

**Config sample lines from hal file:**

loadrt hostmot2

loadrt hm2\_eth board\_ip="192.168.1.121" config="num\_encoders=1 num\_pwmgens=0 num\_stepgens=3 sserial\_port\_0=21xxxxxx"

**Notes:**

board\_ip="192.168.1.121"

The default IP address of the 7i76e  
Its suggested to use the 10.10.10.10 IP address for LinuxCNC so you don't end up with the real time Ethernet IP address range, overlapping a DHCP pool of local network addresses.  
(set W3 up instead of down to use 10.10.10.10)

num\_encoders=1

see man hostmot2 for additional details

num\_pwmgens=0

see man hostmot2 for additional details

num\_stepgens=3

see man hostmot2 for additional details

sserial\_port\_0=21xxxxxx

The first digit (2) selects the software mode from the 7i76e itself,  
The second digit (1) selects the software mode of the connected SSerial device i.e. the 7i73

7i76e supports 3 Software modes:

MODE 0 I/O only mode (32 bits of input data, 16 bit of output data)

MODE 1 I/O plus analog input mode (32 bits of input data, 16 bits of output data, 4analog input channels)

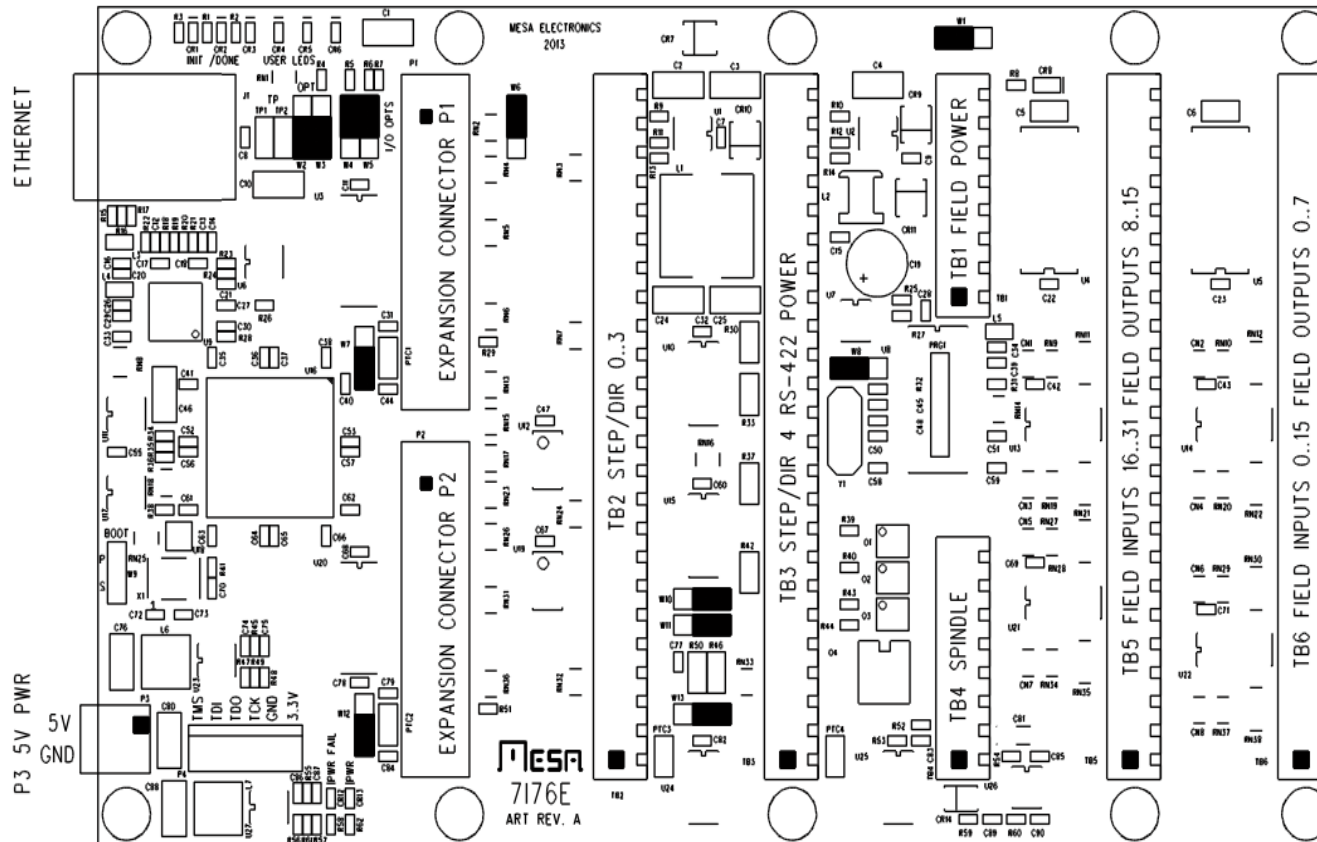
MODE 2 I/O plus analog input and field voltage and MPG mode

32 bits of input data, 16 bits of output data, 4 analog input channels, field voltage analog in,  
and 2 MPG encoders on inputs 16..19.

Default encoder count mode is 1X to match normal 100 ppr MPG's.

