

Rose Engine Task Automation System (RETAS)

Standards and Interfaces

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RETAS - Standards and Interfaces

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Conventions Used in this Document

In this document,

- Standards are documented using green tables
- Recommendations are documented using blue tables

Standards

Stepper Motors

Spindle Stepper Motor

Item	Standard	Recommended
Size	NEMA 23	
Motor Type	Bipolar Stepper	
Step Angle	1.8 deg	
Microstep Resolution	6400	
Min. Holding Torque		
Max. Rated Current/phase	4A	

Other Stepper Motors

Item	Required	Recommended
Size	- n/a -	NEMA 23 or NEMA 17
Motor Type	Bipolar Stepper	Bipolar Stepper
Step Angle	1.8 deg	1.8 deg
Microstep Resolution	- n/a -	6400
Min. Holding Torque	- n/a -	
Max. Rated Current/phase	4A	4A

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General

1. Cabling

Item	Standard
Conductor Type	Stranded copper
Conductor Size	20 AWG
Cable Size	4 conductors / cable

2. Connector

Item	Standard
Connector	GX-16, 4 pins
Cable Ends	Female plug
Control Box	Male Socket

3. Connector Connection Standard & Cable Color Recommendation

Pin	Use	Cable Wire Color	StepperOnline Stepper Motor Lead Color
1	A+ / A1	Black	Black
2	A- / A2	Yellow	Green
3	B+ / B1	Red	Red
4	B- / B2	White	Blue

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Stepper Motor Drivers

1. Device

Item	Standard
Model	DM542T

2. Power Cabling

Item	Standard
Conductor Type	Stranded copper
Conductor Size	20 or 22 AWG
Cable Size	2 conductors / cable

3. Power Cabling Configuration

Item	Cable Wire Color
Positive (+)	Red
Negative (-)	White (or Black)

4. Signal Cabling

Item	Standard
Conductor Type	Stranded copper
Conductor Size	20 AWG
Cable Size	4 conductors / cable

5. **Connectors:** Cable conductors are directly connected to the DM542T using the provided screw terminals.

6. Power Cabling Configuration

Item	Cable Wire Color
Pulse +	Black
Pulse -	White (GND) *
Direction +	Red
Direction -	White (GND) *
Enable +	Yellow
Enable -	White (GND) *

* GND wires tied / bonded together.

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DC Power Supply

1. Device

Item	Standard
Model (USA)	Mean Well EDR-120-24
Input	120 VAC
Output	24 VDC

2. DC Power Cabling

Item	Standard
Conductor Type	Stranded or solid copper
Conductor Size	20 or 22 AWG
Cable Size	2 conductors / cable

3. DC Power Cabling Configuration

Item	Cable Wire Color
Positive (+)	Red
Negative (-)	White (or Black)

4. AC Power Cabling

Item	Standard
Conductor Type	Stranded copper
Conductor Size	16 AWG (min)
Cable Size	3 conductors / cable

5. AC Power Cabling Configuration

Item	Cable Wire Color
Hot (or live or active)	Black
Neutral	White
Ground	Green

6. AC Power Switching Configuration: Hot (or live or active) is switched on the infeed to the DC power supply.

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