⊕ EMKO

EZM-9935 96 x 96 DIN 1/4
Universal Input Programmable Timer

- *6 digits Process (PV) and 6 digits Set (SV) Value Display*
- *Operation with 1 Set Value*
- *Reset , Pause and Start Inputs*
- *Operation with Automatic and Manual Reset*
- *NPN/PNP Type Operation*
- *Programmable Time Bases (Second, Minute, Hour)*

ABOUT INSTRUCTION MANUAL

Instruction manual of EZM-9935 Programmable Timer consists of two main sections. Explanation of these sections are below. Also, there are other sections which include order information and technical specifications of the device. All titles and page numbers in instruction manual are in "**CONTENTS**" section. User can reach to any title with section number.

Installation:

In this section, physical dimensions of the device, panel mounting, electrical wiring, module mounting in the device, physical and electrical installation of the device to the system are explained.

Operation and Parameters:

In this section, user interface of the device, how to access to the parameters, description of parameters are explained.

Also in these sections, there are warnings to prevent serious injury while doing the physical and electrical mounting or using the device.

Explanation of the symbols which are used in these sections are given below.

This symbol is used for safety warnings. User must pay attention to these warnings.

This symbol is used to determine the dangerous situations as a result of an electric shock. User must pay attention to these warnings definitely.

This symbol is used to determine the important notes about functions and usage of the device.

CONTENTS

EU DECLARATION OF CONFORMITY

Manufacturer Company Name   : Emko Elektronik A.S.

Manufacturer Company Address: DOSAB, Karanfil Sokak, No:6, 16369 Bursa, Turkiye

The manufacturer hereby declares that the product conforms to the following standards and conditions.

Product Name   : Programmable Timer

Model Number   : EZM-9935

Type Number   : EZM-9935

Product Category   : Electrical equipment for measurement, control and laboratory use

Conforms to the following directives :

2006 / 95 / EC The Low Voltage Directive

2004 / 108 / EC The Electromagnetic Compatibility Directive

has been designed and manufactured to the following specifications:

EN 61000-6-4:2007 EMC Generic Emission Standard for Industrial Environments

EN 61000-6-2:2005 EMC Generic Immunity Standard for Industrial Environments

EN 61010-1:2001   Safety Requirements for electrical equipment for measurement, control and laboratory use

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When and Where Issued   **Authorized Signature**

16th October 2009   Name   : Serpil YAKIN

Bursa-TURKEY   Position   : Quality Manager

1.Preface

EZM Series Programmable Timer can be used in package machines, production and quality control rollers, and can be adapted easily to all mechanical construction and automation system.

Some application fields which they are used are below:

Application Field

Package machines,
Quality Control rollers,
Filling Systems,
Tool Benchs,
Building Automation.
Production bands

1.1 General Specifications

EZM-9935

Standart

230 V ∿ 50/60Hz
Optional Supply Input
115V ∿ 50/60Hz, 24V ∿ 50/60Hz, 24 V ⎓

Supply Voltage Input

**Switch
Proximity Sensor(NPN,PNP)
Optic Sensor(NPN,PNP)**

Reset, Pause and Start Inputs

Sensor Voltage Output

**Switch
Proximity Sensor
(NPN,PNP)
Optic Sensor**

Standart

Output

Control Output(Relay)
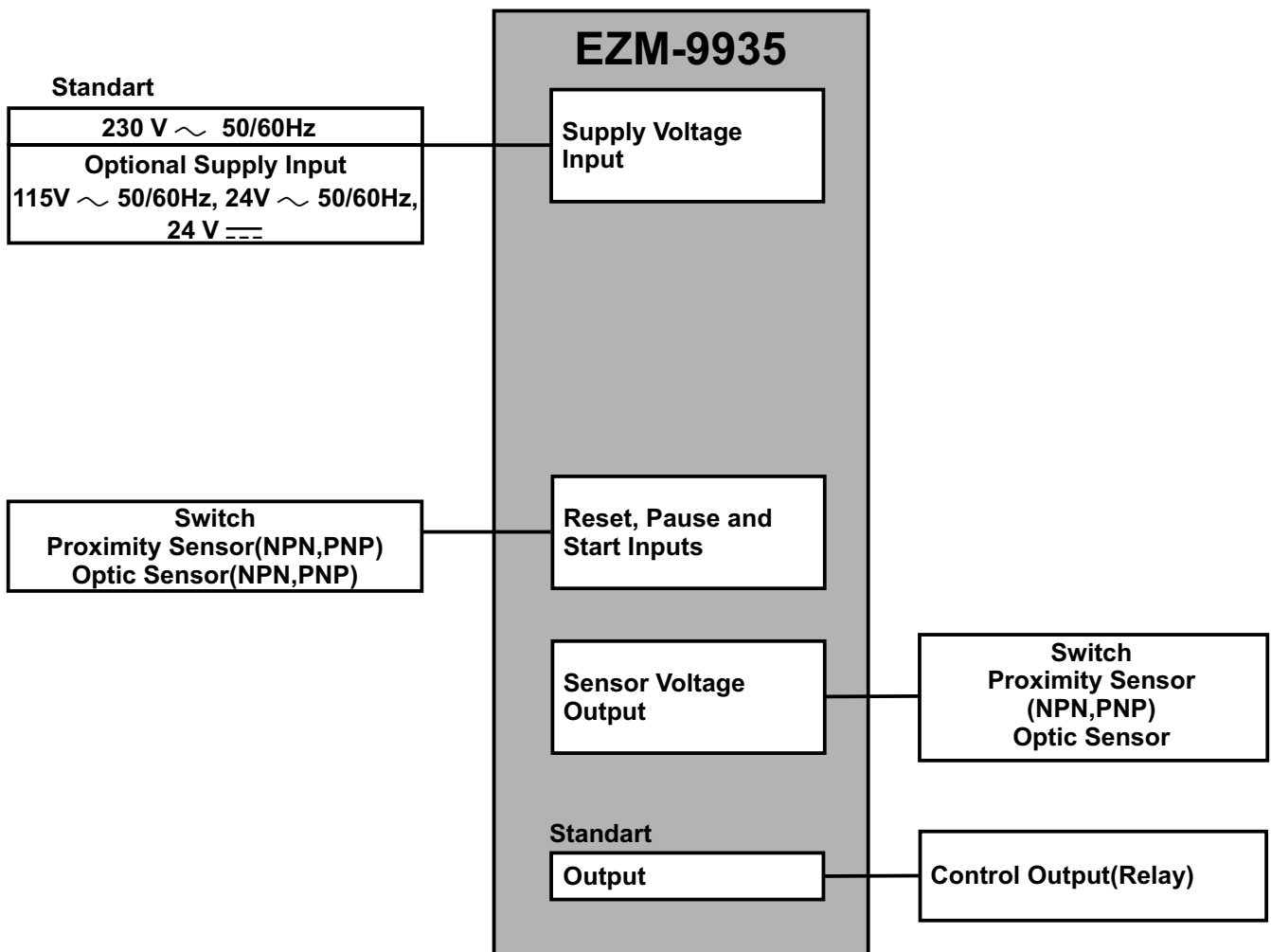
1.2 Ordering Information

EZM-9935 (96x96 1/4 DIN)	A	BC	D	E	/	FG	HI	/	U	V	W	Z
		00	0	1	/	00	00	/	0	0	0	0

A	Supply Voltage
2	24 V ∼ (-%15;+%10) 50/60Hz 24 V=== (-%15;+%10)
3	24 V ∼ (-%15;+%10) 50/60Hz
4	115 V ∼ (-%15;+%10) 50/60Hz
5	230V ∼ (-%15;+%10) 50/60Hz
9	Customer (Maximum 240V ∼ (-%15;+%10))50/60Hz

E	Output-1
1	Relay Output (5A @ 250 V ∼) Rezistive Load

All order information of EZM-9935 Programmable Timer are given on the table at left. User may form appropriate device configuration from information and codes that at the table and convert it to the ordering codes.

Supply voltage must be determined for your system.

Please fill the order code blanks according to your needs.

Please contact us, if your needs are out of the standards.

∼ Symbol means Vac
=== Symbol means Vdc

1.3 Warranty

EMKO Elektronik warrants that the equipment delivered is free from defects in material and workmanship. This warranty is provided for a period of two years. The warranty period starts from the delivery date. This warranty is in force if duty and responsibilities which are determined in warranty document and instruction manual performs by the customer completely.

1.4 Maintenance

Repairs should only be performed by trained and specialized personnel. Cut power to the device before accessing internal parts.
Do not clean the case with hydrocarbon-based solvents (Petrol, Trichlorethylene etc.). Use of these solvents can reduce the mechanical reliability of the device. Use a cloth dampened in ethyl alcohol or water to clean the external plastic case.

2.Installation

Before beginning installation of this product, please read the instruction manual and warnings below carefully.

In package ,
- One piece unit
- Two pieces mounting clamps
- One piece instruction manual

A visual inspection of this product for possible damage occured during shipment is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.

If there is danger of serious accident resulting from a failure or defect in this unit, power off the system and separate the electrical connection of the device from the system.

The unit is normally supplied without a power switch or a fuse. Use power switch and fuse as required.

Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.

Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

Never attempt to disassemble, modify or repair this unit. Tampering with the unit may results in malfunction, electric shock or fire.
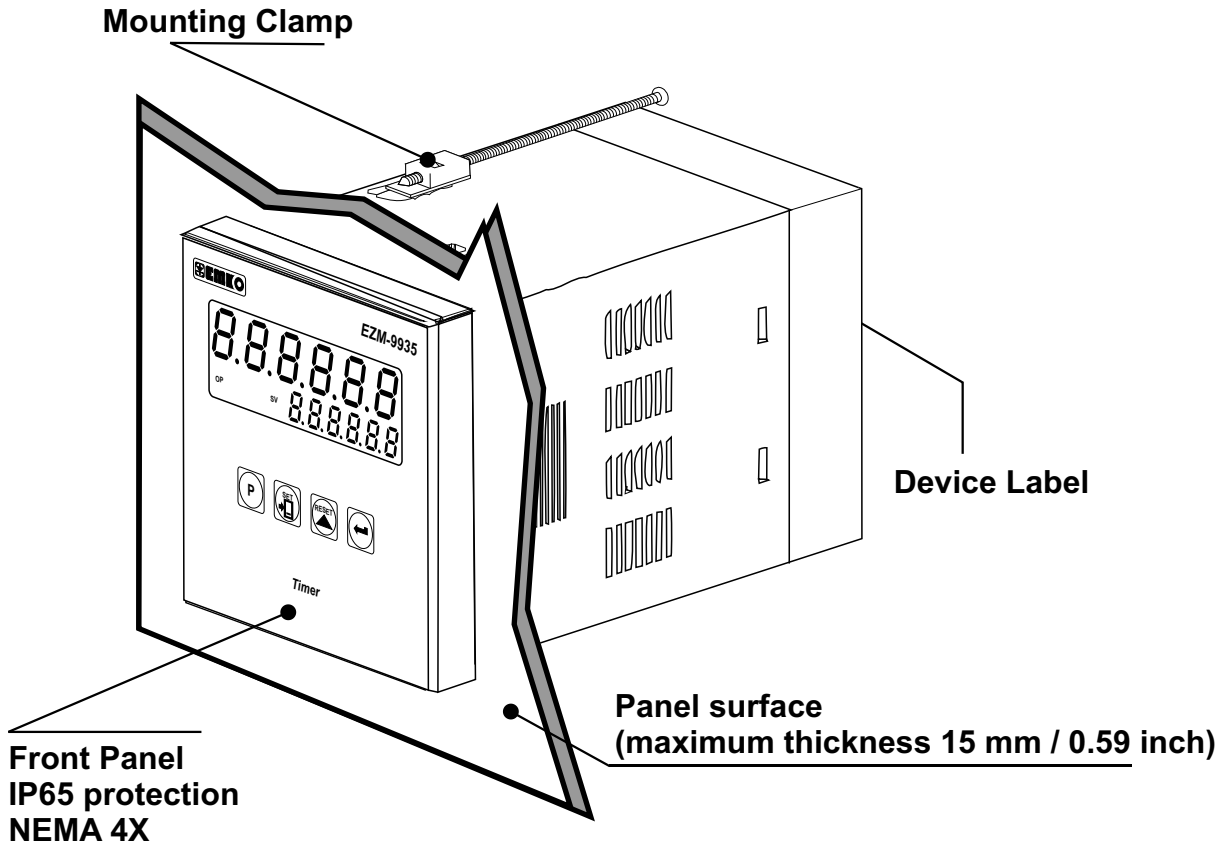
Do not use the unit in combustible or explosive gaseous atmospheres.

During the equipment is putted in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you must be careful.
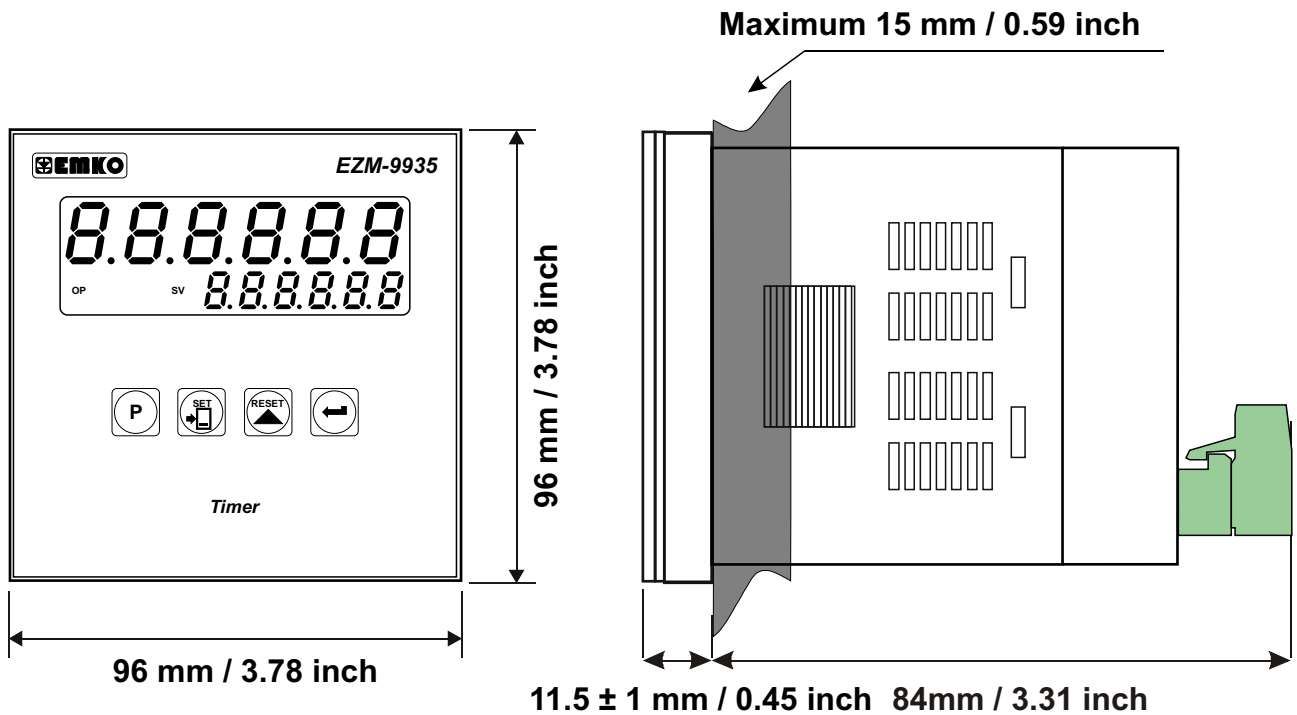
Montage of the product on a system must be done with it's fixing clamps. Do not do the montage of the device with inappropriate fixing clamp. Be sure that device will not fall while doing the montage.

