

FLOW RATE TOTALIZER 4...20 mA ANALOG INPUT

- ❑ 4...20 mA o 0...10V analogue inputs
- ❑ 24 Vdc transmitter power supply
- ❑ 6-digit indicator
- ❑ Maximum range totalizer: 0...999999
- ❑ External (IN1 input) or local Reset key (disabling/enabling) Totalizer reset
- ❑ Suitable for panel mounting



1.0 PACKING LIST

- ☐ user's manual
- ☐ warnings
- ☐ apparatus
- ☐ two fixing clamps
- ☐ one extractable 12 pole terminal blocks (into the unit)

2.0 SAFETY PRECAUTIONS

Before using the instrument read the warnings supplied with the product (see 1.0 Packaging list) ad all is indicated below.

The instrument is a electronic component and you don't have to be esteemed it a machine. If the instrument is utilised as a part of a machine, it can't work if the entire machine doesn't fulfil the relative directive.

The instrument marking doesn't dispense the customer to fulfil the law obligations relatives the entire machine.

Preventively make sure that the instrument model matches with the appropriate power supply voltage (see 4.5 paragraph).

Insert a adequate protection on power supply circuits; we recommend a 100 mA fuse protection with medium retard intervention.

The instrument is exempt to fulmination phenomenon (internal "surge" protection).

By pressing any buttons you will stop the positioning process.

The instrument is a electronic component and can't replace a mechanical safety device.

The manufacturer refuse all responsibility in order to a possible malfunction.



Preventively make sure that the instrument model matches with the appropriate power supply voltage (see 4.5 paragraph).

3.0 GENERAL DESCRIPTION

The unit, in conjunction with the transmitter (4...20 mA or 0...10V), is designed for accurate measurement and total flow.

4.0 PREPARATION FOR THE USE

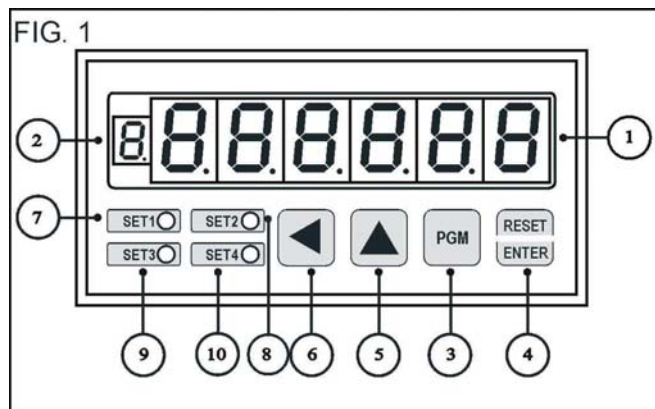
4.1 FIRST STEP

The unit is setted up for panel mounting. It is fixed in place with the two clamps provided.
The maximum permitted panel thickness is 4 mm.
Make all electrical connections with power supply off.
Take care to ensure electrical connections are correct.

