GEFRAN

GF_LOOPER

Multiloop Graphic Controller, 4-8-12-16 zones 3.5" and 5.7" screens, TFT, color, touch screen

Main applications

- *Temperature control of small extruders*
- *Thermoformers*
- *Temperature control of hot runners for injection presses*
- *Multizone furnaces*
- *Dryers*

Main characteristics

- *Color graphic display, TFT, 3.5" and 5.7" touch screen*
- *Complete "On Screen" programming, requires no configuration software*
- *Up to 16 control loops*
- *Bar graph for PV, SP and Output Power with single channel zoom*
- *Group pages with different levels of detail for single channel*
- *Operation with double reset setpoint and common up/down for all setpoints*
- *Active alarms management*
- *Recipes and historical data with USB support*
- *Functions: Self-tuning / Auto-tuning, Softstart, sensor diagnostics, solid-state actuators diagnostics*
- *Remote access for machine setup and diagnostics via Ethernet TCP*
- *Modbus TCP connection for data exchange with HMI*

PROFILE

GF_Looper is an advanced series of multichannel controllers, offered in configurations of up to 16 channels and structured for simple use and complete functionality for managing a wide range of applications.

GRAPHIC INTERFACE

The operator interface, based on LCD TFT color touch screen (3.5" and 5.7") offers maximum simplicity of use.
A series of graphic pages structured with different details provide complete monitoring of GF_Looper operation.
Icons facilitate access to the graphic pages, making navigation immediate and reliable.
Group pages offer an overview of enabled zones, with display of principal data such as PV, SP, output power, state of main alarms.
To simplify a few repetitive operations, the group page offers a control to activate/deactivate control actions for all configured zones, a control (Up/Down) for synchronized change of all work Set Points in control zones, and selection between SP and SP2 for immediate production change.
Detail pages of single control zones provide a complete view of the state of all standard control parameters, such as PID and alarm thresholds.
Any fault conditions, such as broken or short-circuited sensor, or partial or total load interrupt, are displayed both as alarms and graphically with dedicated icons.

ALARM AND RECIPE MANAGEMENT

Integrated alarms management combined with an alarm notice on all pages provides an immediate check of work conditions of the controlled process.
An acknowledgement and deletion command is provided for all alarms.
For recipes, the work parameters of all configured zones can be saved to file.
This management simplifies machine setup operations in case of production changes and guarantees error-proof operation.

USER LEVEL AND MULTI-LANGUAGE MANAGEMENT

So that the GF_Looper may be used by operators of different nationalities, multilanguage management provides simple and intuitive video messages translated into the selected language.
Pre-set password levels guarantee controlled access to the various functions according to the authorization assigned to each operator.

DATA STORAGE

Trend pages with variable selection and sampling time configuration (min/sec) offer paperless recording functions.
Storage of sampled Trend data on file also provides integrated DataLogging functions.
DataLogging values can be exported to .CSV file and transferred to PC on a USB drive. Start/Stop recording commands let you optimize the number of stored data for better analysis.

REMOTE ACCESS

An Ethernet connection with Modbus TCP protocol provides an efficient tool to link GF_Looper to HMI acquisition or supervision systems.
A complete map of variables with all general information on GF_Looper operation and configuration is provided for data exchange with a Modbus TCP master.
For remote diagnostics or machine setup functions, there is a simple solution based on the graphic part of GF_Looper that uses a Windows PC with Ethernet connection to the field instrument.

CONTROLLER

Advanced control algorithms provide excellent management of process variables.
Various types of control are possible: ON/OFF, P, PI, PID, both heat or cool only and heat+cool.
In addition, cooling can be set by specifying the fluid used: air, oil, water.
Calculation of the best process parameters is extremely rapid and efficient thanks to the use of sophisticated automatic tuning processes.
The use of advanced tuning lets you check the best PID parameters under all conditions.

ALARMS

Two alarm thresholds (minimum and maximum) for each zone.
For each alarm, you can select:
- the control variable to be assigned
- the threshold value
- the hysteresis value
- 5 properties (with latch, disable at power-on, deviation/symmetrical, absolute/relative, direct/inverse).
LBA, HB, SBR alarms can be set; the presence of the alarm is displayed on the screen via LEDs.

