

VISU-CB10 (VISU-Control-Board)

General Description

The visualization control board VISU-CB10 is a fully functional module for realizing customer specific human machine interfaces or visualization monitoring systems.

It was especially developed for using the EASY PLC's or PLC-Core-Modules of frenzel + berg electronic with the CoDeSys target visualization.

Already the standard versions of the VISU-CB10 module are equipped with a 5,7" color TFT display matrix keyboard interface and touch panel interface.

All boards have a plug and play serial graphic interface that allows coupling or decoupling panels from and to a running PLC System. So there is also no programming required by panel replacement.

All this enables possibility for using such a panel as a portable HMI, also as a mounted device to a fix place. At least the interface is construed for long wire distance.

For additional Information look to the datasheet of the VISU-P panel also. It's based on this module.

Features

5,7" color TFT display

Interface for analog Touch-Screen

Interface for Matrix-Keyboard (5x7)

LED Backlight

Buzzer (key-Beep)

Serial graphic interface (Rs232, RS485)

12/24V single supply

Stand alone screen setup

Temperature range -10 to 60 °C

VISU-CB10 top view



VISU-CB10 bottom view



Ordering Information

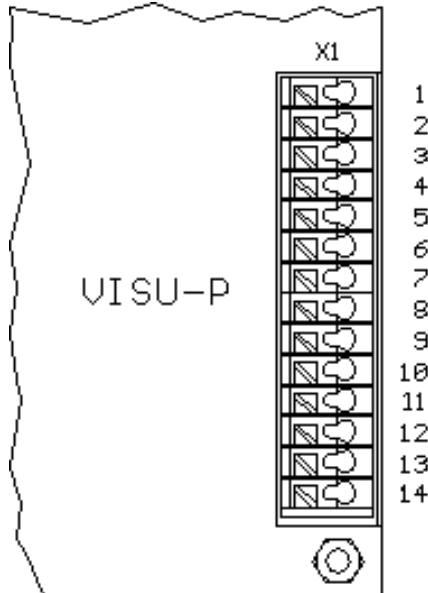
Module	
Product name	Order number
VISU-CB10-TL	EZ00000.4050.01

Accessories / Fittings

Touch panel	
Product name	Order number
Touch-570	HZ00000.4055.01

VISU-CB10 (VISU-Control-Board)

X1 Clamp

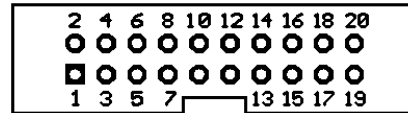


Pin No.	Pin Name	Funktion
1	CANH	CAN-Bus Signal H
2	CANL	CAN-Bus Signal L
3	GND	Common Ground
4	CANH	CAN-Bus Signal H
5	CANL	CAN-Bus Signal L
6	GND	Common Ground
7	A	RS422/485 input
8	B	RS422/485 inverted input
9	Z	RS422/485 inverted output
10	Y	RS422/485 output
11	TXD	RS232 Signal TXD
12	RXD	RS232 Signal RXD
13	U24	Power supply +24V
14	GND	Common Ground

Note: CAN-Bus interface are not available in standard model.

X2 Keyboard Connector

Top view

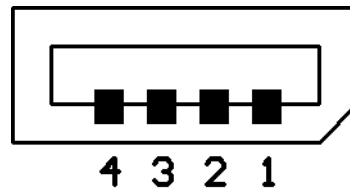


Pin	Pin Name	Funktion
1 .. 6	SCN0 .. SCN5	Scan lines
7 .. 14	RET0 .. RET7	Return lines
15 .. 20	(reserved)	(Don't connect this pins)

X3 Touch Panel Connector

Touch interface for 4-wire resistive touch panels.