It is your responsibility if this equipment is used in a manner not specified in this instruction manual.

2.1 General Description

Mounting Clamp

Device Label

**Panel surface
(maximum thickness 15 mm / 0.59 inch)**

**Front Panel
IP65 protection
NEMA 4X**

2.2 Dimentions

Maximum 15 mm / 0.59 inch

EZM-9935

OP   SV

P   SET   RESET   ←

Timer

96 mm / 3.78 inch

96 mm / 3.78 inch

11.5 ± 1 mm / 0.45 inch   84mm / 3.31 inch

129 mm / 5.08 inch (min)

129 mm / 5.08 inch (min)

92 mm / 3.62 inch

92 mm / 3.62 inch
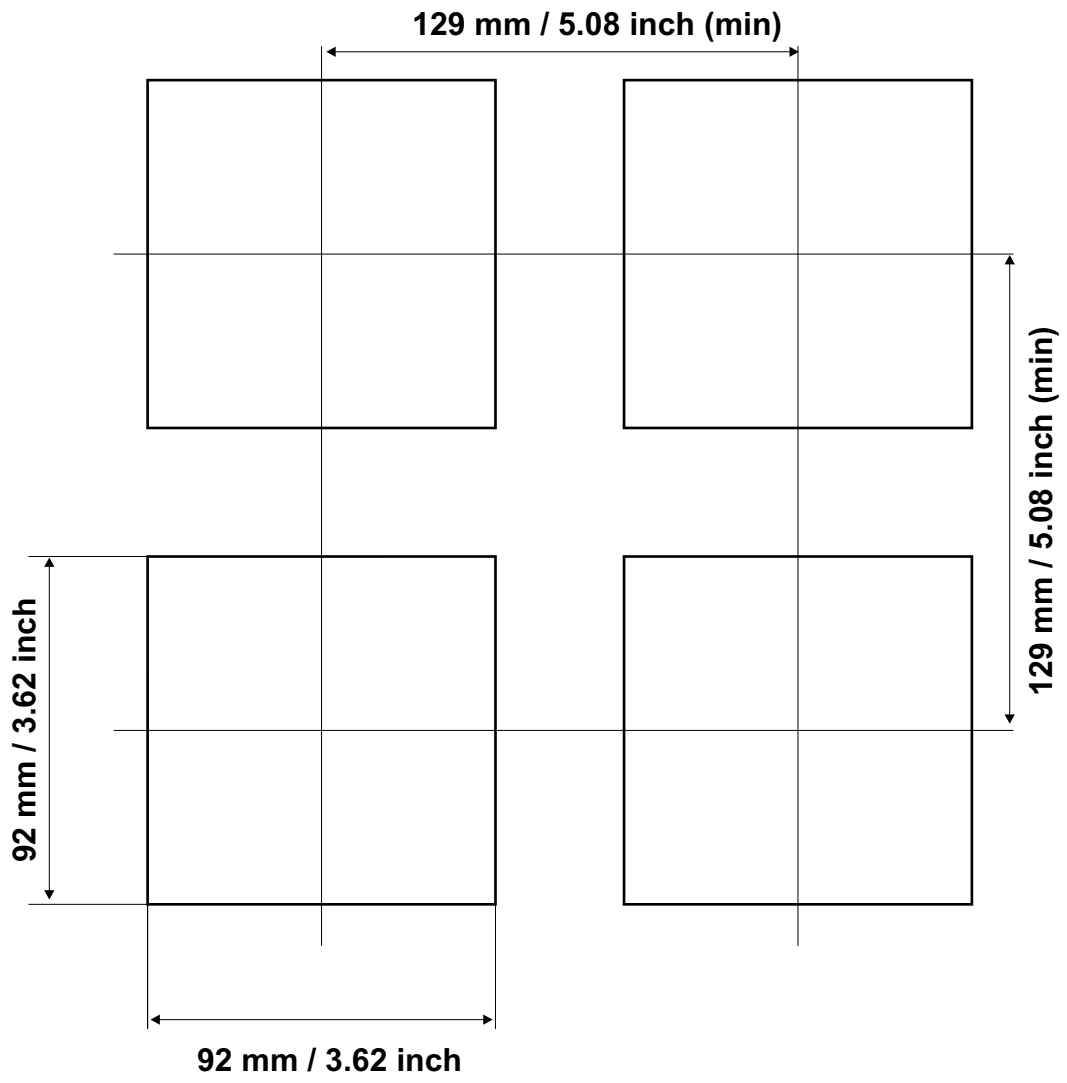
2.4 Environmental Ratings

Operating Conditions

Operating Temperature : 0 to 50 °C

Max. Operating Humidity : 90% Rh (non-condensing)
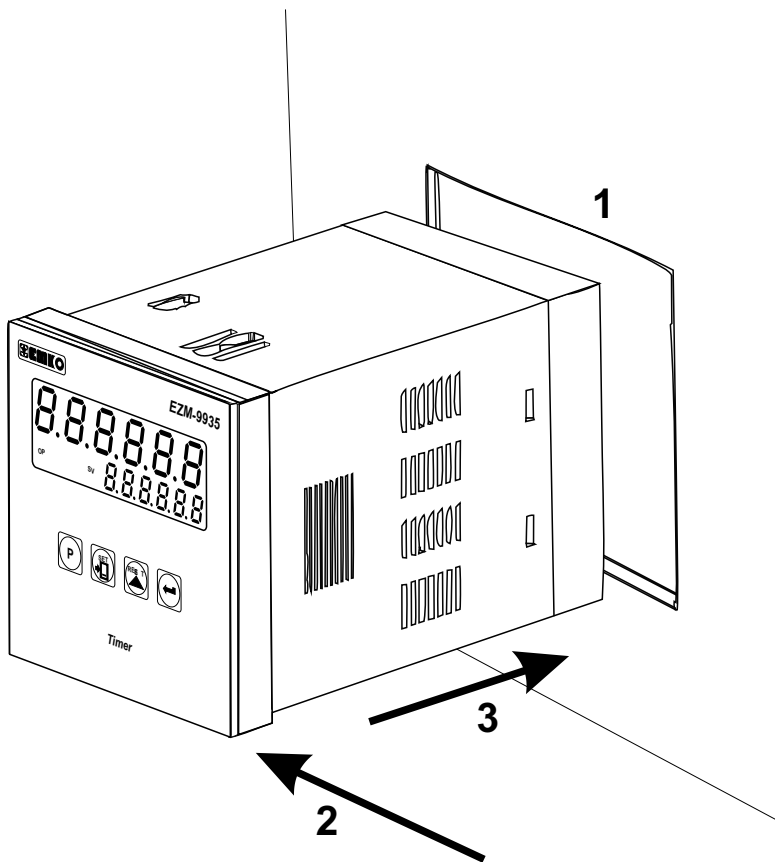
Altitude   : Up to 2000m.

Forbidden Conditions:
Corrosive atmosphere
Explosive atmosphere
Home applications (The unit is only for industrial applications)

2.5 Panel Mounting

1-Before mounting the device in your panel, make sure that the cut-out is the right size.

2-Check front panel gasket position

3-Insert the device through the cut-out. If the mounting clamps are on the unit, put out them before inserting the unit to the panel.

During installation into a metal panel, care should be taken to avoid injury from metal burrs which might be present. The equipment can loosen from vibration and become dislodged if installation parts are not properly tightened. These precautions for the safety of the person who does the panel mounting.

2.6 Installation Fixing Clamp
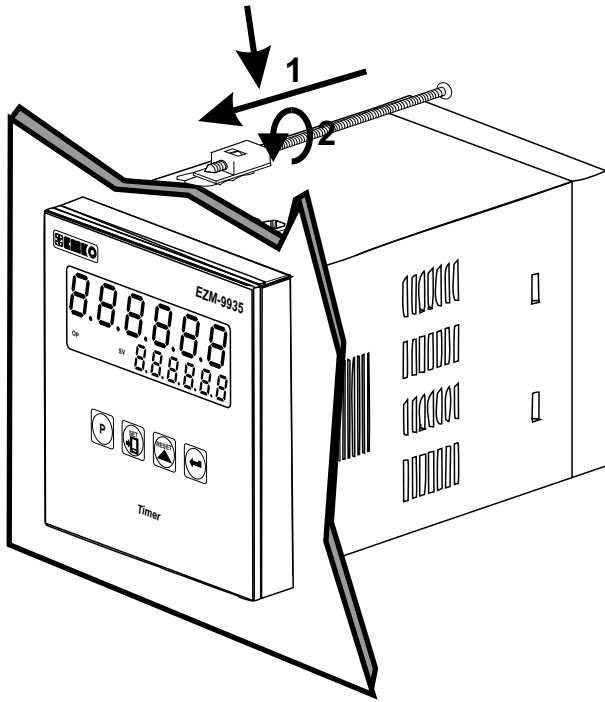
The unit is designed for panel mounting.

1-Insert the unit in the panel cut-out from the front side.

2- Insert the mounting clamps to the holes that located top and bottom sides of device and screw up the fixing screws until the unit completely immobile within the panel

Montage of the unit to a system must be done with it's own fixing clamps. Do not do the montage of the device with inappropriate fixing clamps. Be sure that device will not fall while doing the montage.

2.7 Removing from the Panel

Before starting to remove the unit from panel, power off the unit and the related system.
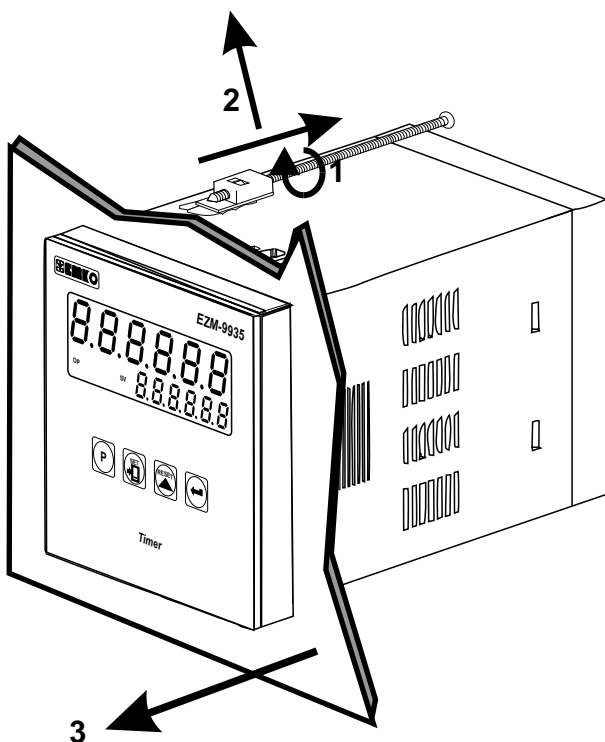
1-Loosen the screws.

2-Pull mounting clamps from top and bottom fixing sockets.

3-Pull the unit through the front side of the panel

3.Electrical Wirings

⚠ You must ensure that the device is correctly configured for your application. Incorrect configuration could result in damage to the process being controlled, and/or personal injury. It is your responsibility, as the installer, to ensure that the configuration is correct.
Parameters of the device has factory default values. These parameters must be set according to the system's needs.

⚠ Only qualified personnel and technicians should work on this equipment. This equipment contains internal circuits with voltage dangerous to human life. There is severe danger for human life in the case of unauthorized intervention.

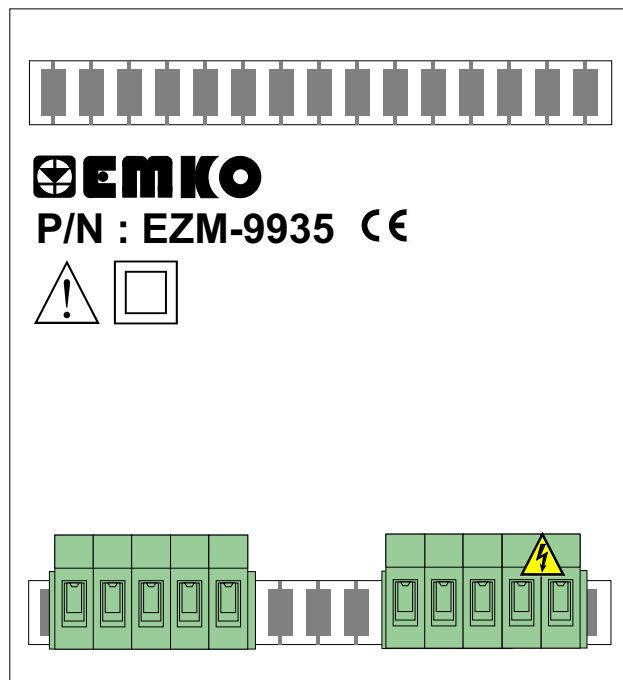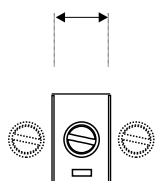⚠ Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.

⚠ Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

3.1 Terminal Layout and Connection Instructions

P/N : EZM-9935 CE

Max. 2.5mm / 0.098 inch
Wire Size:
14AWG/1mm²
Solid / Stranded

Torque
0,5Nm

Screw Driver
0,8 x3mm

3.2 Electrical Wiring Diagram

⚠️ **Electrical wiring of the device must be the same as 'Electrical Wiring Diagram' below to prevent damage to the process being controlled and personnel injury.**
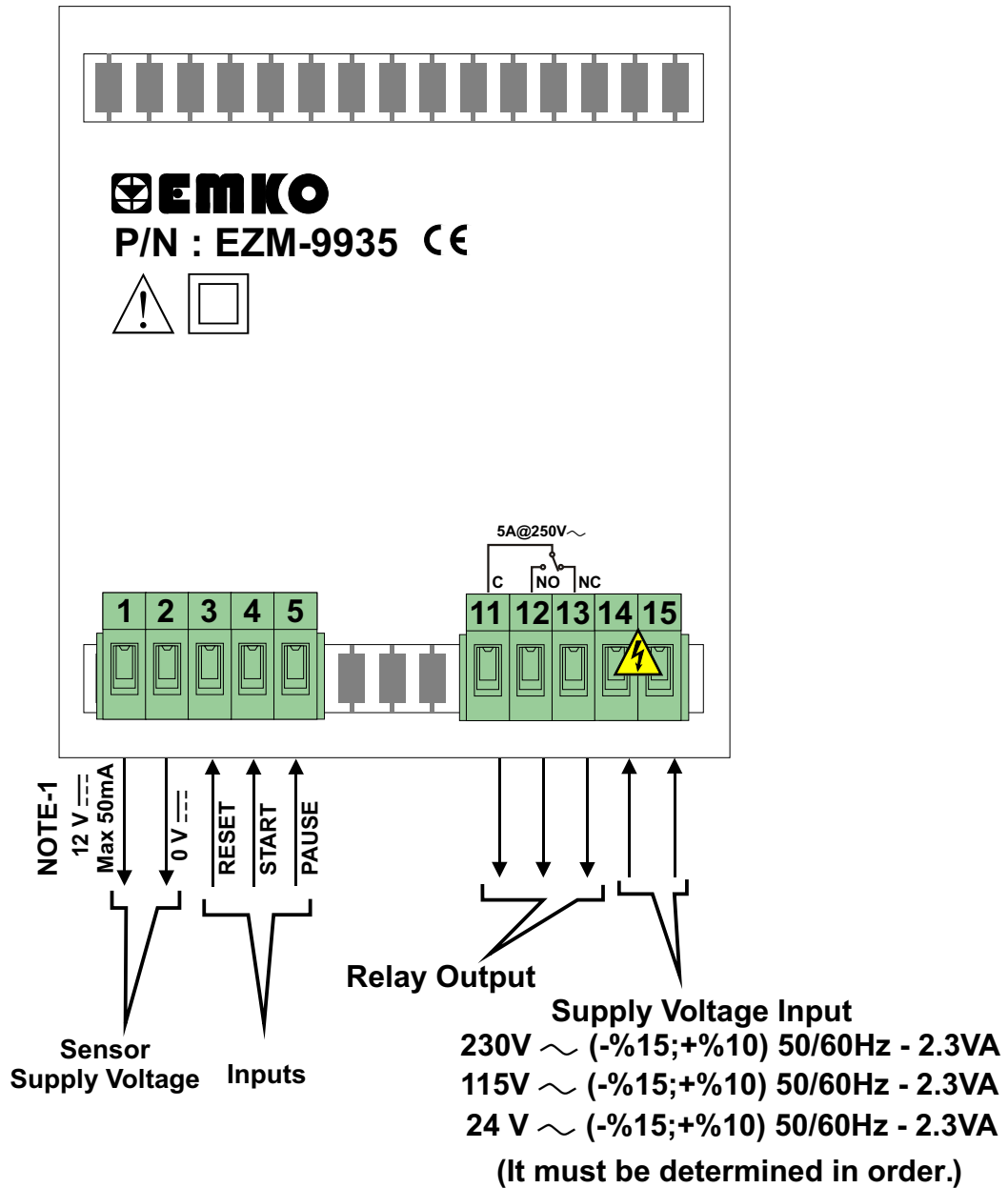
⊞EMKO

P/N : EZM-9935 CE

5A@250V∿
C   NO   NC

| 1 | 2 | 3 | 4 | 5 | | 11 | 12 | 13 | 14 | 15 |

NOTE-1
12 V ⎓ Max 50mA
0 V ⎓
RESET
START
PAUSE

Sensor Supply Voltage **Inputs**

Relay Output

Supply Voltage Input
230V ∿ (-%15;+%10) 50/60Hz - 2.3VA
115V ∿ (-%15;+%10) 50/60Hz - 2.3VA
24 V ∿ (-%15;+%10) 50/60Hz - 2.3VA

(It must be determined in order.)

