

Controllers, Programmers, Multiloop

**Controllers,
Programmers,
Multiloop**



GEFRAN


Our Know how,
Your Solution.

GENERAL DESCRIPTION

Control instruments let you acquire one or more analog inputs, convert them into engineering units, and compare them to setpoints. By applying PID control algorithms with automatic parameter calculation, they supply output signals to control actuators installed on the process.

Gefran's catalog of Controllers range from popular general purpose models to advanced, high-performance solutions made with graphics devices and distributed or integrated control architectures. They can be connected in a network and set for remote access for tele-assistance and remote control.

Multiloop Graphic Controllers GF_LOOPER



CONTROL
On-board control boards.

COMMUNICATION
Connections via Ethernet, RS485, Modbus, CANopen, Profibus, USB port.

GRAPHICS PAGES
Monitor pages for all zones, single zone, alarms, trends, bargraph, clock.

IP65
Front protection

CONTROL
Remoted control boards.

DISPLAY
TFT color graphics display 3.5" and 5.7", touch screen.

Programmers/Controllers Graphic 4 Loop GF_PROMER



CONTROL
On-board control boards.

COMMUNICATION
Connections via Ethernet, RS485, Modbus, CANopen, Profibus, USB port.

DISPLAY
TFT color graphics display 3.5" and 5.7", touch screen.

IP65
Front protection

CONTROL
Remoted control boards.

KEYBOARD
Keyboard with 6 mechanical keys, pressed key feedback.

GRAPHICS PAGES
Monitor pages with trend, bargraph, alarms, clock.

Characteristics

Flexibility

HW/SW flexibility.

Hardware recognition

Automatic recognition of hardware resource.

Process input flexibility

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

Simple settings

Setting via parameters, tick, icon and via Software for PC.

Shared software

Methods of use identical in all Gefran controllers.

Parameters

Displayed parameters described by an acronym, or with complete description.

Ready to use

Preinstalled hardware and software configuration.

Advantages

Every resource is used

Rational use of resource generates highly profitable and efficient operation, with maximum modularity.

Safety

The user has to set only the hardware parameters for safe use of the controller.
Password management of graphics models.

One instrument, many applications

Thanks to its flexibility, you can now use 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.

GRAPHICS MODELS

Alarms

Dedicated pages with explanatory messages.

Trend

Trending of variables and setpoints.

Historical data

Data saved to file.

Diagnostics

All critical situations under control.

Process display

Variables are continuously monitored.

Analyses, Storage, Quality

Data can be exported to USB flash drive.

"General Purpose" Single Loop Controllers

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..

PID

Sophisticated control algorithms simplify every control.

OUTPUTS

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

IP65

Front protection



LEDs

Leds for instantaneous display of instrument state.

DISPLAY

Clear and efficient display of main variables.

600

KEYBOARD

Keyboard for rapid setting and diagnostics.

MODEL DESCRIPTIONS

MULTILOOP MODELS

Graphics controllers with TFT, color display, touch screen, 3.5" and 5.7"

4, 8, 12, 16 control loops

Complete control and monitor pages

Bargraph, Trend, alarms management, recipe saving, Real Time Clock functions for clock/calendar

4 loop controllers

Inputs: universal, Outputs: relay, logic, analog

Digital inputs, Current transformers inputs (option)

Fieldbus communication: Profibus DP, CANopen, DeviceNet, Modbus RTU, Modbus TCP, Ethernet IP

Specific functions for "hot runners"

Power supply: isolated

Installation: DIN rail

HIGH-PERFORMANCE MODELS

"High speed" 2500 controller

3 displays and bargraphs to control pressures, web tension control, ratio control, math calculations for process controls

Graphics programmers with color display, TFT, touch screen, 3.5" and 5.7"

4 universal inputs TC, RTD, mA, V, local or remote, digital inputs (optional)

logic outputs, relay (optional), analog, and for motorized valves

Fieldbus communication: Profibus DP, CANopen, DeviceNet, Modbus RTU, Modbus TCP, Ethernet IP

Advanced functions

Setpoint programmer with 100 programs and 300 steps; up to 4 different setpoint profiles with the same time base; repetition of programs and sequence of steps; bargraph, trend, alarms management, historical data, Real Time Clock function for clock/calendar; 16 inputs/16 outputs for event programmable for each step.

