

LCD TEXTDISPLAYS FOR RS-232C INCL. FRONTAL BEZEL AND LED-BACKLIT



Accessories:
cable EA KV24-9B
length: 1,50 m

FEATURES

- * 15 DIFFERENT SIZES OF DISPLAYS AVAILABLE (2x16 UP TO 8x40)
- * INCL. LED-ILLUMINATION AND WITH HIGH CONTRAST SUPERTWIST LCD
- * SUPPLY VOLTAGE +5V
- * INCL. FRONTAL BEZEL WITH ANTIGLARE GLASS
- * AUTOMATIC LINE MANAGEMENT
- * CR / LF / SCROLL / CURSOR POSITIONING
- * BAUDRATE SETTING BY JUMPER: 300, 1200, 2400 OR 9600 BAUD
- * POTI FOR CONTRAST ADJUSTMENT ON BOARD

OPTIONS

- * MULTIPLE DISPLAYS ON SINGLE RS-232C (PLEASE STATE ADDRESS)
- * MEMORY FOR 64 PERMANENT TEXTS AND 6 DIGITAL INPUT PORTS

ACCESSORIES

- * EA KV24-9B: CABLE WITH 9-PIN D-SUB FEMALE PLUG FOR PC-CONNECTION

SERIAL DISPLAYS WITH RS-232C AND FRONTAL BEZELS												
ordering information	lines x charact	charact. height	module dimensions			viewing area		frontal bezel	bezel mount. size		current typ.	figure on page
			B	H	T	B	H		B	H		
EA SER162-CNLED	2 x 16	4.35	80.0	36.0	27.0	64.5	13.8	017-1UKE	69.7	19.2	90	4
EA SER162-NLED	2 x 16	5.55	84.0	44.0	27.0	61.0	15.8	017-2UKE	66.2	21.2	120	4
EA SER162-BNLED	2 x 16	9.66	122.0	44.0	27.0	99.0	24.0	017-12UKE	103.6	28.8	360	4
EA SER202-NLED	2 x 20	5.55	116.5	39.0	27.0	85.0	18.6	017-7UKE	87.7	23.6	210	5
EA SER202-BHNLED	2 x 20	9.2	146.0	43.0	27.0	123.0	23.0	017-24KE	127.2	28.4	270	5
EA SER202-CNLED	2 x 20	12.7	182.0	60.0	27.0	147.0	35.2	017-27KE	151.2	40.2	225	5
EA SER242-NLED	2 x 24	5.55	118.0	36.0	27.0	93.5	15.8	017-14UKE	98.4	21.2	150	6
EA SER402-NLED	2 x 40	5.55	182.0	33.5	27.0	154.1	15.3	017-4UKE	159.2	21.2	150	6
EA SER164-NLED	4 x 16	4.75	87.0	60.0	27.0	61.8	25.4	017-8UKE	67.0	30.6	220	6
EA SER204-NLED	4 x 20	4.75	98.0	60.0	27.0	76.0	25.2	017-9UKE	81.2	30.6	260	7
EA SER204-BNLED	4 x 20	9.2	146.0	62.5	27.0	123.0	42.5	017-25KE	127.2	47.9	810	7
EA SER204-CNLED	4 x 20	12.7	182.0	90.0	27.0	147.0	65.4	017-28KE	151.2	70.3	225	7
EA SER404-HNLED	4 x 40	4.89	190.0	54.0	27.0	147.0	29.5	017-13UKE	151.2	34.4	440	8
EA SER308-NLED	8 x 30	4.2 bold	180.0	65.0	27.0	134.0	40.0	017-10UKE	137.2	44.4	300	8
EA SER408-NLED	8 x 40	4.2	180.0	65.0	27.0	134.0	40.0	017-10UKE	137.2	44.4	300	8

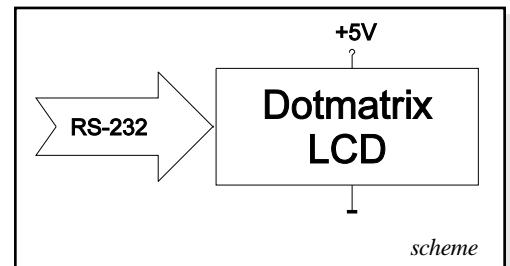
Dimensions in mm
Current in mA

**ELECTRONIC
ASSEMBLY** GMBH

LOCHHAMER SCHLAG 17 · D-82166 GRÄFELFING
PHONE ++49-89-8541991 · FAX ++49-89-8541721

GENERAL

The Serials represents a complete LCD-Dotmatrix family with input circuit and frontal bezel. These LCD-modules also includes a RS-232 interface. The mounting is done through holes of the LCD-module, the data connection is made to a standard RS-232C interface. Transfer rate can be set by jumper on 300, 1200, 2400 or 9600 Baud. All cursor controls (line feed etc.) are performed automatically. All displays feature LED-backlight illumination. Matching frontal bezel with antiglare glass is included also.



COMMANDS, DATA TRANSFER

All incoming datas will be largely interpreted as ASCII datas. When display fills up, the characters automatically scroll to the top. CR/LF will be recognized and executed. FF (12d/\$0C) clears the display. Cursor can be set manually by command i.e. "ESC O" (ESC=27d/\$1B).

