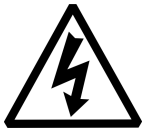
UC107 / UC104
UNIVERSAL CONTROLLER

Attention Risk of Danger, Warning



High Voltage, Risk of Electric Shock

Double / Reinforced Insulation

NOT Litter

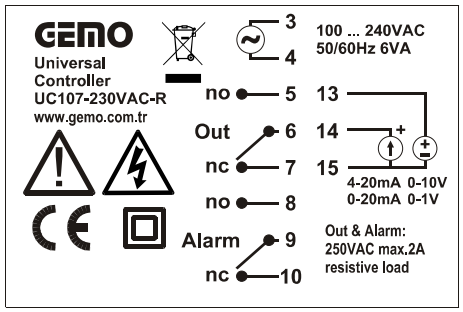
CE Mark

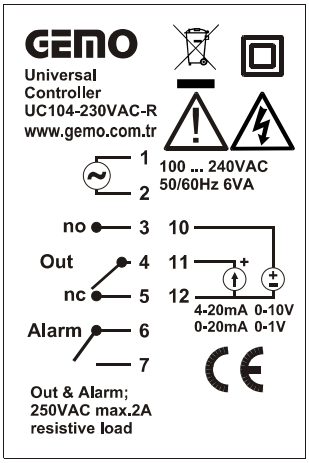
TECHNICAL SPECIFICATION

- **Dimensions** : UC107:72x72, UC104:48x48mm
- **Panel Cut-out** : UC107:68x68, UC104:45,5x45,5mm
- **Display** : 4 Digits 7 Segment (PV), 4 digits 7 Segment (SV)
- **Analog Input** : 0-10Vdc, 0-1Vdc, 0-20mA dc, 4-20mA dc; selectable
- **Voltage Input** : input impedance; >22KOhm, absolute maximum rating: 20Vdc
- **Current Input** : internal shunt impedance; 27 Ohm, absolute maximum rating: 50mA dc
- **Calibration Scale** : -1999 .. 4000
- **Decimal Point** : 2., 3. or 4. digit; selectable
- **Resolution** : ± 1 digit
- **Accuracy** : ± 0.5 % (Over full scale)
- **Control Form** : ON-OFF
- **Out Output** : Relay (NO + NC), 250VAC, 2A, Resistive load, (optional SSR)
- **Alarm Output** : Relay (NO + NC), 250VAC, 2A, Resistive load, (only NO for UC104)
- **Out SET** : LO.SC .. HI.SC
- **Alarm SET** : AL.tY = Abs,-Abs; LO.SC .. HI.SC
  AL.tY = rel, -rel, bnd, -bnd, bn.i, -bn.i; -500 .. +500
- **Out Hysteresis** : 1 .. 100
- **Alarm Hysteresis** : 1 .. 100
- **Offset** : -500..500 (oFFS)
- **"OUT" Control Form** : Forward, Reverse (refer to operating principles)
- **Failure** : OUT and ALARM OFF if hardware fails to measure input signal
- **Supply Voltage** : 100..240VAC, 50-60Hz or 24VDC/AC (isolation voltage: 40VAC max.)
- **Power Consumption** : < 6VA
- **Humidity** : 80% up to 30ºC, then linearly decreases to 50% at 50ºC (non-condensing)
- **Altitude** : < 2000 m
- **EMC** : EN 61000-6-1, EN 61000-6-3 (Only light industrial environment)
- **Safety** : EN 61010-1; Pollution degree 1, measurement category I, (Only light industrial environment, double/reinforced isolated, non-conductive pollution environment)
- **Protection Class** : IP20; according to EN 60529
- **Operation Temp.** : 0 .. 50 ºC
- **Storage Temperature** : -10ºC .. 60ºC (no icing)
- **Weight** : < 0.5 kg
- **Keys** : Micro switch
- **Torque for screwing** : Max. 0.5 N.m

0-10V, 0-1V Input: UC104: 10 (+),12 (-), 11 no connection,
UC107: 13 (+),15 (-), 14 no connection
0-20mA, 4-20mA Input: UC104: 11 (+),12 (-), 10 no connection,
UC107: 14 (+),15 (-), 13 no connection. (+) means current flows in.
WARNING: There exists internal shunt resistor (27 Ohms) between UC104 (11-12) and UC107 (14-15). **Do not apply voltage** to these pins, may cause permanent hardware failure.
All inputs are direct current (DC). **Do not exceed absolute maximum ratings** and **do not apply reverse polarity**, may cause permanent hardware failure.

