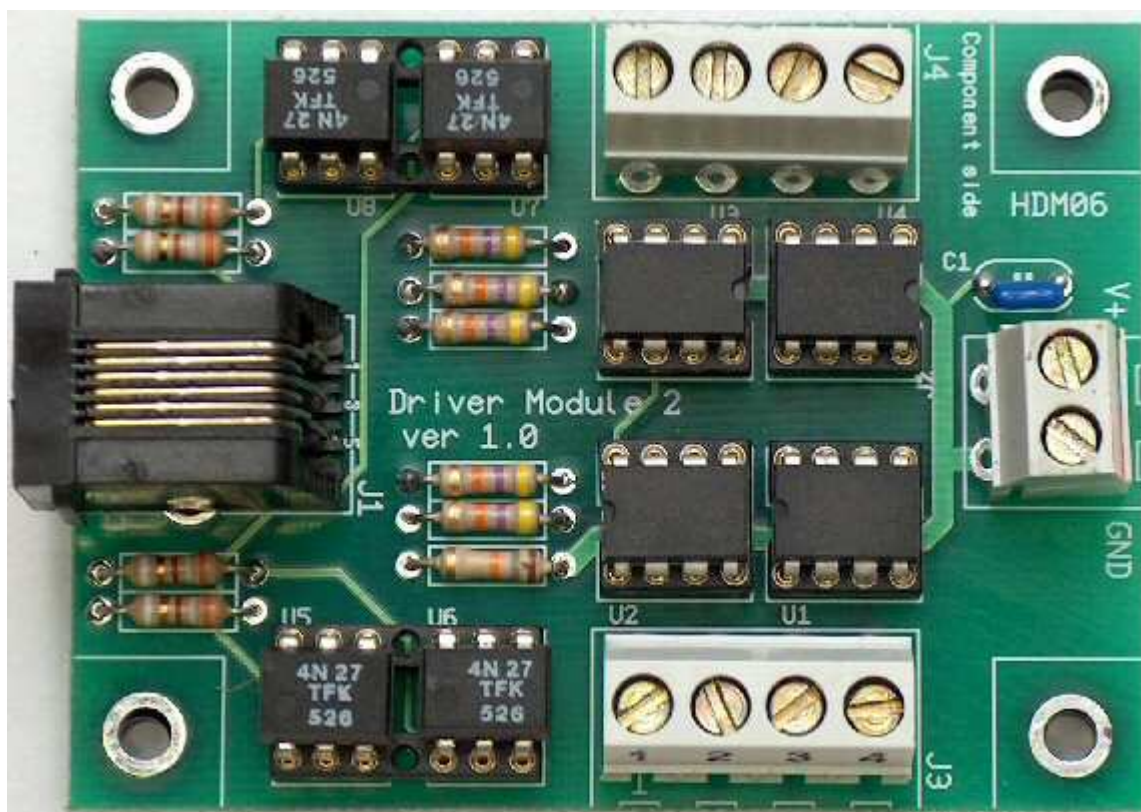


# Driver

# Module 2



**HDM06**

**Liability disclaimer:**

Use all items that can be bought and installation instructions that can be found on this site at your own risk. They have been developed for personal use, and I find them very useful. That is why I wish to share them with other model railroad hobbyists. All items and procedures have been tested and used on my own model railroad systems without causing any damage, but this does not necessarily imply that all modifications and procedures will work in any and all environments or systems. I cannot take any responsibility when items or procedures are used under different circumstances. Always use your own judgement and common sense!

