ELECTRICAL CONNECTION

MODEL OP-WE

WEIGHT/PRESSURE MEASUREMENT AND CONTROL DEVICE

Ver 2.0E

USER GUIDE

WARNING!

READ CAREFULLY BEFORE POWER ON

1. Complete electrical connections according to the schematic at the last page.
2. Check Supply Voltage 220V AC, or DC, due to Specifications on the equipment.
3. Use only shielded cable for Load cell.
4. Keep away the equipment from direct temperature source.
5. MODEL OP-WE is not suitable for outdoor use.
6. Keep away the equipment from water or other liquid drains.
7. Do not open, modify or replace any component in the equipment, If any problem occurs please contact an authorised OPKON technical service or OPKON directly.

ELECTRICAL SPECIFICATIONS:

Microcontroller based
Available 4 programs (liquid,granule and saving mould programs)
16 bit Analog/Digital converter
Up to 200 Ksps.
3 X Relay outputs
Hysteresis
Screen filter

|	
Power Supply	:220V ± % 20 ,50 Hz
Power Consumption	:<2VA(protected by fuse 50mA)
Loadcell supply voltage	:+5VDC
Relays max. ratings	:Relay1 1xNO+NC 8A,230V AC
	:Relay2 1xNO+NC 8A,230V AC
	:Relay3 1xNO+NC 8A,230V AC
External Trigger Input	:160 - 240 VAC

MECHANICAL SPECIFICATIONS:

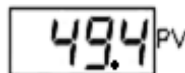|	
Dimensions	:48x96x130 mm
Panel cut dimensions	:45x90 mm
Working temperature	:0-60 ºC
Storage temperature	:-10ºC …+80ºC
Humidity	:<%90 RH

Manufacturer:

OPKON OPTIC ELECTRONIC LTD.

Terazidere Mah.60.Yil Cad.No:5/3
34035 Bayrampasa/ISTANBUL/TURKEY
TEL: 0 212 501 48 63
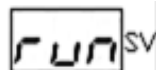FAX: 0 212 501 48 83
Email: opkoninfo@opkon.com.tr

DESCRIPTIONS
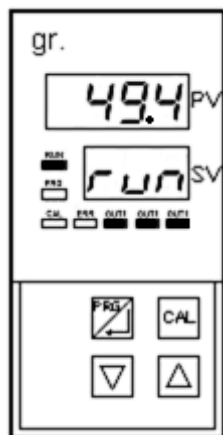
PROCESS DISPLAY

MENU AND PARAMETER DISPLAY

BUTTONS

 Used to enter Program Parameters Menu.
Saves the new registered values.

 Used to enter Program Menu.

 Changes the values down.
Resets the display.

 Changes the values up.
Starts the program When using Program1
(as a start button).

LED INDICATORS

RUN Turns on While device is running.

PRG Turns on When programming.

CAL Turns on When Calibrating the device.
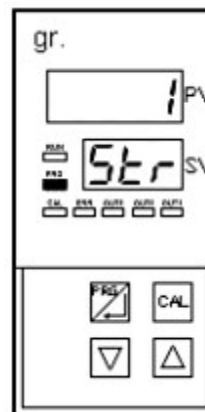
ERR Turns on an error occured.

**OUT1** Turns on When Relay1,Relay2 and
Relay3 is activated.

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7 . **Str :Waiting start by pressing the button Active or Passive Selection**

Press UP/DOWN buttons to choose **Str.**
Press PRG to save and pass next Parameter.

1 Waiting start by pressing the button is Active.(In order to start program **Press DOWN** button)
**0** Waiting start by pressing the button is Passive.

4 .   **tEP: Setting device to zero by an external Pulse, Active or Passive Selection**
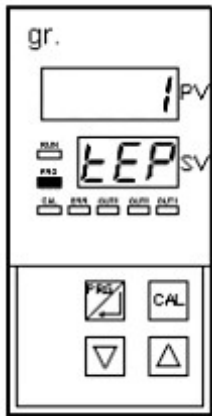
Press UP/DOWN buttons to select **tEP.**
Press PRG to save and pass next Parameter.

1 Setting device to zero by an external Pulse is Active.
0 Setting device to zero by an external Pulse is passive

NOTE : External Pulse input is the trigger pins of device(23-24).

5 .   **SFr : Setting to zero automatically at the beginning, Active or Passive Selection**
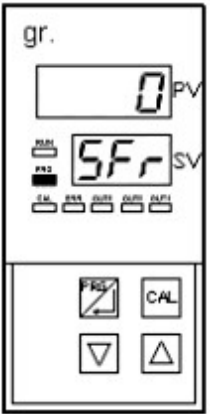
Press UP/DOWN buttons to select **SFr**.
Press PRG to save and pass next Parameter.

1 Setting to zero automatically at the beginning is Active,Thus;
When device power on, even a load is on the Loadcell,but **0** is shown on display.
0 Setting to zero automatically at the beginning is Passive.Thus;
When device power on the weight on the Loadcell shown on display. .

