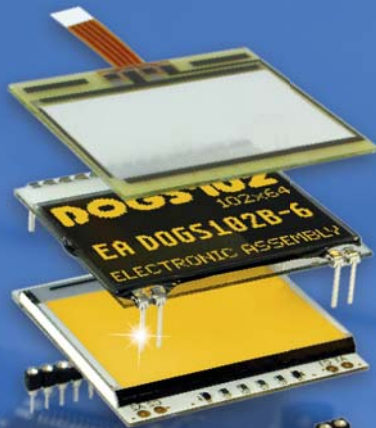


DISPLAY ELECTRONIC ASSEMBLY VISIONS

ELECTRONIC ASSEMBLY

new display design



**DISPLAY
SOLUTIONS
2020 | 2021**

ELECTRONIC ASSEMBLY – WORLD OF DISPLAYS

PREAMBLE

The company ELECTRONIC ASSEMBLY GmbH offers a wide range of high-quality displays for industrial use. Our clients come from a variety of sectors such as from the process automation, mechanical engineering, and information technology.

The products are known worldwide for their flexible use, coupled with „German Engineering“ and a reliable support. Our customers also appreciate for more than 40 years existing expertise and short delivery times.

The long-term availability of our products make ELECTRONIC ASSEMBLY a reliable partner. for decades.

Thanks to our own development department and our own production we are able to react individually to customer requests when needed.

Welcome to this product overview on the latest display solutions from ELECTRONIC ASSEMBLY.

Reliable Displays

The product portfolio extends from simple 7-segment instrumentation displays to sophisticated color touch panel displays for use at information booths or in complex system controllers. Electronic Assembly also has products designed for extremely low power consumption, extended temperature range versions for harsh environments and solutions for special markets and applications such as Cyrillic fonts.

World Wide Sales

The company philosophy at ELECTRONIC ASSEMBLY is based on a simple vision. The management team of Stefan Eber and Carola Wittmann along with the entire staff is fully focused on “making things easy”. This vision is reflected in the design of the company’s products. The displays have a built-in controller which makes things a lot easier for the customer’s design engineering team. High-level language functions eliminate the need for system-level programming by the customer. The display controllers are shipped with an extensive set of sophisticated, pre-packaged graphic functions such as animation and bar charts. Developers can access these features with simple function calls. There is no need to write and test assembler programs for these functions. Many of the displays run right out of the box. The customer can get products to market much quicker and at lower cost.

Engineering - Made in Germany

ELECTRONIC ASSEMBLY has its own engineering development group and helps shape the technological landscape. In-house production, which is not necessarily the norm in today’s market environment, puts the company in full control of quality and gives it that little bit of extra flexibility which from the customer perspective often makes the crucial difference. The success of ELECTRONIC ASSEMBLY is reflected in the construction of new facilities in Gilching which have been the company’s new home since 2009.



Carola Wittmann

Stefan Eber

OLED DISPLAY WITH USB AND PCAP


NEW


Direct USB

From now on displays can also be operated directly via the USB - incl. touchpanel. The connection is surprisingly easy, even the power supply is included automatically. The new family EA PLUGxxx provides the matching displays for it. The latest version is 2.9" with 128x64 pixels. Built-in are various character sets and graphic capabilities. Thanks to digital inputs and outputs, this display can also handle small control tasks as a stand-alone application.

SPI, I²C, RS-232

The display provides additional interfaces for communication with microcontroller applications. All are bi-directional and designed for 3.3V level.

OLED

The OLED display offers a contrast of about 2000:1. It is extremely fast; even at low temperatures down to -40°C, the screen appears fluid and without delay. The all around viewing angle is around 170°. With its 2.9" screen diagonal, the EA PLUGL128-6GTC is the first member of an entire display family. Other sizes will follow.

Sensitive Surface

The front of the display is a robust glass plate, which enables any input. A gentle touch to the surface is sufficient, e.g. to change the screen or trigger an action.

Screw Terminals

In the „Z“ version, the display is equipped with 12 screw terminals for easy connection to external sensors or detectors. 2 analogue inputs enable the measurement of a voltage, which can be displayed directly on the display if desired.

Furthermore, a 26-pin IDC socket connector and a 40-pin ZIFF is equipped, which keeps even more I/Os and additional serial interfaces.

Design

The EA PLUGL128-6GTC is the designer version with fully black front, designed for indoor use. It's perfect because of its flat, shiny and easy to clean glass surface. The surface is hardened and robust against rough handling. When display is switched off, surface is totally black and only when display lights up some graphics or text will become visible as if by magic.

No	Name	Type	Description	Remark
1	GND		Ground 0V	
2	Vin		Power Supply 3.3~5V	
3	AIN1	I	Analog input 1	0~3,3V
4	AIN2	I	Analog input 2	0~3,3V
5	I/O 1	I/O	Digital In- or Output PWM	Output
6	I/O 2	I/O	Digital In- or Output	Output
7	I/O 3	I/O	Digital In- or Output	Output
8	I/O 4	I/O	Digital In- or Output	Output
9	I/O 5	I/O	Digital In- or Output	Low Power Output
10	I/O 6	I/O	Digital In- or Output	Low Power Output
11	I/O 7	I/O	Digital In- or Output	Low Power Output
12	I/O 8	I/O	Digital In- or Output	Low Power Output

Ordering Information

2.9" OLED Graphic with USB and touchpanel	EA PLUGL128-6GTC
With screw terminal and IDC socket	EA PLUGL128-6GTCZ
1.7" OLED Graphic with USB and touchpanel	EA PLUGS102-6GTC
USB cable (about 1m)	EA KUSB-MINI

*** USB interface**

*** no power supply necessary**

*** ASCII incl. ÄÖÜ and ß**

*** Graphic functions**

*** touch sensitive glass front**

*** extreme wide viewing angle**

*** digital inputs and outputs**

*** with frontal plate to be glued to the front plate**

EA UNITFT SERIES

MULTI FUNCTION TFT DISPLAY

5" / 7" / 10.1" (2.0" / 2.8" / 3.5" / 4.3")

**SUCCESSFUL
WITH
INNOVATIVE
DISPLAYS.**



Juggle with objects playfully

TFT displays are indispensable in industrial and medical technology as well as in the private sector. Color displays simplify the operation and therefore revalue every device. Small and large applications benefit from the use of a color display. What is important, however, is an appealing screen layout and a clear and modern design.

This is where the new concept of the uniTFT displays from ELECTRONIC ASSEMBLY is set. A number of graphically sophisticated objects are available, which can be adapted to the individual requirements by the simplest means. The graphical editor makes it easy to drag and drop elements to create nice screen pages. The properties of the individual objects can be edited at any time, actions (for example for touch keys) can be created.

