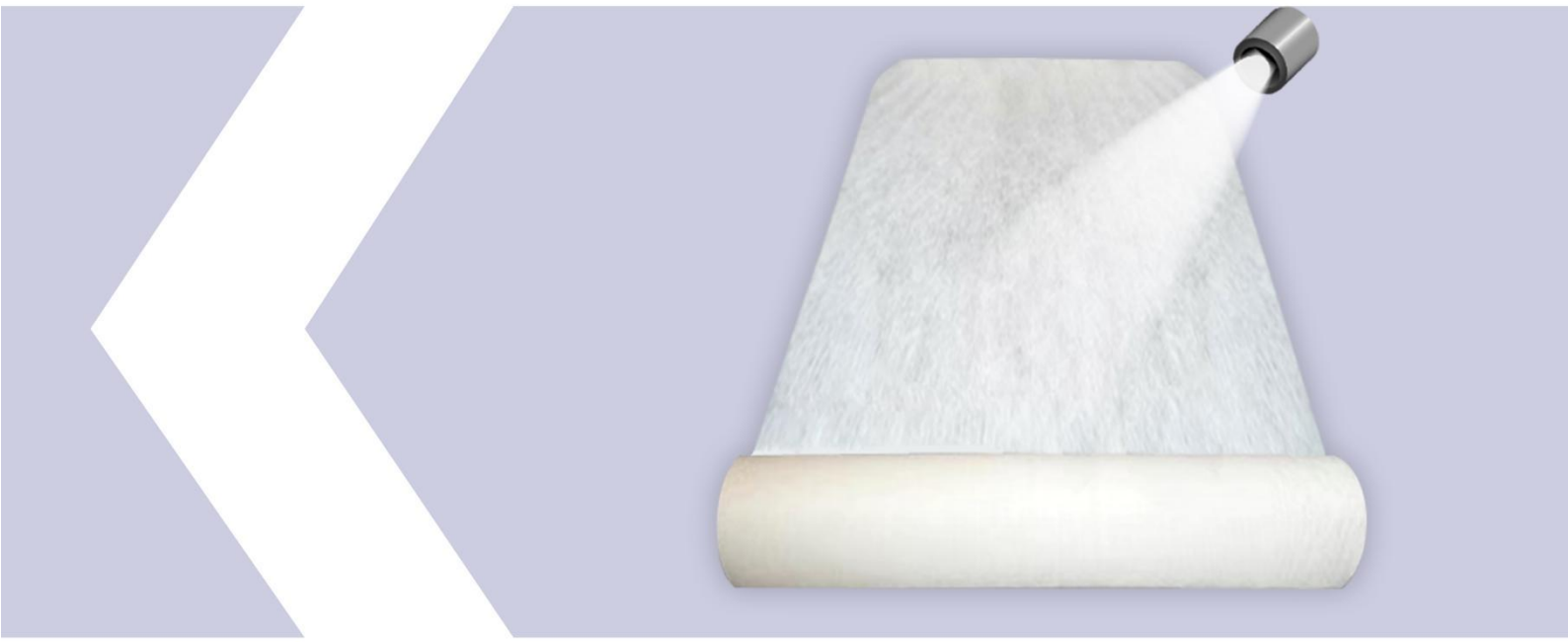
在线视觉验布系统

ONLINE VISUAL INSPECTION SYSTEM



一 参数说明/Parameter Description

检测布种：纯色平纹化纤布

Suitable for: Solid color plain weave chemical fabric

相机移动最大速度：50CM/秒

Maximum Movement Speed of Camera: 50cm per second

相机视野：20CM*20CM

Camera Vision：20CM*20CM

使用环境：不能有强光直射，不能有阳光直射机台

Point of Attention: Please make sure that the machine has not access to direct strong light or sunlight.

