

工业显示器用户手册

Industrial Monitor User Manual

初定规格 Preliminary specification

正式规格 Official specifications

| | |
|-----------------------------|---|
| 产品编号 Product No. | HTM-H040A24-HI-T v0.0 |
| 产品描述 Product Description | 4.0 Inch TFT LCD 720 (RGB) x 720 Dots HDMI Interface monitors |

客户确认签章:

Signature by customer:

小批量试产 Trial production 大批量生产 Mass production

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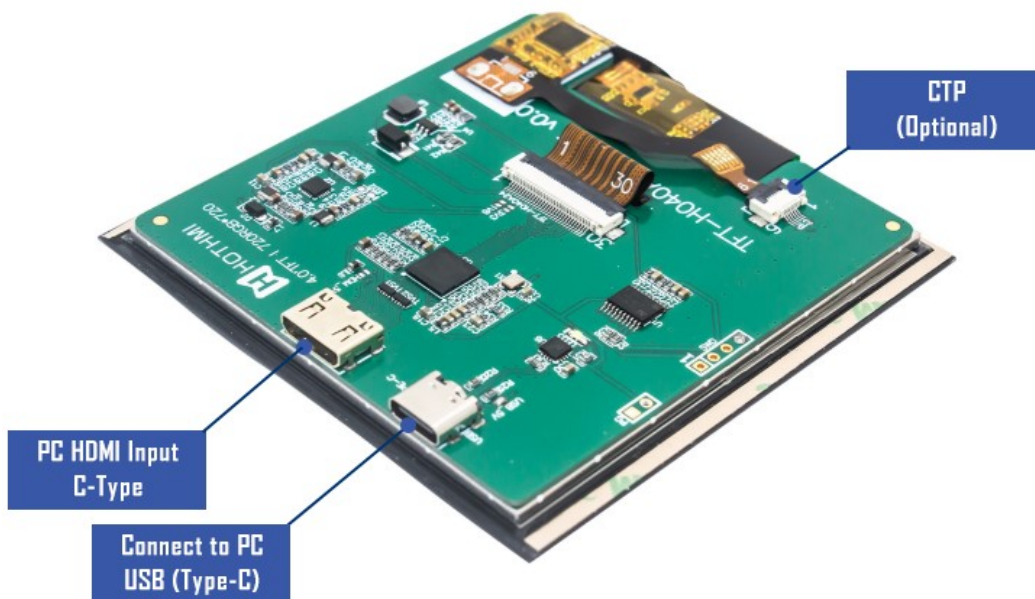
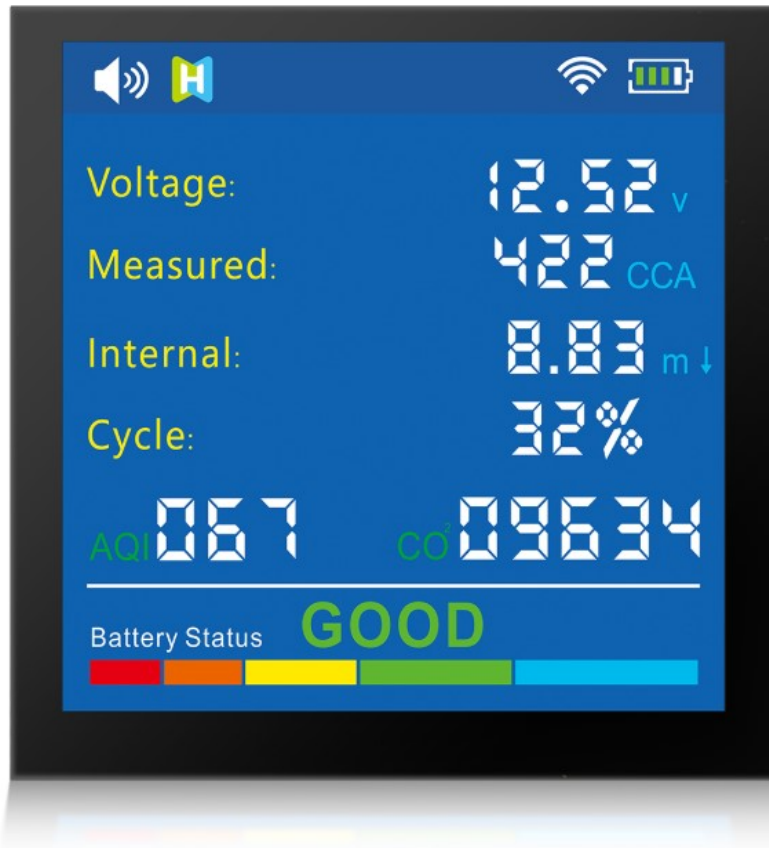
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【产品介绍 Product introduction】

