

TCT 48

DIGITAL ELECTRONIC TIME OR PULSE COUNTER



OPERATING INSTRUCTIONS

Vr. 01 (I - GB) - cod.: ISTR 00361

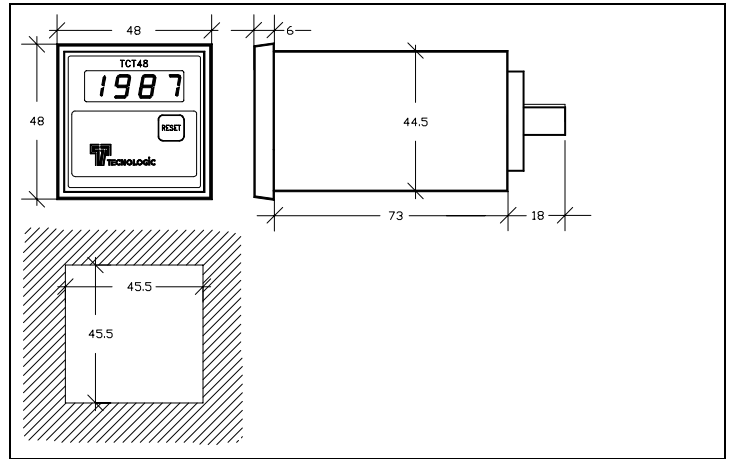
PREVIOUS STATEMENT: In this manual are contained all the necessary information for a correct installation and the instructions for the use and the maintenance of the product; we recommend, therefore, to read carefully the following instructions. The maximum care has been used in the realisation of this document, anyway TECNOLOGIC S.p.A. does not assume any responsibility deriving from the use of itself. The same consideration has to be done for each person or Company involved in the creation of this manual. The herewith issue is an exclusive property of TECNOLOGIC S.p.A. which forbids any reproduction and divulgation, although partial, if not expressly authorised. TECNOLOGIC S.p.A. reserves the right to execute aesthetically and functional modifications, at any moment and without any notice.

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1 - GENERAL DESCRIPTION

TCT48 is a digital counter of pulse or time with 4 digits display. The instrument has an input for count enable (EN), an input for reset (RES) and, if model is a pulse counter, a counting input (IN). The instrument keeps in memory the counting value, without power supply as well, with no need of a back-up battery presence. Furthermore on the front it's possible to have a reset key.



1.1 - INSTRUMENT CODE

TCT 48 a b c d e f f

a = COUNTING MODE

C : PULSE COUNTER

T : TIME COUNTER

b = RESET FRONT KEY

R : RESET front key present

S : Without RESET front key

c = MAX FREQUENCY INPUT (for Pulse Counter)

1 : 30 Hz

2 : 300 Hz

3 : 1000 Hz

- : not applicable because time counter

d = MAX TIME COUNTING (for Time Counter)

1 : 9999 ore

2 : 99 ore 59 min.

3 : 99 min. 59 sec.

,- : not applicable because pulse counter

e = SUPPLY

Y : 24 VDC

A : 24 VAC

C : 110 VAC

D : 230 VAC

ff = SPECIAL CODE

2 - TECHNICAL DATA

ELECTRICAL DATA

Supply: 24 VDC, 24, 110, 230 VAC +/- 10%

Frequency AC: 50/60 Hz

Power consumption: 3 VA approx.

Input/s: 2/3 digital inputs for Reset (RES), Count Enable (EN) and (if pulse counter) for Counting (IN); non-optoisolated for voltage-free contacts or Open Collector (NPN transistors)

Auxiliary supply output: 12 VDC / 30 mA Max

Protection class against electric shock: Class II for Front panel

Insulation: Reinforced insulation between the low voltage section (supply) and the front panel; Basic insulation between the low voltage section (supply) and the extra low voltage section (inputs).

MECHANICAL DATA

Housing: Self-extinguishing plastic, UL 94 V0

Dimensions: 48 x 48 mm DIN, depth 91 mm

Weight: 200 g approx.