TECHNICAL DATA

OPERATOR INTERFACE

DISPLAY

Type:	TFT Color
No. colors:	262K
Diagonal:	3,5” (35CT) - 5,7” (57CT)
Display area:	70,08 x 52,56 mm (35CT) 117,2 x 88,4 mm (57CT)
Resolution:	320x240
Luminosity:	400 cd/mq (35CT) 500 cd/mq (57CT)
Contrast:	400:1 (35CT) 400:1 (57CT)
Backlighting:	8 white LEDs (35CT) 18 white LEDs (57CT)
Angle of view	
H/V:	75°/55°-75°(35CT) 75°/60°-75° (57CT)
Keyboard:	Number of keys 6 (35CT) absent (57CT)
Life:	> 3 million operations

TOUCH SCREEN

Type:	Resistive, four-wire
Life:	>1.000.000 operations
Controller:	integrated

PROCESSOR

Type:	EP9307 Cirrus Logic

MEMORY

System:	128MB (SDRAM)
User:	512KB (SRAM)
Mass:	64MB (FLASH)

PERIPHERALS

Ethernet:	Ethernet 10/100 Mbps Base-T - RJ45 connector with LED
Serial:	RS485 optically-isolated, baud rate 9,6…115 kBaud, RJ10 4p4c connector
USB port:	USB 2.0 HOST (500mA) 4-pin type A connector

POWER SUPPLY

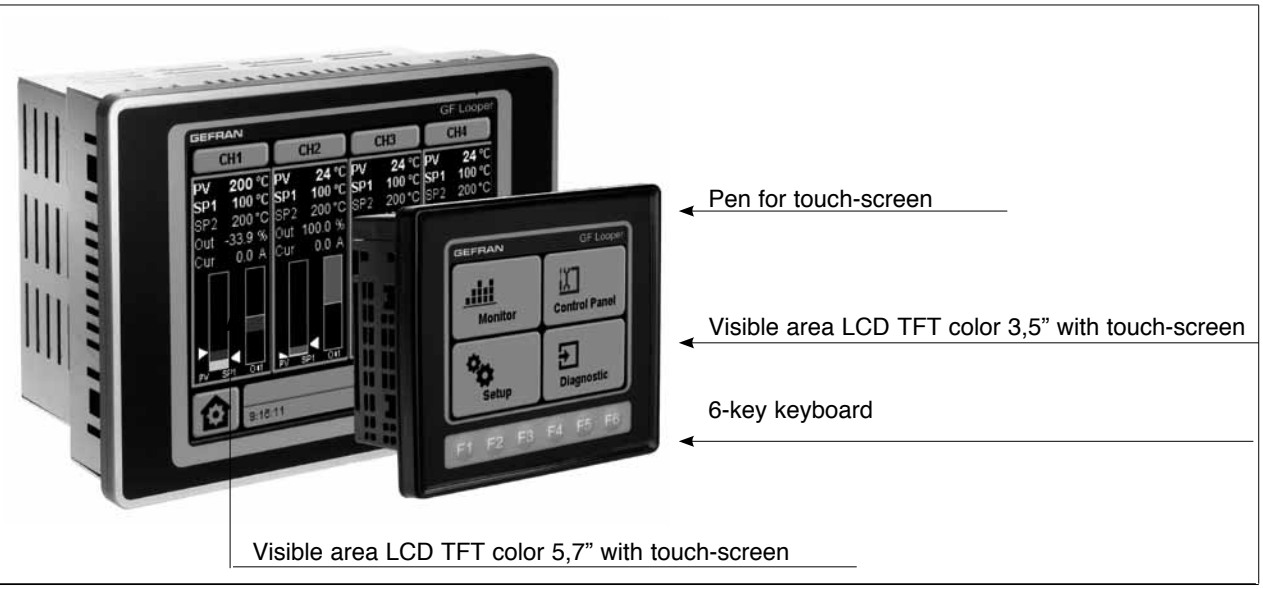
24Vdc ± 25% (3-pin female screw connector)

Max. consumption:
240mA 5W (35CT)
480mA 8,5W (57CT)

Protection:	polarity inversion (both), input circuit overcurrent (57CT)
Battery:	Lithium Manganese Dioxide 3V 65mA/h rechargeable (ML2032T6) autonomy >7500h Expected life 7 years Low-power indication

