

GEFLEX distributed control

GEFLEX distributed control



GEFRAN

Our Knowhow,
Your Solution.

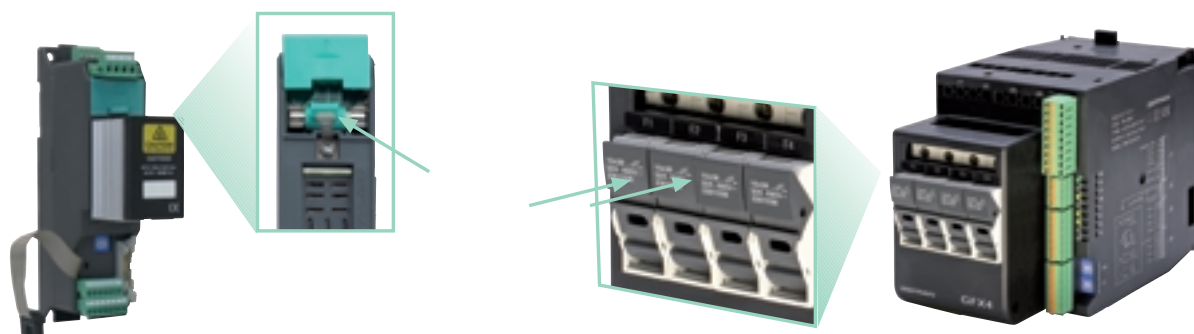
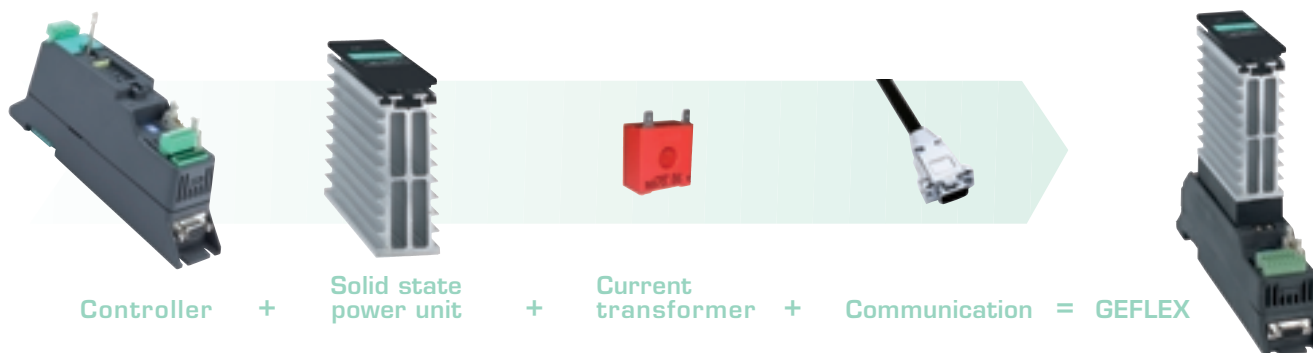
The "GEFLEX system"

Geflex is the modular solution that lets you create back-panel multiloop control systems. Thanks to the use of popular field buses, it integrates easily with a wide variety of automation configurations.

WHAT IS A GEFLEX MODULE?

It's an integrated solution: PID controller+diagnostics+power+communication.

This new synergy has led to the creation of an innovative automation product with high technology content.



The Geflex multifunction and GFX4 families also integrate protective fuses.

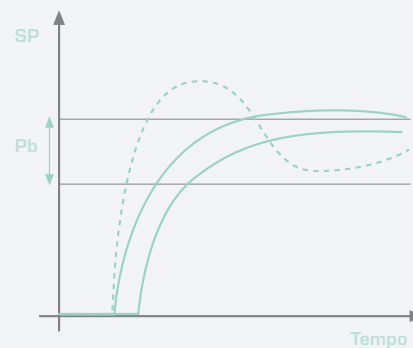
WHAT DOES IT DO?

Geflex performs a variety of automation functions: control, interception, acquisition.

