

Product datasheet flexyPage displays

# LT-Line

sizes from 25,6 cm (10,1") up to 116,8 cm (46")



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# 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 **LT-Line** 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 internal 4G modem. If no internet access is available, software updates can be uploaded if needed and configurations imported or exported through the USB interface.

The LT-Line displays can be used in any lift 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.

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



Do you have questions or suggestions? Contact us at [sales@flexyPage.de](mailto:sales@flexyPage.de).

# Advice for this flexyPage documentation

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



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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

Quick start guide

Video and tutorials

flexyPage user manual

Widget descriptions

Product datasheets

Frequently asked questions

Sales contact

Support contact

[flexypage.de/en/doc/documentation](https://flexypage.de/en/doc/documentation)

[flexypage.de/en/doc/documentation](https://flexypage.de/en/doc/documentation)

[flexypage.de/en/videos-and-tutorials](https://flexypage.de/en/videos-and-tutorials)

[flexypage.de/en/doc/documentation](https://flexypage.de/en/doc/documentation)

[flexypage.de/en/doc/widget-descriptions](https://flexypage.de/en/doc/widget-descriptions)

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[flexypage.de/en/sales](https://flexypage.de/en/sales)

[flexypage.de/en/support](https://flexypage.de/en/support)

# Area of application

The flexyPage displays were designed for use in lifts. 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 LT-Line display is an open-frame display for back-wall mounting into indicator boards and panels. It is available in different sizes, resolutions and optionally with 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 LT-Line displays are designed for back-wall mounting. Using an optional stainless steel frame it can also be mounted front mounting. To protect the displays, a pane of acrylic or safety glass in front of the display is required. It can be ordered separately.



### 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 display

The flexyPage displays provide the following connecting possibilities:

### User LEDs

Next to the connection terminals there are three user LEDs - LPC, PCI and CPU. These serve to output internal status states.

### SIM card

In addition to the user LEDs, there is also a SIM card holder that can hold a SIM card for an optional 4G module (LTE) (Art. No. fel4A-02a-opt-lte).

## USB0

The device includes a USB 2.0 (high speed) interface. It is possible to use USB port, e.g. to install a firmware update or to load configurations.

### Note: Load

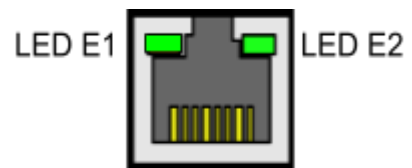
The interface max. provides 500 mA. If the load exceeds this, the internal controller may cause a reset or the interface is blocked until the next reset! In this case, use an external USB port with an own power supply.

## Ethernet interface

To configure and to connect to the internet an ethernet interfaces 10/100 MBit is provided. The default network parameter can be taken from the sticker.

The LEDs at the ethernet socket have the following function:

LED E1            on:    internal power on  
                  flashing: network traffic active  
LED E2            flashing: connection to external network device



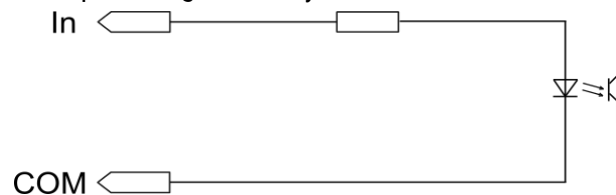
## Digital inputs

Four inputs for discrete signals are available on the monitor controller.

The following connectors can be used here: ELFIN ArtNo. 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 detected as high from 6 VDC.

## Speaker - Audio

The displays is equipped with an internal 6W amplifier for the output of audio signals. Speakers (4-8 ohms) for voice announcement, gong, video sound or background music can be connected to a 2-pin output terminal.

The following connectors can be used here: ELFIN ArtNo. bl-dn35-2-SP



## Switch

The monitor controller has two internal micro switches OPT, Term. The OPT switch activates special functions. The Term switch activates the internal termination of the CAN interface with a 120 ohm resistor.

## CAN + Power supply

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 galvanically 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 connection of the CAN termination (120  $\Omega$ ) takes place.

The following connectors can be used here: ELFIN ArtNr. bl-dn35-4-CL-VIN

1	CAN-L (CL)	2	CAN-H (CH)
3	Power 22..26 VDC	4	Power GND



### **Danger: Electrical Shock**

Danger to life

This product operates with a 24...28 VDC safety extra-low voltage (SELV) power supply. Do not use incompatible adapter.

