES

- **SoftCenter™** construction (see opposite)
- Highest quality instrumentation grade switches
- Board space may be saved by eliminating the need for drivers
- Direct drive from 74HC logic
- Encapsulated in a plastic package with internal mu-metal magnetic screen
- Wide range of switch configurations - 1 Form A, 1 Form B, 2 Form A, 1 Form C
- Two pole relay requires the same board area as the single pole type
- Dry and mercury wetted switches are available with the same pin configuration and footprint
- Insulation resistance greater than  $10^{12}$  ohms for dry Form A devices
- 3, 5, 12 and 24 volt coils are standard, with or without internal diode
- 100% tested for dynamic contact resistance

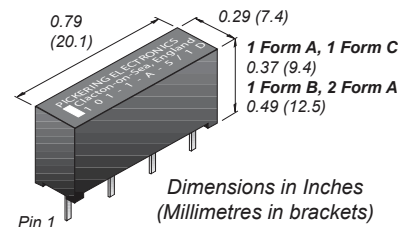
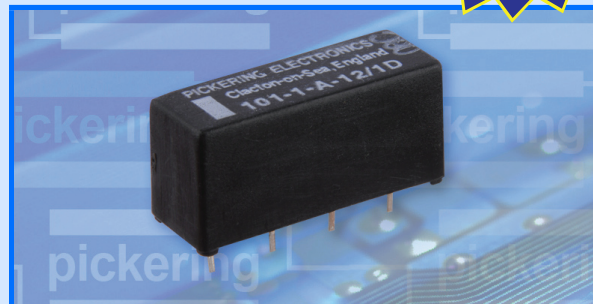
The Series 101 have very high coil resistances. 5 Volt dry versions may be driven directly from 74HC or 74HCT logic without the need for additional drivers.

74HC logic will drive up to 4mA at 5 Volts, therefore a coil resistance of 1600 ohms is desirable to avoid running the IC at its maximum rating; 1600 ohms is the coil resistance of the single pole dry Series 101. They may be stacked on 0.3 inches pitch (7.6mm) and as they have an internal mu-metal magnetic screen, there is no risk of magnetic interaction problems.

Both dry and mercury wetted switches are available in a range of configurations and coil voltages. The switches in the 2 Form A version are vertically stacked so the relay requires the same board area as the 1 Form A type.

A special 1 Form A, 5 Volt version is available with an even higher coil resistance of 3000 ohms. This is particularly suited to applications such as battery powered portable equipment as it requires a coil current of only 1.7 mA. This part, the 101-1-A-5/17 or 17D has the advantage of a lower level of thermal EMF of 3 microvolts or less.

Other special parts are also available that may be operated from 3 Volt logic.



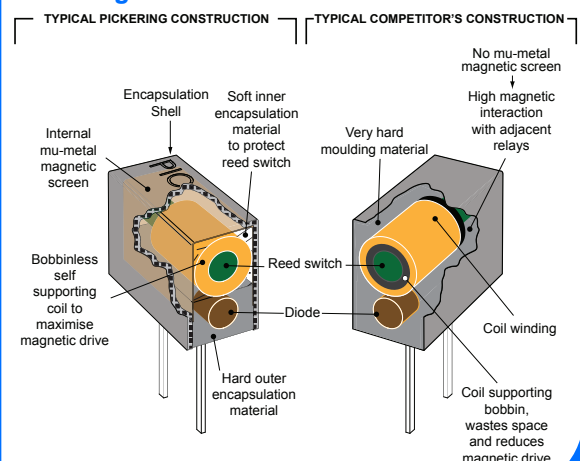
### Switch Ratings - Dry switches

- 1 Form A (energize to make), 10 watts at 200V
- 1 Form A (energize to make), 10 watts at 500V
- 1 Form B (energize to break), 10 watts at 200V
- 1 Form C (change-over), 3 watts at 200V
- 2 Form A (energize to make), 10 watts at 200V

### Switch Ratings - Mercury Wetted Switches

- 1 Form A (energize to make), 50 watts at 500V
- 1 Form A (Position insensitive), 30 watts at 350V
- 2 Form A (energize to make), 50 watts at 500V

### Pickering SoftCenter™ Construction



[www.pickeringrelay.com](http://www.pickeringrelay.com)