可检测瑕疵/Detectable Defects：

瑕疵名称/Defect Name	检测率/Detection Rate【%】	升级备注/Remark for Updates
停机横/Stop Mark	90	
白油针/White Oil Needle	90	
黑油针/Black Oil Needle	90	
白油点/White Oil Spot	90	
黑油点/Black Oil Spot	90	
黑点/飞花/Black Stain/Fly	90	
脏纱/Stained Yarn	90	
坏针/烂针/Broken Needle	50	面光和油针相似，背光板/Surface light is similar to oil needle,backlight
花针/Miss Tuck	0	背光板/Backlight
飞氨纶/飞纱Spandex/Yarn Fly	90	
纱结/Yarn Knot	0	AI库不够/Insufficient AI library
翻丝/反丝/Flipped Yarn	80	
破损/破洞/内断/Hole	0	背光/Poor light
卷边/Curled Edge	90	
卷布跑偏/Fabric Running Off	90	
折痕/Crease Mark	90	
针眼/Duck Eye	0	背光/Poor light

二 产品组成/Product Composition

相关模块：面板、工控机、相机驱动板、相机模组、ERP。

Related Modules: smart panel, IPC, camera drive plate, camera module, and ERP.

面板：下发参数，接收瑕疵停机信号

Smart Panel: Dispatch parameters to machines and receive defect shutdown signal;

工控机：控制相面移动，图像采集，AI识别

IPC: Control the movement of the camera, collect images, AI identification

UPS：防止突然断电，工控机系统损坏

UPS:　Work to prevent sudden power outages from damaging an industrial control system

卷布机：AI视觉检测载体

Take-Down: AI visual inspection carrier

驱动板：驱动电机，开关灯

Drive Board: Drive motor, control light

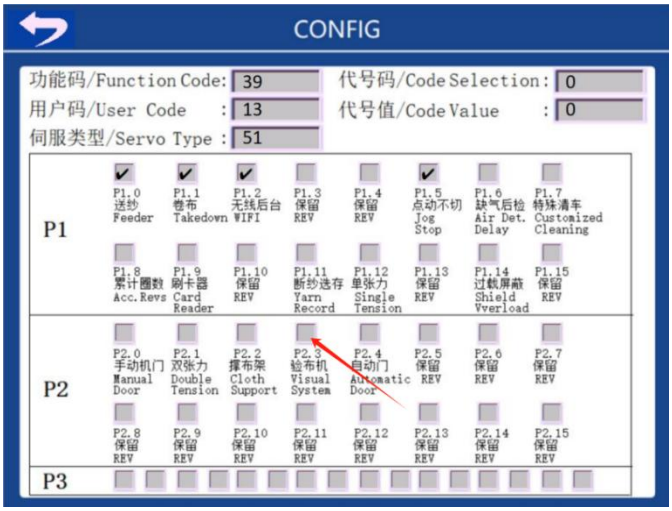
移动视觉：移动取像

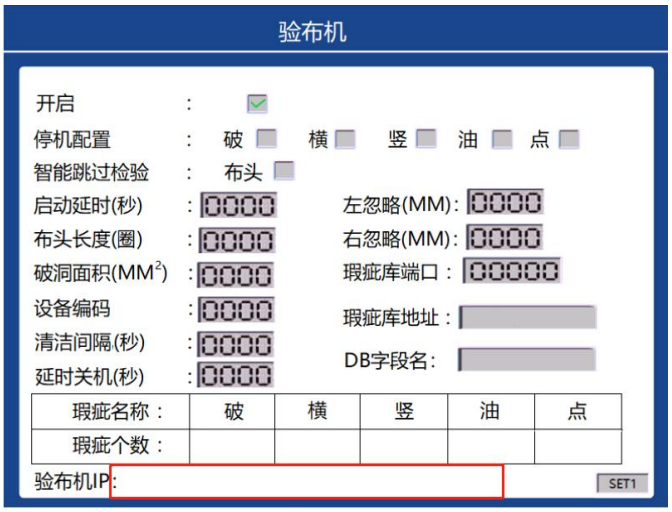
Mobile Vision: Move and capture image

电机：带动相机移动

Motor: Control the movement of camera

三 面板操作说明/Panel Operation Description





开启验布模块/Tick to configure visual module

开启：是否开启此功能，开启后如果通信不上会报验布机

Start: Tick to start the visual system. After startup, it will report <Inspection Machine> alarm in the loss of communication.

停机配置：已弃用，已移动到验布系统中

Shutdown Configuration: Deprecated. Having been removed to fabric inspection system.

智能跳过布头：已弃用，所有瑕疵记录不跑布头，瑕疵统计与评级时跟据圈数据跳过布头

Skip Head: Deprecated. Not record scrap fabric. Defect count and fabric classification will skip the scrap fabric according to revolutions.