Each module is completely independent and needs no software writing; PID, alarms and tuning are controlled locally, perfectly closing the control loop.



TEMPERATURE CONTROL



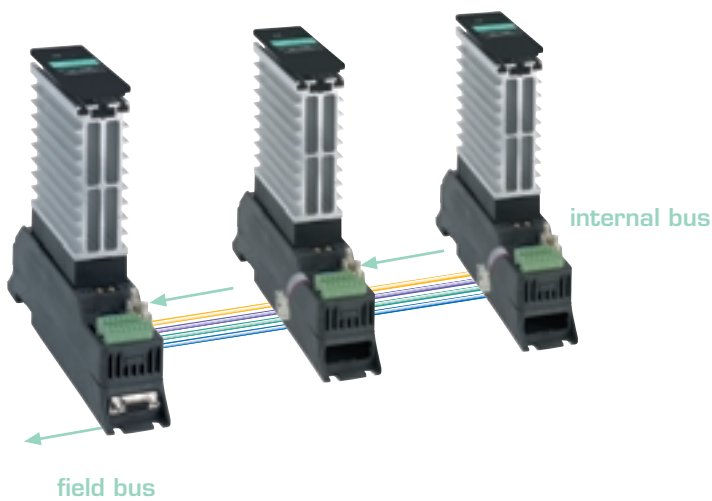
TEMPERATURE CONTROL

WHY GEFLEX?

- Simple wiring
- Remote control via standard operator interfaces
- Simplifies PLC configuration and reduces required physical resources
- Scalable depending on applications
- Open platform dialogs via standard protocols

HOW IS IT USED?

- This simple, intuitive instrument is ready to use:
- Connections among the modules are preset.
- The first module has a connector to the field.



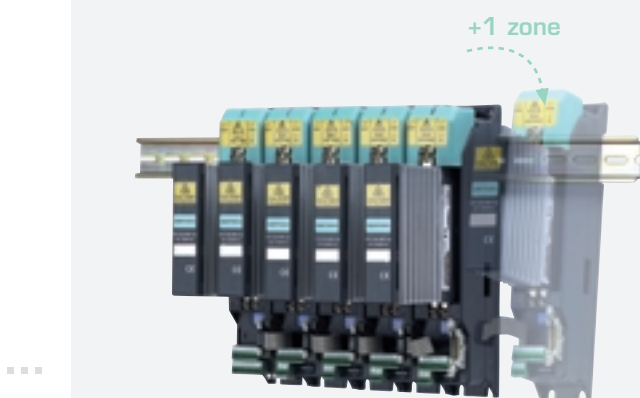
GEFX 25-120



GEFX4

MODULARITY "ONE" AND "FOUR"

Modularity lets you scale the architecture exactly to your needs. There is no waste of resources, even in odd architectures (a typical limit of PLCs). The configuration can always be expanded if necessary.



GEFLEX
Modularity 1



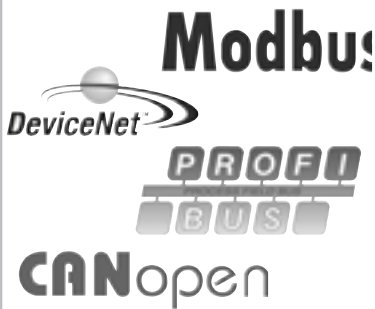
GEFX4
Modularity4

CHARACTERISTICS



ALL IN ONE

Excellent engineering has produced a highly integrated instrument, combining control, power, diagnostics, protection and communication.



FIELD BUS

All popular field buses are available



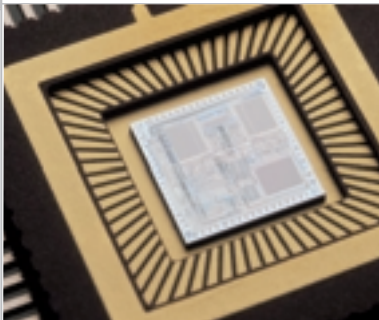
DIAGNOSTICS

HB alarm: checks correct current absorption
ERR alarm: checks correct connection of main sensor
LBA alarms: check correct function of control loop
Generic alarms with configurable setpoints
Alarms have AND/OR function



MODULARITY \ FLEXIBILITY

One or four modularity



INTELLIGENT UNITS

All units are equipped with CPUs, programmed with powerful algorithms, that manage controls, alarms, and calculation adequate PID parameters (tuning).

