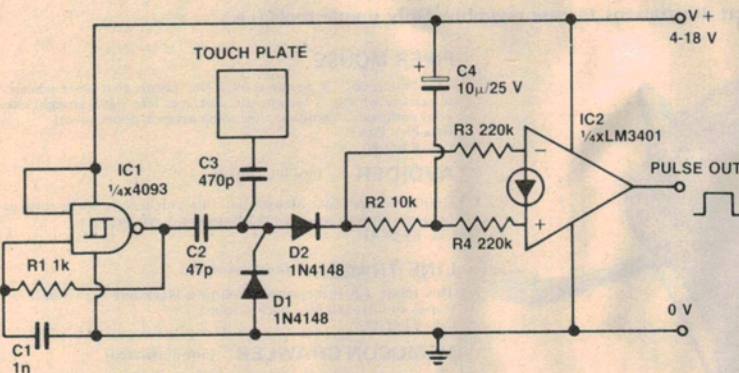


IDEA OF THE MONTH



Wide range touch switch ☆☆☆

Steven Sims, St Peters NSW.

Most capacitive touch switch circuits use a comparator, where the reference input must be trimmed, and retrimmed if the supply voltage is changed.

I wanted to avoid this as I wished to use the switches in a logic designer, with the supply variable over the CMOS range.

The resulting circuit needs no adjustment and operates happily over the range 4-18 V (the lower limit of the op amp to the upper limit of the Schmitt trigger).

The output of the Schmitt trigger astable IC1, R1 and C1, is fed to the capacitive divider C2 C3, rectified and then sent to

both inputs of the Norton op amp comparator. The capacitive divider principle is well known and previously published. However, the way it is employed in this circuit is my own idea.

R2 biases the non-inverting input just below the inverting input, thus the output is normally low. When the plate is touched, the resulting drop in voltage is sent to both inputs, but in the case of the non-inverting input it is delayed by R2 C4. Thus the inverting input momentarily goes below the non-inverting input, turning the op amp on for that time and

producing a short positive pulse at the output.

The op amp swings over virtually the entire supply range, resulting in a reasonably clean pulse with no switch bounce. This pulse may be used as a trigger for a monostable; or sent to a Schmitt trigger for squaring up; or sent to an op amp or JK flip-flop toggling circuit; or any other controlling function.

A LM3900 can be used instead of the LM3401. As both the op amp and the Schmitt trigger come in quad packages, the circuit is ideal for banks of four switches.

Dewatering fluid test device

This test setup was constructed by L. W. Brown of Burwood Victoria to compare assorted cans of electrical (dewatering) spray.

The device is a 25 mm square of single-sided epoxy, glass fibre, copper laminate with a single, deep knife scratch across the middle.

A multimeter capable of measuring above one megohm was used to detect the presence of moisture.

A can of instant freeze (canned cold) is sprayed across the scratch to clean the board and then condense moisture from the atmosphere. Once the ice on the board has melted it will provide a leakage path of around one megohm.

Finally the de-watering fluid under test is used to remove this moisture; the results are alarming!

'IDEA OF THE MONTH' CONTEST

PRIZE WORTH \$90!

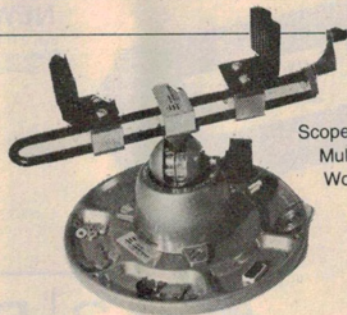
COUPON

Cut and send to: **Scope/ETI 'Idea of the Month' Contest, ETI Magazine, P.O. Box 227, Waterloo NSW 2017.**

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Scope Panavise Multi-Purpose Work Centre.

Scope Laboratories, which manufactures and distributes soldering irons and accessory tools, is sponsoring this contest with a prize given away every month for the best item submitted for publication in the 'Ideas for Experimenters' column — one of the most consistently popular features in ETI Magazine. Each month, we will be giving away a Scope Panavise Multi-Purpose Work Centre, Model 376/300/312, comprising a self-centering head (376), standard base (300) and tray base mount (312), all worth about \$90! Selections will be made at the sole discretion of the editorial staff of ETI Magazine. Apart from the prize, each winner will be paid \$10 for the item published. You must submit original ideas of circuits which have not previously been published. You may send as many entries as you wish.

RULES

This contest is open to all persons normally resident in Australia, with the exception of members of the staff of Scope Laboratories, The Federal Publishing Company Pty Limited, ESN, The Litho Centre and/or associated companies.

Closing date for each issue is the last day of the month. Entries received within seven days of that date will be accepted if postmarked prior to and including the date of the last day of the month.

The winning entry will be judged by the Editor of ETI Magazine, whose decision will be final. No correspondence can be entered into regarding the decision.

The winner will be advised by telegram the same day the result is declared. The name of the winner, together with the winning idea, will be published in the next possible issue of ETI Magazine.

Contestants must enter their names and addresses where indicated on each entry form. Photostats or clearly written copies will be accepted but if sending copies you must cut out and include with each entry the month and page number from the bottom of the page of the contest. In other words, you can send in multiple entries but you will need extra copies of the magazine so that you send an original page number with each entry.

This contest is invalid in states where local laws prohibit entries. Entrants must sign the declaration on the coupon that they have read the above rules and agree to abide by their conditions.