flexyPage

innovative display solutions

Product datasheet flexyPage displays

V-Line

sizes 17,8 cm (7”) - 25,6 cm (10,1”)

2022-03-18

Content

Introduction

flexyPage is a modern, flexible system for the simultaneous display of lift information and multimedial presentations in a lift car and in the floors of a building.

The flexyPage **V-Line Touch** display is an open-frame display for back-wall mounting into car or landing panels of a lift. An optional stainless steel frame also allows front mounting. By using the integrated CAN interface, external sensors, in- and output modules as well as controllers which support the CANopen standard CiA 417 CANopen-Lift can be connected. The audio signal is available via a speaker connection.
Configuration and access to the internet is provided by the LAN interface or via an optional external 4G router. If no internet access is available, software updates can be uploaded if needed and configurations imported or exported through the USB interface.

The V-Line touch displays can be used in any kind of elevators and for various applications, in new installations as well as for retrofitting.

The flexyPage functions and layout can be flexible configured, also by using the internet. Therefore, a configuration software is not required, as every up-to-date internet browser can be used.

The V-Line displays are available in the sizes V-Line 7 and V-Line 10.1, each with or without touch and in different assembly variants (interfaces: CAN, LAN, inputs, I/Os). The displays can be operated from 12-24V. Optionally, a connection for an external emergency power supply (12V) can be provided.

The main innovations of the V-Line compared to the LT-Line and DM-Line are as follows:

- Power supplies from 12 VDC to 24 VDC,
- 4 inputs + Com for signals with positive or negative logic,
- optional additional 16 inputs + Com for signals with positive or negative logic,
- optional additional 16 I/Os + Com for calls with positive logic,
- Speaker connection (2 W) is standard,
- a LAN interface 10/100 MBit,
- Connection for an external emergency power supply (12V)
- Installation depth only 30 mm

Do you need a larger displays with a touch sensor? Our DM-Line displays are available for this purpose.

Do you have questions or suggestions? Contact us at sales@flexyPage.de.

Advice for this flexyPage documentation

This product datasheet describes the technical properties of the flexyPage V-Line Touch displays. It constitutes only a small part of the whole documentation and is undergoing continual improvement.

This documentation is continuously revised and updated with the greatest of care. Nevertheless, errors cannot be excluded. We are pleased to hear your comments, helpful references and suggestions about this documentation. Please contact our sales department or support for that.
The ELFIN Technology GmbH will not accept any liability for errors or any potential damage and their consequences related to the delivery or usage of this document.

Please carefully read the user manuals, product datasheets and safety and mounting instructions before using!

The actual user manual as well as other documents and application cases can be found at the product website:

Introduction to the flexyPage system	flexypage.de/en/doc/documentation
Quick start guide	flexypage.de/en/doc/documentation
Video and tutorials	flexypage.de/en/videos-and-tutorials
flexyPage user manual	flexypage.de/en/doc/documentation
Widget descriptions	flexypage.de/en/doc/widget-descriptions
Product datasheets	flexypage.de/en/doc/documentation
Frequently asked questions	flexypage.de/en/faq
Sales contact	flexypage.de/en/sales
Support contact	flexypage.de/en/support

Area of application

The flexyPage displays were designed for use in elevators. They can be installed in new constructed buildings and in context of modernisation measures for lifts of all manufacturers. The displays can be used in both the lift's cabin and on the landings.

The flexyPage V-Line Touch display is an open-frame display for back-wall mounting into elevator COPs. It is available in different sizes, resolutions and optionally without a touch sensor. Please find the requirements concerning power supply and environmental conditions attached.

Safety instructions and restrictions

Precisely follow this document's instructions, as well as the ones you will find on the device. An exclamation mark inside a warning triangle points out that warnings and hints are available, whose disregard may lead to danger or material damage.

The flash with an arrow leads your attention to dangerous voltage. Disregarding this warning can be life-endangering.