启用延时：正常设置5到10秒，防止点动时频繁启用验布机

Delay Startup: To prevent frequent startups of the inspection system caused by jogging, the value should be set from 5 to 10.

布头长度：已弃用

Head Length: Deprecated

破洞面积：已弃用

Hole Area: Deprecated

设备编码：已弃用

Equipment Code: Deprecated

清洁间隔：清洁相机的间隔时间

Clean Interval:Time interval between camera cleanings

延时关机：正常是30秒，临时停机时不用关闭验布机

Delay Shutdown: Normally 30 seconds; no need to turn off the inspection machine during temporary shutdown

左忽略：正常20MM，如果布边卷的严重可以设置30MM

Left Ignore: Normally 20MM, if the fabric edge too curled, users can also set it to 30MM.

右忽略：正常20MM，如果布边卷的严重可以设置30MM

Right Ignore: Normally 20MM, if the fabric edge too curled, users can also set it to 30MM.

瑕疵库端口：已弃用，端口固定，如有调整需要到验布系统中调整

Defect Library Port: Deprecated (port is fixed; adjustments must be made in the fabric inspection system)

瑕疵库地址：已弃用，地址固定，如有调整需要到验布系统中调整

Defect Library Address: Deprecated. Fixed address, if you want to adjust it, adjustments must be made in the fabric inspection system

DB字段：已弃用

DB Field: Deprecated

瑕疵个数统计：已弃用，现需要到MES后台查看

Defect Count: Deprecated. Now viewable in MES backstage

验布IP：显示验布IP，用于远程验布系统

Fabric Inspection IP: Displays the inspection system IP for remote access

SET1：已弃用

SET1:Deprecated

面板报警图标

Panel Alarm Icon

上图表示和验布机未通信上

The figure above indicates that the fabric inspection machine is in the loss of communication.

上面图标表示有发现停机瑕疵

The figure above indicates that a shutdown defect is found

四 验布系统说明/Fabric Inspection System Description

4.1 开机/Startup

第一次开机时，工控机要开机一分钟左右，工控机没开起之前，面板会一直显示【验布机】。圆机开起时，等待设置时间后，验布机也会开起。当布票号或订单号有变化时，布票号与订单号会发送到验布系统。机台开起后，每转一圈，面板会将当前圈数发送到验布系统。

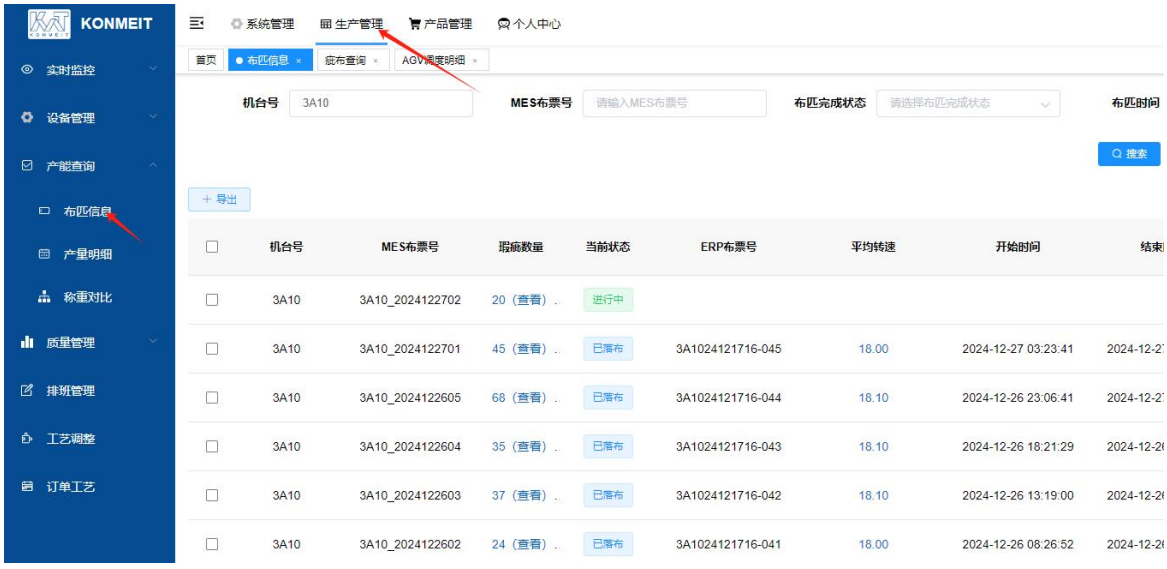
At the first time the machine starts up, the panel will constantly display [Inspection Machine] for about one minute before the IPC starts up. After the knitting machine starts up and the time is preset, the inspection machine will be turned on. When there are changes to the fabric roll number or order number, the new numbers will be sent to the inspection system. After the knitting machine starts up, the panel will update current revolutions to the fabric inspection system when every revolution is completed.

