

Controllers and programmers

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GEFRAN

Our Know how,
Your Solution.

GENERAL DESCRIPTION

Control instruments let you acquire one or more inputs (digital/analog) and control a physical quantity via the “smart” control of one or more outputs (digital/analog).

INPUTS

A wide range of digital/analog inputs for various functions such as reading of process input, state of digital input, reading of delivered current, etc.

IP65

PID

Sophisticated control algorithms simplify every control.

OUTPUTS

Various types of outputs to control: process, alarms, retransmission.

DISPLAY

Clear and efficient display of main variables.



LEDs

LEDs for instantaneous display of instrument state.

KEYBOARD

Keyboard for rapid setting and diagnostics.

Characteristics

Flexibility

HW/SW flexibility.



Hardware recognition

Automatic recognition of hardware resource.



Process input flexibility

Simultaneous connection of various types of input sensors (TC, RTD, V, I).



Simple settings

Setting via parameters



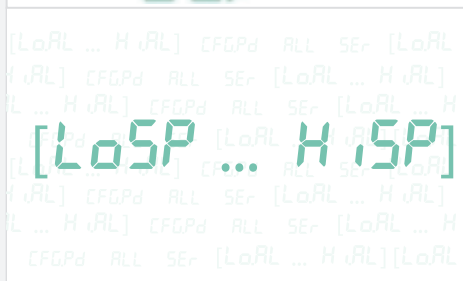
Shared software

Methods of use identical in all Gefran controllers.



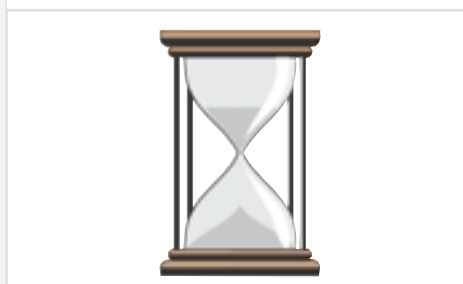
Parameters with acronyms

Displayed parameters described by an acronym.



Ready to use

Preinstalled hardware and software configuration.



Advantages

Every resource is used

Rational use of resources generates highly profitable and efficient operation.

Safety

The user has to set only the HW parameters for safe use of the controller.

One instrument, many applications

Thanks to its flexibility, you can now use one instrument for many applications.

Immediate learning

Very little time is needed to configure the instrument for specific requirements.

Reuse

Shared software lets you go from one controller to another with great ease.

Intuitive setting

The use of acronyms lets you set the parameters with extreme confidence.

“Zero” startup time

The user can start the instrument in a time virtually equal to zero.

HIGH-PERFORMANCE MODELS**LCD Display**

Input: universal
 Auxiliary analog input: CT, linear, potentiometer read
 Digital inputs: 3, max. 8 (with expansion)
 Outputs: min. 2, max. 8, 16 (with expansion)
 Serial: RS485 Modbus RTU

Advanced functions

Ratio controller
 Control in cascade
 Mathematical processing

Programmers

Fifty programs available for a total of one hundred steps to control setpoint profiles

ADVANCED MODELS**Double display**

Input: universal
 Auxiliary analog input: CT, linear, potentiometer read
 Digital inputs: 2
 Outputs: min. 2, max. 5
 Serial: RS485 Modbus RTU

Valves

Specific algorithms to control floating valves with or without feedback

Programmers

Four programs available for a total of sixteen steps to control setpoint profiles

BASIC MODELS**Single display**

Input: universal
 Outputs: min. 2, max. 3

Double display

Input: universal
 Auxiliary analog input: CT read
 Digital inputs: 2
 Outputs: min. 2, max. 4
 Serial: RS485 Modbus RTU

MULTILOOP MODELS

Control loops: four
 Inputs: universal
 Auxiliary analog input: CT, linear, potentiometer read
 Digital inputs: 2
 Outputs: min. 4, max. 10
 Serial: RS485 Modbus RTU
 Fieldbus: Profibus, DP, CANopen, DeviceNet, Modbus TCP
 Power supply: isolated
 Installation: rear panel