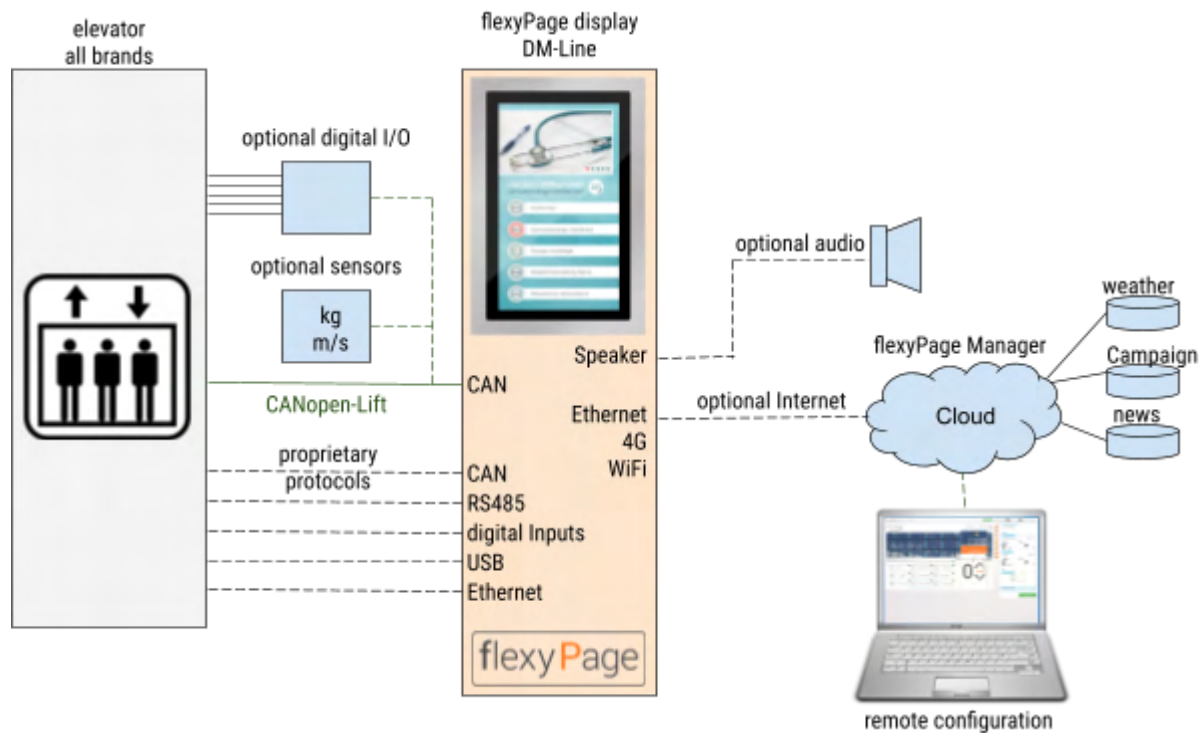


### **NOTICE: Power GND**

The Power GND is internal connected with the housing of the display.

## Principle sketch

The following illustration shows a usual cabling inside a lift.



Principle sketch of the integration inside a lift

## 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 LT-Line 10.4, 12.1, 15.0, 17 and 19 have an aspect ratio of 4:3.

The displays LT-Line 10.1, 12.1, 15.6, 18,5, 21.5, 24, 27, 32, 42, 46 and 55 have the up to date aspect ratio of 16:9.

The display LT-Line 29 and 38 are stretched displays with an aspect ratio of 32:9.

## Technical data

### General data of the LT-Line displays

#### Designation

art. no...: fel4B-02A-xxxy-zzz  
fel4B = V4 with 24V, LVDS  
fel4C = V4 with 12V, LVDS  
02A = LT-Line with CAN and 4 inputs  
xxx = approx. diagonal in inch  
y (variation) A=standard, B=PTC-Touch  
zzz = options e.g. 4G

#### Display

lifespan: >50.000 h (backlight 100% on)  
continuous operation: 24/7  
colours: 16,7 mio.  
surface treatment: anti-reflection  $\leq 1.5\%$ , hardness 3H, anti-static

#### Display controller

processor: CPU: ARM Cortex-A9 (32-bit Quad Core, 1,0 GHz)  
GPU: NEON™ Media Processing Engine; GC2000 (3D), GC320 (2D), GC355 (Vector), IPUv3  
main memory: 1 GB RAM DDR3  
flash: 4 GB NAND  
ethernet: 1 x LAN 10/100 Mbps  
USB: 1 x USB 2.0  
WiFi: via internal modul optionally  
LTE: via internal modul optionally  
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 17..26 VDC (galvanically isolated)  
signal indication: 3 x user LED (red, green)  
battery: CR 2032, internal for RTC ???