To PC

Do not  
connect



### Jumpers:

W1	: left	(default)
W2	: down	(default)
W3	: down	(default) *
W4	: up	(default)
W5	: up	(default)
W6	: up	(default)
W7	: down	(default)
W8	: left	(default)
W9	: up	(default)
W10	: left	(default)
W11	: left	(default)
W12	: down	(default)
W13	: left	(default)

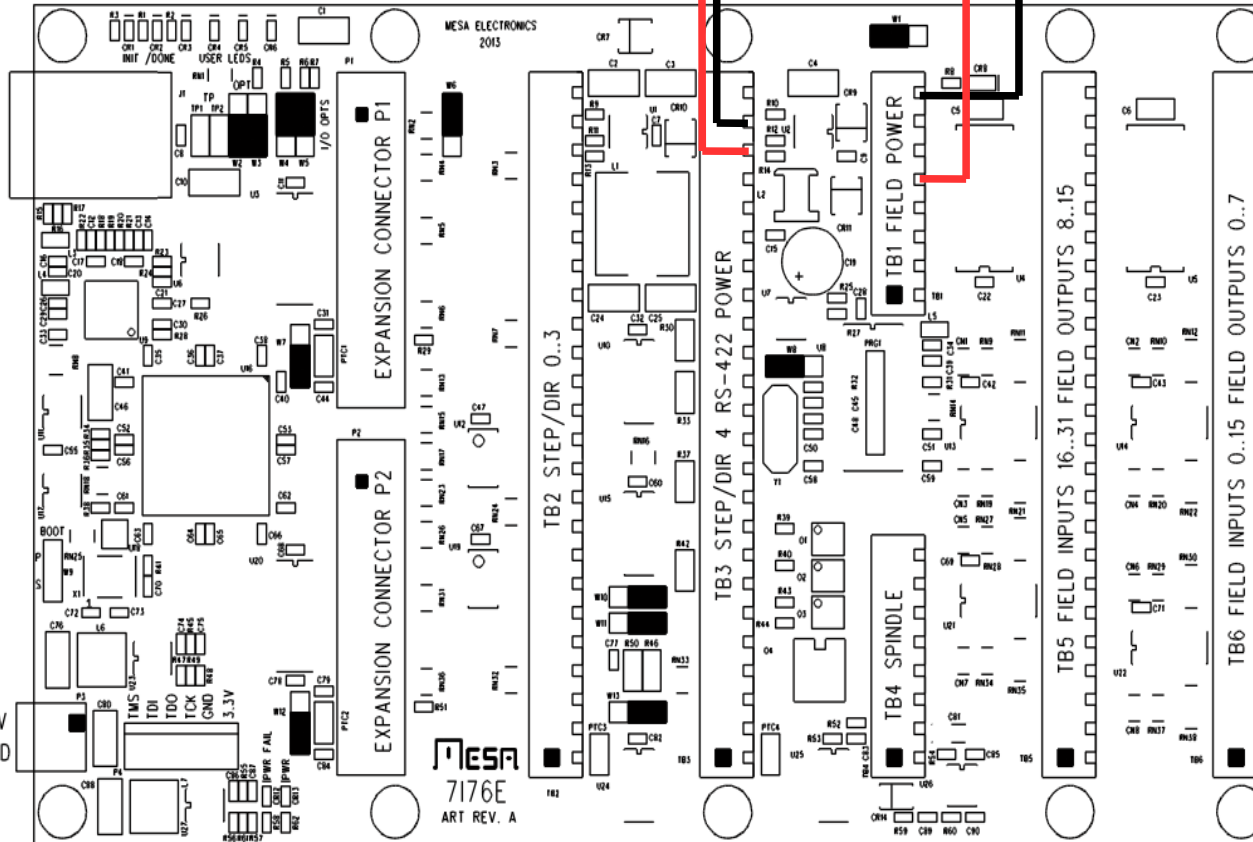
- \* Its suggested to use the 10.10.10.10 IP address for LinuxCNC so you don't end up with the real time Ethernet IP address range, overlapping a DHCP pool of local network addresses. (set W3 up instead of down to use 10.10.10.10)

