GEFRAN

GF_VEDO SL
Controllers and integrated operator Terminals

GF_VEDO SL-V70CT

GF_VEDO SL-70CT

GF_VEDO SL-35CT

GF_VEDO SL-V70CT

GF_VEDO SL-70CT

GF_VEDO SL-35CT

INSTALLATION AND USER MANUAL

CE

code: **80991C - 09-2017 - ENG**

ATTENTION!

This manual must always be available to operators of the devices described here.

Always make sure that you have the latest version of the manual, which is available for free download from the GEFRAN website (www.gefran.com).

Installers and/or maintenance personnel are required to read this manual and to precisely follow the instructions contained in it and in its attachments.

GEFRAN will not be liable for any damage to persons and/or property, or to the product itself, caused by failure to follow the instructions and observe the warnings given below.

This manual and its attachments may be freely reproduced as long as they are not changed in any way and every copy contains this warning and the declaration of ownership by Gefran S.p.A.

REVISION DOCUMENTS

DATE	CODE	UPDATE
07-2013	80991B	Document issue
09-2017	80991C	Addition of UL certification. CE certification update

SUMMARIES AND TABLES OF CONTENTS

Warnings and safety

While all the information contained in this manual has been carefully checked, Gefran S.p.A. accepts no responsibility for the possible presence of errors or for damage to persons and/or property caused by the improper use of the manual. Gefran S.p.A. also reserves the right to make changes to the contents and form of this manual and to the characteristics of the devices illustrated at any time and without prior warning.

The installation of the devices illustrated in the manual must be carried out by qualified technicians in compliance with the laws and standards in force and in agreement with the instructions contained in the manual.
If the GF_VEDO SL is used in applications with the risk of damages to persons, machinery or materials, its use in conjunction with alarms is essential.
It is advisable to envisage the possibility of checking the intervention of the alarms during regular operation.

Before interacting with the Controller and built-in Operator Panel, the operator must receive full training in the procedures of operation, emergency, diagnosis and maintenance of the system.

Printing conventions used in the manual

Pay attention to the use of the following symbols.

Highlights particularly important information which influences the correct operation of the product or of safety or an instruction which must absolutely be followed.

Highlights a risk condition for the safety of the installer or the user, due to the presence of dangerous levels of voltage.

Glossary

CAN Controller Area Network, also known as CAN-bus, is a standardised bus that enables the devices to communicate with each other.

CANopen CAN communication protocol. Protocol specification for devices used in automation systems.

Work cycle Fraction of time that represents the active state of a device, circuit, etc. in relation to the total time considered.

Data logger Enables the storage of information for filing records or further processing.

Duration of settlement Time required for the output value to reach and remain above 90 % of the final value.

Encoder Rotative position transducer.

Electric resistance extensometer Sensor that transforms small dimensional deformations of a body subject to mechanical or thermal stress in changes of electric.

Ethernet Standard for local networks (LAN).

FLASH Non-volatile memory in the solid state.

FRAM Non-volatile RAM faster than the Flash memory.

FTP File Transfer Protocol. Allows the upload and download of data files between the controller and other digital devices.

LSB Least Significant Bit. It defines the minimum resolution of a measurement.

LSS Layer Setting Services.

Modbus Open serial communication protocol, de facto standard in communication between industrial electronic devices. Modbus RTU is the most common implementation of this standard, Modbus TCP/IP is that specific m for Ethernet networks.

Opto isolated Circuit configuration which, through an electronic component called an opto-isolator, allows the transferral of a signal between two circuits while maintaining galvanic separation.

PID Regulation algorithm.

PLC Programmable Logic Controller. A digital computer specialised in the management of industrial processes.

PWM Pulse-Width Modulation. Technique for controlling power towards electric devices.

RAM Random Access Memory Electronic memorising device which enables the reading and writing of data.

RS-232 Standard which defines a low-speed serial transmission interface for the exchange of data between digital devices, such as modems.

RS-485 Standard, at physical level, for serial connection with 2 wires.

SD Card Card for memorising large amounts of digital data.

SDRAM Synchronised access RAM.

Strain gauge See *Electric resistance extensometer*.

USB Universal Serial Bus, serial communication and feeding standard created to connect peripherals to computers.

GENERAL

Overview of the solution and functionalities

GF_VEDO SL is the complete process and automation control solution, which allows sequence control, process management, programming and display of data and connectivity with a single modular system.

To this end, a combination of "technological functions", such as the management of PWM, fast counters, data filing by data logger, temperature PID, data export via FTP, enabling the rapid creation of applications, is made available.

Controller and Operator Panel integrated into a single device, complete with PLC embedded run time, available with a 3.5" or 7" wide display (the latter in either a horizontal or vertical version).

Thanks to its flexibility and ease of use can be used in a variety of sectors and for numerous process and automation process controls, such as:
- the wood industry (gluing, etc.);
- packaging (packing, labelling, etc.);
- food industry (pasteurisers, etc.);
- chemical industry (autoclaves, etc.);
- metal working (washing, etc.);
- plastic working (dryers, coolers, etc.).
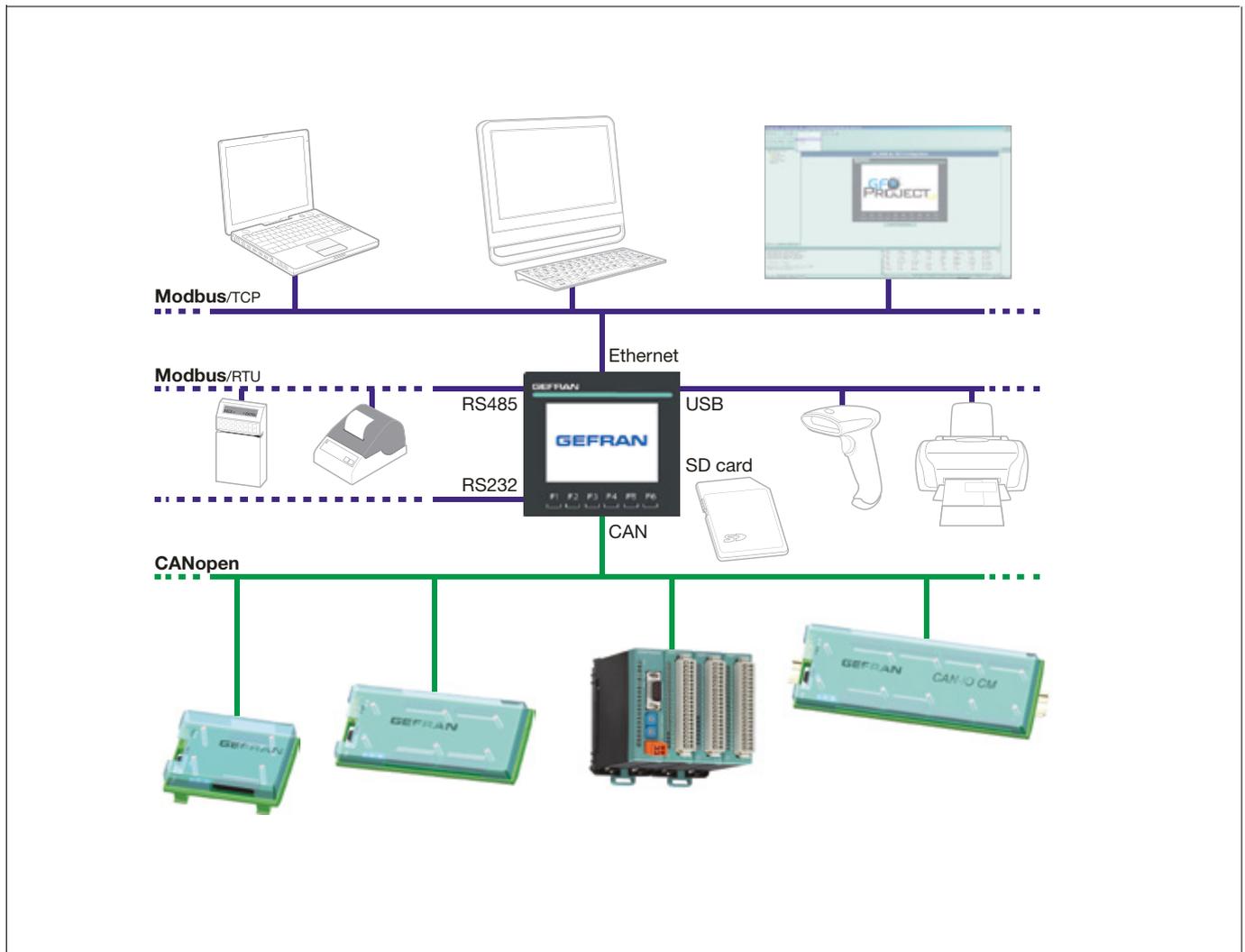
Architecture

Figure 1 - System architecture

GF_VEDO series SL models 35CT – 70CT – V70CT

GF_VEDO_SL - 35CT

GF_VEDO_SL - 70CT

GF_VEDO_SL - V70CT

The integrated Controller and Operator Panel allows the complete management of automation.
Available in 3 versions:
35CT 3,5" color touch;
70CT 7" color touch for horizontal installation;
V70CT 7" color touch for vertical installation;
and equipped with a powerful 400 MHz processor.

It is destined mainly to operate in an industrial environment on the control panels of production process machines or processes.

The operator interacts through a colour touch screen.
Depending on the model, the size of the screen is 3.5" or 7" wide.
As an option, the device can be equipped with programmable function buttons.

Thanks to its numerous communication ports (some of which are optional), it is possible to connect a wide range of devices to the controller, such as computers, barcode readers, USB sticks, modems, printers, etc., and connect it to an Ethernet network.

The remote input and output modules (CAN-IO/GILOGIK II) are connected by bus to the CAN port (CANopen).

Other CANopen standard compliant devices can also be connected to the bus.

