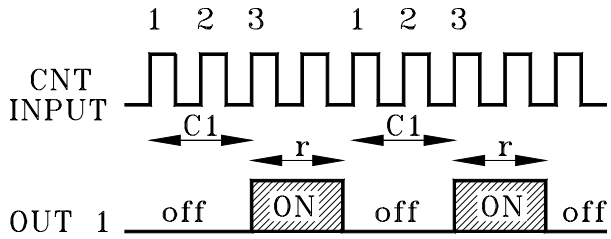
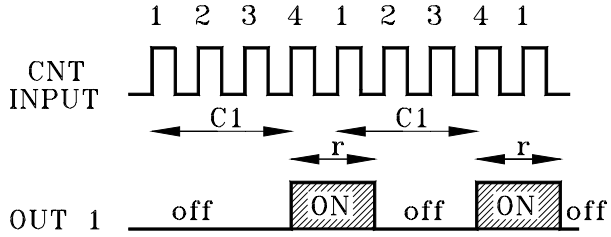
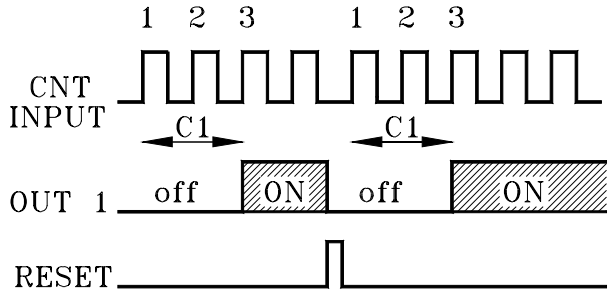
TC 34
MICROPROCESSOR-BASED DIGITAL ELECTRONIC COUNTER

TECHNICAL DATA

MECHANICAL DATA	
Housing	Self-extinguishing plastic, UL 94 V0
Dimensions	33x75 mm – depth 64 mm
Weight	175 g approx.
Connections	2,5 mm^2 screw terminal block
Mounting	Flush in panel in 29x71 mm hole
Front panel protection	IP 54 mounted in panel with gasket
ELECTRICAL DATA	
Power supply	12 VAC/VDC, 24, 110, 230 VAC +/-10%
AC Frequency	50 / 60 Hz
Power consumption	3 VA approx.
INPUT DATA	
Input/s	2 digital inputs for counting (CNT), Reset (RESET) for voltage-free contacts or Open Collector (NPN Transistor) or in voltage
Power consumption voltage inputs	1 mA max.
OUTPUT DATA	
Relay output	Up to 2 relay outputs SPDT (8 A-AC1, 3 A-AC3, 250VAC) or Voltage output for SSR driving (12 VDC/15 mA)
Auxiliary supply output	12 VDC / 20 mA max. (input C type only)
Electrical life for relay outputs	100000 oper.
FUNCTIONAL DATA	
Functioning	3 programmable modes for OUT1: single cycle counting (COUNT) – automatic cycle counting (RESTART) – automatic cycle counting with pulses storage during reset (RESTART-LAP) 4 programmable modes for OUT2: equal to OUT1, occurring counting signal, same function as F1 with absolute C2 set, same function as F1 with relative C2 set subtracted from C1
Measurement range	Display 9999 max.
Max.Frequency of counting input	Programmable 2 to 1000 Hz
Delay time RESET input	15 ms max.
Display	4 Digit Red h=12 mm
Operating temperature	0…55°C
Operating humidity	30…95 RH% without condensation

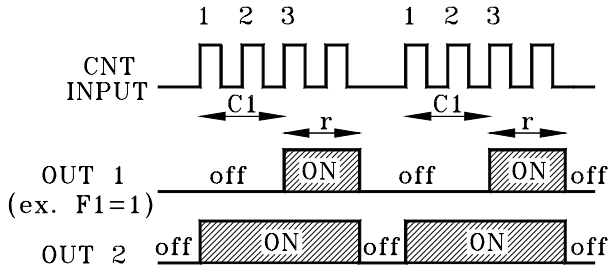
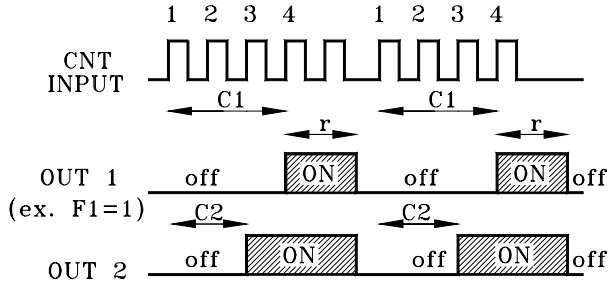
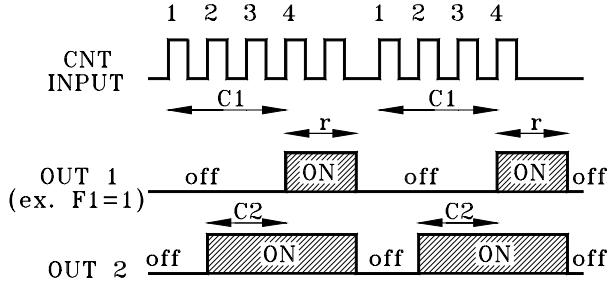
OUTPUT OUT1 FUNCTIONING