ADVANCED MODELS

Double Display

Input: universal

Auxiliary analog input: CT, linear, potentiometer read

Digital inputs: 2

Outputs: min.2 max.5 (isolated analog outputs)

Serial: RS485 Modbus RTU

Valves

Specific algorithms to control floating valves with or without feedback ("V" models)

Programmers

Four programs available for a total of sixteen steps to control setpoint profiles ("P" models)

BASIC MODELS

Single display

Input: universal

Auxiliary analog input: CT read

Outputs: min.2, max.3

Double display

Input: universal

Auxiliary analog input: read CT

Digital inputs: min. 1, max. 2

Outputs : min.2, max.4

Serial: RS485 Modbus RTU

Model 600 OF OpenFrame totally customizable

- Mechanics adaptable to various customizations
- Double display
- Optional I/O resources
- On-board or external keyboard
- Up to 3 programmable setpoint steps

FRONT PANEL INSTALLATION DIN FORMAT

BASIC MODELS		ADVANCED MODELS		HIGH-PERFORMANCE MODELS		MULTILOOP MODELS	
single display	double display	triple display	LCD display	LCD display	LCD display	4 loop controllers (for DIN rail)	
169x120							
96x96	<div data-bbox="566 1601 710 1736">  <p>1300</p> </div> <div data-bbox="566 1444 710 1579">  <p>1800</p> </div> <div data-bbox="566 1265 710 1400">  <p>1800V</p> </div> <div data-bbox="566 1086 710 1220">  <p>1800P</p> </div>	<div data-bbox="566 840 710 996">  <p>2500</p> </div>	<div data-bbox="303 548 478 739">  <p>GF_PROMER 5,7"</p> </div> <div data-bbox="550 571 702 716">  <p>GF_PROMER 3,5"</p> </div>	<div data-bbox="303 168 478 369">  <p>GF_LOOPER 5,7"</p> </div> <div data-bbox="550 201 702 347">  <p>GF_LOOPER 3,5"</p> </div>			
48x96	<div data-bbox="805 1624 973 1724">  <p>1200</p> </div> <div data-bbox="790 1444 973 1568">  <p>1600</p> </div> <div data-bbox="805 1265 973 1388">  <p>1600V</p> </div> <div data-bbox="805 1086 973 1209">  <p>1600P</p> </div>						
48x48	<div data-bbox="1053 1915 1181 2049">  <p>400</p> </div> <div data-bbox="1053 1780 1181 1904">  <p>401</p> </div> <div data-bbox="1053 1612 1181 1736">  <p>600</p> </div> <div data-bbox="1053 1433 1181 1556">  <p>800</p> </div> <div data-bbox="1053 1254 1181 1377">  <p>800V</p> </div> <div data-bbox="1053 1075 1181 1198">  <p>800P</p> </div>						
72x36	<div data-bbox="1252 1904 1348 2049">  <p>40T72PID</p> </div>						
	<div data-bbox="1236 1601 1396 1747">  <p>600 OF (90x45x45mm)</p> </div>						
	PLASTICS, PACKAGING, FURNACES	PLANTS, OVENS, PROCESS	PRESSURE, FORCE				HEAT TREATMENT OVENS, CLIMATIC CHAMBERS, FOOD, PROCESS

