

Bipolaire Microstep Driver for 2 phase stepper motor
Bipolare Microschritt Treiber für 2 Phasen Schrittmotor
MSD-32-2.5

Specifications:

Power Supply

Minimum Voltage : 10 Vdc
Maximum Voltage : 32 Vdc

Microsteps

Minimum number of microsteps : 1
Maximum number of microsteps : 8

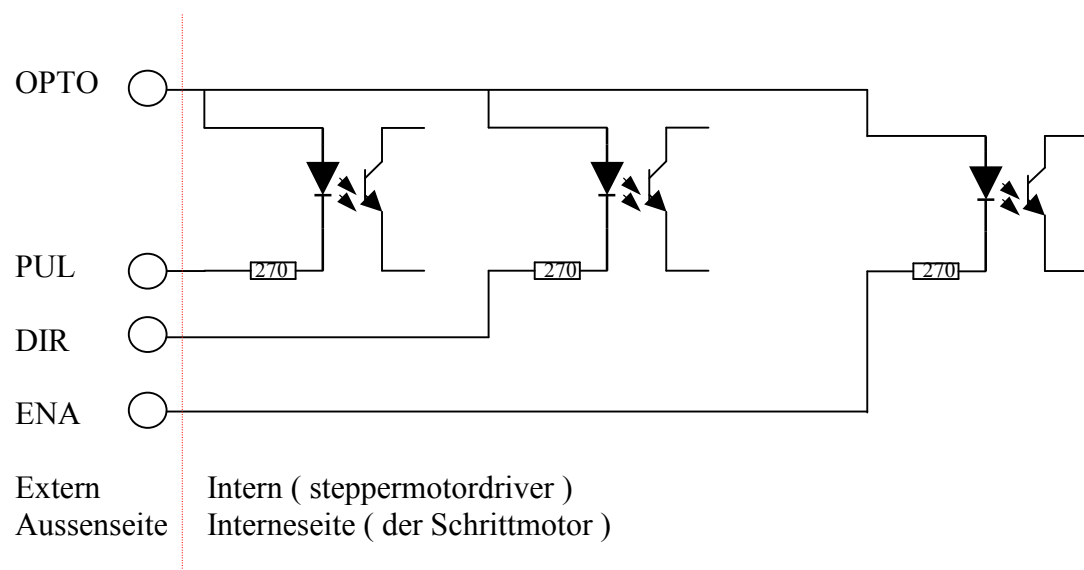
Number of Phases : 2

Stepper motor

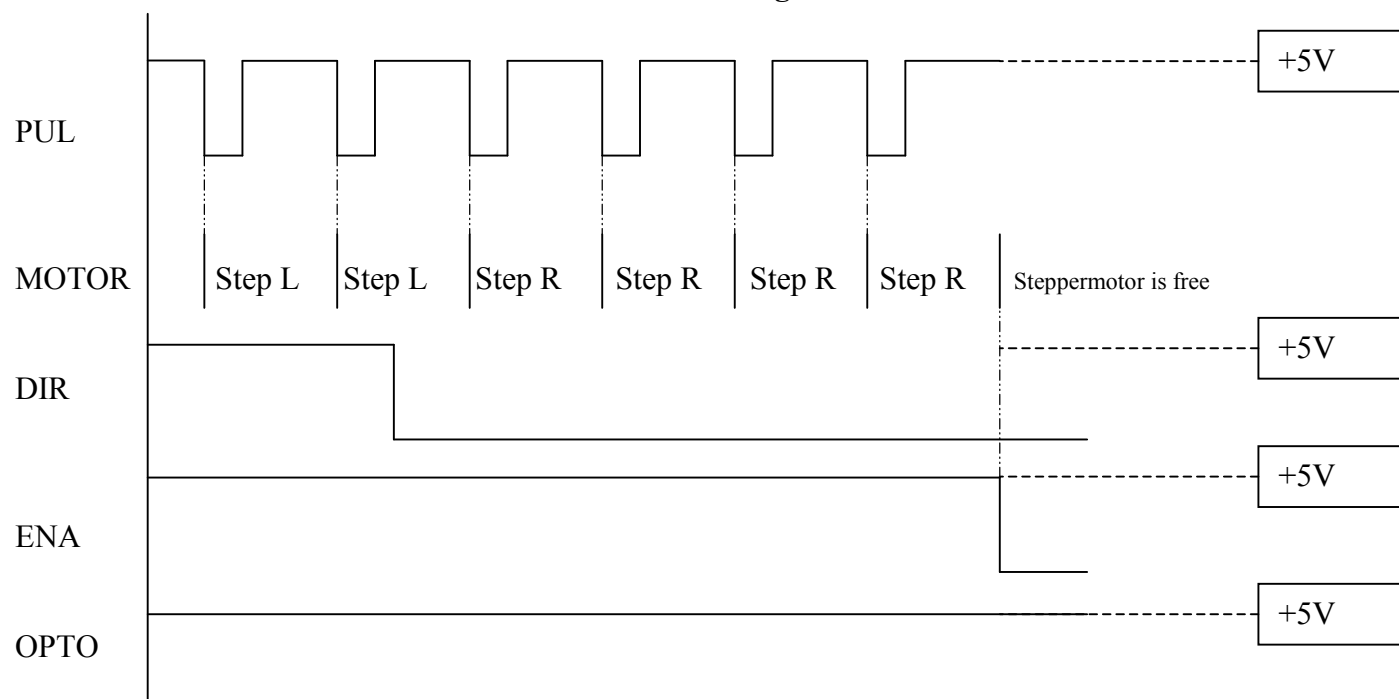
Minimum Phase Current : 0.4 A
Maximum Phase Current : 2.5 A