CUSTOM MODELS

Model DF OpenFrame: totally customizable
 Mechanics
 Display
 I/O resources

FRONT PANEL INSTALLATION DIN FORMAT

REAR PANEL/CUSTOM

	BASIC MODELS	ADVANCED MODELS				HIGH-PERFORMANCE MODELS			MULTILOOP	CUSTOM
	single display		double display		LCD display			double display	4 loop	
				valves	programmers					
FORMAT										
96x96										
		1300	1800	1800V	1800P	4500	4400	2500	GFXTERM04	600 OF
48x96										
		1200	1600	1600V	1600P	3500	3400			
48x48										
		400	401	600	800	800V	800P			
72x36										
	40T72PID									
	PACKAGING, PLASTICS	PACKAGING, PLASTICS		PACKAGING, FURNACES, PROCESSES		COMPLEX PROCESSES		PACKAGING, PLASTIC, FURNACES		

BASIC MODELS



40T72PID



400



401

INPUTS

Process analog				
number		1		
function		Acquisition of process variable		
Sensor type:	thermocouple resistance thermometer thermistor linear voltage linear current	TC: J,K,T,N,R,S,B,E Internal cold junction compensation RTD: PT100 DIN43760 PTC: 990Ω@25°C on request V voltage: 0...60mVdc,0...10Vdc I current: 0...20mA		
sampling time		120 ms		
accuracy		0,2% fs±1 digit		
resolution		< 4μV on 60mV, < 0,8mV on 10Vdc		
linearization		< 0,1% fs		
input filter		0...20,0 sec		
Auxiliary analog				
number		-	1	
function		-	Read: current absorbed by load	
sensor type		-	current transformer 0...50mAac <20Ω	
Auxiliary digital				
number		-		
function		-		
type		-		

OUTPUTS

number	min.2 max.3	min.2 max.3	min.2 max.3
type Out.1	R,T	R,D	
type Out.2	R,D		
type Out.3	none,R,D	-	R,D Alternative to auxiliary analog input
type Out.4	-	-	-
function	Heating, cooling, alarm		
Type description	R Relay: NO/NC,max 5A-,250V _ (resistive load) D Digital: 24Vdc,30mA, Rout:100Ω T Triac: 20...240Vac ±10%, 50/60Hz, 1A max. snubberless		
Transmitter power supply	2 wires, 18V±10%, 50mA		

DISPLAY / KEYPAD

Display				
number		1		
color	red	green		
Display range		-1999...9999		
Keypad	3 keys	4 keys	4 keys	

FUNCTIONS

Main input security:	Sensor open or in short circuit (SBR)		Sensor open or in short circuit (SBR)
Main output security:	Control loop open (LBA)		Control loop open (LBA)
Auxiliary analog input security:	-		Load interrupted (HB)
regulation	P, PD, PI, PID, on/off Single action heat or cool Double action heat + cool		
tuning	selftuning, autotuning		
Alarms no./types	max.3 Absolute, relative, symmetrical, Direct, Inverse	max.2 Absolute, relative, symmetrical, Direct, Inverse	max.3 Absolute, relative, symmetrical, Direct, Inverse

SERIAL COMMUNICATION

type	-		
protocol	-		

GENERAL DATA

Format	72x36	48x48 1/16 DIN
Depth	52mm	99mm
Front protection	IP65	
Mounting	panel	removable panel
Power supply	11...27 Vdc 18...27 Vac 50/60Hz 3VA	200...240Vac / 100...127Vac±10% opt. 11...14Vac/22...27Vac±10% opt. 11...27Vac/dc Not insulated 50/60Hz, 5,5VA max
Certifications	-	CSA on request, UL available within 6 months

BASIC MODELS



600



1200



1300

INPUTS

Process analog

number

1

function

Acquisition of process variable

Sensor type: thermocouple
resistance thermometer
thermistor
linear voltage
linear current

TC: J,K,T,R,S, custom, Internal cold junction compensation.
RTD: PT100 DIN43760,JPT100,custom
PTC,NTC 990Ω@25°C/1KΩ@25°C
V voltage: 0...60mVdc,0...10Vdc custom
I current: 0/4...20mA, custom

sampling time

120 ms

accuracy

0,2% fs±1 digit

resolution

< 2μV on 60mV, < 0,4mV on 10Vdc

linearization

< 0,1% fs

input filter

0...20,0 sec

Auxiliary analog

number

1

function

Read: current absorbed by load

sensor type

current transformer
0...50mA ac <20Ω

Auxiliary digital

number

1, aux analog input, OUT3

2

function

configurable [man/auto,loc/rem,hold...]

