

**Rosetta**

**Standards and Interfaces**

**Version 0.1**

**01 October 2024**

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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 |

## General

1. Cabling

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

1. Connector

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

1. 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 |

## Stepper Motor Drivers

1. Device

|  |  |  |
| --- | --- | --- |
| Item | Standard | |
| Model | | DM542T |

1. Power Cabling

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

1. Power Cabling Configuration

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

1. Signal Cabling

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

1. **Connectors**: Cable conductors are directly connected to the DM542T using the provided screw terminals.
2. 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.

## DC Power Supply

1. Device

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

1. DC Power Cabling

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

1. DC Power Cabling Configuration

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

1. AC Power Cabling

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

1. AC Power Cabling Configuration

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

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

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