

Philips Components

Data sheet	
status	Product specification
date of issue	July 1990

LHA142

T-41-38

Liquid crystal display

DEVICE DESCRIPTION

The LHA142 is a single character display in Heilmeyer Guest-Host technology. Typical applications include information panels for air terminals, bus stations and railway stations.

QUICK REFERENCE DATA

Viewing area dimensions	44.8 x 66.4 mm
Overall glass dimensions	50.8 x 80.0 mm
Thickness	2.7 +/- 0.2 mm
Preferred viewing direction	6 o'clock
Driving method	direct drive

DISPLAY MODE

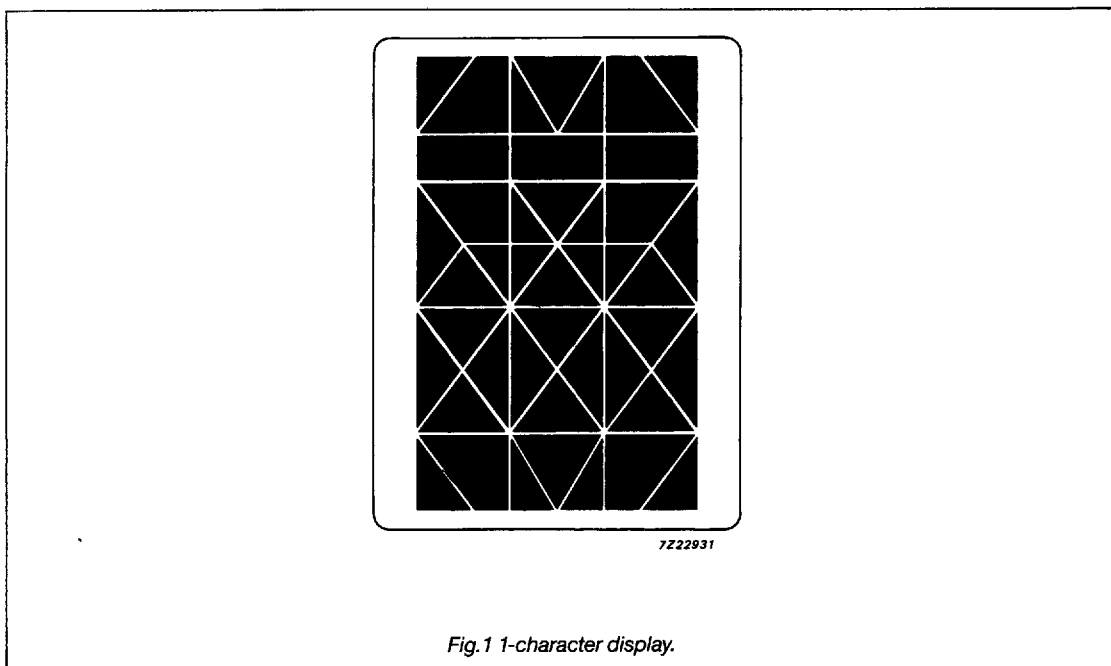


Fig.1 1-character display.

TYPE DEPENDENT CHARACTERISTICS

TYPE	ILLUMINATION MODE	IMAGE MODE	CONNECTION METHOD	RELIABILITY GRADE	OPERATING VOLTAGE (V)
LHA142U-22	transmissive	negative	with fixed pins	extended	7.5 to 9.5

Liquid crystal display

LHA142

PIN DESCRIPTION

PIN NO.	SEGMENT	PIN NO.	SEGMENT
1	comm	21	b10
2	b8	22	c8
3	a4	23	c9
4	a6	24	c10
5	a5	25	b12
6	a1	26	c11
7	a2,a3	27	b15,b16
8	b5	28	c12
9	b3	29	c13
10	b1,b2	30	b17
11	b4	31	a13
12	b7	32	a12
13	b6	33	a11
14	c1	34	b13,b14
15	c2	35	b11
16	c3	36	a10
17	c4	37	a9
18	c6	38	a8
19	c5	39	a7
20	c7	40	b9

RATINGS

Limiting values in accordance with Absolute Maximum System (IEC 134)

Maximum voltage between any two contacts (see note)

V_{max}	15 V RMS
T_{stg}	-40 to +85 °C

Storage temperature range

Note: maximum DC component = 0.1 V

OPERATING CHARACTERISTICS

All values at, $T_{amb} = 25\text{ °C}$; $V_{op} = V_{op\ typ}$; $f_{dr} = 100\text{ Hz}$; $\alpha = 10^\circ$; $\phi = \phi_{opt}$, unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
operating operating voltage	V_{op}	7.5	8.5	9.5	V
operating ambient temperature range	T_{amb}	-25	-	+80	°C
turn on time at $T_{amb} = 25\text{ °C}$	t_{on}	-	60	120	ms
at $T_{amb} = 0\text{ °C}$	t_{on}	-	260	520	ms
turn off time at $T_{amb} = 25\text{ °C}$	t_{off}	-	35	70	ms
at $T_{amb} = 0\text{ °C}$	t_{off}	-	125	250	ms
specific current consumption*	I	-	62	124	μA
frame frequency	f_{dr}	30	-	200	Hz

* All segments on.

