

Introduction

Absolute encoders

Application

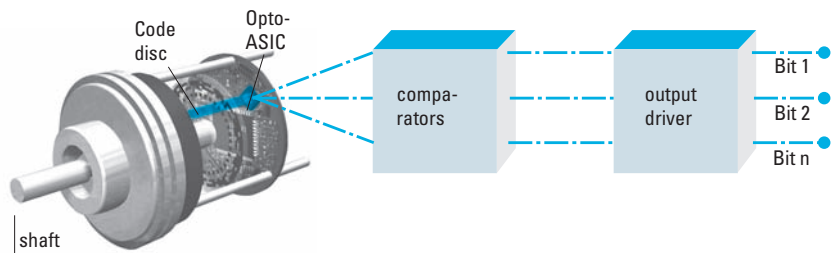


An absolute encoder provides the ability to remember its exact position following any power interruption. There is also no need for synchronization. This is one of the reasons why absolute encoders are used where a HIGH safety standard is required (i.e. robotics industry). Typical applications are for speed or position control circuits.

The features for these encoders are:

- a unique signal for each angular position
- no need for initialization (zero reference)
- immediately after power up or after an interruption of power the position is maintained
- no need for a counter to process the signal

Construction



The electrical signal of the absolute encoder is directly related to the angle of the shaft. The mechanical angular position is sensed by non contact optical elements, causing no wear. The output of an infrared diode is transmitted through a transparent code disc and a diaphragm. The light/dark pattern is converted to an electrical signal by an array of photo

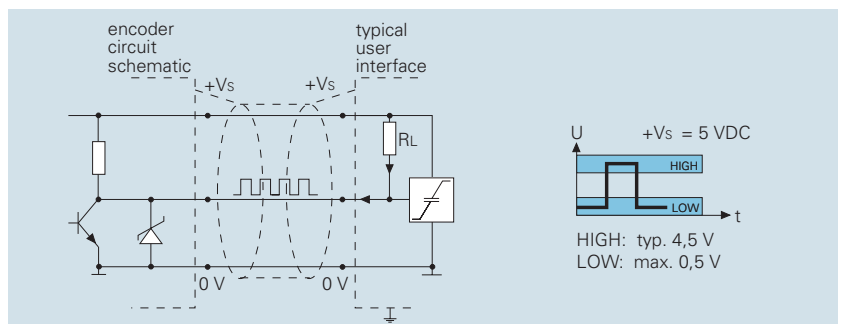
diodes. The same code occurs only once per revolution. This encoder is defined as a "single-turn" encoder.

Multi-turn encoder: see section 3

Output circuits

NPN

05N

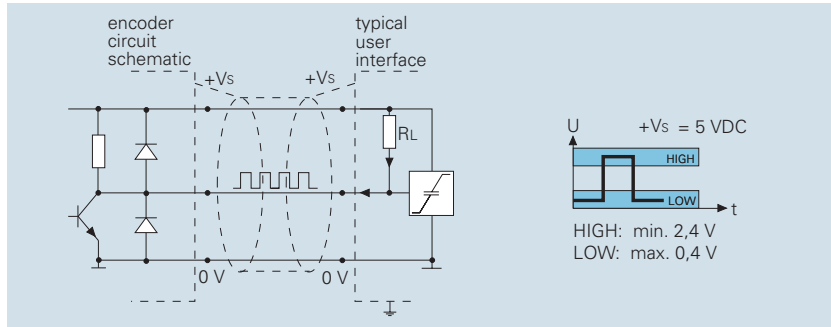


voltage supply	5 VDC \pm 5%
supply current (+Vs/ no load)	typ. 120 mA
output current	max. 100 mA at 85 °C



TTL

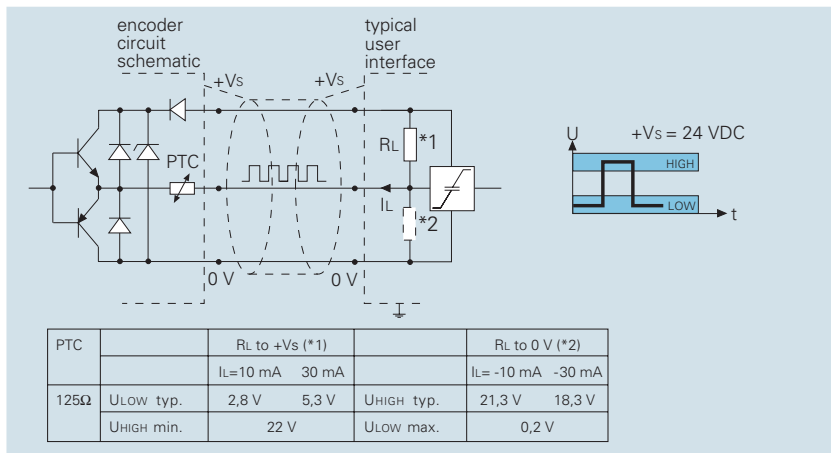
05T



voltage supply	5 VDC $\pm 10\%$
supply current (+Vs/ no load)	typ. 100 mA
output current	HIGH 2 mA / LOW 10 mA

Push-pull
short-circuit
protection

24K



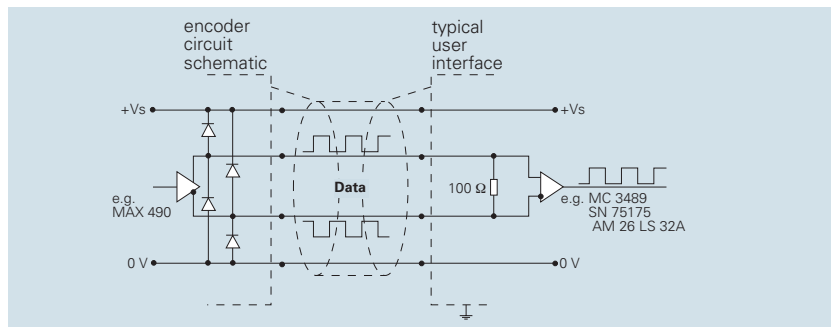
PTC	RL to +Vs (*1)		RL to 0 V (*2)			
	IL=10 mA	30 mA	IL=-10 mA	-30 mA		
125Ω	U _{LOW} typ.	2,8 V	5,3 V	U _{HIGH} typ.	21,3 V	18,3 V
	U _{HIGH} min.	22 V	U _{LOW} max.	0,2 V		

voltage supply	10 - 30 VDC
supply current (+Vs/ no load)	typ. 70 mA
output current	max. 30 mA at 85 °C

SSI
data output

05C

24C



SSI
clock input

05C

24C