Installation and setup is limited to professionals after having read the whole product documentation!
Restoration of damaged assemblies is only permitted for the ELFIN support. An autonomous opening of the housing may damage the device which automatically leads to the loss of the warranty claim. If the device is already damaged when delivered, do not connect it to the power supply and contact the ELFIN support!
Do not use any caustic cleaning material and avoid installing sharp devices to the glass.
Heat accumulation may cause an overheating of the flexyPage monitor controller and displays, which may lead to damages. The internal electricity is cooled passively using the housing. If this includes louvers, ensure that these are always unobstructed, so that a sufficient air circulation is provided.
Wetness and liquids can also cause bypasses or electrical shocks. Therefore, only make use of and connect the device inside a building. Ensure that liquids and carrying elements do not come in touch with the device.

Installation and maintenance

Danger: Electrical Shock
Danger to life
This product operates with a 12 VDC or 24 VDC safety extra-low voltage (SELV) power supply. Do not use incompatible adapter.

Danger: Electrical Shock
Danger to life
Input and output of this device are only suitable for low voltage signals.
Do only use the intended signals.

Caution: Explosive Risk
The installed main board is equipped with a lithium battery.
Danger of explosion if battery is incorrectly replaced. Replace only with battery of the same or equivalent type.

Warning: Burns Hazard
The product generates considerable amount of heat. The housing transports this heat to the environment and therefore gets hot. Caution when touching the housing, burns hazard!

Ambient conditions

Caution: Damage
Do not operate the product beyond the specified ambient conditions.

Danger: Explosive Risk
Do not operate the product in potentially explosive atmosphere.

Installation

Assembling

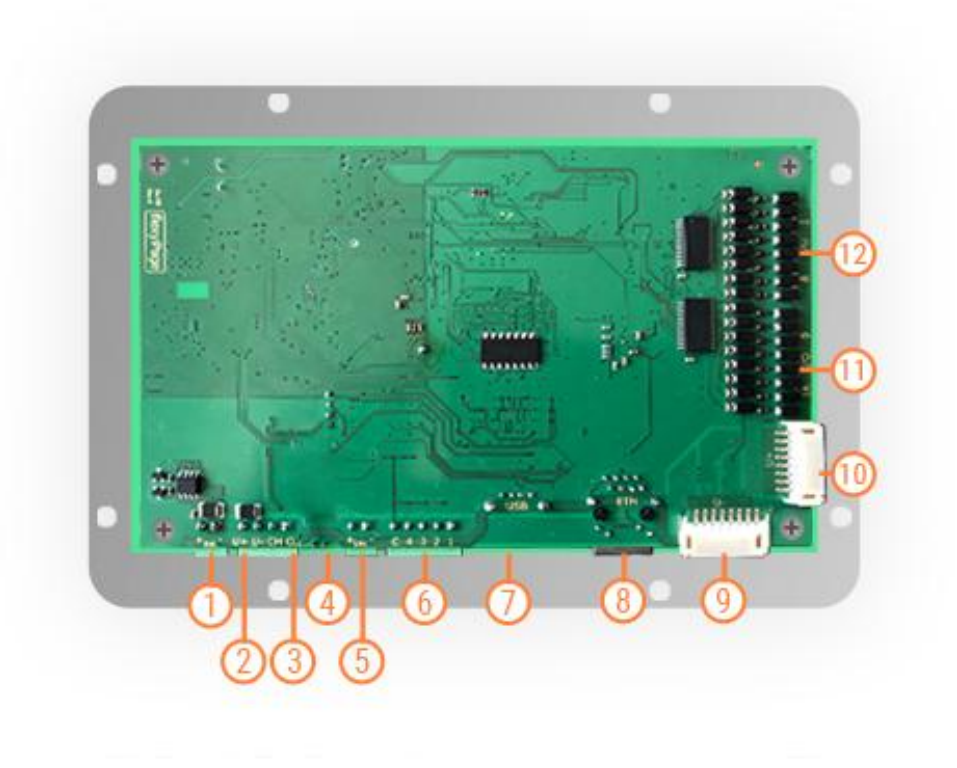
The open-frame flexyPage V-Line Touch displays are designed for back-wall mounting. Using an optional stainless steel frame it can also be mounted front mounting. A safety glass in front of the display and touch sensor protects the device. The parameter of the glass you can find in the capter ‘Size specific data of the displays’ at the end of this document.