4.2 瑕疵检测与停机/Defect Detection and Shutdown：

验布检测过程中如果有发现瑕疵，会上报MES系统，如果瑕疵需要停机，则发送面板停机信号。上报MES系统的瑕疵信息有：订单号，布票号，发现圈数，是否停机，瑕疵名称，发现横向位置，发现时间，机台号。

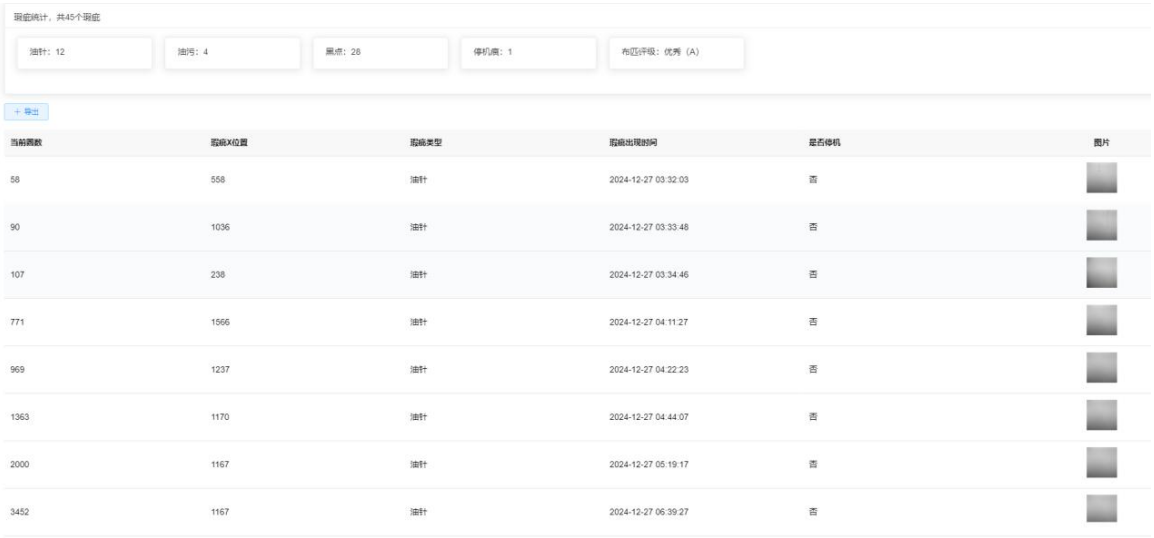
On the detection process, if a defect is detected, it will be reported to the MES system. If the defect is a shutdown defect, shutdown signal will be sent to the panel. Defect information reported to the MES system includes order number, ticket number, defect name, time, position, etc.

4.3 报表查看/View Report：



MES后台查看当前布的瑕疵检测情况，查询条件有：机台号，MES布票号，布匹完成状态，布匹完成时间

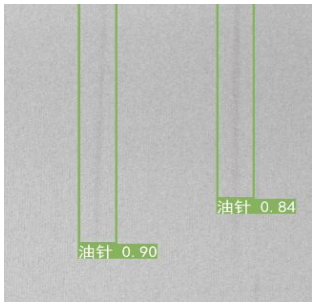
Users can check current fabric defect information at the MES backstage with: machine number, MES ticket number, status, complete time.



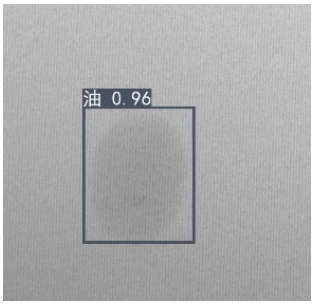
点击<瑕疵数量>查看，可以查看详细的瑕疵信息以及瑕疵汇总信息

Click on the "Number of Defects" to view detailed defect information and summarized defect information.