Technical data

POWER	Operating voltage	24 Vdc ±25%		
	Absorbed current (at 24 Vdc)	300 mA max	350 mA max	
	Dissipated power	7.5 W max	8.5 W max	
	Protections	Protection for polarity inversion Short circuit		
	Connection	3-pole polarised extractable connector Screw terminals, max wire section 2,5 mm²		
BACK-UP BATTERY	Type	Rechargeable Li-Al 3 V 65 mA/h, type ML2032, non-replaceable		
	Duration	10 years in absence of power: 20 months		
CONNECTIONS	CAN port	Opto-isolated Connector: DB9 M Speed: 10 kbit/s … 1 Mbit/s Termination: to be managed externally		
	Ethernet port (ETH)	Connector: RJ45 Speed: 10 / 100 Mbit/s Signals: green connection LED, yellow data LED		
	RS-485 port (optional)	Opto-isolated Connector: DB9 M Speed: 9.6 kbit/s … 115 kbit/s		
	RS-232 port (optional)	Connector: DB9 M Speed: 9.6 kbit/s … 115 kbit/s		
	USB port (optional)	Connector: type A Standard: USB 2.0		
COMMUNICATIONS PROTOCOLS	Ethernet	FTP (File Transfer Protocol) Modbus TCP/IP Master/Slave		
	CAN	CANopen Master		
	Modbus	Modbus RTU Master/Slave		
DISPLAY	Type	TFT touch screen with 4-wires resistive technology		
	Dimensions (diagonal)	3.5”	7” horizontal	7” vertical
	Resolution in pixels	320 x 240 (QVGA)	800x480(WVGA) 480x800(WVGA)	
	Display area (L x H)	70 x 52.5 mm	152.4x91.4mm	91.4x152.4mm
	Colours	262.000		
	Brightness	400 cd/m²	240 cd/m²	
	Contrast	400:1	1000:1	
	Backlighting	White LEDs, duration 50.000 hours @ 25 °C		
	Visual angle	Horizontal: 60° Vertical: 45°-60°	85° in all directions	
CONFIGURATION ELEMENTS	Procedure software access	16-position dial		
CONTROL ELEMENTS	Keypad (optional)	6 programmable function buttons	10 programmable function buttons	
MICROPROCESSOR	Type	ARM9		
	Frequency	400MHz		
MEMORY	Sistem	64 MB, type SDRAM • 12 MB HMI application • 2.5 MB PLC applicative		
	Retentive	• 32 kB retentive variables (FLASH / FRAM) • 1 MB data logger (FLASH)		
	Mass	128 MB, type FLASH • 32 MB for user		
	Mass extension	Slot SD Card (optional)		

Technical data

ENVIRONMENTAL CONDITIONS	Operative temperature	0 ... +50 °C (according to IEC 68-2-14)	
	Storage temperature	-20 ... +70 °C (according to IEC 68-2-14)	
	Relative humidity	max 95% RH non condensing (according to IEC 68-2-3)	
ASSEMBLY		Embedded, in control panels	
DEGREE OF PROTECTION		IP 65 on the front (according to IEC 68-2-3)	
WEIGHT		0.25 kg	0.5 kg
CE STANDARDS	EMC conformity (electromagnetic compatibility)	Observance of directive 2014/30/EU EN61131-2: Programmable controllers Part 2: Equipment requirements and tests	
UL STANDARDS		file E198546 UL 508 - standard for industrial control equipment CSA C22.2 NO. 142-M1987 - process control equipment	

Dimensions and spaces required for installation
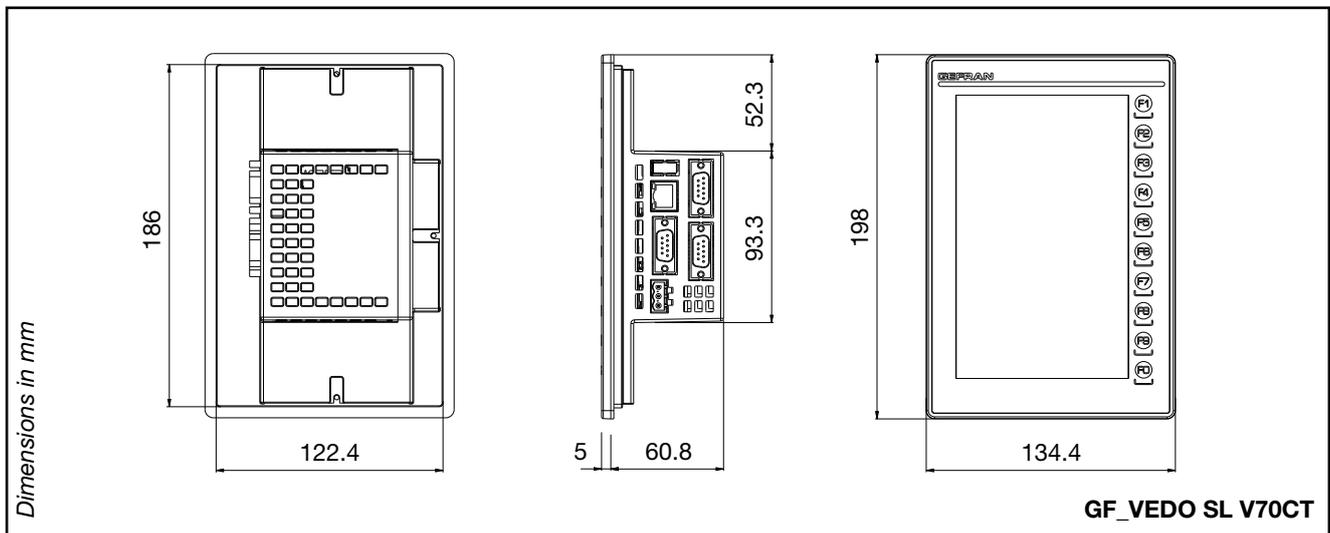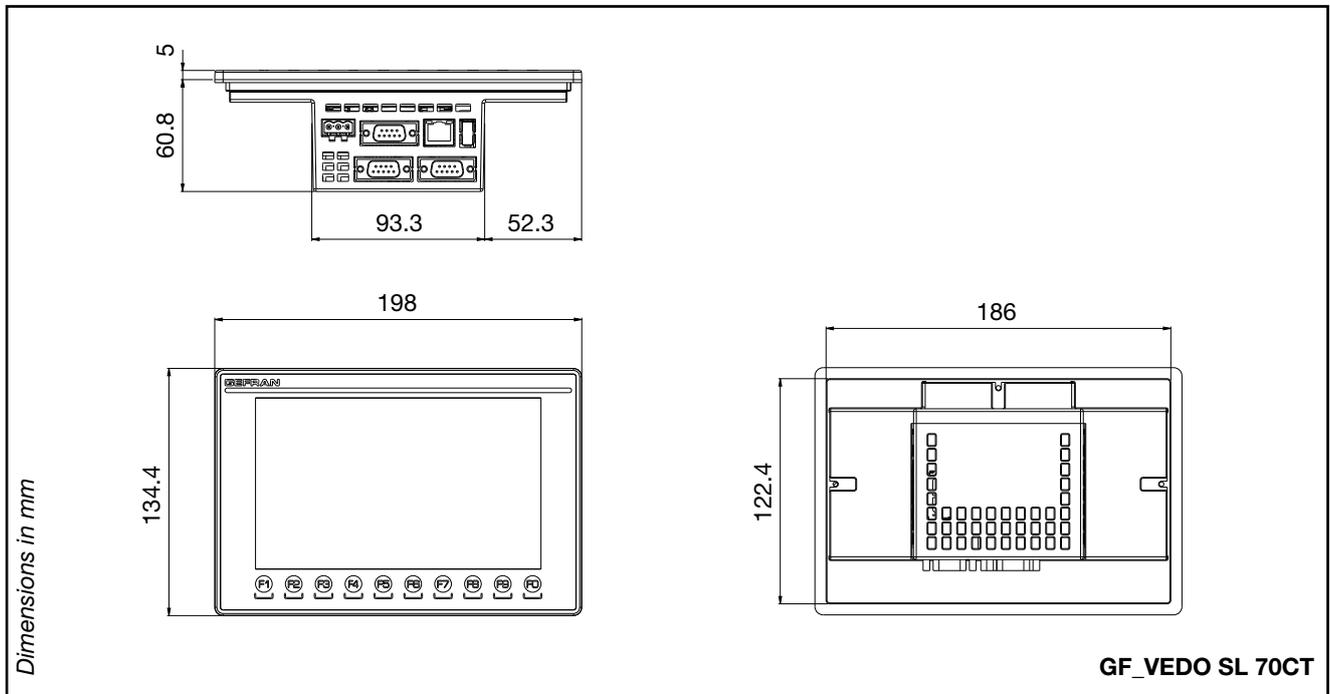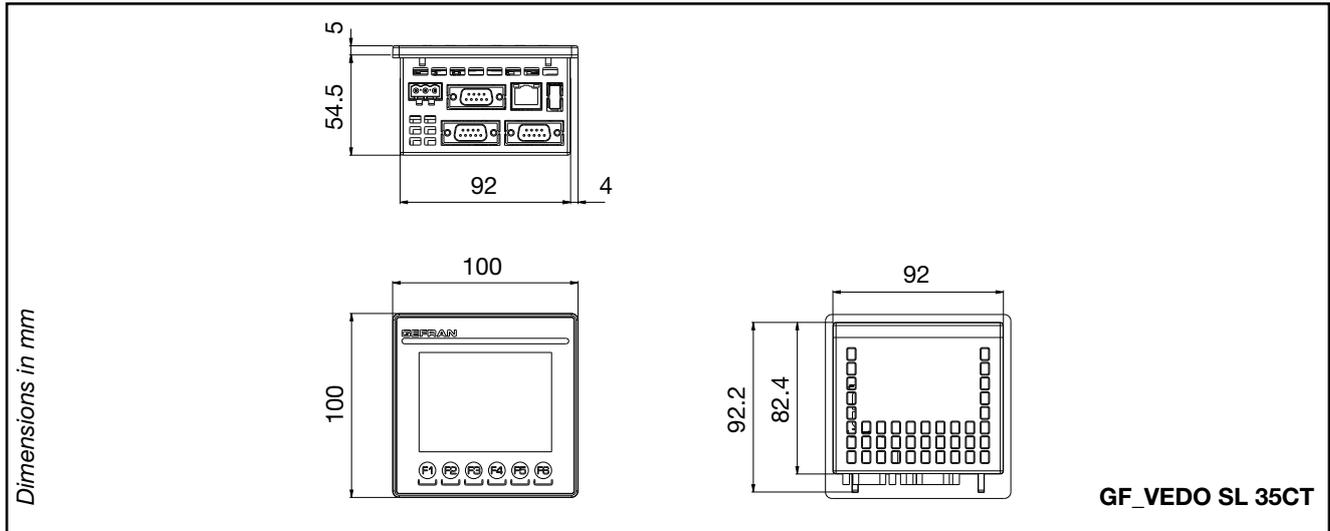
Figure 2 - Dimensions GF_VEDO SL

Figure 3 - Free spaces for ventilation

Within the figure: *Dimensions in mm*

GF VEDO SL 35CT · GF VEDO SL 70CT - V70CT

(Dimension labels: 50 on all sides of each diagram)

⚠ **Attention**: the temperature inside the compartment that houses the integrated Controller and Operator Panel must never exceed 50 °C.

The free spaces highlighted in grey are those recommended with static ventilation.
With forced ventilation these spaces can be reduced even further.

ASSEMBLY AND INSTALLATION

Assembly of Integrated Controller and Operator Panel

UL requirements
- Installation category (overvoltage category) II.
- A device suitable for use in environments with pollution degree 2.
- Maximum temperature of the air around the device 50°C (UL 508).
- Use on a flat surface with protection type 1.

Hole dimensions
For correct installation, observe the dimensions of the templates shown in the illustration.
The dotted line shows the maximum size of the front panel.
Attention: the panel on which the Integrated Controller and Operator Panel is mounted has to have the following characteristics:
- be sufficiently stiff and strong so that it does not bend during use;
- be between 1 and 12 mm thick, to allow the fastening of the device with the terminals supplied;
- if the use of the USB transfer cable is envisaged, read the notes on its installation first.

