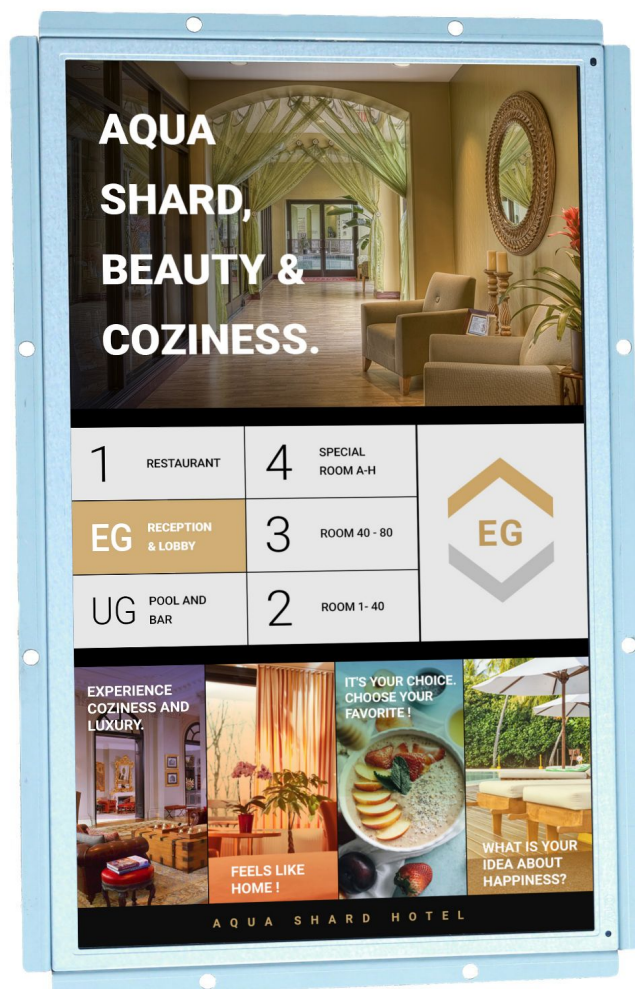


Product datasheet flexyPage displays

LT-Line

sizes from 25,6 cm (10,1") up to 94,0 cm (38,0")



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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. 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. An audio signal is provided by a line-out interface and an optionally loudspeaker connection. Configuration and access to the internet is provided by the LAN interface. 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 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 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 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 tutorials
flexyPage user manual
Widget descriptions
Product datasheets
Frequently asked questions
Sales contact
Support contact

flexypage.de/en/doc/documentation
flexypage.de/en/doc/documentation
flexypage.de/en/tags/video-tutorials
flexypage.de/en/doc/documentation
flexypage.de/en/doc/widget-descriptions
flexypage.de/en/doc/technical-documentation
flexypage.de/en/faq
flexypage.de/en/sales
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. To protect them, 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 LT-Line display V1

The flexyPage displays provide the following connecting possibilities:

USB0

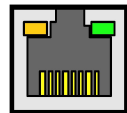
The device includes a USB 2.0 (high speed) interface. It is possible to use USB port, e.g. to install a firmware update or to load configurations.

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 interfaces ETH0.0/ETH0.1

To configure and to connect to the internet, two ethernet interfaces 10/100 MBit are provided. They are equally and internally connected by a switch. The default network parameter can be taken from the sticker.



The LEDs at the ethernet socket have the following function:

LED1	LED2
 No activity	 No Link
 Activity	 10/100 MBit Link

Notice: Cable Length

If your Ethernet cable is long (normative limit = 30 m) or leaves a building, then an additional protection against surges is required.

Add an external surge protector in such cases. E.g. ground the Ethernet cable shield where it enters the building or your cabinet.

If you just connect to a nearby switch, such countermeasures are not required.

Line-out - Audio

The line-out signal is provided by a 3,5 mm jag plug. It is possible to connect loudspeakers for the voice announcement, a gong or background music.

CAN

The CAN bus interface enables the connection to a high speed CAN bus. The displays support the standard 'CANopen CiA- 417 CANopen-Lift' as master or as client. The Weidmüller plug, art. no. 1954480000 (3pol.) can be used.

- Terminals of the CAN interface:
 - CH → CAN-High
 - CL → CAN-Low
 - CG → CAN-GND (mass)

The interface is compatible with ISO 11898-2 (high speed) and is galvanically isolated. The termination of the CAN bus is controlled by an internal switch. The CAN bus is terminated (120 Ω), if the switch is in position "ON".