WEIGHT: 0,4 (35CT) - 0,8 (57CT)

FRONT PANEL DESCRIPTION



General information

Front panel: 100x100x64mm (35CT)
169x120x76mm (57CT)
IP65 protection level

Template: 93x93mm (35CT)
162x115mm (57CT)
Max panel thickness: 4mm (35CT)
3mm (57CT)
Certifications: CE, UL

Optional units / Modules

- Units for distributed control

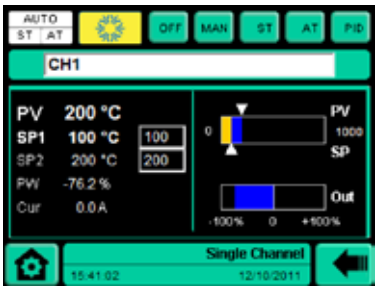
- GFX4/GF4-IR zone modular power controller
- GFXTERMO4 zone modular controller

(See the data sheets for characteristics of the modular controllers).

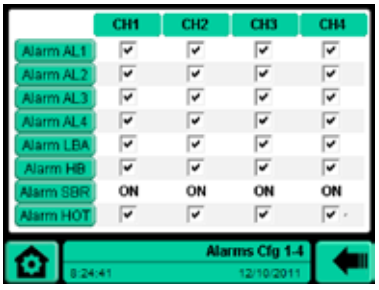
EXAMPLES OF GRAPHICS PAGES

Control panel →

← Single channel



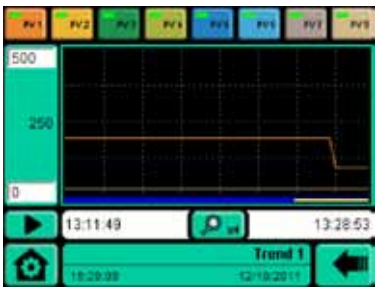
Alarms →



← ON weekley

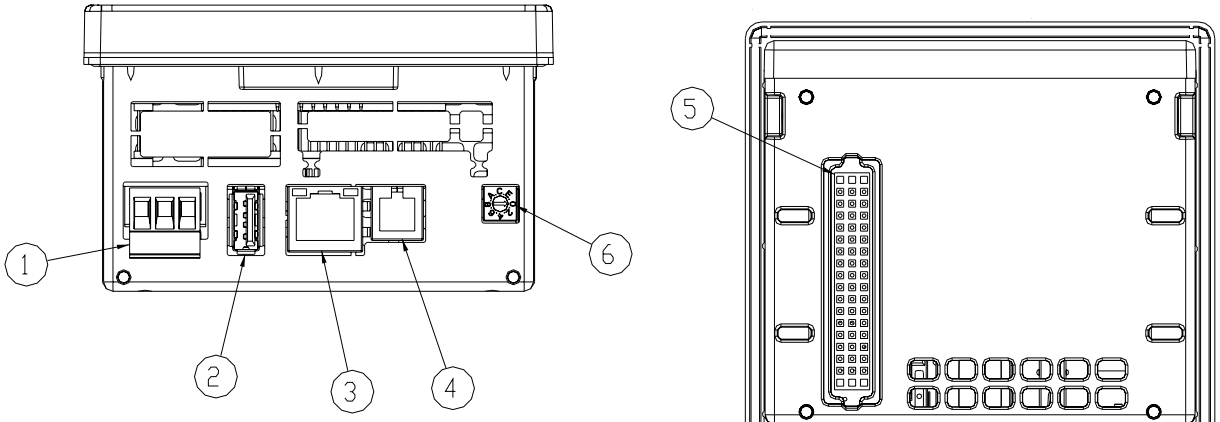
Recipes →

← Trend



USER'S CONNECTION: BASIC GF_LOOPER 35CT / 57CT CONNECTIONS

The user resource connections specified in the table are made at the bottom with standard and custom Gefran connectors.



