

## Main applications

- Extrusion lines
- Injection presses for plastics
- Heat punches
- Presses for rubber
- Packaging machines
- Packing machines
- Polymerization and synthetic fiber plants
- Food processing plants
- Die-casting plants
- Cooling plants
- Climatic cells and test benches
- Dryers for ceramics and construction parts
- Ovens
- Painting plants



## Main features

- Universal input configurable from faceplate
- Accuracy better than 0.2% f.s. under nominal conditions
- Control output: relay, logic, Triac or continuous
- Hot/cold function with selection of cooling fluid
- 3 alarms with completely configurable function
- Analog retransmission output
- Up to 2 isolated digital inputs with configurable function
- Isolated digital input with configurable function
- Auxiliary input for CT (TA) (50mAac)
- Heater break or probe short-circuit alarm
- Self-tuning, Auto-tuning, Soft-start, bumpless Man/Auto function
- Double set, set ramp, timed output function
- Optically isolated RS485 serial line. Protocol: GEFAN MODBUS RTU
- Self-diagnosis
- Rapid configuration from PC with Winstrum packet

## PROFILE

Microprocessor controllers, 48x96 (1/8DIN) format for 1200 and 96x96 (1/4DIN) format for 1300, built with SMT technology. Complete operator interface, protected by Lexan membrane to guarantee an IP65 faceplate protection level. Composed of 4 keys, double 4-digit green LED display, 4 red signal LEDs for the 4 relay/logic outputs and 3 additional LEDs with programmable function to signal the instrument's various function states.

The main input for the variable to be controlled is universal, and allows connection of a wide variety of signals: thermocouples, resistance thermometers, thermistors, normalized linear inputs, all with possibility of custom linearization set from the faceplate.

Input type is selected entirely from the faceplate and requires no external adapter shunts/dividers.

A second auxiliary analog input from current transformer is available. You can select one of the two presettable setpoints, select Manual-Automatic mode, reset the alarm memory, or enable the hold function by means of the digital input.

The instrument provides up to 4 outputs: relay (5A, 250VAC/30VDC  $\cos\phi = 1$ ) or logic (24V  $\pm$  10% (10Vmin a 20mA).

An analog output in voltage or in current is also available.

The functions of each output are freely configurable from the faceplate. In addition to the control and alarm outputs, you can also have outputs that repeat the state of the digital or retransmission input by process variable, setpoint, deviation, alarm trip points and values acquired via serial line. An additional output (24VDC, 30mA max.) is available to power outside transmitters.

The serial communication option can be in Current Loop or RS485, with MODBUS RTU protocol and maximum speed of 19200 baud (485).

The instrument's entire programming procedure is made easier by grouping the parameters in function blocks (CFG for control parameters, Inp for inputs, Out for outputs, etc.).

The instrument can also select the parameters to be displayed based on its hardware configuration, which automatically hides irrelevant parameters. The instrument is supplied with an "EASY" configuration calling for just a few parameters (only those pertaining to the model ordered and essential to the controller's operation).

In this way, you just have to set the setpoint and the alarm, then launch self-tuning with the specific button.

For even simpler configuration, you can use a PC programming kit consisting of a cable and a guided program for Windows environment (see Technical Data code WINSTRUM).

## TECHNICAL DATA

### INPUTS

Accuracy 0,2% f.s.  $\pm$ 1digit.  
Acquisition of the input signal 120msec.

### TC - Thermocouples

<b>J</b>	0...1000°C / 32...1832°F
<b>K</b>	0...1300°C / 32...2372°F
<b>R</b>	0...1750°C / 32...3182°F
<b>S</b>	0...1750°C / 32...3182°F
<b>T</b>	-200...400°C / -328...752°F
<b>B</b>	44...1800°C / 111...3272°F
<b>E</b>	-100...750°C / -148...1382°F
<b>N</b>	0...1300°C / 32...2372°F

**custom** -1999...9999

Using the custom solution, tables are available for the following thermocouples:

<b>L-GOST</b>	0...600°C / 32...1112°F
<b>U</b>	-200...400°C / -328...752°F
<b>G</b>	0...2300°C / 32...4172°F
<b>D</b>	0...2300°C / 32...4172°F
<b>C</b>	0...2300°C / 32...4172°F

**(NI-Ni18Mo)** 0...1100°C / 32...2012°F

<b>RTD 3-wires</b>	
<b>PT100</b>	-200...850°C / -328...1562°F
<b>JPT100</b>	-200...600°C / -328...1112°F

### PTC

990Ω, 25°C -55...120°C / -67...248°F

### NTC

1KΩ, 25°C -10...70°C / 14...158°F

### DC - Linear

With scale settable in limits:

-1999...9999

0...60mV / 12...60mV

0...10V / 2...10V

0...5V / 1...5V

0...1V / 0,2...1V

0...20mA / 4...20mA

Input impedance:

Ri > 1MΩ per 60mV, 1V

Ri > 10KΩ per 5V, 10V

Ri = 50Ω per 20mA

Custom linearisation with 32 segment.