Objects, Variables, Calculation

Any object can be placed, moved and deleted at any time. Fonts can be zoomed and rotated without loss. Chosen Windows character sets are stored directly in the display. Thanks to automatic ASCII and Unicode switching, all systems are flexibly supported; Chinese characters included. Elegant effects for fading in and out or flying in are already

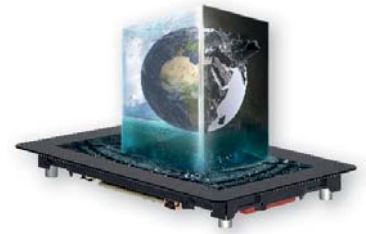
integrated. Stylesheets can be used to create uniform designs. Images can be embedded as JPEG, PNG or SVG (also transparent), sound can be played in the form of MP3. Together with the integrated and battery-buffered time base, events can be documented together with the help of a time stamp or also a processes can be controlled completely autonomously.

USB and other Interfaces

The new EA uniTFT provides various interfaces to the outside world. An USB interface is available for flashing the onboard memory, debugging and also for normal operation. To run the display there are also a SPI, RS-232 and I²C bus interface available. If some external devices or actuators need to be operated, three additional interfaces SPI, RS-232 and I²C bus can be used for that; they are declared as master.

4 analogue inputs and one PWM output enable processing of analog signals. 16 digital I / O (expandable up to 125) take over a wide range of control tasks. A video input directly delivers images, which can be displayed on the screen or stored on the integrated micro SD card (up to 32 GB).

NEW



Resistive or Multitouch-PCAP

Thanks to the high integration, it is easy to create an intuitive and simple to use interface. A variety of functions support the use. Individual key sizes and arrangements are possible. Also settings with a slider are quickly realized. The comprehensive functionality makes this display a complete, versatile HMI, which is extremely compact at the same time. The resistive touchpanel can even be operated with a pencil or gloves; The PCAP version performs even behind a 4 mm thick glass or with thin gloves and is multitouch-capable.

IPS Technology and up to 1000cd/m²

Be inspired of the brilliance and brightness of our new 7" and 10.1" displays. They do provide great colors, brilliant and stable at all viewing angles. With up to 1000cd/m² these displays are well prepared for all applications. Brightness may be reduced at any time by software command.

Ordering Information

TFT 5" with resistive Touch	EA uniTFT050-ATP
TFT 5" with PCAP Touch	EA uniTFT050-ATC
TFT 7" with PCAP Touch	EA uniTFT070-ATC
TFT 10.1" with PCAP	EA uniTFT101-ATC
Quickstart w. 7" and PCAP	EA QUICKuniTFT070C

- * 5" / 7" / 10.1" (EA uniTFT)
- * 2.0" / 2.8" / 3.5" / 4.3" (EA uniTFTs)
- * PCAP Touch
- * Work with Objects
- * Move Objects
- * Flying Graphic Elements
- * USB + SPI + I²C Bus + RS232
- * Character set ASCII & UNICODE
- * Single Supply +3.3V
- * Incl. Touch Panel Controller
- * T_{op.} -20..+70°C

FREE OF CHARGE TOOL FOR UNITFT

uniTFTdesigner FOR WINDOWS INCL. SIMULATOR



Create screens intuitively

With a graphics tool, specially created to support the abilities of this display, screen layouts and user interfaces are created easily. Drag objects into the virtual screen and resized them in size, angle and position using the mouse. More properties of an object can be adjusted pixel-wise at any time via property menu function. Standardized stylesheets help you building an appealing layout.

Functions for grouping objects, as well as alignment tools and grid help are built-in to preserve the symmetry. Images, sounds and Windows fonts in any size are quickly selected and integrated.

Macros are created by a text editor. Since each object has an individual ID, it can therefore also be manipulated extensively later.

With the free simulator, the content as well as the function (e.g. touch buttons) can be tested immediately - even without buying a display. Also the inputs and outputs can be simulated on the Windows PC. Also the download to the display requires only one mouse click.



- * Create pages via Drag and Drop
- * Integrated Simulator
- * Group Objects
- * USB Download
- * Edit Text- and Paintstyle
- * Use Windows Character
- * Write Macros
- * Design Touch Keys
- * Debugger built-in

START IMMEDIATELY

EA QUICKUNITFT050C



The starter pack

Everything in it, everything to it: here you can start immediately. You will get a display with PCAP (capacitive touch-panel) and a testboard with loudspeaker and connection clamp for 3.3V. The display is immediately running and shows a detailed demo.

After installing uniSKETCH on a Windows computer, you connect the USB cable and have access to many examples and more demos. Or you can start your own project right away!

USB + SPI, I²C, RS-232

On the breakout board all interfaces can be reached directly via solder pads. Also the analog inputs and two of the digital inputs and outputs. The USB connector is installed directly on the display.

Disconnect the display and...

...put it into the application: 4 sockets with M3 female thread fix the display stable in the housing. The electrically contact is made via 2 red sockets directly on a circuit board behind it or via an IDC cable.

Even if the display is already installed in the application, it can be reprogrammed at any time without removal via the USB interface.

Alternatively, you can copy your project on a micro-SD card and exchange the SD-card. This is how you easily transfer your new functions to the display.

Open for other display sizes

Both the objects and the display are freely scalable to other sizes such as e.g. 10.1" and 7".

Ordering Information

Quick Start 5" with PCAP	EA QUICKuniTFT050C
Quick Start 7" with PCAP	EA QUICKuniTFT070C
Quick Start 10.1" with PCAP	EA QUICKuniTFT101C

FOR INDUSTRIAL APPLICATIONS COMPATIBLE TFT SERIES FROM 3.5" TO 7"



Same pinout for all!

Who is not at least once desperate at the different pin assignments of different TFT displays? This is coming to an end now. All TFT displays from our company have an identical connection with 40 pins in a grid of 0.5mm. The pin assignment itself is also identical. A matching ZIFF connector is available as an accessory. The displays have been individually developed for industrial applications and are available in a long term. The lifetime is 50,000

hours and the operating temperature range is from -20 to + 70°C. In the backlight there are bright, high-quality LEDs installed.