type

NPN 4,5mA, PNP 5mA 24Vdc isol.1500V

OUTPUTS

number

min.2 max.4

type Out.1

R

type Out.2

R,D,T

type Out.3

None R,D,C,W
Alternative to auxiliary analog input

None,R,D,C,W

type Out.4

None,R alternative to serial line

None,R,D

function

Heating, cooling, alarm

Type description

R Relay: NO/NC,max 5A,250Vac/30Vdc __[resistive load]
D Digital: 24Vdc,30mA, Rout:100Ω
T Triac: 20...240Vac±10%V, 50/60Hz, 1A max. snubberless
C Continue: 0...10Vdc, 0/4...20mA 500Ω not isolated
W Continue: 0...10Vdc, 0/4...20mA 500Ω isolated

Transmitter power supply

2 wires, 15/24Vdc±10%, 50mA Short-circuit protection

DISPLAY / KEYPAD

Display

number

2

color

green, green

Display range

-1999...9999

Keypad

4 keys

FUNCTIONS

Main input security:

Sensor open or in short circuit (SBR)

Main output security:

Control loop open (LBA)

Auxiliary analog input security:

Load interrupted (HB)

regulation

P, PD, PI, PID, on/off
Single action heat or cool
Double action heat + cool

tuning

selftuning, autotuning, autotuning single action

Alarms no./types

max.3
Absolute, relative, symmetrical, Direct, Inverse

SERIAL COMMUNICATION

type

RS485

protocol

Modbus RTU / Cencal GEFran

GENERAL DATA

Format

48x48
1/16 DIN

48x96
1/8 DIN

96x96
1/4 DIN

Depth

99mm

100mm

Front protection

IP65

Mounting

removable panel

Power supply

switching
100...240Vac±10%
opt. 11...27Vac/dc±10%
50/60Hz, 8VA max

Certifications

UL

-

ADVANCED MODELS



800



1600



1800

INPUTS

Process analog		
number		1
function		Acquisition of process variable
Sensor type:	thermocouple resistance thermometer thermistor linear voltage linear current	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, Internal cold junction compensation RTD: PT100 DIN43760,JPT100,custom PTC: 990Ω@25°C, custom voltage: 0...60mVdc,0...10Vdc, custom current: 0/4...20mA, custom
sampling time		120 ms
accuracy		0,2%fs ± 1 digit
resolution		< 1μV on 60mV, < 0,2mV on 10Vdc
linearization		< 0,1% fs
input filter		0...20,0 sec
Auxiliary analog		
number		1
function		Read: current absorbed by load, linear input, potentiometer
sensor type		Current transformer 0...50mA 50/60HZ - linear voltage 0/2...10V, Ri>1MΩ, linear current 0/4...20mA, Ri=5Ω - pot. > 500Ω

Auxiliary digital

number	2 (second input alternative to output 5)
function	configurable (man/auto,loc/rem,hold...)
type	NPN 4,5mA, PNP 3,6mA 24V isol.1500V

OUTPUTS

number	min.2 max.5	min.2 max.6
type Out.1	R,D	R,D
type Out.2	R,D	R
type Out.3	none,R,D	R
type Out.4	none,R,V,I	none V,I
type Out.5	none,V,I Second digital input alternative	none V,I
type Out.6	none	none V,I
function	Heating, cooling, alarm	
Type description	R Relay: NO/NC, max.5A,250V __ (resistive load) D Digital: 12Vdc,20mA, Rout 220Ω V Analog: 0...10Vdc 500Ω resolution 12bit I Analog: 0/4...20mA 500Ω insulated resolution 12bit	
Transmitter power supply	2wires, 10Vdc/24Vdc, 30mA Short-circuit protection, insulated	

DISPLAY / KEYPAD

Display		
number		2
color		green, green
Display range		-1999...9999
Keypad		4 keys