## Series 101 switch ratings

The contact ratings for each switch type are shown below:

| Sw. No | Switch form | Power rating | Max. switch current | Max. carry current | Max. switching volts | Special features |
|--------|-------------|--------------|---------------------|--------------------|----------------------|------------------|
| 1      | A or B      | 10 Watts     | 0.5 Amp.            | 1.2 Amp.           | 200                  | General purpose  |
| 2      | A           | 10 Watts     | 0.5 Amp.            | 1.2 Amp.           | 200                  | Low level        |
| 3      | C           | 3 Watts      | 0.25 Amp.           | 1.2 Amp.           | 200                  | Change over      |
| 4      | A           | 10 Watts     | 0.5 Amp.            | 1.2 Amp.           | 300                  | 500V stand-off   |

Switch no.2 is particularly good for switching low currents and/or voltages. It is the ideal switch for A.T.E. systems where cold switching techniques are often used. Where higher power levels are involved, switch no.1 is a more suitable choice.

## Coil data and type numbers

| Device type   | Type Number   | Coil (V) | Coil resistance | Max. contact resistance (initial) |
|---|---------------|----------|-----------------|-----------------------------------|
| 1 Form A (energize to make)<br>General Purpose<br>Switch No. 1                              | 101-1-A-5/1D  | 5        | 1600            | 0.15 Ohms                         |
|   | 101-1-A-12/1D | 12       | 6000            | 0.15 Ohms                         |
|   | 101-1-A-24/1D | 24       | 6000            | 0.15 Ohms                         |
| 1 Form A (energize to make)<br>Low Level Switch No. 2                                       | 101-1-A-3/2D  | 3        | 1600            | 0.12 Ohms                         |
|   | 101-1-A-5/2D  | 5        | 1600            | 0.12 Ohms                         |
|   | 101-1-A-12/2D | 12       | 6000            | 0.12 Ohms                         |
| 1 Form A (energize to make)<br>High Voltage Switch No. 4                                    | 101-1-A-5/4D  | 5        | 1600            | 0.15 Ohms                         |
|   | 101-1-A-12/4D | 12       | 6000            | 0.15 Ohms                         |
|   | 101-1-A-24/4D | 24       | 6000            | 0.15 Ohms                         |
| 1 Form C (change-over)<br>Switch No. 3  | 101-1-C-5/3D  | 5        | 1600            | 0.20 Ohms                         |
|   | 101-1-C-12/3D | 12       | 6000            | 0.20 Ohms                         |
|   | 101-1-C-24/3D | 24       | 6000            | 0.20 Ohms                         |
| 1 Form B (energize to break)<br>General Purpose<br>Switch No. 1                             | 101-1-B-5/1D  | 5        | 3000            | 0.15 Ohms                         |
|   | 101-1-B-12/1D | 12       | 6000            | 0.15 Ohms                         |
|   | 101-1-B-24/1D | 24       | 6000            | 0.15 Ohms                         |
| 2 Form A (energize to make)<br>General Purpose Switch<br>No. 1                              | 101-2-A-5/1D  | 5        | 1000            | 0.17 Ohms                         |
|   | 101-2-A-12/1D | 12       | 3000            | 0.17 Ohms                         |
|   | 101-2-A-24/1D | 24       | 6000            | 0.17 Ohms                         |
| 2 Form A (energize to make)<br>Low Level Switch No. 2                                       | 101-2-A-5/2D  | 5        | 1000            | 0.15 Ohms                         |
|   | 101-2-A-12/2D | 12       | 3000            | 0.15 Ohms                         |
|   | 101-2-A-24/2D | 24       | 6000            | 0.15 Ohms                         |
| 1 Form A (energize to make)<br>Special Extra<br>Sensitive Version<br>Low Level Switch No. 2 | 101-1-A-5/17D | 5        | 3000            | 0.12 Ohms                         |

When an internal diode is required, the suffix D is added to the part number as shown in the table. If a diode is not required, the D suffix should be omitted.