The instrument has 3 different output functioning depending on what programmed on parameter “F1” :

F1=1	**Automatic cycle counting (RESTART)**: once the programmed Set has been reached (if counting is UP) or in case of state 0000 (if counting is DOWN), during all the time programmed on parameter “r”, the output is on, the display visualises the reached value and it’s not counted any pulse ; at the elapsing of time “r”, the output is off and the counting is automatically reset, in order to begin a new cycle.	
F1=2	**Automatic cycle counting with pulses storage during reset (RESTART-LAP)**: the functioning is similar to the previous one, but the instrument visualising and keeping the output on, goes on with the pulses counting; the counting is then reset at the Set reaching, while the output is reset at the end of the time programmed on parameter “r”.	
F1=3	**Single cycle counting (COUNT)**: once the programmed Set has been reached (if counting is UP) or in case of state 0000 (if counting is DOWN), the output is on up to the manual reset command, which can be given by the remote input o by the RESET frontal key.	

OUTPUT OUT2 FUNCTIONING

The instrument has 4 different output functioning depending on what programmed on parameter “F2” :

F2=1	**OUT 2 output working as OUT1 :** The OUT2 output works exactly as the OUT1, in order to have a double contact output	
F2=2	**OUT2 output working as occurring counting signal :** OUT2 output is activated at the first counting pulse and remains active up to the reset.	
F2=3	**Same function as F1 but with absolute C2 counting set :** The instruments operates on OUT2 output as F1 operates on OUT1 output, but based on C2 set; once C2 has been reached, the output remains active up to end of the cycle, although the counting is reverted and the set is exceeded.	
F2=4	**Same function as F1 but with relative C2 counting set and subtracted from C1 :** The instruments operates on OUT2 output as F1 operates on OUT1 output, but based on [C1-C2] set; once [C1-C2] has been reached, the output remains active up to end of the cycle, although the counting is reverted and the set is exceeded.	

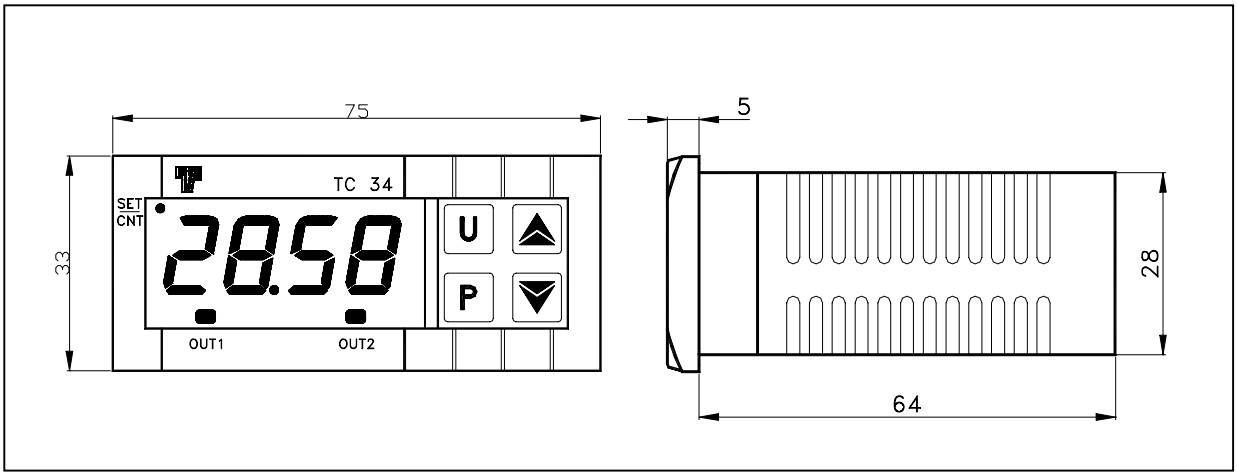
FUNCTIONING MODE OF THE COUNTING CONTROLS

When CNT input is closed, the counting is enabled and this is indicated by the led SET/CNT. During the counting enable it’s possible to visualise and to modify the Set, but not to accede to the parameters programming. To enter, it’s necessary to re-set the counting through the RESET remote input or through the U key. Using the "E" parameter, it’s possible to set the RESET input as command of counting inversion.