TABLE OF COMMANDS					
Command	Code				Remark
Formfeed FF (dec.:12)	^L				Clear screen and place cursor to home position (1,1)
Carriage Return CR (13)	^M				Set cursor into first column left hand
Linefeed LF (dec.:10)	^J				Move cursor down to next line
Cursor positioning	ESC	O	n1	n2	n1=column; n2=line; home-position (1,1) top left hand
Cursor Form	ESC	C	0		Hidden cursor
			1		Cursor in form of a flashing block
			2		Cursor as an underscore
			3		Cursor in form of a flashing block with an underscore
Display Mode	ESC	M	1		Clear-mode; autoflow OFF
			2		Clear-mode; autoflow ON
			3		Scroll-mode; autoflow OFF
			4		Scroll-mode; autoflow ON
Select / Deselect	ESC	S	adr		Select interface adress adr=0..254; (adr 255=all)
		D	adr		Deselect interface adress adr=0..254; (adr 255=all)

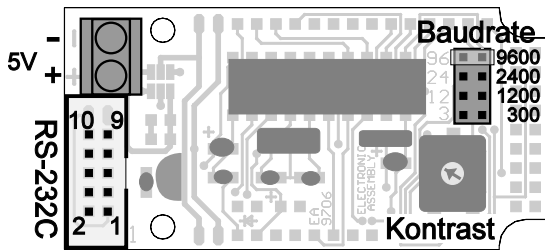
The 8-line display types **EA SER308** and **SER408** offer beside standard-commands additional options like inverse and flashing letters or saving default settings in EEPROM. These displays also feature an extended IBM-character set (characters 32..255) including symbols for frames. A completely different character set may be loaded as well (e.g. Cyrillic font or some special character symbols).

ADDITIONAL COMMANDS FOR EA SER308-NLED/408-NLED					
Command	Code				Remark
Display Mode	ESC	M	5		Clear-mode; autoflow OFF
			6		Clear-mode; autoflow ON
			7		Scroll-mode; autoflow OFF
			8		Scroll-mode; autoflow ON
Set letter type	ESC		N		Set standard type; black letters; bright background
			I		Set inverse letters; bright letters; black background
			B		Flashing letters; black letters flash on bright background
			L		Invers+flashing; bright letters flash on black background
Save actual settings	ESC	P			Saves cursorform, display-mode and font-type in EEPROM
Select / Deselect	ESC	A	adr		Assignes a new select/deselect adress (8 bit) to the interface

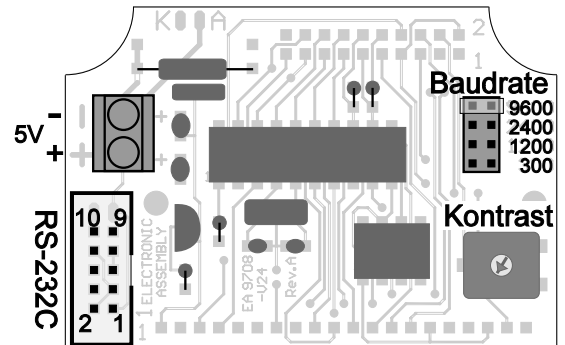
ELECTRONIC ASSEMBLY

POWER SUPPLY / CONTRAST ADJUSTMENT

Supply voltage is +5V, current consumption depends on type of display and its illumination (100-800 mA, see table on page 1). The Serials can be connected to power either by screw terminals or with RS-232C connector. Display contrast is adjustable by potentiometer.



Connections (except EA SER308 and SER408)

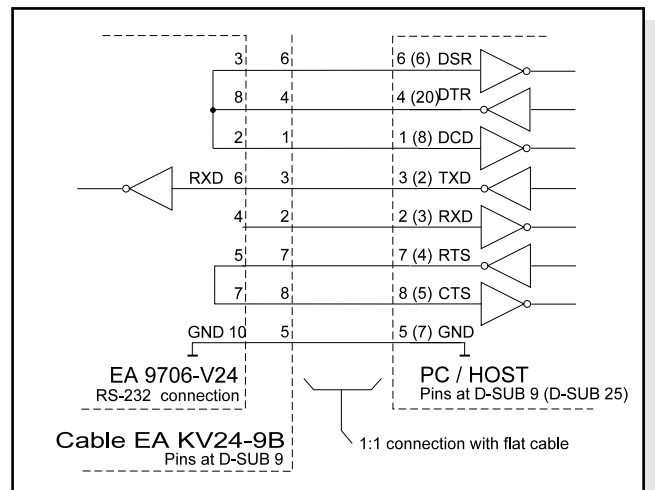


Connections for EA SER308-NLED and SER408-NLED

RS-232C CONNECTION / BAUD RATES

Connection to RS-232C interface is made on a 2x5 pin type socket. With cable EA KV24-9B (accessories) The Serials are ready to be connected directly to a PC. Transfer rate can be set by jumper on 300, 1200, 2400 or 9600 Baud. If no jumper is set during power on, the display switches into self test mode and shows its character set.