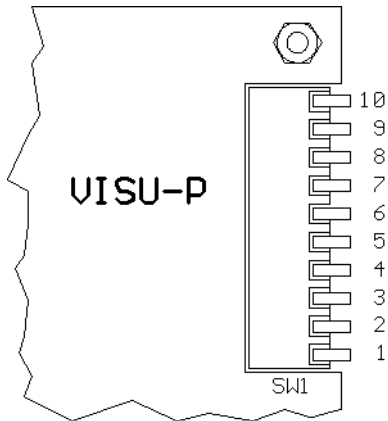
Top view



Pin	Pin Name	Funktion
1, 3	X+, X-	Plane X Resistor
2, 4	Y+, Y-	Plane Y Resistor

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DIP-Switch



SW1 DIP-Switch			
Baudrate (bit/sec)	<i>switch</i>		
	3	4	5
460800	ON	ON	ON
230400	ON	ON	OFF
115200	ON	OFF	ON
(reserved)	ON	OFF	OFF
57600	OFF	ON	ON
38400	OFF	ON	OFF
19200	OFF	OFF	ON
9600	OFF	OFF	OFF
Serial Interface			7
RS232 is enabled			OFF
RS422/485 is enabled			ON
<i>Don't connect RS232 if RS422/485 is enabled !</i>			
Screen Orientation			9 8
Normal orientation 0°			OFF OFF
Orientation rotated 90°			OFF ON
Orientation rotated 180°			ON OFF
Orientation rotated 270°			ON ON
<i>Do touch calibration after orientation was changed !</i>			
Manual Setup			10
Startup setup menu disabled			OFF
Startup setup menu enabled			ON

Note: Other switches are reserved for future use.

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RS232 Settings

When RS232-Interface is used, the following Parameters are fix.

Startbits	Databits	Stopbits
1	8	1

The Baudrate can be set via DIP-Switch between 9600 and 460800 Baud. (see SW1)

Normal Operation

After power up the VISU-P shows the information "READY" and "Vx.xx". This info is shown until communication to the host PLC is running or a communication error was detected. In case of error the display shows an error message as long as the error persist. Otherwise the visualization is displayed.

Panel Setup Menus

The VISU-CB10 has setup menus for setting hardware parameter as brightness, contrast, ... do the touch calibration and get additional information to the panel.

There are two possibilities to enter setup menus:

- 1.) Use library function "SysVisuTool_SetupMenu" in your PLC program.
- 2.) Press any key or hold on touch-screen pressed during power up.

(Note: Feature 2 is disabled if DIP10 is in OFF position)

Setup Main Menu



Select next by using function key or press button on touch screen.

Setup Menu Display



Select next by using function key or press button on touch screen.

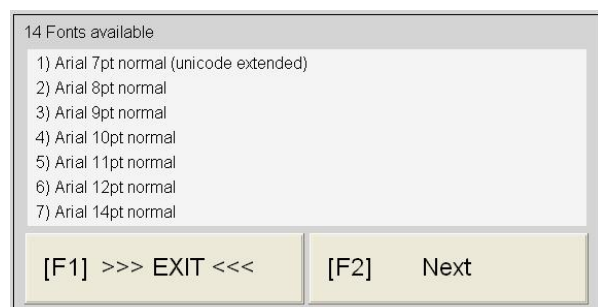
Setup Menu Keyboard



Shows key matrix line and column of last pressed key.

<[F2] BUZZ> toggles the buzzer and an icon (G) on the start screen. If the buzzer is off, the icon is displayed.

Setup Menu Font-Info



Shows a list of available fonts for this panel. Fonts named "Unicode extended" includes lot of special characters from other countries. (e.g. parts of Cyrillic font, Chinese font, ...) For using Unicode Characters the "dynamic text function" of CoDeSys may be used.

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Absolute Maximum Ratings

Stresses greater than those listed parameters may cause permanent damage to the device. Functional operation should be restricted to recommended operation conditions. Exposure to absolute maximum rating conditions for extended times may affect reliability.

Parameter	Symbol	Rated Value		Units	Remarks
		Min.	Max.		
Power supply voltage	U24	- 0,3	36	V	
RS232 Receiver Input	V _I	- 25	25	V	
RS232 Transmitter Output	V _O	- 13,2	13,2	V	
RS232 ESD Protection	V _{ESD}	- 15	15	kV	
RS422/485 Receiver Input (A, B)	V _I	- 7,5	12,5	V	
RS422/485 Trans. Output (Y, Z)	V _O	- 7,5	12,5	V	
Operating temperature	T _A	-10	+60	°C	
Storing temperature	T _A	-20	+70	°C	