Number of motorwires (2 phase) : 4, 6, 8

Inputs : Optocouplers, current low < 8 mA, high > 16 mA



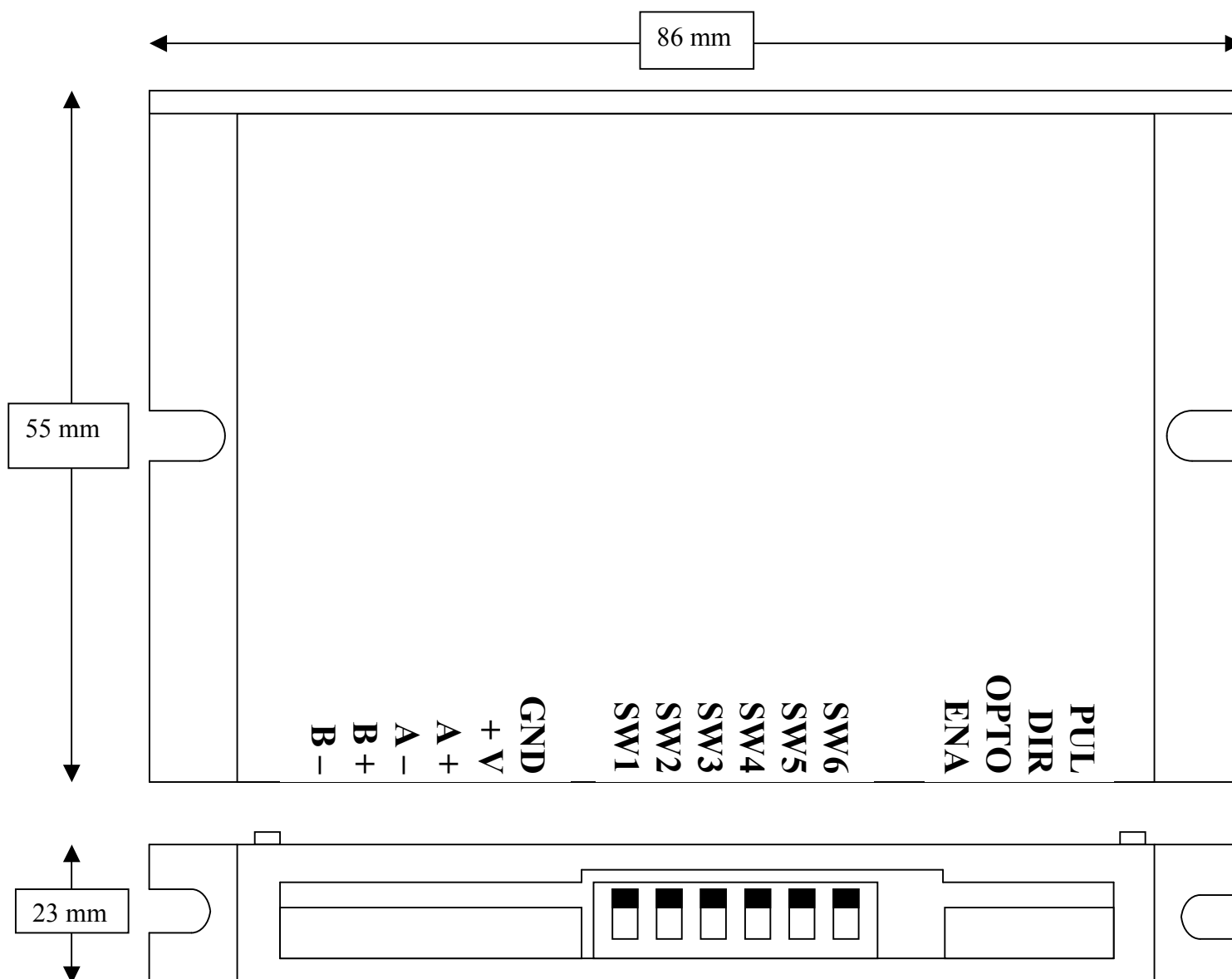
**Signals microstapdriver for steppermotor
Signalen für die Schrittmotor**



