

F110C

规格书（Datasheet）

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1 产品概述

1.1 产品简介

繁易 F1 系列新一代工业人机界面，独具创新性的紧凑式布局，在维持 7 英寸人机界面开孔尺寸的机身框架下，拓展出 10.1 寸宽屏窄边框的超大视野显示区域，带来沉浸式的视觉观感。造型简洁美观，结构紧凑，空间利用率极高，灵活适配各种中小型机械设备及严苛复杂、空间局促受限的作业场景。

内置大容量存储模块，具备强大的数据储备功能，能够有条不紊地保存海量生产数据；可借助以太网连接物联网，方便设备制造商和最终用户对设备进行远程监控、管理和维护。更快更强的处理器平台，带来流畅便利的使用体验。

1.2 产品外观



2 产品规格

分类	项目	参数
硬件参数	显示屏	10.1 英寸，16:10 TFT LCD 屏
	分辨率	800×1280
	色彩	24 位
	亮度	350cd/m ²
	背光	LED
	LCD 寿命	50000 小时
	触摸屏	Glass+Glass 投射式多点电容触摸屏
	CPU	Cortex-A7（主频 1GHz，双核）
	存储器	256MB DDR3+4GB eMMC
	RTC	实时时钟内置
	以太网接口	1 个 10M/100M 自适应 RJ-45 接口
	SD 卡	不支持
	蓝牙	不支持
	声音	蜂鸣器
	USB 端口	◆ 1 个 USB Type-C 2.0 接口 ◆ 1 个 USB Type-A 2.0 接口
	程序下载方式	USB Type-C/USB Type-A/以太网
	串行通讯端口	◆ COM1: RS232/RS485/RS422 ◆ COM2: RS485 ◆ COM3: RS232
	液晶可视角度 (T/B/L/R)	85° /85° /85° /85°
物联网硬件参数	物联网网络接入	以太网
	网络频段	无
	天线	无需配置天线
软件参数	VPN 透传	支持
	数据监控	300 点，支持定时上传或变化上传
	报警推送	100 点，支持客户端推送、短信推送、微信公众号推送

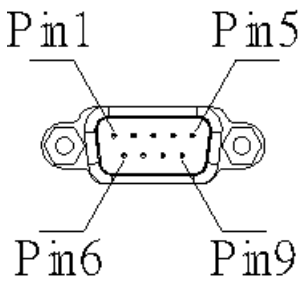
分类	项目	参数
	历史数据	100 点，支持掉线续传，云端保留 180 天
	边缘计算	30 点，支持脚本编程
	网络协议	支持超过百种工业设备协议
	管理与维护	支持远程升级固件，支持配置文件导入导出，支持云下载更新组态
电气规格	额定功率	<10W
	额定电压	DC24V，可工作范围 DC 9V~28V
	电源保护	具备雷击浪涌保护
	允许失电	<5mS
	CE&RoHS	符合 EN61000-6-2:2019，EN61000-6-4:2019 标准 符合 RoHS 雷击浪涌±1kV，群脉冲±2kV； 静电接触 4kV，空气放电 8kV
环境要求	工作温度	-10~60℃
	存储温度	-20~70℃
	防紫外线	禁止在强紫外线环境下工作（例如阳光直射）
	环境湿度	10%~90%RH（无冷凝）
	抗震性	10~25Hz（X、Y、Z 方向 2G/30 分钟）
	冷却方式	自然风冷
机械特性	防护等级	前面板符合 IP60（配合平整盘柜安装），机身后壳符合 IP20
	安装方式	螺丝固定
	材质	铝合金前壳+ABS 后壳
	开孔尺寸	138mm×192mm
	整机尺寸	158mm×249mm×31mm
	整机重量	约 900g

3 接线说明

3.1 电源端子

电源端子 (Pin1~Pin3 从左至右)	引脚	功能
	Pin1	FG
	Pin2	0V
	Pin3	DC24V

3.2 DB9 串口

	引脚	COM1(RS485)	COM1(RS422)	COM1(RS232)	COM3(RS232)
	Pin1	B-	Rx-		
	Pin2			RxD	
	Pin3			TxD	
	Pin4		Tx-		
	Pin5			GND	GND
	Pin6	A+	Rx+		
	Pin7				RxD
	Pin8				TxD
	Pin9		Tx+		

3.3 RS485 串口

485 端子 (Pin1~2 由左至右)	引脚	功能
	Pin1	A+(COM2 RS485)
	Pin2	B-(COM2 RS485)