- ◆ 4.0 inch 标准显示器, 720×720 (VGA) 高清分辨率

4.0 inch standard display, 720×720(VGA) resolution

- ◆ 500 坎德拉/平方米的极限高亮度, 30000 小时的长寿命背光灯

Extreme high brightness of 500 candela/m², 30,000 hours long life backlight.

- ◆ 支持 HDMI 1.4b 信号输入

Support HDMI 1.4b signal input.

- ◆ 支持多点 USB 接口免驱电容触摸屏

Supports multi-point USB interface drive-free capacitive touch screen.

- ◆ 支持面板嵌入式安装, 安装维护非常简便

Support panel embedded installation, easy installation and maintenance.

- ◆ 兼容 DOS/Windows98/2000/XP/win7/win8/win10/Embedded/Linux 等主流操作系统和嵌入式操作系统。

Compatible with mainstream operating systems and embedded operating systems such as DOS/Windows98/2000/XP/win7/win8/win10/Embedded/Linux.

【模块参数 Module parameters】

| 项目 Item | 标准值 Standard Value | | 单位 Unit |
|---|---------------------------------------|--------------|------------------------------|
| 接口 Interface | HDMI 1.4b | | - |
| 电源输入 Power Input | DC 5V/200mA 以上 DC 5V/200mA or more | | - |
| 模组亮度 (极限) Module brightness (Extreme) | 不带触摸屏 Without TP | 500 | 坎德拉/平方米 cd/m ² |
| | 带电容触摸屏 With CTP | 400 | |
| 产品重量 Product weight | 不带触摸屏 Without TP | T. B. D ± 3% | 克 g |
| | 带电容触摸屏 With CTP | T. B. D ± 3% | 克 g |

【液晶屏参数 LCD parameters】

| 项目 Item | 标准值 Standard Value | 单位 Unit |
|-------------------------------|---|-------------|
| 显示尺寸 Display Size | 4.0 | 英寸 Inch |
| 分辨率 Number of Pixels | 720<RGB> (H) x 720 (V) | 点 dots |
| 显示区域 Active Area | 72 (H) x 72 (V) | 毫米 mm |
| 外形尺寸 Outline Dimension | 84.00 (H) x 84.00 (V) x 9.5 (D) <With CTP> | 毫米 mm |
| 对比度 Contrast Ratio | Type 600: 1 | - |
| 响应时间 Response Time | Type 30 (Tr + Tf) | 毫秒 msec |
| 观看方向 Viewing Direction | 全 视角 Full 0'clock (U80/D80/L80/R80) | - |
| 最大色彩 Maximum color | 16.7 M | 色彩 Color |
| USB 触摸屏 USB Touch Panel | <input checked="" type="checkbox"/> 不带触摸屏 Without TP <input checked="" type="checkbox"/> 带 USB 电容触摸屏 With USB CTP | - |
| 工作温度 Operation Temperature | -20 ~ 70 | 摄氏度 ℃ |
| 储存温度 Storage Temperature | -30 ~ 80 | 摄氏度 ℃ |

说明 1：模组亮度默认 500 坎德拉/平方米

Description 1: Module brightness default 500 cd/m²

说明 2：建议不要长时间在模组的极限条件下运行

Description 2: It is recommended not to run under the limit conditions of the module for a long time