GF VEDO SL 35CT   GF VEDO SL V70CT   GF VEDO SL V70CT
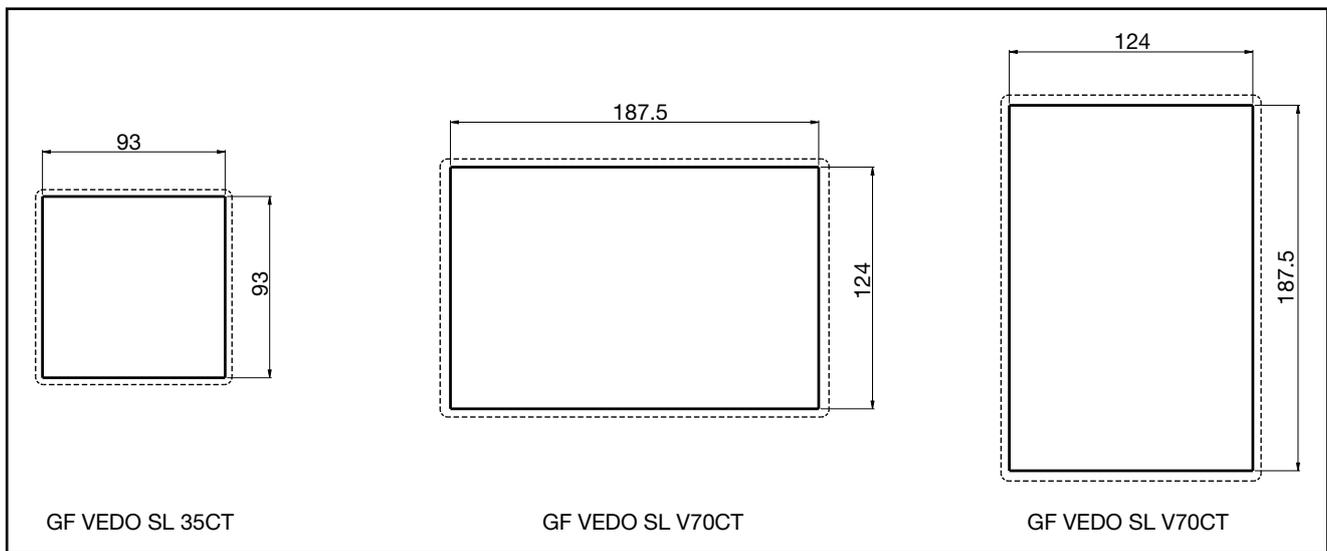
Figure 4 - Panel hole dimensions for GF_VEDO SL

Protection against infiltrations of water
The Integrated Controller and Operator Panel offers, first of all, a degree of protection of IP65. It is therefore possible to install the device in particularly dusty environments or areas subject to splashes of water without problems:
- the compartment in which the device is housed also has to be dust and waterproof;
- the panel on which the device is installed must be perfectly smooth and flat on the front;
- the hole in the panel must scrupulously respect the dimensions indicated;
- the device has to be fastened tightly to the panel, to allow the gasket fitted at the back to ensure water tightness.

Vibrations
The Integrated Controller and Operator Panel can support vibrations up to 150 Hz:
- from 5 to 9 Hz: sinusoidal 3.5 mm constant;
- from 9 to 150 Hz: sinusoidal with acceleration equal to 1 G.

Should the device be mounted on a support that exceeds these limits it is necessary to envisage a system for the suspension and mitigation of the vibrations.

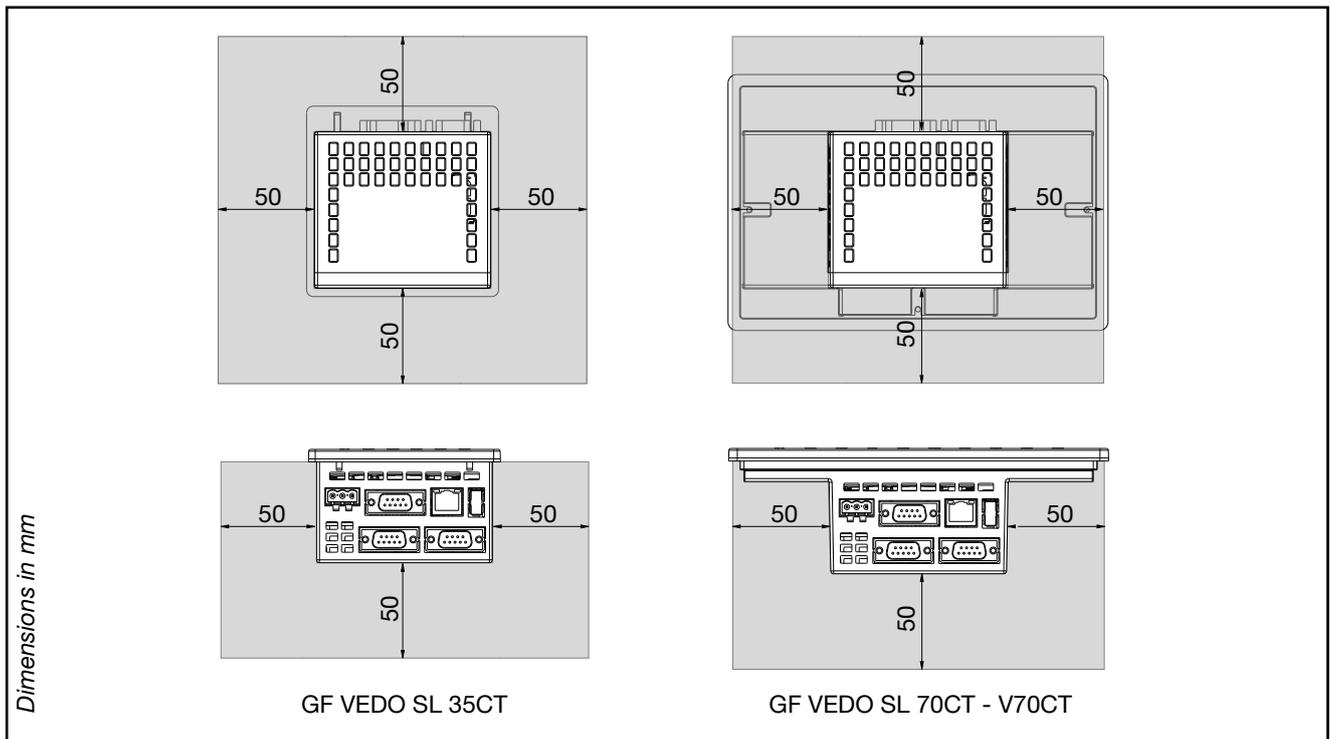## Minimum spaces for ventilation
The temperature of the compartment that houses the Integrated Controller and Operator Panel must not exceed 50 °C. Figure 3 – Free spaces for ventilation shows the minimum free distances recommended in the installation of the device in a closed compartment.

Positioning
The Integrated Controller and Operator Panel has to be positioned in order to guarantee the following conditions:
- the screen must not be directly lit by the sun or particularly bright light sources.
- If necessary, screen direct rays, using an antiglare shutter for example;
- there must be no sudden temperature changes;
- there must be a low explosion risk: it can be connected to elements that operate in environments with a hazardous atmosphere (flammable or explosive) only through appropriate and suitable types of interface, compliant to the safety standards in force;
- low presence of magnetic fields
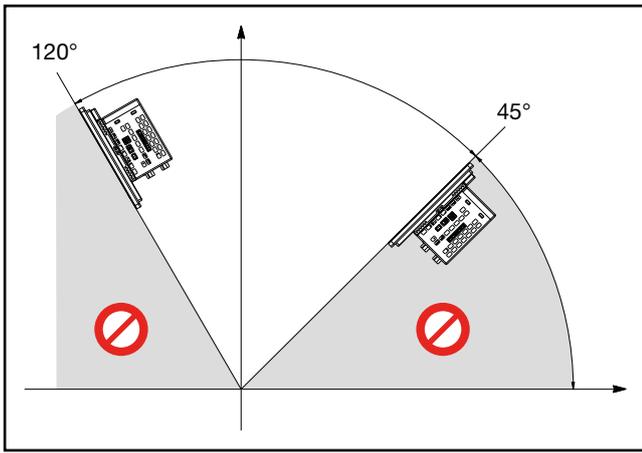
Figure 5 - GF_VEDO SL admitted angulation

Figure 6 - Position and angulation

The angulation of the controller must be between 45° and 120°, as shown in figure 5.

The angulation to choose also depends on the position of the controller compared to the operator, as shown in figure 6.

Fastening to the panel

Fit the die-cut rubber seal in the back of the Integrated Controller and Operator (figure 7).
The seal, supplied as standard, is essential to guarantee IP65-rated protection.

With GF VEDO SL 70CT and GF VEDO SL V70CT, fit the two metallic brackets supplied into the special housings on the short sides and fasten them in place with the screws (figure 7).

Figure 7 - Assembly of seal, metal bracket and terminal connection

Fit the Integrated Controller and Operator in the panel, connect the 4 terminals supplied to the device and tighten the screw until the device is fastened tightly to the panel.

There are 4 positions in which to connect the terminals, two per side.