3.4 以太网接口

RJ45 接口，用于与支持以太网协议的设备（如 PLC、服务器等）进行通讯。



3.5 USB Type-C 2.0 接口

USB Slave 接口，用于下载程序。



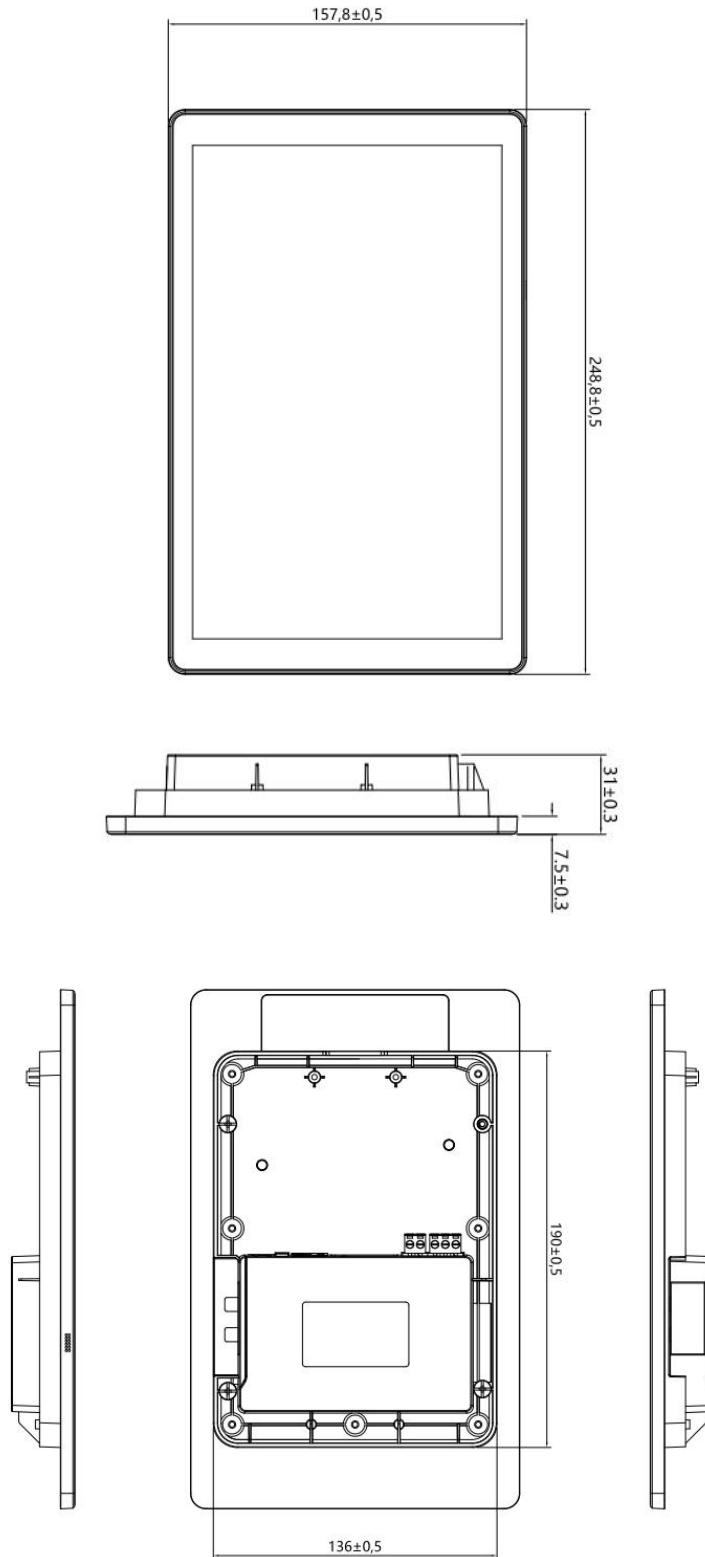
3.6 USB Type-A 2.0 接口

USB Host 接口，用于连接 U 盘、扫码枪等外设。



4 产品尺寸

尺寸单位: mm



嵌入式安装开孔尺寸: 138mm×192mm

5 安装方式

安装方式：嵌入安装面板，安装支架固定。（不支持磁吸安装方式）

安装前准备：一字螺丝刀，4 颗随设备附带的 M3 螺丝

面板开孔尺寸：158mm×249mm×30mm

产品安装前可拆解成如图 1 共 3 部分：

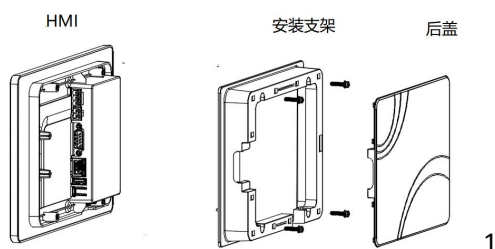


图 1

步骤 1. 如图 2，在安装面板上嵌入 HMI 主体。

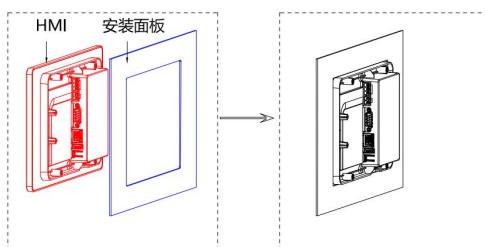


图 2

步骤 2. 将 HMI 固定到安装面板上后，套上安装支架，并用 M3 螺丝锁紧，如图 3。

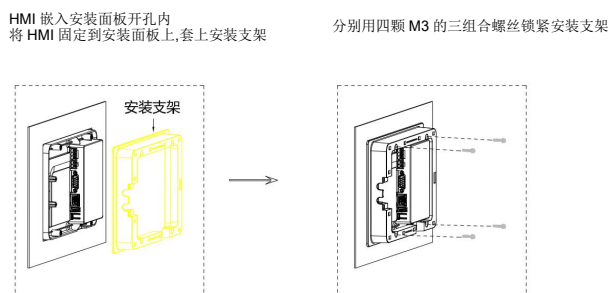


图 3

步骤 3. 盖子卡扣嵌入对应支架孔内，按箭头方向推，直至后盖固定在安装支架上，如下图 4 所示。

盖子卡扣嵌入对应支架孔内，
往箭头方向推，直至盖子
固定在支架上

完成

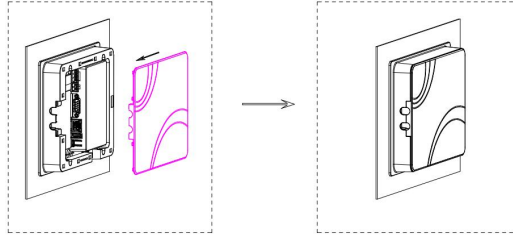


图 4

1 Product Overview

1.1 Product introduction

Flexem F1 series HMI, the new generation of industrial human-machine interfaces which features an innovative and compact layout. Under the framework of the body with a 7-inch opening size, it expands to a large-vision display area with a 10.1-inch wide screen and narrow bezel, bringing an immersive visual experience. It has a simple and beautiful appearance, a compact structure, and an extremely high space utilization rate, and can be flexibly applied to various small and medium-sized mechanical equipment as well as harsh, complex, and space-constrained working scenarios.