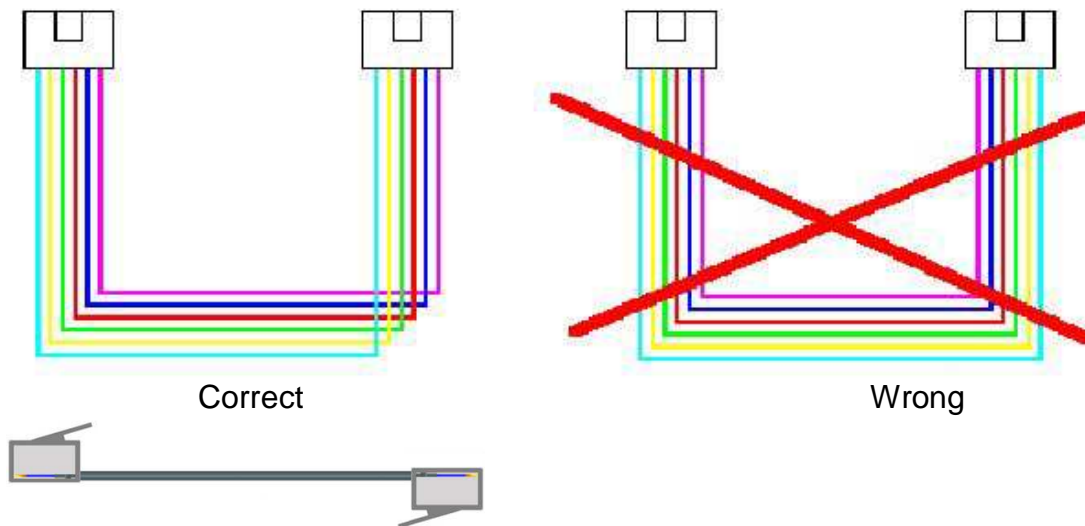
# Driver Module 2 for LocoIO

This is a driver module 2 for LocoIO. Then it is possible with the LocoIO outputs (5V, max 20mA) to drive different items with higher voltages and bigger currents.

This module can be used for direct connection of 4-point motors with end switches. Also for 4 red/green signals can be served.

## Driver module connection:

The Connection between LocoIO and Driver Module is with a 6-wire cable with RJ12 connectors. Important is that on the connector on both ends of the cable the pin1 to pin1 is connected. The length of the cables can be maximum 200 cm.