24-bit RGB

The interface is designed as a parallel RGB interface for a color depth of up to 24 bits. The interface is compatible

Ordering Information (Selection)

TFT 3.5" w./o. touchpanel	EA TFT035-32ANN
TFT 4.3" w./o. touchpanel	EA TFT043-42ANN
TFT 5" w./o. touchpanel	EA TFT050-84ANN
TFT 5.2" w./o. touchpanel	EA TFT052-41ANN
TFT 5.7" w./o. touchpanel	EA TFT057-32ANN
TFT 7" w./o. touchpanel	EA TFT070-84ANN
TFT 7", resist. touchpanel	EA TFT070-84ATP
TFT 7" with PCAP	EA TFT070-84ATS
ZIFF connector, bottom con	EA WF050-40S
ZIFF connector, top contact	EA WF050-40T

TFT Displays				
Ordering Code	Size	Resolution	Dimensions	Optional
EA TFT035-32ANN	3,5"	320x240	76.9 x 63.9 x 3.26	Res. Touch, PCAP
EA TFT043-42ANN	4,3"	480x272	105.5 x 67.2 x 3.0	Res. Touch, PCAP
EA TFT050-84ANN	5"	800x480	120.7 x 75.8 x 2.8	Res. Touch, PCAP
EA TFT052-41ANN	5,2"	480x128	140.4 x 49.9 x 3.0	PCAP
EA TFT057-32ANN	5,7"	320x240	141.1 x 101.6 x 6.5	Res. Touch, PCAP
EA TFT070-84ANN	7"	800x480	165.0 x 100 x 5.8	Res. Touch, PCAP

with most graphic controllers on the market. The supply voltage is 3.3V.

Touch panel

The displays are also available with an integrated touch-panel. Depending on the application, there are 2 different versions available:

The resistive touchpanel (order codes „TP“) is absolutely easy to use because it works on pressure. Any pressure applied to the surface, whether with a finger, glove or pen, triggers an action. Reading out the position is performed by measuring resistance values in the X and Y directions. This technology does not suffer to dirt and water.

The capacitive version (ordering codes „TS“) recognizes fingers and is multitouch-capable (up to 5 positions). Shipped out with a controller, which already takes over the reading and provides the finished data. The connection is done via an I²C bus interface. The PCAP version offers a glossy glass surface, robust against scratching and chemicals.

These TFT displays are standard articles and available also in small quantities.

- *3.5" ~ 7" pin compatible
- *with and w./o. touchpanel
- *PCAP and resistiv
- *fast design-In
- *made for industrial equipment
- *tools and demo board
- *t_{Op.} -20..+70°C

AVAILABLE NOW ON APPSTORE AND PLAYSTORE AUGMENTED REALITY APP



**QUALITY
IS NOT A
FLUKE.**

ELECTRONIC ASSEMBLY is using augmented reality (AR) to bring its new uniTFT display module to the attention of potential users. The free app provides an unprecedented means of displaying in-depth information on what is probably the most innovative display module in the world. It is based on the print advert (see right page) that is to appear as part of an advertising campaign across a large range of media for the uniTFT.

Point the camera of a smartphone or tablet at the advert and the module comes alive, and at the same time a short humorous film is launched on the display module! With the aid of a 3D model, the app also provides valuable information on this new 5" screen.

The use of augmented reality is becoming increasingly widespread for enriching visual representations of any


object with additional computer-generated information directly on the screen. ELECTRONIC ASSEMBLY provides a wealth of information for the uniTFT via the augmented reality app that enables customers to explore the full potential of this advanced touchscreen unit. Among the many functions, a number of videos are available for users of the app to discover more about its performance and options as a control unit. The videos explain to users how to program an entry screen with the display module, how to incorporate a keyboard, the range of settings the touch panel offers and how to feed in analog signals and create virtual measurement instruments on the screen. With the aid of a 3D model, the app also explains the complex components of the display module which range from PCAP, Sound and RTC as well as USB, I2C, SPI and RS-232 interfaces right through to a card slot for a micro SD memory card.

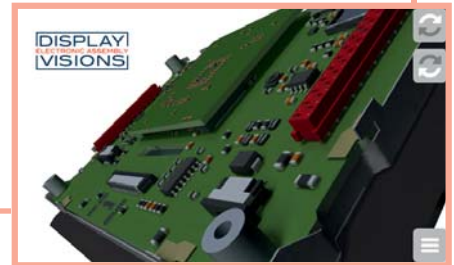
The revolutionary uniTFT display module from ELECTRONIC ASSEMBLY is the first of its kind to offer the option of combining predefined objects on the screen, rotating them, zooming in on them and assigning attributes. The wide range of possibilities offered by this display module considerably increases the productivity







of systems integrators and developers, since it allows developers to produce control elements and display tools graphically and to equip them with real functions.

it from the Apple App Store free of charge. Search for "UNITFT" or use the QR code on the top.

The App is available via Google Play for devices with an Android operating system, while iOS users can source

ELECTRONIC ASSEMBLY
new display design

DISPLAY ELECTRONIC ASSEMBLY VISIONS


- resistiv oder PCAP (Multitouch)
- objektorientierter Bildschirm
- vektorisierte Zeichensätze: ASCII und Unicode
- extrem schneller Bildaufbau mit bis zu 50 fps
- Alpha Blending, bewegte Objekte
- USB, 2xI²C, 2xSPI, 2xRS-232



MULTIFUNCTION TFT
5" - EA uniTFT050-A

WIR VERÄNDERN DIE WELT

1. SCHRITT 2. SCHRITT 3. SCHRITT



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vertrieb@lcd-module.de · www.lcd-module.de

INTELLIGENT DISPLAY CUTS DEVELOPMENT TIME



ELECTRONIC ASSEMBLY has developed a graphic display series whose numerous functions cover a wide variety of potential applications. Built-in intelligence also helps drastically cut development time.

2.8" ~ 7" with and without Touch Panel

The EA eDIP160W-7 offers an abundance of clever graphics functions that can be directly accessed by the development engineer without having to program at the pixel level. Eight predefined fonts are included and can be accurately positioned (down to the pixel) and adapted to meet individual needs. Up to 32 fonts can be stored in the integrated flash memory. All fonts can be scaled as required and rotated in 90-degree increments. The internal memory can also store other types of data, such as images, animations, and macros.

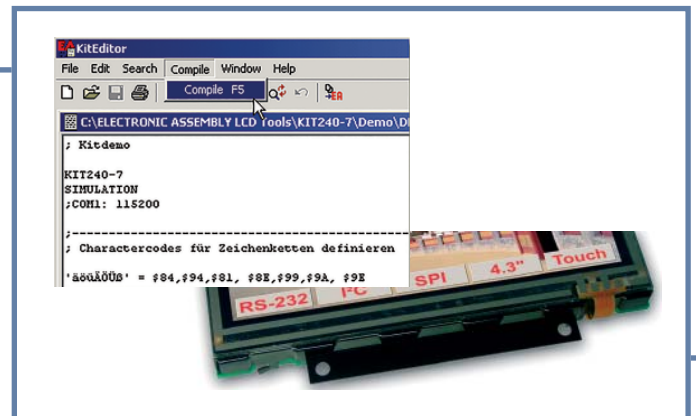
Lots of Fonts and Functions

Many geometric functions are likewise integrated for displaying bar graphs, frames, and switches, for example. Analog rotary and pointer instruments can be easily visualized using a free application called "LCD-Tools". The display unit features two analog inputs for this purpose. The optional variant with touch panel makes it possible to operate the display using graphic controls that change

dynamically. Up to 40 buttons, switches, or bar graphs can be defined and changed by software, depending on the situation.