Caution: Damage
The display and pieces of glass are very sensitive. Pay attention that you do not scrape or pollute them.

If it is necessary to consider a specific mounting direction, a sticker at the back of the device indicates this.

Electrical connection, interfaces and LED

After having installed the device mechanically, you can connect the required interfaces using the connections portrayed in the illustration below.



Terminals of a flexyPage V-Line touch display (rear side)

The flexyPage displays provide the following connecting possibilities:

Emergency power Bat- Bat+ (1)

If the display is to continue to be used in the event of a power supply failure, an emergency power supply with 12 VDC can be connected to the two terminals Bat- and Bat+.

Power supply (2) and CAN (3)

The terminals for the CAN interface and the power supply of the device are located on the CAN/Power connector. The CAN interface is compatible with ISO 11898-2 (high speed) and electrically isolated. The displays support the standard 'CANopen CiA-417 CANopen-Lift' as master and as client. The CAN bus is terminated via an internal switch. If the 'switch contact 2' is in the "ON" position, the CAN termination is switched on (120 Ω).

The following connectors can be used here.
ELFIN Part No. bl-dn35-4-CL-VIN

1	CAN-L (CL)	2	CAN-H (CH)
3	Power 12 bzw. 24 VDC	4	Power GND

Danger: Electrical Shock
Danger to life
This product operates with a 12...24 VDC safety extra-low voltage (SELV) power supply. Do not use incompatible adapter.

Switch (4)

The displays have two Term, OPT microswitches. The OPT switch is used to activate special functions. The Term switch activates the internal termination of the CAN interface with a 120 Ohm resistor. The switch position is towards display 1 and towards board 0.

Speaker (5)

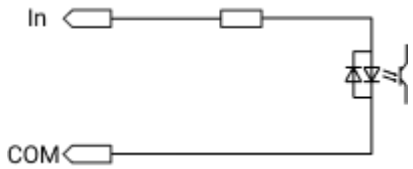
The V-Line displays have an internal 2W amplifier for the output of audio signals. Loudspeakers (4-8 Ohm) can be connected to a 2-pole output terminal for voice announcement, gong, video sound or background music.
The following connectors can be used here.
ELFIN Part No. bl-dn35-2-SP

Digital inputs I1-I4 (6)

4 inputs for discrete signals are available on the display.
The following connectors can be used here.
ELFIN Part No. bl-dn35-5-I1-COM

1	I1	2	I2
3	I3	4	I4
5	COM		

The inputs are galvanically isolated from the other signals of the device and refer to the COM signal.



++The impedance of the inputs is 5 kOhm. The input signals are recognized as high from 6 VDC.

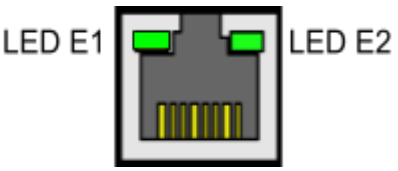
USB0 (7)

The device provides a USB 2.0 (high speed) interface. This can be used for the use of USB sticks e.g. for a firmware update or for loading configurations.

Note: Maximum load

The interface USB0 can provide max. 500 mA. If the load is too high, the internal controller may perform a reset or the interface may be blocked until the next restart! In this case use an external USB switch with its own supply voltage.