NOTE-1 : Sensor supply voltage: 12V⎓ ± 40%, 50 mA maximum with short circuit protection

EMKO C E
P/N : EZM-9935

Max.50mA | 12 V —— | 0 V —— | Reset | Start | Pause
| 1 | 2 | 3 | 4 | 5 |

230 V~ ± 15%
50/60 Hz - 2.3VA
5A@250V~
C | NO | NC | N | L
| 11 | 12 | 13 | 14 | 15 |
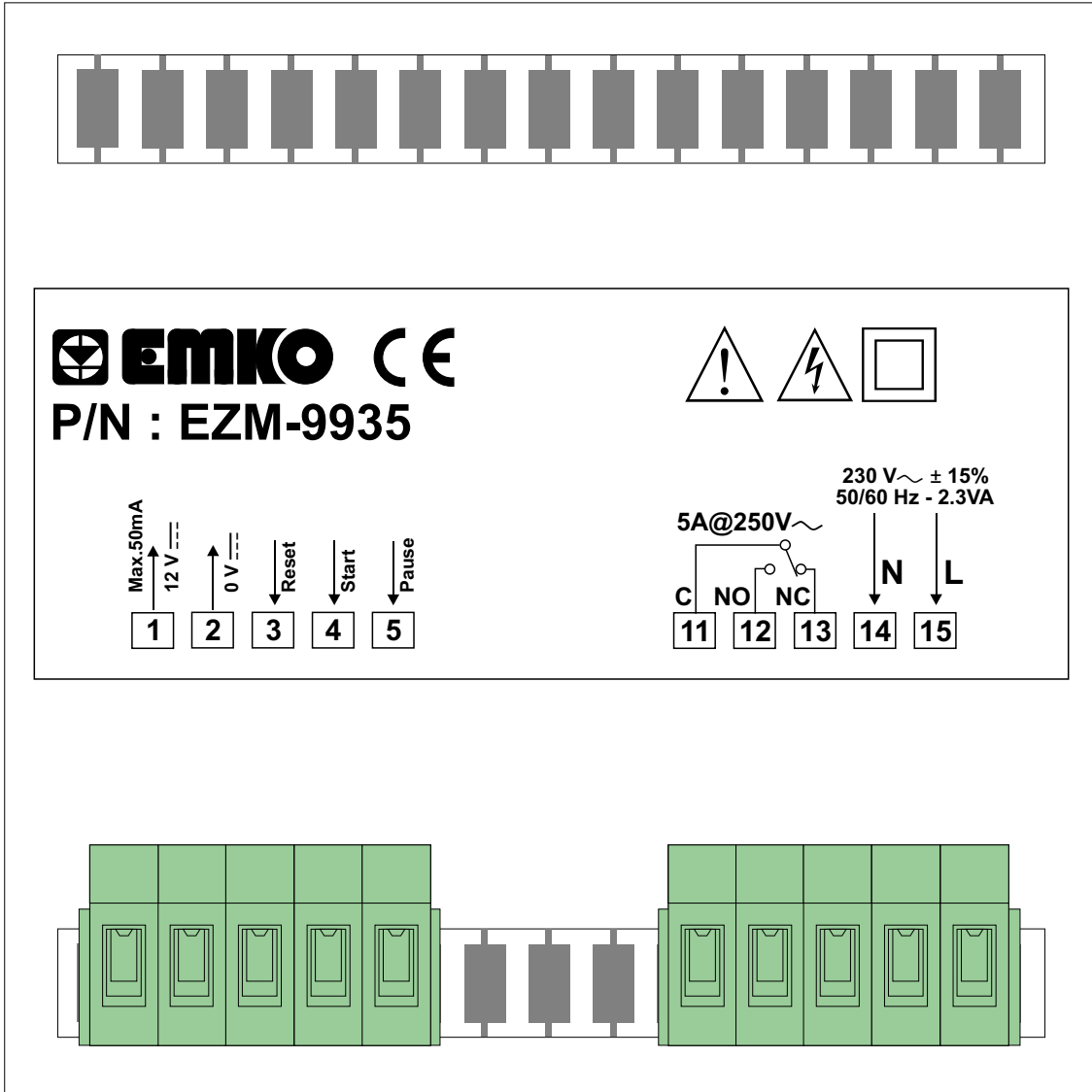
Connection of Universal Supply Voltage Input

Connection of Universal Supply Voltage Input

Fuse | Note-1

N | L

14 | **15**

Note-2 | **External Fuse (1 A ~ T)**

Power Supply Switch

Supply Voltage 115V~, 230 V ~ (-%15;+%10) 50/60 Hz

Fuse | Note-1

N | L

14 | **15**

Note-2 | **External Fuse (1 A ~ T)**

Power Supply Switch

Supply Voltage 24V ~ (-%15;+%10) 50/60Hz
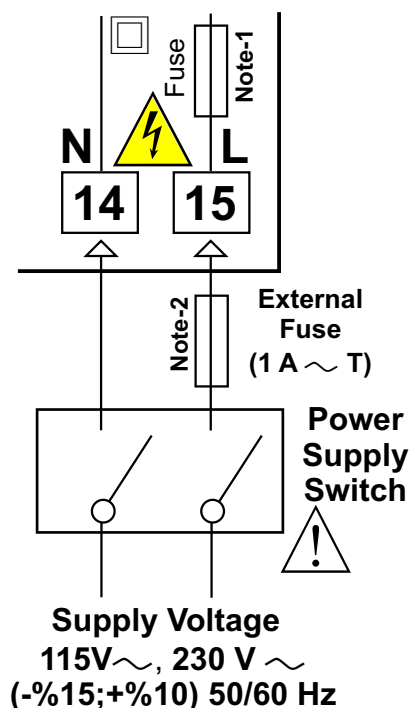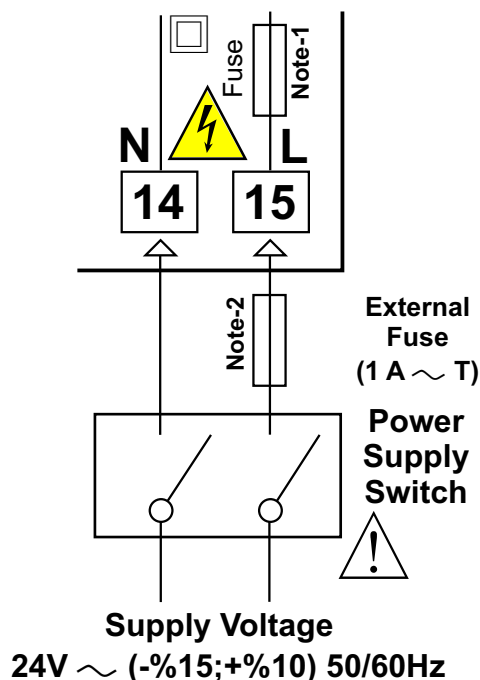
Note-1 :

There is internal 33 R   fusible flameproof resistor in 115V ~   50/60 Hz and 230V~   50/60 Hz
There is internal 4R7   fusible flameproof resistor in 24V ~ 50/60Hz

Note-2 : External fuse is recommended

Make sure that the power supply voltage is the same indicated on the instrument.

Switch on the power supply only after that all the electrical connections have been completed.

Supply voltage range must be determined in order. While installing the unit, supply voltage range must be controlled and appropriate supply voltage must be applied to the unit. Controlling prevents damages in unit and system and possible accidents as a result of incorrect supply voltage.

There is no power supply switch on the device. So a power supply switch must be added to the supply voltage input. In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument.Power supply switch shall be easily accessible by the user.

Power switch must be two poled for seperating phase and neutral. On/Off condition of power switch is very important in electrical connection. On/Off condition of power switch must be signed for preventing the wrong connection.

If an external fuse is used, it must be on phase connection in ~supply input.

3.5.1 Proximity Connection
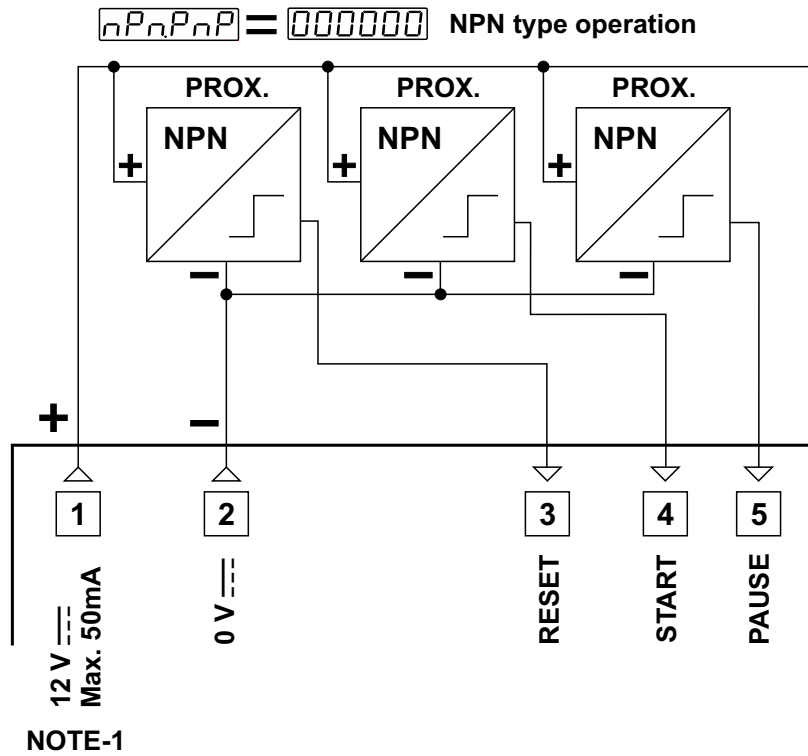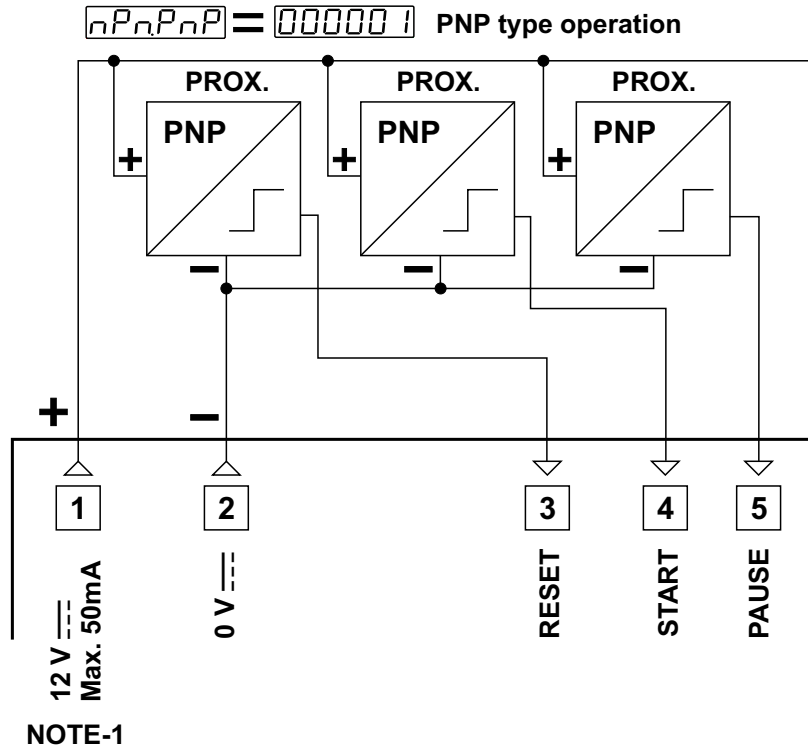
$nPnPnP = 000001$ **PNP type operation**

PROX. **PROX.** **PROX.**

PNP   PNP   PNP

| **1** | **2** | | **3** | **4** | **5** |

12 V ⎓ Max. 50mA

0 V ⎓

RESET

START

PAUSE

NOTE-1

$nPnPnP = 000000$ **NPN type operation**

PROX. **PROX.** **PROX.**

NPN   NPN   NPN

| **1** | **2** | | **3** | **4** | **5** |

12 V ⎓ Max. 50mA

0 V ⎓

RESET

START

PAUSE

NOTE-1

NOTE-1 : Sensor supply voltage: 12V⎓ ± 40%,   50 mA maximum with short circuit protection