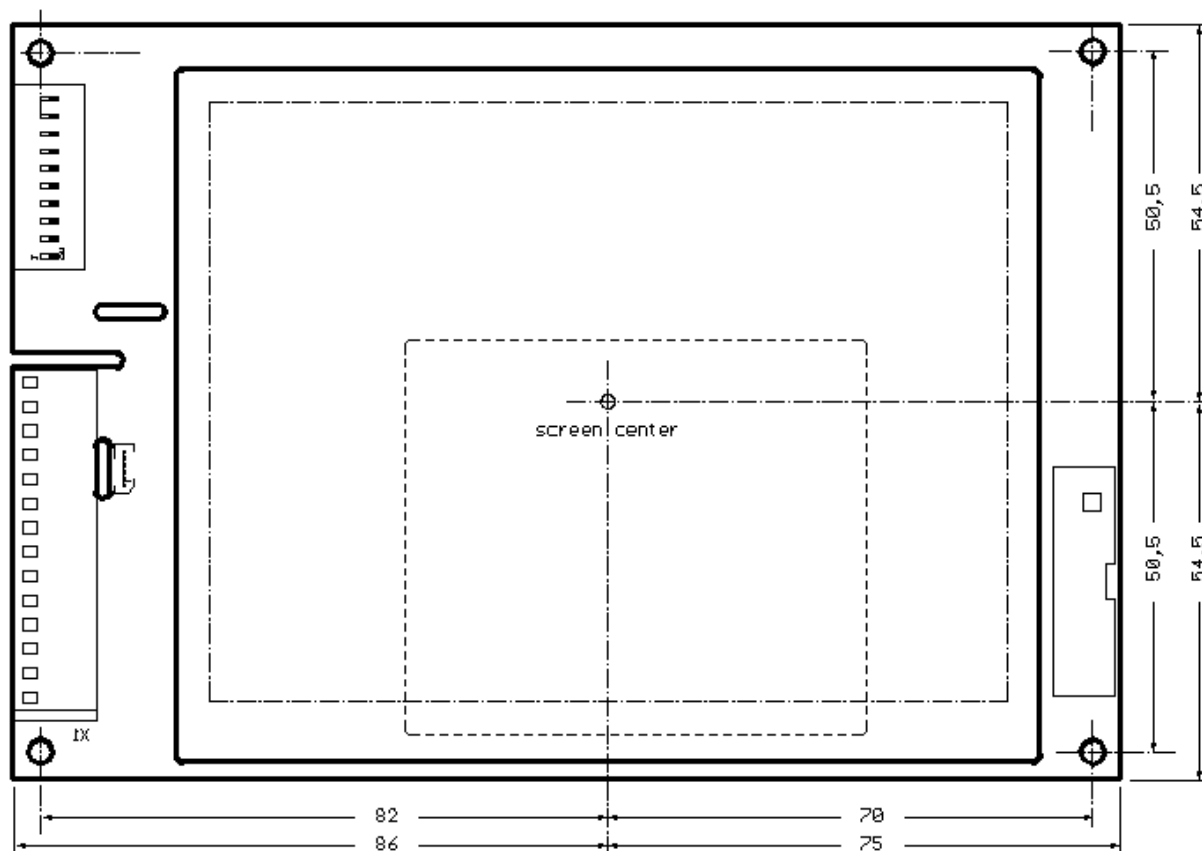
Recommended Operation Conditions and Characteristics

Functional operation should be restricted to recommended operation conditions.