## Bill of materials for the basic driver module:

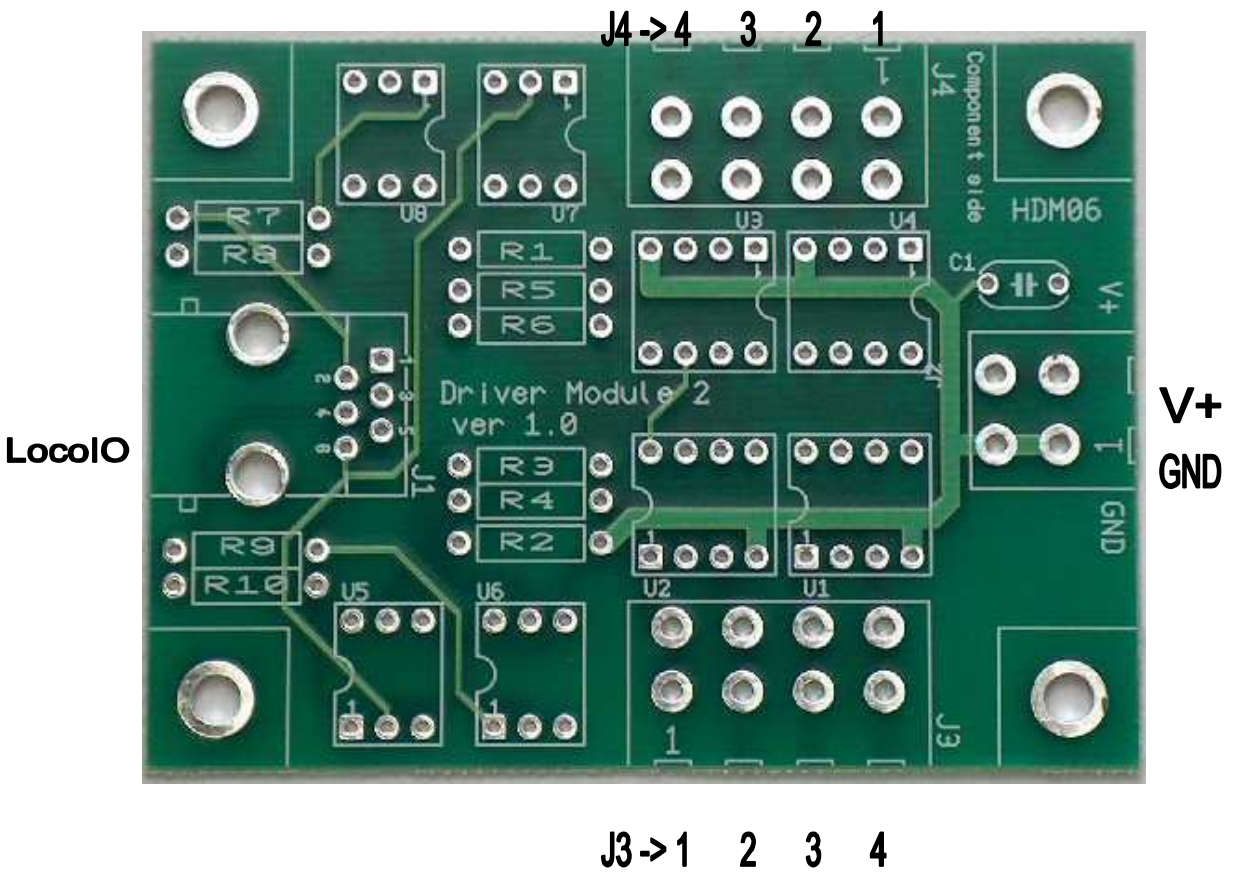
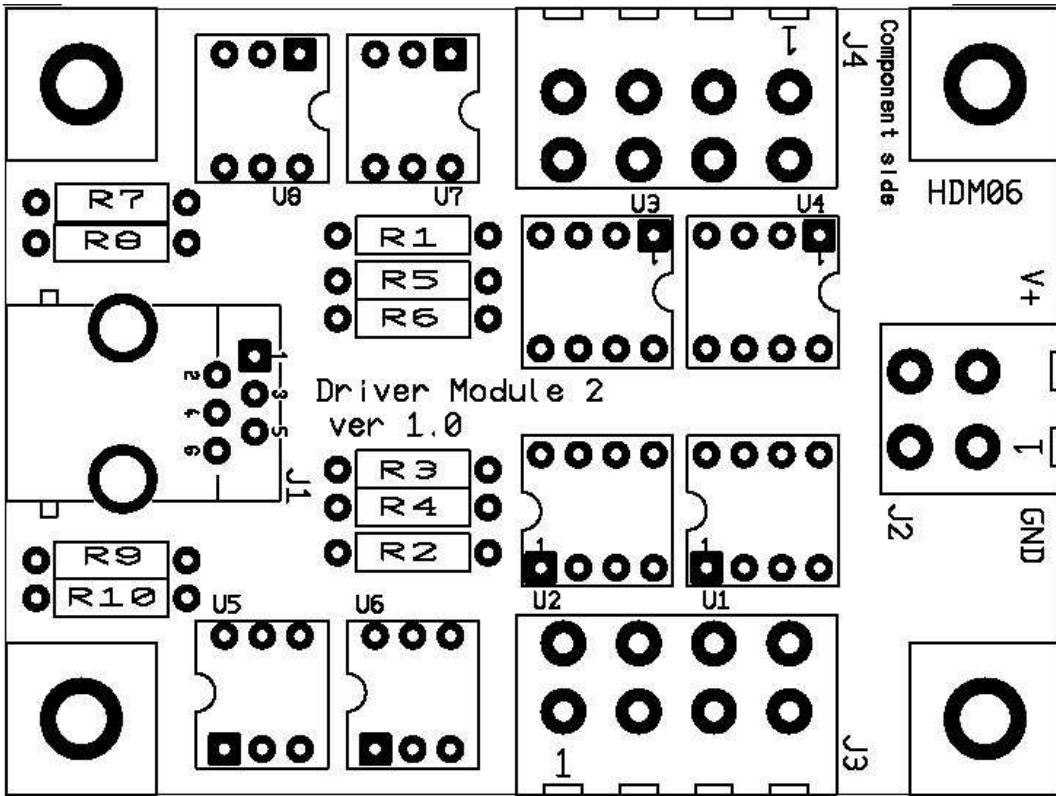
UT_DEVICE	UT_VALUE	Refdes
Connector	RJ12	J1
HDR_2	2 pins print connector	J2
HDR_4	4 pins print connector	J3, J4
Resistor	47k $\Omega$	R1, R3, R4, R5, R6
Resistor	18k $\Omega$	R2
Resistor	390 $\Omega$	R7, R8, R9, R10
Capacitor	100nF	C1
Opamp	L272M	U1, U2, U3, U4
Optocoupler	TIL111	U5, U6, U7, U8