【背光参数 Backlight parameters】

| 项目 Item | 标号 Symbol | 条件 Condition | 最小值 Min | 典型值 Type | 最大值 Max | 单位 Unit |
|---------------------------------------|--------------|--------------------|------------|-------------|------------|------------------------------|
| 亮度 (带 LCD) Luminance (With LCD) | Lv | 不带触摸 Without TP | - | - | 500 | 坎德拉/平方米 cd/m ² |
| | | 带触摸 With CTP | - | - | 400 | |
| LED 寿命 LED life time | Hr | Ta=25±3 °C | 20,000 | 30,000 | - | 小时 Hour |

注释 Note:

1. LED 寿命 (Hr) 定义为在 Ta=25±3 °C, 上表所示的典型电压电流值条件下持续工作直至亮度低于 50% 的时间。

LED life time (Hr) can be defined as the time in which it continues to operate under the condition: Ta=25±3 °C, typical IL value indicated in the above table until the brightness becomes less than 50%.

2. 以上结果是按MTBF计算方式预估判定的LED失效时间, 实际测试LED在Ta=25±3 °C点亮5000H, 亮度衰减 8%.

The above results are estimated and judged by the MTBF calculation method of the LED failure time. The actual test LED is lit for 5000H at Ta=25±3 °C, and the brightness decays by 8%.