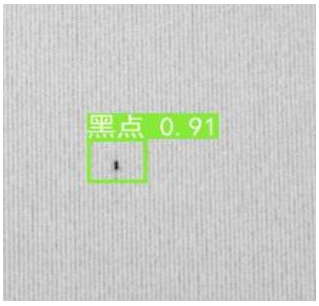
4.4 瑕疵样图/Defect Sample



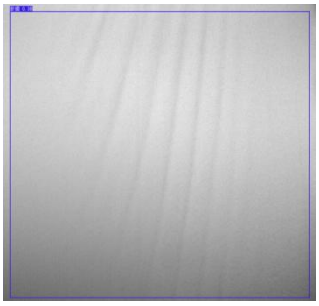
油针/Oil Needle



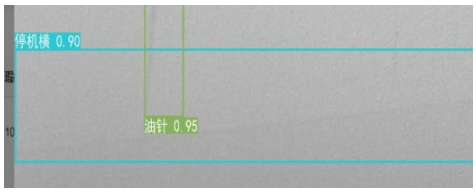
油污/Oil Stain



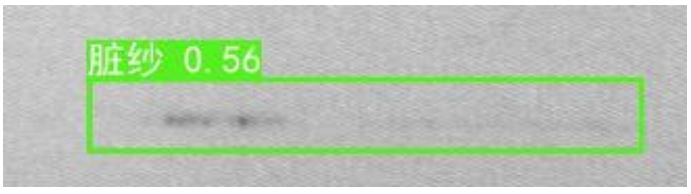
黑点/Black Spot



折痕/Crease Mark

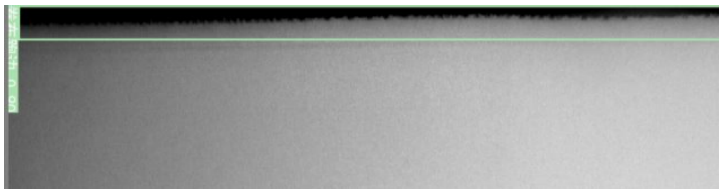


停机横/Stop Mark

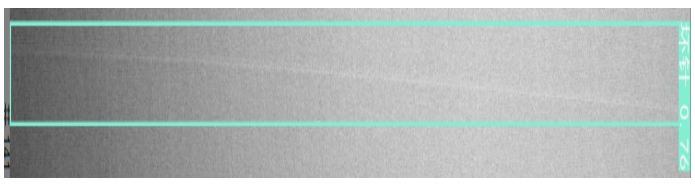


脏纱/Stained Yarn

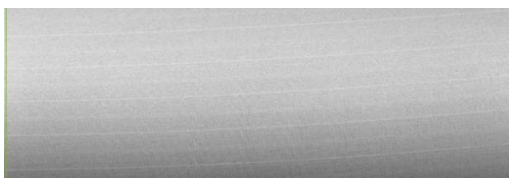
横条/Horizontal Strip Mark



卷布跑边/Edge Run Off

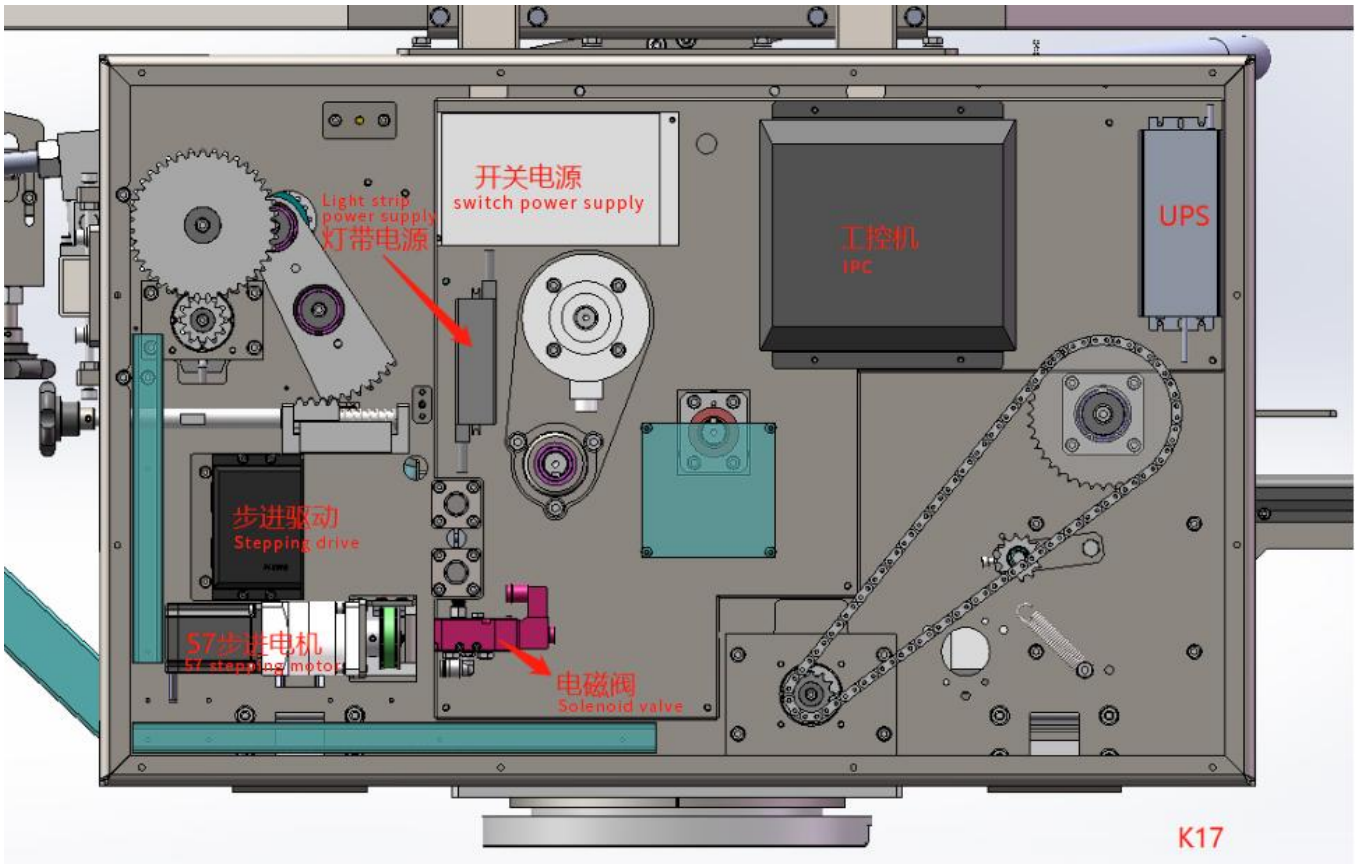


坏针/Broken Needle



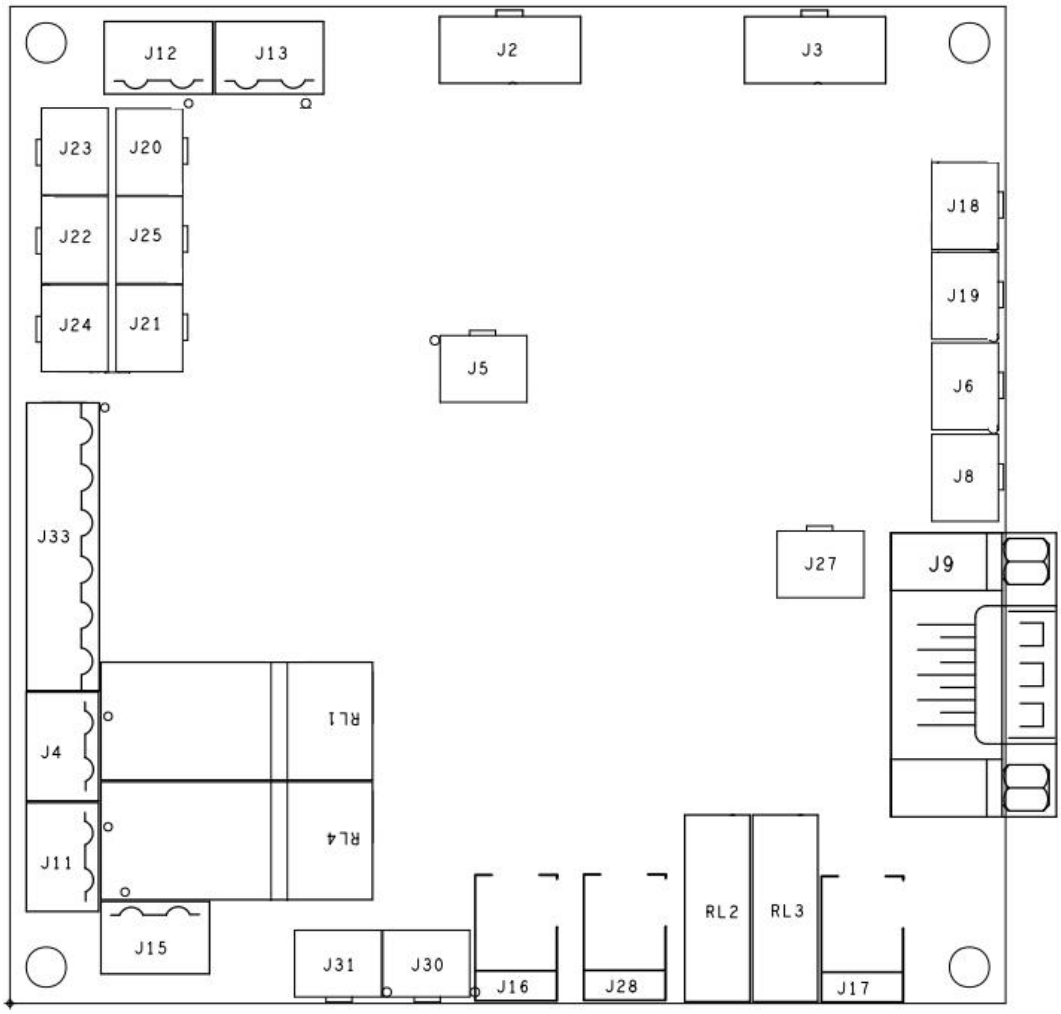
跑氨纶/Broken Spandex

五 结构说明/Structure Description



六 电路接口说明/ Description of Electric Ports

6.1 端口布局图/Terminal Layout：



6.2 端口功能列表/Terminal Function List

端口位号/Terminal Num.	功能描述/Function Description
