

**PICKERING SERIES 101**

**pickering**

# CMOS Drive SIL reed relays

## Direct drive from 74HC or HCT

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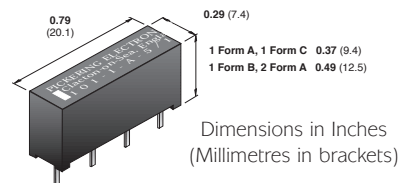
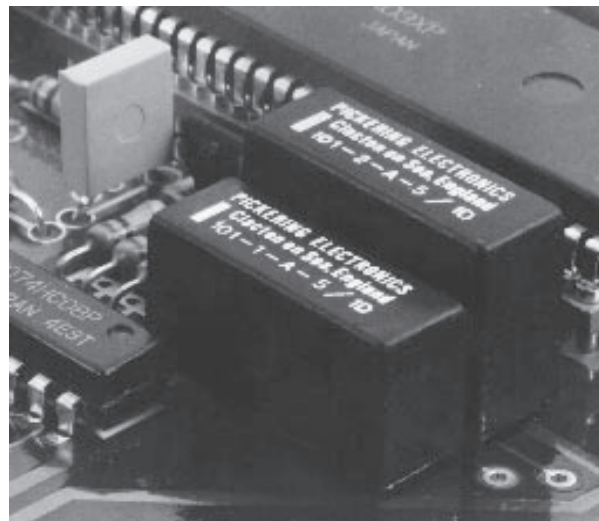
The Series 101 have very high coil resistances. 5 Volt dry versions may be driven directly from 74HC or 74HCT logic without the need for additional drivers.

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,



- 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<sup>12</sup> ohms for dry Form A devices.
- 5, 12 and 24 volt coils are standard, with or without internal diode.
- 100% tested for dynamic contact resistance.

### 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
- **1 Form C** (change-over), 30 watts at 350v
- **2 Form A** (energize to make), 50 watts at 500v

## Dry 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
1	A or B	10 Watts	0.50 Amp.	1.2 Amp.	200	General purpose Low level Change over 500v stand-off
2	A	10 Watts	0.50 Amp.	1.2 Amp.	200	
3	C	3 Watts	0.25 Amp.	1.2 Amp.	200	
4	A	10 Watts	0.50 Amp.	1.2 Amp.	300	

Switch no.2 is a sputtered ruthenium device and 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.

## Dry Relays - Data and type numbers.

Device type	Type number	Coil volts	Coil resistance (ohms)	Max. contact resistance (initial)
1 Form A (energize to make) General Purpose 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) Low Level Switch No. 2	101-1-A-5/2D	5	1600	0.12 Ohms
	101-1-A-12/2D	12	6000	0.12 Ohms
	101-1-A-24/2D	24	6000	0.12 Ohms
1 Form A (energize to make) 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) 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) General Purpose 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) General Purpose Switch 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) 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) Special Extra Sensitive Version 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	2.00 Amp.	3.0 Amp.	500	Standard Mercury Change-over Position insensitive
7	C	30 Watts	1.00 Amp.	2.0 Amp.	350	
8	A	30 Watts	0.75 Amp.	2.0 Amp.	350	

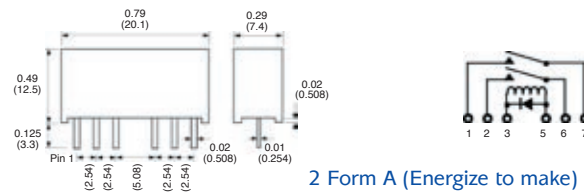
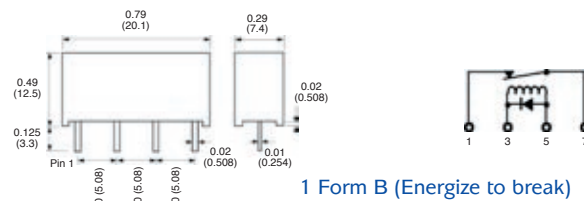
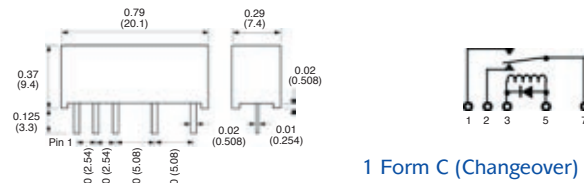
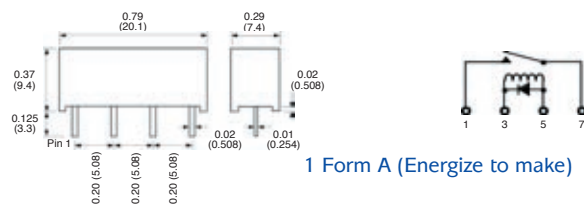
## Mercury Relays - Data and type numbers.

Device type	Type number	Coil volts	Coil resistance (ohms)	Max. contact resistance (initial)
1 Form A (energize to make) 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) Position Insensitive Sw. 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
1 Form C (change-over) Switch No. 7	101-1-C-5/7D	5	150	0.100 Ohms
	101-1-C-12/7D	12	500	0.100 Ohms
	101-1-C-24/7D	24	1600	0.100 Ohms
2 Form A (energize to make) 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.

## Pin configuration and dimensional data

Dimensions in Inches (Millimetres in brackets).

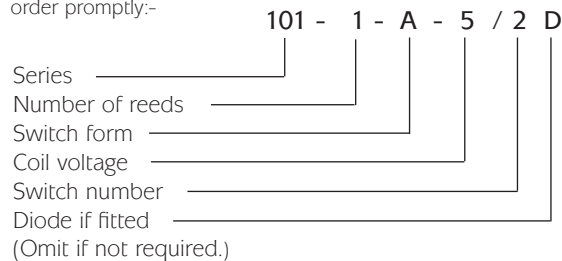


## Mercury Relays

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:-



## Please ask us for a sample

## 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.

**pickering**

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