6 .   **ıd : Communication Protocol code for rs485**
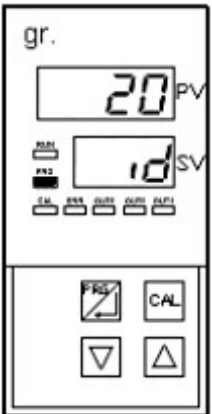
Press UP/DOWN buttons to write ı**d** value on display.
Press PRG to save and pass next Parameter.

This parameter is used to define a code When using rs485 communication protocol,

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CALIBRATION

Every Device must be calibrated according to used Loadcell.The fit calibration is calibrating the device accorging to %70 of total capacity of the Loadcell. CALIBRATION is shown below;
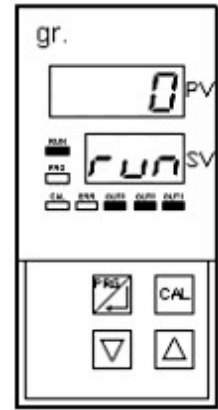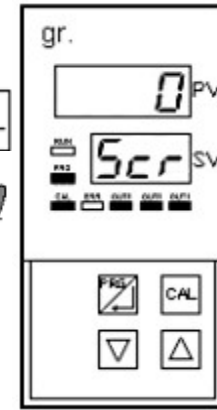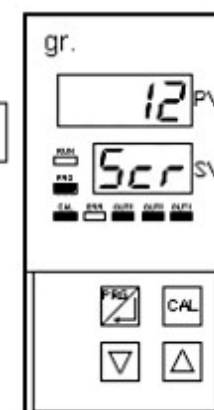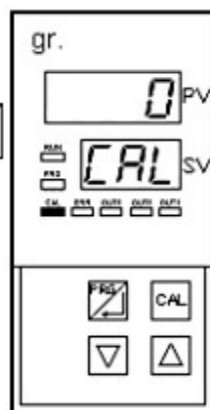
Figure a   Figure b   Figure c   Figure d

Power on Device and wait for Figure a.
Press **CAL** button.
Press **UP** button to write **12** on the Figure b.
Press PRG button.

Figure d **is definning the Lower Calibration Point screen.**

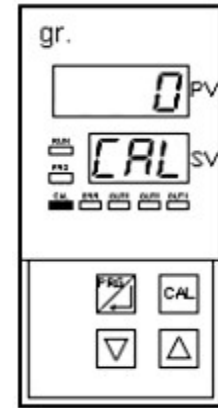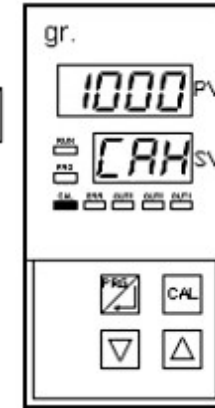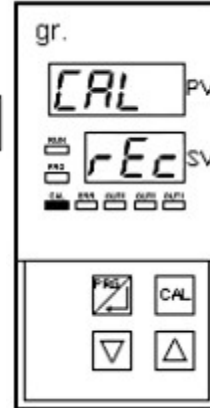Figure e   Figure f   Figure g

Put a *known weight* on Loadcell.*(For zero do not put anything.)*
Press UP/DOWN buttons to write on display the weight was puted on Loadcell.
Press PRG button.Thus the lower calibration point is defined.
After this Figure f appears.

Figure f   **is definning the Upper Calibration Point screen.**

Put a known weight on Loadcell.
Press UP/DOWN buttons to write on display the weight was puted on Loadcell.
Press **PRG** button**.**
Figure g is shown for **2** second.Thus the **calibration was completed**.

PROGRAMS

4 Programs are available by users on device

PROGRAM1 LIQUID FILLING PROGRAM
PROGRAM2 GRANULE FILLING PROGRAM
PROGRAM3 GRANULE FILLING PROGRAM 2
PROGRAM4 SAVING MOULD PROGRAM

1.PROGRAM1 *LIQUID FILLING PROGRAM*

1.1 DEFINITION

Used **Tare** required processes.
Provides a *sensitive filling* by tolerating the **Tare weight differences** by using the **Tare Lower weight** and **Upper weight** Parameters. .
All the **Relays are active** at the **beginning**.
SET3 parameter value is,the ending weight of filling..
Relay1turns not active at the value of difference between SET3 and SET1
RELAY1 = SET3 – SET1
Relay2 turns not active at the value of difference between SET3 and SET2
RELAY2 = SET3 – SET2

1.2. WORKING BASIS

☐ Device waits during **t** duration after **senses** the **Tare**.

☐ At the end of the **t** duration filling Starts.

☐ **Relay1** turns not active on SET3 - SET1 weight.

☐ **Relay2** turns not active on SET3 - SET2 weight.

☐ **Relay3** turns not active on SET3 weight.