CAN LEDs

Between the switch for the termination and the CAN connection, two CAN LEDs are available. They signal the internal status and inform about the CAN bus status.



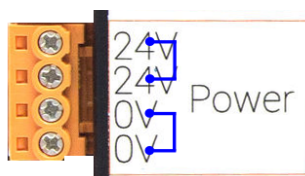
Power supply

LT-Line Display V1

The terminals "Power 24V + 0V" provide the power supply of the display. The Weidmüller plug, art. no. 1954470000 (4pol.) can be used.

The internal contacts of the terminals are connected by the same signal.

Nominal data of the power supply: 24 VDC $\pm$ 10%, max. 5A



Terminal block: "Power 24V + 0V"



Danger: Electrical shock

Danger to life

This product operates with 20...28 VDC safety extra-low voltage.

Do not use incompatible adapter.

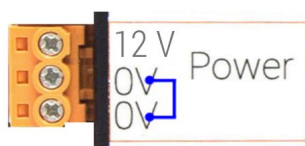
To protect the device against EMI, the terminal 0V should be connected with PE.

LT-Line Display V2

The terminals "Power 12V + 0V" provide the power supply of the display. The Weidmüller plug, art. no. 1954480000 (3pol.) can be used.

The internal contacts of the terminals are connected by the same signal.

Nominal data of the power supply: 12 VDC $\pm$ 5%, max. 5A



Terminal block: "Power 12V + 0V"

**Danger: Electrical shock**

Danger to life

This product operates with 12 VDC safety extra-low voltage.

Do not use incompatible adapter.

To protect the device against EMI, the terminal 0V should be connected with PE.

Digital input and output IO1-IO4

The display in version V1 provides four programmable in- and output terminals, which can also be used as calls. The Weidmüller plug, art. no. 1954470000 (4pol.) can be used.

The signal levels are 24 VDC, positive logic (high side switch).

The in and outputs are not galvanically isolated.

The inputs' impedance is at 5 kOhm.

**Attention: Inductive load**

If inductive loads are plugged in parallel to the outputs, an additional protection (freewheeling diode, varistor) is needed to protect the device from destroyal.

Digital input and output I1-I4

The display in version V2 provides four programmable input terminals. The Weidmüller plug, art. no. 1954470000 (4pol.) can be used.

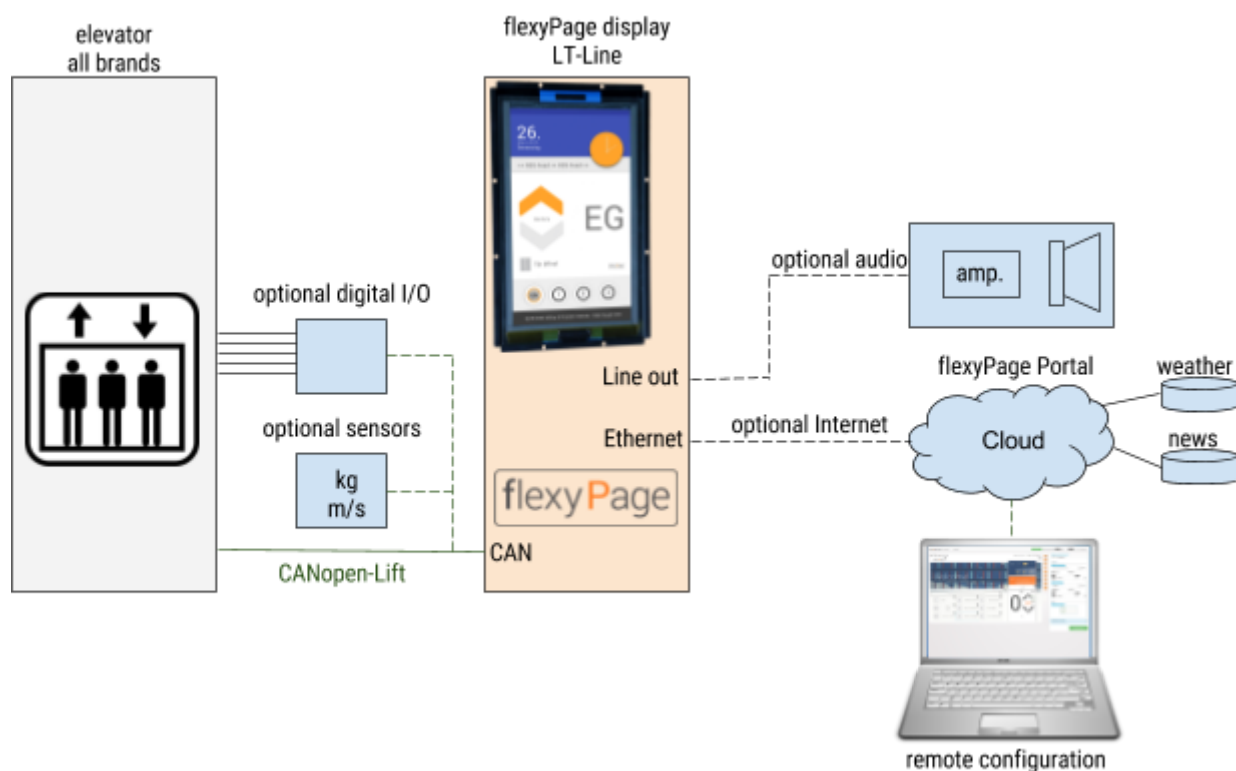
The signal levels are 24 VDC, positive logic.