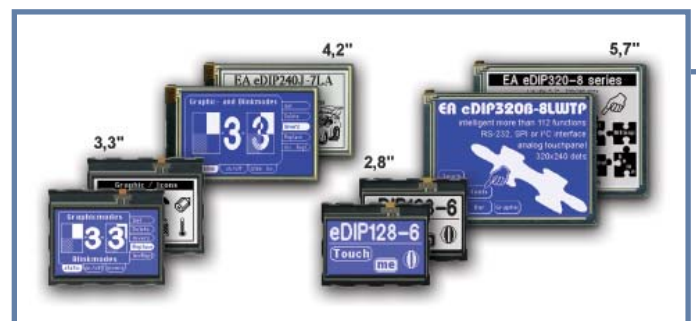
Mounting option included

Measuring 5.7 inches in the diagonal, the display supports a resolution of 640 x 480. Images and texts can be mixed as desired. Macro pages let the developer realize a



multilingual display. The energy-efficient LED background illumination is set via software. To give the developer the greatest level of freedom, the display units provide three different interfaces – RS 232, I²C bus, and SPI bus. The display can be used in an enhanced temperature range of -20°C to +70°C.

There are 8 different sized, monochrome variants and 4 colored TFT displays, offering the same functions.



- * touch panel incl. controller
- * RS-232 + I²C-Bus + SPI
- * USB + RS-485 via external circuit
- * character sets & graphic functions
- * 128x64 .. 320x240 monochrome
- * colored TFT 3.2" ... 7"
- * single supply +5V (+3.3V)
- * T_{op.} -20..+70°C

Ordering Information (Selection)	
2.8" 128x64 blue-white	EA eDIP128B-6LWTP
3.3" 160x104 black&white	EA eDIP160W-7LWTP
4.2" 240x128 blue-white	EA eDIP240B-7LWTP
5.7" ¼-VGA blue-white	EA eDIP320B-8LWTP
USB Evaluation Kit incl.Touch Display	EA EVALeDIPxxx

7" INTELLIGENT DISPLAY WITH ACOUSTIC FEEDBACK



The 7-inch EA eDIPTFT70-ATP made by ELECTRONIC ASSEMBLY sets new design standards for interactive operator control systems. Brilliant display quality, 800 x 480 pixel resolution, built-in intelligence and innovative, user-friendly features provide the ideal platform for development of interactive controls. For example, a virtual keyboard can be embedded directly into the graphic display, and the display is also capable of providing acoustic feedback to the user.

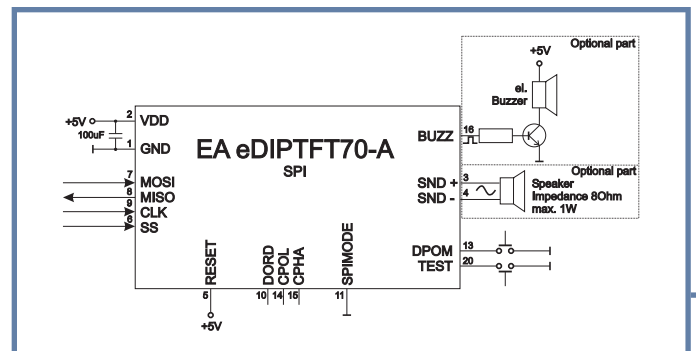
Capacitive PCAP or resistive Touch Panel

These features make it much easier to program an interactive user interface. As a standard all displays can be shipped with or without touch panel, the 4.3" and the 7" alternatively with a capacitive (PCAP) or resistive one. A virtual keyboard can be generated on the touch panel screen with just a few instructions which resemble high level language programming code. The keyboard functionality includes an Edit Box which enables users to view what they have entered and make any necessary corrections prior to submitting the data to host.

RS-232, I²C, SPI

Programming is very simple and straightforward. Powerful instructions which resemble high level language code enhance productivity during solution development and reduce time to market. Lines, areas and bar graphs can be defined and displayed with a single instruction. Defining the appearance, size, placement and function of keys and buttons is equally fast and easy.

The EA eDIPTFT70-ATP offers a number of other features which support user-friendly programming and sophisticated image design including a flash memory to store fonts, images, animation and macros. Eight pre-defined fonts are provided. TrueType fonts can also be imported. Input data can be displayed on pre-defined virtual analogue instruments which can be tailored to suit the needs of the user. Built-in macro pages and string tables are provided to support multiple languages, an important consideration for equipment and systems which are destined for export markets.



Development Support

An evaluation kit is available to help you get your development project started. A USB port provides connectivity to a PC where software development takes place. Three different ports are available for communication with the system. Only one supply voltage is needed. A mounting bezel is available as an option.

Ordering Information (Selection)	
TFT 3.2" with Touchpanel	EA eDIPTFT32-ATP
TFT 4.3" with Touchpanel	EA eDIPTFT43-ATP
TFT 5.7" with Touchpanel	EA eDIPTFT57-ATP
TFT 7" with PCAP-Touch	EA eDIPTFT70-ATC
USB Evaluation Kit incl. Touchpanel Display 7"	EA EVALeDIPTFT70
Mounting panel for 7"	EA 0FP801-70SW

- * 3,2" - 4,3" - 7"
- * **No Controller Board required !**
- * **SPI + I²C Bus + RS232**
- * **Character Set & Graphic Functions**
- * **Single Supply +5V (3.2" also +3.3V)**
- * **Incl. Touch Panel Controller**
- * **T_{op.} -20..+70 °C**

EA OLED SERIES

OLEDs FOR INDUSTRIAL APPLICATIONS

$T_{OP.} -40..+80^{\circ}C$

**WE
HAVE THE
SOLUTION.**

Because of their valued brilliant optic in smartphones OLED displays have become indispensable. These displays are based on organic materials. The display manufacturer ELECTRONIC ASSEMBLY brings this technology in the field of industrial applications now.

Contrast 2000:1

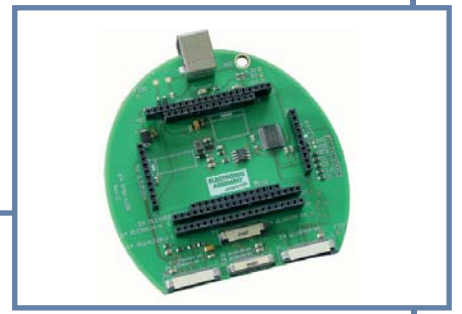
With an extreme high contrast ratio of 2000:1, the OLED models from ELECTRONIC ASSEMBLY are real eye-catchers. The high contrast ratio is achieved by using a genuinely black background and an active display technology. A new, patented system eliminates the relatively short service life of previous OLED displays. OLED displays from ELECTRONIC ASSEMBLY can be operated 100,000 hours and more at room temperature. Even when used at maximum operating temperature (80°C), they retain 50 percent or their original brightness after 14,000 hours.