☐ **Then device waits for next Tare.**

1.3. SETTINGS

a) Selecting PROGRAM1

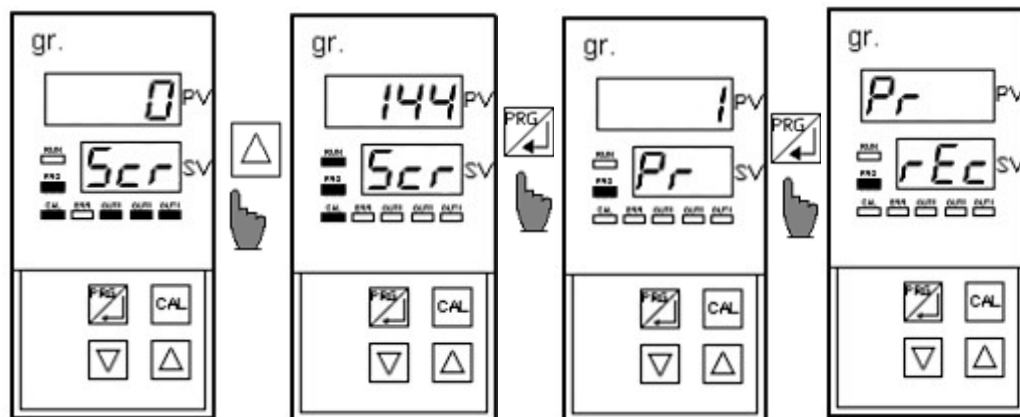Figure 1a   Figure 1b   Figure 1c   Figure 1d

Press CAL button.
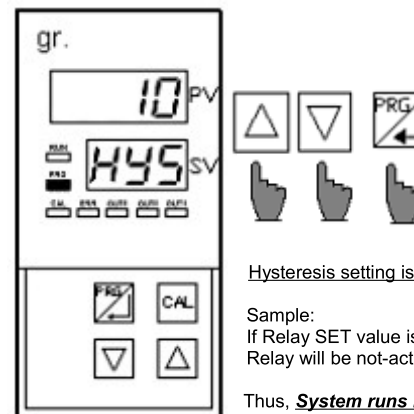**Press** UP button to write **144** on Figure 1b
Press PRG button.
Press UP/DOWN buttons and Select **1** on Figure 1c (Program 1).
Press PRG button.
Figure 1d is shown for **2** second.Thus the **PROGRAM1 was selected.**

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1.   **HyS: Hysteresis Setting.**

Press UP/DOWN buttons to write HYS value on display.
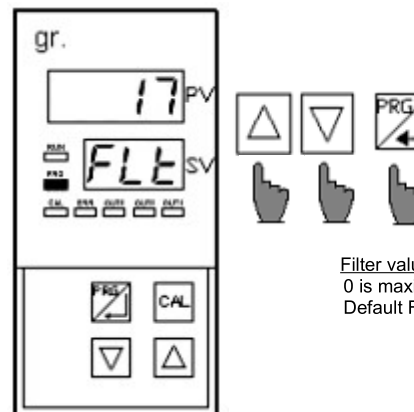**Press PRG** to save and pass next Parameter.

Hysteresis setting is used to Tolerate the value of Relays will be **not activated.**

Sample:
If Relay SET value is 500 and the Hysteresis value is 10 , Relay will not be   not-activated at 500.
Relay will be not-activated at 500 - 10 = 490

Thus, **System runs more Stable.**

2.   **FLt : Filter Valu**

Press UP/DOWN buttons to write FLt value on display.
Press PRG to save and pass next Parameter.

Filter value is used to fitler the space of Loadcell sensitiveness on the display.
0 is maximum of sensitiveness and 99 is minimum of sensitiveness
Default Filter value is 20.

3.   **tAR: Setting device to zero by button Active or Passive Selection**
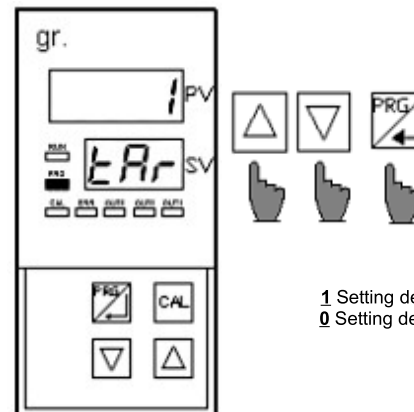
Press UP/DOWN buttons to select **tAr**.
Press PRG to save and pass next Parameter.

1 Setting device to zero by button is Active.
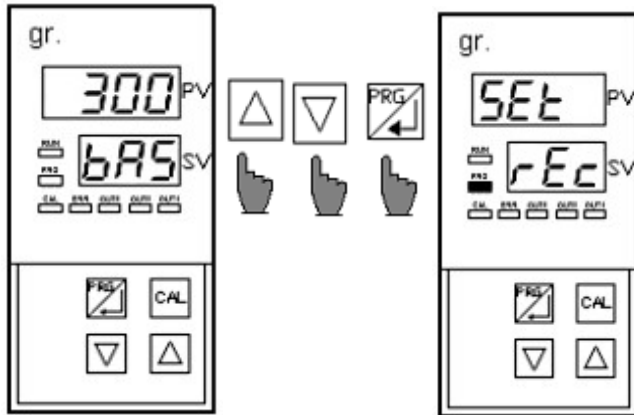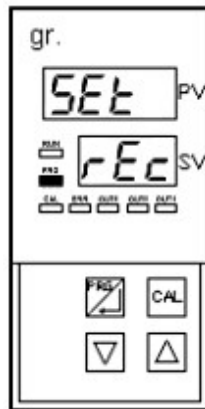**0** Setting device to zero by button is Passive.