It is equipped with a large-capacity storage module, has powerful data storage function, and can systematically save massive amounts of production data. It can connect to the Internet of Things via Ethernet, facilitating equipment manufacturers and end-users to remotely monitor, manage, and maintain the equipment. The faster and more powerful processor platform brings a smooth and convenient user experience.

1.2 Product Appearance



2 Specifications

Category	Item	Description
Hardware	Display	10.1" 16:10 TFT LCD
	Resolution	800×1280
	Colors	24-bit
	Brightness	350cd/m ²
	Backlight	LED
	LCD Lifetime	50000 hours
	Touch Panel	Glass+Glass Projection multi-point capacitive touch panel
	CPU	Cortex-A7(main frequency is 1GHz,dual-core)
	Storage	256MB DDR3+4GB eMMC
	RTC	Built-in
	Ethernet	1* 10M/100M self-adaptive RJ45 port
	SD Card	NA
	Bluetooth	NA
	Sound	Buzzer
	USB Port	◆ 1*USB Type-C 2.0 port ◆ 1*USB Type-A 2.0 port
	Program Download Method	USB Type-C/USB Type-A/Ethernet
	Serial Port	◆ COM1:RS232/RS485/RS422 ◆ COM2: RS485 ◆ COM3:RS232
	LCD Viewing Angles (T/B/L/R)	85° /85° /85° /85°
Internet Hardware feature	Network Access	Ethernet
	Network Band	NA
	Antenna	No antenna configuration required
Software	VPN Pass-through	Available