BASIC MODELS



40T72PID



400



401

INPUTS

Process analog

number	1	
function	acquisition of process variable	
Sensor type	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: 0/4...20mA	
thermocouple		
resistance thermometer		
thermistor		
linear voltage		
linear current		
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	R, D
type Out. 2		R, D	
type Out. 3	none, R, D	-	R, D alternative to auxiliary analog input
type Out. 4	-	-	-
type Out. 5			
type Out. 6			
function	heating, cooling, alarm		
type description	R D T Relay: NO/NC, max 5A-, 250V _ (resistive load) Digital: 24Vdc, 30mA, Rout: 100Ω Triac: 20...240Vac ±10%, 50/60Hz, 1A max. snubberless		

transmitter power supply

2 wires, 18V±10%, 50mA

DISPLAY / KEYBOARD

Display

number	1	
color	red	green
display range	-1999...9999	

Keyboard

	3 keys	4 keys	4 keys
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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	100...240Vac ±10% opt. 11...27Vac ±10% 50/60Hz, 10VA max
certifications	UL	



600



1200



1300



600 OF

1		1	
acquisition of process variable			
TC: J,K,T,R,S, custom, internal cold junction compensation. RTD: PT100 DIN43760, PT100,custom PTC,NTC 990Ω@25°C/1KΩ@25°C V voltage: 0...60mVdc,0...10Vdc custom I current: 0/4...20mA, custom		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	
120 ms		0-120 ms	
0,2% fs±1 digit		0,2% fs±1 digit	
< 2μV on 60mV, < 0,4mV on 10Vdc		< 2mV on 60mV, <0,4mV on 10Vdc	
< 0,1% fs		< 0,1% fs	
0...20,0 sec		0...20,0 sec	
1		-	
read current absorbed by load		-	
current transformer 0...50mA ac <20Ω		-	
1, auxiliary analog input, OUT3		2	
configurable (man/auto, loc/rem, hold...) NPN 4,5mA, PNP 5mA 24Vdc isol.1500V		configurable (man/auto, loc/rem, hold...)	
min.2 max.4		5	
R		R,D	
R,D,T		R	
none, R, D, C, W alternative to auxiliary input		none, R, D, C, W	
none, R alternative to serial line		none,R,D	
-		buzzer	
-		D	
heating, cooling, alarm			
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			
2 wires, 15/24Vdc±10%, 50mA short-circuit protection		-	
2			
green, green			
-1999...9999			
4 keys			
sensor open or in short circuit (SBR)			
control loop open (LBA)			
load interrupted (HB)		control loop open (LBA)	
P, PD, PI, PID, on/off single action heat or cool / double action heat + cool			
selftuning, autotuning, autotuning single action - (6000F: 3 steps for set profile)			
max.3			
absolute, relative, symmetrical, direct, inverse, latching or non-latching			
RS485		RS485 (on request)	
Modbus RTU / Cencal GEFran		Modbus RTU	
48x48 (1/16 DIN)		96x96 (1/4 DIN)	
99mm		100mm	
IP65			
removable panel		rear panel	
switching 100...240Vac±10% opt. 11...27Vac/dc±10% 50/60Hz, 8VA max		switching 100...240Vac ±10%, 50/60Hz, 18VA opt. 11...27Vac/dc ±10%, 50/60Hz, 11VA	
UL		UL	
-		-	

ADVANCED MODELS



800



1600



1800

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 DIN43760,JPT100,custom PTC: 990Ω@25°C, custom voltage: 0...60mVdc,0...10Vdc, custom current: 0/4..20mA, custom
thermocouple	
resistance thermometer	
thermistor	
linear voltage	
linear current	
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, isolated	

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, Optoisolated, 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, 12VA max		
Certifications	RINA	UL	



800V



1600V



1800V

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		0,2% 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	R,D
type Out.2		R	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		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 isolated 12bit I Analog: 0/4...20mA 500Ω isolated 12bit	
Transmitter power supply		10Vdc/24Vdc, 30mA Short-circuit protection, isolated	
DISPLAY / KEYPAD			
Display			
number		2	2+bargraph
color		green, green	green, green,red
Display range		-1999...9999	
Keypad		4 keys	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 Three step motorized valves	
tuning		selftuning,autotuning,autotuning single action	
Alarms no./types		max.5 Absolute, relative, symmetrical, direct, inverse, latching or non-latching	
SERIAL COMMUNICATION			
type		RS232-RS422/485 - Current loop, Optoisolated, 4 wires	
protocol		Modbus RTU Cencal GEFRA	
GENERAL DATA			
Format		48x48 1/16 DIN	48x96 1/8 DIN
Depth		129mm	115mm
Front protection		IP65	
Mounting		Removable panel	
Power supply		switching 100...240Vac/dc ±10% opz. 20...27Vac/dc ±10% 50/60Hz, 12VA max	
Certifications		RINA	UL