# Power Connections

Do not  
connect

P3 5V PWR  
5V  
GND

ETHERNET



+ 24 V

GND

## TB1 Field Power

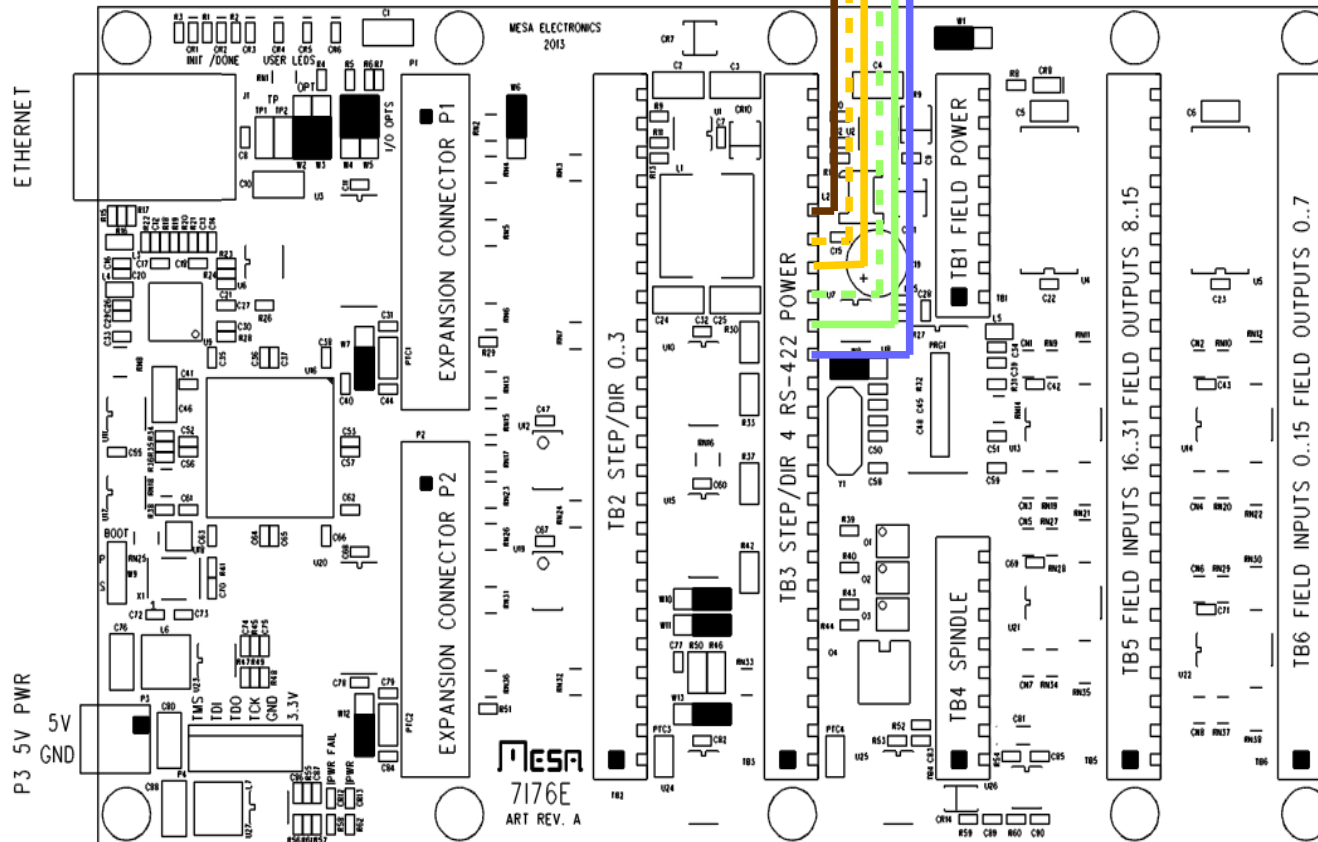
- Pin 8 : GND
- Pin 5 : + 24 V

## TB3 Power

- Pin 23 : GND
- Pin 22 : + 24 V

To SSerial Device i.E. 7i73

## Connection to SSerial device, i.e. 7i73



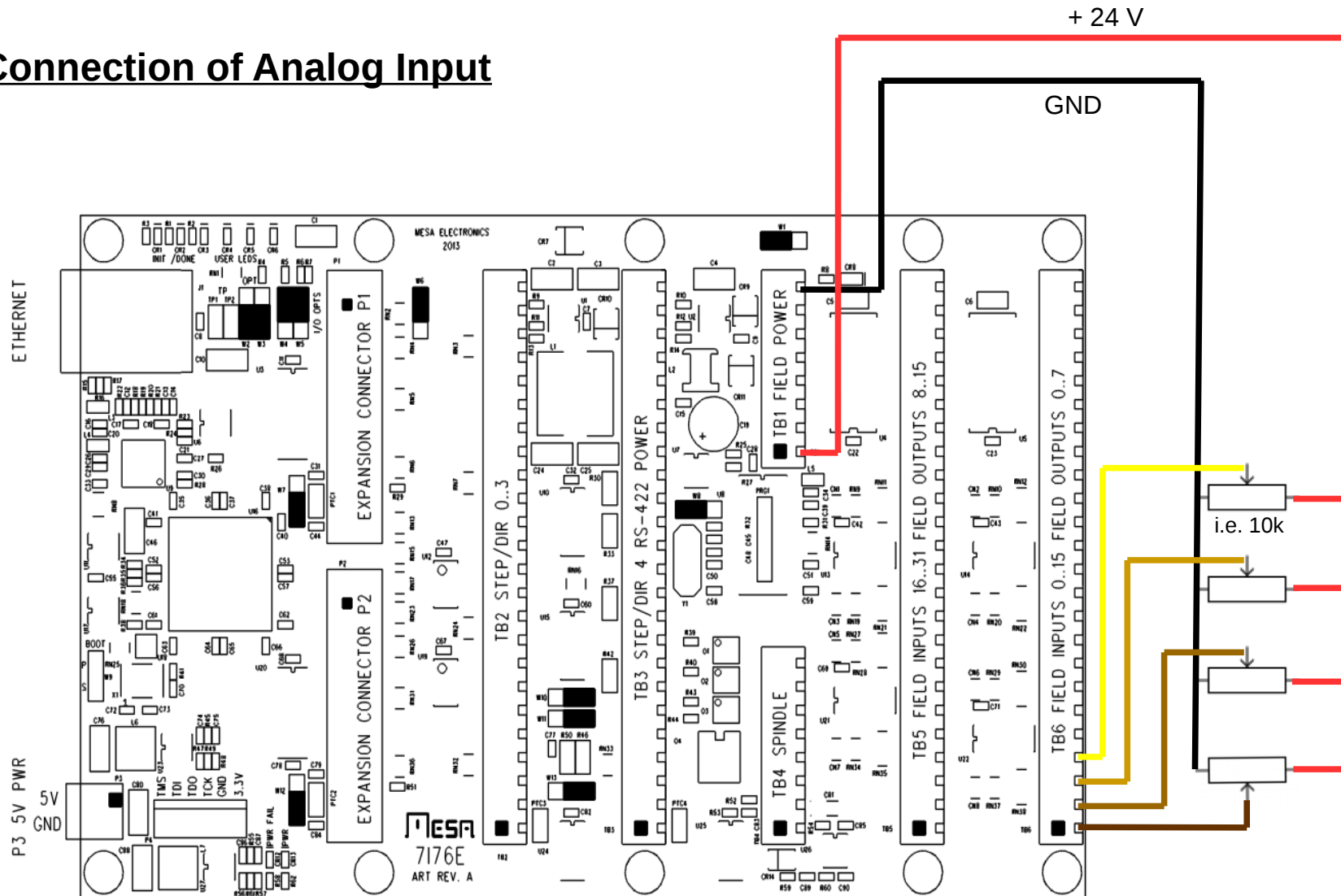
### **TB3 SSerial**

- Pin 20 : Brown and Brown/White
- Pin 19 : Orange/White
- Pin 18 : Orange
- Pin 17 : Green/White
- Pin 16 : Green
- Pin 15 : Blue and Blue/White

