

User manual

ELECTRONIC COUNTERS:

pulse **SLE-42**

timer **STH-42**

- Firmware: v.1.00 or higher
- Input type: contact / OC or voltage
- Self powered, 3.6V 1/2AA Lithium Battery



SLE-42



STH-42



Read the user's manual carefully before starting to use the unit or software.
Producer reserves the right to implement changes without prior notice.

CONTENTS

1. BASIC REQUIREMENTS AND USER SAFETY.....	2
2. GENERAL CHARACTERISTICS.....	3
3. TECHNICAL DATA.....	4
4. DEVICE INSTALLATION.....	5
4.1. UNPACKING.....	5
4.2. ASSEMBLY.....	5
4.3. WIRING AND REAR TERMINALS.....	7
4.4. MAINTENANCE.....	8
4.5. BATTERY REPLACEMENT.....	8
5. FRONT PANEL DESCRIPTION.....	10
6. PRINCIPLE OF OPERATION.....	10

Explanation of symbols used in the manual:



- This symbol denotes especially important guidelines concerning the installation and operation of the device. Not complying with the guidelines denoted by this symbol may cause an accident, damage or equipment destruction.

IF THE DEVICE IS NOT USED ACCORDING TO THE MANUAL THE USER IS RESPONSIBLE FOR POSSIBLE DAMAGES.



- This symbol denotes especially important characteristics of the unit. Read any information regarding this symbol carefully

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1. BASIC REQUIREMENTS AND USER SAFETY



- **The manufacturer is not responsible for any damages caused by inappropriate installation, not maintaining the proper technical condition and using the unit against its destination.**
- Installation should be conducted by qualified personnel. During installation all available safety requirements should be considered. The fitter is responsible for executing the installation according to this manual, local safety and EMC regulations.
- The unit must be properly set-up, according to the application. Incorrect configuration can cause defective operation, which can lead to unit damage or an accident.
- **If in the case of a defect of unit operation there is a risk of a serious threat to the safety of people or property additional, independent systems and solutions to prevent such a threat must be used.**
- **The unit uses dangerous voltage that can cause a lethal accident. The unit must be switched off and disconnected from the power supply prior to starting installation of troubleshooting (in the case of malfunction).**

- Neighbouring and mating equipment must meet the requirements of appropriate standards and regulations concerning safety and be equipped with adequate anti-overvoltage and anti-interference filters.
- **Do not attempt to disassemble, repair or modify the unit yourself. The unit has no user serviceable parts. Units, in which a defect was stated must be disconnected and submitted for repairs at an authorized service centre.**



- In order to minimize fire or electric shock hazard, the unit must be protected against atmospheric precipitation and excessive humidity.
- Do not use the unit in areas threatened with excessive shocks, vibrations, dust, humidity, corrosive gasses and oils.
- Do not use the unit in explosion hazard areas.
- Do not use the unit in areas with significant temperature variations, exposed to condensation or icing.
- Do not use the unit in areas exposed to direct sunlight.
- Make sure that the ambient temperature (e.g. inside the control box) does not exceed the recommended values. In such cases forced cooling of the unit must be considered (e.g. by using a ventilator).



The unit is designed for operation in an industrial environment and must not be used in a household environment or similar.

2. GENERAL CHARACTERISTICS

The electronic counters are popular, self-powered LCD totalizers (**SLE-42**) or hour meters (**STH-42**) in a small form. With a panel size of DIN 48 x 24 mm, they are perfect for limited space installations. They are powered by a replaceable lithium battery that lasts approximately 7 years, no external power required. They are available in 7 digits with 8 mm height figures with front reset or remote reset options. Input signal includes dry contact, open collector, voltage, wide range voltage at maximum count speed up to 30 Hz. The front panel protection is IP 54 and wiring connection is easily done via the terminal block connector, making it secure and reliable. CE, UL and RoHS compliant.