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ADVANTAGES



LESS WIRING

Integrating three instruments in one saves money on wiring, space in the electrical panel



EASY INTEGRATION

The use of popular field buses makes it quick and easy to insert Geflex in a wide variety of automation configurations



REMOTE CONTROL

Geflex can be installed in the process zone and remote-controlled. Save on wiring, improve system layout



SIMPLIFIES PLC CONFIGURATION

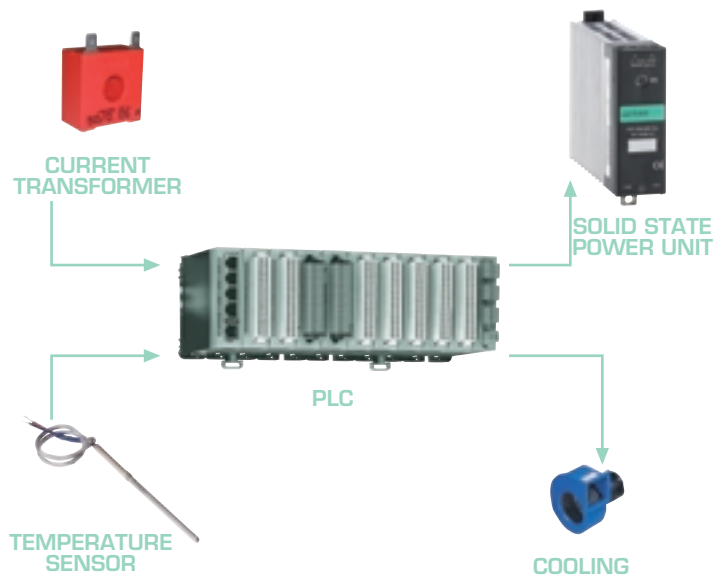
Each Geflex is independent: you can replace the PLC control or scale the CPU



SCALABILITY

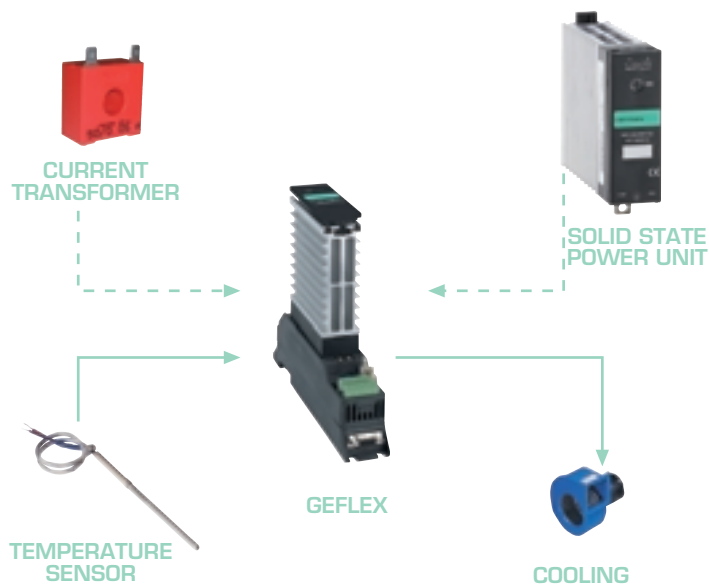
“One” or “four” modularity, flexibility, and easy expansion let you create the exact solution for your needs