Colors correspond to  
Standard CAT 5 or  
CAT 6 network cable  
If wired according T568B  
Just cut one end

For details see:  
<https://en.wikipedia.org/wiki/TIA/EIA-568>

## Connection of Analog Input



### TB1 Field Power

- Pin 5 : + 24 V
- Pin 8 : GND
- Pin 1 : + 24 V

You may use also:

- Pin 5 : + 24 V
- Pin 4 : + 24 V
- Pin 3 : + 24 V
- Pin 2 : + 24 V

as power source or get GND and +24 V directly from the powersupply.

### TB6 : Analog in

- PIN 4 = hm2\_7i76e.0.7i76.0.0.analogin3
- PIN 3 = hm2\_7i76e.0.7i76.0.0.analogin2
- PIN 2 = hm2\_7i76e.0.7i76.0.0.analogin1
- PIN 1 = hm2\_7i76e.0.7i76.0.0.analogin0

# Connection of Digital Input

## TB1 Field Power

Pin 2 : + 24 V

You may use:

Pin 5 : + 24 V

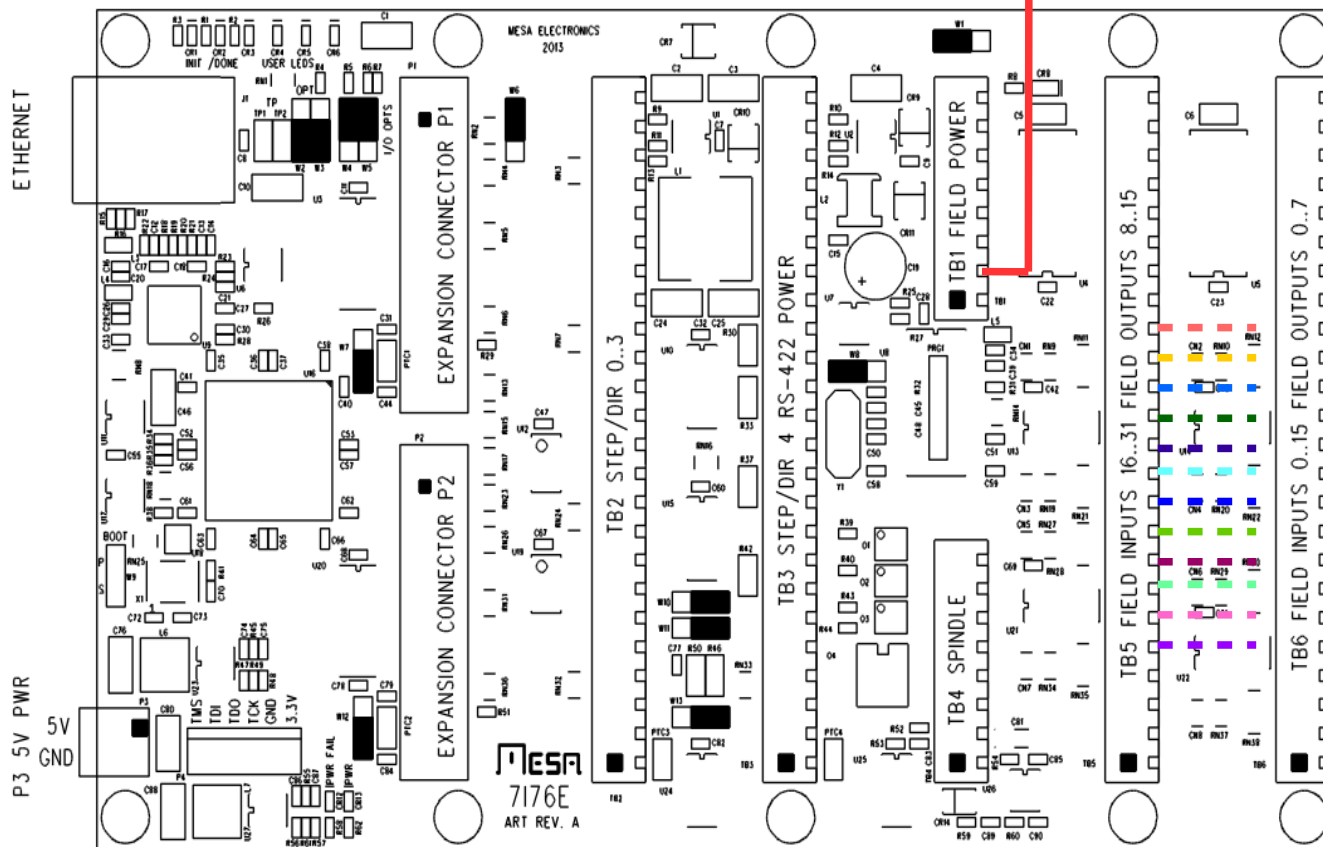
Pin 4 : + 24 V

Pin 3 : + 24 V

Pin 1 : + 24 V

as power source or  
get it directly from  
the power supply.