GF VEDO SL 35CT

GF VEDO SL 70CT
GF VEDO SL V70CT
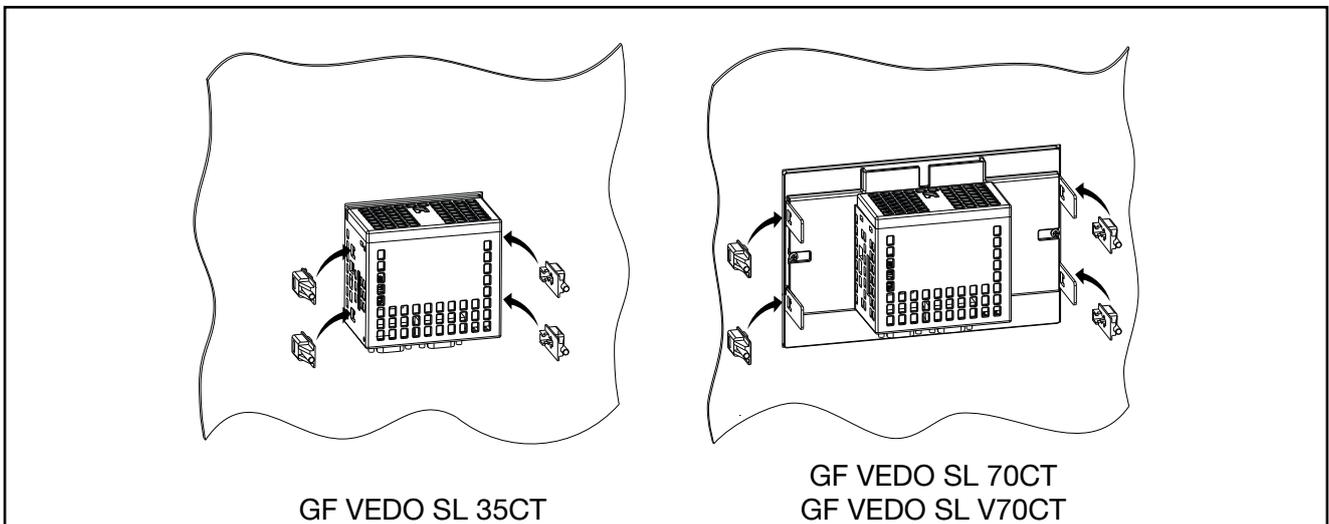
Figure 8 - Positions available for fastening terminals

Inputs, ports and signals

GF VEDO SL 35CT

GF VEDO SL 70CT
GF VEDO SL V70CT
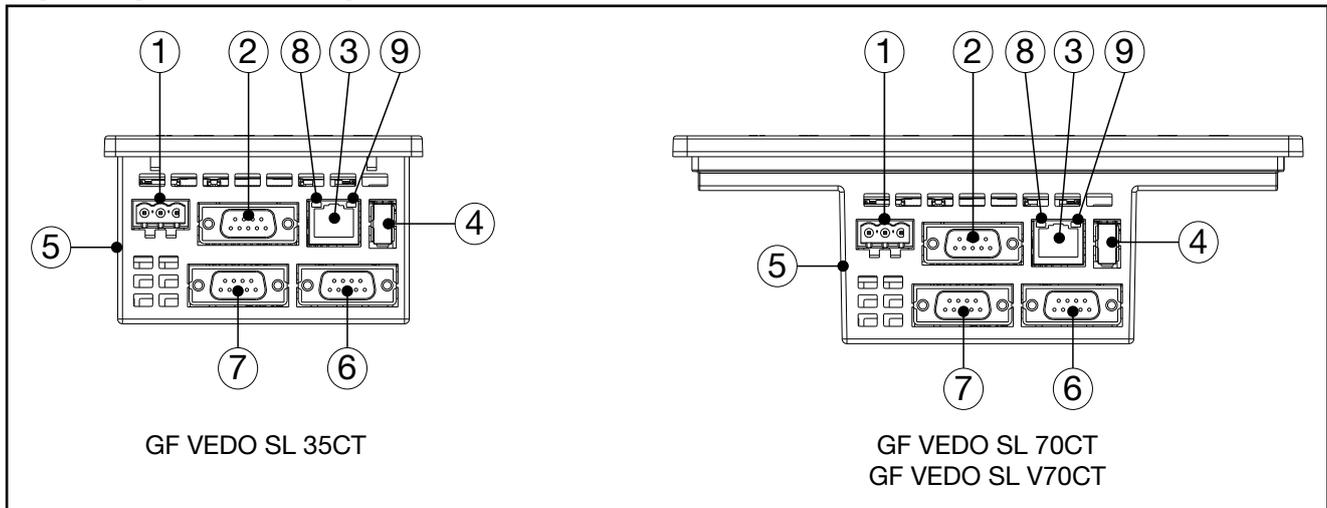
Figure 9 - GF_VEDO SL connector position

N.	Description	Connector / indicator	Note
1	Input power 24 Vdc ± 25%	Pull-out polarised terminal block	
2	CAN Port	DB9 M (D-sub 9 pin male)	
3	Ethernet Port 10/100 Mbit/s	RJ45	
4	USB Port	USB Type A	optional
5	SD Card Slot		optional
6	RS232 Port	DB9 M (D-sub 9 pin male)	optional
7	Insulated RS485 Port	DB9 M (D-sub 9 pin male)	optional
8	Green "Link" LED	Permanently on signals that the Ethernet connection is active	
9	Yellow "Data" LED	Flashing signals that data is being transferred	A high-speed transfer could make the yellow LED appear permanently on

Power

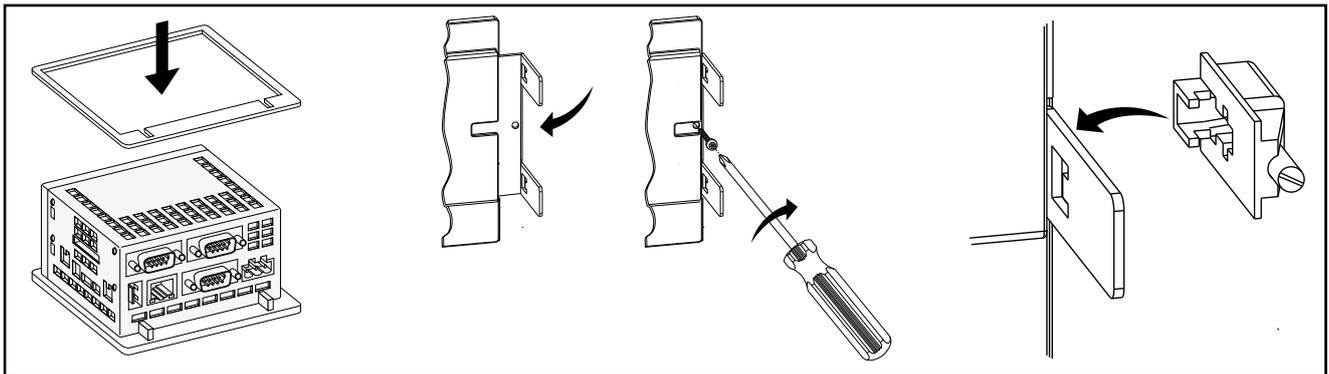The Integrated Controller and Operator Panel must be connected to a 24 Vdc power supply unit.
The same 24 Vdc power supply can feed several devices (controller and CAN-IO modules).
Make sure that the current issued by the power supply is higher than the total maximum current absorbed by all the devices connected.
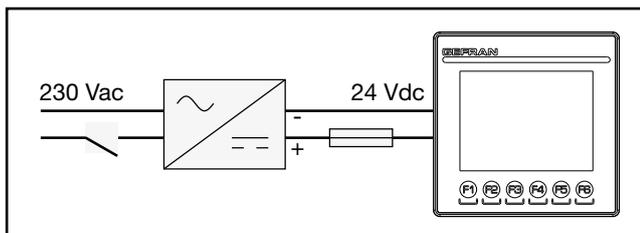
Figure 10 - GF_VEDO SL power

Considering that the device has no switch, it is necessary to install one before it, with a protective fuse.
The switch has to be positioned in the immediate vicinity of the device and be easy for the operator to reach.

For the 24 Vdc power supply, use a separate line from that used for electromechanical power devices such as relays, contactors, solenoids, etc.
If there are considerable changes in the mains voltage, use a voltage stabiliser.
Near to high frequency generators or arc welders, use adequate grid filters.

Connect the power cables to the power connector. Fit the cylindrical nucleus in ferrite, supplied with the product, as close as possible to the device to limit the susceptibility of the device to electromagnetic disturbance (figure 11).

The 24 Vdc power cables must follow a separate route from the power cables of the system or the machine.
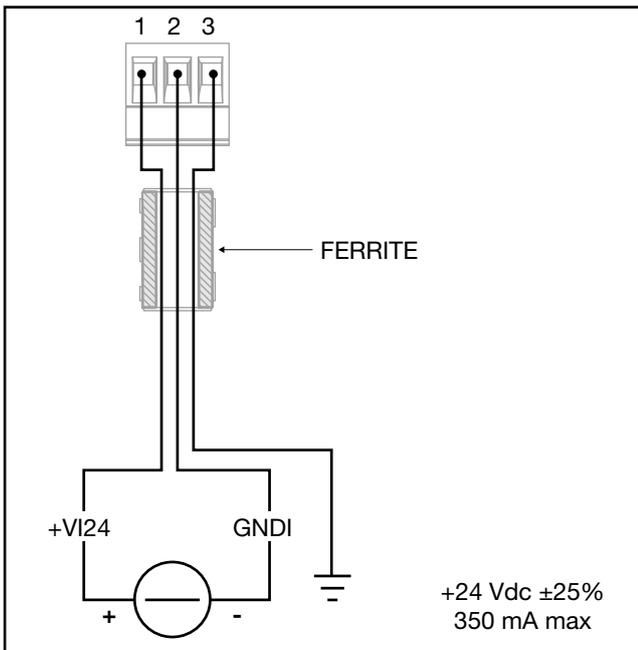
Figure 11 - GF_VEDO SL power connection

⚠ **Attention**: make sure that the earth connection is efficient. A non-existent or inefficient earth connection can make the operation of the device unstable, due to excessive environmental.
In particular, check that:
- the voltage between ground and earth is < 1 V;
- the ohm resistance is < 6 Ω.

CAN

Connect the cable for the CAN field bus (CANopen protocol). The CAN bus connects the various CAN devices, such as the CAN-IO modules, to the Integrated Controller and / or Operator Panel.
Considering that the CAN port is opto-isolated, it is not necessary to disconnect the power to the device before connecting it.
For the wiring of the line, use an approved cable.
Fasten the cable connector to that of the controller with the appropriate screws.
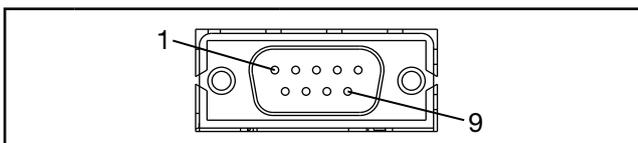
Pin	Name	Description
1		
2	CAN_L	CAN-Low (CAN-)
3	GND	Ground (mass)
4		
5	EARTH	Earth
6		
7	CAN_H	CAN-High (CAN+)
8		
9		

Figure 12 - CAN bus line termination

⚠ The line termination is not fitted in the controller. It is therefore necessary to fit two terminations (resistor 120 Ω, ¼ W, 5%) at the ends of the CAN bus, as shown in figure 12.

Note: If the last device of the CAN bus is a CAN-IO module, it is possible to activate the termination in the module with the appropriate switches (see the CAN-IO documentation).

Ethernet

If necessary, connect the Ethernet cable to the Ethernet RJ45 port.
The Ethernet port allows connection of the Integrated Controller and Panel to a computer or to a company LAN network.
The connection cable to use (either straight or crossover) depends on the type of device that has to be connected. For example, to directly connect a PC it is necessary to use a crossover cable.
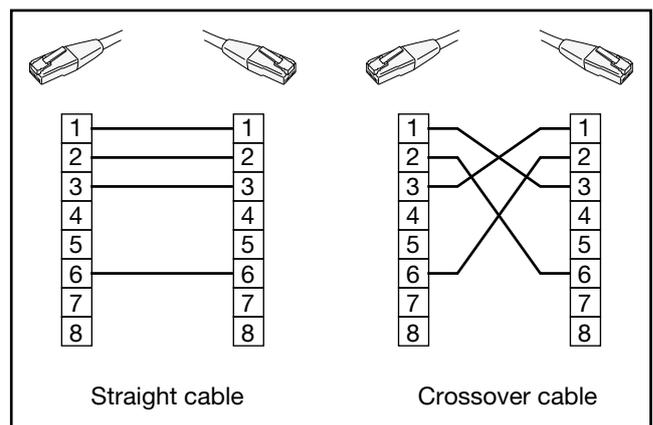
Figure 13 - straight and crossover Ethernet cables

For the connection, use a CAT6 UTP cable or superior.
The maximum length of the Ethernet cable is 100 metres.

