

TC21

Technical data

TC21

825B031E

Capacitance level transmitter

Power supply:	20÷30 Vdc.
Consumption:	1,1 W max.
Output current:	4÷20 mA max load 250ohm 0÷20 mA max load 250ohm
Storage temp.:	-30 ÷+80 °C
Working temp.:	-20 ÷ +60 °C
Meas. range:	min 100 pF, max 10 nF
Accuracy:	±1% of full scale
Range adj.:	dip-switch
Calibration adj.:	trimmers multitrans
Display:	red led "set"
Mec. protection:	IP00 designed to be installed into IP65 enclos.

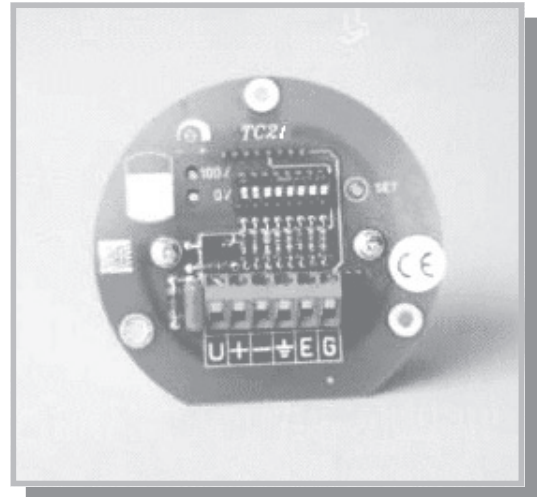


fig.1

TC21 is a capacitance level transmitter. TC21 is an electronic insert designed to be installed in a IP65 head connection enclosure of the SGM-LEKTRA capacitance sensor like CLT4., CLT7., CLT8.. . The TC21 converts directly the empty and full capacitance detected from the capacitance electrodes into a 0/4 to 20mA output current.

TC21

TC21 Measurement range selection

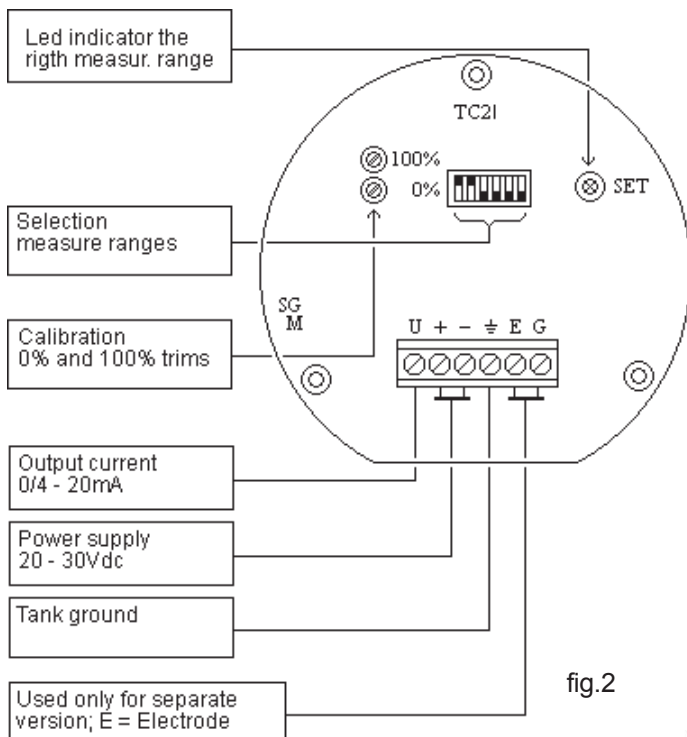


fig.2

N.	MEASURE RANGES	1 2 3 4 5 6	ON	
1	100 pF		ON	Max Sensibility
2	220 pF			
3	470 pF			
4	1000 pF			
5	2200 pF			
6	4700 pF			
7	10000 pF			Min Sensibility