+ 24 V



## TB6 : Digital in

PIN 16 = hm2\_7i76e.0.7i76.0.0.input-15

PIN 15 = hm2\_7i76e.0.7i76.0.0.input-14

PIN 14 = hm2\_7i76e.0.7i76.0.0.input-13

PIN 13 = hm2\_7i76e.0.7i76.0.0.input-12

PIN 12 = hm2\_7i76e.0.7i76.0.0.input-11

PIN 11 = hm2\_7i76e.0.7i76.0.0.input-10

PIN 10 = hm2\_7i76e.0.7i76.0.0.input-09

PIN 9 = hm2\_7i76e.0.7i76.0.0.input-08

PIN 8 = hm2\_7i76e.0.7i76.0.0.input-07

PIN 7 = hm2\_7i76e.0.7i76.0.0.input-06

PIN 6 = hm2\_7i76e.0.7i76.0.0.input-05

PIN 5 = hm2\_7i76e.0.7i76.0.0.input-04

Do not use

hm2\_7i76e.0.7i76.0.0.input-03

hm2\_7i76e.0.7i76.0.0.input-02

hm2\_7i76e.0.7i76.0.0.input-01

hm2\_7i76e.0.7i76.0.0.input-00

As they are used as analog input

## TB5 : Digital in

PIN 16 = hm2\_7i76e.0.7i76.0.0.input-31

PIN 15 = hm2\_7i76e.0.7i76.0.0.input-30

PIN 14 = hm2\_7i76e.0.7i76.0.0.input-29

PIN 13 = hm2\_7i76e.0.7i76.0.0.input-28

PIN 12 = hm2\_7i76e.0.7i76.0.0.input-27

PIN 11 = hm2\_7i76e.0.7i76.0.0.input-26

PIN 10 = hm2\_7i76e.0.7i76.0.0.input-25

PIN 9 = hm2\_7i76e.0.7i76.0.0.input-24