Ethernet interface ETH0 (8)



An Ethernet interface 10/100 MBit is available for configuration and connection to the Internet. The preset network parameters can be taken from the sticker on the device and the info screen during booting.
The LEDs on the Ethernet socket have the following functions:

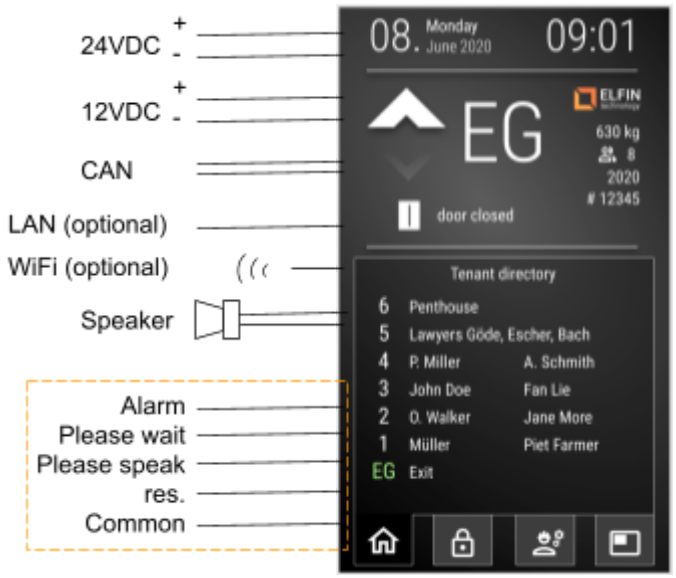
LED E1	on:	internal voltage on
	flashing:	data send/receive active
LED E2	flashing:	Connection to external network device

Mounting variants of the V-Line displays

Depending on the assembly of the module, the displays are equipped with different interfaces or inputs/outputs.

V-Line with 4 inputs (fel5B-06A)

This variant is used in applications where the connection is made via the CAN or LAN interface, e.g. as a touch display on an elevator with CANopen lift. Additionally, up to 4 discrete signals can be connected.

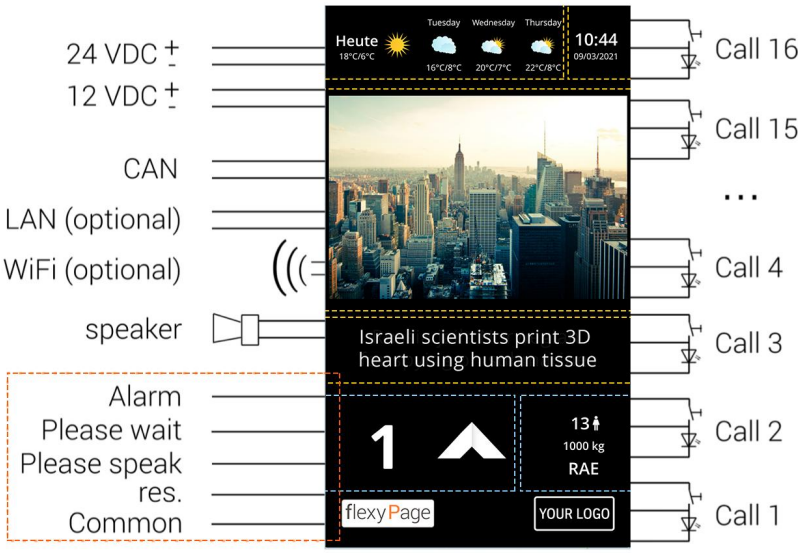


Application area: Display in lift control panels (car + floor) Control via CANopen-Lift or LAN

The 8-pin connectors for U- (9), U+ (10), I/O 9-16 (11) and I/O 1-8 (12) are not present in this assembly variant.

V-Line with 4 inputs + 16 calls (fel5B-06B)

This variant is used in applications where the connection is made via the CAN or LAN interface and the call buttons of an elevator are also to be connected, e.g. as display + voice announcement in a car operating panel or landing operating panel. The touch function also allows PIN entry for access control or activation of charging times, as well as operation of the hearing impaired function in emergency calls.



Application area: Call panels (car + floor) with a CANopen Lift control

The 8-pin connectors for U- (9), U+ (10), I/O 9-16 (11) and I/O 1-8 (12) are equipped as follows for this assembly variant.

U- for inputs/outputs and calls (9)

At the two 8-pole plugs (U-), the negative potential from the power supply is available as a reference signal for the call buttons or input/output signals.
Socket connectors with pre-assembled signal wires are available for connecting the switches.