## Power supply

power (min..max):	see details below
reverse pole protection:	yes, internal
fuse:	none
electrical isolation:	GND and shield is connected to the housing
current capacity USB +5V:	500 mA
energy requirements:	2,9 W (hibernation, backlight off, no external load)

## Housing

material:	sheet steel, hot-dip galvanised 1 mm
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## 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 LT-Line 10,1

Product	LT-Line 10,1
art. no.:	fel4B-02A-101A
Display	
diagonal:	256 mm (10,1")
active area:	217 x 135 mm
resolution:	1280 x 800 px
aspect ratio:	16:9
viewing angle:	v 170° / h 170°
brightness:	300 cd/m <sup>2</sup>
contrast (static):	1300 : 1
Size and weight	
housing dimension (LxWxH):	175 x 233 x 32 mm
weight:	0,95 kg
Ambient conditions	
ambient air temperature:	-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:	18..28 VDC
starting current (max):	1,5 A
energy requirements: (active, brightness 100%, no external load)	12 W

## Size specific data of the displays LT-Line 12,1

Product	LT-Line 12,1 16:9
art. no.:	fel4B-02A-121A2
Display	
diagonal:	307 mm (12,1")
active area:	261 x 163 mm
resolution:	1200 x 800 px
	16:9
viewing angle:	v 176° / h 176°
brightness:	400 cd/m <sup>2</sup>
contrast (static):	1000 : 1
Size and weight	
housing dimension (LxWxH):	
weight:	
Ambient conditions	
ambient air temperature:	-10..+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:	18..28 VDC
starting current (max):	1,8 A
energy requirements: (active, brightness 100%, no external load)	21 W

## Size specific data of the displays LT-Line 15,6 and 18,5

Product	LT-Line 15,6 Rev 1	LT-Line 15,6 Rev 2	LT-Line 18,5
art. no.:	fel4B-02A-156A	fel4B-02A-156A	fel4B-02A-185A
<b>Display</b>			
diagonal:	396 mm (15,6")	396 mm (15,6")	470 mm (18,5")
active area:	344 x 194 mm	344 x 194 mm	409 x 230 mm
resolution:	1920 x 1080	1920 x 1080	1920 x 1080 px
	16:9	16:9	16:9
viewing angle:	v 170° / h 170°	v 178° / h 178°	v 178° / h 178°
brightness:	400 cd/m2	500 cd/m2	500 cd/m2
contrast (static):	1500 : 1	1000 : 1	1000 : 1
<b>Size and weight</b>			
housing dimension (LxWxH):	385 x 237 x 42 mm	385 x 237 x 42 mm	455 x 280 x 33 mm
weight:	3,0 kg	3,0 kg	2,7 kg
<b>Ambient conditions</b>			
ambient air temperature:	-20..+50°C	-20..+50°C	0..+50°C
	at sea level, derated by 1°C per 300 m above sea level to a maximum of 2000 m.		
<b>Power supply</b>			
supply voltage:	18..28 VDC	18..28 VDC	18..28 VDC
starting current (max):	2,4 A	2,4 A	2,8 A
energy requirements: (active, brightness 100%, no external load)	24 W	24 W	32 W

## Size specific data of the displays LT-Line 21.5, 24 and 29

Product	LT-Line 21,5	LT-Line 24	LT-Line 29
art. no.:	fel4B-02A-215A	fel4B-02A-240A	fel4B-02A-290A
Display			
diagonal:	546 mm (21,5")	609 mm (24,0")	730 mm (29")
active area:	476 x 268 mm	531 x 299 mm	700 x 197 mm
resolution:	1920 x 1080 px	1920 x 1080 px	1920 x 540 px
	16:9	16:9	32:9
viewing angle:	v 178° / h 178°	v 178° / h 178°	v 178° / h 178°
brightness:	300 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>
contrast (static):	5000 : 1	5000 : 1	4500 : 1
Size and weight			
housing dimension (LxWxH):	534 x 330 x 48 mm	580 x 346 x 45 mm	754 x 250 x 45 mm
weight:			6,0 kg
Ambient conditions			
ambient air temperature:	0..+50°C	0..+50°C	0..+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:	18..28 VDC	18..28 VDC	24 VDC
starting current (max):	2,6 A	2,8 A	3,8 A
energy requirements: (active, brightness 100%, no external load)	33 W	39 W	52 W