PIN 8 = hm2\_7i76e.0.7i76.0.0.input-23

PIN 7 = hm2\_7i76e.0.7i76.0.0.input-22

PIN 6 = hm2\_7i76e.0.7i76.0.0.input-21

PIN 5 = hm2\_7i76e.0.7i76.0.0.input-20

Do not use

hm2\_7i76e.0.7i76.0.0.input-19

hm2\_7i76e.0.7i76.0.0.input-18

hm2\_7i76e.0.7i76.0.0.input-17

hm2\_7i76e.0.7i76.0.0.input-16

As they are used as MPG input

Switches  
i.e. limit  
X,Y,Z



# Connection of Digital Output

## TB1 Field Power

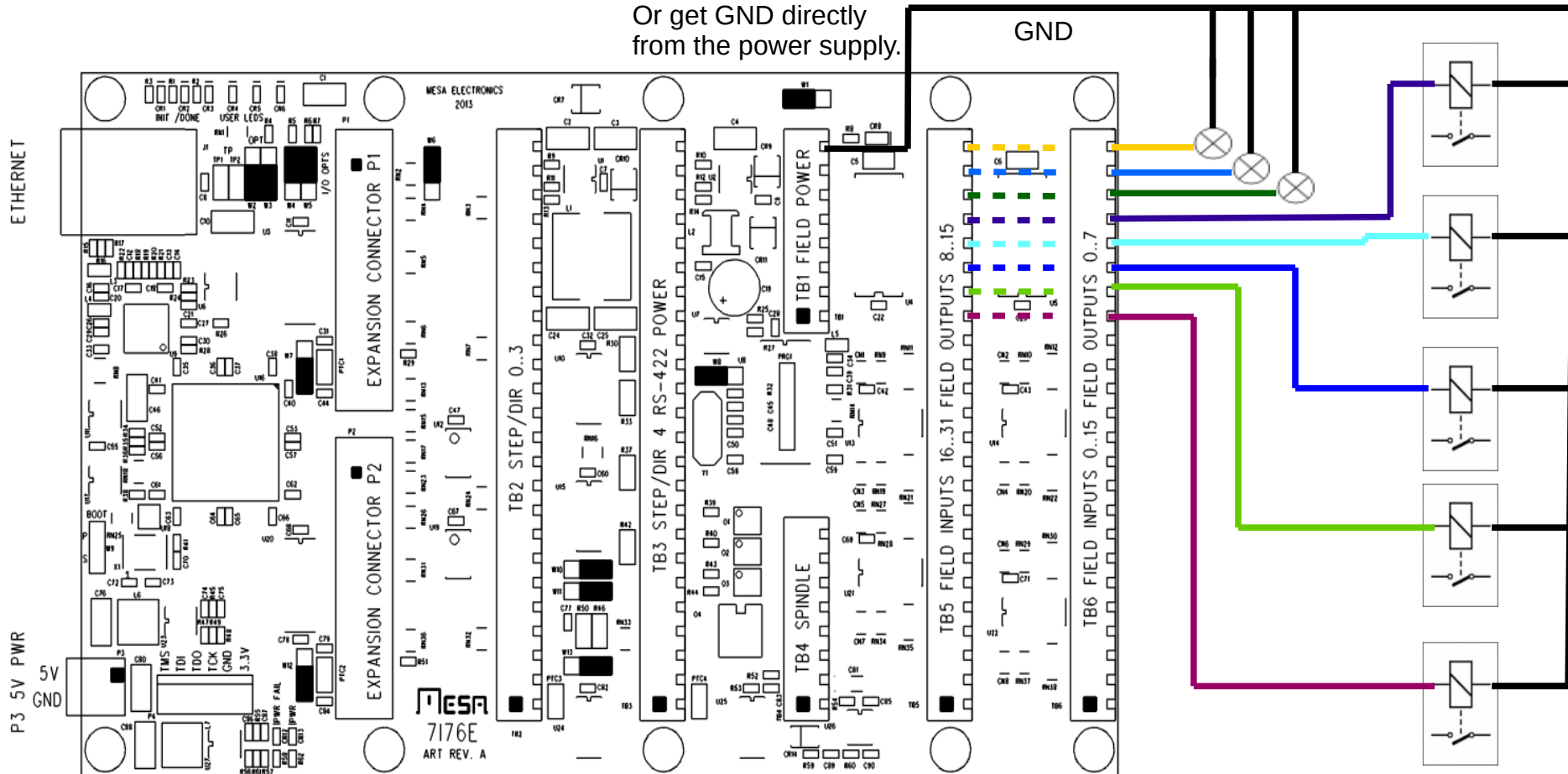
Pin 8 : GND

Or get GND directly from the power supply.

## Important note:

Maximum output load per pin is 350 mA

Total output is limited to 2A.



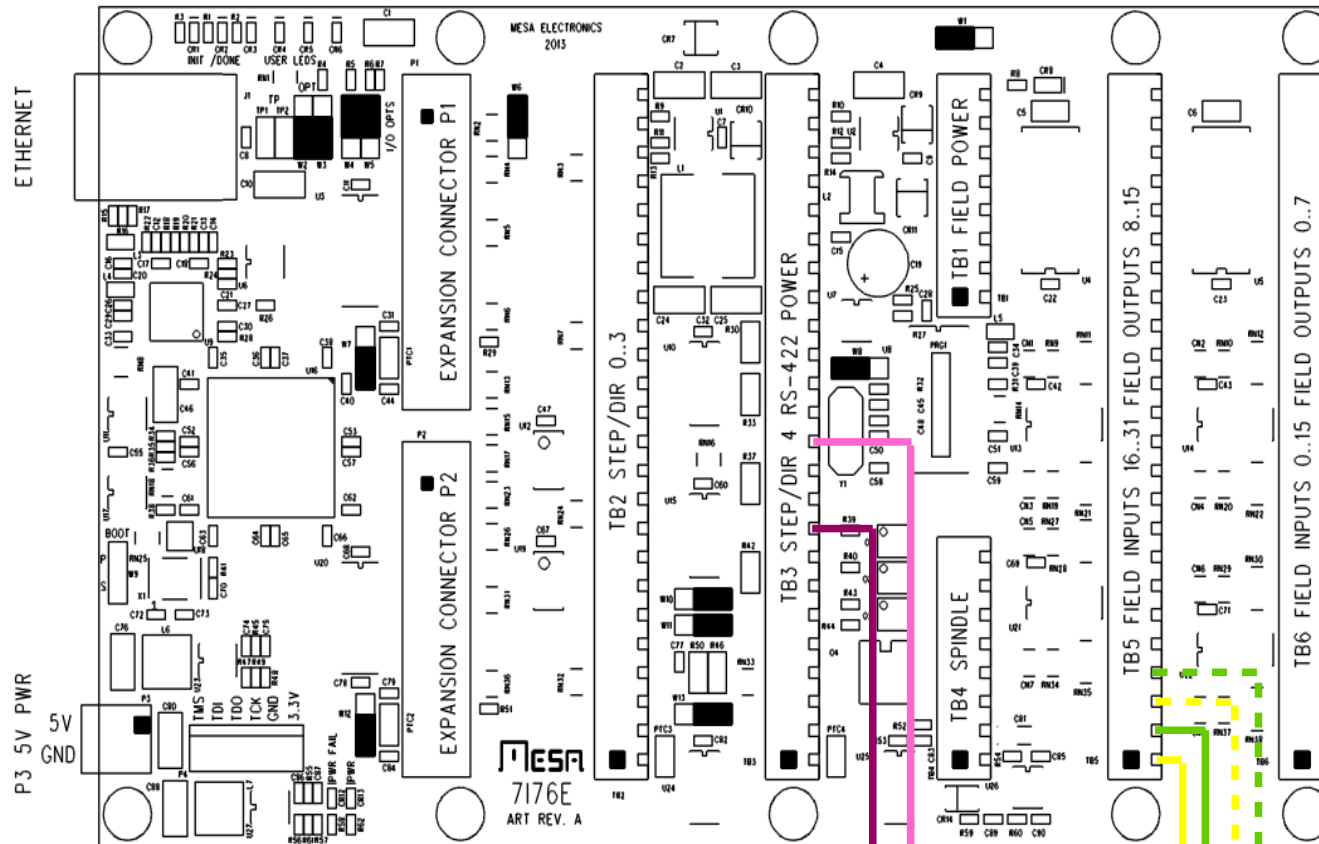
## TB5 : Digital out

- PIN 24 = hm2\_7i76e.0.7i76.0.0.output-15
- PIN 23 = hm2\_7i76e.0.7i76.0.0.output-14
- PIN 22 = hm2\_7i76e.0.7i76.0.0.output-13
- PIN 21 = hm2\_7i76e.0.7i76.0.0.output-12
- PIN 20 = hm2\_7i76e.0.7i76.0.0.output-11
- PIN 19 = hm2\_7i76e.0.7i76.0.0.output-10
- PIN 18 = hm2\_7i76e.0.7i76.0.0.output-09
- PIN 17 = hm2\_7i76e.0.7i76.0.0.output-08

