Test Project

Industrial Control

Submitted by:

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Introduction

Using FluidSIM, develop an electrical control diagram for the machine in accordance with:

- Operating flowchart;
- Specified material requirements; and
- Machine operating instructions.

A template file is provided, with the control simulation and power circuit already prepared. Use this template to complete the electrical control circuit.

Instructions:

1. Open the template file "**WSC2026_TP19_MC_template_en.fspjt**" on your computer.
2. Save a copy of the template using your country code followed by your surname.
3. Example: **AT_Surname.fspjt**
4. Use only the newly saved file to design and complete the electrical circuit in FluidSIM.

Notes:

1. Do not modify the original template file. If you accidentally delete any items from the template, you can find and restore them from the Module C library.
2. Each device provides only the contacts shown in "Electrical Connections Available". Do not use more contacts than listed.

Machine Operations

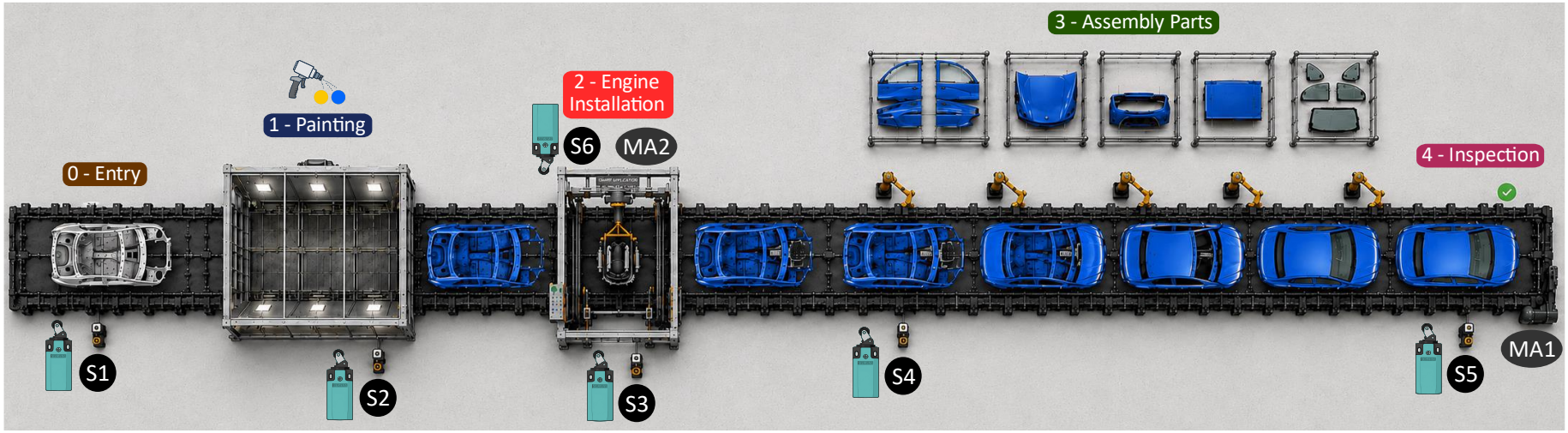
System Representation

Car Production Line Process Flow:

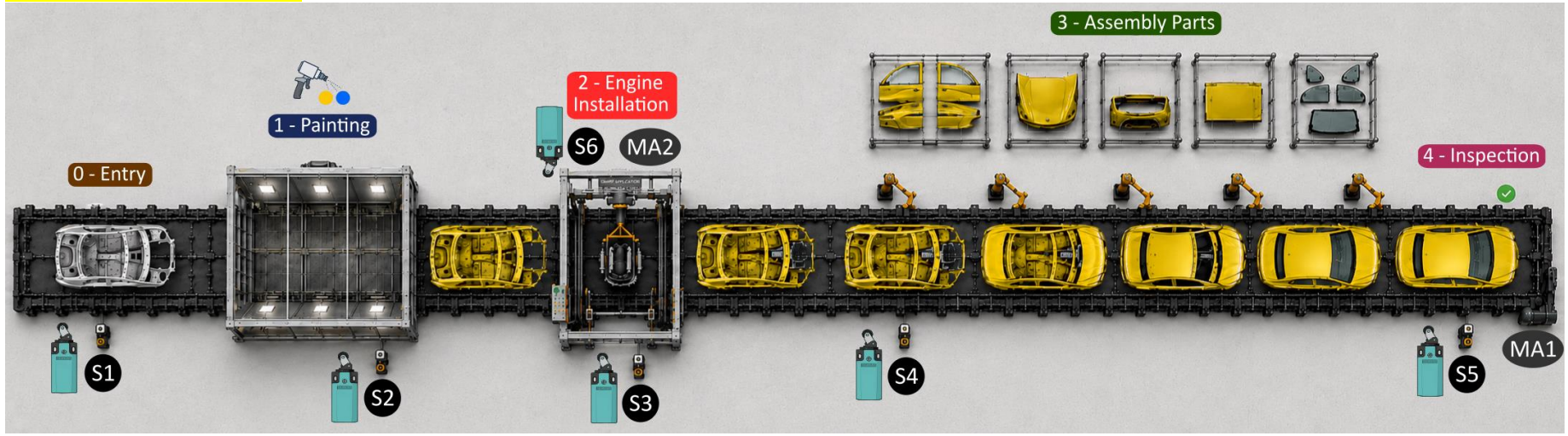


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Blue Car Production Line:

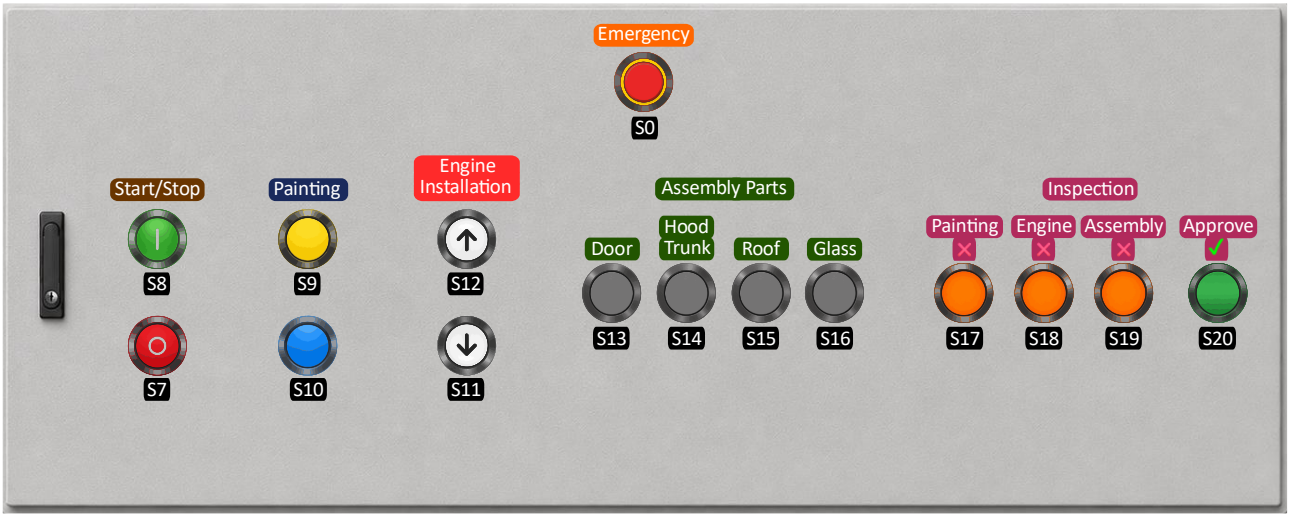


Yellow Car Production Line:

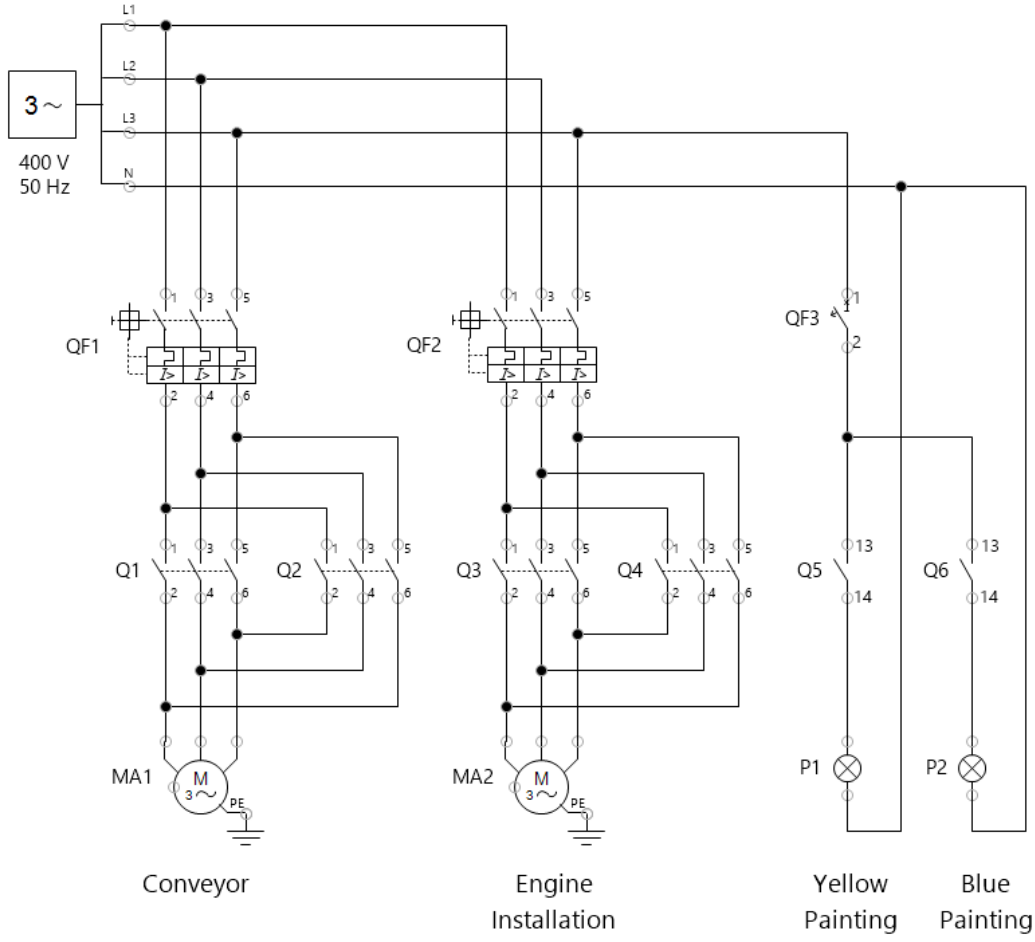


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Control Panel



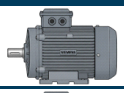
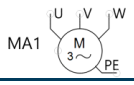
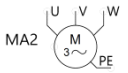
Power Circuit



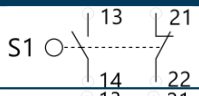
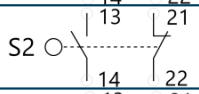
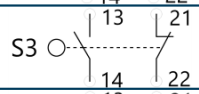
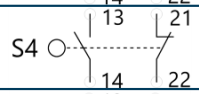
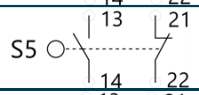
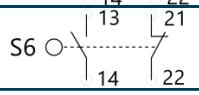
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Materials Requirements

Loads:

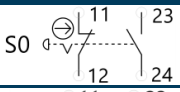
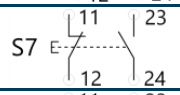
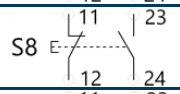
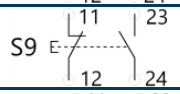
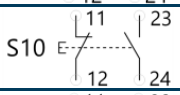
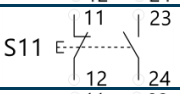
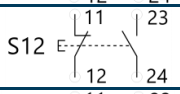
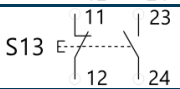
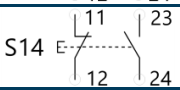
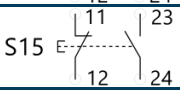
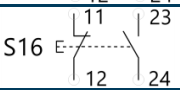
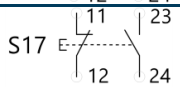
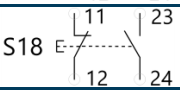
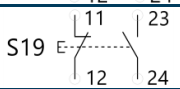
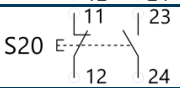
DEVICE	DESCRIPTION	FUNCTION	PICTURE	ELECTRICAL CONNECTIONS AVAILABLE
MA1	Three-Phase Motor - 400V - 0,25kW	Conveyor		
MA2	Three-Phase Motor - 400V - 0,25kW	Engine Installation Elevator		
P1	Tower Light - 220V - Yellow	Yellow Painting Indicator Light		
P2	Tower Light - 220V - Blue	Blue Painting Indicator Light		

Control Limit Switches:

DEVICE	DESCRIPTION	FUNCTION	PICTURE	ELECTRICAL CONNECTIONS AVAILABLE
S1	Limit Switch - 1NO + 1NC	Car Entry Position		
S2	Limit Switch - 1NO + 1NC	Painting Position		
S3	Limit Switch - 1NO + 1NC	Engine Installation Position		
S4	Limit Switch - 1NO + 1NC	Assembly Parts Position		
S5	Limit Switch - 1NO + 1NC	Final Inspection Position		
S6	Limit Switch - 1NO + 1NC	MA2 Elevator Limit Position		

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Control Buttons:

DEVICE	DESCRIPTION	FUNCTION	PICTURE	ELECTRICAL CONNECTIONS AVAILABLE
S0	Emergency Stop Button - 1NC + 1NO	System Emergency Stop		
S7	Push Button - 1NC + 1NO	System Stop		
S8	Push Button - 1NC + 1NO	System Start		
S9	Push Button - 1NC + 1NO	Painting Color Selection – Yellow		
S10	Push Button - 1NC + 1NO	Painting Color Selection – Blue		
S11	Push Button - 1NC + 1NO	Move Down – Engine Installation Elevator		
S12	Push Button - 1NC + 1NO	Move Up – Engine Installation Elevator		
S13	Push Button - 1NC + 1NO	Door Assembly Completed		
S14	Push Button - 1NC + 1NO	Hood and Trunk Assembly Completed		
S15	Push Button - 1NC + 1NO	Roof Assembly Completed		
S16	Push Button - 1NC + 1NO	Glass Assembly Completed		
S17	Push Button - 1NC + 1NO	Painting Inspection – Fail		
S18	Push Button - 1NC + 1NO	Engine Installation Inspection – Fai		
S19	Push Button - 1NC + 1NO	Assembly Inspection – Fail		
S20	Push Button - 1NC + 1NO	Inspection – Approve		

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