ADVANCED MODELS



800P

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	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
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 Second digital input alternative
type Out.5	none
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 isolated 12bit I Analog: 0/4...20mA 500Ω isolated 12bit
Transmitter power supply	2 wires, 10Vdc/24Vdc, 30mA Short-circuit protection, isolated

DISPLAY / KEYPAD

Display

number	2
color	green, green
Display range	-1999...9999

Keypad

	4 keys
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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 GEFAN

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, 12VA max
Certifications	RINA



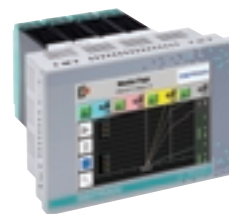
1600P



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
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 isolated I Analog: 0/4...20mA 500Ω isolated
Transmitter power supply	2 wires, 10/24Vdc, 30mA Short-circuit protection, isolated
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 GEFTRAN
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, 12VA max
Certifications	UL

HIGH-PERFORMANCE MODELS



GF_PROMER 3,5"

GF_PROMER 5,7"

Distributed solution with series GFX modules Integrated solution with series GILOGIK II modules (*)

INPUTS (for module)		GFX1	GFX2	GFX4	GFXTERM04	TC8	R-MIX
Process analog							
number of PID loops		1	1	4	4	4	4
function		Acquisition of process variable					
Sensor type		J,K,R,S,T, TC custom (32 pt), internal cold junction compensation				J,K	J,K,R,S,T
thermocouple		PT100 DIN 43760, PT100 custom (32 pt)				-	PT100
resistance thermometer		0/12...60mV, Ri>1MΩ; 0/0,2...1V, Ri>1MΩ; 0-60mV custom (32 pt)					mV, 0-10V
voltage		0/4-20mA, Ri=50Ω, mA custom (32 pt)					0/4-20mA
current		120 msec				200 msec	
sampling time		0,2% f.s. ±1 scale points at 25°C				0,5% f.s.	
accuracy		0...20,0 sec					
input filter							
Auxiliary analog							
number		0	1		4	0	2
function			feedback potentiometer		read external CT		read external CT
sensor type			potentiometer, min... max...		50mAac; 50/60Hz, Ri=10Ω		50mAac; 50/60Hz, Ri=10Ω
Digital							
number		1	1		2	1	8
function		run/hold programs		run/hold/ready programs		run/hold programs	run/hold ready programs
type		PNP, 24Vdc, 8mA (isol. 3500V)					program recall clearance inputs
OUTPUTS (for module)							
Control analog							
number			2	4	4	-	2
function		Heating/Cooling control outputs					Heating/Cooling control outputs
type		0-10V, 0/4-20mA					0-10V, 0/4-20mA
Digital/Relay							
number		max 4		max 6	max 10 (max 6 relay)	16	8 (max 4 relay)
function		Heat / Cool / Alarms / Event outputs					
DISPLAY							
dimensions		3,5" and 5,7"					
type		TFT colors LCD display, 1/4 VGA, touch screen					
Keyboard		resistive touch screen, 6 mechanical keys, pressed key feedback (mod. 35CT)					
functions		data display, programmed setpoint graphics, PV+SP graphics, PV+SP bargraph, Pout% bargraph, alarms, password, RTC calendar					
FUNCTIONS							
Main input security		sensor open or in short circuit (SBR)					
Control output safety		Control loop open (LBA)					
Actuator/load safety		load interrupted alarm (even partial) with inputs from CT and alarm outputs					
regulation		ON/OFF, Proportional (P), Proportional Derivative (PD), Proportional Integral Derivative (PID) Heat, Cool, Heat/Cool with double independent PID					
tuning		selftuning, autotuning, one shot autotuning					
PROGRAMMER							
nr. programs		100 programs					
nr. steps		300 steps					
program repetition		infinite					
step repetition		infinite					
clearance inputs		up to max 16 (with optional modules)					
event outputs		up to max 16 (with optional modules)					
save config. parameters		to internal solid disk, can be copied to USB flash drive					
save recipes		to internal solid disk, can be copied to USB flash drive					
SERIAL COMMUNICATION							
type		RS485, Ethernet port, USB port					
protocol		Modbus RTU, Modbus TCP, Profibus DP slave, CANopen slave					
GENERAL DATA							
format		96x96mm (3,5") / 169x120mm (5,7")					
front protection		IP65					
mounting		panel (and on DIN bar in case of distributed solution)					
power supply		24Vdc					
certifications		CE, UL					