THE INTEGRATED SOLUTION



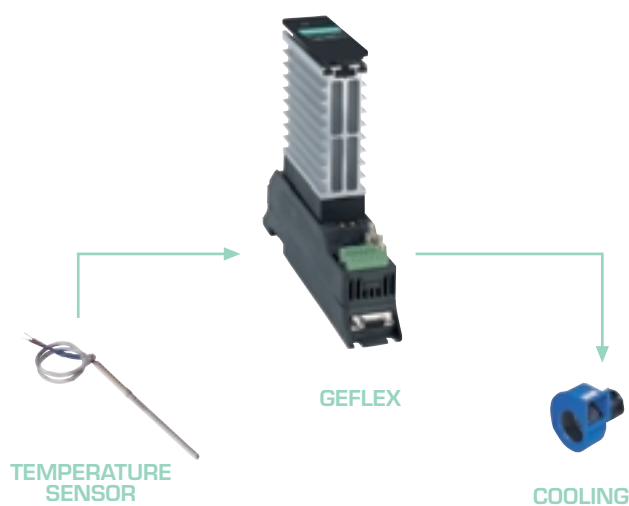
TRADITIONAL

Traditional temperature control uses a PLC or other instrument connected to temperature sensors and current transformer. In output, it activates a solid state power unit for heating and a cooling system.



INTEGRATION

Integration of the current transformer and the solid state power unit in a single module that also controls the process (in ternal PID) provides definite advantages.



EVOLUTION

Geflex is a step forward in temperature control, with obvious advantages in terms of reduced wiring, elevated diagnostics, and modularity.



ARCHITECTURES

JUST ONE CABLE, AND TEMPERATURE CONTROL IS "ON-LINE"

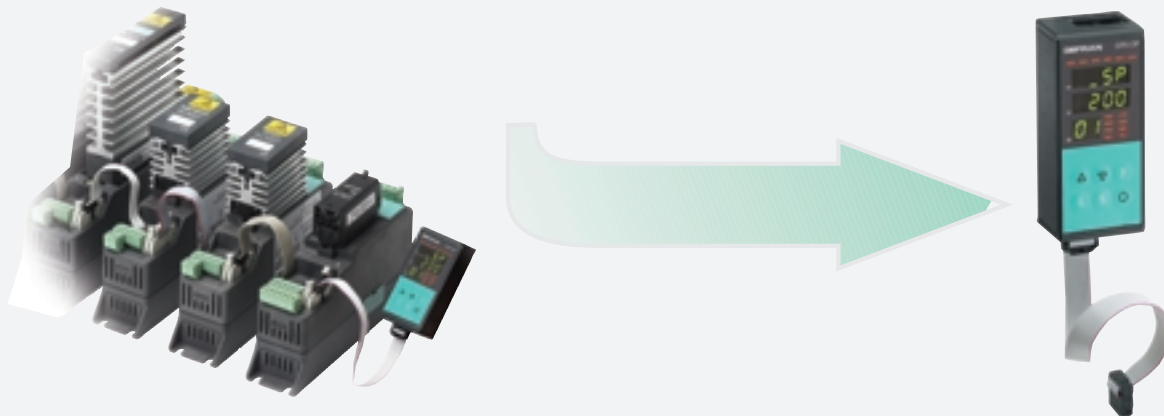
Thanks to the use of popular field buses, Geflex integrates easily to create a wide variety of automation architectures.

GEFLEX OFFERS A WIDE CHOICE OF FIELD BUSES



STANDARD SOLUTION

By means of the GFX-OP accessory it is possible to equip the Geflex with an interface similar to the traditional instruments. For this reason is extremely fast, realize the configuration and use for the whole range an "operator panel" ready for use.



GEFLEX



GFX 25

GFX 120

GFX25-120

Temperature control unit with integrated power solid state relay from 25 to 120 Amp.