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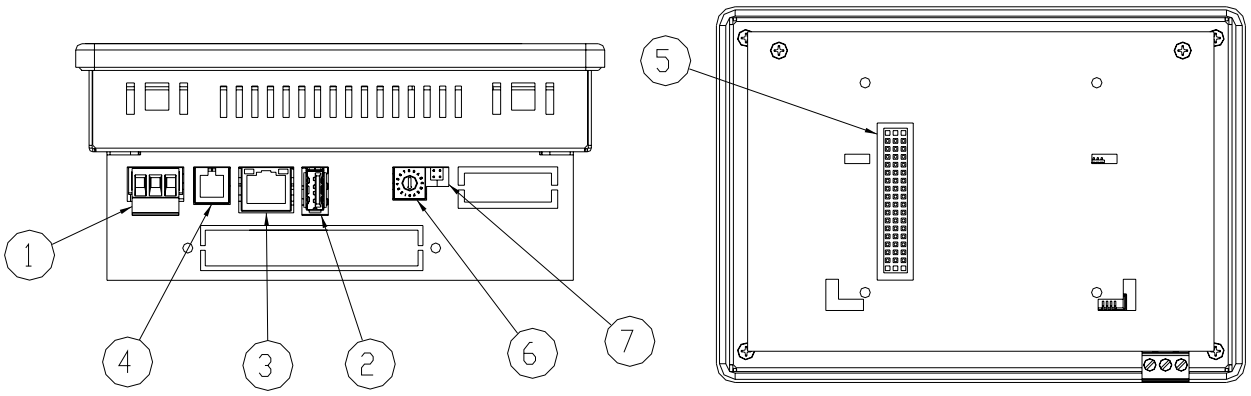
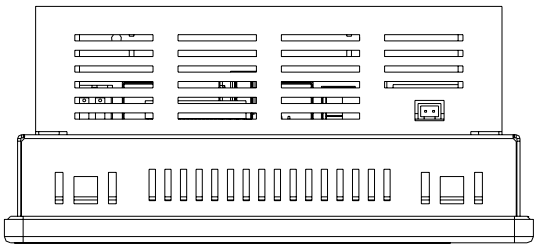


Number	Description
1	Supply
2	USB
3	Ethernet 10/100
4	RS485 serial comm
5	BUS-G
6	Rotary-switch
7	Battery ON

Connector description



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Connection with optional units / modules

For all information on connecting:

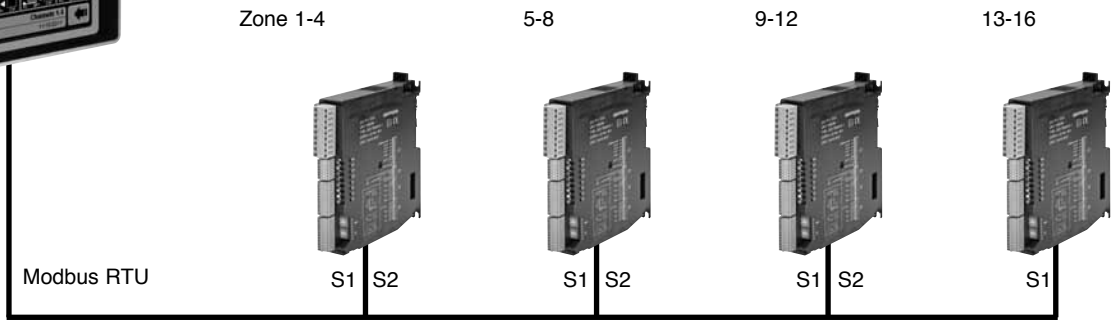
- GFX4 / GFX4-IR / GFXTERMO4

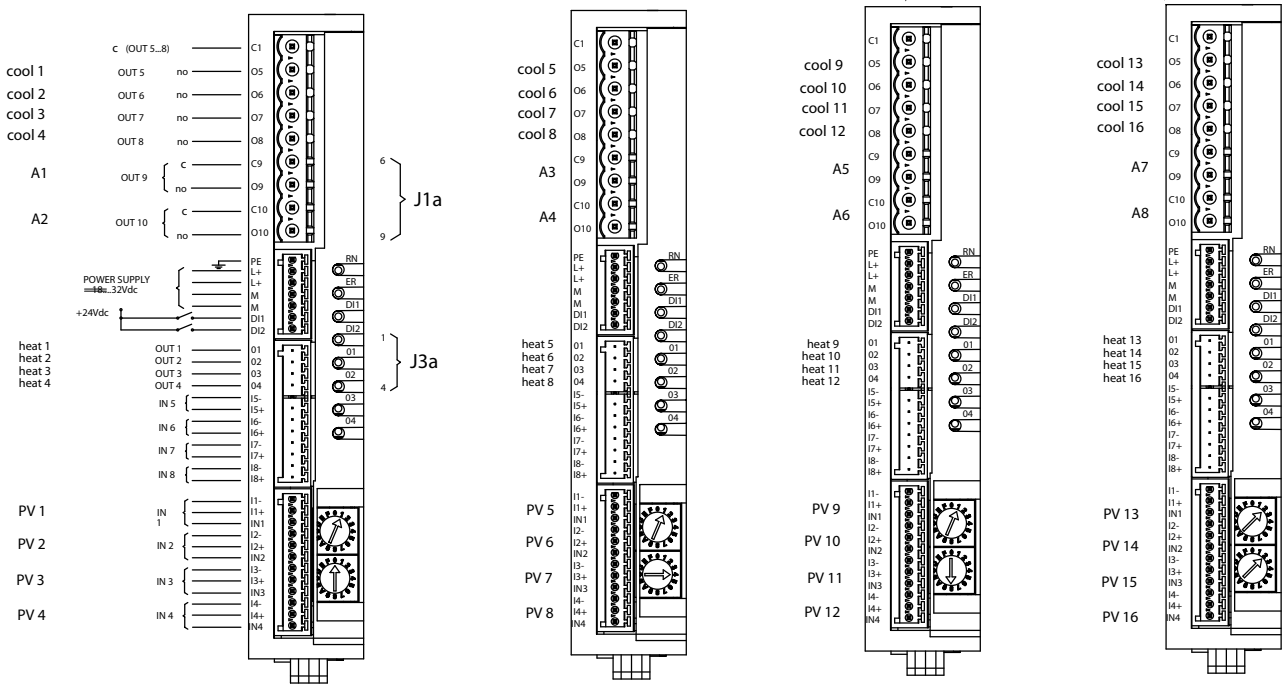
see the data sheets and manuals.

