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| **[ ASSEMBLY MACHINE USER & MAINTENANCE MANUAL]** |
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# INTRODUCTION

The aim of this manual is to supply specification about the correct use of electrical drawing, schematic, flowchart and program.

# REFERENCE DATA

Costumer : AMTEK MANUFACTURING BATAM

Address :

Machine Name : Assembly Machine

Last Release : 1. Manual : ASSEMBLY\_MACHINE\_1.00

2. Document Support : Electric\_SCH

: Input\_PLC

: Output\_PLC

: Panel\_Box

# WARNING FOR OPERATION SAFETY

The machine is equipped with automation test system. If there is any automation or spesific hardware make reference to the related chapter of this manual.

Don’t use product or machine programs different from the ones listed on Product Reference.

Don’t use machine if all parts have not been properly installed. See layout and schematic diagram inside this manual.

If you are doubt or disagree with the application, please press “Emergency Button” then report to maintenace.

# WARNING FOR MACHINE SAFETY

Before start the machine, please check all ecectrical supply and air supply is on. There are indicator lamp for electrical supply in back panel of machine. For air supply indicator, you can check pressure gauge. Please make sure pressure measured by pressure gauge is enough to operate machine. Normally machine use 6 bar air pressure.

# WARNING FOR ADAPTER SAFETY

The main power input for the machine is single phase 220VAC. When installing the machine make sure that the terminal input power is installed corectly.

# TEST APPLIACTION – OPERATE & USE

* 1. **START UP**

After the installation for the incoming power ready with AC 220 V.

1. Switch on the main switch.
2. Switch on all MCB inside panel box.
3. Machine ready to use.
   1. **OPERATE IN AUTOMATIC MODE**

Normally automatic mode use for running product. To operate the machine with automatic mode follow this instruction.

1. Your machine already “START UP”, please follow intruction in point 1.1
2. Insert the product to machine
3. Remove your hand from machine.
4. Press two green mushroom button to assemby the product.
5. Product will be assembled automatically.
6. Don’t put your hand inside the machine when machine still process to assembly product.
7. When product already assembled, take out the product from machine
   1. **TROUBLESHOOTING**

**1.3.1 PLC**

* PLC need supply 220 VAC and common 24V DC (if use PNP wiring), 0V DC (if use NPN wiring)
* Verify if mode operation of PLC is RUN mode.
* If PLC in STOP mode, please change to RUN with Serial cable and PLC software.
* If PLC in ERROR mode, please restartup the machine, refer to point 1.1

**1.3.2 Sensor**

Please see source document of sensor.

# MACHINE APPLICATION – GENERAL INFORMATION

* 1. **Flowchart machine Process**



# PROJECT DOCUMENT

* 1. **Sparepart**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Main Panel** | | | |
| **Part Name** | **Spec** | **Qty** | **Used** |
| 1 | MCB | 3 pole | 1 unit | Supply Power |
| 2 | MCB | 2 pole | 2 unit | Supply PLC & Power Supply |
| 3 | Switching PSU | 24 Volt 5A | 1 unit | Supply IO |
| 4 | PLC | OMRON CPM2A | 1 unit | Controller |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Button Panel** | | | |
| **Part Name** | **Spec** | **Qty** | **Used** |
| 1 | Push Button Start | XB5AA31 | 2 pcs | Start Machine |
| 2 | Push Button Stop | XB5AA42 | 1 pcs | Stop Machine |
| 3 | Emergency Switch | XB5AS8444 | 1 pcs | Emergency |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Banch** | | | |
| **Part Name** | **Spec** | **Qty** | **Used** |
| 1 | Solenoid | 24VDC | 3 unit | Drive Cylinder |
| 2 | Sensor A\_PLUS | 24VDC | 1 pcs | Cylinder Sensor |
| 3 | Sensor A\_MIN | 24VDC | 1 pcs | Cylinder Sensor |
| 4 | Sensor B\_PLUS | 24VDC | 1 pcs | Cylinder Sensor |
| 5 | Sensor B\_MIN | 24VDC | 1 pcs | Cylinder Sensor |
| 6 | Sensor C\_PLUS | 24VDC | 1 pcs | Cylinder Sensor |
| 7 | Sensor C\_MIN | 24VDC | 1 pcs | Cylinder Sensor |
| 8 | Sensor OPTIC | 24VDC | 2 pcs | Product Sensor |
| 9 | Mushroom Button | 24VDC | 2 pcs | Manual Trigger Machine |

* 1. **PLC I/O LIST**
     1. **INPUT**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **PLC INPUT** | | |
| **INPUT NAME** | **POSITION** | **LABELING** |
| 1 | PUSH BUTTON START1 | BUTTON PANEL | %0.00 |
| 2 | PUSH BUTTON STOP | BUTTON PANEL | %0.01 |
| 3 | EMERGENCY SWITCH | BUTTON PANEL | %0.02 |
| 7 | SENSOR A\_PLUS | BANCH | %0.03 |
| 8 | SENSOR A\_MIN | BANCH | %0.04 |
| 9 | SENSOR B\_PLUS | BANCH | %0.05 |
| 10 | SENSOR B\_MIN | BANCH | %0.06 |
| 11 | SENSOR C\_PLUS | BANCH | %0.07 |
| 12 | SENSOR C\_MIN | BANCH | %0.08 |
| 13 | SENSOR OPTIC1 | BANCH | %0.09 |
| 14 | SENSOR OPTIC2 | BANCH | %0.10 |
| 15 | PUSH BUTTON START2 | BUTTON PANEL | %0.11 |

* + 1. **OUTPUT**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **PLC OUTPUT** | | |
| **INPUT NAME** | **POSITION** | **LABELING** |
| 1 | SOLENOID YA1 | BANCH | %100.00 |
| 2 | SOLENOID YA2 | BANCH | %100.01 |
| 3 | SOLENOID YB1 | BANCH | %100.02 |
| 4 | SOLENOID YB2 | BANCH | %100.03 |
| 5 | SOLENOID YC1 | BANCH | %100.04 |
| 6 | SOLENOID YC2 | BANCH | %100.05 |