Liquid crystal display

LHA142

	PIN NUMBERS																			
	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A		X	X	X	X	X	X								X	X	X	X	X	X
B		X	X	X	X	X	X		X	X				X		X	X	X	X	X
C			X	X	X	X	X		X	X				X		X				
D			X	X	X	X	X		X	X				X		X	X	X	X	X
E		X	X	X	X	X	X		X	X				X	X					
F		X	X	X	X	X	X													
G			X	X	X	X	X		X	X				X		X	X	X	X	X
H		X	X	X	X	X	X							X	X	X	X	X	X	X
I		X						X	X	X	X	X	X							
J							X		X	X				X		X	X	X	X	X
K		X	X	X	X	X	X					X	X	X	X	X	X			
L			X	X	X	X	X		X	X				X	X					
M			X	X	X	X	X							X	X	X	X	X	X	X
N		X	X	X	X	X	X					X	X	X	X	X	X	X	X	X
O			X	X	X	X	X		X	X				X		X	X	X	X	X
P		X	X	X	X	X	X													
Q		X	X	X	X	X	X		X	X				X		X	X	X	X	X
R		X	X	X	X	X	X							X	X	X	X	X	X	X
S		X					X		X	X				X		X	X	X	X	X
T		X						X	X	X	X	X	X			X	X	X	X	X
U			X	X	X		X		X	X				X		X	X	X	X	X
V				X	X			X	X		X		X				X	X	X	X
W		X	X	X	X		X	X				X	X	X		X	X	X	X	X
X		X			X	X	X	X				X	X	X	X	X	X			
Y		X					X	X	X	X	X	X	X	X	X	X				
Z		X			X	X	X	X	X	X				X	X					
?		X						X	X					X						
!		X						X	X					X						
+		X						X			X	X	X							X
-		X																		X
:								X			X	X	X							X
.									X	X	X									
/		X			X	X	X	X				X								
\		X										X	X	X	X	X	X			
{			X	X	X		X		X	X										
}									X	X				X		X	X	X	X	X
[			X	X	X	X	X		X	X										
]									X	X				X	X	X	X	X	X	X
■		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
↓		X		X	X			X	X		X	X	X				X	X		
1		X						X	X	X	X	X	X							
2		X			X	X	X	X	X	X				X	X					
3		X					X		X	X				X		X	X	X	X	X
4		X												X	X	X	X	X	X	X
5		X					X		X	X				X		X	X	X	X	X
6		X	X	X	X		X		X	X				X		X	X	X	X	X
7		X			X	X	X	X				X								
8		X	X	X	X		X		X	X				X		X	X	X	X	X
9		X					X		X	X				X		X	X	X	X	X
0		X	X	X	X		X	X	X	X		X		X		X	X	X	X	X
°																				
%		X			X	X	X	X				X		X	X					

* Pin 1 = common; X = ON; blank = OFF

Liquid crystal display

LHA142

	PIN NUMBERS (cont.)																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	X	X	X	X		X	X	X		X		X	X			X	X	X	X	X
B	X	X		X	X	X	X	X		X		X	X			X	X	X	X	X
C						X	X	X		X		X	X			X	X	X	X	X
D		X	X	X		X	X	X		X	X	X	X			X	X	X	X	
E	X						X	X	X	X	X	X	X			X	X	X	X	X
F	X						X	X	X	X	X	X	X			X	X	X	X	X
G	X	X					X	X	X	X	X	X	X			X	X	X	X	X
H	X	X	X	X		X		X	X		X	X	X			X	X	X	X	X
I	X				X		X			X				X	X					X
J		X	X	X		X	X	X	X	X										
K	X	X		X	X	X		X	X							X	X	X	X	X
L										X	X	X				X	X	X	X	X
M		X	X	X		X	X	X	X		X	X	X	X		X	X	X	X	X
N		X	X	X		X		X	X		X	X	X		X	X	X	X	X	X
O		X	X	X		X	X	X		X		X	X			X	X	X	X	X
P	X	X	X	X	X	X	X	X		X	X	X	X			X	X	X	X	X
Q		X	X	X		X	X	X		X		X	X			X	X	X	X	X
R	X	X		X	X	X	X	X		X	X	X	X			X	X	X	X	X
S	X	X			X	X	X	X		X	X	X	X			X	X	X	X	X
T	X				X		X	X	X	X	X	X	X	X	X					X
U		X	X	X		X		X	X		X	X	X			X	X	X	X	X
V		X	X	X		X		X	X		X	X	X			X	X	X	X	X
W		X	X	X		X		X	X		X	X	X			X	X	X	X	X
X	X	X		X	X	X	X	X	X	X	X	X	X		X	X		X		X
Y	X	X		X	X	X		X	X		X	X	X		X	X		X		X
Z	X	X		X	X	X	X	X	X	X	X	X	X			X	X		X	X
?	X	X		X	X	X	X	X	X	X	X	X	X							
!	X	X		X	X	X	X	X	X	X	X	X	X							X
+	X	X	X	X	X			X		X				X	X	X	X	X	X	X
-	X	X	X	X	X									X	X	X	X	X	X	X
:					X									X	X					
.																				
/	X	X		X	X	X		X	X											
\										X	X	X				X	X	X	X	X
{							X			X		X	X			X	X	X	X	X
}		X	X	X		X	X	X		X		X	X			X	X	X	X	X
[							X			X		X	X			X	X	X	X	X
]		X	X	X		X	X	X	X	X		X	X			X	X	X	X	X
■	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
↓	X				X									X	X					X
1	X						X			X		X		X	X					X
2	X	X		X	X	X	X	X		X		X	X							X
3	X	X		X	X	X	X	X		X		X	X							X
4	X	X	X	X		X				X	X	X								X
5	X	X					X	X	X	X	X	X				X	X	X	X	X
6	X	X				X	X	X		X		X	X			X	X	X	X	X
7	X	X		X	X	X	X	X	X	X	X	X								X
8	X	X		X	X	X	X	X		X		X	X			X		X	X	X
9	X	X		X	X	X	X	X		X		X	X		X	X		X	X	X
0	X	X		X	X	X	X	X		X		X	X		X	X	X	X	X	X
°				X	X	X	X	X		X		X	X	X	X					
%	X	X		X	X	X		X	X		X	X								

* Pin 1 = common; X = ON; blank = OFF