Configurable analog process input

- thermocouples TC (J, K, R, S, T)
- resistance thermometers RTD (Pt100, JPT100)
- linear in voltage (0...60mV, 12...60mV, 0...1V, 200mV...1V)
- linear in current (0...20mA, 4...20mA)
- custom (20mA, 60mV, Pt100, JPT100)

Configurable digital input

- On\Off
- Manual\Automatic

Main output typically used as heating and connected directly to SSR

Configurable auxiliary input typically used as cooling, available as relay, digital, analog

2 configurable relay outputs

typically used as alarm

Integrated current transformer CT (option on GFX25-120)

Integrated voltage transformer VT (option on GFX25-120)

Applications: EXTRUSION, OVENS



GFX Multifunction/Valves

GEFLEX MULTIFUNCTION\VALVES

Control unit with removable function groups: 5/10/15A power solid state relay, double analog output, 1-2 relay outputs.

Main features: identical to Geflex 25-120

Auxiliary analog input (optional)

- potentiometer (≥ 1 kohm)
- linear in voltage (0/2...10V)
- linear in current (0/4...20mA)

Version for valve control

Applications: OVENS, HOT CHANNELS, PACKING



Module GTS-L 5
5A solid state relay



Module GTS-L 10
10A solid state relay



Module GTS-L 15
15A solid state relay



Module GFX-OUT-CC
Two analog outputs



Module GFX-OUT-RR
Two Relay outputs



Module GFX-OUT-R
Exchange relay



GFX4
with integrated removable fuses



GFX4
without fuses



GFX4

Temperature control unit with four independent PIDs, integrated power solid state relays for 30KW, 60KW, 80KW power management

4 configurable analog process inputs

- thermocouples TC (J, K, R, S, T)
- resistance thermometers RTD (Pt100, JPT100)
- linear in voltage (0...60mV, 12...60mV, 0...1V, 200mV...1V)
- linear in current (0...20mA, 4...20mA)
- custom (20mA, 60mV)

4 auxiliary analog inputs for TC/linears (option)

2 configurable digital inputs

- On\Off
- Manual\Automatic, reset alarm latch

4 configurable main outputs typically used as heating and connected directly to SSR

4 configurable auxiliary inputs typically used as cooling, available as relay, digital, analog, triac

2 relay outputs typically used as alarm

1 or 4 integrated current transformers for timed or simultaneous control of currents delivered to each zone, alarm management (HB)

Serial port for local bus (Modbus RTU protocol)

Serial port for field bus (protocols: Modbus RTU, CANopen, Profibus DP, DeviceNet, Ethernet)

Applications: INJECTION PRESSES, THERMOFORMING MACHINES, EXTRUSION, PACKING MACHINES

GFX_OP

Operator terminal for field configuration of the entire Geflex range.

Two types of terminals are available:

- for installation on the Geflex heatsink or on DIN guide
- for installation on the faceplate

Main characteristics:

- Double display for variables
- Display to identify the communication node
- Six function keys
- LED for diagnostics of inputs/outputs and main Geflex functions
- Ability to upload/download the Geflex configuration (up to a maximum of ten)
- Powered directly by the Geflex

GEFLEX4 30-60-80 kW
 4 INDEPENDENT LOOP CONTROL UNIT


with fuses



without fuses

GEFLEX 5-10-15A valve multifunctions
 SINGLE INDEPENDENT LOOP
GEFLEX-M2
MasterGEFLEX-S2
SlaveGEFLEX-E2
Expansion
GEFLEX 25-40-60-75-90-120A
 SINGLE INDEPENDENT LOOP
GEFLEX-M1
MasterGEFLEX-S1
SlaveGEFLEX-E1
Expansion**INPUTS**
 4
 TC (J, K, R, S, T),
 RTD (Pt100, JPt100),
 0...1V, 0...60mV,
 0...20mA
 custom

 120ms (total)
 0,2% f. s.

4

 TC (J, K, R, S, T custom),
 0/12...60mV

 480ms (total)
 0,2% f. s.

1 or 4 (depending on the models)

TA+TV internal

2

PNP 24V, 8mA

INPUTS

NR.

TYPE

SAMPLING TIME

ACCURACY

NR.

TYPE

SAMPLING TIME

ACCURACY

NR.

TYPE

NR.