Do not run the Ethernet cable alongside the machine power cables, to avoid interference with data transmission.

The RJ45 socket has two LEDs. When the Ethernet connection is active, the green LED stays permanently lit; when data is being transmitted, the yellow LED flashes.

USB

The USB port is optional and is used to connect external devices compliant to the USB standard.

The connector is Type A and the port supports version USB 2.0, with speed up to 480 Mbit/s.

The port is able to issue a current of 500 mA at 5 Vdc to power USB devices.

The maximum length allowed for the USB cable is 5 metres.

Transfer cable

It is possible to directly access the USB port of the controller from the panel using the transfer cable (accessory to order separately).

To fit the socket of this cable, the panel thickness, in the position chosen, should not exceed 2 mm.

SD Card

The SD Card slot is optional and allows use of the SD Card mass memories to store data and applications.

The SD Card can be used and removed at will.

Before removing it, make sure that there are no writing operations in progress.

RS232

The RS232 port is optional.

Considering that the RS232 port is not insulated, it is necessary to disconnect the power to the Integrated Controller and Operator Panel and to the device to be connected before connecting them.

The connection cable must be screened and not exceed a length of 5 metres.

Tighten the cable connector to that of the controller using the special screws.
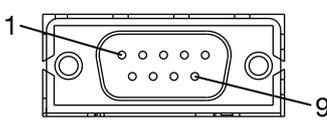
Pin	Name	Description	Signal Flow
1	DCD	Data Carrier Detect	Input
2	RxD	Received Data	Input
3	TxD	Transmitted Data	Output
4	DTR	Data Terminal Ready	Output
5	GND	Ground	Mass
6	DSR	Data Set Ready	Input
7	RTS	Request To Send	Output
8	CTS	Clear To Send	Input
9	RI	Ring Indicator	Input

RS485

The RS485 port is optional.

Considering that the RS485 is opto-isolated, it is not necessary to disconnect the power to the Integrated Controller and Operator Panel and to the device to be connected before connecting them.

Tighten the cable connector to that of the controller using the special screws.

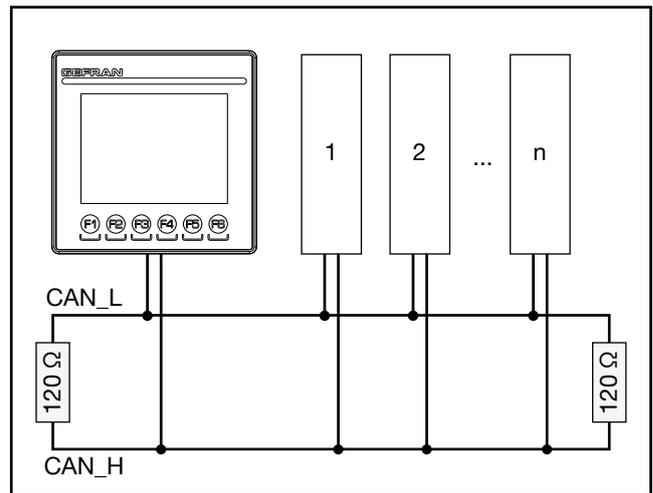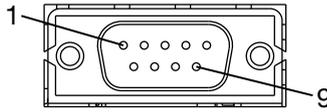| Pin	Name	Description
1		
2	TX/RX+	Data +
3		
4	TX/RX-	Data -
5	GND	Ground
6		
7		
8		
9		
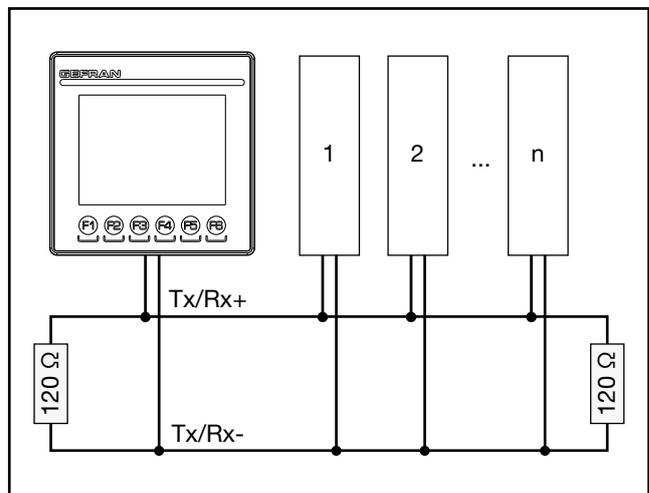
Figure 14 - RS485 bus line termination

The line termination is not fitted in the controller. It is therefore necessary to fit two terminations (resistor 120 Ω, ¼ W, 5%) at the ends of the RS485 bus, as shown in figure.

The RS485 connection can be used successfully over long distances and in environments characterised by considerable disturbance. The maximum length of the cable depends on the transmission speed, as shown in figure 15.

Max data transmission speed with AWG24 cable
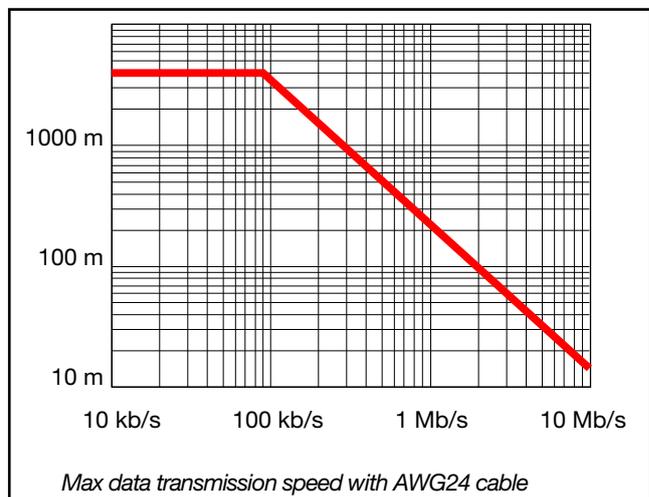
Figure 15 - RS485 max transmission speed

Set-up program

When no application program has been uploaded onto the Integrated Controller and Operator Panel, or when the dial is positioned on F, the following happens:

1. The Gefran logo appears on the screen.

2. The operating system is loaded (this takes about 1mi).
3. The Main Menu of the set-up program appears.

The set-up program allows configuration of the device and to obtain information on it.

The configurations to be carried out when using the controller for the first time are:
1. Regulation of the current date and time.
2. Calibration of the touchscreen display.
3. Uploading of the application program.

When uploading an application program onto the controller, the set-up program is no longer shown.

To access the set-up program again after uploading an application program onto the Integrated Controller and Operator Panel, proceed as follows:
1. Switch off the controller.
2. Shift the controller dial to position F (figure16)
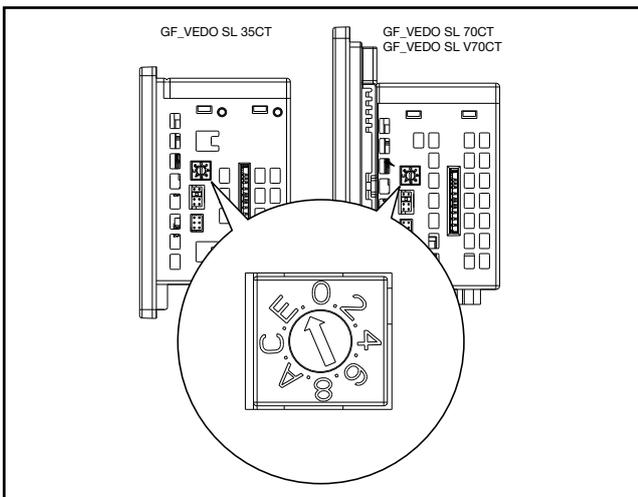
Figure 16 - GF_VEDO SL Dial

3. Switch the controller on again. After the initial start phase, the main menu of the set-up program appears.
4. Operate as for the set-up program and then switch off the controller.

5. Shift the controller dial to its previous position.
6. Switch the controller again. After the initial start phase, the application program screen appears.

Main Menu
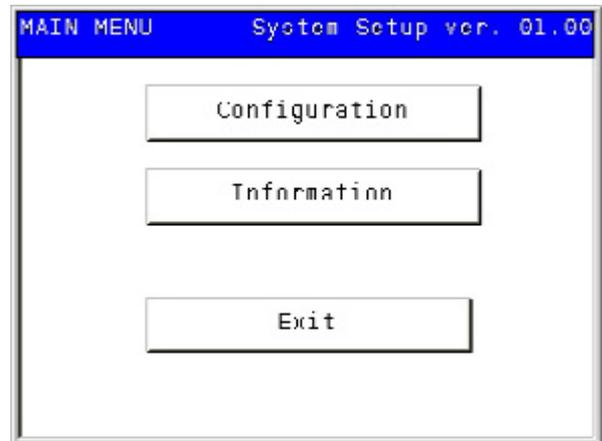
The version of the set-up program installed appears in the top right corner.

The **Configuration** button allows access to the device configuration procedures.

The **Information** button allows access to information on the firmware and communication protocols installed.

The **Exit** button allows a return to the application program, if installed.

Configuration
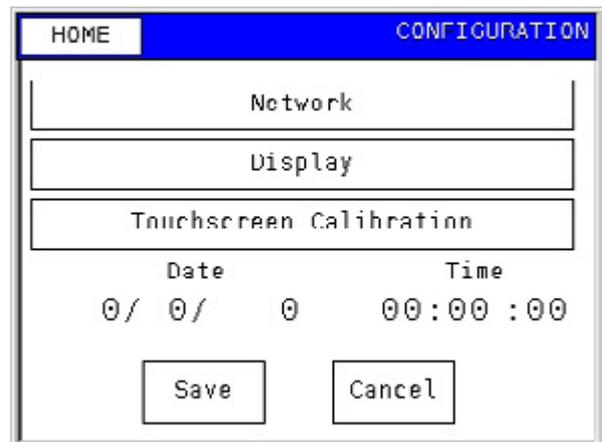
The **HOME** button in the top left corner allows a return to the *Main Menu*.

The **Network** button allows access to the device configuration procedures.

The **Display** button allows access to information on the firmware and communication protocols installed.

The **Touchscreen Calibration** button will allow future access to the procedure for the calibration of the touch screen without using the dial.