RS-232C socket (2x5 pins)					
Pin	Symbol	Function	Pin	Symbol	Function
1	VDD	+5V	2	DCD	connection to DSR and DTR
3	DSR	connection to DCD and DTR	4	NC	not connected
5	CTS	CTS and RTS bridged	6	RXD	data input
7	RTS		8	DTR	connection to DSR and DCD
9	NC	not connected	10	VSS	0V



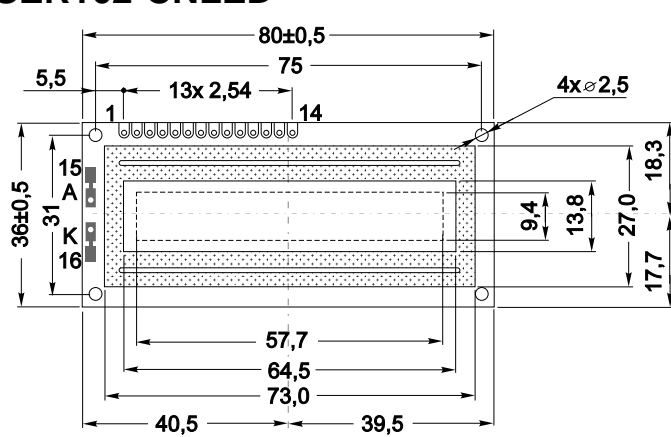
MULTIPLE DISPLAYS ON A SINGLE RS-232C

A single RS-232C can operate a number of displays. For that an individual address must be assigned to each display (please state desired address on your order). Commands "Select/Deselect" will target each individual display.

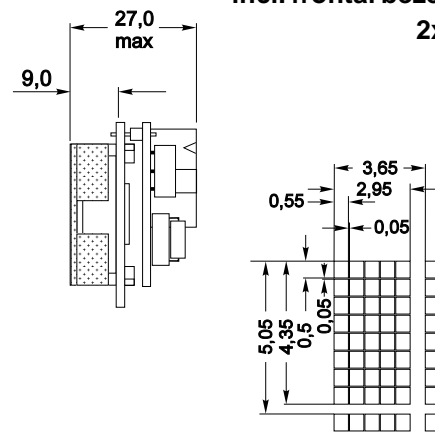
CAUTION!
Use ESD precautionary procedures
Electrostatic sensitive components



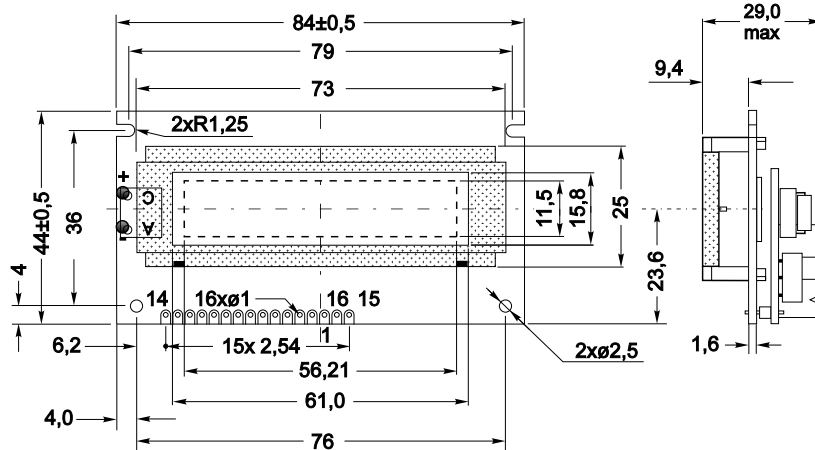
EA SER162-CNLED



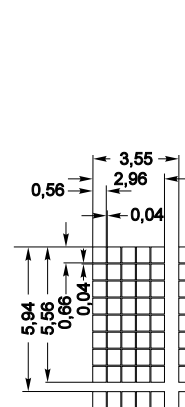
incl. frontal bezel EA 017-1UKE
2x16,ZH4.35mm



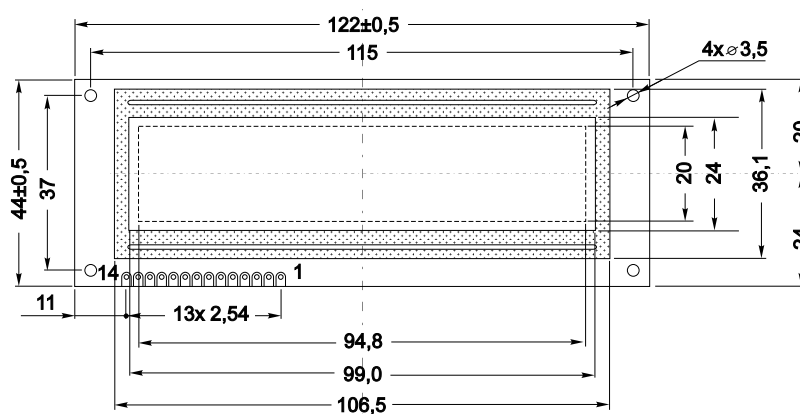
EA SER162-NLED



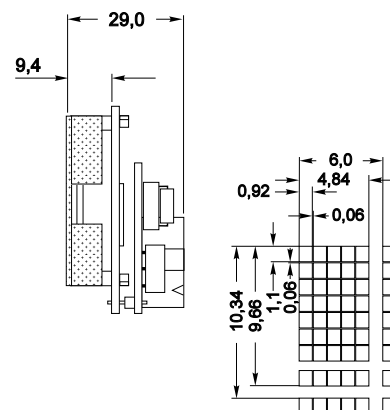
incl. frontal bezel EA 017-2UKE
2x16,ZH5.55mm