3. TECHNICAL DATA

Power supply voltage	3.6V 1/2AA Lithium Battery (inside), 7 years (replaceable)
Pulse inputs	
Dry Contact/OC/Voltage	NPN Transistor Sink current approx. 8 μ A Input levels : L < 0.8V, H: 2 - 30 V Count speed: max. 30 Hz (SLE-42) Input impedance 300 k Ω
Wide-Range Voltage	Input levels L: 0 - 10V AC/DC, H: 20 - 250V AC/DC Count speed: max. 20 Hz (SLE-42)
Resolution	1 count per 1/10 hour (STH-42)
Reset	Remote reset: dry contact/OC/voltage or wide-range voltage or front panel reset (only SLE-42)
Reset pulsewidth	6 ms min.
Display	7 digits, 7-segment LCD, 8 mm
Display range	0 ÷ 9999999 (SLE-42); 0.0 ÷ 999999.9 (STH-42)
Front panel protection	IP 54
Wiring	M3 terminal screw
Housing type	panel
Housing dimensions	48 x 24 x 39,7 mm
Panel cut size	45 x 22,2 mm (+1 mm)
Weight	approx. 50 g (battery included)
Operating temperature	-10°C to +55°C (non-freezing)
Storage temperature	-20°C to +65°C (non-freezing)
Humidity	25 to 85% (non-condensing)
Vibration / Shock resistance	
Operation:	double amplitude 0.3 mm; frequency: 10 - 55 Hz, X, Y, Z Axis (3 axis) / 100 m/s ²
Storage:	double amplitude 0.75 mm; frequency: 10 - 55 Hz, X, Y, Z Axis (3 axis) / 300 m/s ²
Noise immunity	Electrostatic discharge: IEC-61000-4-2 8kV Electromagnetic field: IEC-61000-4-3 10V/m EFT/BI/O leads: IEC-61000-4-4 1.0kV
EMC standard	EMI: EN50081-2 EMS: EN50082-2
Compliance	RoHS ; CE ; UL 863



This is a class A unit. In housing or a similar area it can cause radio frequency interference. In such cases the user can be requested to use appropriate preventive measures.

4. DEVICE INSTALLATION

The unit has been designed and manufactured in a way assuring a high level of user safety and resistance to interference occurring in a typical industrial environment. In order to take full advantage of these characteristics installation of the unit must be conducted correctly and according to the local regulations.



- Read the basic safety requirements on page 2 prior to starting the installation.
- Ensure that the power supply network voltage corresponds to the nominal voltage stated on the unit's identification label.
- The load must correspond to the requirements listed in the technical data.
- All installation works must be conducted with a disconnected power supply.
- Protecting the power supply clamps against unauthorized persons must be taken into consideration.

4.1. UNPACKING

After removing the unit from the protective packaging, check for transportation damage. Any transportation damage must be immediately reported to the carrier. Also, write down the unit serial number on the housing and report the damage to the manufacturer.

Attached with the unit please find:

- user's manual,
- warranty,
- accessories.

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4.2. ASSEMBLY



- The unit is designed for mounting indoor inside housings (control panel, switchboard) assuring appropriate protection against electric impulse waves. Metal housing must be connected to the grounding in a way complying with the governing regulations.
- Disconnect the power supply prior to starting assembly.
- Check the correctness of the performed connections prior to switching the unit on.



In order to assembly the unit, a 45 x 22,2 mm mounting hole (Figure 4.1) must be prepared. Then follow the instructions mentioned below (Figure 4.2):

1. Insert gasket into the unit.
2. Insert the unit into the panel. Use the correct panel cut-out size.
3. Insert the mounting clip to the back of the unit.
4. Push the mounting clip until it locks the unit tightly against the panel.

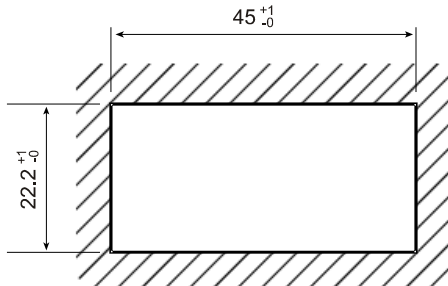
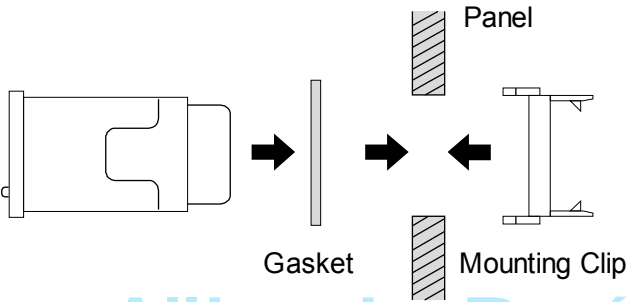