Figure 4j   Figure 4k

Press *UP/DOWN* **buttons to write "baS" (cycle quantity) value on** Figure 4j **.**
Press *PRG* **button.**
Figure 4k is shown for **2** second.Thus The **PROGRAM4 PARAMETER SETTING** was done.

DEVICE PARAMETER SETTINGS

There are 8 Parameters User can set.

1. **HYS**: Hysteresis Setting.
2. **FLT** : Filter Value.
3. **TAR**: Reset the device by button Active or Passive Choose.
4. **TEP** : Reset the device by an external Pulse Active or Passive Choose.
5. **SFR** : Reset automatically at the beginning Active or Passive Choose.
6. **id**   : Communication Protocol code for rs485.
7. **STR** : Waiting start by pressing the button Active or Passive Choose.
8. **sio** : Communication Protocol Choose.Rs232 or Rs485.(*optiona*l)

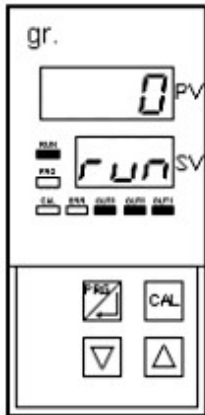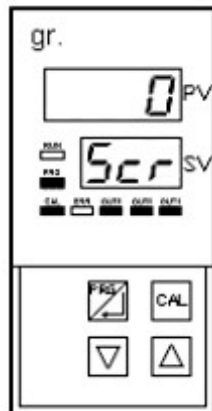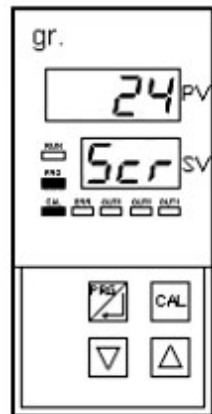**These Settings are done as Shown below.**

Figure A   Figure B   Figure C

Press PRG **button on** Figure A **.**
Press **UP** button to write **24** on Figure B.
Press **PRG** button.

b) Parameter settings for PROGRAM1

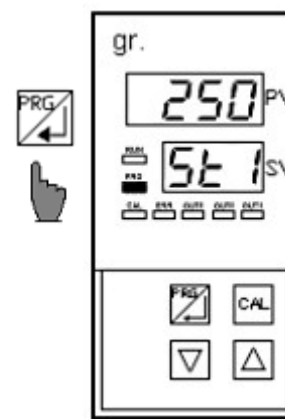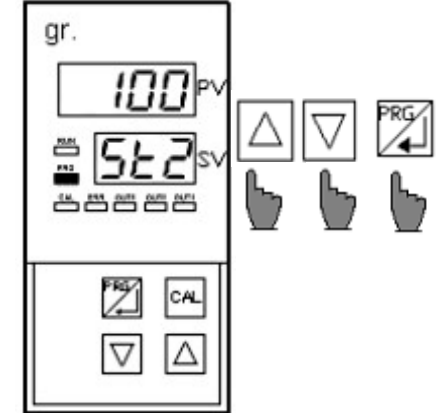Figure 1h **is definning the Lower Calibration Point screen.**

Figure 1e   Figure 1f

Press **PRG** button to enter the Parameter menu.
Press **UP/DOWN** buttons to write *SET1* value on Figure 1e.
Press **PRG** button.
Press **UP/DOWN** buttons to write *SET2* value on Figure 1f.
Press **PRG** button.
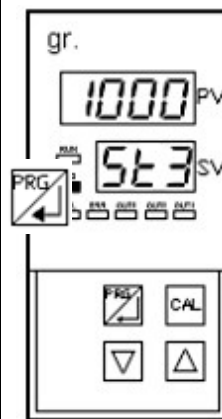