Min puls high time 5 uS
 Min puls low time 5 uS
 DIR to PUL lead time 5 uS
 ENA to PUL lead time 5 uS

High = + 5V (current < 8 mA)
 Low = 0V (current > 16 mA)

Dimensions of steppermotordriver MSD-32-2.5



Dipswitches

Dipswitches S1 , S2 , S3 are for adjusting the current through each phase of the steppermotor

SW1	SW2	SW3	Current
OFF	ON	ON	0.4 A
ON	OFF	ON	0.7 A
OFF	OFF	ON	1.1 A
ON	ON	OFF	1.4 A
OFF	ON	OFF	1.8 A
ON	OFF	OFF	2.1 A
OFF	OFF	OFF	2.5 A

Dipswitch S4 is for the current reduction

S4 = ON : No current reduction
S4 = OFF : Auto current reduction

Auto current reduction on means 200 mS after the last puls is received the current is reduced to 60% of the nominal current. This reduces the heat dissipated in the steppermotor to $0,6 * 0,6 = 0,36$ of the nominal dissipated heat in the steppermotor. The disadvantage is the fact that in precise cnc applications the steppermotor can shift holding position a little. Normal this is not a problem, but in high cnc precision application this can be a problem. Furthermore is the holding torque of the steppermotor naturally less in the current reduction phase. This can be a problem if for example the driver is driving a steppermotor in a cnc machine that needs to hold a HF spindle vertical in position. As the holding torque of the steppermotor is less, it can cause the steppermotor to be unable to hold the HF spindle at the right height in the cnc machine, or even to break through the holding torque of the steppermotor altogether, and moving down to the lowest possible position in the cnc machine.

Dipswitches SW5 , SW6 are for adjusting the microsteps

SW5	SW6	Microsteps	Step	Step / Rotation
On	On	1	1.8°	200
Off	On	2	0.9°	400
On	Off	4	0.45°	800
Off	Off	8	0.225°	1600

**Connections of the steppermotor driver
Anslusse fur die Schrittmotor Treiber**

OPTO : + 5 V
PUL : STEP
DIR : DIRECTION
ENA : SWITCH (optional)

+ V : Positive of Power Supply
GND : Negative of Power Supply (or ground)

A+ : A connection of 1 phase of steppermotor
A- : A\ connection of 1 phase of steppermotor

B+ : B connection of 2 phase of steppermotor
B- : B\ connection of 2 phase of steppermotor