FUNCTIONS

Main input security:	Sensor open or in short circuit (SBR)
Main output security:	Control loop open (LBA)
Auxiliary analog input security:	Load interrupted (HB)
regulation	P, PD, PI, PID, on/off Single action heat or cool Double action heat + cool
tuning	selftuning, autotuning, single action
Alarms no./types	max.5 Absolute, relative, symmetrical, direct, inverse

SERIAL COMMUNICATION

type	RS232-RS422/485 - current loop, Optoinsulated, 4 wires
protocol	Modbus RTU - Cencal GEFran

GENERAL DATA

Format	48x48 1/16 DIN	48x96 1/8 DIN	96x96 1/4 DIN
Depth	129mm	115mm	
Front protection	IP65		
Mounting	Removable panel		
Power supply	switching 100...240Vac/dc ±10% opz. 20...27Vac/dc ±10% 50/60Hz, 9VA max		
Certifications	CSA,RINA,UL available shortly	CSA,UL	

ADVANCED MODELS



800P

: Controllers and programmers

INPUTS		
Process analog		
number		1
function		Acquisition of process variable
Sensor type:	thermocouple resistance thermometer thermistor linear voltage	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, Internal cold junction compensation RTD: PT100 DIN43710,JPT100,custom PTC: 990Ω@25°C voltage: 0...60mVdc,0...10Vdc, custom current: 0/4...20mA, custom
sampling time		120 ms
accuracy		0,2% fs±1 digit
resolution		< 1μV on 60mV, < 0,2mV on 10Vdc
linearization		< 0,1% fs
input filter		0...20,0 sec
Auxiliary analog		
number		1
function		Read: current absorbed by load, linear input, potentiometer
sensor type		Current transformer 0...50mA 50/60HZ - linear voltage 0/2...10V, Ri>1MΩ, linar current 0/4...20mA, Ri=5Ω - pot. > 500Ω
Auxiliary digital		
number		2 (second input alternative to output 5)
function		configurable (man/auto,loc/rem,hold...)
type		NPN 4,5mA - PNP 3,6mA 24V isol.1500V
OUTPUTS		
number		min.2 max.5
type Out.1		R,D
type Out.2		R,D
type Out.3		none,R,D
type Out.4		none,R,V,I
type Out.5		none,V,I
type Out.5		Second digital input alternative
function		Open, close, heating, cooling, alarm
Type description		R Relay: NO/NC, max.3A,250V __ (resistive load) D Digital: 12Vdc,20mA V Analog: 0...10Vdc 500Ω insulated 12bit I Analog: 0/4...20mA 500Ω insulated 12bit
Transmitter power supply		2 wires, 10Vdc/24Vdc, 30mA Short-circuit protection, insulated
DISPLAY / KEYPAD		
Display		
number		2
color		green, green
Display range		-1999...9999
Keypad		4 keys
FUNCTIONS		
Main input security:		Sensor open or in short circuit (SBR)
Main output security:		Control loop open (LBA)
Auxiliary analog input security:		Load interrupted (HB)
regulation		P, PD, PI, PID, on/off Single action heat or cool Double action heat + cool
tuning		selftuning, autotuning, single action
Alarms no./types		max.5 Absolute, relative, symmetrical, direct, inverse
Set programmer		
nr. programs		4
nr. steps		up to 16 steps
SERIAL COMMUNICATION		
type		RS232-RS422/485, current loop, optoisolated, 4 wires
protocol		Modbus RTU - Cencal GEFran
GENERAL DATA		
Format		48x48 1/16 DIN
Depth		129mm
Front protection		IP65
Mounting		Removable panel
Power supply		switching 100...240Vac10% opz. 20...27Vac/dc ±10% 50/60Hz, 9VA
Certifications		CSA,RINA,UL available shortly