U+ for inputs/outputs and calls (10)

At the two 8-pin connectors (U+), the plus potential from the power supply is available as a reference signal for the call buttons or input/output signals.
Socket connectors with pre-assembled signal wires are available for connecting the switches.

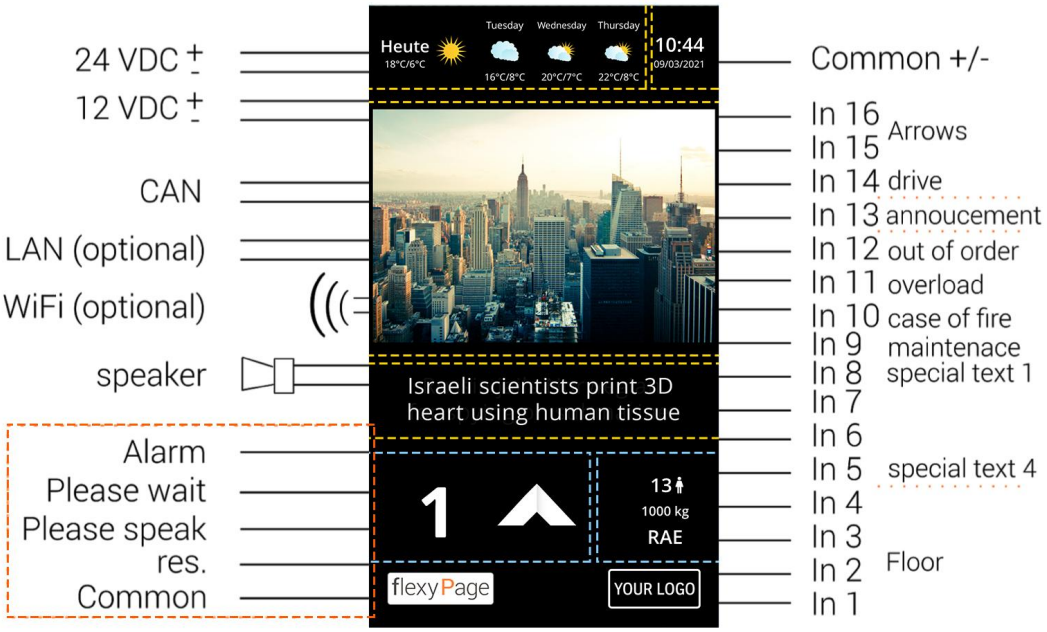
Inputs/outputs or calls 9-16 (11) 1-8 (12)

Eight signals can be connected to each of the two 8-pin connectors (I/O 9-16) (11) or (I/O 1-8) (12). The terminals can be configured by software as input, output or call. Usually, the buttons of the car or landing operating panels are connected here.
Socket connectors with pre-assembled signal wires are available for connecting the pushbuttons.

The outputs are high-side driving and the inputs for a control with common cathode. The COM potential of the inputs and outputs is internally connected to the U- of the power supply.

V-Line with 4 + 16 inputs (fel5B-06C)

This variant is used in applications where control must be via discrete signals, e.g. as display + voice announcement in a car operating panel or floor operating panel. The touch function also allows the operation of the hearing impaired function for emergency calls.



Application: Display in lift control panels (car + floor) - Control via discrete signals (positive and negative logic)

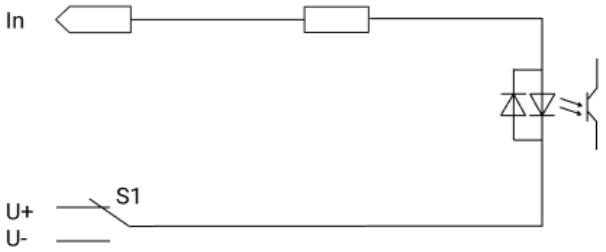
U- U+ (9)(10)

Here there is a switch S1 with which the COM signal of the inputs 1-16 can be switched to the U- or U+ potential (see following figure).