The inputs are not galvanically isolated.

The inputs' impedance is at 5 kOhm.

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 LT-Line displays 10,4", 12,1", 15,0" 17,0" and 19,0" have an aspect ratio of 4:3.

The LT-Line displays 10,1", 12,1", 15,6" 17,3", 21,5" and 24,0" have the up to date aspect ratio of 16:9.

The LT-Line display 15,1" is a stretched display with an aspect ratio of 5:1. The LT-Line displays 29,0" and 38,0" are stretched displays with an aspect ratio of 32:9.

Technical data

General data of the LT-Line displays

Designation

art. no.: fel3B-02A-xxxy-KEL
fel1A = V1 with 24V, LVDS
fel3B = V2 with 12V, LVDS
02A = LT-Line with CAN and 4 Eingängen
xxx = approx. diagonal in inch
y (variation) A=standard, B=PTC-Touch

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

Touch (optional)

typ: PTC, single

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: 2 x LAN 10/100 Mbps (internal switch)
USB: 1 x USB 2.0
data storage: 1 x internal micro SD card (8..32 GB) optionally
CAN: ISO/DIS 11898-2 (galvanically isolated)
termination switch 120 Ohm
digital I/O: 4 x digital inputs 17..26 VDC (V2)
4 x digital inputs/outputs/calls 17..26 VDC (V1)
outputs short circuit protected
signal indication: 2 x user LED (red, green)

Power supply

power (min..max): 18 .. 28 VDC (V1)

power (min..max): 11 .. 13 VDC (V2)

reverse pole protection: yes, internal

fuse: none

electrical isolation: no, GND is connected to the interfaces and the PE contact

current capacity USB +5V: 500 mA

energy requirements: 2,9 W (hibernation, backlight off, no external load)

Case

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 LT-Line displays 10,1 and 10,4

Product	LT-Line 10,1	LT-Line 10,4
Art. nr.:	fel3B-02A-101A-KEL	fel3B-02A-104A-KEL
Display		
diagonal:	256 mm (10,1")	264 mm (10,4")
active area:	217 x 135 mm	210 x 158 mm
resolution:	1280 x 800 px	1024 x 768 px
aspect ratio:	16:9	4:3
viewing angle:	v 170° / h 170°	v 176° / h 176°
brightness:	300 cd/m2	500 cd/m2
contrast (static):	1300 : 1	1000 : 1
Size and weight		
housing dimension (LxWxH):	175 x 233 x 32 mm	228 x 219 x 32 mm
weight:	0,95 kg	1,3 kg
Ambient conditions		
ambient air temperature:	-20..+60°C	-20..+60°C
	at sea level, derated by 1°C per 300 m above sea level to a maximum of 2000 m.	
Power supply		
supply voltage:	12 VDC	12 VDC
starting current (max):	1,5 A	1,5 A
energy requirements: (active, brightness 100%, no external load)	12,0 A	19,2 A

Size specific data of the LT-Line displays 12,1 4:3 and 16:9

Product	LT-Line 12,1 4:3	LT-Line 12,1 16:9
Art. nr.:	fel3B-02A-121A	fel3B-02A-121A2
Display		
diagonal:	307 mm (12,1")	307 mm (12,1")
active area:	246 x 184 mm	261 x 163 mm
resolution:	1024 x 768 px	1200 x 800 px
	4:3	16:9
viewing angle:	v 140° / h 160°	v 176° / h 176°
brightness:	500 cd/m2	400 cd/m2
contrast (static):	700 : 1	1000 : 1
Size and weight		
housing dimension (LxWxH):		
weight:		
Ambient conditions		
ambient air temperature:	-20..+60°C	-10..+60°C
	at sea level, derated by 1°C per 300 m above sea level to a maximum of 2000 m.	
Power supply		
supply voltage:	12 VDC	12 VDC
starting current (max):	2,1 A	1,8 A
energy requirements: (active, brightness 100%, no external load)	21 W	21 W

