





## Instructions for U-Line 10 Lead Version

(disc motor U97DR, U150R)

### Power supply requirements and Blower operating

**The power supply must limit the current according the absolute maximum ratings !!!**

#### Absolute maximum ratings

	U97DR		U150R	
	12 V	24 V	12 V	24 V
Blower voltage range Ripple < 5 %	8...16 V	12...27 V	8...16 V	12...27 V
<b>Power supply minimal current</b>	3 ADC	2 ADC	3 ADC	3 ADC
<b>Current limit maximal at the power supply</b>	7 ADC	4 ADC	7 ADC	5 ADC
Maximal Blower operating current	2.4 ADC	2.4 ADC	2.4 ADC	2.4 ADC*
Blower locked rotor protection	yes	no	yes	no
Use of BRAKE function allowed	yes	no	yes	no

\* max. current 2 ADC at 27 V

The values are measured at 25°C / 77°F

**Exceeding the absolute maximum ratings may cause permanent damage.**

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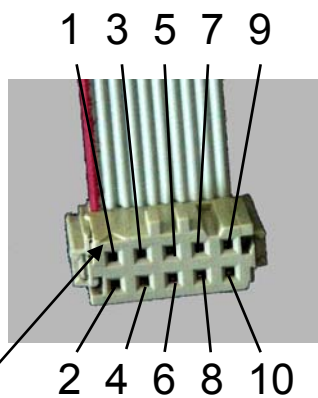
(disc motor U97DR, U150R)

## Connector pre-connection

**External 470µF / 35 V capacitor is necessary**  
**Pin 1 and 2 to 3 and 4 ( near the connector )**

**U97DR 24V: pre-connect Poly – Switch Tyco RXE110 to Pin 1 / 2 !**

### Connector:



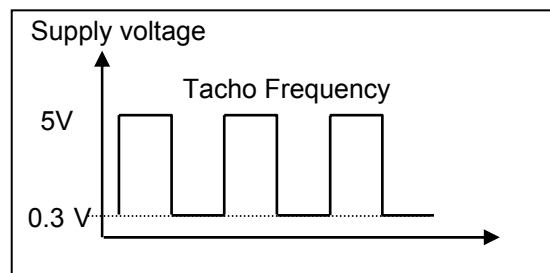
1 VP	6 NOS
2 VP	7 PWM
3 GND	8 AN. GND
4 GND	9 Brake
5 Tacho	10 nc

notice arrow (Pin 1)

Pin 1 / 2 VP power supply positive potential  
Pin 1 and 2 must be connected  
470µF / 35 V capacitor is necessary Pin 1 and 2 to 3 and 4

Pin 3 / 4 GND power supply ground potential  
Pin 3 and 4 must be connected

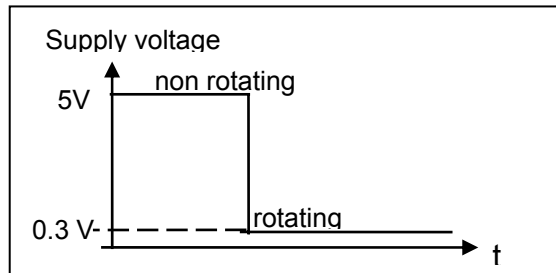
Pin 5 Tacho Open drain output: pull-up resistor (22kΩ) to 5V is **integrated**.  
(max. 10mA, no direct connection to GND and +VP)  
 $f_{Tacho} [ Hz ] * 5 = rpm [ 1/min ]$  (8 pol. Motor)



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Pin 6      NOS      **Non Operating Signal**  
Open drain output: pull-up resistor (22kΩ) to 5V is **integrated**.  
(max. 10mA, no direct connection to GND and +VP)  
motor run: low                      motor blocked: high



Pin 7      PWM      **Analog speed control**                      **Input: 0...5 VDC**  
Potentiometer 100kΩ to be connected with AN. GND (Pin 8) .  
Adjustable ~10 – 100% PWM

$$U_{V5V} = 5V$$

$$PWM \ U_{Motor} = \frac{U_{V5V} * R_{PWMpoti} * 8.75}{(15 \text{ k}\Omega + R_{PWMpoti})}$$

**R 15 kΩ is integrated.**  
**( pull-up resistor to 5V )**

**U Motor = U Pin PWM \* 8.75 ( Independent of supply voltage )**

Without Pin PWM connection: motor rotate with 100 % speed

Pin 9      Brake      At activated Brake signal, the motor is stopped immediately by shorting all driver outputs to ground.  
**U<sub>max</sub> = 5V ( rotate )                      U < 0.3 V = blocked**

Pin 10      nc      please do not use  
**U<sub>max</sub> = 5V**

### Caution



- **Handle connector only in currentless condition.**
- **no polarity protection**
- **power supply must limit the current !**  
**( please see chart at page nr. 1 )**