$\boxed{nPnPnP} = \boxed{000001}$ **PNP type operation**

$\boxed{nPnPnP} = \boxed{000000}$ **NPN type operation**
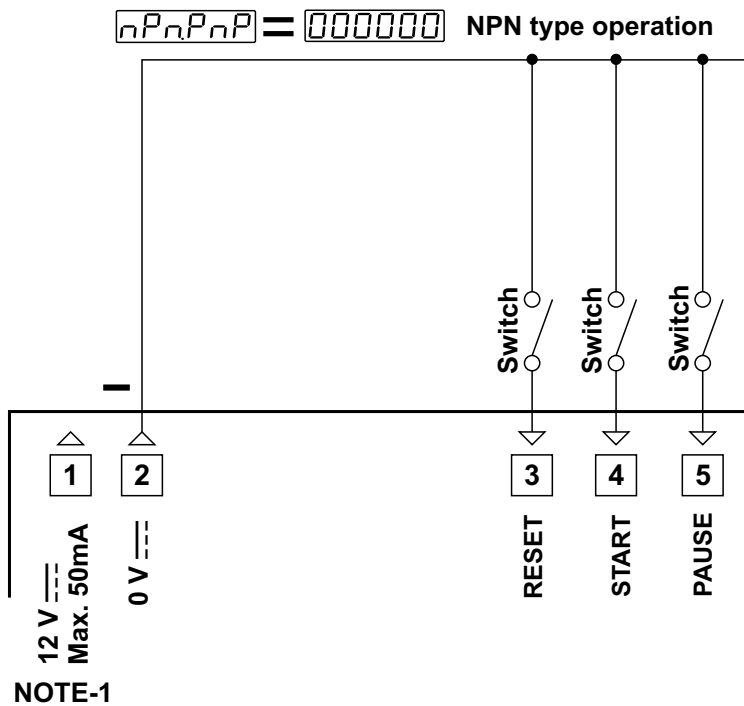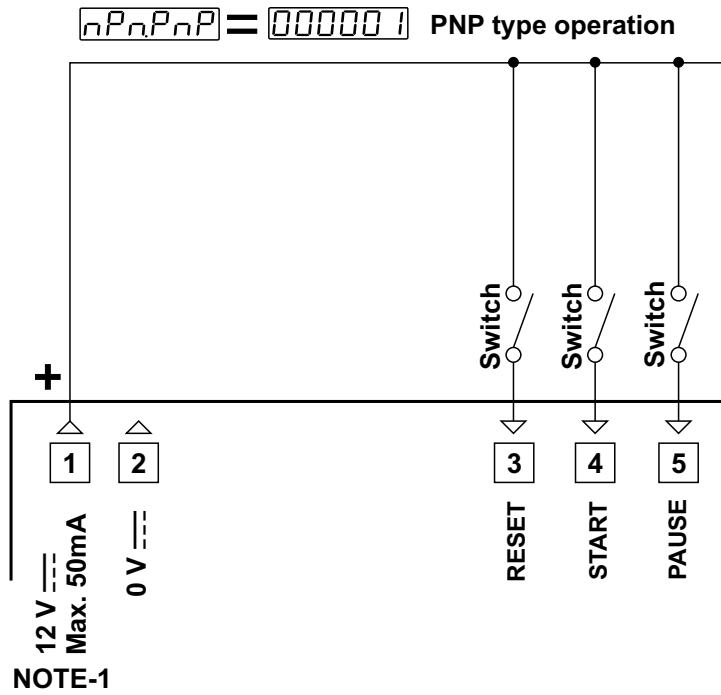
NOTE-1 : Sensor supply voltage: 12V‐‐ ± 40%,   50 mA maximum with short circuit protection

3.6 Relay Output Wiring Diagram
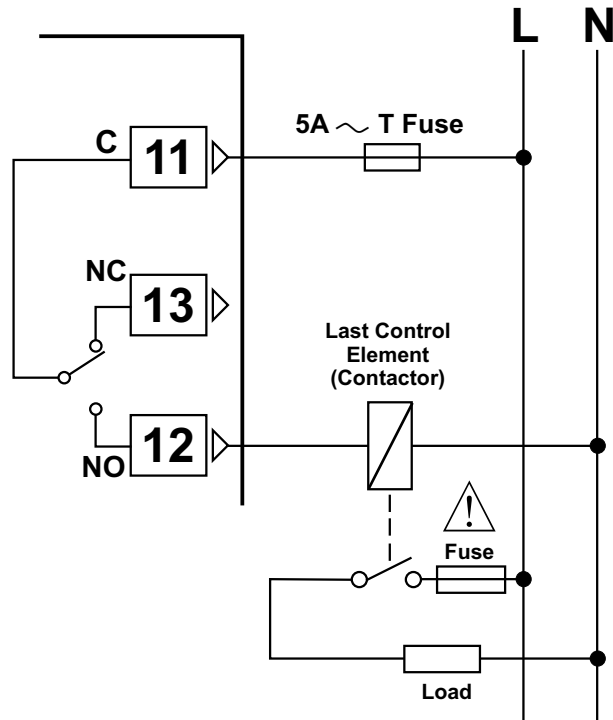
⚠ **Fuses must be selected according to the applications.**

3.7 Galvanic Isolation Test Results of EZM-9935 Programmable Timer
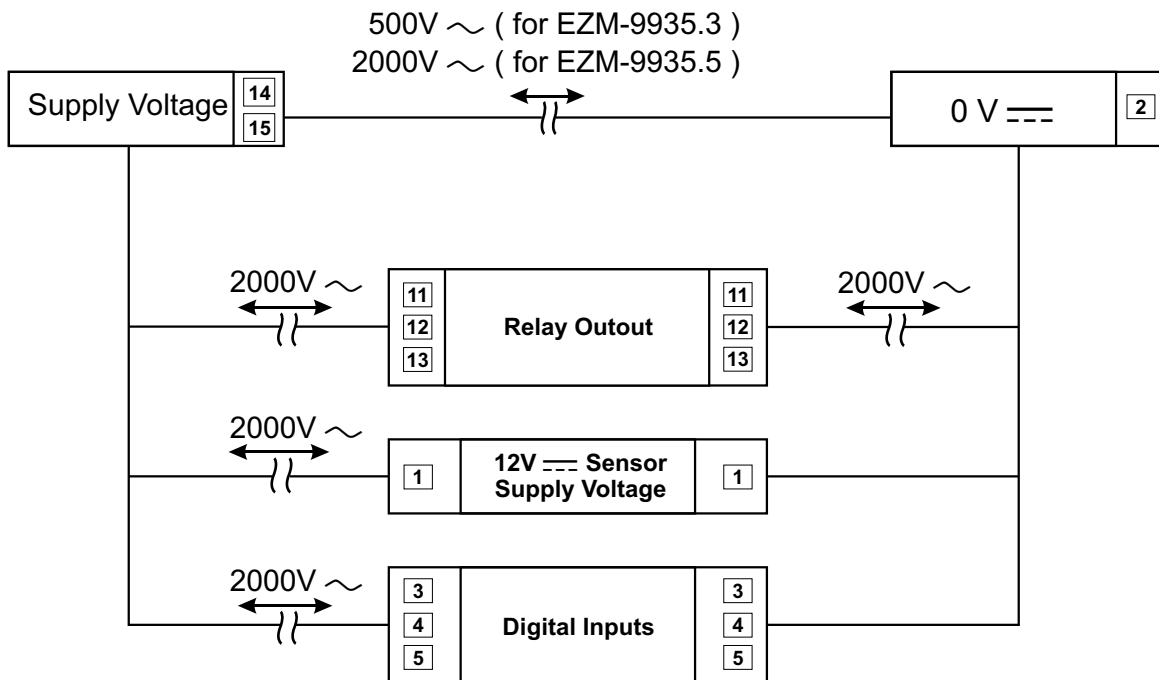
4.1 Definition of Front Panel

Displays Actual Value and Name of Program Parameter

Displays SET and Parameter Value

Led indication of output is active

Led indication of SV:SET value

Timer

PROG Button is Used for accessing to the Program Parameters

ENTER Button is used for saving all changes to memory and accessing to the parameters.

SHIFTING Button is used for Changing the cursor position in Programming mode and entering the SET Value.

RESET and INCREMENT Button is used to Reset the Actual Value or increment the digit value that is selected by SHIFTING Button.

4.2 Power On Observation of EZM - 9935 Programmable Timer and Software Revision on the Display

When power is applied to the device, software revision number of the controller is momentarily illuminated on actual value display. Then operation screen is observed.

When power on, view of the screen is shown below:

"rEu"   Revision   Revision number
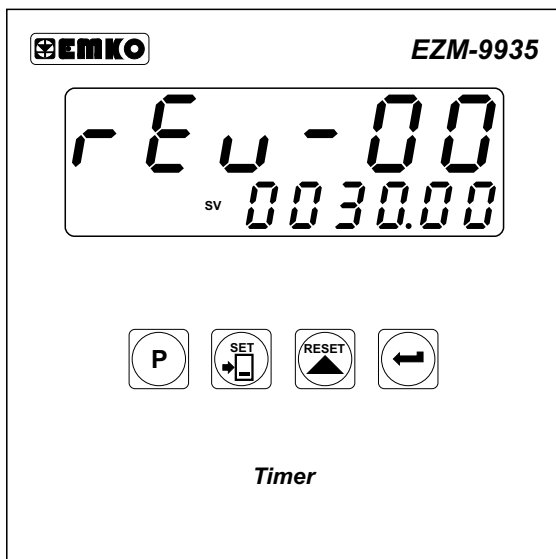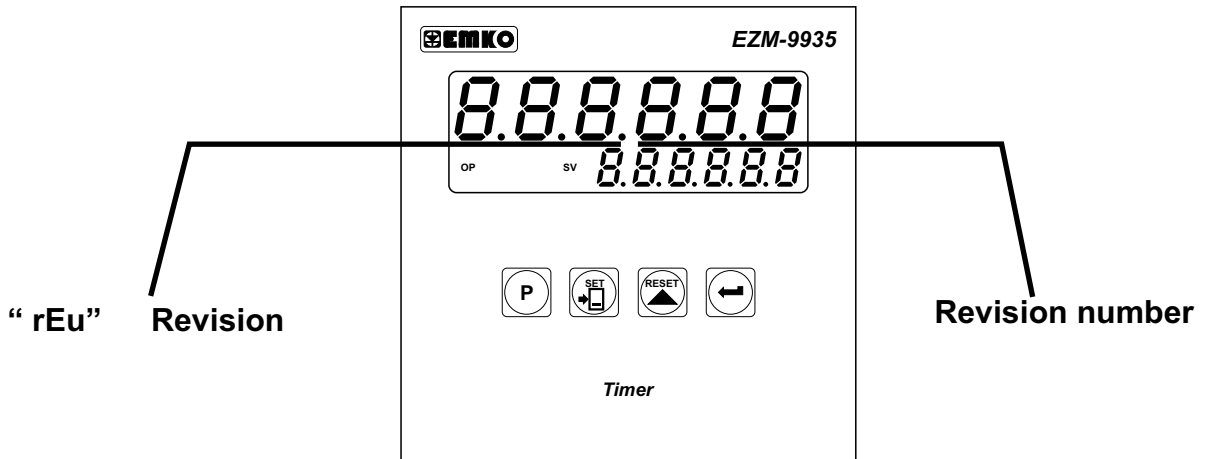
Software Revision
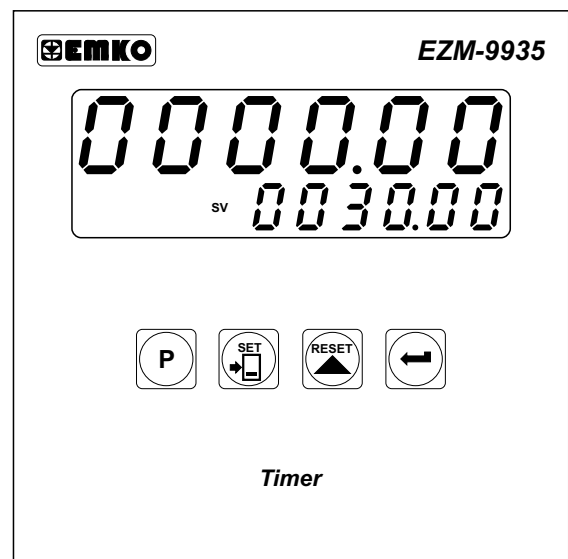
Main screen is shown.

⚠ **If there is an unexpected situation while opening the device, power off the device and inform a qualified personnel.**

Changing SET Value

0000.00 sv 0030.00	**Operation Screen**	0000.00 sv 0030.00	**SET Screen**

P SET RESET ⏎   P SET RESET ⏎

When shift button is pressed, 6th digit of SET value starts to flash.

Press Shift button again.

| 0000.00 sv 0030.00 | **SET Screen** |
| 0000.00 sv 0030.00 | **SET Screen** |

P SET RESET ⏎   P SET RESET ⏎

4th digit of SET value starts to flash.

5th digit of SET value starts to flash.   Press Shift button again.

Increase the flashing value with increment button.

| 0000.00 sv 0050.00 | **SET Screen** |
| 0000.00 sv 0050.00 | **Operation Screen** |

P SET RESET ⏎   P SET RESET ⏎

Save the value as SET value by pressing Enter button.

$$0823.40$$
OP SV $$0030.00$$

Operation Screen

$$0000.00$$
SV $$0030.00$$

Operation Screen

P SET RESET ↵

P SET RESET ↵

When RESET button is pressed, Actual Value becomes the 0 Value.

ⓘ **RESET operation can be realized by Reset button or applying signal to the RESET input. These two operations are named MANUAL RESET in parameters section.**
At the end of MANUAL RESET; if $dirEct = 000000$ then Count value becomes 0 value. If $dirEct = 000001$ then Count value becomes SET value.

4.5 Accessing to the Program Parameters

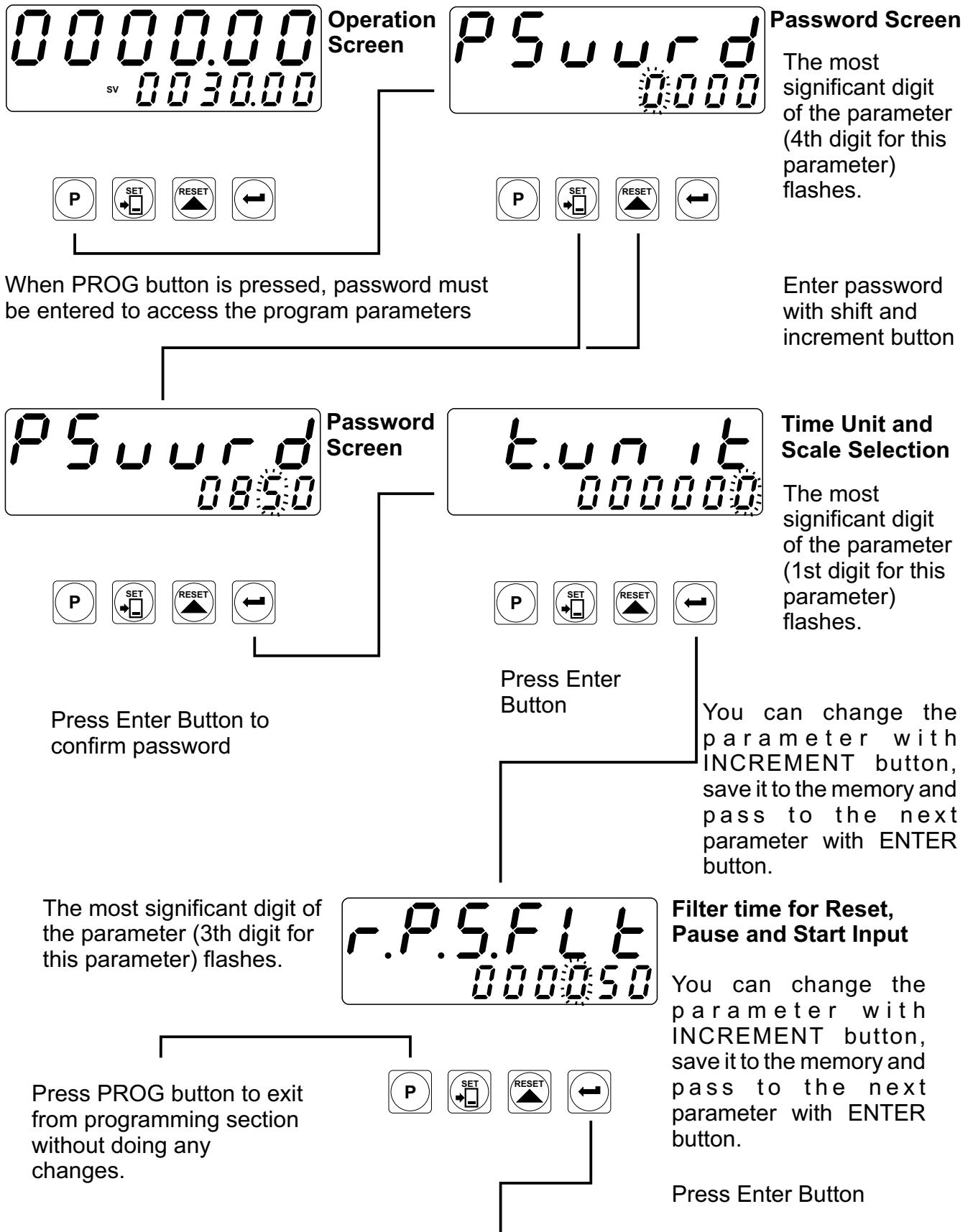In this section Accessing to the Program parameters process is shown.
For details on parameters refer to PROGRAM PARAMETERS section.

```
000000        Operation
    sv  003000        Screen
```

```
PSuurd        Password Screen
     0000
```

Password Screen

The most significant digit of the parameter (4th digit for this parameter) flashes.

