# 29

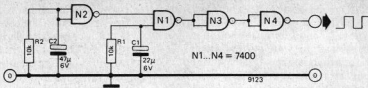**W. Hollevoet**

# automatic reset for TTL circuits



N1...N4 = 7400

9123

When the supply voltage is switched off, TTL counters and memories lose their information. To prevent them from assuming a random position when the supply voltage is switched on again, we can use the circuit described in this article for a complete automatic resetting or presetting to a certain position.

The auto reset circuit functions as follows:

When the supply voltage is switched on, the output of N1 will become logic '1', because capacitor C1 is not yet charged.

Since C2 will not be charged either, the output of N2 will also be logic '1'.
The time constants are chosen so that the charging time of C1 is shorter than that of C2. This means that at a certain moment C1 is sufficiently charged for both inputs of N1 to be logic '1', so that the output will be '0'.
A short time later, when C2 has charged sufficiently, the output of N2 will become logic '0', with the result that the output of N1 will immediately return to logic '1'. From then on the

circuit is stable.
The resistors R1 and R2 serve to discharge the electrolytic capacitors C1 and C2 when the supply voltage cuts out. The moment of switching, and also the pulse duration, can be modified by experimenting with the values of the two resistors and capacitors; the charging time of C1 must, however, always be shorter than that of C2! The values given here will be suitable in most cases.