Disconnect when Arduino is
connected by USB to computer

Arduino Power
J2

J1
12v Power
PWR_FLAG
PWR_FLAG
PWR_FLAG
2
1
GND

VIO

U1
VM   VIO
16   10

J3
Stepper Motor
1
2
3
4
14 A2
13 A1
12 B1
11 B2

EN   1
MS1 2
MS2 3
SP   4
RX   5
TX   6
STEP 7
DIR 8

15 GND   GND 9

TMC2209

GND

Arduino Nano

VIN 30
3V3 17
+5V 27

D0/RX 2
D1/TX 1
D2   5
D3   6
D4   7
D5   8
D6   9
D7   10
D8   11
D9   12
D10 13
D11 14
D12 15
D13 16

RESET 28
RESET 3

AREF 18

A0 19
A1 20
A2 21
A3 22
A4 23
A5 24
A6 25
A7 26

GND GND A1
29 4

GND

RV1
Delay
2
GND

RV2
Speed
2
GND

RV3
Length
2
GND

J4
1
2
3
VIO
GND

J5
2
1
2
3
VIO
GND

J6
3
1
2
3
VIO
GND

J7
4
1
2
3
VIO
GND

J8
5
1
2
3
VIO
GND

J9
6
1
2
3
VIO
GND

R1
1K
R2
1K

D1
Home
D2
Away

GND

LEDs will show:
Solid when Home or Away.
Flash if the hopper is moving to Home or Away.
Alternate flash when initialising.
Both flash for error.

Coal Hopper

Sheet: /
File: Coal-Hopper-V2.kicad_sch

Title: Arduino Stepper Motor Driver for Coal Hopper

Size: A4   Date: Rev:
KiCad E.D.A. kicad (6.0.11-0)   Id: 1/1