Table 1



TC21 Electrical connections

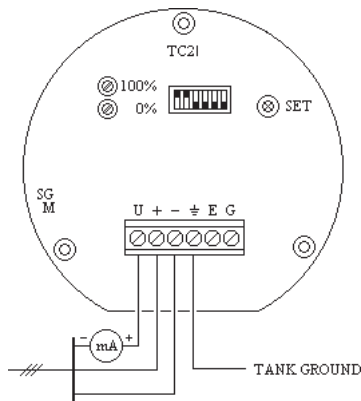
The drawings of the electrical connection are showed in fig.2 and fig.3. In fig.1 are indicated the reference for the calibration of the TC21.

During the electrical connection please, respect the following rules:
1) Use connection 3-wires (1mm² each) cable, the max recommended cable length is 500m;

2) Cable with current output and power supply, must not be led in common trace with high power lines.

Important:

The ground tank wiring or eventually the good connection to the reference electrode (plastic tank situation), is very important for the correct working of the system. The wiring may be done with 1mm² wire fixed to the ground screw placed externally to the IP65 capacitance sensor head of the flange or on the boss depending to the process fitting.



A) SETTING FOR CALIBRATION WITH CURRENT OUTPUT

fig.3

TC21 Calibration

The great variety of shapes, dimensions and materials of the tanks and the big differences of the electrical characteristics of the products to be measured, make the range of the capacitance signal really wide. In order to reach the better stability needs to select the most suitable range of measurement for the relevant application.

TC21 provide for 7 measure ranges that may be selected by means of dip-switches. The ranges with the relevant dip-switch positions are showed in table 1. The selection of the range is made normally directly on the tank after the installation. To make the right range selection please, follow the below procedure:

- Verify the level of the product, min. 20% MAX 100%
- Starting from the max sensibility range, 100pF, (see table 1) select one after the other all the ranges 220pF, 470pF, 1000pF and so on till to led "set" is lighted, than stop because it is the most suitable range. If the level during the range selection is at 100% than go directly to the calibration jumping step c).
- If the level during the above range selection was below 100% to reach the right range (always referred to 100% level) make a mathematical proportion of the of the level and the rang at which the led "set" was lighted, for instance, product level 25% ⇒ range at which led "set" switch on = 220pF; because level function is linear, at the product level of 100% we will expect 220pF x 4 ⇒ 880pF consequently select the range of 1000pF that is the range immediately greater than the computed one.

Calibration Before to proceed with the output current calibration need to have selected the right measurement range.

4÷20 mA. :

- connect a milliamperometer in series at the TC21 output current;
- be sure to have 0% level and by means 0% trim reach out current = 0mA;
- fill the product up to the 100% level, by means 100% trim reach out current to 16 mA;
- now again by means 0% trim reach out current = 20mA.

0÷20 mA. :

- connect a milliamperometer in series at the TC21 output current;
- be sure to have 0% level and by means 0% trim reach out current = 0mA;

fill the product up to the 100% level, by means 100% trim reach out current to 20 mA.

TC21 Warranty

Products supplied by SGM LEKTRA are guaranteed for a period of 12 (twelve) months from delivery date according to the conditions specified in our sale conditions document. SGM LEKTRA can choose to repair or replace the Product. If the Product is repaired it will mantein the original term of guarantee, whereas if the Product is replaced it will have 12 (twelve) months of guarantee. The warranty will be null if the Client modifies, repair or uses the Products for other purposes than the normal conditions foreseen by instructions or Contract. In no circumstances shall SGM LEKTRA be liable for direct, indirect or consequential or other loss or damage whether caused by negligence on the part of the company or its employees or otherwise howsoever arising out of defective goods.

TC21 Factory test certificate

In conformity to the production and check procedures I certify the equipment:

TC21 serial n.
satisfy technical characteristics as write in TECHNICAL DATA and it is conform to the internal procedures

Quality control Manager

Date of manufacture:



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