1600P



1800P

INPUTS	
Process analog	
number	1
function	Acquisition of process variable
Sensor type:	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, Internal cold junction compensation RTD: PT100 DIN43710,JPT100,custom PTC: 990Ω@25°C voltage: 0...60mVdc,0...10Vdc, custom current: 0/4...20mA ,custom
thermocouple	
resistance thermometer	
thermistor	
linear voltage	
sampling time	120 ms
accuracy	0,2% fs ±1 digit
resolution	< 1μV on 60mV, < 0,2mV on 10Vdc
linearization	< 0,1% fs
input filter	0...20,0 sec
Auxiliary analog	
number	1
function	Read: current absorbed by load, linear input, potentiometer
sensor type	0...50mA ac <20Ω - 0/4...20mA ,0..10Vdc > 1MΩ - 100...1000Ω isol.1500V
Auxiliary digital	
number	2 (second input alternative to output 5)
function	configurable (man/auto,loc/rem,hold...)
type	NPN 4,5mA - PNP 3,6mA, 24V isol.1500V
OUTPUTS	
number	min.2 max.6
type Out.1	R,D
type Out.2	R
type Out.3	R
type Out.4	none R,D
type Out.5	none,V,I
type Out.6	none V,I
function	Open, close, heating, cooling, alarm
Type description	R Relay: NO/NC, max.3A,250V __[resistive load] D Digital: 12Vdc,20mA V Analog: 0...10Vdc 500Ω insulated I Analog: 0/4...20mA 500Ω insulated
Transmitter power supply	2 wires, 10/24Vdc, 30mA Short-circuit protection, insulated
DISPLAY / KEYPAD	
Display	
number	2+bargraph
color	green, green,red
Display range	-1999...9999
Keypad	5 keys
FUNCTIONS	
Main input security:	Sensor open or in short circuit (SBR)
Main output security::	Control loop open (LBA)
Auxiliary analog input security.	Load interrupted (HB)
regulation	P, PD, PI, PID, on/off Single action heat or cool Double action heat + cool Tree step motorized valves
tuning	selftuning,autotuning, single action
Alarms no./types	max.5 Absolute, relative, symmetrical, direct, inverse
Set programmer	
nr. programs	4
nr. steps	up to 16 steps
SERIAL COMMUNICATION	
type	RS232-RS422/485, current loop, optoisolated, 4 wires
protocol	Modbus RTU/Cencal GEFran
GENERAL DATA	
Format	48x96 1/8 DIN
Depth	115mm
Front protection	IP65
Mounting	Removable panel
Power supply	switching 100...240Vac ±10% opz. 20...27Vac/dc ±10% 50/60Hz
Certifications	CSA,UL

HIGH-PERFORMANCE MODELS



3400



4400

INPUTS

Process analog		
number		1
function		Acquisition of process variable
Sensor type:	thermocouple resistance thermometer thermistor linear voltage linear current	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, Internal cold junction compensation RTD: PT100 DIN43760,JPT100,custom
sampling time		120 ms
accuracy		0,1% fs±1 digit
resolution		< 1µV on 60mV, < 0,2mV on 10Vdc
linearization		< 0,1% fs
input filter		0...20,0 sec

Auxiliary analog

number		1
function		Read: current absorbed by load, linear input, potentiometer
sensor type		0...5A ac,Ri=20mΩ,50/60Hz -0/4...20mA ,0...10Vdc > 1MΩ- 100...2000Ω ,0...1V,Ri>10MΩisol1500V

Auxiliary digital

number		3
function		configurable (man/auto,loc/rem,hold, prg... selection)
type		NPN 3,5mA - PNP 6mA 24V (12V,2mA)

OUTPUTS

number		min.0 max.4
type Out.1		none,R,D,V,I - Transmitter power supply alternative
type Out.2		none,R,D,V,I - Transmitter power supply alternative - MD81 alternative
type Out.3		none,R,D,V,I - Transmitter power supply alternative - MD81 alternative
type Out.4		none,R,D,V,I - Transmitter power supply alternative - MD81 alternative
function		heating, cooling, alarm
Type description		R Relay: NO/NC, max.5A,250V __ (resistive load) D Digital: 23V,20mA Rout 470Ω insulated V Analog: 0...10Vdc 500Ω insulated I Analog: 0/4...20mA 500Ω insulated
Transmitter power supply		24Vdc, 30mA hort-circuit protection
Probe power supply		-