### Auxiliary input

(IN CT)

For current transformer

50mAac, 50/60Hz, Ri=10Ω

### Digital input

(IN1/IN2)

PNP: Ri = 4,7KΩ (24V, 5mA) insulation

1500V

NPN: voltage-free contact.

Function configurable among man/auto

selection, local/remote (setpoint from

serial line, setpoint1/setpoint2);

Set/reset outputs, start/stop tuning

functions, software off/on, reset alarm

memory, hold.

### OUTPUTS

4 configurable outputs:

• OUT1 relay (switching contact only with OUT2 relay)

• OUT2 available in relay, logic or triac

• OUT3 available in relay, logic, continuous or analog retransmission

• OUT4 relay or logic.

The outputs are freely assignable to control and alarm functions (in "OR" or "AND").

They can be slaved to a faceplate key or to the auxiliary digital input.

### Relay

(order code R)

With rating: 5A/250Vac/30Vdc, cosφ=1

### Logic

(order code D)

24Vdc, Rout=100Ω (10V/20mA)

### Triac (order code T)

24...240Vac ± 10%, 50/60Hz, 1A max.

I<sup>2</sup>t = 128A<sup>2</sup>sec.

Leakage current 1.5mA max a 200Vac.

### Continuous (order code C)

0...10V, 0/4...20mA, on 500Ω max

only for heat/cool control output.

### Retransmission

(order code W)

0...10V, 0/4...20mA, on 500Ω resolution

12bit, useful for retransmission of the

variable.

### Serial line

Optoisolated 2/4 wires, RS422/485 (1200,

2400, 4800, 9600, 19200 baud) interface

Prot.: MODBUS RTU

### POWER SUPPLY

Standard: 100...240Vac/dc ± 10%

on request: 11...27Vac/dc ± 10%

50/60Hz, max. 8VA max

Protection by internal fuse not serviceable

by the user

### POWER SUPPLY TRANSMITTER

24V ±10% not stabilized, 30mA

Short circuit protection

### AMBIENT CONDITION

Working temperature range: 0...50°C

Storage temperature range: -20...70°C

Humidity: 20...85%Ur non condensing

### CONTROL

On/Off, P, PD, PID in both heating and cooling, with parameters settable from keyboard..

Cooling setpoint relative to heating setpoint.

• Manual reset -999...999 digits

• Reset power -100.0...100.0%

• Cycle time 0...200sec

• Soft-start 0.0...500.0 min

For each action:

• Proportional band 0.0...999.9% f.s.

• Integral time 0.0...99.99 min

• Derivative time 0.0...99.99 min

• Maximum power limit 0.0...100.0%

### ALARMS

• 3 alarm limits settable in absolute, deviation, symmetrical deviation value compared to set-point with direct or reverse function.

• Alarm limit settable along entire selected scale.

• Alarm masking with exclusion at power-up, with memory, with trip delay.

• LBA alarm for adjustment control

• Trip hysteresis settable for each alarm

• Alarm assigned to ammeter input with different function modes.

### WEIGHT

320g (1200)

400g (1300)

## FACEPLATE DESCRIPTION

**A** - PV Display: process variable, height 10mm (1200), 20mm (1300) green

**B** - SV Display: setpoint value, height 10mm (1200), 13mm (1300) green

**C** - "Function" key

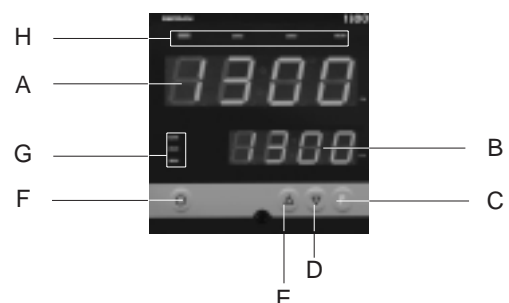
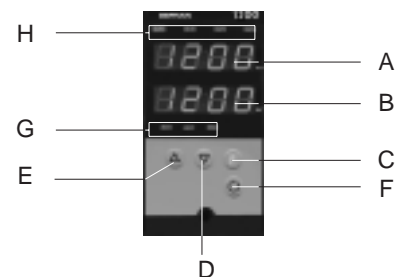
**D** - "Raise" key

