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

IP65
Front protection

CONTROL
Remoted control boards.

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.

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

Programmers/Controllers
Graphic 4 Loop
GF_PROMER

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

CONTROL
On-board control boards.

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

IP65
Front protection

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

CONTROL
Remoted control boards.

KEYBOARD
Keyboard with 6 mechanical keys, pressed key feedback.

Characteristics / Advantages

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 usone 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

PID
Sophisticated control algorithms simplify every control.

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..

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.

KEYBOARD
Keyboard for rapid setting and diagnostics.

600

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

FORMAT

	BASIC MODELS		ADVANCED MODELS			HIGH-PERFORMANCE MODELS		MULTILOOP MODELS	
	single display		double display			triple display	LCD display	LCD display	
169x120				valves	programmers	controllers	 GF_PROMER 5,7"	 GF_LOOPER 5,7"	
96x96		 1300	 1800	 1800V	 1800P	 2500	 GF_PROMER 3,5"	 GF_LOOPER 3,5"	
48x96		 1200	 1600	 1600V	 1600P			4 loop controllers (for DIN rail)  GFXTERM04	
48x48	 400  401	 600	 800	 800V	 800P				
72x36	 40T72PID	 600 OF (90x45x45mm)							
	PLASTICS, PACKAGING, FURNACES		PLANTS, OVENS, PROCESS			PRESSURE, FORCE	HEAT TREATMENT OVENS, CLIMATIC CHAMBERS, FOOD, PROCESS		

BASIC MODELS

40T72PID

400

401

	40T72PID	400	401
INPUTS			
Process analog			
number	1		
function	acquisition of process variable		
Sensor type thermocouple	TC: J,K,T,N,R,S,B,E internal cold junction compensation		
resistance thermometer	RTD: PT100 DIN43760		
thermistor	PTC: 990Ω@25°C on request		
linear voltage	V voltage: 0...60mVdc,0...10Vdc		
linear current	I current: 0/4...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	-	-	-
type Out. 5			
type Out. 6			
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 / KEYBOARD			
Display			
number	1		
color	red	green	
display range	-1999...9999		
Keyboard	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	100...240Vac ±10% opt. 11...27Vac ±10% 50/60Hz, 10VA max	
certifications	-	UL	

600

1200

1300

600 OF

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			
< 2µV on 60mV, < 0,4mV on 10Vdc			<2mV on 60mV, <0,4mV on 10Vdc
< 0,1% fs			
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...)			configurable (man/auto, loc/rem, hold...)
NPN 4,5mA, PNP 5mA 24Vdc isol.1500V			
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		R
none, R alternative to serial line	none,R,D		R
-	-		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)	48x96 (1/8 DIN)	96x96 (1/4 DIN)	90x45
99mm	100mm		45mm
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		switching 100...240Vac ±10%, 50/60Hz, 8VA
UL	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 transfomer 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: Main output security: Auxiliary analog input security.	Sensor open or in short circuit (SBR) Control loop open (LBA) 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 - V voltage: 0...60mVdc,0...10Vdc, custom I 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 transfomer 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: Main output security: Auxiliary analog input security.	Sensor open or in short circuit (SBR) Control loop open (LBA) 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 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	

ADVANCED MODELS

800P

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 transfomer 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
FUNCTIONS	
Main input security: Main output security: Auxiliary analog input security.	Sensor open or in short circuit (SBR) Control loop open (LBA) 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, 12VA max
Certifications	RINA

1600P

1800P

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	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: Main output security:: Auxiliary analog input security.	Sensor open or in short circuit (SBR) Control loop open (LBA) 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	96x96 1/4 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"
Distributed solution with series GFX modules

GF_PROMER 5,7"
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 — thermocouple	J,K,R,S,T, TC custom (32 pt), internal cold junction compensation				J,K	J,K,R,S,T
resistance thermometer	PT100 DIN 43760, PT100 custom (32 pt)				-	PT100
voltage	0/12...60mV, Ri>1MΩ; 0/0,2...1V, Ri>1MΩ; 0-60mV custom (32 pt)					mV, 0-10V
current	0/4-20mA, Ri=50Ω, mA custom (32 pt)					0/4-20mA
sampling time	120 msec				200 msec	
accuracy	0,2% f.s. ±1 scale points at 25°C				0,5% f.s.	
input filter	0...20,0 sec					
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"

Distributed solution with series GFX modules

GF_LOOPER 5,7"

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 thermocouple	J,K,R,S,T, TC custom (32 pt), internal cold junction compensation				J,K	J,K,R,S,T
resistance thermometer	PT100 DIN 43760, PT100 custom (32 pt)				-	-
voltage	0/12...60mV, Ri>1MΩ; 0/0,2...1V, Ri>1MΩ; 0-60mV custom (32 pt)				-	mV, 0-10V
current	0/4-20mA, Ri=50Ω, mA custom (32 pt)			-	-	0/4-20mA
sampling time	120 msec				200 msec	-
accuracy	0,2% f.s. ±1 scale points at 25°C				-	-
input filter	0...20,0 sec				-	-
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

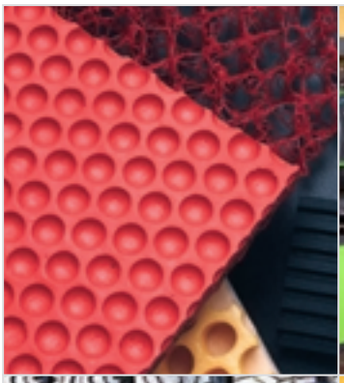
GFXTERM04

2500

INPUTS			
Process analog			
	number	4	2
	function	acquisition of process variable	
Sensor type	thermocouple	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
	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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