## Size specific data of the displays LT-Line 32

Product	LT-Line 32	LT-Line 32 High Bright
art. no.:	fel4B-02A-320A	fel4B-02A-320A2
Display		
diagonal:	810 mm (32,0")	810 mm (32,0")
active area:	698 x 393 mm	698 x 393 mm
resolution:	1920 x 1080 px	1920 x 1080 px
aspect ratio:	16:9	16:9
viewing angle:	v 178° / h 178°	v 178° / h 178°
brightness:	400 cd/m2	1500 cd/m2
contrast (static):	700 : 1	4000 : 1
Size and weight		
housing dimension (LxWxH):		
weight:		
Ambient conditions		
ambient air temperature:	0..+50°C	0..+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):	6,8 A	10,1 A
energy requirements: (active, brightness 100%, no external load)		114 W

## Size specific data of the displays LT-Line 38 and 46

Product	LT-Line 38	LT-Line 38 High Bright	LT-Line 46
art. no.:	fel4B-02A-380A	fel4B-02A-380A2	fel4B-02A-460A
Display			
diagonal:	940 mm (38")	940 mm (38")	1170 mm (46")
active area:	905 x 255 mm	905 x 255 mm	1018 x 599 mm
resolution:	1920 x 540 px	1920 x 540 px	1920 x 1080 px
aspect ratio:	32:9	32:9	16:9
viewing angle:	v 178° / h 178°	v 178° / h 178°	v 178° / h 178°
brightness:	700 cd/m <sup>2</sup>	1000 cd/m <sup>2</sup>	700 cd/m <sup>2</sup>
contrast (static):	4000 : 1	4000 : 1	4000 : 1
Size and weight			
housing dimension (LxWxH):	995 x 335 x 55 mm	995 x 335 x 55 mm	
weight:	12,5 kg	12,5 kg	
Ambient conditions			
ambient air temperature:	0..+50°C	0..+50°C	0..+45°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	24 VDC
starting current (max):	4,2 A	4,6 A	8,1 A
energy requirements: (active, brightness 100%, no external load)	70 W	91 W	96 W

## Mechanical drawings



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

## Hardware product history

Version	Release Date	Changes
1.0	2015-05-01	Serial production with and without touch
1.1	2016-12-30	LT-Line 15,6 Touch fel1A-02A-156B-KEL and LT-Line 21,5 Touch fel1A-02A-215B-KEL removed, will be replaced by new DM-Line
1.2	2017-01-10	LT-Line 15,6 fel1A-02A-156C-KEL replaces fel1A-02A-156A-KEL
1.3	2017-02-08	LT-Line 15,1 fel1A-02A-151A-KEL - panoramic display added
2.0	2017-09-01	LT-Line V2 all sizes with 12 V, 4 Input, speaker
2.1	2017-09-29	LT-Line V1 sizes 29" and 38"
4.0	2018-12-20	LT-Line V4 (2019) 12V + 24V and 18.5", 32" and 46"

## Software product history

Have a look at [flexypage.de/en/firmware-historie](https://flexypage.de/en/firmware-historie)

## Document history

Version	Release Date	Changes
1.0	2016-11-04	final translation
1.1	2017-02-08	LT-Line 15,6 Touch + LT-Line 21,5 Touch removed, LT-Line 15,1 added, LT-Line 15,6 FullHD added, Aspect ratio notes added
2.0	2017-09-29	modification for LT-Line V2 + stretched displays
2.1	2017-11-02	typo
3.0	2018-12-30	LT-Line V4 (2019) added
3.1	2019-12-14	special notice: Ethernet cable length removed
3.2	2020-04-22	update technical data, company rename to ELFIN Technology GmbH
3.3	2020-09-30	update technical data, typo
3.4	2020-10-21	product updates
3.5	2022-03-18	new address
3.6	2023-08-23	update GND signal description

# 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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