**E** - "Lower" key

**F** - "Automatic/Manual" selection

**G** - Function indication, red leds

**H** - Indication of active outputs, red leds

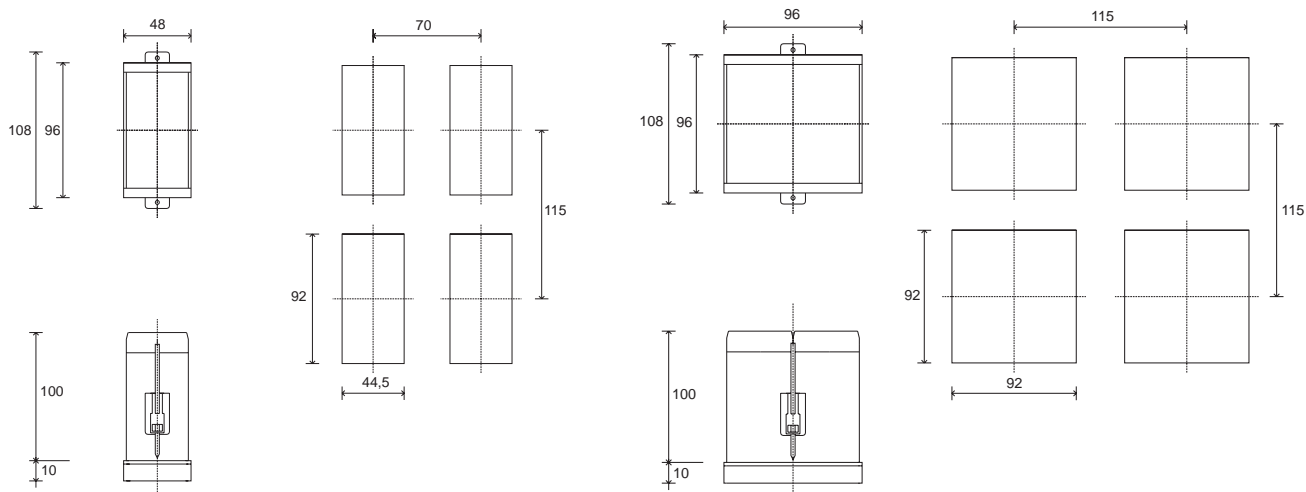


Faceplate protection IP65

## DIMENSIONS AND CUT OUT

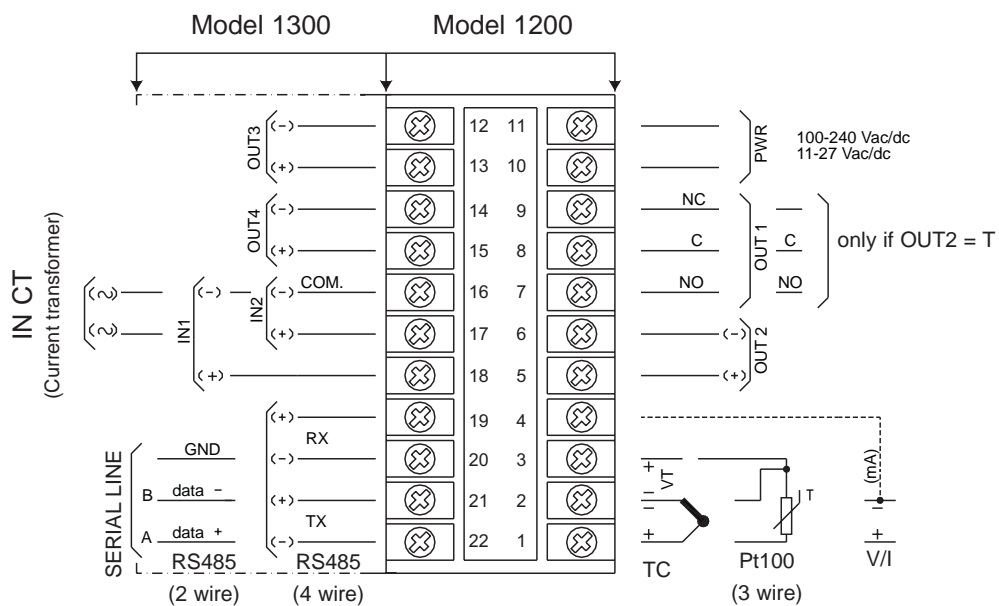
1200


1300



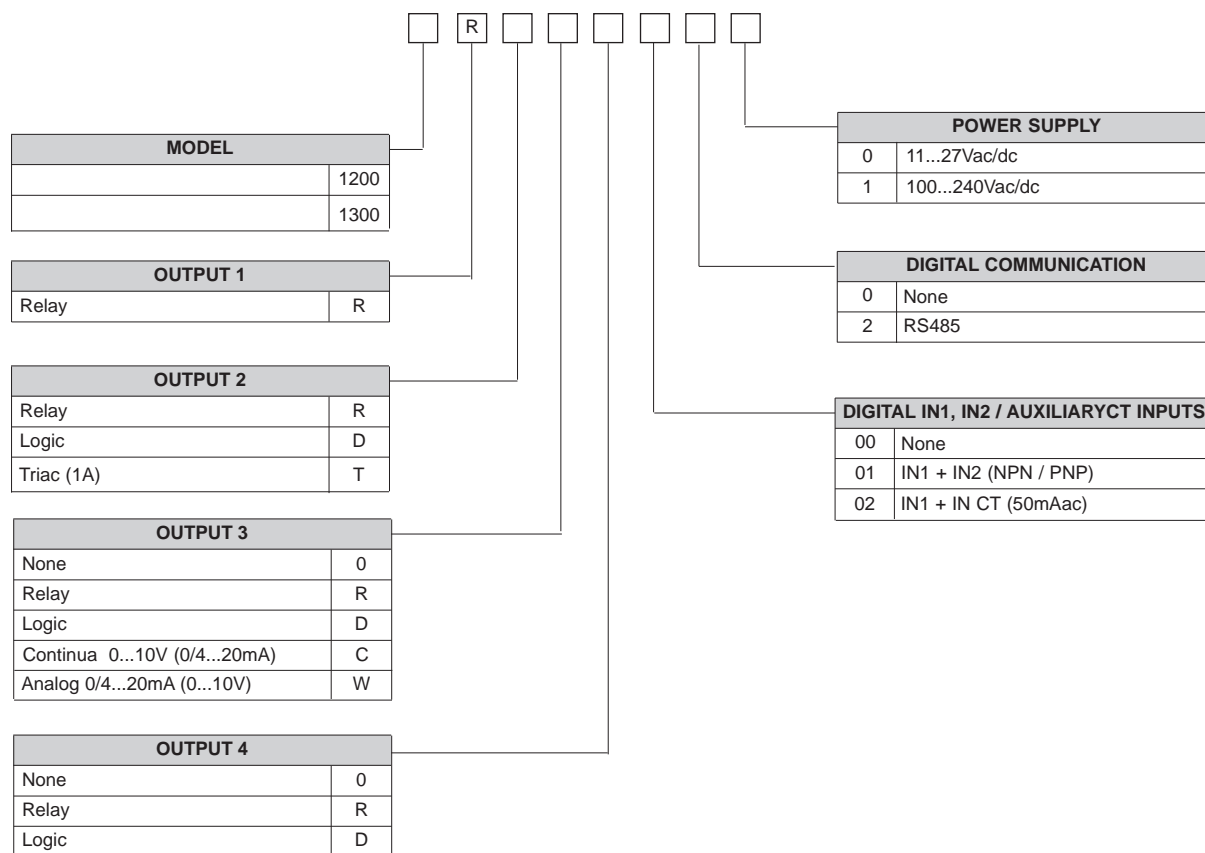
Dimensions: 48x96mm - 96x96mm (1/8DIN - 1/4DIN) depth 100mm

## CONNECTION DIAGRAM



 Apply user's manual warnings for a correct installation

## ORDER CODE



Please, contact GEFRA sales people for the codes availability.

GEFRAN spa reserves the right to make any kind of design or functional modification at any moment without prior notice.



In conformity to ECC 89/336/CEE and 73/23/CEE with reference to standards:  
 - CEI-EN 61000-6-2 (immunity in industrial environment) - EN 50081-1 (emission in residential environment) - EN 61010-1 (safety)



GEFRAN spa via Sebina, 74 - 25050 Provaglio d'Iseo (BS)  
 Tel. 03098881 - fax 0309839063 - Internet: <http://www.gefran.com>

1200/1300 - 09/03