no: normally open, **nc**: normally closed





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INSTALLATION, USE and WARNINGS

- This device and its packing is NOT litter and may NOT be disposed of with domestic waste. Please return this device and its packing to an appropriate recycling point at the end of its service life.
- Please read this user manual carefully and completely before installation and use. Please take into consideration all warnings mentioned in this manual.
- UC107 / UC104 are suitable only for permanent panel type mounting
- Installation and use of this device must be done by qualified, authorized and trained technical personnel only.
- Inspect device carefully before installation. Do not install and use broken and defective devices.
- Do not disassemble device. Do not make any repair on any part of the device. There is no accessible part inside the device. Please contact to manufacturer for broken and defective devices.

- Do not use device in environments subject to flammable, explosive and corrosive gases and/or substances.
- This device is designed for applications only in light industrial environments. This device is not suitable for medical and residential use. This device is not suitable for use related with human health and safety. This device is not suitable for automotive, military and marine use.
- Do not allow children and unauthorized people to use this device.
- Before installation and any technical work, disconnect the power supply and mains connections.
- Check the power supply voltage level before power on, and make sure voltage level is in specified limits. Check quality of neutral line. Improper neutral line may give permanent damage to the device.

- Connect an external power switch and an external fuse (1A, 250VAC) to the power supply line that are easily accessible for rapid intervention. Connect an external fuse (2A, 250VAC) for each relay output separately.
- Use appropriate cables for power supply and mains connections. Apply safety regulations during installation.
- Install the device in a well ventilated place. Install the device permanently into a proper panel cut-out. Fix the device with two fasteners supplied with the device. Only front panel must be accessible after installation is completed.
- Do not operate the device other then the environmental conditions given in Technical Specification.
- Do not operate the device in environments that may cause conductive pollution.

- Take precautions against negative environmental conditions like humidity, vibration, pollution and high/low temperature during installation.
- There exists internal shunt resistor (27 Ohms) between UC104 (11-12) and UC107 (14-15). Do not apply voltage to these pins, may cause permanent hardware failure. All inputs are direct current (DC). Do not exceed absolute maximum ratings and do not apply reverse polarity, may cause permanent hardware failure.
- Keep device, signal cables and communication cables away from circuit breakers, power cables and devices/cables emitting electrical noise. Use shielded and twisted signal and communication cables and connect shield to earth ground on device side. Keep length of signal and communication cables less than 3m.
- In your applications, always use separate and independent mechanical and/or electromechanical devices/apparatus to support UC107 / UC104 to handle emergency cases..

- Use insulated cable end-sleeves at the end of cables screwed to the device connector terminals.
- Maximum torque for screwing; 0.5 N.m.
- Please check www.gemo.com.tr for latest device and documentation updates regularly. All updates and all information are subject to change without notice.

GENERAL SPECIFICATION

- This device is designed for basic process control applications only in light industrial environments.
- Universal Controller with OUT and ALARM output
- Selectable Analog Input; 0-20mA, 4-20mA, 0-10V, 0-1V
- Scalable Calibration; -1999 … 4000
- Selectable Decimal Point Digit
- ON-OFF control form
- Selectable Relative, Absolute or Band Alarm
- Forward / Reverse Control Option for OUT Output
- Displays SET and PROCESS values
- Input “Offset” feature
- Adjustable Hysteresis Value
- Displays SET and PROCESS values
- High accuracy
- EEPROM memory to store settings
- Dimensions; UC107:72x72mm and UC104:48x48mm
- Optional SSR output
- Easy connection with plug-in connectors