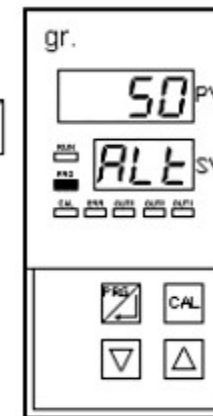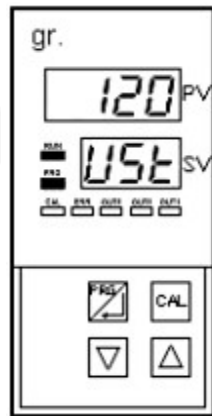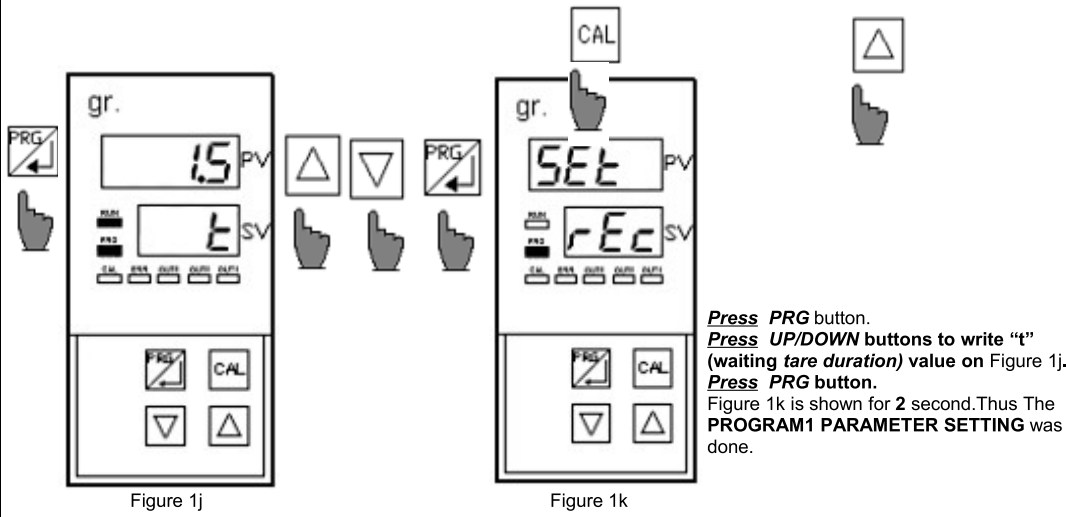Figure 1g   Figure 1h   Figure 1i

Press **UP/DOWN** buttons to write *SET3* value on Figure 1g.
Press **PRG** button.
Press **UP/DOWN** buttons to write "**ALt**" (*tare lower weight)* value on Figure 1h.

Press **PRG** button.
Press **UP/DOWN** buttons to write "**USt**" (*tare upper weight)* value on Figure 1i.

Press **PRG** button.
Press **UP/DOWN buttons to write "t"** (waiting *tare duration)* **value on** Figure 1j**.**
Press **PRG button.**
Figure 1k is shown for **2** second.Thus The **PROGRAM1 PARAMETER SETTING** was done.

Figure 1j   Figure 1k

## 2. PROGRAM2 *GRANULE FILLING PROGRAM*

2.1 DEFINITION

Used in general purpose filling systems.
All the *Relays are active* at the *beginning*.
SET3 parameter value is,the ending weight of filling..
Relay1 turns not active at the value of difference between SET3 and SET1
RELAY1 = SET3 – SET1
Relay2 turns not active at the value of difference between SET3 and SET2
RELAY2 = SET3 – SET2

2.2 WORKING BASIS

  Relay1 turns not active on SET3 - SET1 weight.

  Relay2 turns not active on SET3 - SET2 weight.
  Relay3 turns not active on SET3 weight.

2.3 SETTINGS

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a) Selecting PROGRAM2

Figure 2a   Figure 2b   Figure 2c   Figure 2d

Press CAL **button.**
Press **UP** button to write **144** on Figure 2b.
Press **PRG** button.
Press **UP/DOWN** buttons and Select **1** on Figure 2c.(Program 1)
Press **PRG** button.
Figure 2d **is shown for 2 second.Thus the** *PROGRAM1 was selected.*
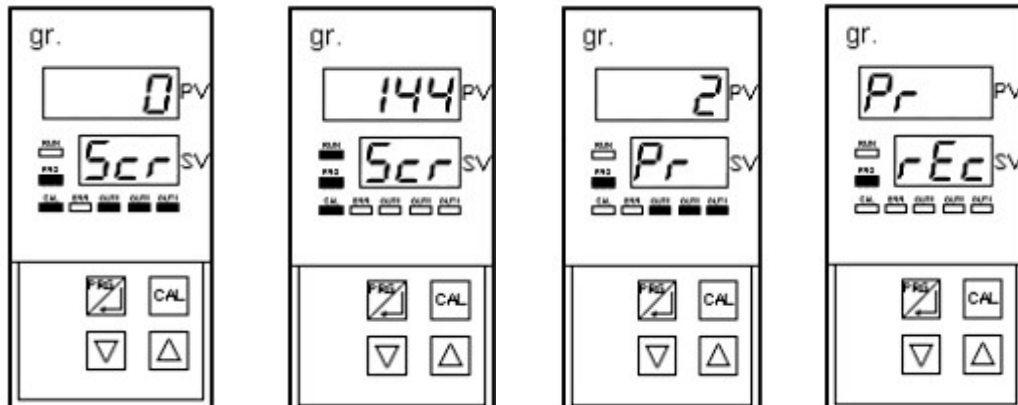
b) Parameter settings for PROGRAM 4
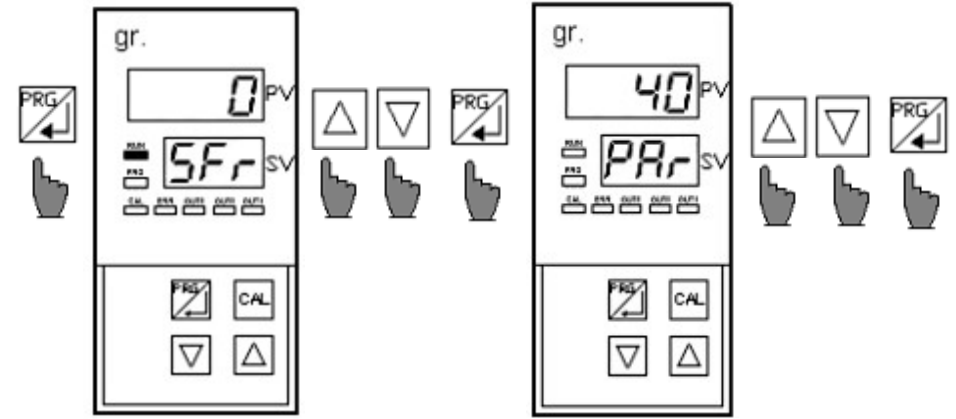

