flexyPage

innovative display solutions

Product datasheet flexyPage displays

DM-Line

sizes from 39,6 cm (15,6”) - 94 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 **DM-Line** display is an open-frame touch-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 DM-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.

You do not need a touch sensor? Our LT-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 DM-Line 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 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 tutorials	flexypage.de/en/tags/video-tutorials
flexyPage user manual	flexypage.de/en/doc/documentation
Widget descriptions	flexypage.de/en/doc/widget-descriptions
Product datasheets	flexypage.de/en/doc/technical-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 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 DM-Line touch display is an open-frame display for back-wall mounting into car operating panels and landing panels. It is available in different sizes, resolutions and mounting kits. 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 24...28 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 DM-Line displays are designed for back-wall mounting. Using an optional stainless steel frame it can also be mounted front mounting.

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

Notice: Cable Length

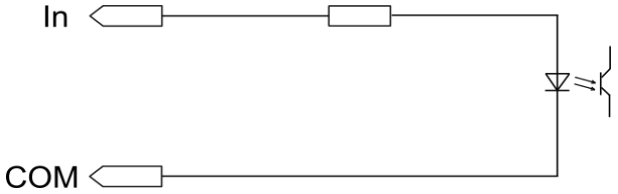
If your Ethernet cable is long (normative limit = 30 m) or leaves a building, then an additional protection against surges is required.
Add an external surge protector is such cases. E.g. ground the Ethernet cable shield where it enters the building or your cabinet.
If you just connect to a nearby switch, such countermeasures are not required.

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

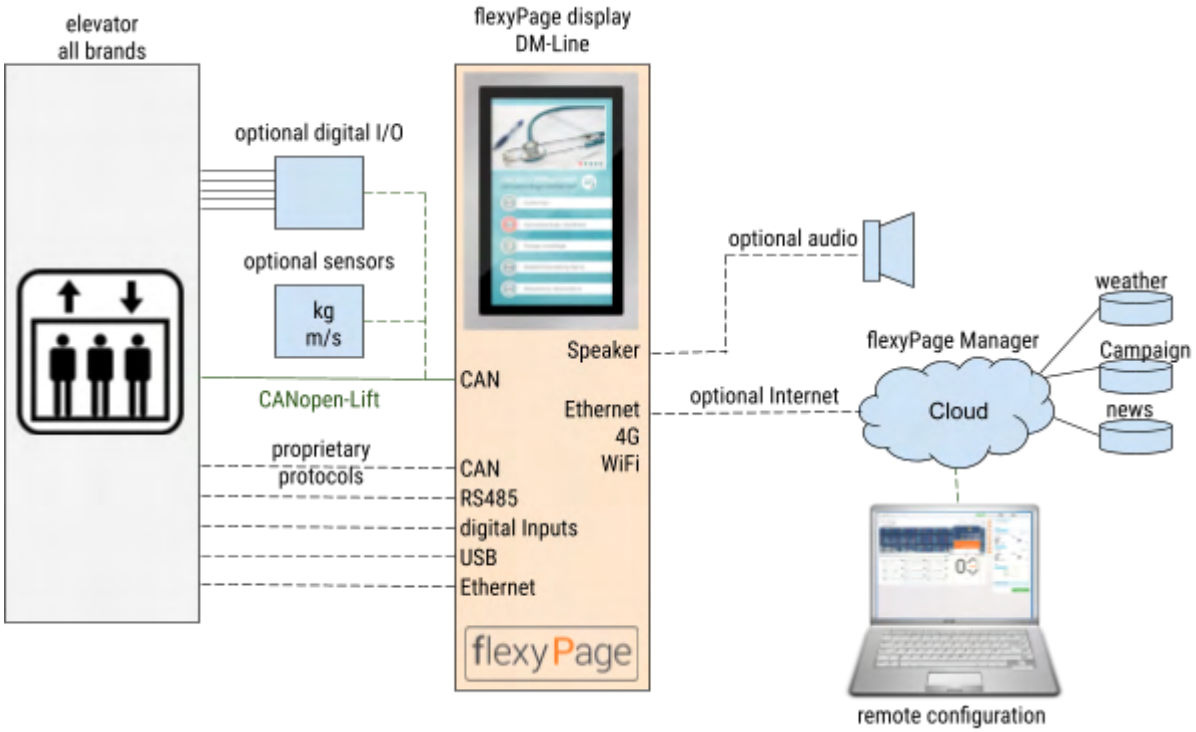
1	CAN-L (CL)	2	CAN-H (CH)
3	Power 22..26 VDC	4	Power GND