CONNECTION GF_LOOPER 57 CT LX0 0 xxxx

with GFXTERMO4 units

GF_VEDO 57CT LX0 XX XXXX - LP1

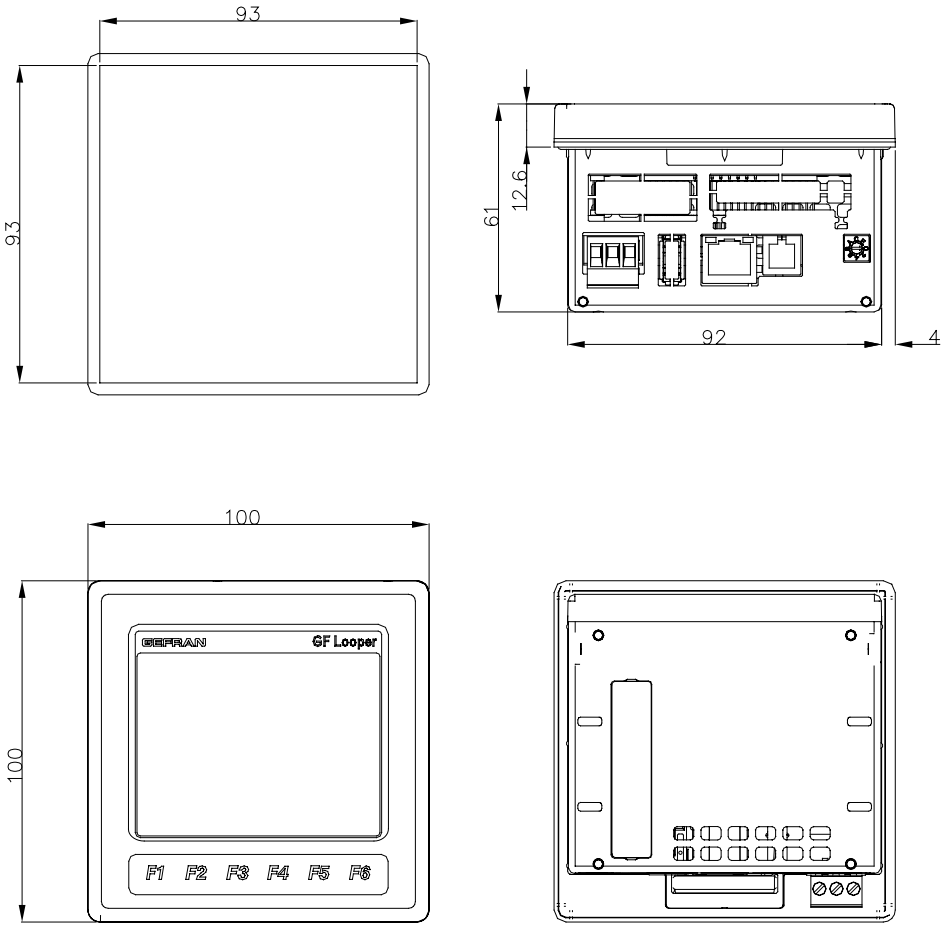




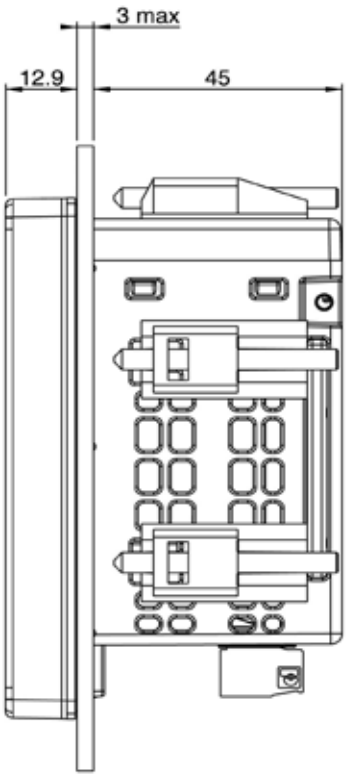
1-4 5-8 9-12 13-16

A1 = OR alarms AL1-AL3 of zone 1-4
A2 = OR alarms AL1-AL3 of zone 1-4
A3 = OR alarms AL1-AL3 of zone 5-8
A4 = OR alarms AL1-AL3 of zone 5-8
A5 = OR alarms AL1-AL3 of zone 9-12
A6 = OR alarms AL1-AL3 of zone 9-12
A7 = OR alarms AL1-AL3 of zone 13-16
A8 = OR alarms AL1-AL3 of zone 13-16