Figure 4e   Figure 4f

Not: When setting the **PROGRAM4 PARAMETERS** ; Be sure that the TRIGGER Connections (23-24 pins) are **not connected.**

Press **PRG** button to enter the Parameter menu on Figure 4e.
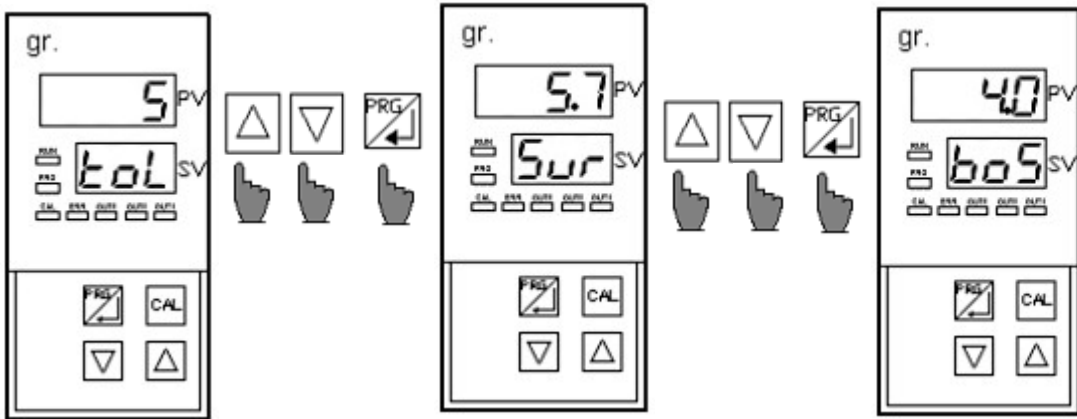*Press* **UP/DOWN** buttons to write **"Par"** value (piece weight) on Figure 4f.
Press **PRG** button.

Figure 4g   Figure 4h   Figure 4i

Press **UP/DOWN** buttons to write ¨**toL** ¨ value on Figure 4g.
Press **PRG** button.
Press **UP/DOWN** buttons to write ¨**Sur**¨ (piece drop duration) value on Figure 4h.
Press **PRG** button.
Press **UP/DOWN** buttons to write "**boS**" (discharging time) value on Figure 4i.
Press **PRG** button.

4. PROGRAM4 *MOLD PROTECTING PROGRAM*

4.1 DEFINITION

Used in Metal Injection Machines for safety purpose for moulds.
All the **Relays are** <u>not active</u> at the *beginning*.
Relay2 output <u>must connect</u> **to the Emergency Stop of Injection Machine** *serially.*

4.2 WORKING BASIS

Program4 starts to work by an external **AC TRIGGER** Pulse.(*23-24 pins of device*.)

Waits for drop of piece duration defined at the Parameter "**Sur**"(*sur=time*)
At the end of that time If the piece did not drop;