TYPE

OUTPUTS
 Total power (480V)
 Power zone

4

30 kW

60 kW

80 kW

7,6 kW

15,3 kW

19,2 kW
(23,7 max)

4

R/D/T/C

 1
 1 (opt)
 TA internal
 or TA + TV internal

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

 1
 1 (opt)
 TC (J, K, R, S, T),
 RTD (Pt100, JPt100),
 0...1V, 0...60mV,
 0...20mA
 custom

120ms

0,2% f. s.

-

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-

 1 (opt)
 TA internal
 or TA + TV internal

1 (opt)

1 (opt)

1

1

1

1

1

1

1

1

1

1

1

1

1

 PNP 24V, 8mA
 PNP 24V, 8mA
SSR build-in
25/40/60/75/90/120A 480Vac

R/D/C

R/D/C

R/D/C

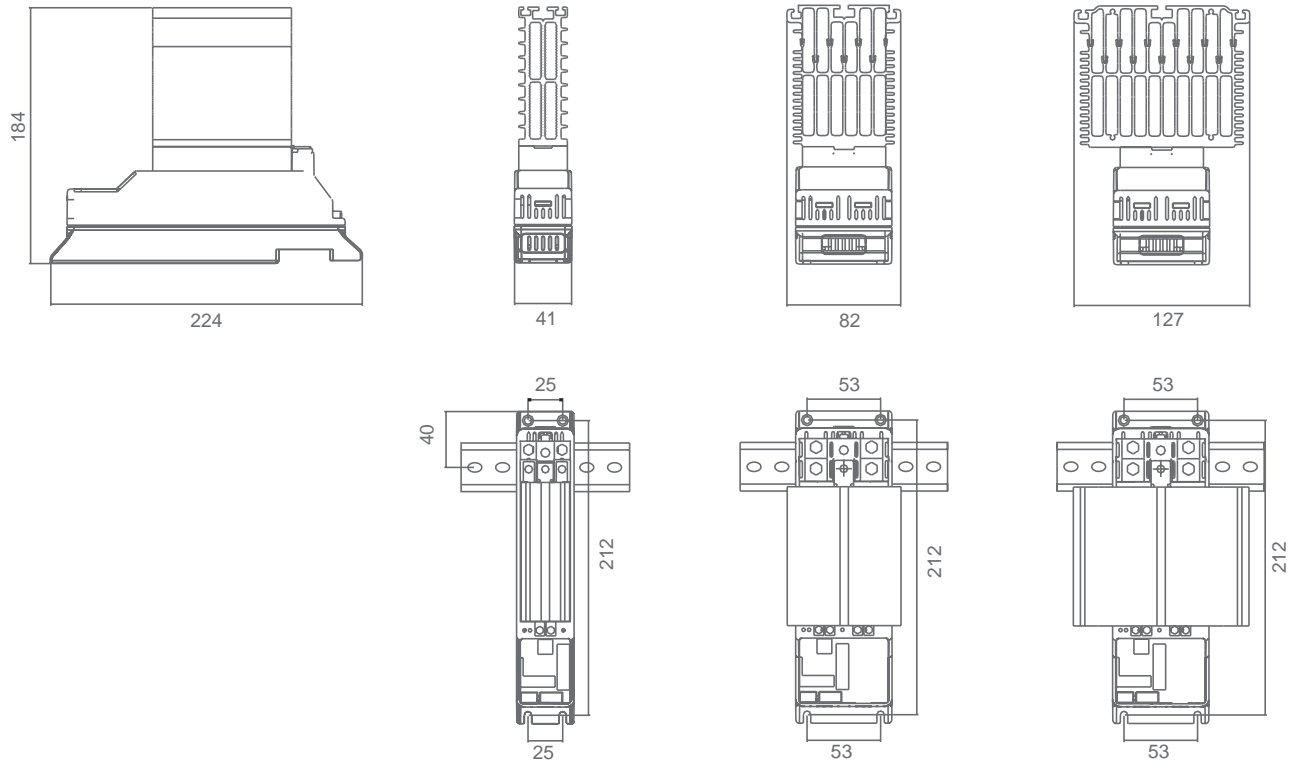
R/D/C

MAIN
ConfigurableAUXILIARY
Configurable
(opt.)