DISPLAY / KEYPAD

Display		
type		Backlighted LCD
color		-
Keypad		
		6 keys

FUNCTIONS

Main input security:		Sensor open or in short circuit (SBR)
Main output security:		Control loop open (LBA)
Auxiliary analog input security:		Load interrupted (HB)
regulation		P, PD, PI, PID, on/off Single action heat or cool Double action heat + cool
tuning		selftuning,autotuning,autotuning single action
Alarms no./types		max.2 (10 with MD81expansion) Absolute, relative, symmetrical, direct, inverse, latching or non-latching
Set programmer		
nr. programs		-
nr. steps		-

SERIAL COMMUNICATION

type		RS232-RS485
protocol		Modbus RTU - Cencal GEFran

GENERAL DATA

Format	48x96 1/8 DIN	96x96 1/4 DIN
Depth	157mm	
Front protection	IP54 (IP65 with protective cover)	
Mounting	Removable panel	
Power supply	switching 100...240Vac/dc ±10% opz. 20...27Vac/dc ±10% 50/60Hz, max 15VA	
Certifications	-	

HIGH-PERFORMANCE MODELS



3500



4500



2500

INPUTS		
Process analog		
number	1	2
function	Acquisition of process variable	
Sensor type:	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, Internal cold junction compensation RTD: PT100 DIN43760,JPT100,custom PTC, V voltage: 0...50mV,10...50mV. For signal 0...10V Please use external shunts I current: For signal 0...20mA, 4...20mA Please use external shunts	Strain Gauge:350+,sensitivity 1,5...4mV/V,con probe power supply 5/10Vdc. Potentiometer: $\leq 100\Omega, R_i > 10M\Omega @ 2,5Vdc$ DC linear: $\pm 60mV, \pm 100mV, R_i > 10M\Omega - \pm 60mV, \pm 100mV, R_i > 10M\Omega - TC$
thermocouple		
resistance thermometer		
thermistor		
linear voltage		
linear current		
sampling time	120 ms	2 ms
accuracy	0,1% fs ± 1 digit	
resolution	<math>< 1\mu V</math> n 60mV, <math>< 0,2mV</math> on 10Vdc	<math>< 0,6\mu V</math> on 60mV, <math>< 0,1mV</math> on 10Vdc
linearization	<math>< 0,1\%</math> fs	
input filter	0...20,0 sec	
Auxiliary analog		
number	1	2
function	Read: current absorbed by load, linear input, potentiometer	Remote set, offset, mathematics
sensor type	0...50mAac20Ω-0/4...20mA,0..10Vdc>1M Ω -100...1000 Ω isol1500V	Pot:1...10K Ω -@10Vdc -DC linear 10V, $R_i > 2m\Omega$ - 0/4...20ma, $R_i = 50\Omega$ -
Auxiliary digital		
number	3	from 2 to 6
function	configurable (man/auto,loc/rem,hold, prg... selection)	configurable
type	NPN 3,5mA - PNP 6mA 24V (12V,2mA)	NPN 5mA - PNP 5mA 24Vdc isolated
OUTPUTS		
number	min.0 max.4	4
type Out.1	none,R,D,V,I - R alternative	
type Out.2	none,R,D,V,I - Transmitter power supply alternative - R alternative	
type Out.3	none,R,D,V,I - Transmitter power supply alternative - R alternative	
type Out.4	none,R,D,V,I - Transmitter power supply alternative - R alternative	
function	heating, cooling, alarm	
Type description	R Relay: NO/NC, max.5A,250V __ (resistive load) D Digital: 23V,20mA Rout 470 Ω , insulated V Analog: 0...10Vdc 500 Ω insulated I Analog: 0/4...20mA 500 Ω insulated	
Transmitter power supply	24Vdc, 30mA hort-circuit protection	24Vdc,100mA
Probe power supply	-	10Vdc - 250mA Bridge resistance
DISPLAY / KEYPAD		
Display		
type	Backlighted LCD	
color	-	red/green, green,red
Keypad	6 keys	
FUNCTIONS		
Main input security:	Sensor open or in short circuit (SBR)	
Main output security:	Control loop open (LBA)	
Auxiliary analog input security:	Load interrupted (HB)	-
regulation	P, PD, PI, PID, on/off Single action heat or cool Double action heat + cool	
tuning	selftuning,autotuning,autotuning single action	
Alarms no./types	max.2 (10 with MD81expansion) Absolute, relative, symmetrical, direct, inverse, latching or non-latching	10
Set programmer		
nr. programs	50	-
nr. steps	up to 100 steps	-
SERIAL COMMUNICATION		
type	RS232-RS485	RS485
protocol	Modbus RTU Cencal GEFran	Modbus RTU,Profibus
GENERAL DATA		
Format	48x96 1/8 DIN	96x96 1/4 DIN
Depth	157mm	
Front protection	IP54 (IP65 with protective cover)	
Mounting	Removable panel	
Power supply	switching 100...240Vac/dc $\pm 10\%$ opz. 20...27Vac/dc $\pm 10\%$ 40/50Hz, max 15VA	switching 100...240Vac/dc $\pm 10\%$ opz. 20...27Vac/dc $\pm 10\%$ 48/62Hz, max 15VA
Certifications	UL available shortly	