To regulate the date, proceed as follows:
1. Touch the year with a finger. The numeric keypad appears. Type in the year and press **Enter**. The changed year appears underlined.
2. Touch the month with a finger. The numeric keypad appears. Type in the month in the 2-figure format and press **Enter**. The changed month appears underlined.
3. Touch the day with a finger. The numeric keypad appears. Type in the day in the 2-figure format and press **Enter**. The changed day appears underlined.
4. Press **SAVE** to save the changes made. When the new date has been saved, the underlining disappears.

To regulate the time, proceed as follows:
1. Touch the hours with a finger. The numeric keypad appears. Type in the hour in the 24h format and press **Enter**. The changed hour appears underlined.
2. Touch the minutes with a finger. The numeric keypad appears. Type in the minutes in the 2-figure format and press **Enter**. The changed minutes appear underlined.
3. Touch the seconds with a finger. The numeric keypad appears. Type in the seconds in the 2-figure format and press **Enter**. The changed seconds appear underlined.
4. Press **Save** to save the changes made. When the new time has been saved, the underlining disappears.

⚠️ **Attention**: the controller does not automatically update the time when the clocks go back/forward.

The **Save** button memorises the new time and date and the **Cancel** button cancels the changes and maintains the previous time and date.

Network
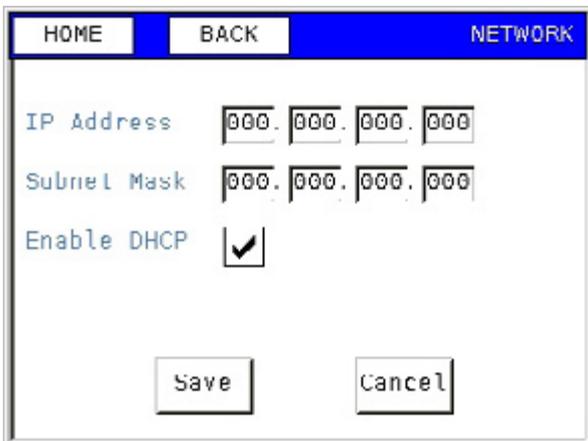
On this screen it is possible to know and set the IP (**IP Address**) and the **Subnet Mask** of the Integrated Controller and Operator Panel.
Selecting **Enable DHCP** the controller obtains the IP address from a DHCP server connected to the network, otherwise it uses the IP address saved by hand.
The **Save** button memorises the new configuration and the **Cancel** button cancels the changes and maintains the previous configuration parameters.
The **HOME** button in the top left corner allows a return to the *Main Menu* while the **BACK** button returns to the *Configuration* screen.

Display
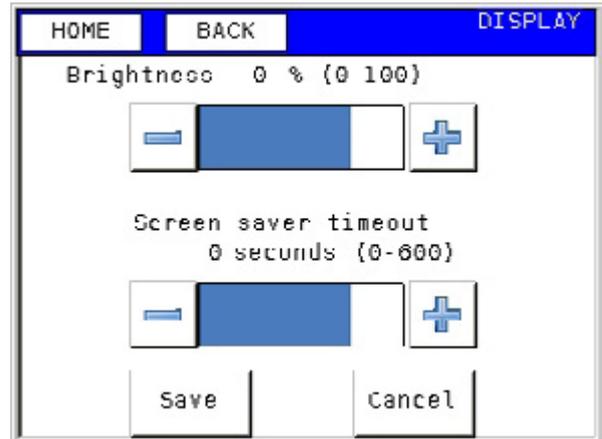
On this screen it is possible to regulate the brightness and the screensaver timeout.
To regulate the **Brightness** of the screen, use the - and + buttons.
The 100% value (set in the factory) is ideal for most situations.
To regulate the **Screen saver timeout** use the - and + buttons. 120 seconds (set in the factory) is ideal for most situations.
Setting 0 seconds, the screen never times out.
It is advisable to set the shortest possible timeout, compatibly with your needs.
To see the screen again, all you have to do is touch any button.
The **Save** button memorises the new configuration and the **Cancel** button cancels the changes and maintains the previous configuration parameters.
The **HOME** button in the top left corner allows a return to the *Main Menu* while the **BACK** button returns to the *Configuration* screen.

Touchscreen calibration

To calibrate the touch screen, proceed as follows:
1. Switch off the device.
2. Position the dial on E.
3. Switch the device on again. The logo page is followed by the calibration screen. This screen is used to calibrate the response of the screen when it is touched with a finger.
4. Touch the 5 targets precisely with a plastic tip, following the order proposed on the screen
5. After touching the 5th target, the system automatically exits the calibration procedure and starts the set-up program or, if it exists, the application program.
6. Switch off the device.
7. Position the dial on 0.
8. Switch the device on again.

Information

```
┌──────────────────────────────────────────┐
│ ┌───────┐                    INFORMATION  │
│ │ HOME  │                                 │
│ ├───────┴──────────────────────────────┐ │
│ │          CANopen                     │ │
│ ├──────────────────────────────────────┤ │
│ │        Modbus  TCP                   │ │
│ ├──────────────────────────────────────┤ │
│ │        Modbus  RTU                   │ │
│ ├──────────────────────────────────────┤ │
│ │      System  Message                 │ │
│ └──────────────────────────────────────┘ │
│ Bootloader ........ 0 . 0 . 0            │
│ Firmware .......... 0 . 0 . 0            │
│ FileSystem ........ 0 . 0 . 0            │
│ Runtime ........... 0 . 0 . 0            │
└──────────────────────────────────────────┘
```

The **HOME** button in the top left corner allows a return to the *Main Menu*.

The **CANopen**, **Modbus TCP** and **Modbus RTU** buttons allow access to information relating to the various communication protocols.

The **System Message** button allows access to system information.

The screen directly shows the versions of Bootloader, Firmware, FileSystem and Runtime.

CANopen

```
┌──────────────────────────────────────────┐
│ ┌───────┐  ┌───────┐           CANopen    │
│ │ HOME  │  │ BACK  │                      │
│ └───────┘  └───────┘                      │
│  ┌──────┐       ┌──────────┐              │
│  │ Node │       │      0   │              │
│  └──────┘       └──────────┘              │
│ Status                                    │
│ ─────────────────────────────────────     │
│ Configured                          No    │
│ Present (operational)               No    │
│ Net Status              Boot up slave     │
│ Miss counter                         0    │
│ ─────────────────────────────────────     │
│ Emergency                   0 [Counter]   │
│ ┌────────┬──────────┬──────────────────┐  │
│ │ Code   │ Register │   Add. code      │  │
│ │ 000h   │  000h    │ 0h 0h  0h 0h 0h  │  │
│ └────────┴──────────┴──────────────────┘  │
└──────────────────────────────────────────┘
```
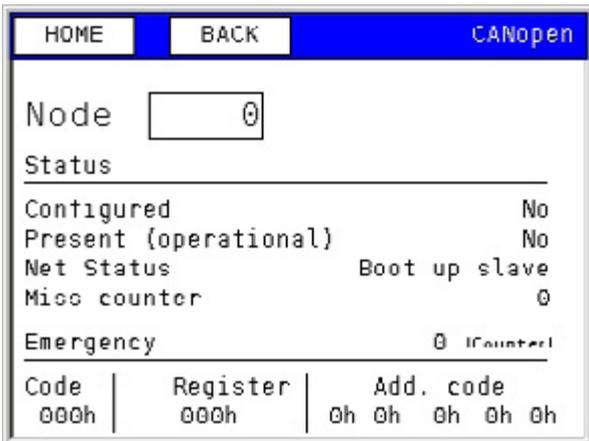
This screen shows the node number of the Integrated Controller and Operator Panel for the CANopen protocol and information on the status of the CANopen protocol.

Emergency information defines the number of times that the node has shown the state of emergency.

The **HOME** button in the top left corner allows a return to the *Main Menu* while the **BACK** button returns to the *Information* screen.

Modbus TCP

```
┌──────────────────────────────────────────┐
│ ┌───────┐  ┌───────┐         Modbus TCP   │
│ │ HOME  │  │ BACK  │                      │
│ └───────┘  └───────┘                      │
│  ┌──────┐       ┌──────────┐              │
│  │ Node │       │      0   │              │
│  └──────┘       └──────────┘              │
│ Status                                    │
│ ─────────────────────────────────────     │
│ Active                              No    │
│ Configured                          No    │
│ Present (operational)               No    │
│ Net Status              Disconnected      │
│ Miss counter                         0    │
│ IP Address                                │
│ ┌──────────────────────────────────────┐ │
│ │                                      │ │
│ └──────────────────────────────────────┘ │
└──────────────────────────────────────────┘
```

This screen shows the **Node** number of the Integrated Controller and Operator Panel for the Modbus TCP protocol and information on the status of the Modbus TCP protocol.
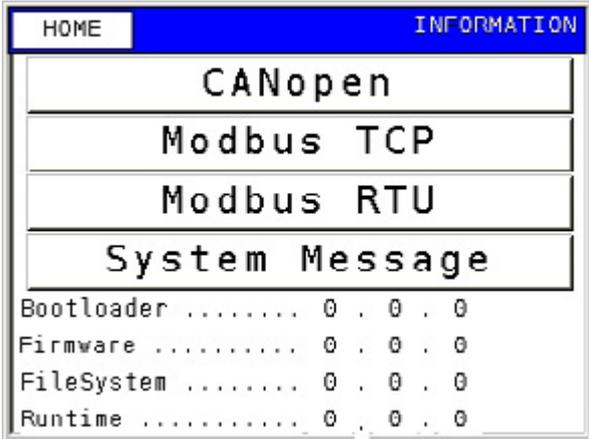
The **HOME** button in the top left corner allows a return to the *Main Menu* while the **BACK** button returns to the *Information* screen.

Modbus RTU

```
┌──────────────────────────────────────────┐
│ ┌───────┐  ┌───────┐         Modbus RTU   │
│ │ HOME  │  │ BACK  │                      │
│ └───────┘  └───────┘                      │
│  ┌──────┐       ┌──────────┐              │
│  │ Node │       │      0   │              │
│  └──────┘       └──────────┘              │
│ Status                                    │
│ ─────────────────────────────────────     │
│ Active                              No    │
│ Configured                          No    │
│ Present (operational)               No    │
│ Net Status              Disconnected      │
│ Miss counter                         0    │
│ Fisical number node                  0    │
│ ┌──────────────────────────────────────┐ │
│ │                                      │ │
│ └──────────────────────────────────────┘ │
└──────────────────────────────────────────┘
```

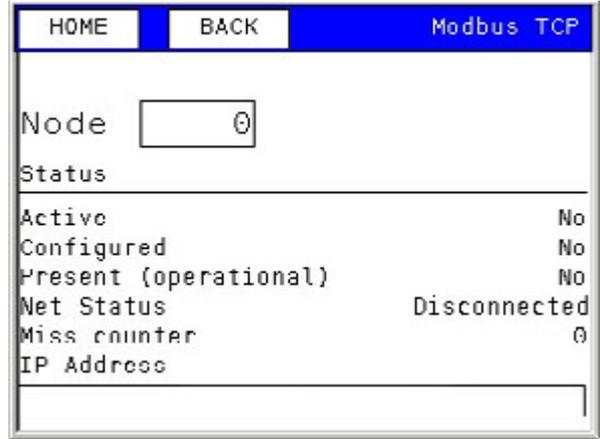This screen shows the **Node** number of the Integrated Controller and Operator Panel for the Modbus RTU protocol and information on the status of the Modbus TCP protocol.