J12	相机移动支架1步进驱动器供电电源 Camera moving track 1 stepping drive power supply
J13	未使用/Not used
J2	相机移动支架1步进驱动器控制信号 Camera moving track 1 stepping drive control signal
J3	未使用/Not used
J20	相机移动支架<复位>边界限位开关 Camera moving track<Reset>bound limit switch
J21	相机移动支架<置位>边界限位开关，吹气端 Camera moving track<Set>bound limit switch
J22	未使用/Not used

J23	相机移动到<复位>边界端提前减速检测开关（防撞边提前减速） Pre-deceleration switch: camera movement speed reduces when approaching <Reset> boundary end.
J24	相机移动到<置位>边界端提前减速检测开关（防撞边提前减速） Pre-deceleration switch: camera movement speed reduces when approaching <Set> boundary end.
J25	下布测速感应开关/Cloth drawing-off speed sensing switch
J5	仿真调试口/Simulating debug port
J27	调试串口/Debug serial port
J18	镜头1清洁电磁阀驱动线/Lens 1 clean solenoid valve drive wire
J19	未使用/Not used
J6	未使用/Not used
J8	未使用/Not used
J9	DB9数据线，驱动板与工控机通信线/DB9 digit wire, drive board and IPC communication cable
J16	工控机供电线/IPC power supply cable
J17	UPS充电线（UPS进线）UPS charging wire (UPS input wire)
J28	UPS输出线（UPS出线）UPS output wire (UPS output wire)
J30	摄像头1供电电源，12VDC/ Camera 1 power supply 12V DC
J31	未使用/Not used
J15	交流220V输入线/220V alternative current input wire
J11	灯带电源供电线/Light strip power supply cable
J4	未使用/Not used
J33	双输出规格开关电源接线，220V输入，12V+24V输出 Wiring for a double-output switching power supply with 220V input and 12V + 24V outputs

七 日常维护/Daily Maintenance：

滑杆擦油:每6个月擦一次油

Apply grease on the sliding rod every 6 months.

镜头清洁:由机台油雾决定，油雾重的两天一次，油雾清的半年一次

Lens cleaning: clean once every other day when oil mist is heavy on the machine, otherwise, clean once every 6 months.