(*) Integrated solution with series GILOGIK II modules, available in mid-2009

HIGH-PERFORMANCE MODELS



GF_LOOPER 3,5"

GF_LOOPER 5,7"

Distributed solution with series GFX modules Integrated solution with series GILOGIK II modules (*)

INPUTS (for module)	GFX1	GFX2	GFX4	GFXTERM04	TC8	R-TEMP4
Process analog						
number of PID loops	1	1	4	4	8	4
function	Acquisition of process variable					
Sensor type	J,K,R,S,T, TC custom (32 pt), internal cold junction compensation				J,K	J,K,R,S,T
thermocouple	PT100 DIN 43760, PT100 custom (32 pt)				-	-
resistance thermometer	0/12...60mV, Ri>1MΩ; 0/0,2...1V, Ri>1MΩ; 0-60mV custom (32 pt)				-	mV, 0-10V
voltage	0/4-20mA, Ri=50Ω, mA custom (32 pt)				-	0/4-20mA
current	120 msec				200 msec	-
sampling time	0,2% f.s. ±1 scale points at 25°C				-	-
accuracy	0...20,0 sec				-	-
input filter						
Auxiliary analog						
number	-	-	-	-	-	2
function	-	-	-	-	-	read external CT
sensor type	-	-	-	-	-	50mAac; 50/60Hz, Ri=10Ω
Digital						
number	-	-	-	-	-	-
function	-	-	-	-	-	-
type	-	-	-	-	-	-
OUTPUTS (for module)						
Control analog						
number	-	2	4	4	-	-
function	-	Heating/Cooling control outputs			-	-
type	-	0-10V, 0/4-20mA			-	-
Digital/Relay						
number	max 3	max 5	max 6	max 10 (max 6 relay)	16	8
function	Heat / Cool / Alarms					
DISPLAY						
dimensions	3,5" and 5,7"					
type	TFT colors LCD display, 1/4 VGA, touch screen					
Keyboard	resistive touch screen, 6 mechanical keys, pressed key feedback (mod. 35CT)					
functions	data display, PV+SP graphics, PV+SP bargraph, Pout% bargraph, alarms, password, RTC calendar					
FUNCTIONS						
Main input security	sensor open or in short circuit (SBR)					
Control output safety	Control loop open (LBA)					
Actuator/load safety	load interrupted alarm (even partial) with inputs from CT and alarm outputs					
regulation	ON/OFF, Proportional (P), Proportional Derivative (PD), Proportional Integral Derivative (PID) Heat, Cool, Heat/Cool with double independent PID					
tuning	selftuning, autotuning, one shot autotuning					
MULTILOOP						
loop numbers (*)	from 1 up to 16			from 4 up to 16		
GFX communication	with Modbus RTU (RS485)					
save config. parameters	to internal solid disk, can be copied to USB flash drive					
save recipes	to internal solid disk, can be copied to USB flash drive					
SERIAL COMMUNICATION						
type	RS485, Ethernet port, USB port					
protocol	Modbus RTU, Modbus TCP, Profibus DP slave, CANopen slave					
GENERAL DATA						
format	96x96mm (3,5") / 169x120mm (5,7")					
front protection	IP65					
mounting	panel (and on DIN bar in case of distributed solution)					
power supply	24Vdc					
certifications	CE, UL					