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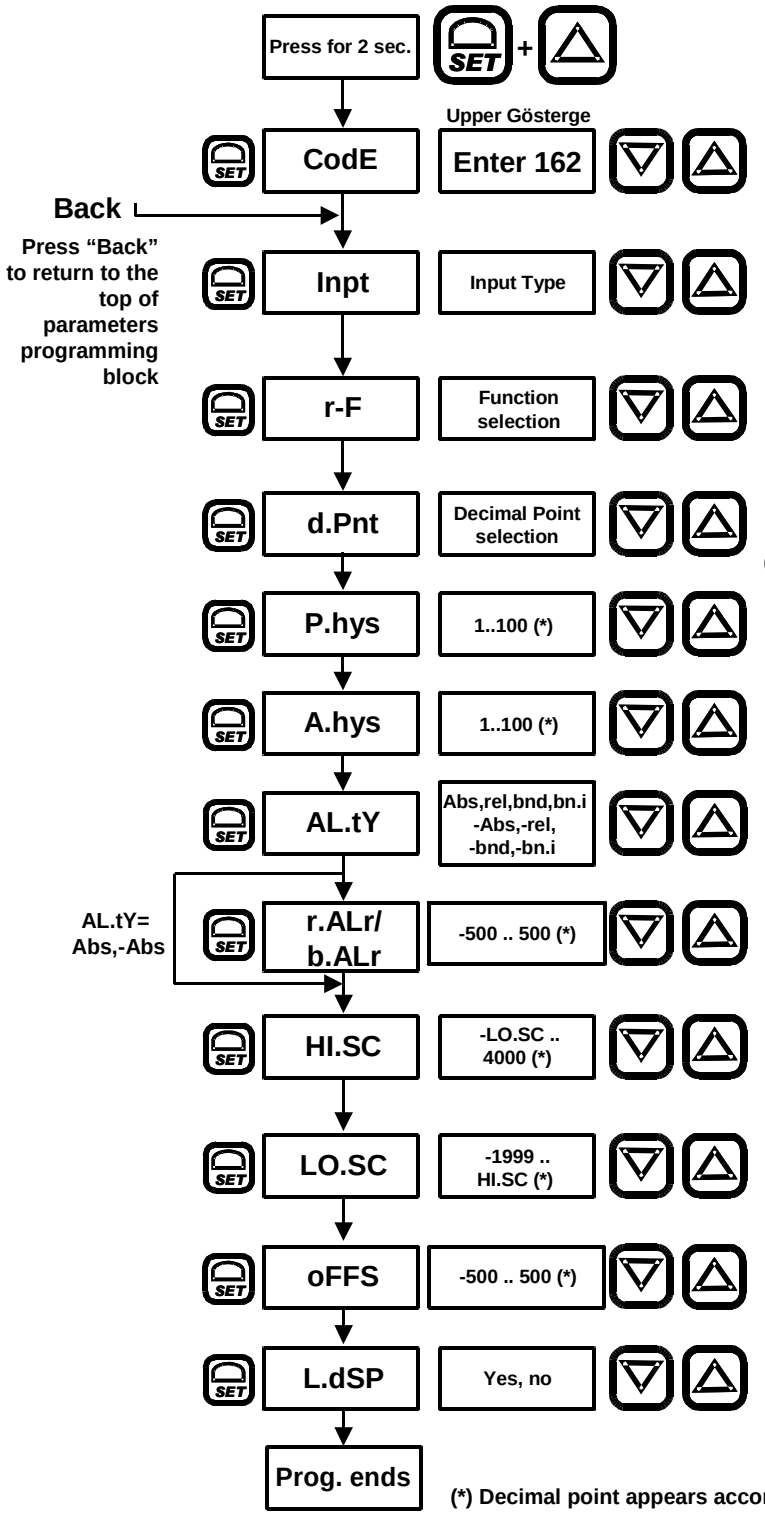
PROGRAMMING SYSTEM PARAMETERS



Factory SET values:

P.Set: 100
A.Set: 400
InPt: 10u
r-F: r
d.Pnt : 0
P.hys : 3
A.hys: 3
AL.tY : rel
r.ALr: 3
HI.SC: 400
LO.SC: 0
oFFS: 0
L.dSP: Yes

ERROR MESSAGES

- **FAIL** : Hardware fails to measure input signal or hardware failure
- **Err** : Hardware failure

CLAEANING

Do not use any solvents (alcohol, thinners, benzine, acid, etc.) or corrosive substances to clean the device. Use only a dry and clean non-abrasive cloth. Before cleaning, disconnect the power supply and mains connections.