Figure 4.1. Panel cut-out dimensions



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Figure 4.2. Installing of clip and gasket

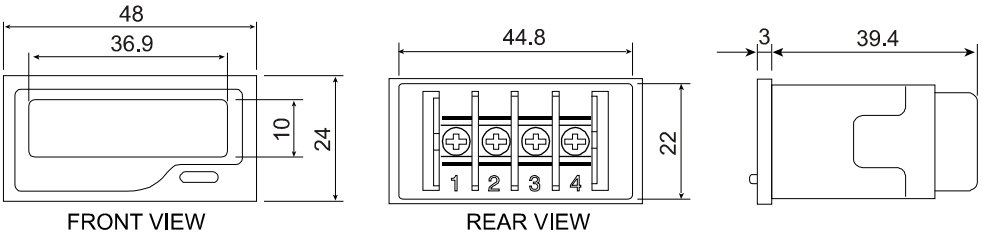


Figure 4.3. Dimensions of the case

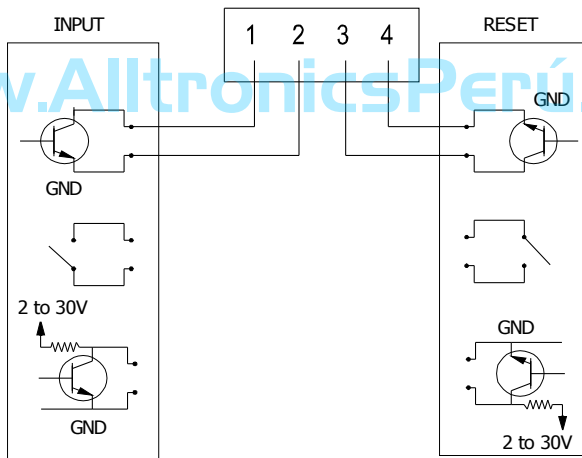
4.3. WIRING AND REAR TERMINALS

Attention



- Installation should be conducted by qualified personnel. During installation all available safety requirements should be considered. The fitter is responsible for executing the installation according to this manual, local safety and EMC regulations.
- The power supply network cable diameter must be selected in such a way that in the case of a short circuit of the cable from the side of the unit the cable shall be protected against destruction with an electrical installation fuse.
- Wiring must meet appropriate standards and local regulations and laws.
- In order to secure against accidental short circuit the connection cables must be terminated with appropriate insulated cable tips.
- Tighten the clamping screws. The recommended tightening torque is 0.5 Nm. Loose screws can cause fire or defective operation. Over tightening can lead to damaging the connections inside the units and breaking the thread.
- After the installation is completed do not touch the unit's connections when it is switched on, because it carries the risk of electrical shock.

a)



b)

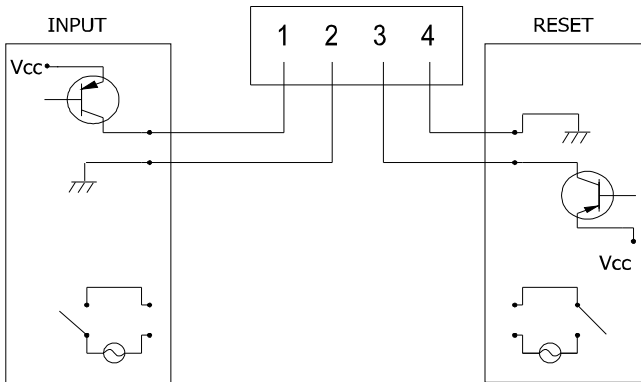


Figure 4.4. Rear terminals description:
 a) version with dry contact/OC/NPN input
 b) version with wide-range voltage input

4.4. MAINTENANCE

The unit (except battery) does not have any internal replaceable or adjustable components available to the user. Pay attention to the ambient temperature in the room where the unit is operating. Excessively high temperatures cause faster ageing of the internal components and shorten the fault-free time of unit operation. In cases where the unit gets dirty do not clean with solvents. For cleaning use warm water with small amount of detergent or in the case of more significant contamination ethyl or isopropyl alcohol.