Especially the new OLED display family EA OLEDxxx can be integrated easily because of its built-in pins with 2.54mm (1/10") pitch. So there's no longer any need to think about mechanical mounting stuff with this construction.

Wide Temperature Range -40..+80°C

The OLED displays also provide full contrast at the complete operating temperature range, even down to -40°C! No contrast adjustment is required for this. Their response time of 10 microseconds gives the displays an extremely fast response time as well, regardless whether they are used at high or low temperatures. In addition,

OLED Displays				
Ordering Code	Diagonale	Resolution	Dimension	Connector
EA OLEDS102-6	1,59"	102x64	39x39mm	Pins
EA OLEDM128-6	2,18"	128x64	55x44mm	Pins
EA OLEDL128-7	2,9"	128x64	68x49mm	Pins
EA OLEDM204-A	2,1"	4x20	61x26mm	Pins
EA W064048-XALG	0,66"	46x48	19x18mm	Direct
EA W096016-XALB	0,84"	96x16	29x9mm	Direct
EA W096064-XALG	0,95"	96x64	25x23mm	Direct
EA W128128-XRLG	1,18" round	128x128	37x41mm	ZIF
EA W128128-XALG	1,5"	128x128	34x37mm	ZIF
EA W128032-XALG	2,2"	132x32	62x24mm	ZIF
EA W128064-XALG	2,42"	128x64	61x37mm	ZIF
EA W256064-XALG	3,12"	256x64	88x28mm	ZIF
EA W256064-XGLG	5,5"	256x64	146x45mm	ZIF

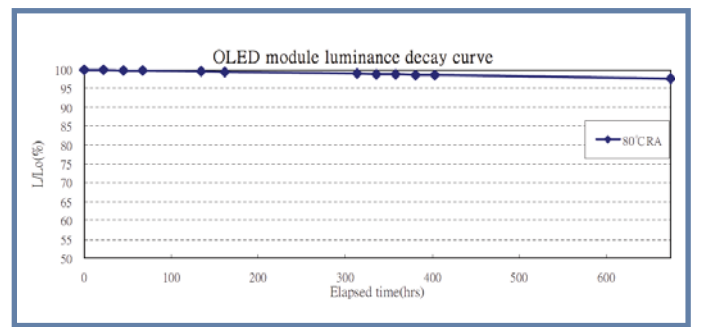


information shown on the OLED displays is easy to read, no matter what the viewing angle. The interface to any microcontroller is done via standard SPI or I²C bus. Power supply for logic is 3.3V plus sometimes +12V for contrast. Current consumption ranges between 15 and 200 mA, depending on the size of the display. ELECTRONIC ASSEMBLY provides all support to interface design with a μ C. Various application examples and code snippets are available for free.

USB test board EA 9781-1USB

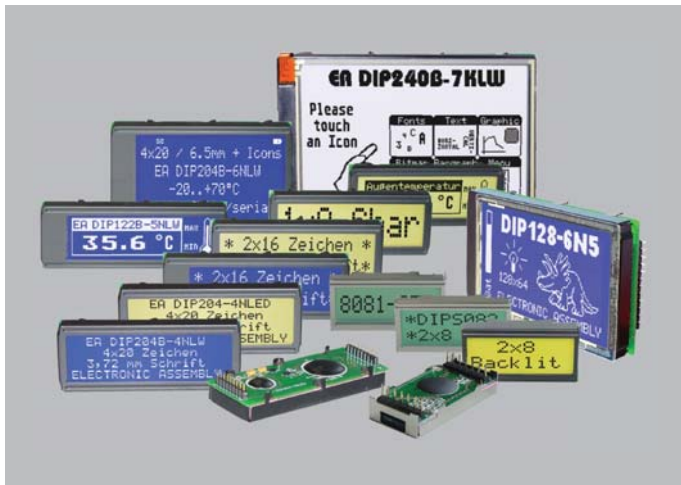
For a quick test without investing lots of time or any hardware or software effort we do provide a small board EA 9781-1USB. Simply plug in the display.

Ordering Information (Selection)	
128x64 yellow with pins	EA OLEDL128-6GGA
128x128 white, round, ZIF	EA W128128-XRLW
96x16 white, 29x9mm	EA W096016-XALW
USB test board	EA 9781-1USB



- * **Excellent Contrast**
- * **SPI / I²C bus**
- * **Graphic ability**
- * **Superfast also at -40°C**
($t_r/t_f = 10\mu s$)
- * **Perfect for wearables**
- * **Micro display from 0.66" off**
- * **Low power**

MAKING IT CLEAR: HIGH-CONTRAST DISPLAYS



ELECTRONIC ASSEMBLY has designed the EA DIP162-DN3LW LCD module for applications where the display has to be clearly legible. The module comes with a high-contrast alphanumeric LCD supertwist display for showing two 16-character lines. LED background lighting supplied as a standard feature makes the text clearly stand out.

Different colors

The dot matrix display is available in three versions. Users can choose between black text on a yellow/green background, white text on a blue background or black on white. Automatic temperature compensation eliminates the need for contrast re-adjustment.

Controller onboard

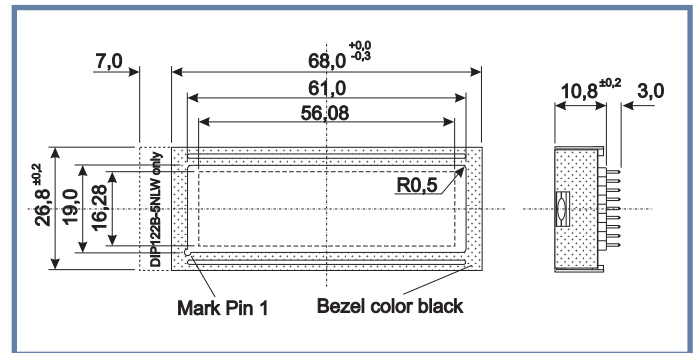
The on-board ST7066 controller is 100% compatible with the widely-used HD44780 controller. The built-in character set provides 240 letters, numbers and symbols, and users can define additional 8 characters. The controller has a 4 and 8 bit data bus interface.

The EA DIP162-DN3LW is designed to make handling very easy during the manufacturing process. No mechanical assembly is necessary. The module is simply inserted into the PCB and soldered in place.

The display is powered from a single 5 V input. A 150 mA constant current source is needed for the LED lighting on the green/yellow version or a 45 mA on the blue/white and black/white versions. The wide operating temperature

range (-20°C to +70°C) makes the display ideal for a variety of industrial applications.

Other versions of the display in the same housing with the same pinout can also be supplied. Users can choose 1 x 8 or 4 x 20 character dot matrix displays or full graphic version with 122 x 32 pixels up to 240x128 pixels.