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 connect

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 display DM-Line 15,6 has the aspect ratio of 16:9, the displays DM-Line 29 and 38 are stretched displays with an aspect ratio of 32:9.

Technical data

General data of the DM-Line displays

Designation

art. no.:	fel4B-05A-xxxy-zzz fel1A = V1 with 24V, LVDS fel3B = V2 with 12V, LVDS fel4B = V4 with 24V, LVDS 05A = DM-Line xxx = approx. diagonal in inch y (variation) = B=PTC-Touch zzz = options e.g. 4G

Display

lifespan:	>50.000 h (backlight 100% on, 25°C)
continuous operation:	24/7
colours:	16,7 mio.
surface treatment:	anti-reflection ≦ 1.5%, hardness 3H, anti-static

Touch

typ:	PTC, single

Display controller

processor:	CPU: ARM Cortex-A9 (32-bit Quad Core, 1,0 GHz)
GPU:	Vivante GC2000
main memory:	1 GB RAM DDR3
flash:	4 GB eMMC
PCIe:	1 x internal (Gen 2)
Ethernet:	LAN 10/100 Mbps
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 galvanically isolated
digital inputs:	4 x digital Eingang 12-26 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

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 display DM-Line 15,6

Product	DM-Line 15,6
Art. no.:	fel4B-05A-156B
Display	
diagonal:	396 mm (15,6”)
active area:	344 x 194 mm
resolution:	1920 x 1080
aspect ratio:	16:9
viewing angle:	v 170° / h 170°
brightness:	400 cd/m2
contrast (static):	1500 : 1
Size and weight	
housing dimension (LxWxH):	385 x 237 x 42 mm
weight:	3,0 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:	24 VDC
starting current (max):	2,4 A
energy requirements: (active, brightness 100%, no external load)	24 W

Size specific data of the display DM-Line 29 and 38

Product	DM-Line 29	DM-Line 38
Art. no.:	fel4B-05A-290B	fel4B-05A-380B
Display		
diagonal:	730 mm (29”)	940 mm (38”)
active area:	700 x 197 mm	905 x 255 mm
resolution:	1920 x 540 px	1920 x 540 px
aspect ratio:	32:9	32:9
viewing angle:	v 178° / h 178°	v 178° / h 178°
brightness:	500 cd/m2	700 cd/m2
contrast (static):	4500 : 1	4000 : 1
Size and weight		
housing dimension (LxWxH):	790 x 280 x 48 mm	995 x 335 x 55 mm
weight:		12,5 kg
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:	23..25 VDC	23..25 VDC
starting current (max):	3,8 A	4,1 A
energy requirements: (active, brightness 100%, no external load)	52 W	71 W

Mechanical drawings

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

Hardware product history

Version	Release Date	Changes
0.8	2017-04-11	pre version with touch and optional stainless steel frame
1.0	2017-10-01	series 15,6” 12 V with touch and optional stainless steel frame prototyp 38,0” 24 V with touch and optional stainless steel frame
2.0	2019-02-01	series with display controller fpc-04 V4 - 24VDC

Software product history

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

Document history

Version	Release Date	Changes
0.9	2017-04-12	preversion
1.0	2017-11-03	first series version
1.1	2018-12-29	version V4 added
1.2	2020-10-21	product updates
1.3	2022-03-18	new address
1.4	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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