Category	Item	Description
feature	Data Monitoring	300 and it supports regular upload or variable upload
	Alarm Push	100,it supports clients push, SMS push, wechat public NO push
	Historical Data	100, It supports offline transfer and can keep data on the cloud for 180 days
	Edge Computing	30,It supports script programming.
	Network Protocol	It supports over hundreds of industrial devices protocol.
	Managing and Maintenance	It supports remote firmware upgrading, equipping files lead in and lead out, cloud downloading of update configuration.
Electrical feature	Rated Power	<10W
	Rated Voltage	DC24V,operational range:DC 9V~28V
	Power Protection	Lightning surge protection
	Power Interruption Tolerance	<5ms
	CE&RoHS	EN61000-6-2:2019 and EN61000-6-4:2019 standards certified;RoHS certified;lightning surge±1kV; group pulse±2kV;electrostatic contact 4kV,air discharge 8kV
Environmental requirement	Operating Temperature	-10~60℃
	Storage Temperature	-20~70℃
	UV Resistance	Operating in high UV environment is prohibited(e.g.in direct sunlight)
	Environmental Humidity	10%~90%RH(non-condensing)
	Vibration Endurance	10~25Hz(X/Y/Z direction,2G/30 minutes)
	Cooling Method	Natural air cooling
Mechanical feature	Protection Level	Front:IP60(with flush panel cabinet installation),Rear:IP20

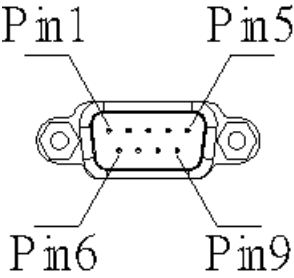
Category	Item	Description
	Installation Method	Screw Fixing
	Enclosure Material	Aluminum front panel+ ABS back cover
	Cutout Dimensions	138mm×192mm
	Dimensions	158mm×249mm×31mm
	Weight	About 900g

3 Port Description

3.1 Power Terminal

Power Terminal(Pin 1~3 from left to right)	Pin	Description
	Pin1	FG
	Pin2	0V
	Pin3	DC 24V

3.2 DB9 Serial Port

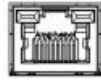
	Pin	COM1(RS485)	COM1(RS422)	COM1(RS232)	COM3(RS232)
	Pin1	B-	Rx-		
	Pin2			RxD	
	Pin3			TxD	
	Pin4		Tx-		
	Pin5			GND	GND
	Pin6	A+	Rx+		
	Pin7				RxD
	Pin8				TxD
	Pin9		Tx+		

3.3 RS485 Serial Port

RS485 Terminals (Pin 1~2 from left to right)	Pin	Description
	Pin1	A+ (COM2 RS485)
	Pin2	B- (COM2 RS485)

3.4 Ethernet Port

RJ45 port for Ethernet communication with the controller or server.



3.5 USB Type-C 2.0 Port

USB Slave port,Used for program download and debugging.