## Mercury Reed - Series 101 switch ratings

The contact ratings for each switch type are shown below:

| Sw. No | Switch form | Power rating | Max. switch current | Max. carry current | Max. switching volts | Special Features     |
|--------|-------------|--------------|---------------------|--------------------|----------------------|----------------------|
| 6      | A           | 50 Watts     | 2 Amp.              | 3 Amp.             | 500                  | Standard Mercury     |
| 8      | A           | 30 Watts     | 0.75 Amp.           | 2 Amp.             | 350                  | Position Insensitive |

## Mercury Relay - Coil data and type numbers

| Device type   | Type Number   | Coil voltage | Coil resistance | Max. contact resistance (initial) |
|---|---------------|--------------|-----------------|-----------------------------------|
| 1 Form A (energize to make)<br>Switch No. 6                         | 101-1-A-5/6D  | 5            | 375             | 0.075 Ohms                        |
|   | 101-1-A-12/6D | 12           | 1000            | 0.075 Ohms                        |
|   | 101-1-A-24/6D | 24           | 3000            | 0.075 Ohms                        |
| 1 Form A (energize to make)<br>Position Insensitive Switch<br>No. 8 | 101-1-A-5/8D  | 5            | 375             | 0.100 Ohms                        |
|   | 101-1-A-12/8D | 12           | 1000            | 0.100 Ohms                        |
|   | 101-1-A-24/8D | 24           | 3000            | 0.100 Ohms                        |
| 2 Form A (energize to make)<br>Switch No. 6                         | 101-2-A-5/6D  | 5            | 150             | 0.100 Ohms                        |
|   | 101-2-A-12/6D | 12           | 650             | 0.100 Ohms                        |
|   | 101-2-A-24/6D | 24           | 2000            | 0.100 Ohms                        |

When an internal diode is required, the suffix D is added to the part number as shown in the table. If a diode is not required, the D suffix should be omitted.

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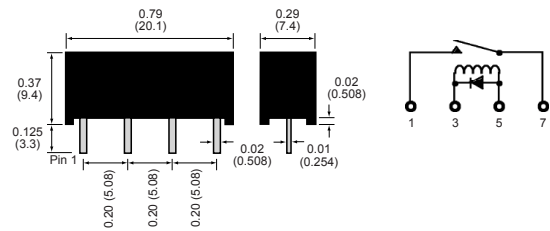


ISO9001  
Manufacture of Reed Relays  
FM 29036

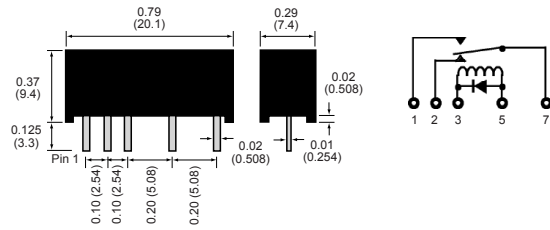
## Pin configuration and dimensional data

Dimensions in Inches (Millimetres in brackets).

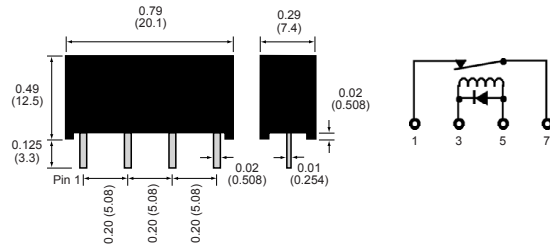
### 1 Form A (Energize to make)



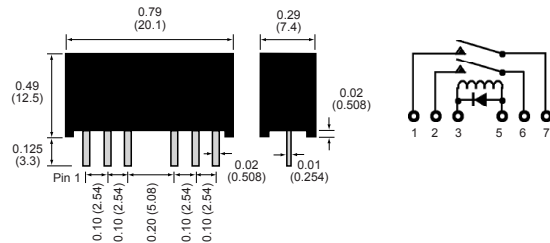
### 1 Form C (Changeover)



### 1 Form B (Energize to break)



### 2 Form A (Energize to make)



## Mercury Relays

With the exception of the position insensitive type, mercury relays should be mounted vertically with pin 1 uppermost.

## Order Code

The following example indicates data required to process your order promptly:

**101 - 1 - A - 5 / 2 D**

Series \_\_\_\_\_  
Number of reeds \_\_\_\_\_  
Switch form \_\_\_\_\_  
Coil voltage \_\_\_\_\_  
Switch number (See table adjacent) \_\_\_\_\_  
Diode if fitted (Omit if not required) \_\_\_\_\_

## Help !!!

If you need any technical advice or help in any way, please telephone our Technical Sales Department. There is a limit to how much data we can put on a sales leaflet and we will always be pleased to discuss Pickering reed relays with you.

**Please ask us for a FREE evaluation sample**