Mounting: Flush in panel in 45,5 x 45,5 mm hole

Connections: Undecal pin socket

Degree of protection of front panel : IP 54 mounted in panel with gasket

Pollution situation: Normal

Operating temperature: 0 ... 55 °C

Operating humidity: 30 ... 95 RH% without condensation

Storage temperature: -10 ... +60 °C

FUNCTIONAL DATA

Measurement range: Display 9999 Max

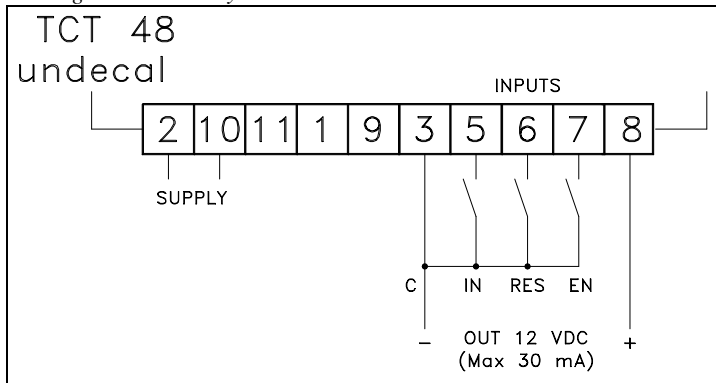
Max counting input frequency for pulse counter: 30 Hz, 300 Hz, 1000 Hz

Max counting time for time counter: 9999 hrs, 99 hrs 59 min., 99 min. 59 sec.

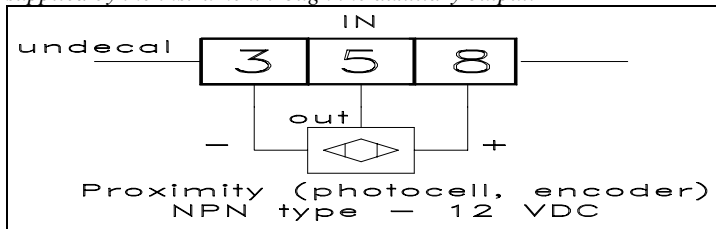
3 - INSTALLATION

MECHANICAL MOUNTING: The instrument, in DIN case 48 x 48 mm, is designed for panel mounting. Make an hole 45,5 x 45,5 mm and insert the instrument, fixing it with the provided special bracket. We recommend to mount the gasket to obtain an IP 54 front protection. Avoid to place the instrument in areas with humidity or dirt. Connect the instrument as far as possible from source of electromagnetic disturbances so as motors, power relays, relays, electrovalves, etc.

ELECTRICAL CONNECTIONS: Carry out the electrical wiring connecting only one wire for each terminal, according to the following diagram, check that the power supply is the same as indicated on the instrument and the loads current is not upper than the maximum current admitted. The instrument, being a built in equipment with permanent connection into a cabinet, is not furnished with internal device protecting from overcurrent: it's recommended, therefore, to properly protect all the electric circuits connected to the instrument, with devices (ex. fuses) proportionate to the circulating currents. It's strongly recommended to use cables with proper insulation, according to the working voltages and temperatures. Furthermore, the input cables has to be kept separate from line voltage wiring. If the input cables is screened, it has to be connected on the ground with only one side.



Wiring example of IN counting input of a NPN transistor device, directly supplied by the instrument through the auxiliary output.



4 - OPERATING MODE

4.1 - OPERATING MODE OF COUNTING CONTROLS

TIME COUNTER: When the EN input is closed the counter is in counting state and it's signaled by the flashing of the separation point led of the display. The counting stops at the EN input opening and restart, from the reached value, at the closed of it.

PULSE COUNTER: When the EN input is closed the pulse counter is ready for counting (i.e. it can count pulses), and this state is signalled by the flashing of the decimal point led on the left of the display. With the EN input closed, pulses received by the IN input are recorded by the counter. Reset of the counting occurs by means of the RESET key or the RES input.

4.2 - DISPLAY OPERATING MODE

TIME COUNTER: The separation point led of the display when flashing indicate the counting state on (EN input closed). After reset the display will show 0000. When the power supply cut-off, the reached value is memorised on the inside memory and it's visualized again on display at the coming back of power supply.

PULSE COUNTER: The decimal point on the left flashes to indicate that the counting mode is activated. After reset the display will show 0000. When the power supply cut-off, the reached value is memorised on the

5 - PROBLEMS, MAINTENANCE AND WARRANTY

HOW TO CLEAN: We recommend to avoid abrasive cleaners or containing solvents which could damage the instrument.

WARRANTY AND REPAIRS: The instrument is under warranty against construction vices or defected material, noticed within 12 months from delivery date. The warranty is limited to the repairs or to the substitution of the instrument. The eventual opening of the housing, the violation of the instrument or the wrong use and installation of the product means the automatically decay of the warranty. In case of defected instrument, noticed in warranty period or out of warranty, do contact our sales department to obtain the shipment authorisation. The defected product must be shipped to TECNOLOGIC with the detailed description of the failures found and without any fees or charge for Tecnologic, safe different agreements.