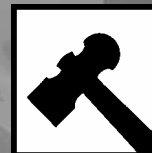


# storm

## 5003 Series. Vandal Resistant Display Bezel



FM 39602



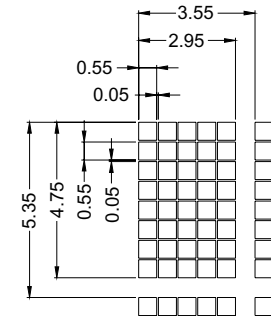
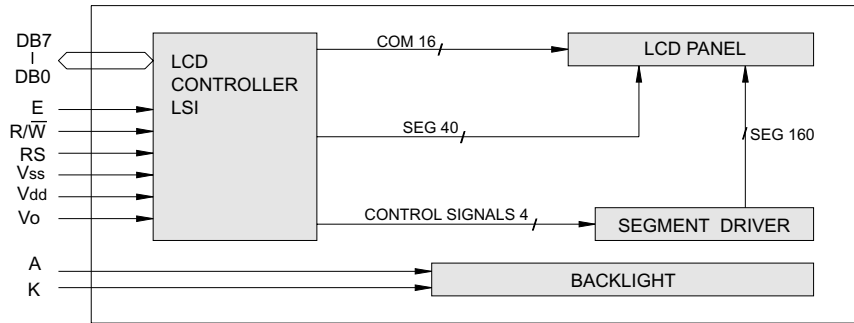
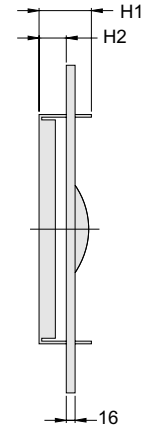
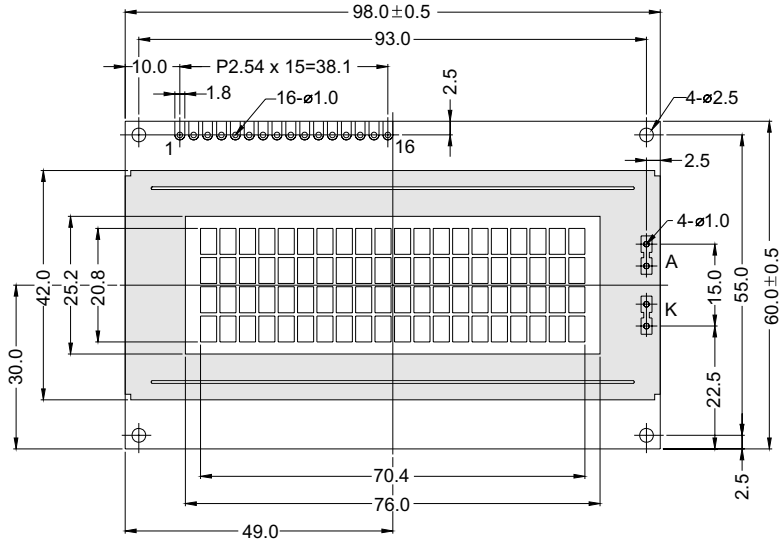
### For menu driven applications in the toughest environments

- Impact resistant (20J BS EN 60068-2-75: 1997).
- Clear, scratch resistant, anti-reflective window.
- Water and dust resistant. (IP65).
- Responsive menu navigation and option select keys.
- Available with or without an optional 122 X 32 dot resolution, LCD graphic display, or 4 line X 20 characters LCD display module.
- Under-panel fixing through panel thicknesses of up to 2 mm.
- Supplied complete with panel gasket.
- Resistant to petrochemicals and most commonly used cleaning agents.
- 20 °C (dry) to +60 °C ( Bezel only. Display to be separately specified according to application ).
- Optional heater module for use in cold environments.
- Download a 3D CAD model of this device at [www.storm-interface.com](http://www.storm-interface.com).





**OUTLINE DIMENSION & BLOCK DIAGRAM**



The tolerance unless classified  $\pm 0.3\text{mm}$

MECHANICAL SPECIFICATION			
Overall Size	98.0 x 60.0	Module	H2 / H1
View Area	76.0 x 25.2	W / O B/L	5.0 / 9.6
Dot Size	0.55 x 0.55	EL B/L	5.0 / 9.6
Dot Pitch	0.60 x 0.60	LED B/L	8.7 / 13.3

PIN ASSIGNMENT		
Pin no.	Symbol	Function
1	Vss	Power supply(GND)
2	Vdd	Power supply(+)
3	Vo	Contrast Adjust
4	RS	Register select signal
5	R/W	Data read / write
6	E	Enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	A	Power supply for LED B/L (+)
16	K	Power supply for LED B/L (-)

ABSOLUTE MAXIMUM RATING									
Item	Symbol	Condition	Min.	Max.	Units				
Supply for logic voltage	Vdd-Vss	25°C	-0.3	7	V				
LCD driving supply voltage	Vdd-Vee	25°C	-0.3	13	V				
Input voltage	Vin	25°C	-0.3	Vdd+0.3	V				
ELECTRICAL CHARACTERISTICS									
Item	Symbol	Condition	Min.	Typical	Max.	Units			
Power supply voltage	Vdd-Vss	25°C	2.7	-	5.5	V			
LCD operation voltage	Vop	Top	N	W	N	W	V		
		-20°C	-	7.1	-	7.5	-	7.9	V
		0°C	5.1	-	5.4	-	6.1	-	V
		25°C	5	6.1	5.3	6.4	5.8	6.7	V
		50°C	4.4	-	4.7	-	5.5	-	V
		70°C	-	5.7	-	6	-	6.3	V
LCM current consumption (No B/L)	Idd	Vdd=5V	-	2.5	4	mA			
Backlight current consumption	LED/edge	VB/L=4.2V	-	-	-	mA			
	LED/array	VB/L=4.2V	-	260	-	mA			

**REMARK**

LCD option: STN, TN, FSTN

Backlight Option: LED, EL Backlight feature, other Specs not available on catalog is under request.