R/D/T/C	R/D/C	R/D/C	R/D/C	TYPE	ALARM Configurable
2	2	2	2	NR.	
R	R	R	R	TYPE	
FUNCTIONS					
PID heat/cool (with liquid selection of cooling) ON-OFF heat/cool	PID heat/cool (with liquid selection of cooling) ON-OFF heat/cool	PID heat/cool (with liquid selection of cooling) ON-OFF heat/cool	PID heat/cool (with liquid selection of cooling) ON-OFF heat/cool	TYPE	CONTROL
Selftuning Autotuning continuous Autotuning Oneshot	Selftuning Autotuning continuous Autotuning Oneshot	Selftuning Autotuning continuous Autotuning Oneshot	Selftuning Autotuning continuous Autotuning Oneshot	TYPE	TUNING
LBA (loop break alarm) HB (heater break) SBR (sensor break)	LBA (loop break alarm) HB (heater break) SBR (sensor break)	LBA (loop break alarm) HB (heater break) SBR (sensor break)	LBA (loop break alarm) HB (heater break) SBR (sensor break)	TYPE	DIAGNOSTIC
8	4	4	4	NR.	ALARMS configurables
Absolute/relative Direct/reverse/symmetrical Latch	Absolute/relative Direct/reverse/symmetrical Latch	Absolute/relative Direct/reverse/symmetrical Latch	Absolute/relative Direct/reverse/symmetrical Latch	TYPE	
Software OFF	Software OFF	Software OFF	Software OFF	TYPE	OTHER FUNCTIONS
Softstart	Softstart	Softstart	Softstart		
PROTECTION					
N. 4 fuse-holders	Extractable (on SSR versions)			TYPE	FUSES
FIELDBUS					
1+1 (opt.)	1	1	1	NR.	
Modbus RTU (all models)	Modbus RTU	Modbus RTU	Modbus RTU		DIGITAL COMMUNICATION
Profibus DP (opt.)	Profibus DP	Profibus DP	Profibus DP		
CANOpen (opt.)	CANOpen	CANOpen	CANOpen		
DeviceNet (opt.)	DeviceNet	DeviceNet	DeviceNet		
GENERAL DATA					
24Vdc ± 25%	24Vdc ± 25%	24Vdc ± 25%	24Vdc ± 25%		AUX. POWER SUPPLY
GFX-OP	GFX-OP	GFX-OP	GFX-OP	TERMINAL	CONFIGURATION TOOL
Winstrum	Winstrum	Winstrum	Winstrum	PC SOFTWARE	
GEFLEX Models					

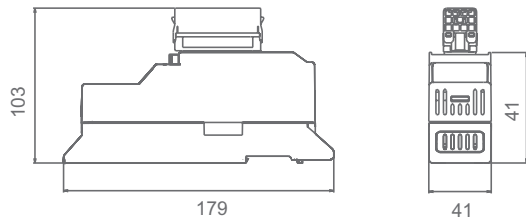
DIMENSIONS

Geflex 25-120

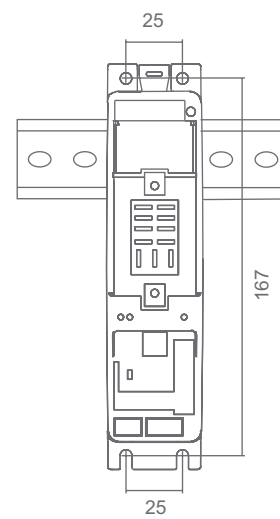


Geflex multifunction

Base with "5A solid state power unit" module or "Double continuous output" or "Double Relay"



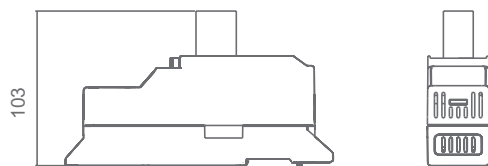
Base Mounting on electromechanical plate with quick coupling to DIN EN50022 guide or with 5mA screws