P SET RESET ↵

P SET RESET ↵

When PROG button is pressed, password must be entered to access the program parameters

Enter password with shift and increment button

```
PSuurd        Password
     0850        Screen
```

Password Screen

```
t.unit        Time Unit and
    000000        Scale Selection
```

Time Unit and Scale Selection

The most significant digit of the parameter (1st digit for this parameter) flashes.

P SET RESET ↵

P SET RESET ↵

Press Enter Button to confirm password

Press Enter Button

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

The most significant digit of the parameter (3th digit for this parameter) flashes.

```
r.P.S.FLt
    000050
```

Filter time for Reset, Pause and Start Input

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

P SET RESET ↵

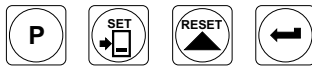Press PROG button to exit from programming section without doing any changes.

Press Enter Button

The most significant digit of the parameter (1st digit for this parameter) flashes.
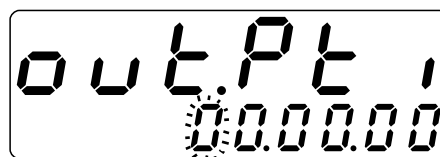
out.Fnc
000000

Output Functions

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [↵]

Press Enter Button

The most significant digit of the parameter (1st digit for this parameter) flashes.

out.run
000000

Output Run Type

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [↵]

Press Enter Button

The most significant digit of the parameter (6th digit for this parameter) flashes.

out.Pti
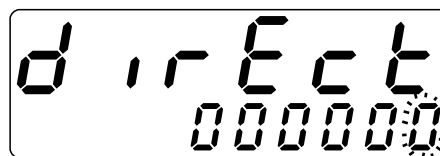**00.00.00**

Output Pulse Time

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [↵]

Press Enter Button

The most significant digit of the parameter (1st digit for this parameter) flashes.

dirEct
000000

Counting Direction

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

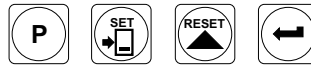Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [↵]

Press Enter Button

The most significant digit of the parameter (1st digit for this parameter) flashes.
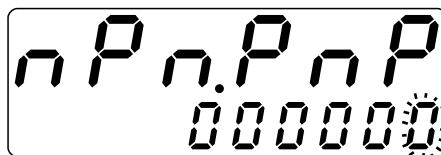
`dAt.rEc`
`000001`

Data Record

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [←]

Press Enter Button

The most significant digit of the parameter (1st digit for this parameter) flashes.

`nPn.PnP`
`000000`
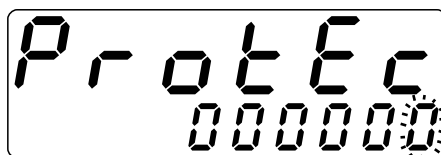
Sensor Type Selection

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [←]

Press Enter Button

The most significant digit of the parameter (1st digit for this parameter) flashes.

`ProtEc`
`000000`

Reset and Set Protection

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [←]

Press Enter Button

The most significant digit of the parameter (4th digit for this parameter) flashes.

`ProG.PS`
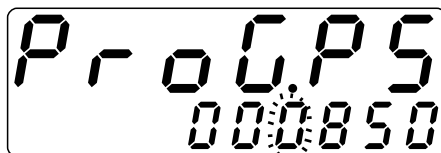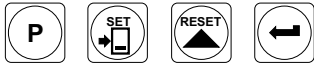`000850`

Program Password

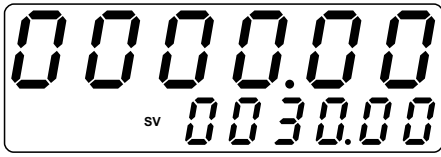You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

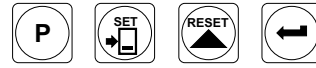Press PROG button to exit from programming section without doing any changes.

[P] [SET] [RESET] [←]

Press Enter Button

`000000` `SV` `003000`

`t.unit` `000000`

Operation Screen

Time Unit and Scale Selection

Continue to press ENTER
button for scanning all
parameters.

`t.unit` **Time Unit and Scale Selection**

`000000` Hour/Minute
It can be adjusted from `000000` to `009959`

`000001` Minute/Second
It can be adjusted from `000000` to `009959`

`000002` Second/Milisecond
It can be adjusted from `000000` to `009999`

`000003` Hour/Minute
It can be adjusted from `000000` to `002359`

`000004` Hour
It can be adjusted from `000000` to `099999`

`000005` Minute
It can be adjusted from `000000` to `099999`

`000006` Second
It can be adjusted from `000000` to `099999`

`r.P.S.FLt` **Filter Time of Reset, Pause and Start Inputs**

It is used to protect against the electrical contact debounce or the signal that is less than the determined pulse time.
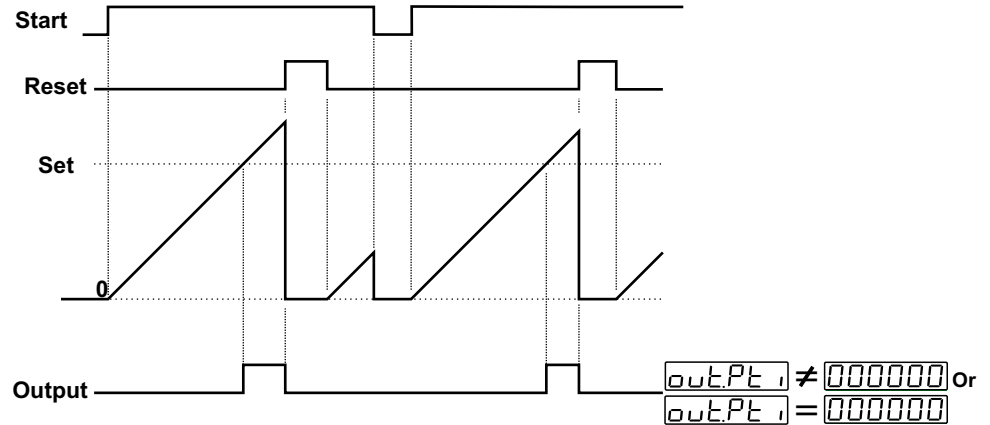It can be adjusted from `000002` to `000250` msec .

out.Fnc	

Output Functions

out.Fnc = 000000

Manual Reset-1.
Device continues to count till manual reset is applied.
(Output PulseTime out.Pt i **is not considered)**

Count direction : 0 --> P (Upcounting)   direct = 000000

Start

Reset

Set

0

Output   out.Pt i ≠ 000000 Or
out.Pt i = 000000

When count value reaches the Set Value, Output Position is changed. Counting process continues over the SET value. Output Pulse Time is not considered. Process counts, until manual reset happens. Counting is continues, while Start input is active. When Start input is passive, count value becomes "0". When Manual Reset happens, count value becomes 0 value.

Counting direction : P --> 0 (Downcounting) direct = 000001

Start

Reset

Set

0

Output   out.Pt i ≠ 000000 Or
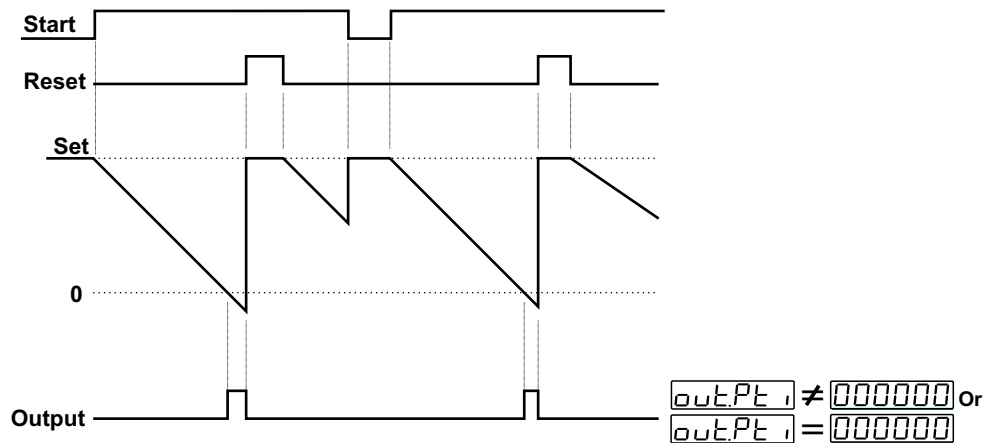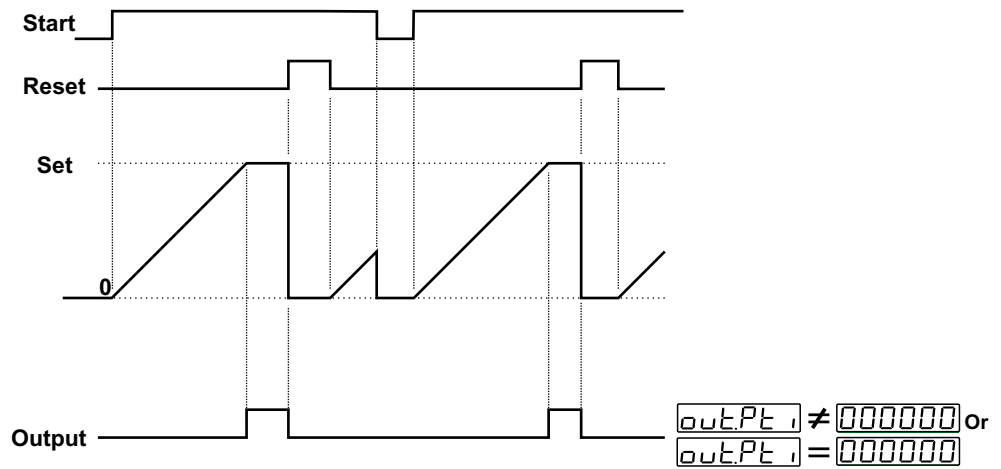out.Pt i = 000000

When count value reaches the 0 Value, Output Position is changed. Counting process continues under the 0 value. Output Pulse Time is not considered. Process counts, until manual reset happens. Counting is continues, while Start input is active. When Start input is passive, count value becomes SET value. When Manual Reset happens, count value becomes SET value.
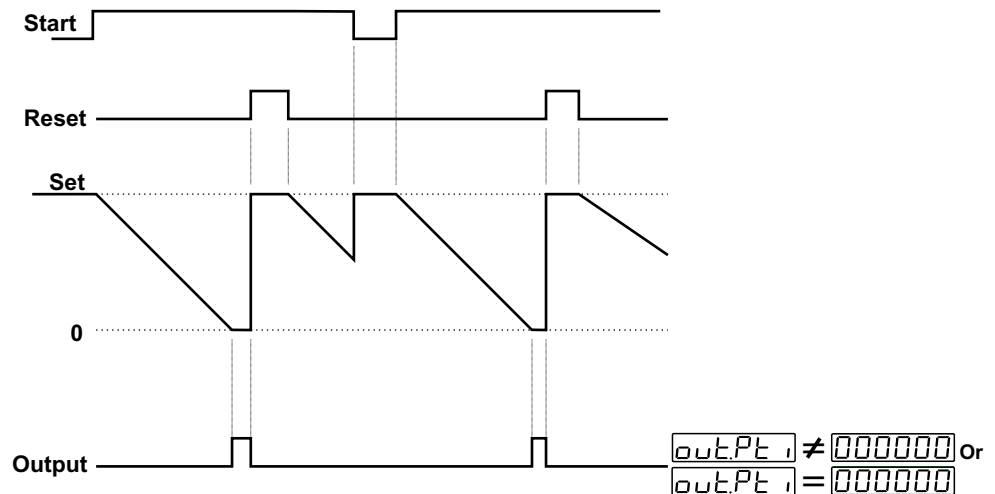
| out.Fnc | = | 000001 |

Manual Reset-2.
Device continues to count till manual reset is applied.
(Output pulse Time | out.Pt 1 | **is not considered)**

Counting direction : 0 --> P (Upcounting) | dırEct | = | 000000 |

Start

Reset

Set

0

Output

| out.Pt 1 | ≠ | 000000 | Or
| out.Pt 1 | = | 000000 |

When count value reaches the Set Value, Output Position is changed. Counting process is not continue over the SET value. Output Pulse Time is not considered. Process counts, until manual reset happens. When Manual Reset happens, count value becomes 0 value. Counting is continues, while Start input is active. When Start input is passive, count value becomes "0".

Counting direction : P --> 0 (Downcounting) | dırEct | = | 000001 |

Start

Reset

Set

0

Output

| out.Pt 1 | ≠ | 000000 | Or
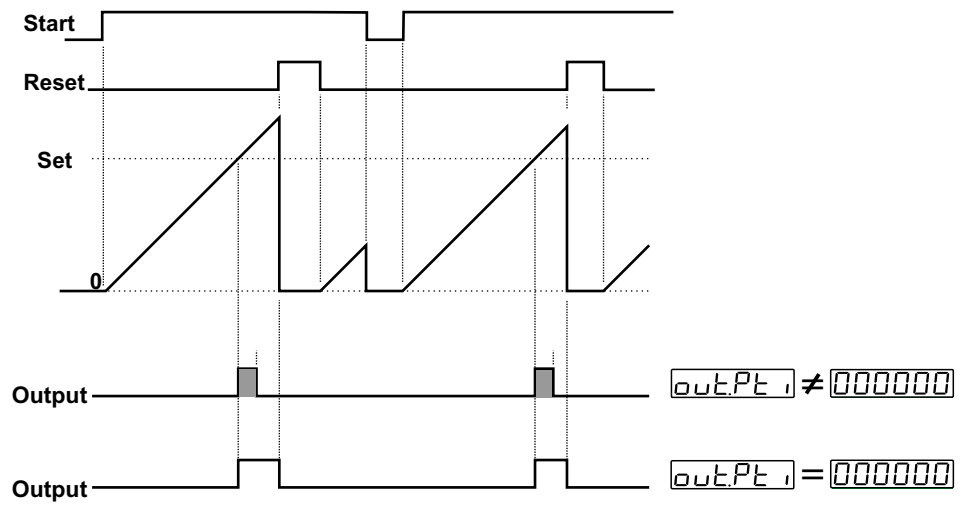| out.Pt 1 | = | 000000 |

When count value reaches the 0, Output Position is changed. Counting process is not continue under the 0 value. Output Pulse Time is not considered. Process counts, until manual reset happens. When Manual Reset happens, count value becomes SET value. Counting is continues, while Start input is active. When Start input is passive, count value becomes SET value.