## SPECIFICATIONS

Responsive menu navigation and option select keys

Matrix Output to 0.1" square pins ..... compatible with Molex KK Housing  
 Overall Size ..... 110 mm wide x 88 mm high  
 Vandal Resistant ..... 20J BS EN 60068-2-75:1997  
 Water and Dust Resistant ..... IP65

Panel Mount Gasket Included.

Responsive key action .....  
 Panel Cutout .....  
 Operating Temp .....  
 Switch Rating .....  
 Contact Resistance .....

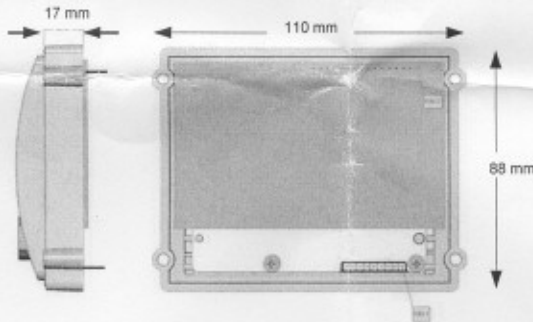
travel 1.5 mm (nominal), force 130 gm (nominal)  
 96 mm x 81 mm  
 -20°C to +60°C  
 24 V dc (Max), 50 mA (Max)  
 100 Ohms (Max)

Optional backlit 4 line x 20 character LCD ..... Powertips PC2004-A-LRU-H  
 fitted with a single row of 16 0.1" square pins  
 LCD Operating Voltage +5V to +9V (see note \*)

### UNIT WITH LCD FITTED



Position 1	Position 2	Position 3
R1C1	R1C2	R1C3



### MATRIX KEYPAD CONNECTIONS

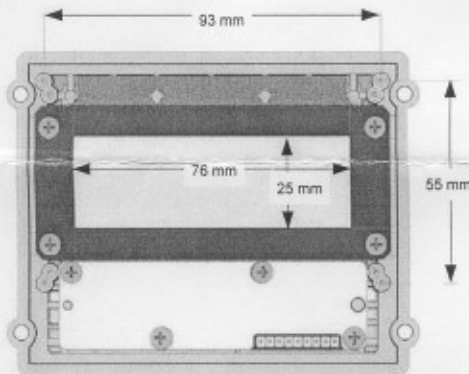
CONTACT CONNECTIONS (REAR VIEW)

PINS	• • • • • • • • • •
PIN NUMBER	9 8 7 6 5 4 3 2 1

CONTACT MATRIX

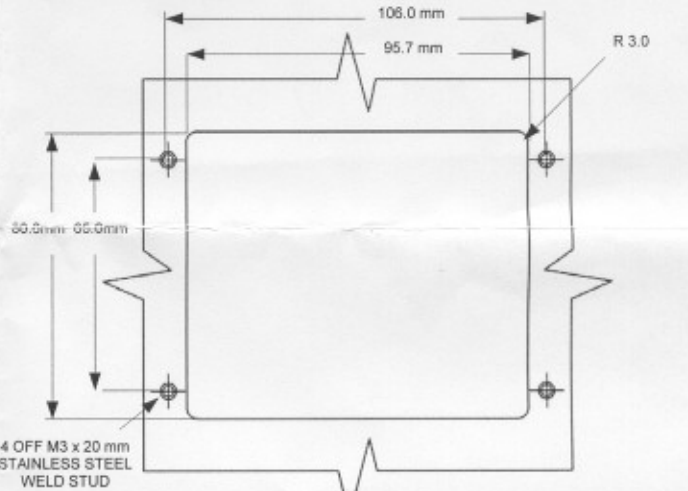
PIN	ROW / COLUMN
7	C1
6	C2
5	C3
3	R1

### REAR VIEW (NO LCD)



WINDOW VIEW AREA IS 76 x 25 mm  
 LCD MOUNTING CENTRES AT 93 mm x 55 mm, (OR 89.9 mm x 48.8mm)  
 TO SECURE LCD USE PLASTITE TYPE SCREW, M1.8 THREAD OR EQUIVALENT

### HOST PANEL CUTOUT



RECOMMENDED PANEL MATERIAL 1.6 OR 2.0 mm STAINLESS STEEL . TOLERANCES ± 0.5mm

### INSTALLATION

1. Prepare host panel and connection cable(s). For keypad use Molex 2695 Connector 5 way (PN22-01-2051) or 9 way (PN 22-01-2091). For LCD use PN 22-01-2161
2. Fit the supplied gasket over the 4 weld studs on the rear of the host panel.
3. Slide the display bezel over the studs and secure with M3 Nyloc Nuts or similar.

### ORDERING DETAILS

Stock No	Item
5001-20010[X]	DISPLAY BEZEL 3 KEY
5001-20020[X]	DISPLAY BEZEL 3 KEY WITH 4 X 20 CHARACTER DISPLAY

[x] denotes packaging variant

#### Note\* LCD Rating - Temperature Compensation

An LCD operating voltage varies at different temperatures. The operating voltage must rise as temperature lowers or the contrast will degrade. Conversely, the operating voltage must fall as the temperature rises or the contrast will degrade. A temperature compensation circuit is required to control the input voltage as the temperature changes.

For Connection Information for LCD see :  
 Powertip PC 2004-A Datasheet for 4 x 20 Character LCD



[www.storm-interface.com](http://www.storm-interface.com)

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