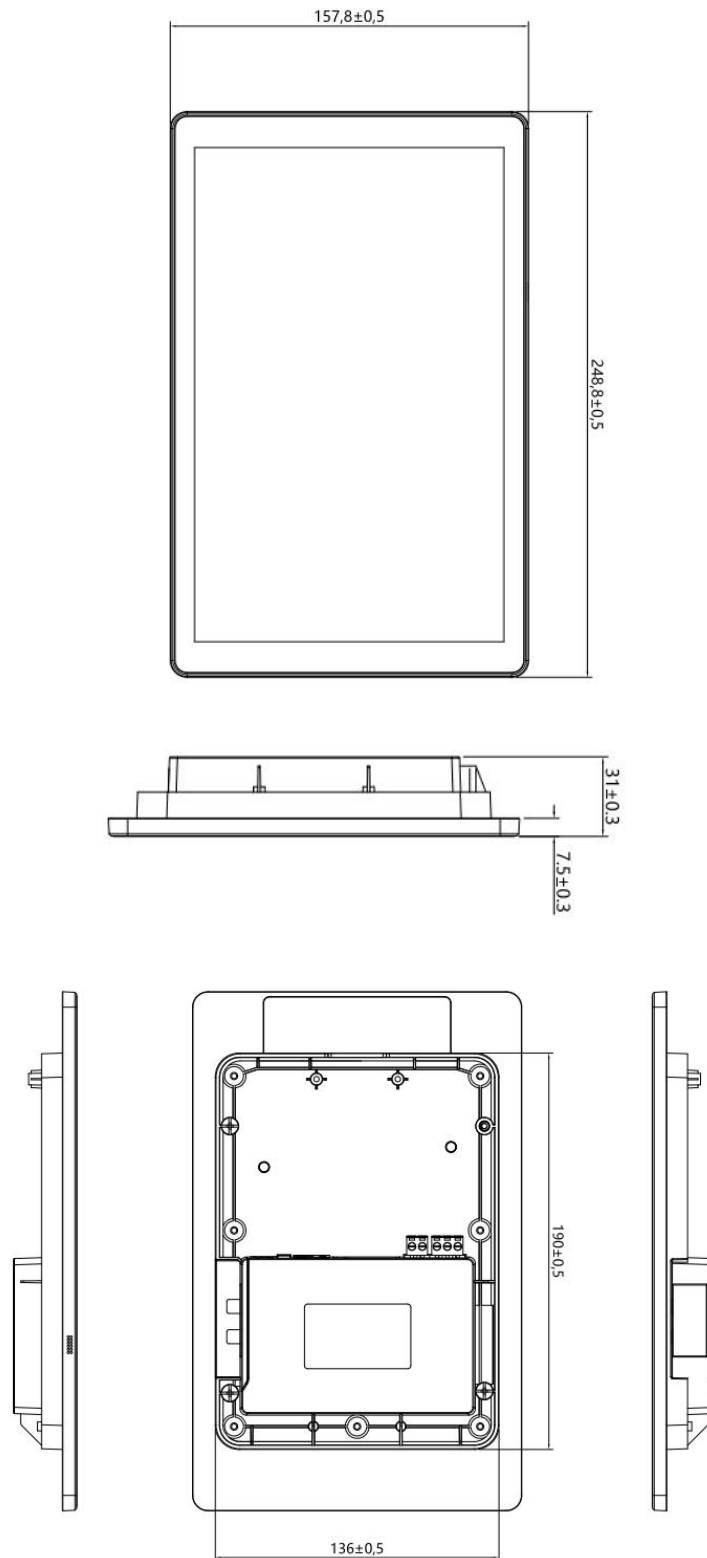
3.6 USB Type-A 2.0 Port

USB Host port,Used for connecting peripheral devices,such as USB flash drive or bar code scanner.



4 Dimension

Unit: mm



Flush-mounted installation cutout dimensions: $138\text{mm} \times 192\text{mm}$

5 Installation Method

Installation Method: Embed the installation panel and secured with mounting brackets. (Does not support magnetic suction installation mode.)

Preparation for installation: A flat-head screwdriver, 4 * M3 screws (accessory).

Panel Cutout Dimensions: 158mm × 249mm × 30mm

The product can be disassembled into three parts as shown in Figure 1 before installation:

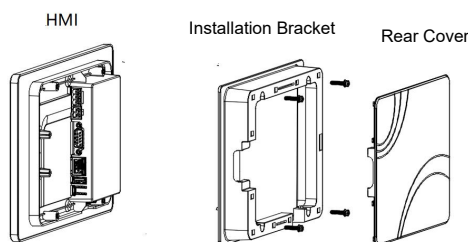


Figure 1

Step 1. As shown in Figure 2, embed the HMI main body into the installation panel.

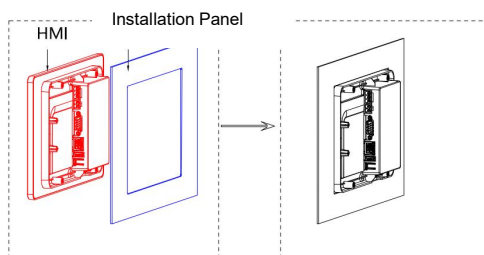


Figure 2

Step 2. After fixing the HMI onto the mounting panel, put on the mounting bracket and tighten it with M3 screws, as shown in Figure 3.

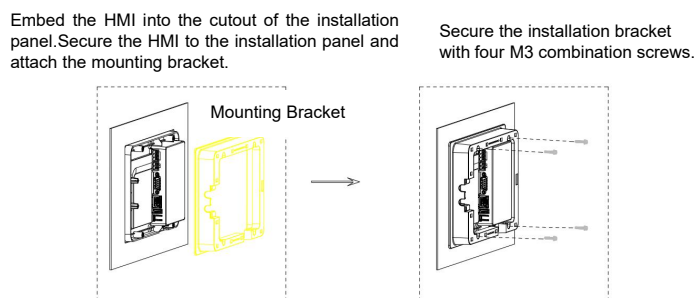
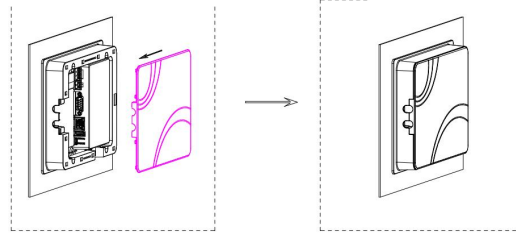


Figure 3

Step 3. The buckle is embedded in the corresponding bracket hole and pushed in the direction of the arrow until the rear cover is secured to the mounting bracket, as illustrated in the following Figure 4.

The cover's latch is inserted into the corresponding bracket hole, push in the direction of the arrow until the cover is securely fixed onto the bracket.



Figur 4