EA SER162-BNLED



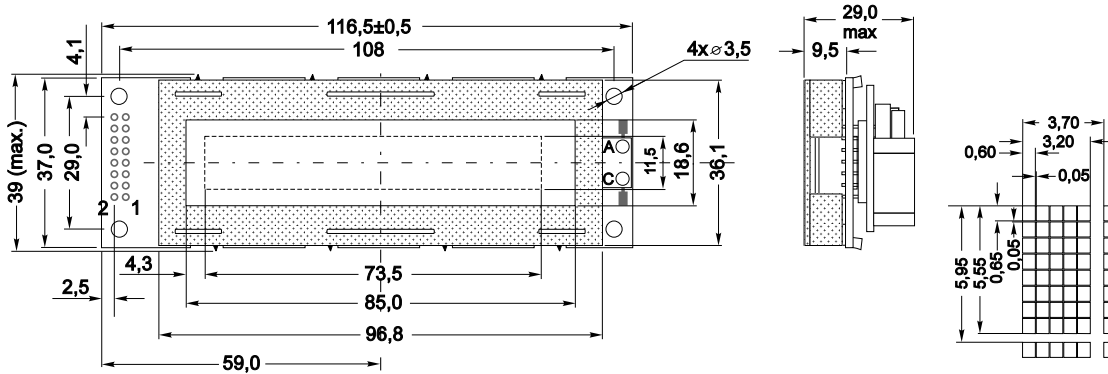
incl. frontal bezel EA 017-12UKE
2x16,ZH9.66mm