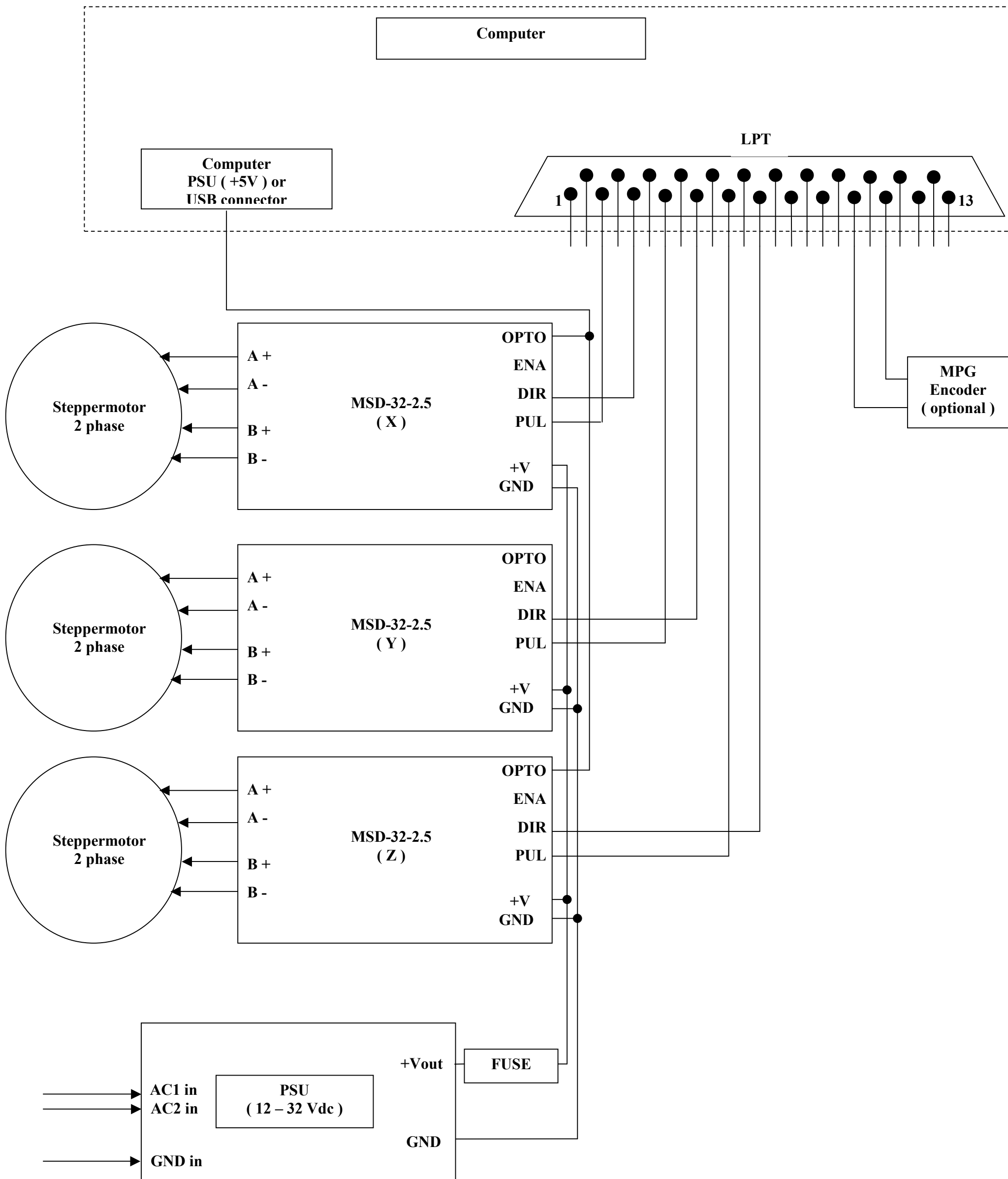
**Standard Connections (Example) of the steppermotor drive
Standard anslusse fur die Schrittmotor Treiber**

