

Display Elektronik GmbH

DATA SHEET

LCD STANDARD PANEL

DE 302 - SERIES

Product specification

Version : 2

07.06.2006

GENERAL SPECIFICATION

MODULE NO. :

DE 302 - SERIES

CUSTOMER P/N

VERSION NO.	CHANGE DESCRIPTION	DATE
1	ORIGINAL VERSION	02.06.2006
2	MODIFY VOLTAGE	07.06.2006

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DATE: 07.06.2006

APPROVED BY: MH

DATE: 07.06.2006

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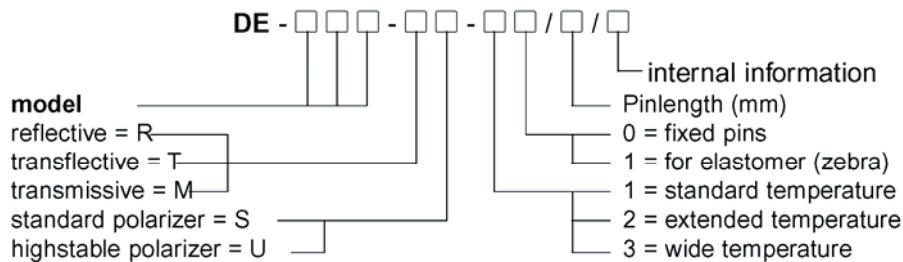
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1. GENERAL FEATURES

Display Elektronik GmbH is specialized in LCD-products.

- There is a wide range of standard lcd-panels. Most of them are available from stock.
- Most of our standard panels operate within the extended temperature range (-20°C to +70°C).
- For the static types the Vlcd is ready for 3 Volt, like shown in the following table. For most of our multiplexed standard panels we offer a 3Volt and a 5Volt model.
- Most panels are available in reflective and transfective version.
- In general we offer a standard pinlength from stock. Pls ask us in case you want a different pinlength. For the LCD-panels without pins we also offer elastomeric connectors (zebras).
- For outdoor applications we offer suitable LCD-displays with extreme wide temperature range and UV-stability etc...

2. ORDERING INFORMATION



Example:

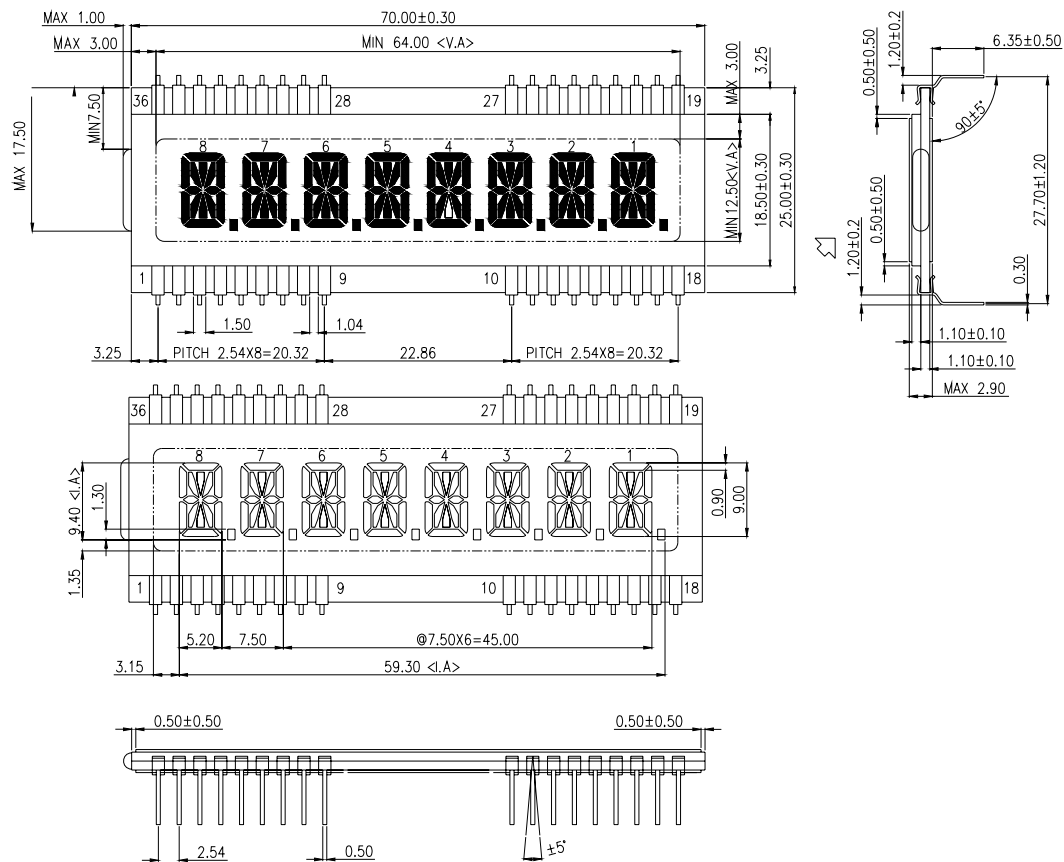
DE-113-RS-10/7,5
 LCD 3½ digits
 Digit height 12.7 mm
 Reflective
 Standard polarizer
 Standard temperature
 Fixed pins
 Pinlength 7.5 mm