The **HOME** button in the top left corner allows a return to the *Main Menu* while the **BACK** button returns to the *Information* screen.

System Message / Fault

```
┌─────────────────────────────────────────┐
│ ┌────────┐ ┌────────┐                    │
│ │ HOME   │ │ BACK   │            Fault   │
│ └────────┘ └────────┘                    │
│                                          │
│ Reset after watchdog signal       FALSE  │
│                                          │
│ Last Fault           │            None │  │
│ Fault address        │               0 │  │
│                                          │
│ PLC Loaded           │        0│ FALSE │  │
│                                          │
│ HMI Loaded           │        0│ FALSE │  │
│                                          │
└─────────────────────────────────────────┘
```

This screen shows useful information in the case of malfunctions.

Reset after watchdog signal indicates whether the controller restarts automatically after the program has been blocked.

Last Fault indicates when the last malfunction occurred.

Fault address indicates the address of the application program code which manifested the malfunction.

PLC Loaded shows and signals the correct upload of the PLC software.

HMI Loaded shows and signals the correct upload of the application program.

The **HOME** button in the top left corner allows a return to the *Main Menu* while the **BACK** button returns to the *Information* screen.
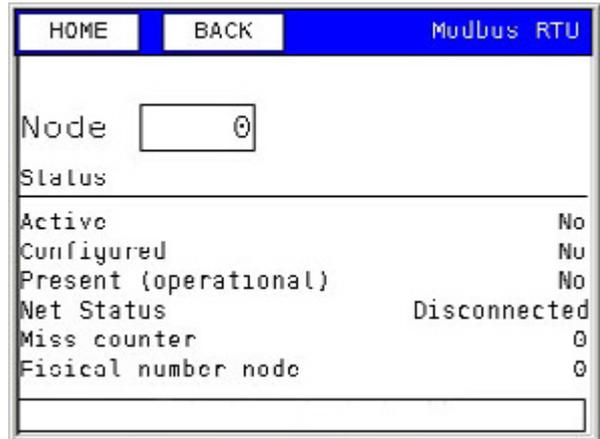
Uploading the application program

To upload the application program onto the Integrated Controller and Operator Panel, proceed as follows:

1. Connect the controller to a PC using a crossover Ethernet cable.
2. Open the Network screen of the set-up program, disable the DHCP and manually set an IP address, e.g.: 192.168.010.002.
3. Run the *GF Project LX* program on the PC.
4. Click the **Open code prj ...** button.
5. Select the required PLC program from the list that opens (the file extension is .PPJS) and click the **Open** button.
6. Select -> **Settings** from the **Communication** menu.
7. Select the **GDB** protocol in the *Device Link Manager Config* window that opens.
8. Click the **Properties** button. The *Gdb Config.* Window opens. Select the **TCP/IP** protocol from the *Port* dropdown menu and enter the *IP address* indicated at step 2 of the procedure in the IP address box.
9. Click the **OK** button and then press **OK** again.
10. Check the connection. Select -> **Connect** from the **Connection** menu. The PC connects to the controller. In the bottom right window the following words appear: **CONNECT**, in green, **NO CODE** in yellow. If **DIFFERENT CODE** appears, this means that there is already an application program, different from the one you are trying to upload, on the controller. If the word CONNECT does not appear, this means that communication related settings are incorrect. In particular, verify the IP address.

11. Upload the application onto the controller, selecting -> **Download Code** from the **Communication** menu. Click the **Yes** button in the warning message that opens. The transfer starts and is highlighted on a progress bar.
12. At the end of the transfer, a window opens and asks you to restart the system. Click **Yes**.
13. In the bottom left corner of the *Output* panel there is a list of the results of the actions performed; the message **SOURCE OK** appears in the window at the bottom.
14. Click the **Open GF Project LX page** button and wait for the page editor to open.
15. Open the page application, selecting the **OPEN page** menu.
16. Select the page required (the file extension is PAJX) from the list and click the **Open** button.
17. Select -> **Communication settings** from the **Project** menu.
18. Select the **GDB** protocol in the *Device Link Manager Config* window that opens.
19. Click the **Properties** button. The *Gdb Config*. Window opens. Select the **TCP/IP** protocol from the Port dropdown menu and enter the *IP address* indicated at step 2 of the procedure in the IP address box.
20. Click the **OK** button and then press **OK** again.
21. Transfer the program, selecting -> **Download Project** from the **Project** menu.
22. In the bottom left corner of the *Output* panel there is a list of the results of the actions performed; and the first page of the program uploaded appears on the screen of the Integrated Controller and Operator Panel.
23. Remove the Ethernet cable.

To upload a new program onto a controller that has already been programmed, follow the same procedure.

MAINTENANCE AND DIAGNOSTICS

Maintenance

Integrated Controller and Operator Panel
To clean the screen use a slightly damp soft cloth.
Do not use chemical or abrasive products.
Disconnect the power supply before cleaning the Controller.

Disposal

The Integrated Controller and Operator Panel and the CAN-IO module must be disposed of in compliance with the laws in force. Some of the components used in the devices may damage the environment unless disposed of properly.

Diagnostics

Integrated Controller and Operator Panel
See the *System Message* screen of the set-up program.

Integrated Controller and Operator Panel

Create the codes to suit the device configuration required

GF_VEDO SL | 35CT | LX0 | | | | |

Model	
3,5" Display	**35CT**

Basic memory	
FLASH 128 MB DRAM 64 MB FRAM 32 kB	**LX0**

RS485 + RS232 Ports	
Absent	**00**
seriale RS485+RS232+ slot SD card	**S1**

Lexan	
G	Gefran

Keypad	
00	Absent
K1	Present

USB Port	
00	Absent
U1	USB

CAN Port	
00	Absent
1) **C1**	CANopen
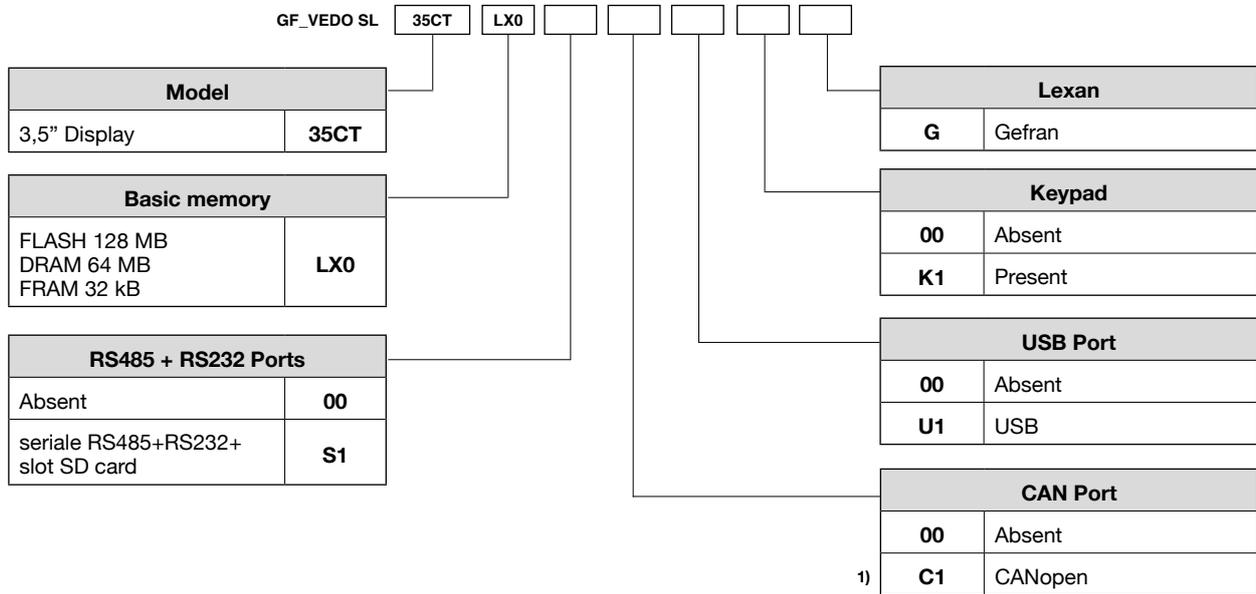
(1) Mandatory port for use with remote IO

GEFRAN spa reserves the right to make aesthetic and/or functional changes at any time and without notice.

GF_VEDO SL 35CT color touch

Model	Description	Code
GF_VEDO SL 35CT LX0 00 00 00 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection	F055183
GF_VEDO SL 35CT LX0 00 00 U1 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port and USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection.	F055185
GF_VEDO SL 35CT LX0 S1 00 00 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection	F056398
GF_VEDO SL 35CT LX0 00 C1 00 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port and CAN port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection	F056879
GF_VEDO SL 35CT LX0 S1 C1 00 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port, CAN port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection	F056880
GF_VEDO SL 35CT LX0 S1 00 U1 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port, USB port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection	F056882
GF_VEDO SL 35CT LX0 00 C1 U1 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, CAN port and USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection	F054747
GF_VEDO SL 35CT LX0 S1 C1 U1 00 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port, CAN port, USB port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection	F055906