**MULTILOOP
OPEN FRAME**



GFXTERMO4



600 OF

INPUTS		
Process analog		
number	4	1
function	Acquisition of process variable	
Sensor type: thermocouple resistance thermometer linear voltage linear current	TC: J,K,T,R,S, custom, Internal cold junction compensation RTD: PT100 DIN43760, PT100, custom V voltage: 0/12...60mV Ri > 1MΩ, 0/0,2...1V Ri > 1MΩ, custom 60mV I current: 0/4...20mA Ri = 50Ω, custom 20mA a 32 segment	
sampling time	120 ms All four	0-120 ms
accuracy	0,2% fs ±1 scale points at 25°C	0,2% fs ±1 digit
resolution	-	<2mV on 60mV, <0,4mV on 10Vdc
linearity	-	<0,1% fs
input filter	0...20,0 sec	
Auxiliary analog		
number	4	-
function	Read: current absorbed by load, linear input - TC	
Sensor type	external CT 50mAac; 50/60Hz, Ri = 10Ω range voltage 0/12...60mV, Ri > 1MΩ TC J, K, R, S, T, custom	
Auxiliary digital		
number	1	
function	configurable (man/auto,loc/rem,hold selection prg...)	
type	PNP, 24Vdc, 8mA (isol. 3500V)	24V, 4mA or no-voltage contact
OUTPUTS		
number	Min.6 Max. 10	5
type Out.1	D	R,D
type Out.2	D	R
type Out.3	D	R
type Out.4	D	R
type Out.5	O,R,D,C,T	buzzer
type Out.6	O,R,D,C,T	D
type Out.7	O,R,D,C,T	-
type Out.8	O,R,D,C,T	-
type Out.9	R	-
type Out.10	R	-
function	Heating, cooling, alarm	
FUNCTIONS		
Main input security:	Sensor open or in short circuit (SBR)	
Main output security:	Load interrupted (LBA)	
Auxiliary analog input security:	anello di regolazione aperto (LBA)	-
regulation	P, PD, PI, PID, on/off Single action heat or cool Double action heat + cool	
tuning	selftuning, autotuning, autotuning single action	
Alarms no./types	max.8 Absolute, relative, symmetrical, direct, inverse, latching or non-latching	max.3 Absolute, relative, symmetrical, direct, inverse
SERIAL COMMUNICATION		
Serial 1	Always present	Upon request
type	RS485	
protocol	Modbus RTU	
Serial 2	option	-
type	According to protocol	
protocol	Profibus DP,CANopen,DeviceNet,Modbus TCP,Modbus RTU	
GENERAL DATA		
Power supply	24Vdc ±25%,max 5VA	switching 100...240Vac ±10% 50/60Hz 8VA
Certifications	UL available shortly	-

Applications

Plastics



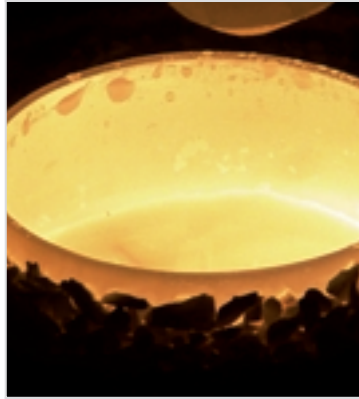
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