3. MODEL TYPES

Our actual model types are:

MODEL NAME	POLARIZER MODE	POLARIZER TYPE	OPERATING TEMPERATURE	PIN LENGTH	VIEWING DIRECTION	OPERATING VOLTAGE	VOLTAGE MODE
DE 302-RU-30/6,35 (4.7V)	Reflective	High-Stable	-30°C ... +80°C	6,35	6° clock	4,7 Volt	¼ duty 1/3 bias

4. MECHANICAL SPECIFICATIONS



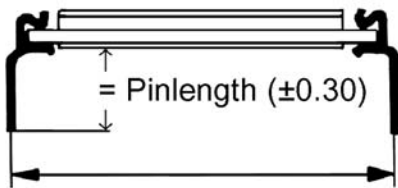
5. PIN ASSIGNMENT

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
COM1			8I		7I		6I		5I		4I		3I		2I		1I		
COM2		8F	8J	7F	7J	6F	6J	5F	5J	4F	4J	3F	3J	2F	2J	1F	1J		
COM3		8E	8K	7E	7K	6E	6K	5E	5K	4E	4K	3E	3K	2E	2K	1E	1K	COM3	
COM4	COM4	8D	8N	7D	7N	6D	6N	5D	5N	4D	4N	3D	3N	2D	2N	1D	1N		
		19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
COM1	COM1	1A	1H	2A	2H	3A	3H	4A	4H	5A	5H	6A	6H	7A	7H	8A	8H		
COM2		1B	1G	2B	2G	3B	3G	4B	4G	5B	5G	6B	6G	7B	7G	8B	8G	COM2	
COM3		1C	1L	2C	2L	3C	3L	4C	4L	5C	5L	6C	6L	7C	7L	8C	8L		
COM4		P1	1M	P2	2M	P3	3M	P4	4M	P5	5M	P6	6M	P7	7M	P8	8M		

6. ELECTRICAL AND PHYSICAL PROPERTIES

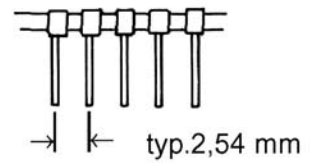
At an ambient temperature of 25°C	Standard temperature			Extended temperature			Wide temperature			Unit
	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	
Operating voltage		3			3			5		V
Driving frequency	30	32	100	30	32	100	30	32	100	Hz
Current consumption		1,0	2,0		1,0	2,0		1,0	2,0	µA/cm ²
DC-voltage allowance			50			50			50	mV
Response time (t _{on} + t _{off})		440			440				450	ms
Operating temperature	-10		60	-20		70	-40		90	°C
Storage temperature	-20		65	-40		90	-40		90	°C
Lifetime	100 000									h