1. **Relay2** turns active.The **Error led** turns on.(*Remember that the Relay2 was connected to the Emergency Stop of the Machine.*)
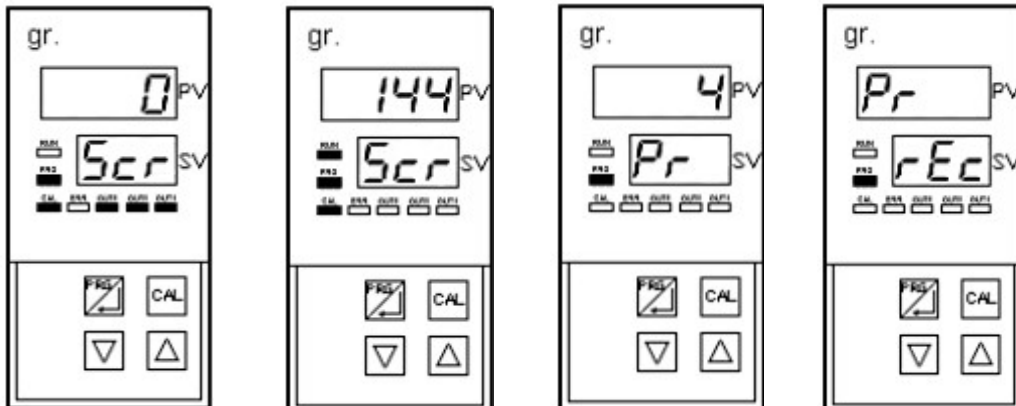
2. **Err Pr6** appears on display.*Press* **PRG** button to restart the Program.

At the end of that time If the piece dropped;

1. **Relay1** turns active.**Relay2 is stil deactive.**

2. Waits for duration defined at the Parameter "**boS**"(*discharging time*).At the end of duration of **boS** Relay1 turns not active.

Program runs until quantity defined at the Parameter "bAS"(cycle quantity) ended.

4.3 SETTINGS

a) *Selecting PROGRAM4*

Figure 4a   Figure 4b   Figure 4c   Figure 4d

Press CAL button.
Press UP button to write **144** on Figure 4b.
Press PRG button.
Press **UP/DOWN** buttons and Select **1** on Figure 4c.(Program 4)
Press PRG button.
Figure 4a is shown for **2** second.Thus the **PROGRAM4 was selected.**
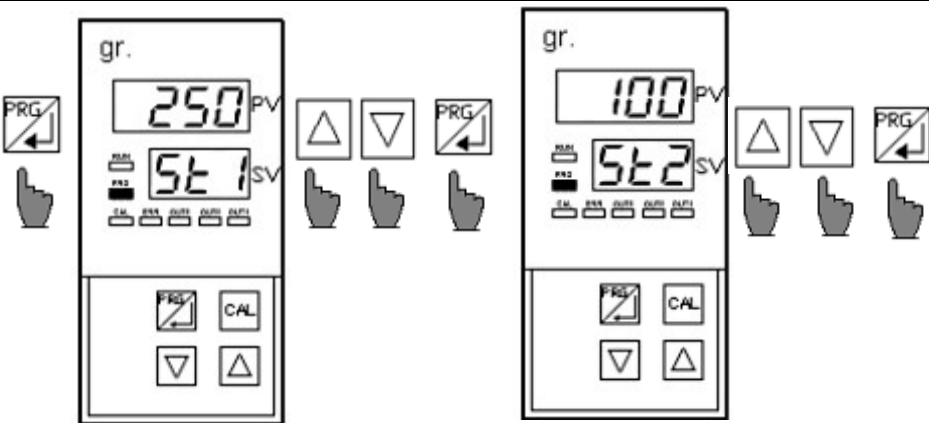
b) Parameter settings for PROGRAM2

Figure 2e   Figure 2f

Press **PRG** button to enter the Parameter menu.
Press **UP/DOWN** buttons to write **SET1** value on Figure 2e.
Press **PRG** button.
Press **UP/DOWN** buttons to write **SET2** value on screen Figure 2f.
Press **PRG** button.
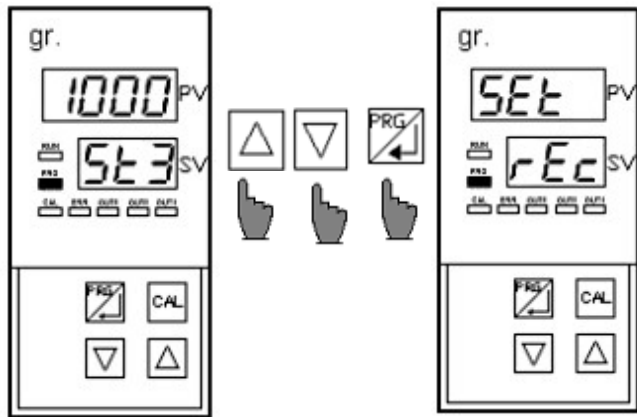

Figure 2g   Figure 2h

Press **UP/DOWN** buttons to write **SET3** value on Figure 2g.
Press **PRG** button.
Figure 2h is shown for **2** second.Thus The **PROGRAM2 PARAMETER SETTING** was done

NOTE Please Look out that, in Program2 the parameters "**t**","**ALt**"and "**USt**" is not available.

3. PROGRAM3 *GRANULE FILLING PROGRAM 2*

3.1 <u>DEFINITION</u>

Used in general purpose filling systems.
All the **Relays are** <u>not active</u> at the **beginning**.
SET3 parameter value is, the ending weight of filling..
Relay1 turns active on SET1 weight.
RELAY1 = SET1
Relay2 turns active on SET2 weight.
RELAY2 = SET2

3.2 <u>WORKING BASIS</u>

☐ **Relay1** turns active on SET1 weight.