GF_VEDO SL 35CT color touch with 6 programmable function keys

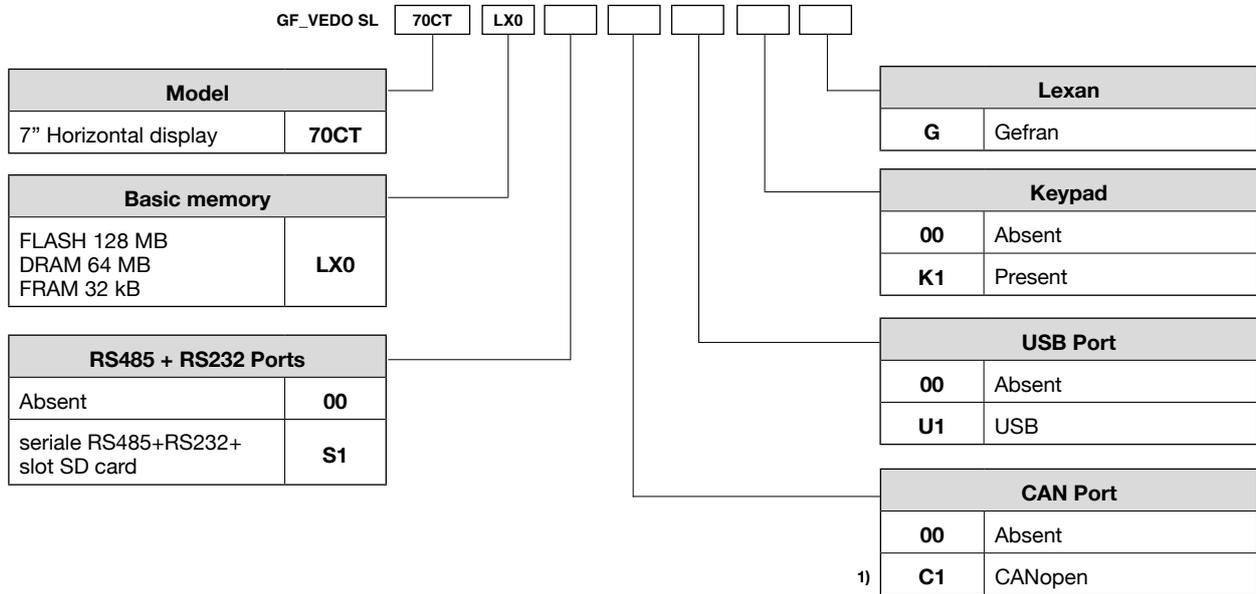| Model	Description	Code
GF_VEDO SL 35CT LX0 00 00 00 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection, 6 programmable function keys [F1…F6]	F055184
GF_VEDO SL 35CT LX0 00 00 U1 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port and USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection, 6 programmable function keys [F1…F6]	F056866
GF_VEDO SL 35CT LX0 S1 00 00 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection, 6 programmable function keys [F1…F6]	F056862
GF_VEDO SL 35CT LX0 00 C1 00 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port and CAN port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection, 6 programmable function keys [F1…F6]	F056867
GF_VEDO SL 35CT LX0 S1 C1 00 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port, CAN port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection, 6 programmable function keys [F1…F6]	F056868
GF_VEDO SL 35CT LX0 S1 00 U1 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port, USB port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection, 6 programmable function keys [F1…F6]	F056429
GF_VEDO SL 35CT LX0 00 C1 U1 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, CAN port and USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery , IP65 front panel protection, 6 programmable function keys [F1…F6]	F054746
GF_VEDO SL 35CT LX0 S1 C1 U1 K1 G	GF_VEDO SL 35CT Integrated unit for the complete management of the machine and process automation. 3.5" TFT color display, 262K colors, resolution 320x240 pixels QVGA, analog and resistive touch screen, Built-in Ethernet port, RS485 port, RS232 port, CAN port, USB port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, 6 programmable function keys [F1…F6]	F054745

Integrated Controller and Operator Panel

Create the codes to suit the device configuration required

GF_VEDO SL | 70CT | LX0 | ☐ | ☐ | ☐ | ☐ | ☐

Model	
7" Horizontal display	**70CT**

Basic memory	
FLASH 128 MB DRAM 64 MB FRAM 32 kB	**LX0**

RS485 + RS232 Ports	
Absent	**00**
seriale RS485+RS232+ slot SD card	**S1**

Lexan	
G	Gefran

Keypad	
00	Absent
K1	Present

USB Port	
00	Absent
U1	USB

CAN Port	
00	Absent
1) **C1**	CANopen

(1) Mandatory port for use with remote IO

GEFRAN spa reserves the right to make aesthetic and/or functional changes at any time and without notice.

GF_VEDO SL 70CT color touch

Model	Description	Code
GF_VEDO SL 70CT LX0 00 00 00 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F055186
GF_VEDO SL 70CT LX0 00 00 U1 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F055188
GF_VEDO SL 70CT LX0 S1 00 00 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F056340
GF_VEDO SL 70CT LX0 00 C1 00 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation.	F056900
GF_VEDO SL 70CT LX0 S1 C1 00 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F056901
GF_VEDO SL 70CT LX0 S1 00 U1 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F056902
GF_VEDO SL 70CT LX0 00 C1 U1 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation.	F054750
GF_VEDO SL 70CT LX0 S1 C1 U1 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation.	F055908

GF_VEDO SL 70CT color touch with 10 programmable function keys

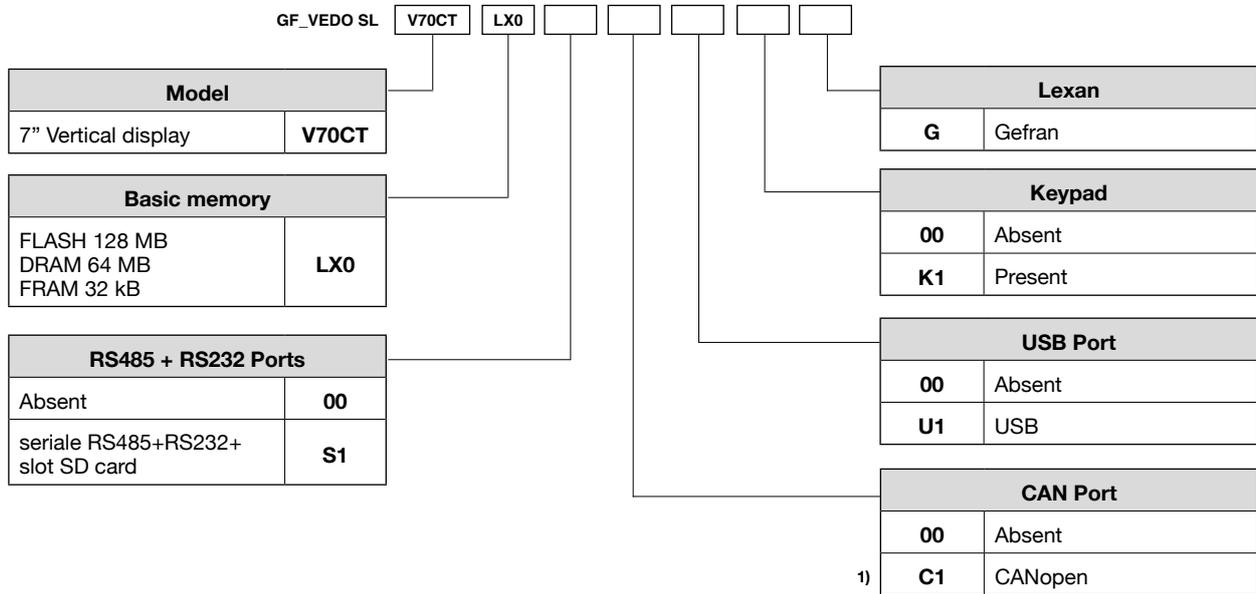| Model	Description	Code
GF_VEDO SL 70CT LX0 00 00 00 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, 10 programmable function keys [F1…F10]	F055187
GF_VEDO SL 70CT LX0 00 00 U1 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10]	F056920
GF_VEDO SL 70CT LX0 S1 00 00 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10]	F056934
GF_VEDO SL 70CT LX0 00 C1 00 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10]	F056921
GF_VEDO SL 70CT LX0 S1 C1 00 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10] .	F056922
GF_VEDO SL 70CT LX0 S1 00 U1 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10].	F056935
GF_VEDO SL 70CT LX0 00 C1 U1 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10].	F054749
GF_VEDO SL 70CT LX0 S1 C1 U1 K1 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 800x480 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10]	F054748

ORDERING CODES

Integrated Controller and Operator Panel

Create the codes to suit the device configuration required

GF_VEDO SL | V70CT | LX0 | ☐ | ☐ | ☐ | ☐ | ☐

Model	
7" Vertical display	**V70CT**

Basic memory	
FLASH 128 MB DRAM 64 MB FRAM 32 kB	**LX0**

RS485 + RS232 Ports	
Absent	**00**
seriale RS485+RS232+ slot SD card	**S1**

Lexan	
G	Gefran

Keypad	
00	Absent
K1	Present

USB Port	
00	Absent
U1	USB

CAN Port	
00	Absent
C1	CANopen

1)

(1) Mandatory port for use with remote IO

GEFRAN spa reserves the right to make aesthetic and/or functional changes at any time and without notice.

GF_VEDO SL V70CT color touch - vertical installation

Model	Description	Code
GF_VEDO SL V70CT LX0 00 00 00 00 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F0567936
GF_VEDO SL V70CT LX0 00 00 U1 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation.	F056951
GF_VEDO SL V70CT LX0 S1 00 00 00 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F056952
GF_VEDO SL V70CT LX0 00 C1 00 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F056953
GF_VEDO SL V70CT LX0 S1 C1 00 00 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation.	F056954
GF_VEDO SL V70CT LX0 S1 00 U1 00 G	GF_VEDO SL 70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F056955
GF_VEDO SL V70CT LX0 00 C1 U1 00 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F0567380
GF_VEDO SL V70CT LX0 S1 C1 U1 00 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation	F056956

GF_VEDO SL V70CT color touch with 10 programmable function keys - vertical installation

Model	Description	Code
GF_VEDO SL V70CT LX0 00 00 00 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, 10 programmable function keys [F1…F10] .	F056974
GF_VEDO SL V70CT LX0 00 00 U1 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10]	F056975
GF_VEDO SL V70CT LX0 S1 00 00 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10] .	F056976
GF_VEDO SL V70CT LX0 00 C1 00 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10] .	F056977
GF_VEDO SL V70CT LX0 S1 C1 00 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10] .	F056978
GF_VEDO SL V70CT LX0 S1 00 U1 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, USB port, RS485 port, RS232 port and SD slot, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10] .	F056979
GF_VEDO SL V70CT LX0 00 C1 U1 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10].	F056275
GF_VEDO SL V70CT LX0 S1 C1 U1 K1 G	GF_VEDO SL V70CT Integrated unit for the complete management of the machine and process automation. 7" TFT colors display, 262K colors, resolution 480x800 pixels WVGA, analog and resistive touch screen, Build-in Ethernet port, CAN port, RS485 port, RS232 port and SD slot, USB port, integrated SoftPLC [standard IEC61131-3], ARM9, 400MHz processor, Flash 128 MB, DRAM 64 MB, FRAM 32 KB, RTC with backup battery, IP65 front panel protection, horizontal installation, 10 programmable function keys [F1…F10].	F056184

Programming tool

GF_PROJECT LX

Development software that allows the writing of the application program for PLC with IEC1131 languages.
Also allows the construction, in graphic mode, of the various pages of the user interface necessary to the application developed.
Via GF_PROJECT LX it is possible to connect to the device that will host the application to debug the program and upload the upgrades.

System requirements

Operating system	Windows XP SP2 or Windows Vista or Windows 7 (32 bit)	Windows 7 (64 bit)
Processor	Intel Pentium 1 GHz	Intel Core i5 2,5 Ghz or superior
RAM	2 GB	4 GB or superior
Free space on Hard Disk	2 GB	4 GB or superior
Graphic resolution	XGA (1024 x 768 pixel)	SXGA (1280 x 1024 pixel) or superior
Browser	Microsoft Internet Explorer 8.0	Microsoft Internet Explorer 9.0 or superior
Ethernet port	1 RJ45	
DVD player	Yes	
USB port		1 USB 2.0

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