OVERALL DIMENSIONS AND TEMPLATE

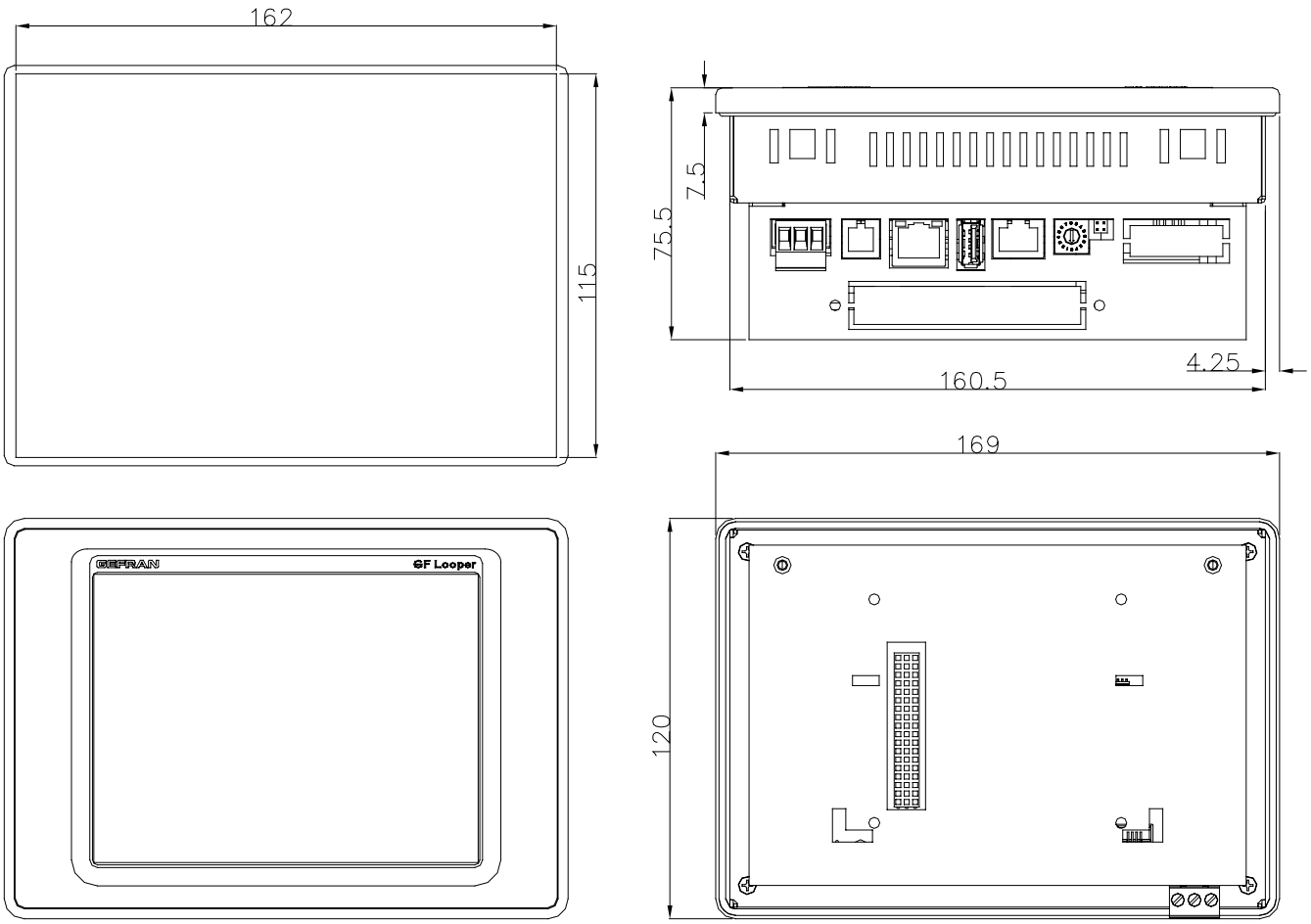


Physical dimensions and template dimensions for - 35CT -

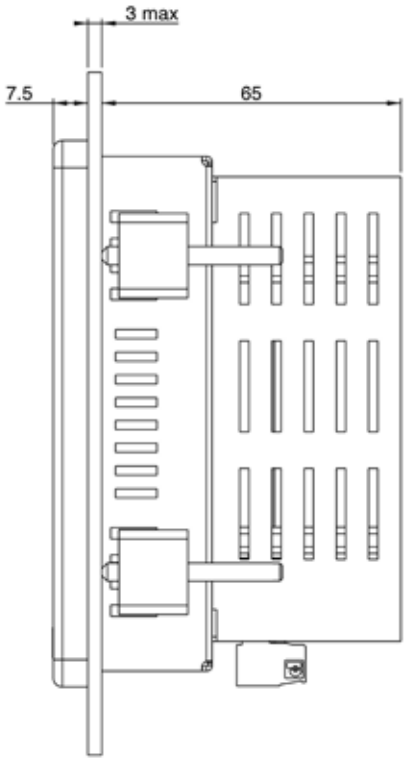


Template dimensions for - 35CT -

OVERALL DIMENSIONS AND TEMPLATE



Physical dimensions and template dimensions for GF_LOOPER 57CT terminals



Template dimensions for GF_LOOPER 57CT terminals

ORDERING CODE

GF_LOOPER		LX0	1	0	0	0	U	

DISPLAY	
3,5”color + touch screen	35CT
5,7”color + touch screen	57CT

CONTROL TYPE	
(*) **Distributed** (unit to be connected via RS485 serial)	
With: GFX4 / GFX4-IR GFXTERMO4	1

Fieldbus (with backplane L-BUS4, slot 4)	
None	0

Additional SW options	
None	0

Port USB Expansion	
USB	U

LEXAN	
Gefran	G
Neutral	N

(*) the GFX4, GFX4-IR, GFXTERMO4 models are ordered separately, each with its own order code.

Kindly contact GEFRAN for information on the availability of codes.

UL	Conformiy C/UL/US File no. 198546
CE	The instrument conforms to the European Directives 2004/108/CE and 2006/95/CE with reference to the generic standards **EN 61131-2** (product) - **EN 61010-1** (safety)

GEFRAN

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