(*) Integrated solution with series GILOGIK II modules, solutions with 12 and 16 Loops, available in mid-2009

**MULTILOOP
ULTRA-FAST
CONTROLLERS**



GFXTERMO4



2500

INPUTS			
Process analog			
number		4	2
function		acquisition of process variable	
Sensor type		J,K,T,R,S, custom, internal cold junction compensation	Strain gauge: 350Ω, sensitivity 1,5...4mV/V, with probe power supply 5/10Vdc. Potentiometer: 100Ω, Ri>10MΩ-@2,5Vdc DC linear: ±60mV, ±100mV, Ri>10MΩ, ±60mV, ±100mV, Ri> 10MΩ - TC
thermocouple			
resistance thermometer		PT100 DIN43760, PT100, custom	
linear voltage		0/12...60mV, Ri>1MΩ, 0/0,2...1V, Ri>1MΩ, custom 60mV	
linear current		0/4...20mA, Ri=50Ω, custom 20mA at 32 segments	
sampling time		120 ms	2 ms
accuracy		0,2% fs ±1 scale points at 25°C	0,1% fs ±1 digit
resolution		-	< 0,6μV on 60mV, < 0,1mV on 10Vdc
input filter		0...20,0 sec	
Auxiliary analog			
number		4	2
function		Read: current absorbed by load - linear input - TC	remote set, offset, mathematics
sensor type		external CT 50mAac; 50/60Hz, Ri = 10Ω range voltage 0/12...60mV, Ri > 1MΩ TC J, K, R, S, T, custom	Potentiometer: 1...10KΩ-@10Vdc DC linear 10V, Ri>2mΩ, 0/4...20mA, Ri=50Ω
Auxiliary digital			
number		1	from 2 up to 6
function		configurable (man/auto, loc/rem, hold selection prg...)	configurable
type		PNP, 24Vdc, 8mA (isol. 3500V)	NPN 5mA - PNP 5mA 24Vdc isolated
OUTPUTS			
number		Min.6 Max.10	4
type Out. 1		D	none, R,D,V,I - alternative R power supply
type Out. 2		D	none, R,D,V,I transmitter power supply alternative R alternative
type Out. 3		D	
type Out. 4		D	
type Out. 5		O,R,D,C,T	
type Out. 6		O,R,D,C,T	-
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	
transmitter power supply		-	24Vdc, 100mA
probe power supply		-	10Vdc, 250mA bridge resistance
DISPLAY / KEYBOARD			
Display	color	-	green, red
Keyboard		-	6 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		control loop open (LBA)	load interrupted (HB)
regulation		P, PD, PI, PID, on/off single action heat or cool double action heat + cool	P, PD, PI, PID, on/off single action heat or cool double action heat + cool
tuning		selftuning, autotuning, autotuning single action	selftuning, autotuning, autotuning single action
alarms no./types		max.8, absolute, relative, symmetrical, direct, inverse, latching or non-latching	max. 10
SERIAL COMMUNICATION			
Serial 1		always present	optional
type		RS485	RS485
protocol		Modbus RTU	-
Serial 2		option	-
type		according to protocol	-
protocol		Profibus DP, CANopen, DeviceNet, Modbus TCP, Modbus RTU, Ethernet IP	Modbus RTU, Profibus
GENERAL DATA			
power supply		24Vdc ±25%, 5VA max	switching 100...240Vac/dc ±10% option 20...27Vac/dc ±10% 48/62Hz, max 15VA
certifications		UL	UL

Applications

Plastics



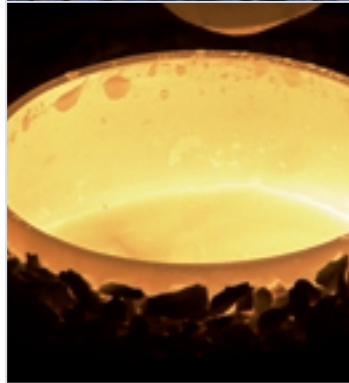
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