Base with "10/15A power solid state unit" module



Base with "Base with Relay" module"

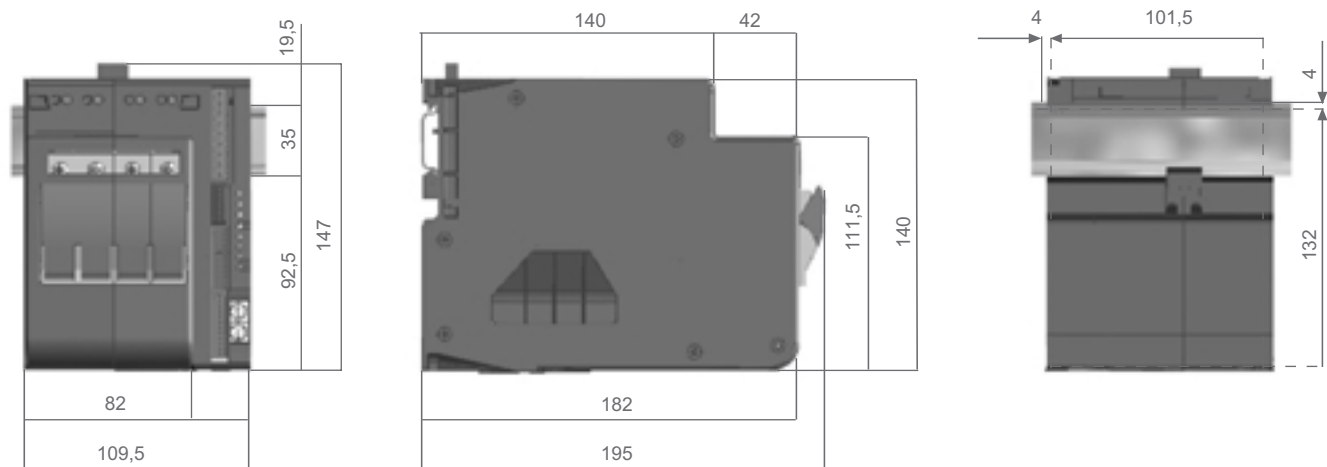


GFX4

Model GFX4
without fuses-holders



Model GFX4
with fuses-holders



GFXTERMO4

and if the integrated power offered by GFX4 is not enough, it is possible to use a solution without static group integrated more flexible.



GFXTERMO4

Temperature control unit with four independent PIDs

4 configurable analog process inputs

thermocouples TC (J, K, R, S, T)
resistance thermometers RTD (Pt100, JPT100)
linear in voltage (0...60mV, 12...60mV, 0...1V, 200mV...1V)
linear in current (0...20mA, 4...20mA)
custom (20mA, 60mV)

4 auxiliary analog inputs (option)

available as CT/voltage analog inputs, read external CTs

2 configurable digital inputs

On\Off
Manual\Automatic, reset alarm latch

4 configurable main outputs

typically used as heating (for direct control of solid state relays)
available as digital

4 configurable auxiliary inputs (option)

typically used as cooling, available as relay, digital, analog, triac

2 relay outputs

typically used as alarm, available as relay

Serial port 1 for local bus

Modbus RTU protocol

Serial port 2 for field bus

protocols: Modbus RTU, CANopen, Profibus DP, DeviceNet,
Ethernet Modbus TCP

**Applications: HOT CHANNELS, THERMOFORMING MACHINES,
EXTRUSION, PACKING MACHINES**

Applications

<p>PACKAGING</p> 	<p>PHARMACEUTICAL</p> 
<p>EXTRUSION</p> 	<p>BLOW MOLDING</p> 
<p>HEAT TREATMENT</p> 	<p>FURNACES FOR GLASS</p> 
<p>SEMICONDUCTORS</p> 	<p>HOT CHANNELS</p> 
<p>THERMOFORMING</p> 	<p>INJECTION</p> 

Applications

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