Size specific data of the LT-Line displays 15,0, 15,1 and 15,6

Product	LT-Line 15,0	LT-Line 15,1	LT-Line 15,6
Art. nr.:	fel3B-02A-150A-KEL	fel1A-02A-151A-KEL	fel3B-02A-156C-KEL
Display			
diagonal:	381 mm (15,0")	384 mm (15,1")	396 mm (15,6")
active area:	304 x 228 mm	376 x 73 mm	344 x 194 mm
resolution:	1024 x 768 px	1280 x 248 px	1920 x 1080
	4:3	5:1	16:9
viewing angle:	v 140° / h 160°	v 178° / h 178°	v 170° / h 170°
brightness:	400 cd/m2	300 cd/m2	400 cd/m2
contrast (static):	700 : 1	2000 : 1	1500 : 1
Size and weight			
housing dimension (LxWxH):	362 x 290 x 42 mm	398 x 131 x 49 mm	385 x 237 x 42 mm
weight:		1,9 kg	3,0 kg
Ambient conditions			
ambient air temperature:	-30..+60°C	0..+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:	12 VDC	12 VDC	12 VDC
starting current (max):	2,4 A	1,8 A	2,4 A
energy requirements: (active, brightness 100%, no external load)	19 W	18 W	24 W

Size specific data of the LT-Line displays 17,0, 17,3 and 19,0

Product	LT-Line 17,0	LT-Line 17,3	LT-Line 19,0
Art. nr.:	fel3B-02A-170A-KEL	fel3B-02A-173A-KEL	fel3B-02A-190A-KEL
Display			
diagonal:	432 mm (17,0")	439 mm (17,3")	482 mm (19,0")
active area:	338 x 270 mm	382 x 215 mm	376 x 301 mm
resolution:	1280 x 1024 px	1920 x 1080 px	1280 x 1024 px
	4:3	16:9	4:3
viewing angle:	v 140° / h 160°	v 140° / h 160°	v 178° / h 178°
brightness:	350 cd/m2	400 cd/m2	300 cd/m2
contrast (static):	800 : 1	600 : 1	2000 : 1
Size and weight			
housing dimension (LxWxH):	395 x 334 x 42 mm	425 x 269 x 37 mm	433 x 361 x 45 mm
weight:		2,7 kg	
Ambient conditions			
ambient air temperature:	-30..+60°C	0..+60°C	0..+60°C
	auf Meereshöhe, verringert sich um 1°C alle 300 Höhenmeter, max. 2000 m		
Power supply			
supply voltage:	12 VDC	12 VDC	12 VDC
starting current (max):	2,8 A	1,70 A	2,8 A
energy requirements: (active, brightness 100%, no external load)	29 W	22 W	32 W

Size specific data of the LT-Line displays 21,5, 24,0 and 29,0

Product	LT-Line 21,5	LT-Line 24,0	LT-Line 29,0
Art. nr.:	fel3B-02A-215A-KEL	fel3B-02A-240A-KEL	fel1A-02A-290A-KEL
Display			
diagonal:	546 mm (21,5")	609 mm (24,0")	730 mm (29,0")
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/m2	300 cd/m2	1000 cd/m2
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:			
Ambient conditions			
ambient air temperature:	0..+60°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:	12 VDC	12 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 LT-Line display 38,0

Product	LT-Line 38,0
Art. nr.:	fel1A-02A-380A-KEL
Display	
diagonal:	940 mm (38,0")
active area:	905 x 255 mm
resolution:	1920 x 540 px
aspect ratio:	32:9
viewing angle:	v 178° / h 178°
brightness:	1000 cd/m2
contrast (static):	4000 : 1
Size and weight	
housing dimension (LxWxH):	944 x 302 x 48 mm
weight:	7,8 kg
Ambient conditions	
ambient air temperature:	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
starting current (max):	4,2 A
energy requirements: (active, brightness 100%, no external load)	71 W

Mechanical drawings



The mechanical drawings for the LT-Line products can be found on our homepage under <https://flexypage.de/en/technical-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 29,0" and 38,0"

Software product history

Have a look at 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

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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