Ordering Information (Selection)

1x8 / 7,15mm	EA 8081-A3N
2x16 / 6.68mm blue-white	EA DIP162-DN3LW
4x20 / 3.73mm yellow/green	EA DIP203G-4NLED
122x32 / AX6120, blue-white	EA DIP122B-5NLW
128x64 / SBN0064, b&w	EA DIP128J-6N5LW
240x128 / SAP1024, blue-wht	EA DIP240B-7KLW



- * compact
- * high reliability
- * Fast and easy assemble
- * character & graphic
- * 128x64 .. 320x240 monochrome
- * compatible
- * short delivery time
- * long term availability
- * T_{op.} -20..+70°C

EA SYLOG SERIES

COMPACT DATA LOGGER WITH USB AND WIFI



ELECTRONIC ASSEMBLY offers different data logger for monitoring and recording ambient temperature. The EA SYLOG-USB-1 is especially well suited to applications in the pharmaceutical, food, transportation and logistics industries. Data logger with the code EA WLAN-xxx are to become installed in the range of a WiFi network. So supervising becomes easy directly from the workplace. Therefore all readings are available immediately.

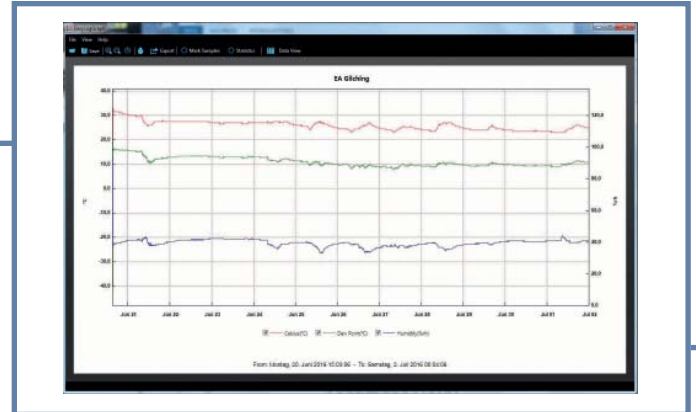
USB Interface - EA SYLOG

The EA SYLOG-U-2LCD e.g. measures temperature and humidity. It save up to 16,382 readings. Users can set the time lapse between measurements from 10 seconds to 12 hours to customize the monitoring period, which can span as little as 5 hours or as much as 1 year. The time at which measurements are to be taken is also programmable. The software provided graphically depicts the measurements on the computer screen and formats the graphics for printing. Data can also be converted and exported in different standard formats to be processed externally.

EA WLAN series with WiFi

The EA WLAN-T+ measures temperature and humidity in the range of -20..+60°C. The large display makes the measurement readable from far away together with any alert and min/max. All readings of the data logger will be distributed to a pc in network via WiFi. If the WiFi isn't available, the data will be stored on a SD card on logger side until the network will become available again. As an accessory a WiFi alert module with loud sound

and LED flash is available to supervise one or more WiFi logger without the use of any pc.



PDF Solution

A small solution are our „EA SYPDF“ data logger series with start function on site. They are factory preset for easy and error-free usage, for example suitable to watch the cooling chain for chilled goods. Reading out is same easy while plugging to the USB connector and reading out an instand readable *.pdf file.



- * USB connection
- * Temperature
- * Humidity
- * Voltage, Current
- * WiFi Interface
- * with large LCD
- * Battery Powered
- * pdf and xls output

Ordering Information (Selection)

Temp. -35..+80°C with LCD	EA SYLOG-U-1LCD
Voltage 0..30V	EA SYLOG-USB-3
Loop 4..20mA	EA SYLOG-USB-4
WiFi Temp. and Humidity	EA WLAN-TH
PDF Data logger Pharma, 8..25°C	EA SYPDF-1-004

EA DOG SERIES

SIMPLY INGENIOUS. 3.3V - SPI - DIFFERENT COLORS

**CONTINUITY
AND QUALITY
IS OUR
HIGHEST
PRIORITY.**



Display specialist ELECTRONIC ASSEMBLY in Gilching/ Germany is introducing an exceptionally versatile line of alphanumeric displays for use in industrial and commercial applications. The high-contrast, easy-to-read LCD super-twist display modules of the EA DOG family requires a mere 3.3 or 5 V to operate. Negative auxiliary voltage is also not required for the 3.3 V systems – a world first. This allows developers to keep their power supply simple and economical.

Full Color Backlight

Another clever idea is the separation of display and illumination that will be ordered separately. This makes it possible to implement numerous designs with different sizes and colors. Customers can choose from five display units and six LED background illumination schemes, including one that covers the entire RGB color spectrum. Three text display units are offered for viewing one, two, or three lines of data, which are available with different font sizes. The variety of display types, font sizes, and background illumination schemes translates into a total of 63 „customization“ options for character displays and there are a lot more graphic types also. Two or three separate LED paths are available for the

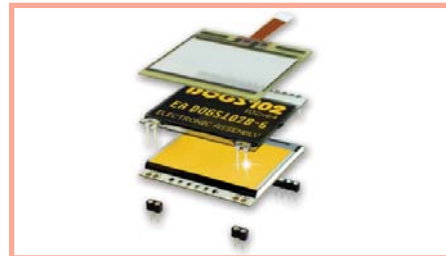
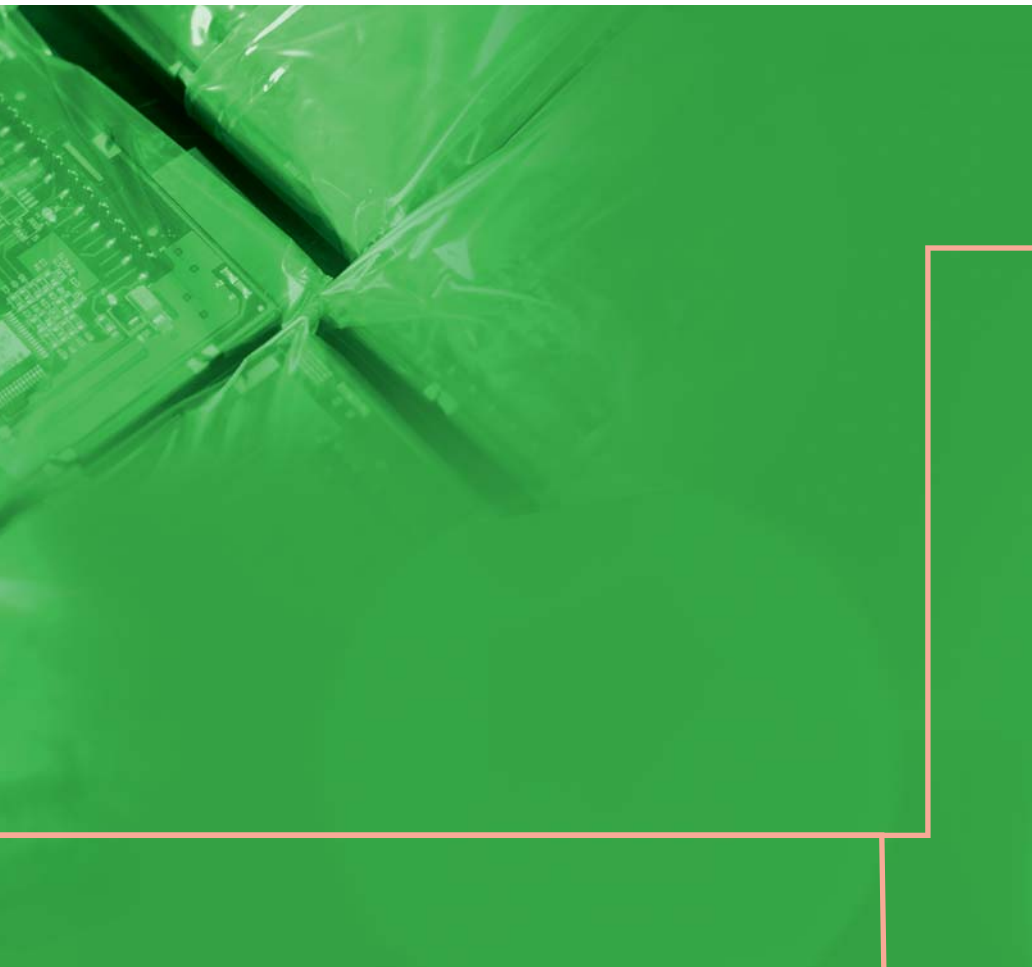
unicolor backlights, so the illumination unit can therefore be operated using a 3.3 V or a 5 V power supply.