## Remark:

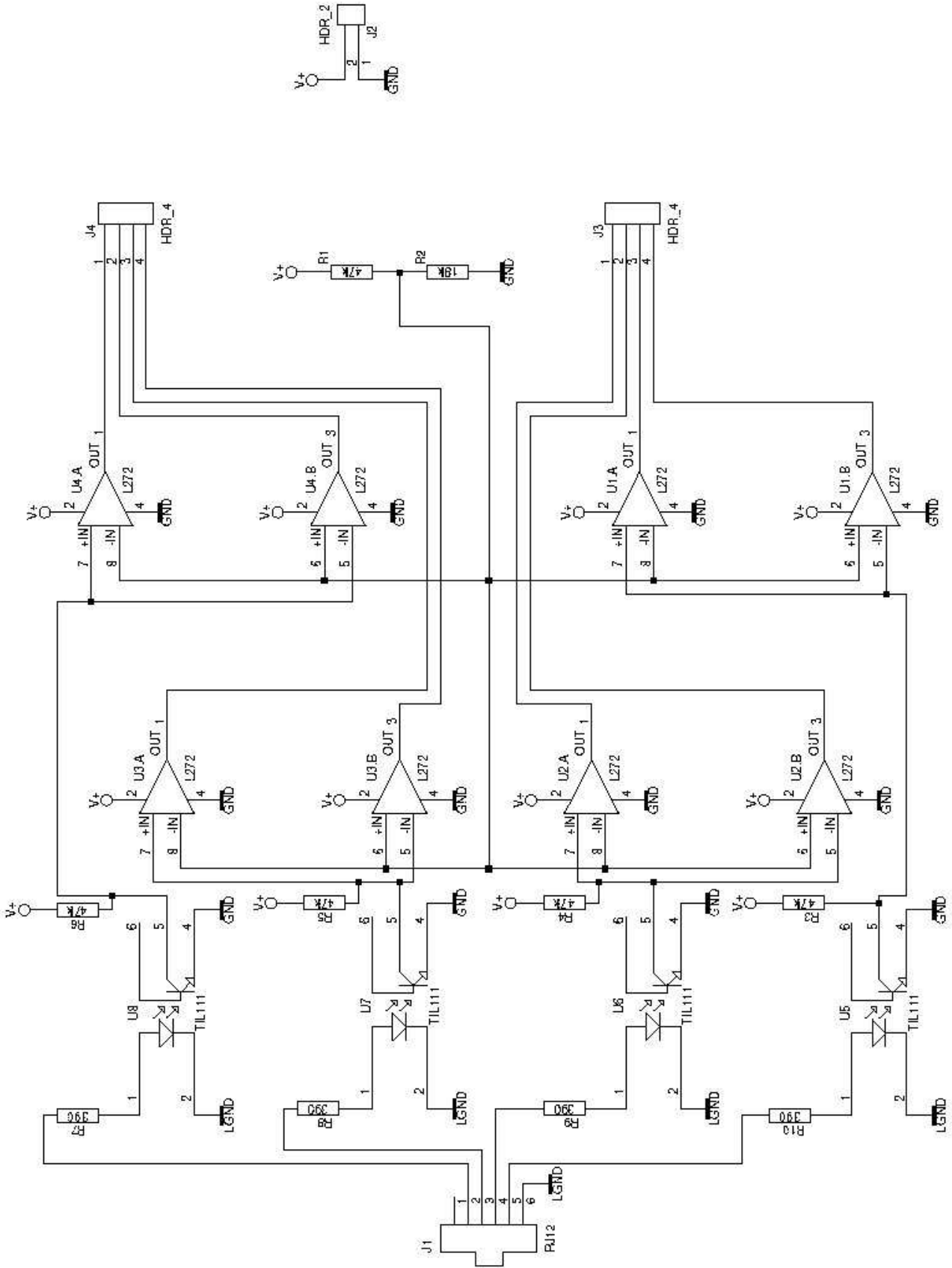
- For the optocoupler may in principle every 6 pins optocoupler been used, as the 4N27, CNY17,...

## Specifications:

Power voltage V+ on J2: 5 to 24 V this depends on the connected engines  
Output current each port: 700mA max



# HDM06



**Examples of Configuration:**



**Examples of connection possibilities:**

Lemaco motor or Tortoise motor:

**Motor 1**

J3 – pin 1  
J3 – pin 2

and/or

**Motor 2**

J3 – pin 3  
J3 – pin 4

and/or

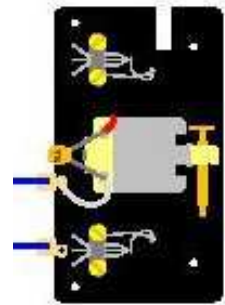
**Motor 3**

J4 – pin 1  
J4 – pin 2

and/or

**Motor 4**

J4 – pin 3  
J4 – pin 4



Tillig/Pilz motor:



Red  
Pink en Yellow

**Motor 1**

J3 – pin 1  
J3 – pin 2

**Motor 2**

J3 – pin 3  
J3 – pin 4

**Motor 3**

J4 – pin 1  
J4 – pin 2

**Motor 4**

J4 – pin 3  
J4 – pin 4

2-way signal with common ground connection:

**Signal 1**

J3 - pin 1  
J3 - pin 2  
J2 - pin 1

and/or

**Signal 2**

J3 – pin 3  
J3 – pin 4  
J2 – pin 1

and/or

**Signal 3**

J4 – pin 1  
J4 – pin 2  
J2 – pin 1

and/or

**Signal 4**

J4 – pin 3  
J4 – pin 4  
J2 – pin 1