## TB6 : Digital out

- PIN 24 = hm2\_7i76e.0.7i76.0.0.output-07
- PIN 23 = hm2\_7i76e.0.7i76.0.0.output-06
- PIN 22 = hm2\_7i76e.0.7i76.0.0.output-05
- PIN 21 = hm2\_7i76e.0.7i76.0.0.output-04
- PIN 20 = hm2\_7i76e.0.7i76.0.0.output-03
- PIN 19 = hm2\_7i76e.0.7i76.0.0.output-02
- PIN 18 = hm2\_7i76e.0.7i76.0.0.output-01
- PIN 17 = hm2\_7i76e.0.7i76.0.0.output-00

# Connection of MPG's



## TB5 : MPG in

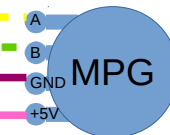
- PIN 4 = MPG 1 Signal B
- PIN 3 = MPG 1 Signal A
- PIN 2 = MPG 0 Signal B
- PIN 1 = MPG 0 Signal A

## TB3 : MPG Power

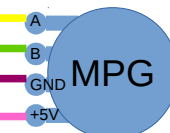
- PIN 12 = MPG + 5V
- PIN 9 = MPG GND

Power could also be taken from other pin  
i.E. TB3 Pin 1 and PIN 6

hm2\_7i76e.0.7i76.0.0.enc0.count



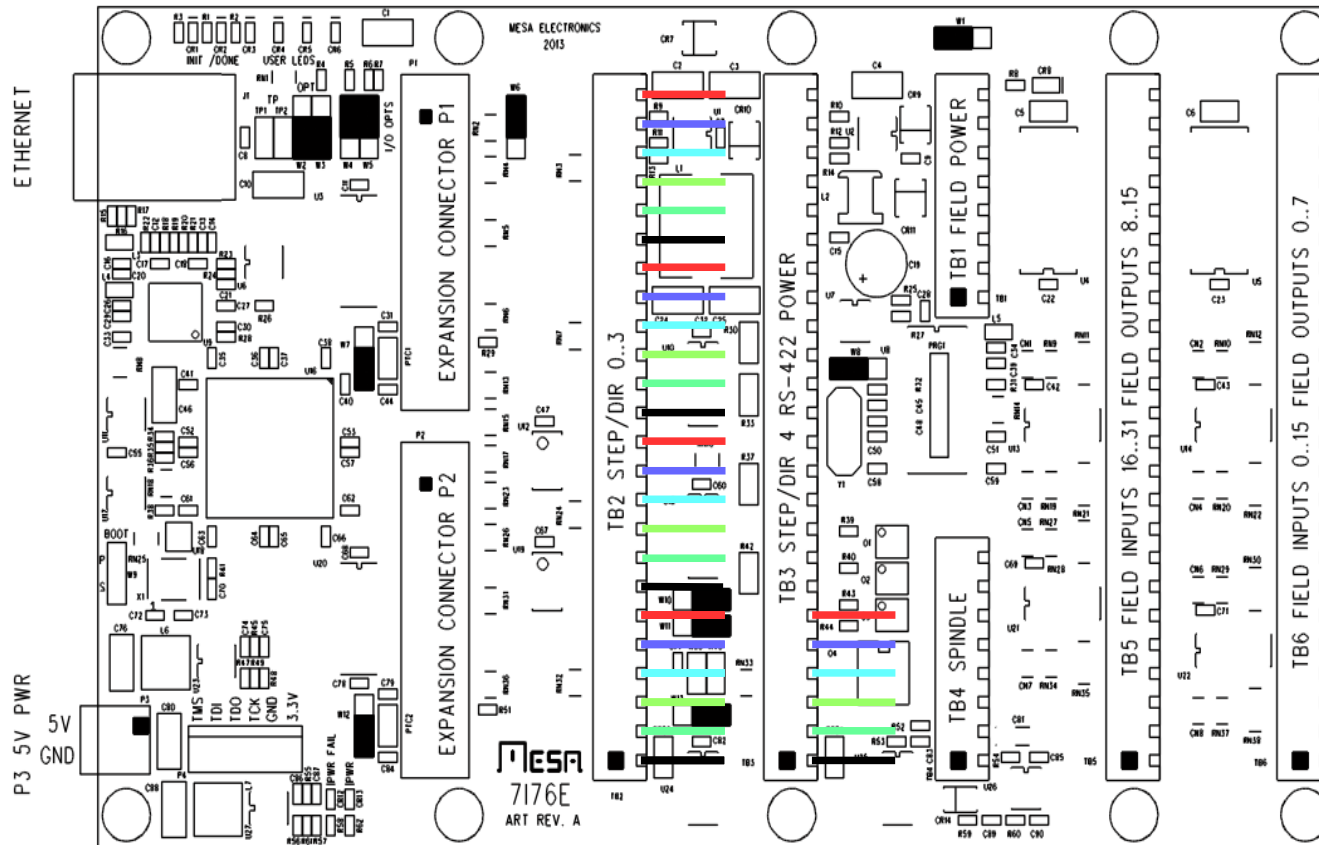
hm2\_7i76e.0.7i76.0.0.enc1.count



# Connection of Steppers

## Note:

Not used pins can not be used as IO Pin,  
even if not all stepper are used



## TB2 : Stepper in

PIN 24 = + 5V : Stepper 3  
PIN 23 = DIR+ : Stepper 3  
PIN 22 = DIR- : Stepper 3  
PIN 21 = STEP+ : Stepper 3  
PIN 20 = STEP - : Stepper 3  
PIN 19 = GND : Stepper 3