ELECTRONIC ASSEMBLY

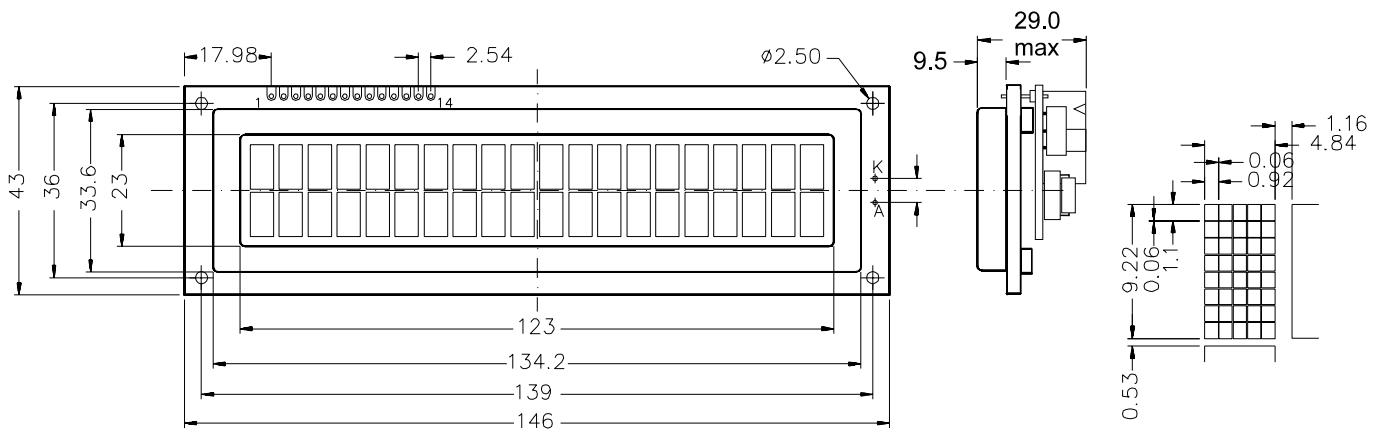
EA SER202-NLED

incl. frontal bezel EA 017-7UKE
2x20, ZH 5.55mm



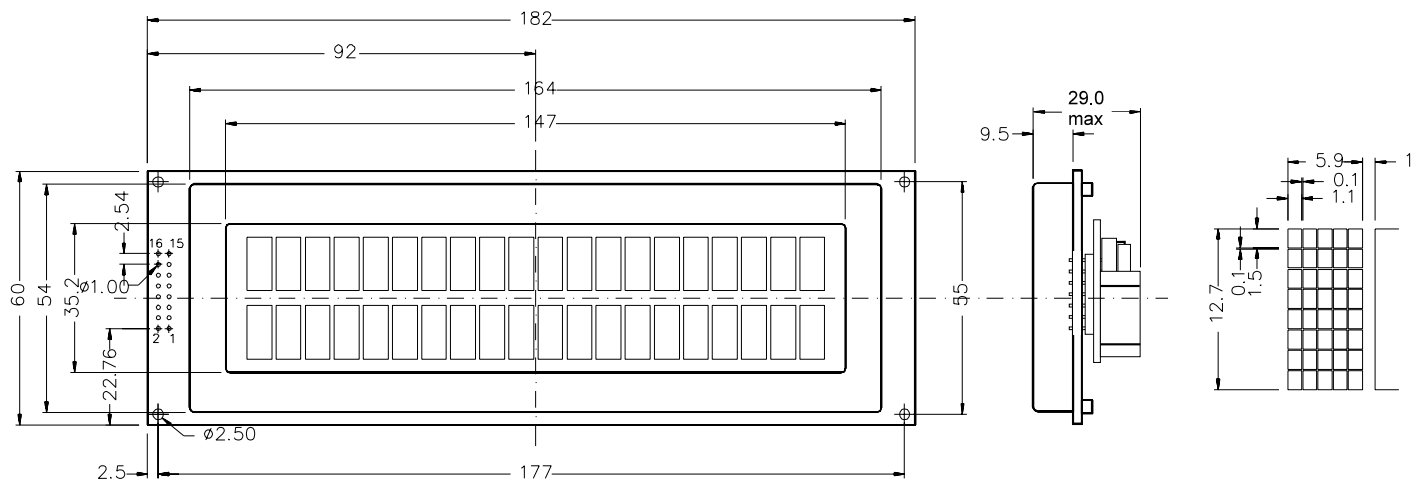
EA SER202-BHNLED

incl. frontal bezel EA 017-24KE
2x20, ZH 9.2mm



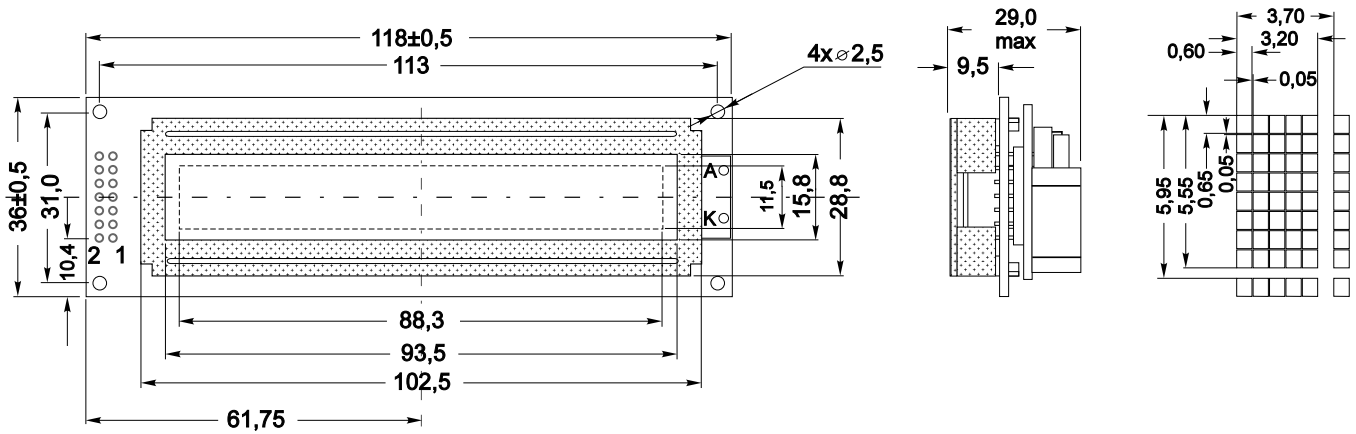
EA SER202-CNLED

incl. frontal bezel EA 017-27KE