Easy mounting

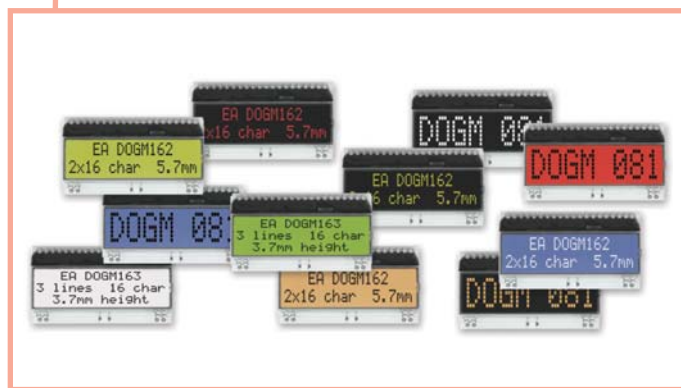
Keeping the illumination and display concept separate also enables extremely flat layouts. Without the illumination unit, the display is only 2.0 mm thick, and even when the latter is fitted, the 5.8 mm build height provides for a very flat configuration. The display can be mounted frameless by having it soldered directly to the circuit board. A ST 7036 display controller is included in the display units despite their small size. Four-bit, eight-bit, and SPI interfaces are offered to connect to the outside world. The operating range for the displays is between -20 °C and + 70 °C, making them compatible with industrial applications, and all variants can be ordered in quantities of one or more.

USB Testboard

In addition to a free simulator tool for Windows, which shows all displays in all variants and colors, ELECTRONIC ASSEMBLY offers a fast and easy test board with USB. Simply plug the included cable into the USB socket and plug in the DOG display and their backlight - without



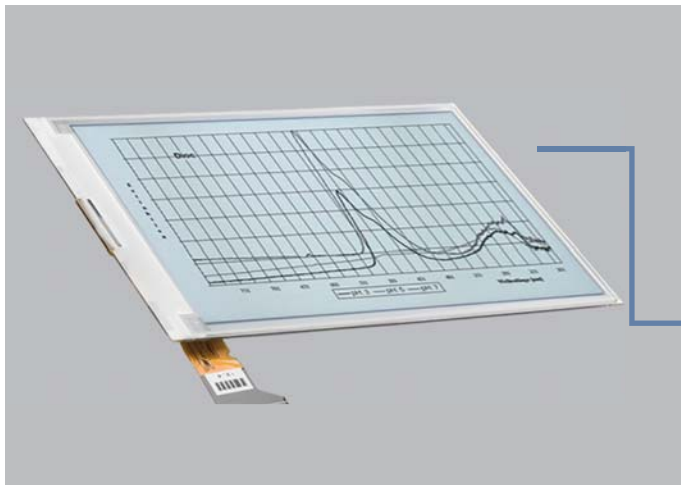
doing any hardware or software. In addition to that there are thousands of code snippets and application examples available. Our team is helping out with all details and solution.



- *super flat: 2.0~6.5mm
- *Graphic 102x64, 132x32, 128x64, 160x104
- *Character 2x16, 3x16, 4x16, 4x20, 1x8
- *real 3.3V operation
- *SPI interface, low power: 150 / 250 μ A
- *display and backlight separate
- *white LED B/L runs from 3 mA
- *Standard displays

Ordering Information (Selection)	
240x128 blue/white	EA DOGM1240B-7
102x32 black&white negative	EA DOGS102S-6
3x16 / 3.65mm yellow/green	EA DOGM163L-A
LED backlight unit full color	EA LED55x31-RGB
LED backlight unit white	EA LED55x31-W

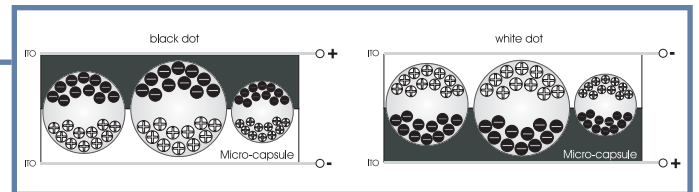
E-PAPER DISPLAYS ZERO POWER-AMAZING CONTRAST



tion, storage gauge, timetable, doorplate up to the well-known eBook reader.

EA eLABEL20-A as a starter kit

The EA EVALeLABEL20-A was developed for an easy start and some individual test. We developed this intelligent 2" e-paper display, which will be shipped out ready



Unreached Contrast and Viewing Angle

The new e-paper displays series „EA EPA“ do provide the most neutral display for text and graphic. These displays are straight black&white displays with 2 gray levels. The resolution is with its 90dpi quiet high and provides therefore fine pictures. The displays are well readable without any backlight even under direct sunlight.

Technology

Embedded in small micro capsules and surrounded by viscous polymer there are small black and white particles. The white particle are positive loaded and the black ones negative. An electrostatic field may change the position of the micro capsules and therewith the color. After that the electrostatic field can be switched off. The position of the capsules stays stable.

Because of the viscosity of the transparent polymer, e-paper displays do store its display content for many years - without any current consumption.