$\boxed{\text{out.Fnc}} = \boxed{000002}$

Manual Reset-3.
Device continues to count till manual reset is applied.
(Output Pulse Time $\boxed{\text{out.Pt1}}$ is considered.)

Counting direction : 0 --> P (Upcounting) $\boxed{\text{dirEct}} = \boxed{000000}$

$\boxed{\text{out.Pt1}} \neq \boxed{000000}$

$\boxed{\text{out.Pt1}} = \boxed{000000}$

When count value reaches the Set Value, Output Position is changed. If Output Pulse time $\boxed{\text{out.Pt1}}$ is not 0, then Output Position is changed at the end of the Pulse time. If $\boxed{\text{out.Pt1}} = \boxed{000000}$ then Output Position has not change, until Manual Reset happens. Counting process continues over the SET value.
When Manual Reset happens, count value becomes 0 value. When Start input is passive, count value becomes "0".

Counting direction : P --> 0 (Downcounting) $\boxed{\text{dirEct}} = \boxed{000001}$

$\boxed{\text{out.Pt1}} \neq \boxed{000000}$
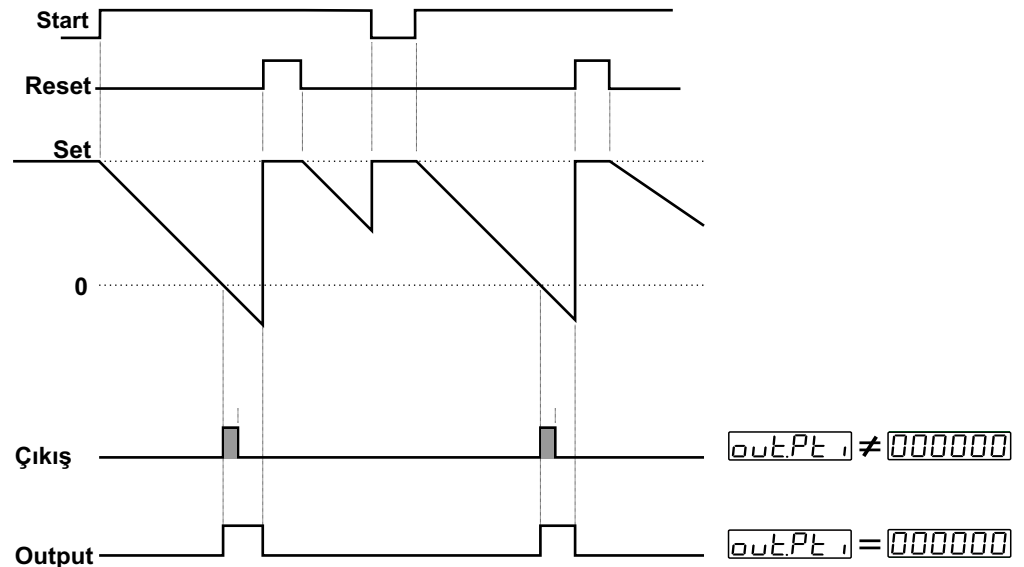
$\boxed{\text{out.Pt1}} = \boxed{000000}$

When count value reaches the 0 Value, Output Position is changed. If Output Pulse time $\boxed{\text{out.Pt1}}$ is not 0, then Output Position is changed at the end of the Pulse time. If $\boxed{\text{out.Pt1}} = \boxed{000000}$ then Output Position has not change until Manual Reset happens. Counting process continues under the 0 value.
When Manual Reset happens count value becomes SET value. When Start input is passive, count value becomes SET value.

$\boxed{\text{out.Fnc}} = \boxed{000003}$ **Automatic Reset-1**

Counting direction : 0 --> P (Upcounting) $\boxed{\text{direct}} = \boxed{000000}$

$\boxed{\text{out.Pt i}} \neq \boxed{000000}$

$\boxed{\text{out.Pt i}} = \boxed{000000}$

When count value reaches the Set Value, Output Position is changed. Actual value is reset automatically. While Start input is active, then counting starts upcounting from 0 value. If Output Pulse time is not 0, then Output Position is changed at the end of the Pulse time.
If $\boxed{\text{out.Pt i}} = \boxed{000000}$, then Output Position has not changed until Manuel Reset happens.
When Manual Reset happens, count value becomes 0 value.

Counting direction : P --> 0 (Downcounting) $\boxed{\text{direct}} = \boxed{000001}$

$\boxed{\text{out.Pt i}} \neq \boxed{000000}$

$\boxed{\text{out.Pt i}} = \boxed{000000}$

When count value reaches the 0 Value, Output Position is changed. Actual value is reset automatically. If Start input is active, then counting starts downcounting at Set value. If Output Pulse time $\boxed{\text{out.Pt i}}$ is not 0, then Output Position is changed at the end of the Pulse time. If Pulse time $\boxed{\text{out.Pt i}} = \boxed{000000}$ then Output Position has not changed until Manuel Reset happens.
When Manual Reset happens count value becomes SET value.

(i) **If output functions parameter $\boxed{\text{out.Fnc}}$ is selected Automatic Reset ($\boxed{000003}$ $\boxed{000004}$, $\boxed{000005}$ or $\boxed{000006}$, then $\boxed{\text{out.Pt i}}$ must be different from zero for realizing Automatic Reset.**

out.Fnc = **000004**   Automatic Reset-2

Counting direction : 0 --> P (Upcounting)   **dirEct** = **000000**
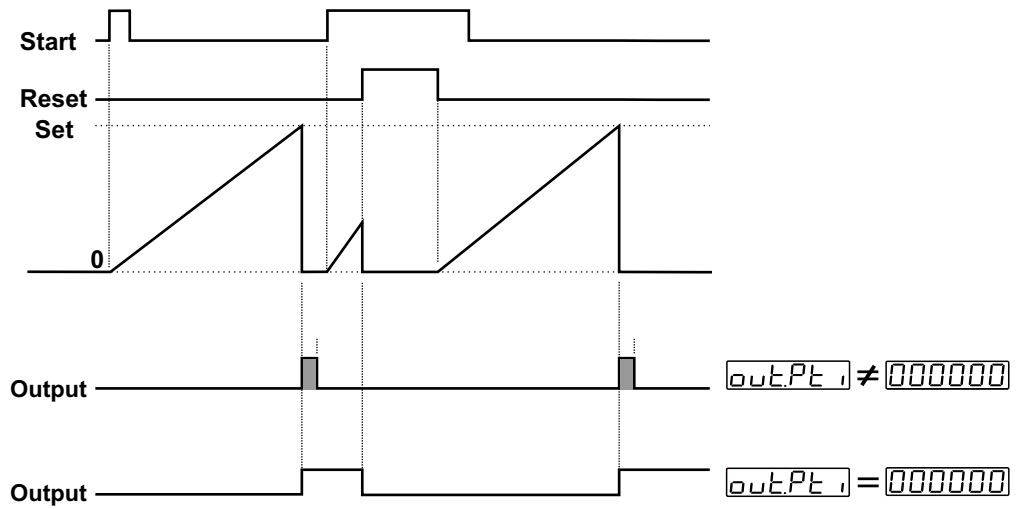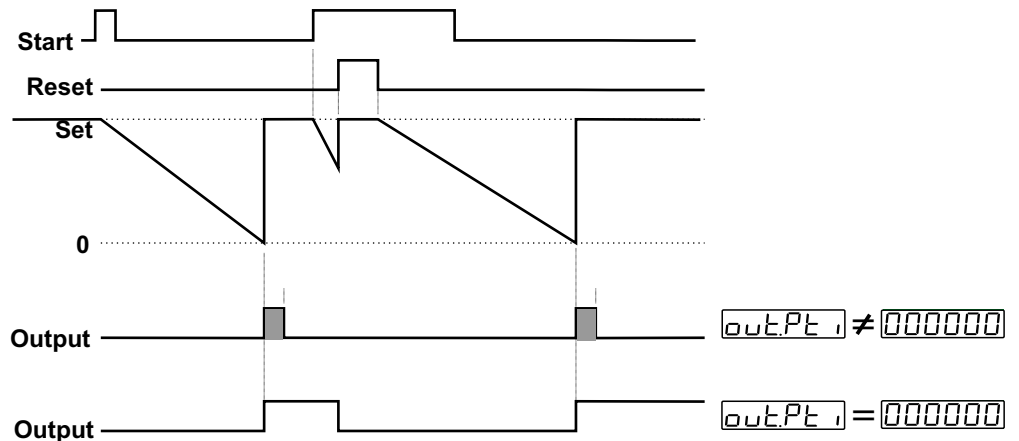

out.Pt1 ≠ **000000**

out.Pt1 = **000000**

When count value reaches the Set Value, Output Position is changed. If Output Pulse time **out.Pt1** is not 0, then Output Position is changed at the end of the Pulse time and Actual value is reset and if the Start input is active, then counting starts from 0 value. If output pulse time **out.Pt1** is "0", then output position has not change until Manual Reset happens.

Actual counting value stops at SET value. Counting process is not continue over the SET value.
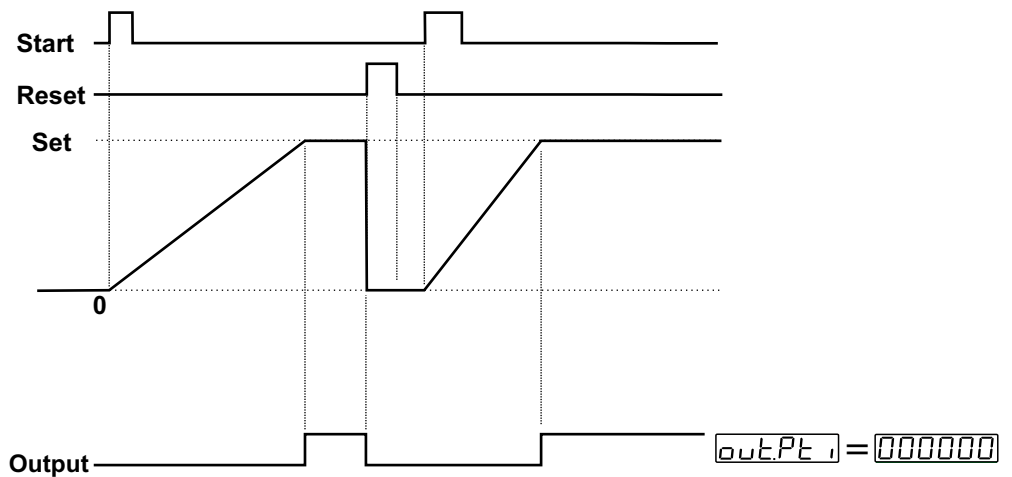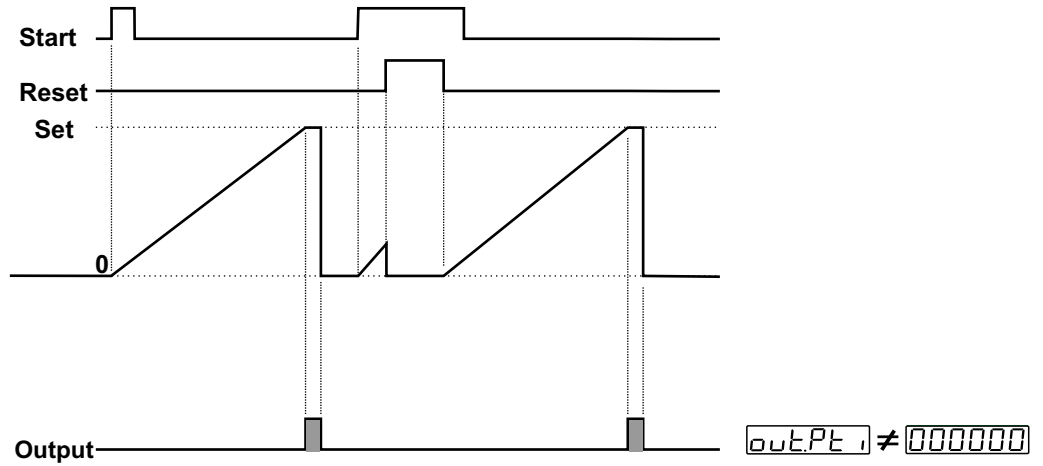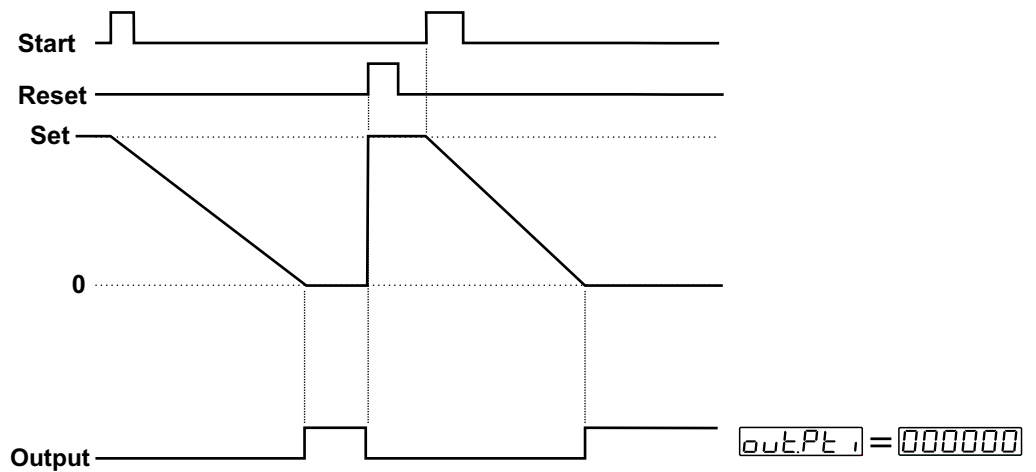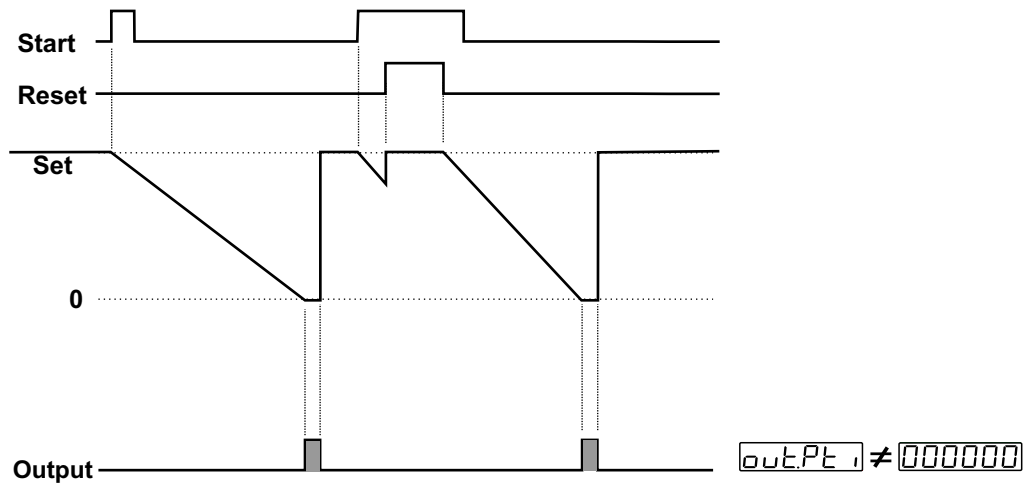
When Manual Reset happens, count value becomes 0 value.