4.2 ASSEMBLY AND INSTALLATION

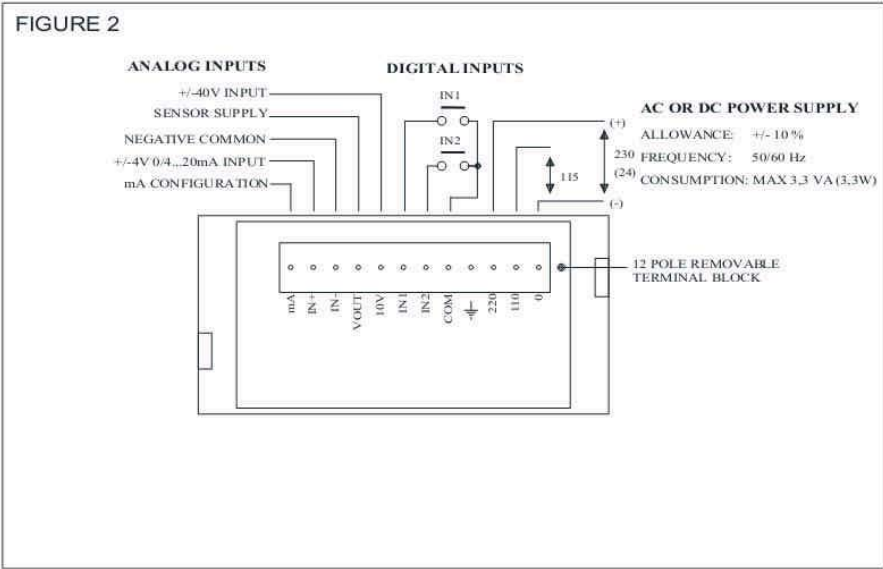
Insert the instrument in the panel.
It is fixed in place with the two clamps provided.
Insert the clamps into the button-holes in the right and left sides of the instrument and put them in tension turning the pin with a screw-driver (slot or cross, 4 mm).
Make all electrical connections are correct as showed in the schemas below.

4.3 FRONTAL VIEW




- 1= 6-digit reading indicator (character high 12.5 mm)
- 2= 9 millimetres display show the label of parameter during programming
- 3= PGM programming access key
- 4= Dual function RESET/ENTER key:
 - ☐ used for reset during normal operation
 - ☐ enter data during programming
- 5= UP arrow key. Used to change selected digit
- 6= SHIFT arrow key with two functions
- 7= not enabled
- 8= not enabled
- 9= not enabled
- 10= not enabled

4.4 REAR VIEW AND CONNECTIONS



4.5 POWER SUPPLY

 Preventively make sure that the instruments model matches with the appropriate power supply voltage

Model	Power supply	Notes
SLM2X00S206	115 Vac	Tolerance: ± 10%
SLM2X10S206	230 Vac	Tolerance: ± 10%
SLM2X20S206	24 Vac	Tolerance: ± 10%
SLM2X30S206	24 Vdc	Range 12...30 Vdc

All data are stored in a E2PROM static memory therefore they are kept with power off.

4.6 ELECTRICALS CONNECTIONS

Two removable 12+6 pole terminal blocks are provided at the rear of the instrument for electrical connections (see Figure 2).

4.6.1 POWER SUPPLY

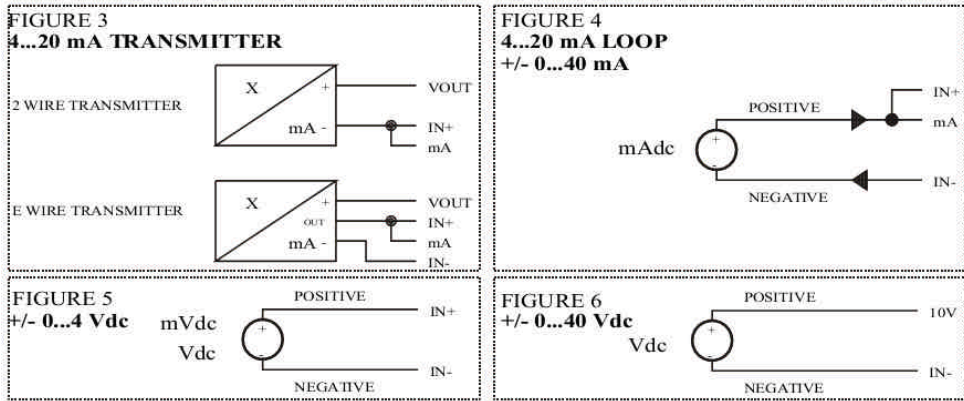
- 24 Vdc to terminals 0 (negative) e 24 (positive)
- 24 Vac to terminals 0 e 24
- 115 Vac to terminals 0 e 110
- 230 Vac to terminals 0 e 220
- Connect ground to associated terminal

4.6.2 DIGITAL INPUT

IN1 input: zero totalizer contact between IN1 and COM

4.6.3 CONNECTION OF ANALOG INPUT

See figures 3, 4, 5



4.7 FUNCTION TEST

Apply power supply.
The display is on and show zero.