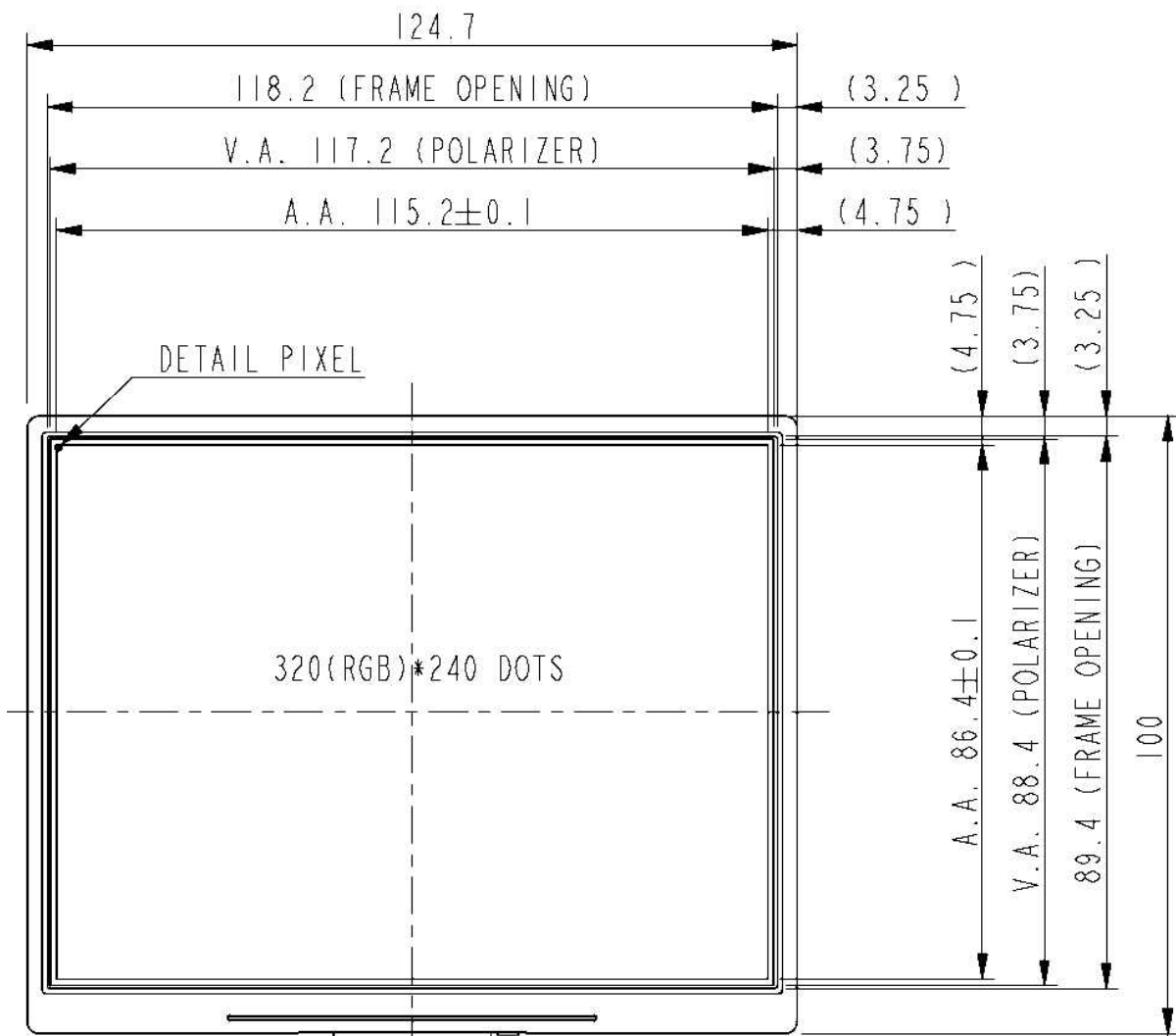
Parameter	Symbol	Rated Value			Units	Remarks
		Min.	Typ.	Max.		
Power supply voltage	U24	10	24	32	V	
Power supply current	I _{CC}		130	200	mA	(24VDC)
RS232 Receiver Input	V _{IH}	- 3,0		- 15	V	
	V _{IL}	3,0		15	V	
RS232 Receiver Output	V _{OH}	- 5,0	- 5,4		V	R _L = 3kΩ to GND
	V _{OL}	5,0	5,4		V	R _L = 3kΩ to GND
RS422/485 Diff-Driver Output	V _{OD}	2,0			V	R _L = 100Ω
	V _{OD}	1,5			V	R _L = 60Ω
Touch Plane Resistor	R _{PL}	350		3500	Ω	(X and Y- plane)
Operating temperature	T _A	-10		+60	°C	

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Measurement VISU-CB10



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Version History and Notes

Version	Date	Changes
1.00	26.05.2008	Datasheet new
1.01		
1.02	04.05.2009	Measurement drawing replaced. New board dimension for second PCB version.
1.03		
1.04	13.10.2010	Dip-switch description changed, DIP 7 is used to enable / disable RS422/485
1.05	18.10.2012	Setup menu new item <buzzer on/off>

The information herein is given to describe certain components and shall not be considered as warranted characteristics. Terms of delivery and all rights to technical changes are reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

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