☐ **Relay2** turns active on SET2 weight.

☐ **Relay3 turns active on SET3 weight.**

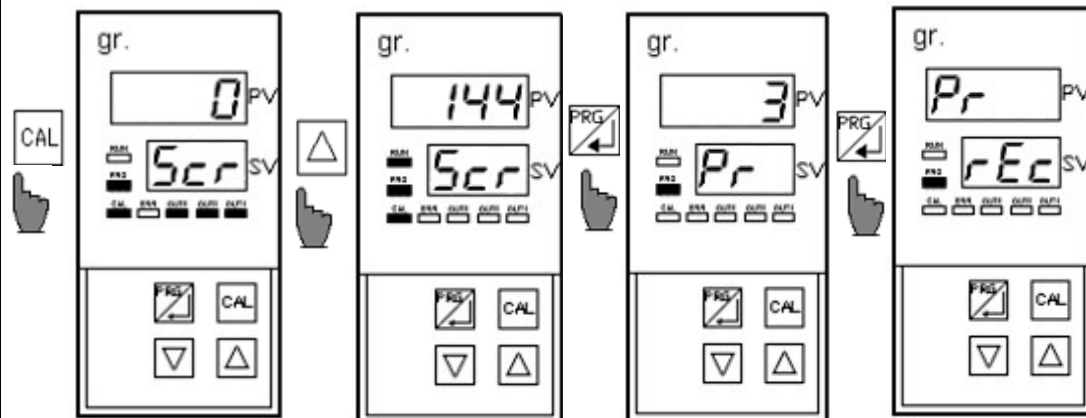**3.3** <u>SETTINGS</u>

a) <u>Selecting PROGRAM3</u>

Figure 3a   Figure 3b   Figure 3c   Figure 3d

Press CAL button.
*Press UP button to write **144** on Figure 3b.*
Press PRG button.
Press **UP/DOWN** buttons and Select **1** on Figure 3c.(Program 3)
Press PRG button.
Figure 3d is shown for **2** second.Thus the **PROGRAM3 was selected.**
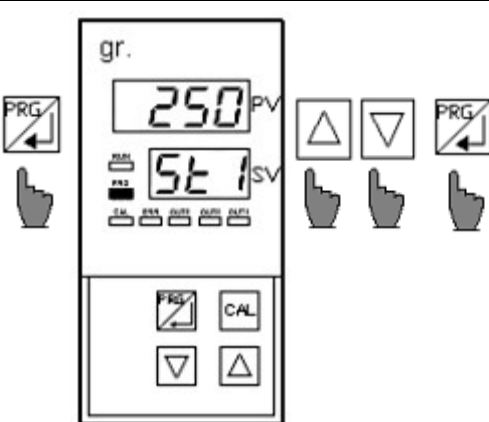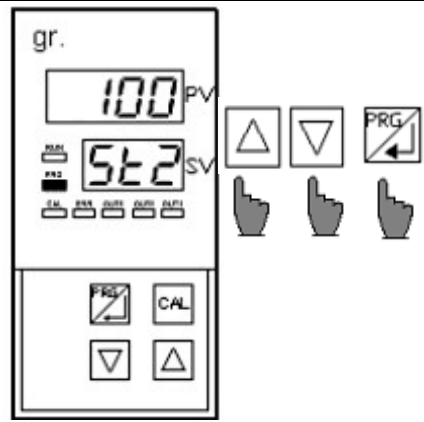
b) <u>Parameter settings for PROGRAM3</u>

Figure 3e

Figure 3f

Press **PRG** button to enter the Parameter menu.
Press **UP/DOWN** buttons to write *SET1* value on Figure 3e.
Press **PRG** button.
Press **UP/DOWN** buttons to write *SET2* value on Figure 3f.
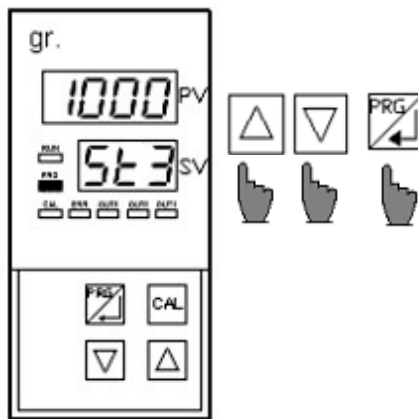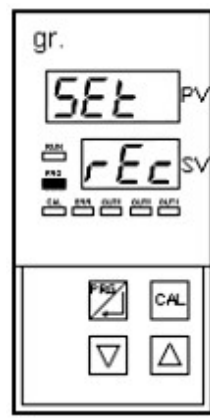*Press* **PRG** button.

Figure 3g

Figure 3h

Press **UP/DOWN** buttons to write *SET3* value on Figure 3g .
Press **PRG** button.
Figure 3h is shown for **2** second.Thus The **PROGRAM3 PARAMETER SETTING** was done

NOTE Please Look out that, in Program3. the parameters "**t**","**ALt**"and "**USt**" is not available.