4.8 CALIBRATION PROGRAMMING

Default calibration:

- ☐ input : 4...20 mA
- ☐ total flow : 0...1000.

The calibration operation makes it possible to associate two value for the input variable (start and end of scale) with the two reading values programmed for the parameters "start of scale reading" and "end of scale reading" in the configuration programs.

This operation must be execute only if necessary:



- ☐ **calibrate the signal in input (for example change signal input from 4...20 mA to 0...10V)**
- ☐ **recalibrate the device (periodic calibration)**
- ☐ **correct the input signal at the connect transmitter**

4.8.1 KEYBOARD PROCEDURE

To access calibration, hold down the PGM key for around three seconds after the last configuration programming step. To perform this operation, indicator must be connected with the input variable (real or calibrator).

Set analogue input to start of scale. Enter calibration mode.

The display will indicate "tar.IS": press ENTER to calibrate start of scale, or press PGM to pass to end of scale calibration.

If ENTER is pressed, the display will indicate "attend" (wait) while the unit the operation required for calibration (this may take some time, particularly if the variable is not perfectly stable).

After data acquisition, the display will show "tar.FS".

Enter the end of scale value.

Press ENTER to calibrate end of scale. To exit from calibration programming, press PGM.

If ENTER is pressed, the display will indicate "attend" (wait) while the unit the operation required for calibration (this may take some time, particularly if the variable is not perfectly stable).

5.0 INSTRUCTION FOR THE OPERATION

After the start up operation the instrument is ready.

The device measures the signal applied at the input, integrates it according to the set parameters,

The maximum scale totalizer is 0 ... 999999 . Reached full scale, it resets and restarts .

The totalized value is stored in the EEPROM memory at the power off.

5.1 EXAMPLE OF INTEGRATION

- ☐ input signal: 4...20 mA ;
- ☐ settings hourly capacity: 0...3000 l/h
 - ☐ 4 mA : 0 litres / hour
 - ☐ 20 mA : 3000 litres / hour

With a constant input to 12 mA indicator has totaled in an hour , 1500 pulses ; the display is increased by one unit every 2.4 seconds .

5.2 LOCAL RESET

Zeroing can be implemented using the front button RESET / ENTER (after enabling parameter " F " to one) .

The action can be :

- ☐ immediate : the totalized value is reset when you press the RESET / ENTER
- ☐ delayed (by setting the parameter "A " to one) : the sum total value is reset with a continuous pressure of three seconds of the RESET / ENTER

5.3 REMOTE RESET

The reset can be implemented by means of the digital input IN1 .

The signal should be a clean contact .

5.4 CONFIGURATION MENU

The following configurations are available:

Description	Label	Range		Default
		Min	Max	
Hour count at 0 mA	E	0	999999	0
Hour count at 20 mA	L	0	999999	1000
Decimal point	d	0	6	0
Reset key	F	0	1	0
Immediate or delayed reset key	A	0	1	0
Dead band at starting scale	b	0,0	10,0	0,1

To access configuration press PGM key. Display will show "C 000000", while units will flash. To access programming, enter pass code "210" and confirm with PGM.

If the wrong number is entered it is will not be accepted; when the ENTER or PGM keys are pressed the display will show the count again. After each configuration step: press PGM to move on the next programming step or press ENTER to return to the count display.

CODE “E” - HOUR COUNT AT 0 mA

Set the number (normally is zero).

Number must be between 0 and 999999.

CODE “L” - HOUR COUNT AT 20 mA

Set the number.

Number must be between 0 and 999999.