PIN 18 = + 5V : Stepper 2  
PIN 17 = DIR+ : Stepper 2  
PIN 16 = DIR- : Stepper 2  
PIN 15 = STEP+ : Stepper 2  
PIN 14 = STEP - : Stepper 2  
PIN 13 = GND : Stepper 2

PIN 12 = + 5V : Stepper 1  
PIN 11 = DIR+ : Stepper 1  
PIN 10 = DIR- : Stepper 1  
PIN 9 = STEP+ : Stepper 1  
PIN 8 = STEP - : Stepper 1  
PIN 7 = GND : Stepper 1

PIN 6 = + 5V : Stepper 0  
PIN 5 = DIR+ : Stepper 0  
PIN 4 = DIR- : Stepper 0  
PIN 3 = STEP+ : Stepper 0  
PIN 2 = STEP - : Stepper 0  
PIN 1 = GND : Stepper 0

## TB3 : Stepper in

PIN 6 = + 5V : Stepper 4  
PIN 5 = DIR+ : Stepper 4  
PIN 4 = DIR- : Stepper 4  
PIN 3 = STEP+ : Stepper 4  
PIN 2 = STEP - : Stepper 4  
PIN 1 = GND : Stepper 4

Type 0	Type2
+ 5 V	+ 5 V
DIR +	A
DIR -	A-
STEP +	B
STEP -	B-
GND	GND

setp hm2\_7i76e.0.stepgen.00.step\_type 0

Sets the type to be used:

Type 0 = step/dir

Type 1 = up/down

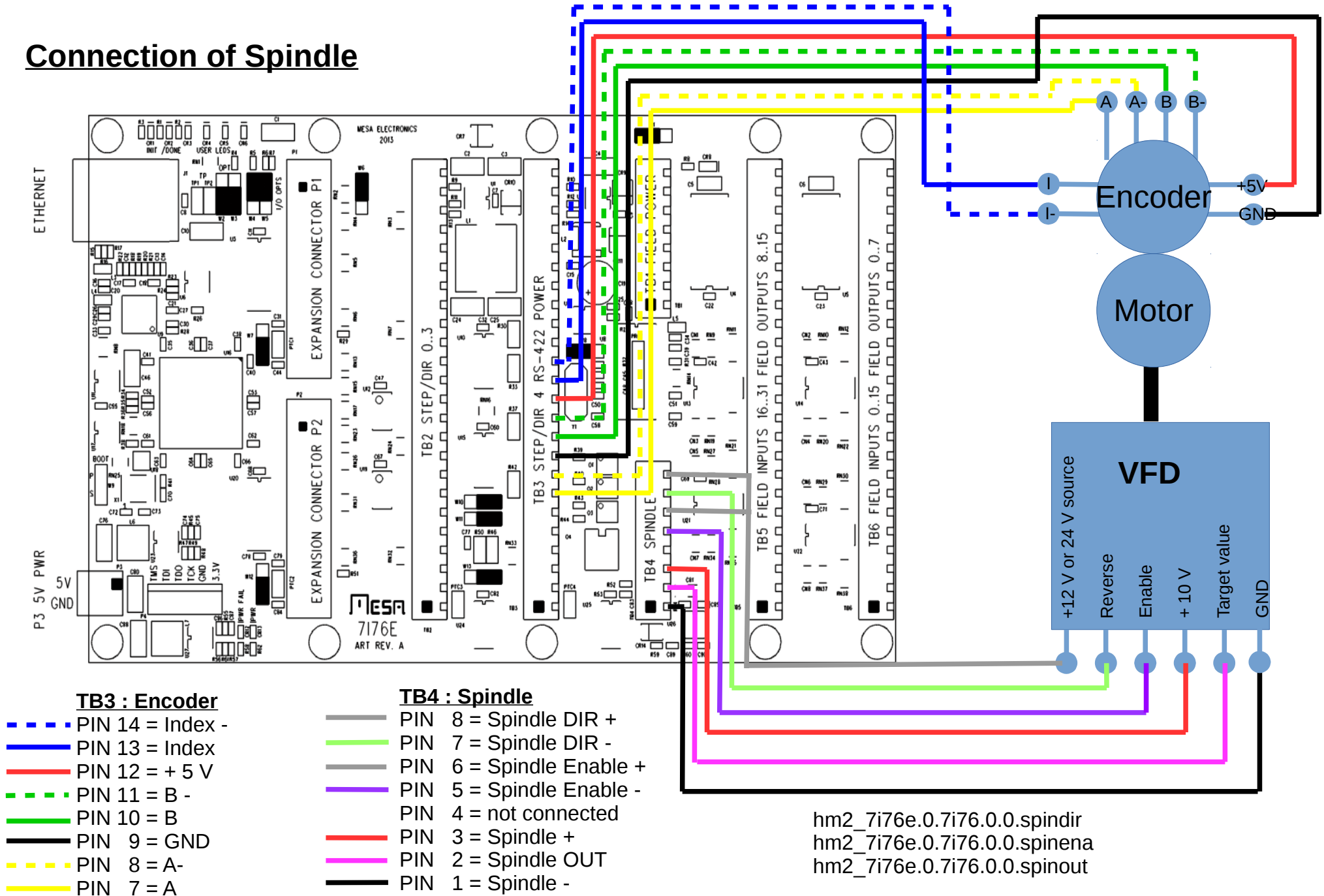
Type 2 = quadratur A/B

Type 3 = Three phase full step

Etc.

See „man stepgen“ for all details

# Connection of Spindle



hm2\_7i76e.0.7i76.0.0.spindir  
 hm2\_7i76e.0.7i76.0.0.spinena  
 hm2\_7i76e.0.7i76.0.0.spinout