ⓘ **If output functions parameter out.Fnc is selected Automatic Reset (000003 000004 , 000005 or 000006 , then out.Pt1 must be different from zero for realizing Automatic Reset.**

Counting direction : P --> 0 (Downcounting) $\boxed{d\,\mathrm{ir}\,Ec\,t} = \boxed{000001}$

$\boxed{out.Pt\,\mathrm{i}} \neq \boxed{000000}$

$\boxed{out.Pt\,\mathrm{i}} = \boxed{000000}$

When count value reaches the 0 Value, Output Position is changed. If Output Pulse time $\boxed{out.Pt\,\mathrm{i}}$ is not 0, then Output Position is changed at the end of the Pulse time and Actual value is reset. If the Start input is active, then counting starts from Set value. If output pulse time $\boxed{out.Pt\,\mathrm{i}}$ is 0, then output position has not change until Manual Reset happens. Actual counting value stops at 0 value. Counting process is not continue under the 0 value.

When Manual Reset happens count value becomes SET value.

ⓘ **If output functions parameter $\boxed{out.Fnc}$ is selected Automatic Reset ($\boxed{000003}$ $\boxed{000004}$, $\boxed{000005}$ or $\boxed{000006}$, then $\boxed{out.Pt\,\mathrm{i}}$ must be different from zero for realizing Automatic Reset.**

| $out.Fnc$ = 000005 | **Automatic Reset-3** |

Counting direction : 0 --> P (Upcounting) $direct$ = 000000

$out.Pt_1$ ≠ 000000

$out.Pt_1$ = 000000

When count value reaches the Set Value, Output Position is changed. If Output Pulse time $out.Pt_1$ is not 0, then Output Position is changed at the end of the Pulse time and Real counting value is shown on Actual value screen. If output pulse time $out.Pt_1$ = 000000 then, output position has not change until Manual Reset happens.

When counting value reach SET value, output position becomes active position and if the Start input is active, then count value starts counting from 0 value. But SET value is observed in actual value display. Counting process has not continue over SET value.

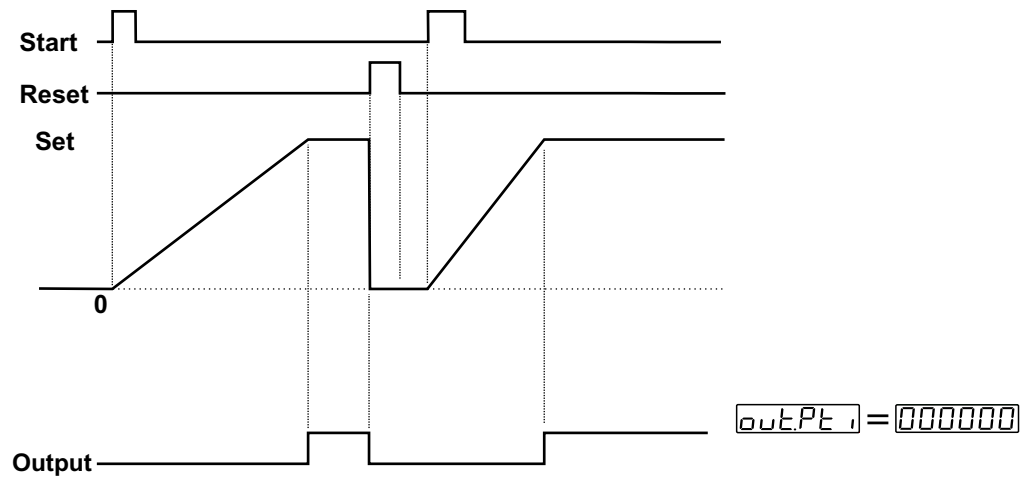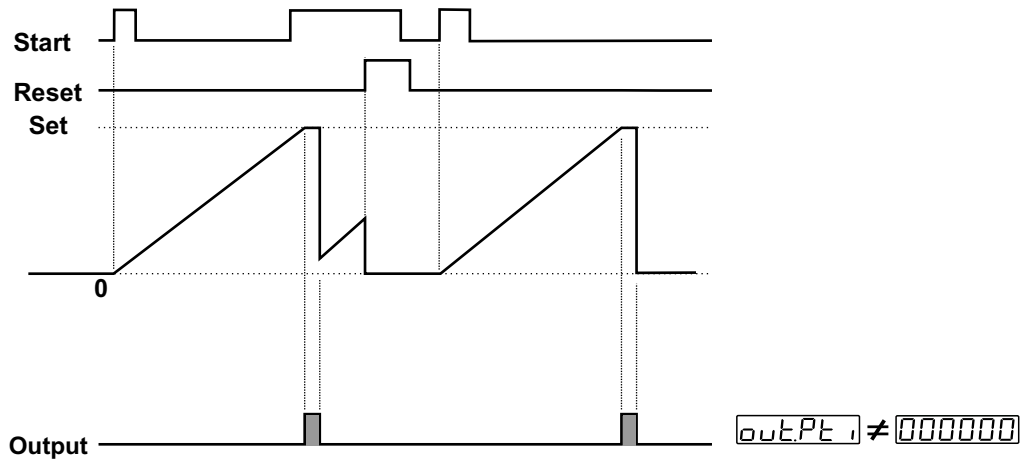When Manual Reset happens, count value becomes 0 value.

ⓘ **If output functions parameter $out.Fnc$ is selected Automatic Reset (000003 , 000004 , 000005 or 000006 , then $out.Pt_1$ must be different from zero for realizing Automatic Reset.**

Counting direction : P --> 0 (Downcounting) $\boxed{d\,\, ir E c t} = \boxed{000001}$

Start

Reset

Set

0

Output $\boxed{out.Pt\,i} \neq \boxed{000000}$

Start

Reset

Set

0

Output $\boxed{out.Pt\,i} = \boxed{000000}$

When count value reaches the 0 Value, Output Position is changed. If Output Pulse time $\boxed{out.Pt\,i}$ is not 0, then Output Position is changed at the end of the Pulse time and Real counting value is shown on Actual value screen. If output pulse time $\boxed{out.Pt\,i} = \boxed{000000}$, then output position has not change until Manual Reset happens.

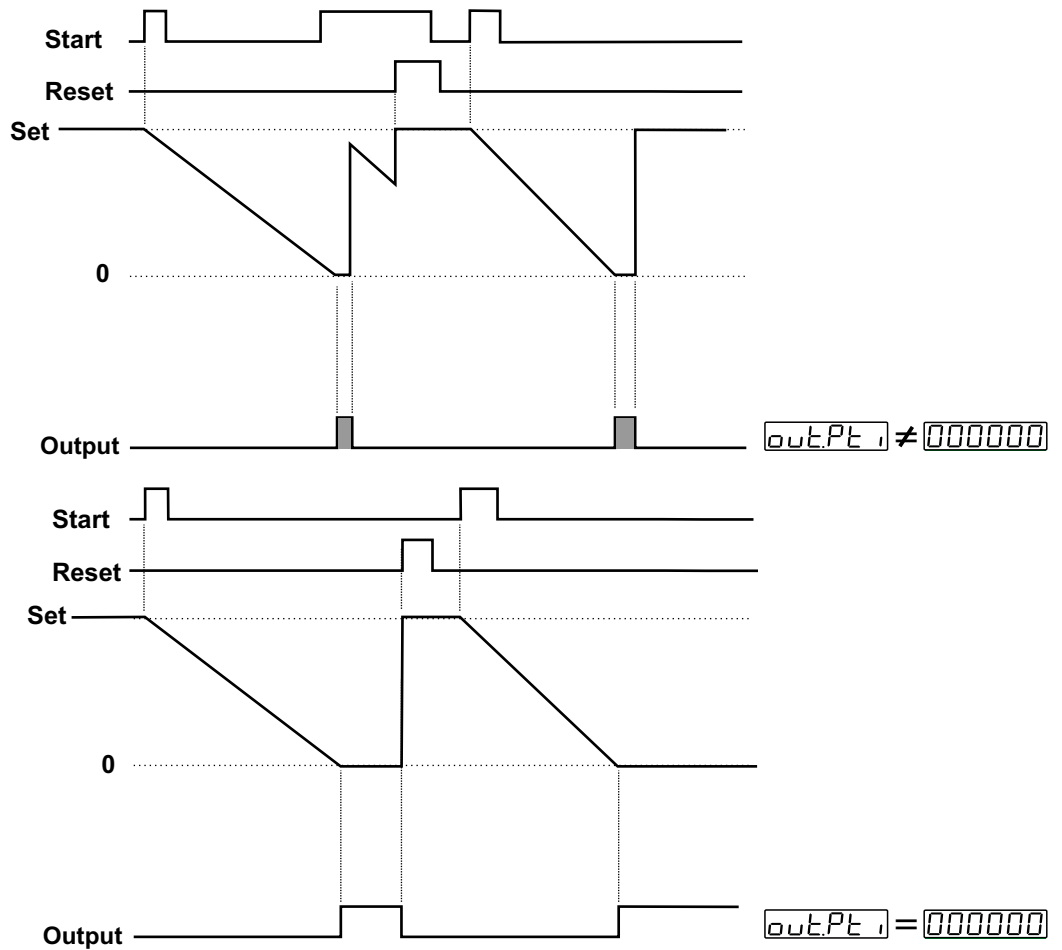When counting value reach 0 value, output position becomes active position and if the Start input is active, then count value starts counting from Set value. But 0 value is observed in actual value display. Counting process has not continue under 0 value.

When Manual Reset happens count value becomes SET value.

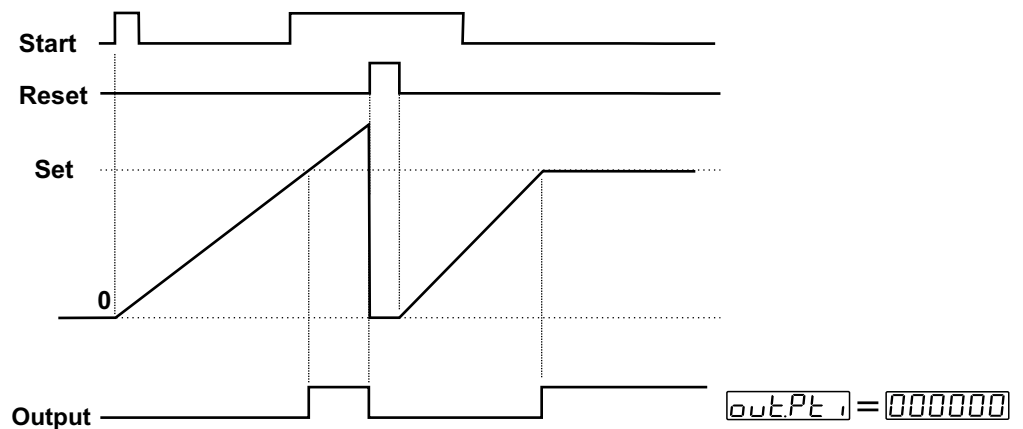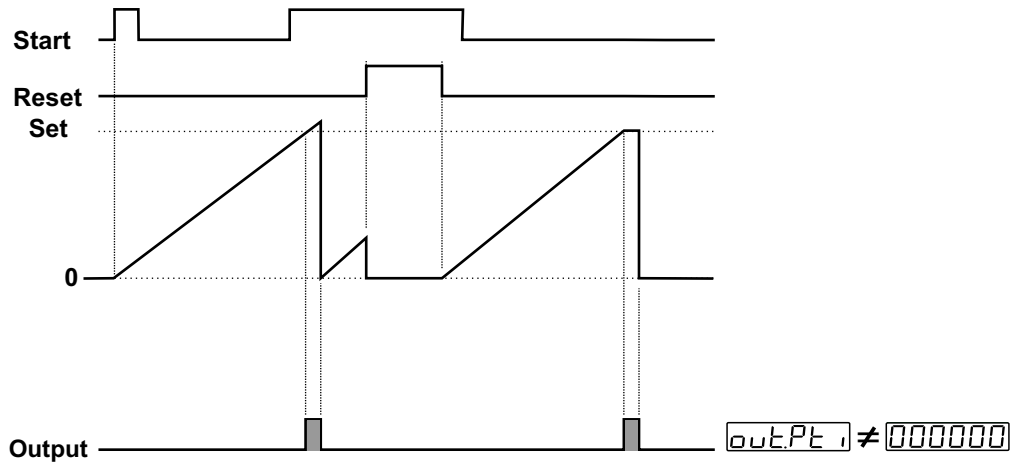ⓘ **If output functions parameter** $\boxed{out.Fnc}$ **is selected Automatic Reset (** $\boxed{000003}$ $\boxed{000004}$ **,** $\boxed{000005}$ **or** $\boxed{000006}$ **, then** $\boxed{out.Pt\,i}$ **must be different from zero for realizing Automatic Reset.**

$\boxed{\text{ouŁ.Fnc}} = \boxed{000006}$ **Automatic Reset-4**

Counting direction : 0 --> P (Upcounting) $\boxed{d\ irEcŁ} = \boxed{000000}$

Start

Reset
Set

0

Output $\boxed{ouŁ.PŁ\ i} \neq \boxed{000000}$

Start

Reset

Set

0

Output $\boxed{ouŁ.PŁ\ i} = \boxed{000000}$

When count value reaches the Set Value, Output Position is changed. If Output Pulse time $\boxed{ouŁ.PŁ\ i}$ is not 0, then Output Position is changed at the end of the Pulse time and counting value becomes 0 and output becomes inactive position. If output pulse time $\boxed{ouŁ.PŁ\ i} = \boxed{000000}$,then output position has not change until Manual Reset happens.
When counting value reach Set value, output position becomes active position. If the Start input is active, then counting continue over the Set value.
When Manual Reset happens, count value becomes 0 value.