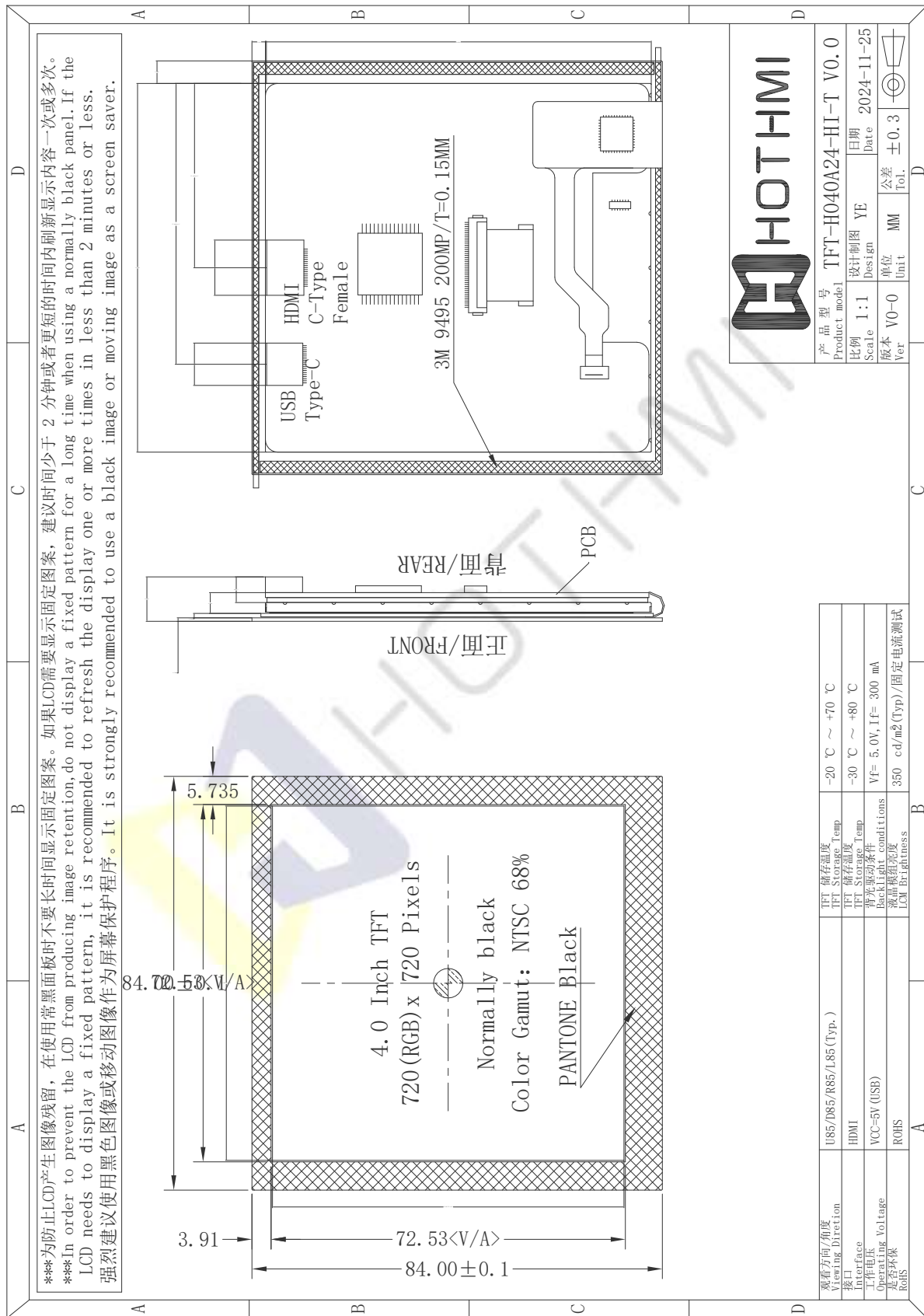
【电容触摸参数 Capacitive touch parameters】

| 项目 Item | 标准值 Standard Value | 单位 Unit |
|---------------------------------|---|------------|
| 类型 Type | 5 点触控<默认/最多 10 点> -point touch <default/max 10 points> | |
| 表面硬度 Surface hardness | ≥3H | - |
| 透光率 Transmittance | ≥80% | - |
| 响应时间 Response Time | <48 (Green mode) | 毫秒 msec |
| 通信接口 Communication Interface | USB TYPE-C | - |
| 工作温度 Operation Temperature | -20 ~ 70, ≤90%RH | 摄氏度 ℃ |
| 储存温度 Storage Temperature | -30 ~ 80, ≤90%RH | 摄氏度 ℃ |

【功耗 Power consumption】

| 条件 Condition | | 最小值 Min | 典型值 Type | 最大值 Max | 单位 Unit |
|-----------------------|-----------------|------------|-------------|------------|------------|
| 输入电压 Input Voltage | | 4.2 | - | 5.5 | 伏 V |
| 有信号 have signal | 最亮 Brightest | DC: 4.2V | - | 78 | 毫安 mA |
| | | DC: 5.5V | - | 290 | 毫安 mA |
| | 最暗 Darkest | DC: 4.2V | - | 71 | 毫安 mA |
| | | DC: 5.5V | - | 260 | 毫安 mA |
| 无信号 no signal | 待机 Standby | 70 | - | 90 | 毫安 mA |

【产品尺寸 Product Dimensions】



【端口说明 Port Description】

◆ HDMI C-Type 连接器说明 HDMI C-Type Connector Description

| 引脚编号 Pin NO. | 标号 Symbol |
|-----------------|----------------|
| 1 | TMDS D2 Shield |
| 2 | TMDS D2+ |
| 3 | TMDS D2- |
| 4 | TMDS D1 Shield |
| 5 | TMDS D1+ |
| 6 | TMDS D1- |
| 7 | TMDS D0 Shield |
| 8 | TMDS D0+ |
| 9 | TMDS D0- |
| 10 | TMDS CK Shield |
| 11 | TMDS CK+ |
| 12 | TMDS CK- |
| 13 | DDC/GEC GND |
| 14 | GEC |
| 15 | SCL |
| 16 | SDA |
| 17 | NC |
| 18 | +5V Power |
| 19 | HPD |

◆ USB CTP+PowerSupply 连接器说明 USB CTP+PowerSupply Connector Description

特征 Characteristic: USB TYPE-C/USB2.0

文档修订历史 Document revision history:

| 版本 Version | 日期 DATE | 修改说明 Modify description | 编制 PREPARED BY |
|---------------|------------|----------------------------|-------------------|
| 0-0 | 2025-08-15 | 初次编制 First compilation. | YE |
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