CODE “d” - DECIMAL POINT

Set one of the following numbers:

0	= No decimal point	999999
1	= Decimal point at far right	999999.
2	= One decimal place	99999.9
3	= Two decimal places	9999.99
4	= Three decimal places	999.999
5	= Four decimal places	99.9999
6	= Five decimal places	9.99999

CODE “F” - RESET/ENTER KEY FUNCTION

Select function:

0 = disabled

1 = enable to display reset

CODE “A” - IMMEDIATED OR DELAYED FRONTAL RESET

Set one of the following numbers:

0 = Immediate reset key

1 = Front reset key active only if held down for three seconds

CODE “b” - DEAD BAND AT STARTING SCALE

Configure the percentage of dead band at starting of scale.

When input value is into the dead band total value doesn't increase. This parameter is useful for to correct the imprecision at the start scale of measurement and ensure no increase without input signal.

5.5 MANUAL COMMAND

The device has the following manual command (see Fig. 1):

- 3 = PGM programming access key.
- 4 = Dual function RESET/ENTER key:
 - used for reset during normal operation,
 - enter data during programming.
- 5 = UP arrow key. Used to change selected digit.
- 6 = SHIFT arrow key. Used to move selected digit during programming,

5.6 REMOTE COMMANDS

There are the following remote command:

- ☐ 4...20 mA analog input
- ☐ Digital input

5.6.1 ANALOG INPUT

DC current with 4...20 mA range
Input impedance 100 ohm
Max overload 100% constant
Maximum length cables: 3 meters.

5.6.2 DIGITAL INPUT (IN1)

not powered contact or static NPN
Voltage max 24 volt
Current max 6 mA
Maximum length cables: 3 meters.

5.7 CALIBRATION FREQUENCY

Recalibrate every two years is recommended.

5.8 MAINTENANCE

In the device there are no parts that require maintenance.

6.0 TECHNICAL SPECIFICATIONS

6.1 GENERAL FEATURES

PACKAGE Case panel mount 96 x 48 mm; frontal, IP54 Cut-out dimensions 92 x 45 mm Depth 100 mm (terminal blocks included) Case material Noryl Weight 450 g, ac models (300 g, dc model) Keyboard: 4 membrane pushbuttons Connections by two extractable 12+6 poles terminal block ANALOG INPUT Input terminal configuration: - 0...± 40 mA impedance 100 ohm - 4...20 mA impedance 100 ohm - 0... ±4 V impedance 10 kohm - 0... ±40 V impedance 110 kohm Maximum overload 100 % constant DIGITAL INPUT (IN1) One optocoupled reset input Not powered contact or static NPN Voltage max 24 volt Current max 6 mA	INDICATOR 6-digits display Maximum range: 0...999999 20.000 points A/D converter resolution Average conversion time 250 ms POWER SUPPLY Power supply as per code: 115 Vac; 230 Vac; 24 Vac; 24 Vdc Frequency (AC): 50/60 Hz Max consumption 3,3 VA (3,3W) E ² EPROM static memory at power off. TRANSMITTER POWER SUPPLY AC power models : output 24 Vdc DC power : power in
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6.2 AMBIENTAL CONDITIONS

6.2.1 TEMPERATURE

Operating temperature -10...+50°C

6.2.2 HUMIDITY

Relative humidity 0...95% not condensing

6.2.3 EMC COMPLIANCE

EEC Directive 2004/108

EN61000-6-2 Generic standard immunity industrial environment

EN61000-6-4 Generic standard emission industrial environments

6.2.4 LVD COMPLIANCE

Directive 2006/95 / EC

EN61010-1 Safety requirements

6.3 STORAGE

Storage temperature -20... +70°C

Relative humidity 0...95% not condensing

You should preferably utilise dry and clean environment.

Avoid any corrosive acid exhalation exposure.

Do not wash the apparatus with water.

Avoid any liquid entry.

6.4 ACCESSORIES AND OPTIONS

There isn't any optional for this device.

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 maintain 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

Factory Test Certificate

In conformity to the company and check procedures I certify that the equipment:

SLM2X..... Production and check date:

is conform to the technical requirements on Technical Data and it is made in conformity to the SGM-LEKTRA procedure

Serial n.

Quality Control Manager

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