2x20, ZH 12.7mm



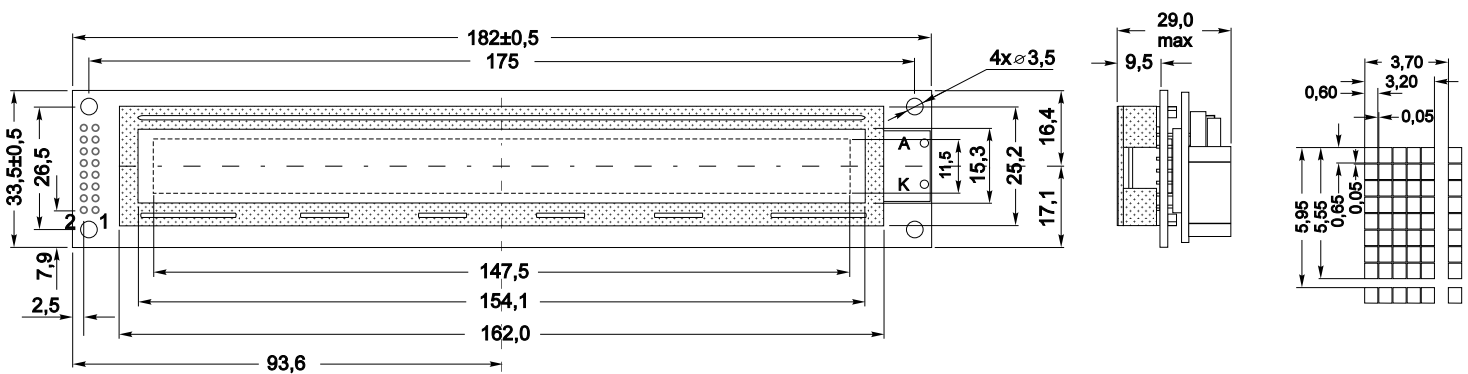
EA SER242-NLED

incl. frontal bezel EA 017-14UKE
2x24,ZH5.55mm



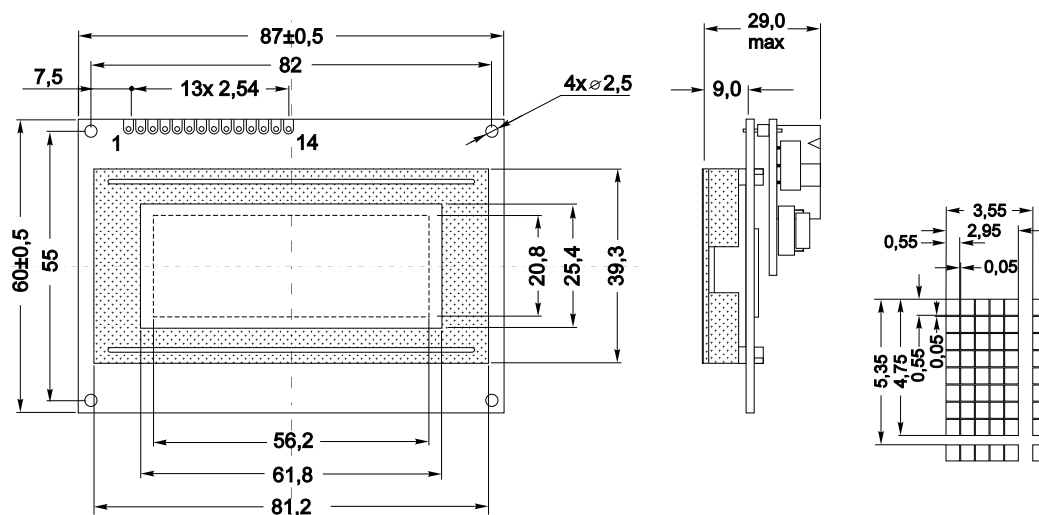
EA SER402-NLED

incl. frontal bezel EA 017-4UKE
2x40,ZH5.55mm



EA SER164-NLED

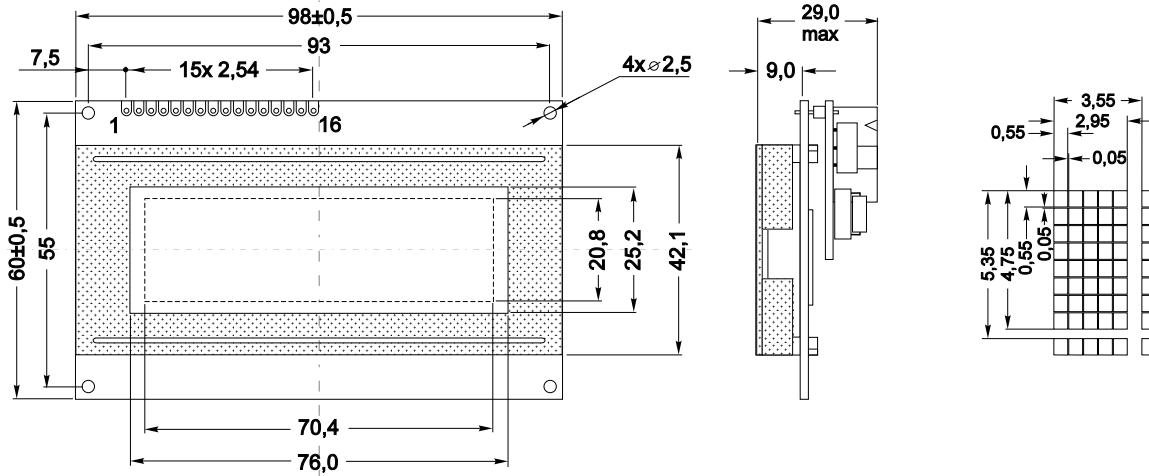
incl. frontal bezel EA 017-8UKE
4x16,ZH4.75mm