Using any other agents can cause permanent damage to the housing.



Product marked with this symbol should not be placed in municipal waste. Please check local regulations for disposal and electronic products.

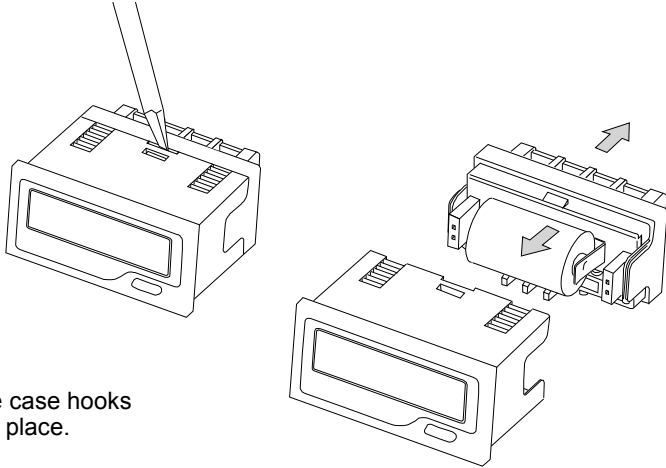
4.5. BATTERY REPLACEMENT

Precautions when replacing the battery:



- Disconnect the wiring before changing the battery. Do not touch areas subject to high voltages as this could result to an electric shock.
- Make sure that your body is free from static electricity before changing the battery.
- **Use only 3.6V 1/2AA Lithium Battery for this unit.**

- 1) Use a flat screwdriver or any appropriate tool to lift the groove in order to unfasten rear case from front case.
- 2) Pull out the rear case from the main body.
- 3) Replace with a new battery. Make sure that the positive and negative terminals of the battery are positioned correctly.
- 4) Replace the rear case to the main body.



Make sure that the case hooks click properly in place.



Warning!



This unit uses Lithium battery. Properly dispose the battery after use. Do not short the positive and negative terminals, recharge, disassemble, deform, or dispose the battery to fire as this may seriously damage it or may cause explosion.

5. FRONT PANEL DESCRIPTION

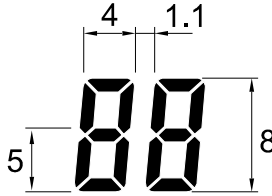
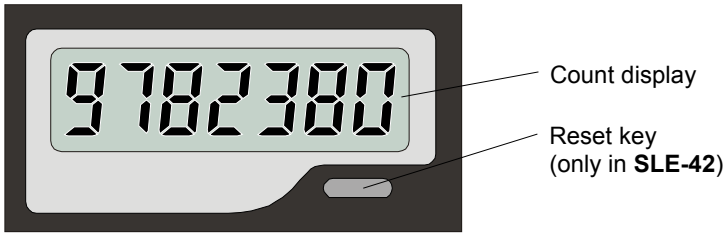


Figure 5.1. Size of figure

6. PRINCIPLE OF OPERATION

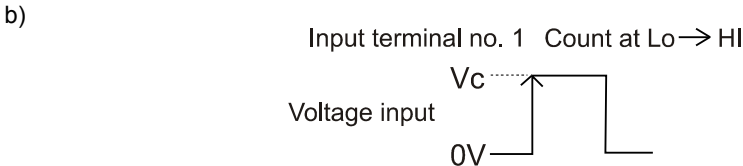
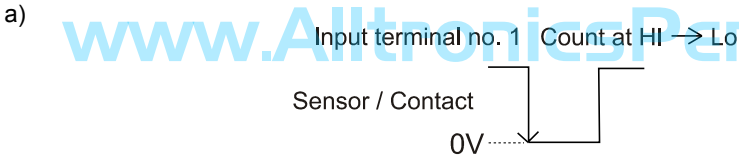
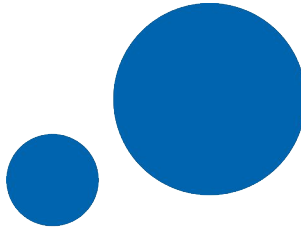


Figure 6.1. The counting principle of the **SLE-42** counters:
a) dry contact/OC/NPN input, b) wide-range voltage input

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