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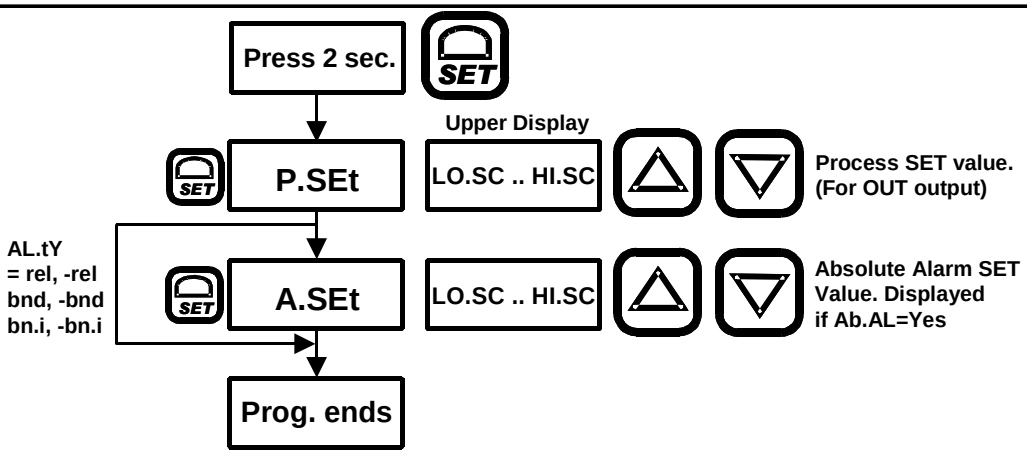
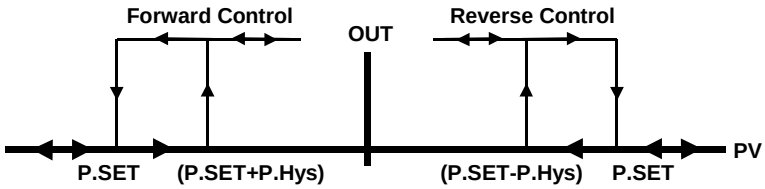
PROGRAMMING PROCESS SET AND ABSOLUTE ALARM SET PARAMETERS

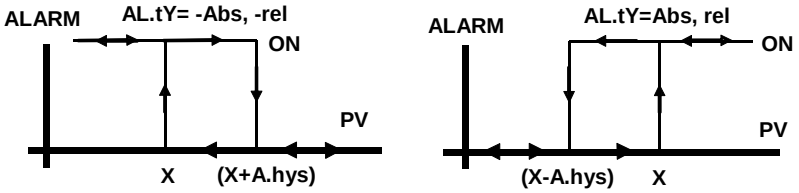


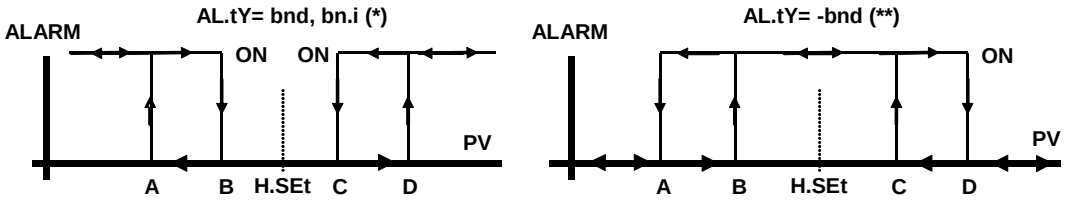
OUT OUTPUT (ON-OFF OPERATING PRINCIPLE)



OUT CONTROL FORM; ON-OFF

AL.tY = Abs, -Abs; X = A.SEt
AL.tY = rel, -rel ; X = H.SEt + r.ALr





A = H.Set-b.Alr, B = H.SET-b.Alr+A.hys, C = H.SEt+b.Alr-A.hYS, D = H.SET+b.Alr

(*) AL.tY = bn.i is same as bnd except that if AL.tY = bn.i, ALARM is never ON before PV is in band.
(**) AL.tY = -bn.i is always same as -bnd.

CALIBRATION

- User calibration is done via HI.SC and LO.SC parameters.
- First select the analogue input signal type (0-10V,0-1V, 0-20mA, 4-20mA).
- When analogue input is equal to lowest value of selected input signal, LO.SC is displayed.
- When analogue input is equal to highest value of selected input signal, HI.SC is displayed.
- **Example 1**; Let LO.SC = -100, HI.SC = 1750. Input signal 0-10V selected. Input signal = 0V; Displayed value; -100, Input signal = 10V; Displayed value; 1750, Input signal = 5V; Displayed value; 825
- **Example 2**; Let LO.SC = -100, HI.SC = 1750. Input signal 0-1V selected. Input signal = 0V; Displayed value; -100, Input signal = 1V; Displayed value; 1750, Input signal = 0,5V; Displayed value; 825
- **Example 3**; Let LO.SC = -300, HI.SC = 750. Input signal 4-20mA selected. Input signal = 4mA; Displayed value; -300, Input signal = 20mA; Displayed value; 750, Input signal = 12mA; Displayed value; 225
- **Example 4**; Let LO.SC = -300, HI.SC = 750. Input signal 0-20mA selected. Input signal = 0mA; Displayed value; -300, Input signal = 20mA; Displayed value; 750, Input signal = 10mA; Displayed value; 225
- Decimal point appears according to the “d.Pnt” setting.