(i) **If output functions parameter $\boxed{ouŁ.Fnc}$ is selected Automatic Reset ($\boxed{000003}$ $\boxed{000004}$, $\boxed{000005}$ or $\boxed{000006}$, then $\boxed{ouŁ.PŁ\ i}$ must be different from zero for realizing Automatic Reset.**

Counting direction : P --> 0 (Downcounting) $\boxed{d\ ir Ec t}=\boxed{000001}$

Start

Reset

Set

0

Output $\boxed{out.Pt\ i} \neq \boxed{000000}$

Start

Reset

Set

0

Output $\boxed{out.Pt\ i} = \boxed{000000}$

When count value reaches the 0 Value, Output Position is changed. If Output Pulse time $\boxed{out.Pt\ i}$ is not 0, then Output Position is changed at the end of the Pulse time and counting value becomes Set value and output becomes inactive position. If output pulse time $\boxed{out.Pt\ i}=\boxed{000000}$, then output position has not change until Manual Reset happens.
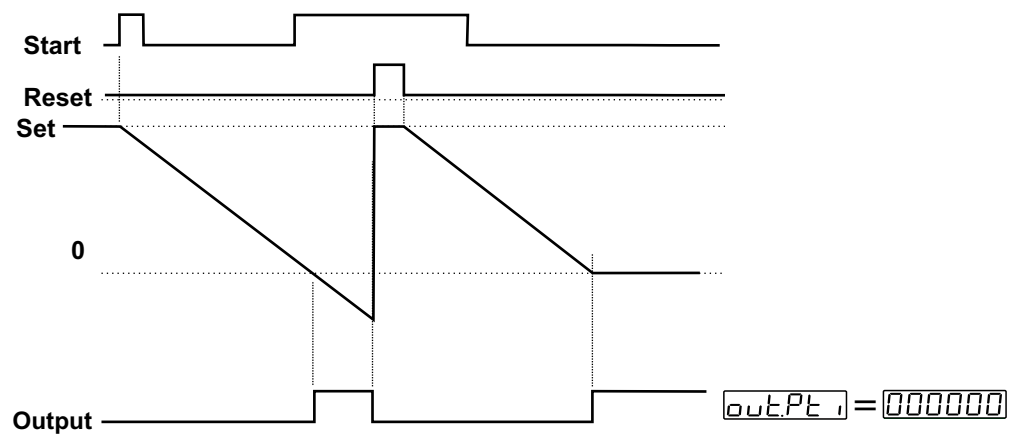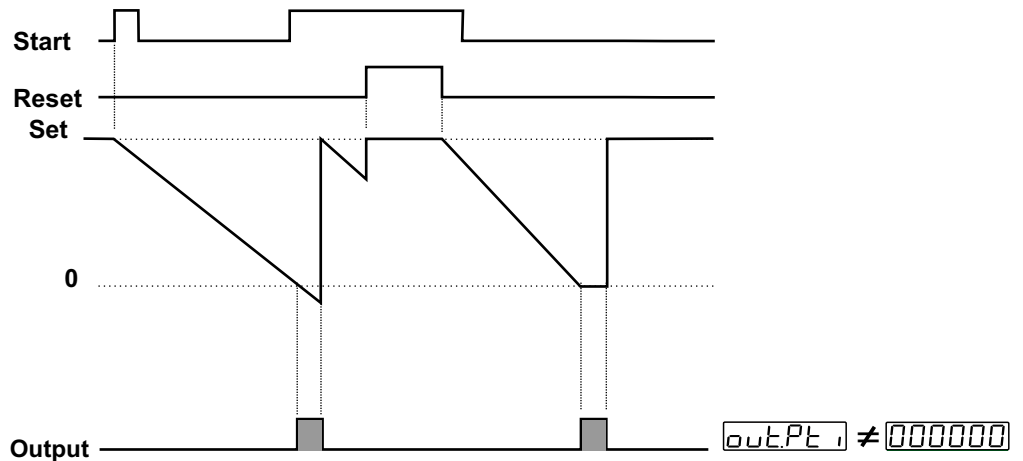
When counting value reach 0 value, output position becomes active position. If the Start input is active, then counting continue under the 0 value.

When Manual Reset happens count value becomes SET value.

i **If output functions parameter $\boxed{out.Fnc}$ is selected Automatic Reset ($\boxed{000003}$ $\boxed{000004}$, $\boxed{000005}$ or $\boxed{000006}$, then $\boxed{out.Pt\ i}$ must be different from zero for realizing Automatic Reset.**

$\boxed{\text{ouŁ.Fnc}} = \boxed{000007}$ **Automatic Reset-5**
$\boxed{\text{ouŁ.PŁ }_{1}}$ **is not considered.**
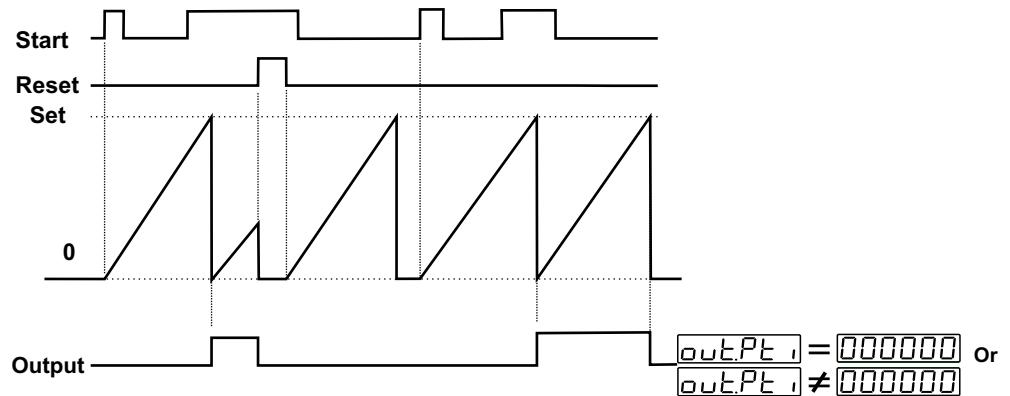
Counting direction : 0 --> P (Upcounting) $\boxed{\text{d }_{1}\text{rEcŁ}} = \boxed{000000}$

$\boxed{\text{ouŁ.PŁ }_{1}} = \boxed{000000}$ **Or**
$\boxed{\text{ouŁ.PŁ }_{1}} \neq \boxed{000000}$

If the Start input is active, then Process starts counting, until count value reach SET value. When count value reach SET value, Output Position becomes active position and process is automatically reset. If the Start input is active, then process start counting from "0" value. If count value reach SET value, Output Position becomes passive position.
When manual reset happens, count value becomes "0".

Counting direction : P --> 0 (Downcounting) $\boxed{\text{d }_{1}\text{rEcŁ}} = \boxed{000001}$

$\boxed{\text{ouŁ.PŁ }_{1}} = \boxed{000000}$ **Or**
$\boxed{\text{ouŁ.PŁ }_{1}} \neq \boxed{000000}$
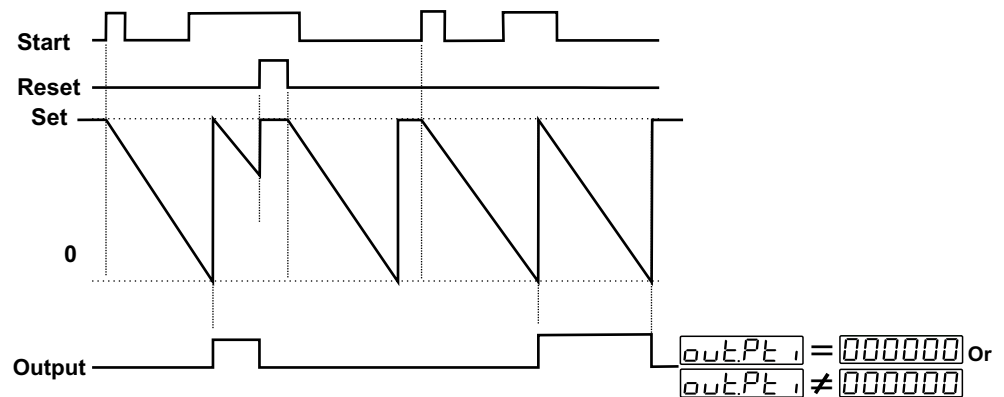
If the Start input is active, then Process starts counting, until count value reach "0" value. When count value reach "0" value, Output Position becomes active position and process is automatically reset. If the Start input is active, then process start counting from SET value. If count value reach "0" value, Output Position becomes passive position.
When manual reset happens, count value becomes SET value.

`out.run`	**Output Run Type**
`000000`	Output Normally non-energised
`000001`	Output Normally energised

`out.Pt 1`	**Output Pulse Time**

It determines how long Output will be active.
It can be adjusted from 00.00.00 to 99.59.99 (99 minutes; 59.99 seconds).
For details, refer to the section where output functions `out.Fnc` are defined

`dirEct`	**Direction of Counting**
`000000`	Upcount. (0 --> Preset)
`000001`	Downcount. (Preset --> 0)

`dAt.rEc`	**Data Record**
`000000`	Count value is saved to memory when power is disconnected and restored on power up.
`000001`	Count value is not saved to memory when power is disconnected. When power up `000000` is shown on the screen.

`nPn.PnP`	**Sensor Type Selection**
`000000`	NPN type sensor selected
`000001`	PNP type sensor selected

`ProtEc`	**Reset and Set Protection (for Front Panel Access)**
`000000`	There is no Reset and Set protection
`000001`	Only RESET Button protection is active. Actual value can not be reset by Reset button.
`000002`	SET value can not be changed.
`000003`	Full protection ; Reset protection is active and SET value can not be changed.

$\boxed{P r o G.P S}$ **Program Password**

It is used for accessing to the program parameters. It can be adjusted from $\boxed{000000}$ to $\boxed{009999}$.
If it is $\boxed{000000}$, there is no password protection while accessing to the parameters.
When programming button is pressed, $\boxed{P r o G}$ will appear on the display.
If program password is not "0" while accessing to the program parameters ;
1- If user does not enter the $\boxed{P S u u r d}$ value correctly ; operation screen will appear without entering to operator parameters.

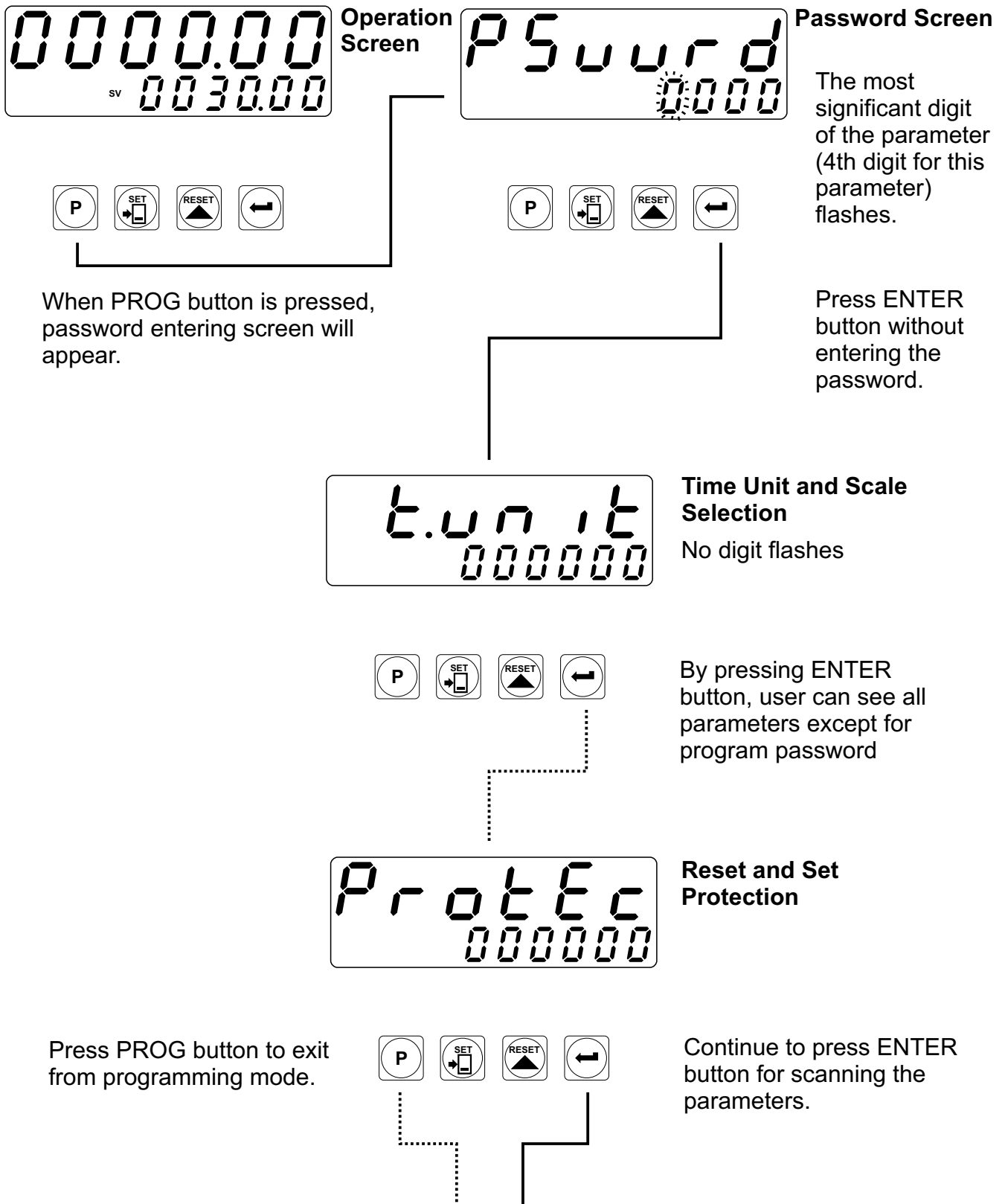**2-** When $\boxed{P S u u r d}$ in top display and $\boxed{000000}$ in bottom display,if user presses ENTER button without entering password (for observing the parameters):
User can see all parameters except Program Password but device does not allow to do any changes with parameters.
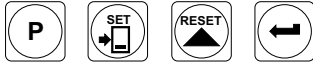
1-If the password is not 0, user can access to the parameters without entering the password and by pressing ENTER button.

User can see all parameters except for programming password parameter $\boxed{ProGPS}$ but user can not do any changes in parameters. If password is entered for accessing to the parameters correctly, most significant digit of the parameter flashes. But if the password is not entered, flashing of the most significant digit is not realised.

Operation Screen

Password Screen

The most significant digit of the parameter (4th digit for this parameter) flashes.

When PROG button is pressed, password entering screen will appear.

Press ENTER button without entering the password.

Time Unit and Scale Selection

No digit flashes

By pressing ENTER button, user can see all parameters except for program password

Reset and Set Protection

Press PROG button to exit from programming mode.

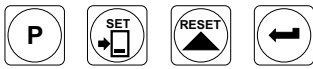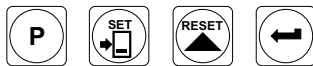Continue to press ENTER button for scanning the parameters.

Operation Screen

Time Unit and Scale Selection

2-If Actual Value is flashing and counting is stopped ;
It appears if any of the count value is greater than the maximum count value.
To remove this warning and reset the count value press RESET button.

3-If Actual Value is flashing and counting is stopped ;
It appears if any of the count value is lower than the minimum count value.
To remove this warning and reset the count value press RESET button.

Device Type	: Programmable Timer
Housing & Mounting	: 96mm x 96mm x 87.5 1/4 DIN 43700 plastic housing for panel mounting. Panel cut-out is 92x92mm
Protection Class	: NEMA 4X (IP65 at front, IP20 at rear).
Weight	: Approximately 0.34 Kg.
Environmental Ratings	: Standard, indoor at an altitude of less than 2000 meters with none condensing humidity

Storage / Operating Temperature: -40 $^{\circ}$C to +85 $^{\circ}$C / 0 $^{\circ}$C to +50 $^{\circ}$C

Storage / Operating Humidity	: 90 % max. (None condensing)
Installation	: Fixed installation
Over Voltage Category	: II
Pollution Degree	: II, office or workplace, none conductive pollution
Operating Conditions	: Continuous
Supply Voltage and Power	: 230 V $\sim$ (-%15 / +%10) 50/60 Hz. 2.3VA
	115 V $\sim$ (-%15 / +%10) 50/60 Hz. 2.3VA
	24 V $\sim$ (-%15 / +%10) 50/60 Hz. 2.3VA
Digital Inputs	
Electrical Characteristics	: Rated voltage : 16 V⎓ @ 5mA
	Maximum continuous permissible voltage : 30 V⎓
	Logic 1 minimum level : 3 V⎓
	Logic 0 maximum level : 2 V⎓
Sensor Supply Voltage	
Electrical Characteristics	:12V⎓ ± %40 max. 50mA
Output Type	: Relay Output on Resistive Load 5A@250V$\sim$ 100.000 operation (Full Load)
Actual Value Display	: 13,2 mm Red 6 digit LED Display
Set Display	: 8 mm Green 6 digit LED Display
LED Displays	: SV (Set value) , OP (Control output) LEDs
Approvals	: ЕАС , CE

8. Other Informations

Manufacturer Information:
Emko Elektronik Sanayi ve Ticaret A.Ş.
Demirtaş Organize Sanayi Bölgesi Karanfil Sk. No:6 16369
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