Inputs 9-16 (11) 1-8 (12)

Eight signals can be connected to each of the two 8-pin connectors (I/O 9-16) (11) or (I/O 1-8) (12). The terminals can be configured by software as inputs with different functions. These inputs are usually used to control the display in systems without CANopen.

The COM of the inputs can be connected to the U+ or the U- of the power supply using a changeover switch. The inputs can then be used for controllers with common cathode or common anode.



++The impedance of the inputs is 5 kOhm. The input signals are recognized as high from 6 VDC.

Socket connectors with pre-assembled signal wires are available for connecting the input signals.

Principle sketch

The following figures show a typical cabling in an elevator.

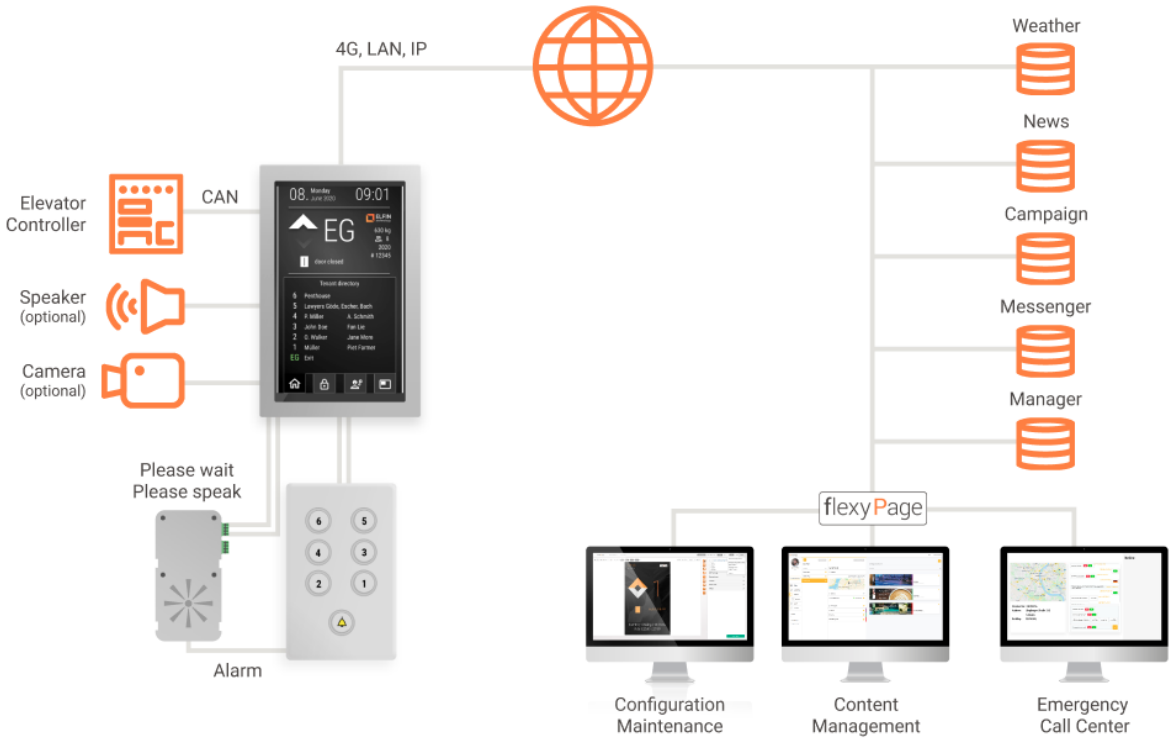


Figure: Principle drawing: Integration in a car operating panel with hearing impaired emergency call

Maintenance

NOTICE: ESD Protection
Always follow common ESD practice when you service the product!

Dust

When maintaining, ensure that the device is dust free. Clean if necessary.

Humidity

When maintaining, check if the device is dry. If not, take necessary actions to protect it.

Security updates

Security updates may appear to devices connected to the internet. After your login, search the category maintenance, check if new updates are available and install them. Further information is available in the user manual. You can also contact our support.

