
frc_rekt Documentation

Release

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Submodules

frc_rekt.battery module

Battery model.

Models a battery on an frc robot.

class frc_rekt.battery.**Battery** (*starting_voltage=13.2, load=0, internal_resistance=0.012*)

Bases: object

Model of a Battery.

voltage ()

Voltage of battery.

frc_rekt.drivetrain module

Generic Drivetrain model.

Models a drivetrain on an frc robot.

class frc_rekt.drivetrain.**Drivetrain** (*wheel=None, motor=None, length=34, width=28*)

Bases: object

Model of a Drivetrain.

length

Wheelbase length in inches.

width

Wheelbase width in inches.

frc_rekt.gearbox module

Gearbox model.

Models a gearbox on an frc robot.

class `frc_rekt.gearbox.Gearbox` (*motors=None, gears=None, efficiency=0.8*)

Bases: `object`

Model of a Gearbox.

mechanical_advantage

Gearbox mechanical advantage.

frc_rekt.helpers module

Helper functions.

Use these so we don't write duplicate code.

`frc_rekt.helpers.get_file_encoding` (*file_path*)

Return encoding for file path.

Parameters `file_path` (*str*) – Path to file

Returns encoding

Return type `str`

`frc_rekt.helpers.plot_func` (*dataframe, func, x_label=None, y_label=None, title=None*)

Plot best fit function.

Generates points using the function, and plots those points against the original data.

Parameters

- **dataframe** (*pandas.DataFrame*) – the dataframe of original data
- **func** (*types.FunctionType*) – the function to plot
- **x_label** (*str*) – the label of the x axis data in the dataframe
- **y_label** (*str*) – the label of the y axis data in the dataframe

frc_rekt.main_breaker module

MainBreaker model.

Models a main breaker on an frc robot. Uses data from datasheet

class `frc_rekt.main_breaker.MainBreaker` (*ambient_temp=25*)

Bases: `object`

Model of a Mainbreaker.

temperature_derate (*temp*)

Trip time derating, based on temperature.

trip_time (*current*)

Trip time min, max in seconds for given amount of current.

frc_rekt.model module

Model is deprecated.

frc_rekt.motor module

Model of an frc Motor.

Models an frc motor. Uses data from motors.vex.com.

```
class frc_rekt.motor.Motor (motor_type='cim', speed=0.0, voltage=0.0)
```

Bases: object

Models a motor.

```
motor_types = ['cim', 'mini-cim', '775pro', 'bag']
```

frc_rekt.wheel module

Wheel model.

Models a wheel on an frc robot.

```
class frc_rekt.wheel.Wheel (diameter=4.0, cof=1.3, torque=0.0)
```

Bases: object

Model of a Wheel.

diameter

Wheel diameter in inches.

force

Force at wheel in ft*lbs.

Module contents

FRC Robot Electrical and Kinematic Tool.

A modeler for frc robots.

CHAPTER 2

Indices and tables

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