ELECTRONIC ASSEMBLY

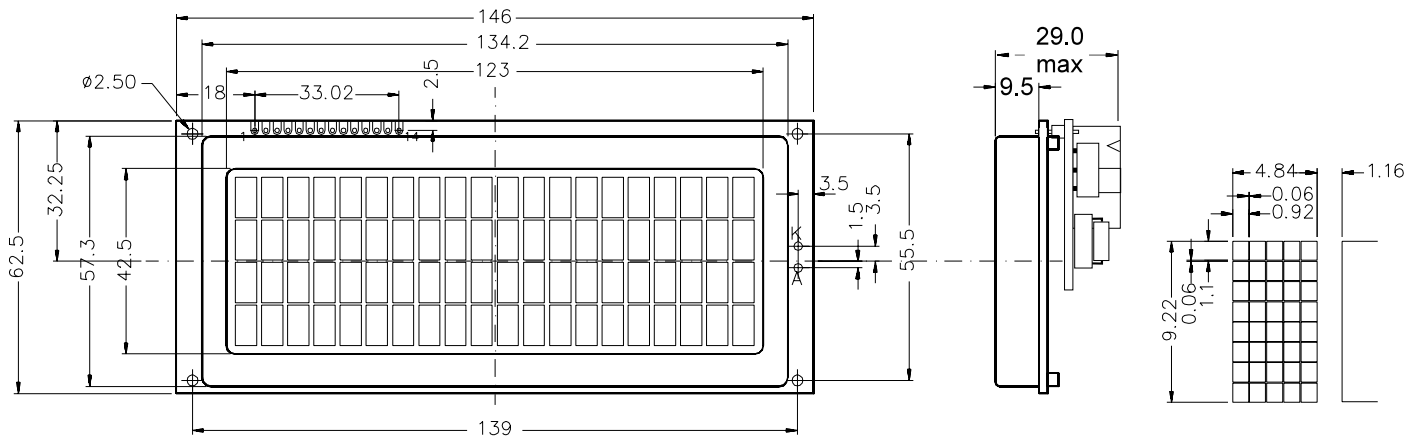
EA SER204-NLED

incl. frontal bezel EA 017-9UKE
4x20,ZH4.75mm



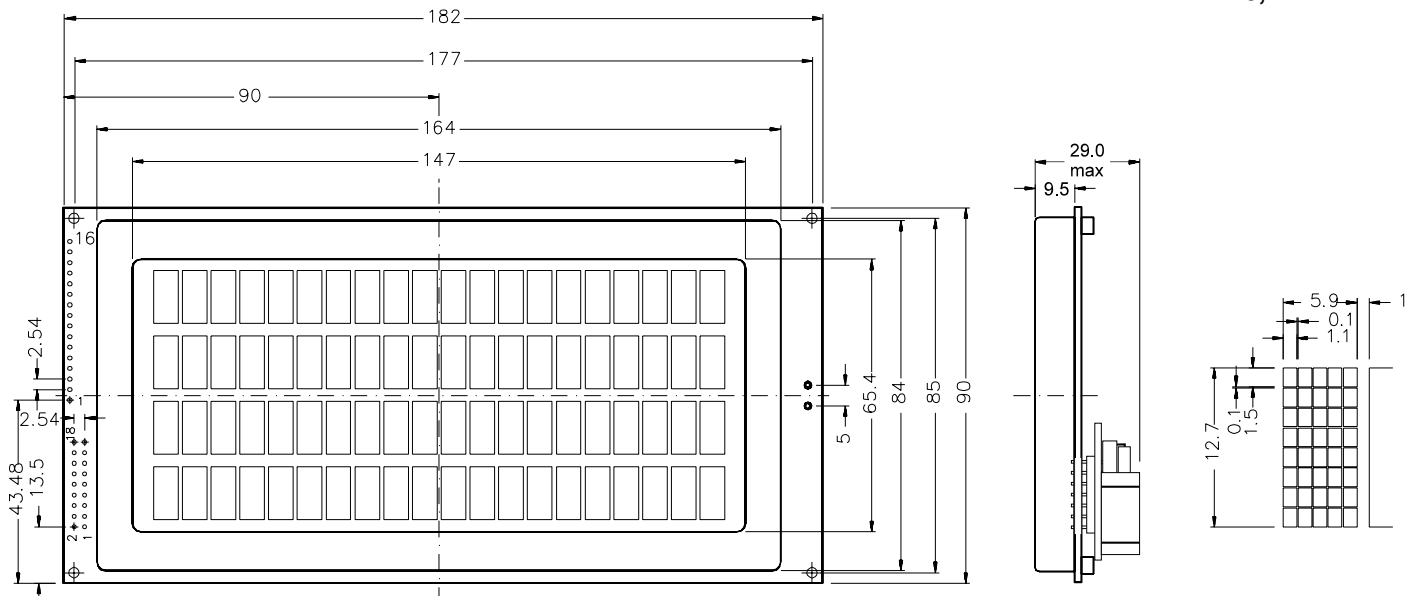
EA SER204-BNLED

incl. frontal bezel EA 017-25KE
4x20,ZH9.2mm

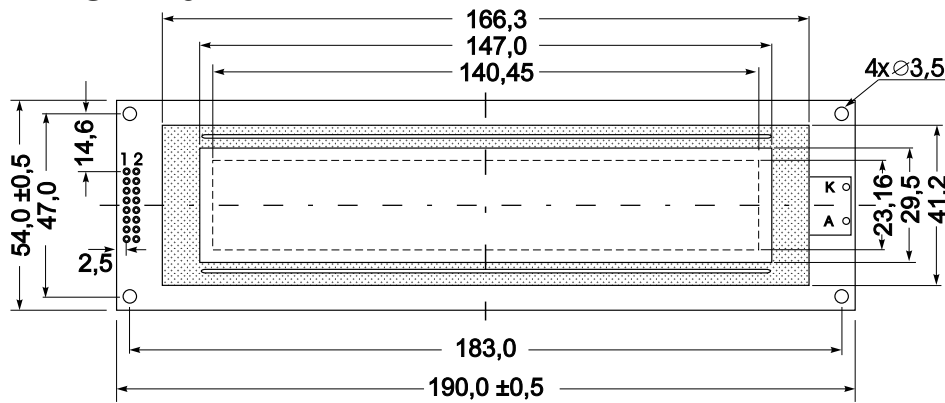


EA SER204-CNLED

incl. frontal bezel EA 017-28KE
4x20,ZH12.7mm

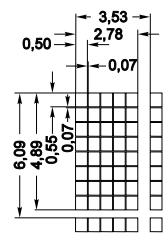
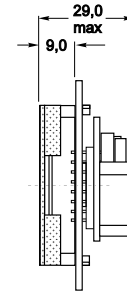