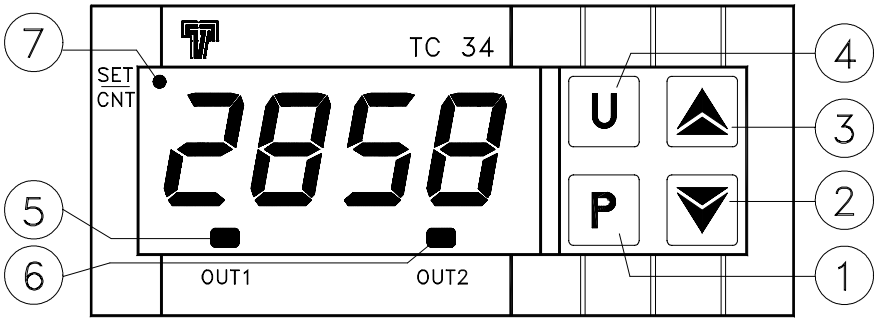
DISPLAY FUNCTIONING

The led SET/CNT works as input in programming mode indication, if flashing, as counting indication, if lighted on; counting end and reset state, if lighted off.
After the reset, the display visualises 0000, if the counting mode is UP, while it visualises the programmed set value if the counting mode is DOWN.

MECHANICAL DIMENSIONS (mm)



FRONT PANEL DESCRIPTION



1 - Key P It programs the Set Point value and it permits to enter into the parameters programming.

2 - Key DOWN It decreases the values to be programmed, one digit per time and selects the parameters.

3 - Key UP It increases the values to be programmed, one digit per time and selects the parameters.

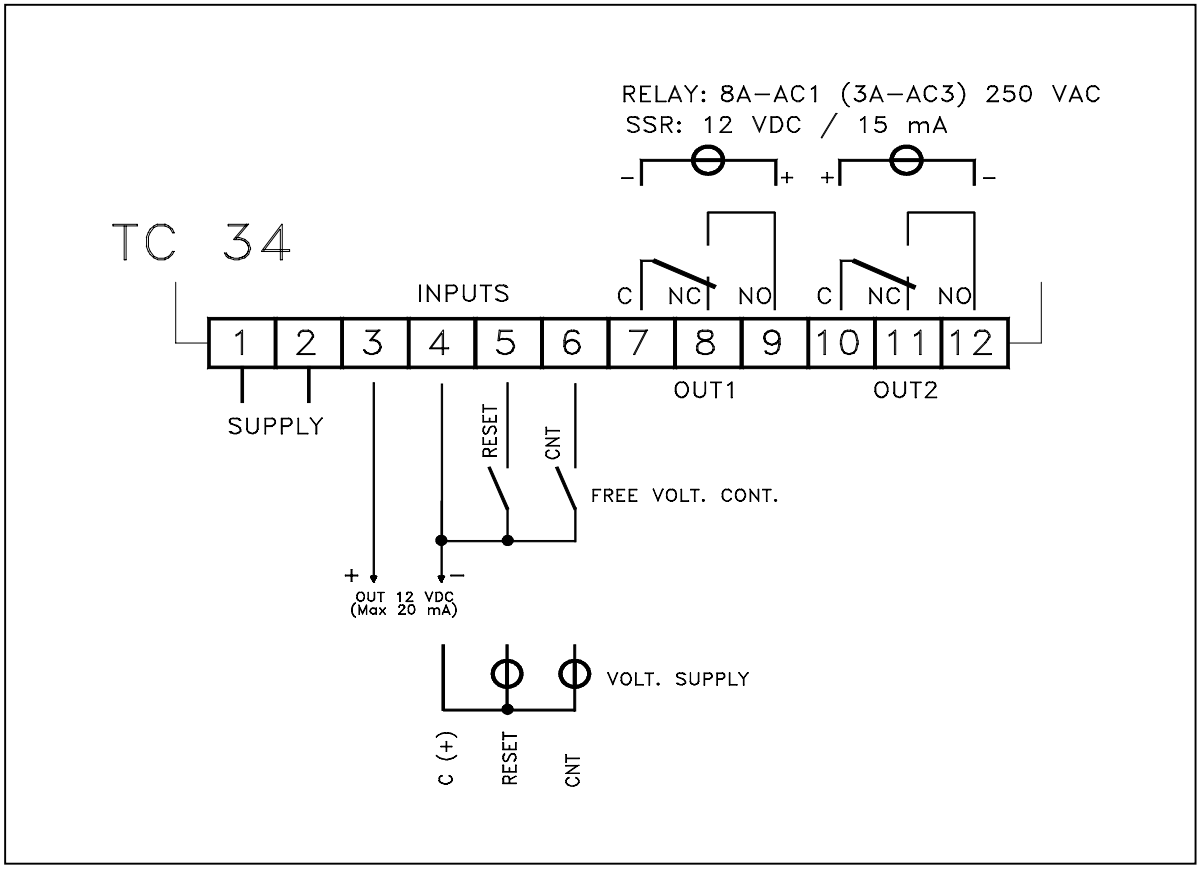
4 - Key U Used to reset the counting.

5 – Led OUT1 It indicates OUT1 output state.

6 - Led OUT2 It indicates OUT2 output state.

7 – Led SET/CNT Flashing, it indicates the input in programming mode; on, it indicates the counting state; off, it indicates the reset state.

CONNECTIONS DIAGRAM



CERTIFICATIONS AND CONFORMITY

▲ CE Conformity: CEE EMC 89/336 (EN 61326)
CEE LT 73/23 and 93/68 (EN 61010-1)