Superflat and with SPI

With an overall height of only 1.18mm these displays do match all applications. The 2" type EA EPA20-A is equipped with a standard SPI interface. Connection is done via 24-pin ZIF connector. Power supply voltage is 3.3V. The operating temperature range is 0..+50°C.

Larger displays with 4.3" and 6" and a resolution of 800x600 and 800x480 are also available.

The field of application starts from price tag, weather sta-

to use with battery. The EA eLABEL20-A shows some pages automatically. Via one of the serial interface SPI, RS-232 or I²C individual text and pictures can be shown. The onboard FLASH and the integrated character sets do ease creation of individual demos.

Thanks to the integrated battery (CR2032) the EA ELABEL20-A may be plugged-off from pc after pictures and text are loaded. Demos run automatically. Switching off the battery freezes the display content. Forever.

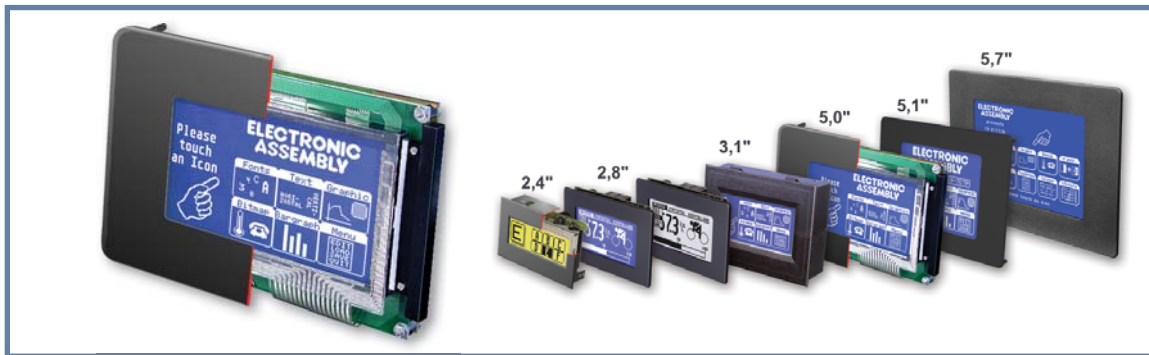
Ordering Information

2" e-paper display, SPI	EA EPA20-A
4.3" e-paper display	EA EAP43-A
6" e-paper display	EA EPA60-A
2" e-paper with intelligence	EA ELABEL20-A
2" e-paper as a starter kit	EA EVALELABEL20



- * **Excellent Contrast**
- * **Zero Power**
- * **Clean white Display**
- * **Single Supply 3.3V**
- * **Graphic Ability**
- * **4 Gray Scale**
- * **as Standard available**

THE EASY WAY TO COMMUNICATE WITH AND W./O. TOUCHPANEL



The EA KIT-series has built up its reputation within many different applications as a smart control panel. The outstanding attributes of the well proved KIT-series are the cross-platform and simplicity to use. There's no need to learn a complicated programming language and work-in tools and driver.

Touchpanel for Mounting

All functions are easy to use. „Programming“ is done via standard RS-232 interface. Even assembling is quickly done with the help of our anodized aluminium bezels.

Display Output

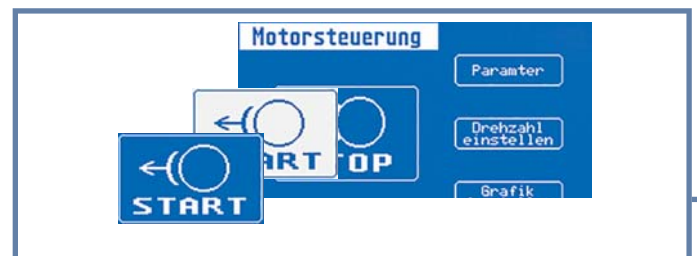
16 different fonts are built in for viewing machine settings or error messages. All characters can be zoomed and displayed horizontal or vertical - accurate to the pixel ! Many graphics functions are built in for easy drawing: place box, draw line, automatically scaled bargraph and so on. No need to say that these control units can store and display many bitmaps, logos and help text.

Input per Touch Panel

With a light touch on the display you are able to control a machine or any device in a smart way. The display is sensitive for pressure i.e. control can be done with finger or pencil for example. Even with very dry hands or using a glove you are able to control your equipment. On the first glance a touch panel based system seems to be just innovative and space-saving in comparison to a standard keyboard. Looking twice there are many other

advantages: above all flexibility allows to change key pad and legend at any time. Thus even for 1 pc. off control panel can be produced with different languages ! Also during run time key pads can be modified in size and position. According to the display content the same key pad may become a different function. Other key pad may be turned off. Double booking is no longer necessary. This makes operation much more simple and prevents operating error.

Flexibility is even more: thanks to the built-in FLASH/EEPROM it is possible to download a complete new touch panel definition after sales, too.



Simulation Software for Windows®

The software „ELECTRONIC ASSEMBLY LCD-Tools“ allows full simulation of pictures and macros on a standard pc screen. Start the free download now and be convinced of the multi-functional and easy programming of the EA KIT-series.

Ordering Information (Selection)	
320x240, ¼-VGA, 5.9", Touch	EA KIT320-8LWTP
240x128, 5.0" with Touchpanel	EA KIT240-7LWTP
160x128, 5.1" with Touchpanel	EA KIT160-7LWTP
240x64, 5.4" with Touchpanel	EA KIT240-6LEDTP
160x80, 3.1" with Touchpanel	EA KIT160-6LEDTP
128x64, 2.8" with Touchpanel	EA KIT129-6LWTP
120x32, 2.4" with Touchpanel	EA KIT120-5LEDTP

- * opt. Mounting Bezel / Plastic Case
- * RS-232 / RS-422 / USB Interface
- * 5V, 12V, 24V Supply
- * up to 16 digital I/O's
- * Blue-White or Yellow/Green
- * Simulator Software for Windows®
- * Short Leadtime

**ELECTRONIC ASSEMBLY –
World of Displays**

**OLED Displays with USB
and PCAP**

**Multifunction TFT Display
5“ - EA uniTFT050-A**

**Available now in AppStore and PlayStore
Augmented Reality App**

**uniTFTdesigner for Windows
incl. Simulator**

**Compatible TFT Series
from 3.5“ up to 7“**

**Intelligent 7“ Display
with Acoustic Feedback**

**Intelligent Display
Cuts Development Time**

**Contrasty, compact
Alphanumeric Display**

**OLEDs for Industrial Applications
with SPI and 4/8-Bit Interface**

**Compact Data Logger
with USB and WiFi**

**Variable LCD Display Requires
No Additional Auxiliary Voltage**

**e-Paper Displays
Zero Current - Amazing Contrast**

**The Easy Way for Communication
With and w./o. Touchpanel**