EA SER404-HNLED



incl. frontal bezel EA 017-13UKE

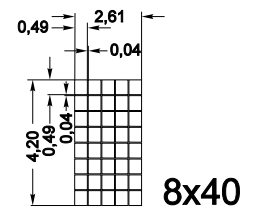
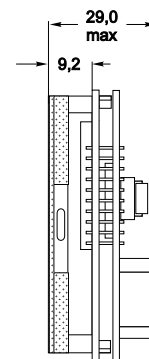
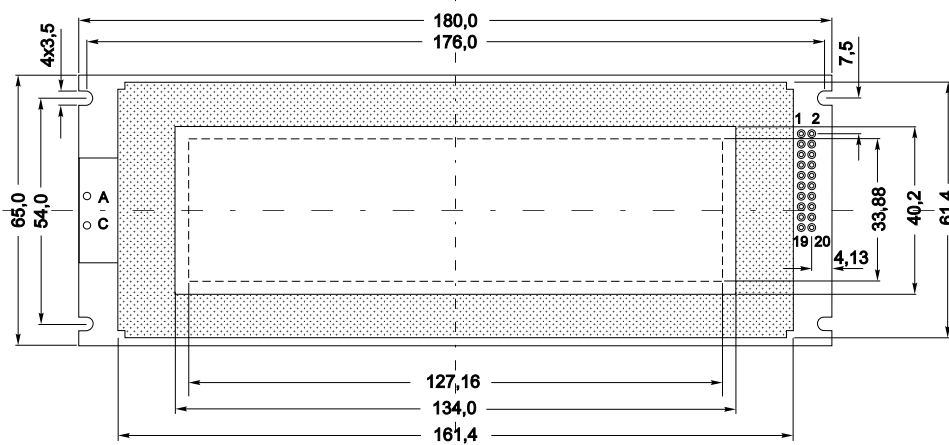
4x40,ZH 4.89mm



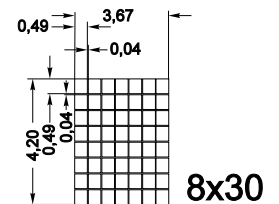
EA SER308-NLED / SER408-NLED

incl. frontal bezel EA 017-10UKE

8x30 bold / 8x40,ZH 4.2mm

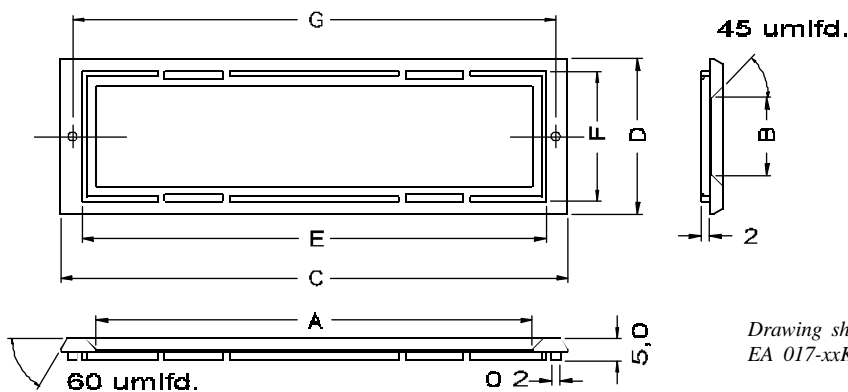


8x40



8x30

FRONTAL BEZEL / DIMENSIONS



Drawing shows the nose piece for frontal bezels EA 017-xxUKE;
EA 017-xxKE have a rim on full circumference.

Display type	Viewing area		Outside dim.		Mounting size		G	Frontal Bezel
	A	B	C	D	E	F		
EA SER162-CNLED	63,5	12,8	79,5	25,0	69,7	19,2	74,5	EA 017-1UKE
EA SER162-NLED	60,0	14,8	76,0	27,0	66,2	21,2	71,0	EA 017-2UKE
EA SER162-BNLED	97,4	22,4	113,4	34,6	103,6	28,8	108,4	EA 017-12UKE
EA SER202-NLED	81,5	17,2	97,5	29,4	87,7	23,6	92,5	EA 017-7UKE
EA SER202-BHNLED	121,0	22,0	137,0	34,2	127,2	28,4	132,0	EA 017-24KE
EA SER202-CNLED	145,0	33,8	161,0	46,0	151,2	40,2	156,0	EA 017-27KE
EA SER242-NLED	92,0	14,8	108,0	27,0	98,4	21,2	103,0	EA 017-14UKE
EA SER402-NLED	153,0	14,8	169,0	27,0	159,2	21,2	164,0	EA 017-4UKE
EA SER164-NLED	60,8	24,2	76,8	36,4	67,0	30,6	71,8	EA 017-8UKE
EA SER204-NLED	75,0	24,2	91,0	36,4	81,2	30,6	86,0	EA 017-9UKE
EA SER204-BNLED	121,0	41,5	137,0	53,7	127,2	47,9	132,0	EA 017-25KE
EA SER204-CNLED	145,0	63,9	161,0	76,1	151,2	70,3	156,0	EA 017-28KE
EA SER404-HNLED	145,0	28,0	161,0	40,2	151,2	34,4	156,0	EA 017-13UKE
EA SER308-NLED	131,0	38,0	147,0	50,2	137,2	44,4	142,0	EA 017-10UKE
EA SER408-NLED	131,0	38,0	147,0	50,2	137,2	44,4	142,0	EA 017-10UKE

Dimensions in mm

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handling precautions!