7. APPLICATION NOTE



DIL-Pins

Pinlength = Distance between rear side of LCD to end of pin

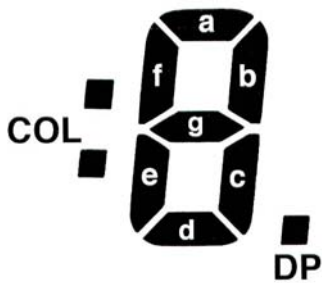


Distance of pinrow to pinrow = glass-size + 2.54 mm

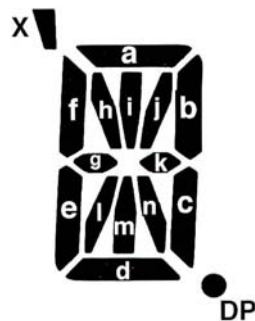
Ø hole in PCB typ. 1,0 mm

8. SEGMENT DEFINITION

7 SEGMENT

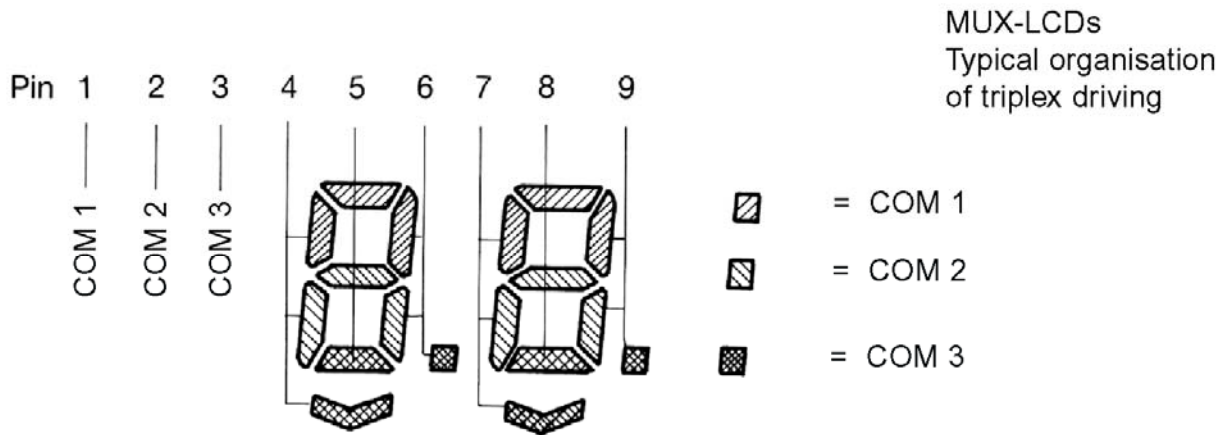


14 SEGMENT



16 SEGMENT





Digits to be counted from left to right.

9. CONNECTING LCDs

- Fixed pins have a typical pitch of 2,54mm. (Pls refer to mechanical specification).
- LCD for elastomeric connectors (zebras) may have thighter pitches. Please regard tolerances and pitch of elastomer connector.

10. SOLDER CONDITIONS FOR LCD WITH FIXED PINS

	min.	typ.	max.
Solder temperature	t.b.d.	~ 235°C	260°C
Solder duration	t.b.d.	2 seconds	5 seconds
Distance to glass substrate	4mm	6mm	t.b.d.

t.b.d. – to be discussed !

11. CLEANING OF LCDs

- LCDs have a protective foil on top of the front glass. This foil should be removed at the latest possible stage.
- If there is a need of cleaning, you may use freon or alcohol with a soft fabric, as front polarizers are sensitive to physical damage.
- Pls also note this protective foil on the rear side, in case you use transfective model-types.
- Do not use ultrasonic for cleaning of PCB once LCD is soldered.

12. HANDLING PRECAUTIONS

- As polarizers of LCD (front and rear-side) are sensitive, they must be handled with care.
- DC Voltage or drive voltage higher than specified voltage will decrease the lifetime of the liquid crystal

display panel.

- If any fluid leaks out of a damaged glass cell, wash off any human part that comes into contact with soap and water. Never swallow the fluid. The toxicity is low, but caution should be exercised at all times.
- LCD is made up of glass, organic sealant, organic fluid and polymer based polarizers. The following precautions should be taken when handling:

Keep the temperature within range for use and storage. Excessive temperature and humidity could cause polarization degradation, polarizer peel-off or bubble generation. When storage for a long period over 40°C is required, the relative humidity should be kept below 60%.