Aspect ratio notes

The displays V-Line 7 and 10.1 have the up to date aspect ratio of 16:9.

Technical data

General data of the V-Line displays

Designation

art. no..:	fel5B-06x-yyyz fel5B = V5 with 24V 06A = V-Line with CAN, LAN and 4 inputs 06B = V-Line with CAN, LAN, 4 inputs and 16 I/Os 06C = V-Line with CAN, LAN and 20 inputs yyy = approx. diagonal in inch z (variation) A=standard, B=PTC-Touch

Display

lifespan:	>25.000 h (backlight 100% on, 25°C)
continuous operation:	24/7
colours:	16,7 mio.
surface treatment:	anti-reflection ≦ 1.5%, hardness 3H, anti-static

Display controller

processor:	CPU: ARM Cortex-A8 (32-bit Quad Core, 1,0 GHz)
GPU:	NEON™ SIMD
main memory:	512 MB RAM DDR3
flash:	4 GB NAND
ethernet:	1 x LAN 10/100 Mbps
USB:	1 x USB 2.0
data storage:	1 x internal micro SD card (16..64 GB) optionally
CAN:	ISO/DIS 11898-2 (galvanically isolated) termination switch 120 Ohm
digital inputs:	4 x digital inputs 9..26 VDC common anode and cathode dedicated COM
signal indication:	3 x user LED (red, green, blue)
battery:	CR 1225, internal for RTC ???
Audio:	internal amplifier 2 W
optional	
WiFi:	optional via external stick
Digital inputs:	16 x digital input 9-26 VDC common anode and cathode (switchable)
Digital I/Os:	16 x digital inputs/outputs/calls 9-26 VDC common cathode

Power supply

power (min..max): 12 .. 28 VDC (24V version)
reverse pole protection: yes, internal
fuse: none
electrical isolation: yes, GND is connected to the shield via internal capacitor (2kV)
current capacity USB +5V: 500 mA
energy requirements: 2,8 W (hibernation, backlight off, no external load)

Housing

material: sheet steel, hot-dip galvanised 1 mm

Ambient conditions

storage temperature: -20..+75°C
relative humidity: 5% .. 95%, no condensation
protection class: IP20

The displays comply with the current RoHS guidelines.

Size specific data of the displays V-Line 7 and 10,1

Product	V-Line 7 Touch	V-Line 10,1 Touch
art. no.:	fel5B-06x-70B	fel5B-06x-101B
Display		
diagonal:	177,8 mm (7,0”)	256,5 mm (10,1”)
active area:	154 x 85 mm	217 x 136 mm
resolution:	1024 x 600 px	1280 x 800 px
aspect ratio:	16:9	16:9
viewing angle:	v 170° / h 170°	v 170° / h 170°
brightness:	600 cd/m2	850 cd/m2
contrast (static):	800 : 1	900 : 1
Size and weight		
housing dimension (HxWxD):	202 x 138 x 30 mm	272 x 190 x 30 mm
weight:	0,5 kg	1,0 kg
Ambient conditions		
ambient air temperature:	-20..+50°C	-20..+50°C
	at sea level, derated by 1°C per 300 m above sea level to a maximum of 2000 m.	
Power supply		
supply voltage:	24 VDC	24 VDC
starting current (max):	1,5 A	1,5 A
energy requirements: (active, brightness 100%, no external load)	8 W	10 W
Cover lense		
Structure:	G+G tempered glass >6H	
lense thickness:	1,8 mm	1,1 mm

Mechanical drawings

The mechanical drawings for the LT-Line products can be found on our homepage under https://flexypage.de/en/documentation

Hardware product history

Version	Release Date	Changes
1.0	2020-08-01	Serial production V-Line 7

Software product history

Have a look at flexypage.de/en/firmware-historie

Document history

Version	Release Date	Changes
0.8	2020-07-15	Pre version
0.9	2022-03-18	New address

Your contact persons

Even an extensive documentation cannot answer all questions. Do you have questions or suggestions concerning our flexyPage system? We look forward to your requests. You can contact us at:

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