X-axes
OPTO : + 5 V (computer)
PUL : LPT - 2
DIR : LPT - 3
ENA : NC

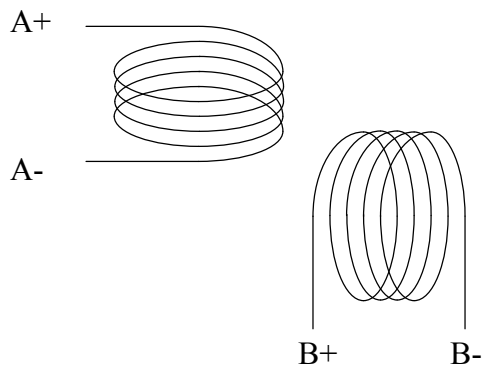
Y-axes
OPTO : + 5 V (computer)
PUL : LPT - 4
DIR : LPT - 5
ENA : NC

Z-axes
OPTO : + 5 V (computer)
PUL : LPT - 6
DIR : LPT - 7
ENA : NC

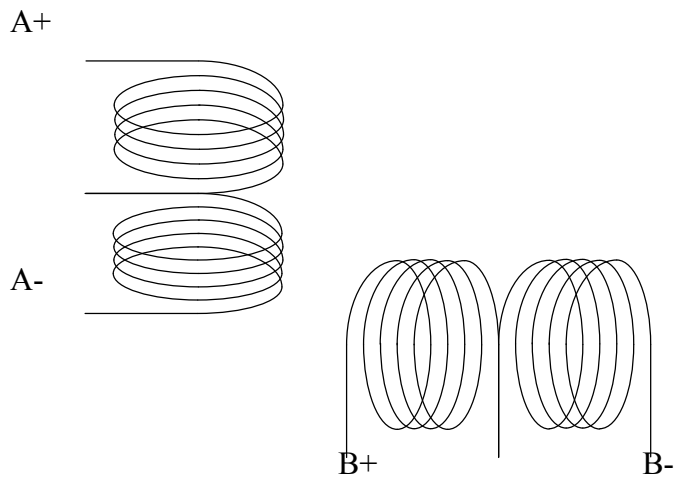
Connection example



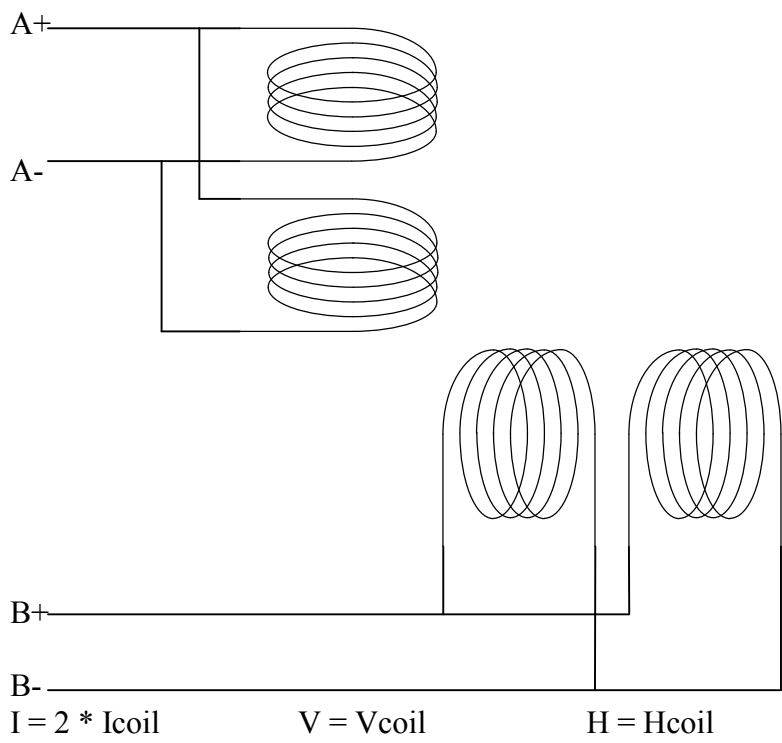
4 Wire 2 phase steppermotor / Schrittmotor mit 4 Drahte



6 Wire 2 phase steppermotor / Schrittmotor mit 6 Drahte



**8 Wire 2 phase steppermotor
Parallel connected (best way to connect a steppermotor)**



**8 Wire 2 phase steppermotor
Serial connected**

