

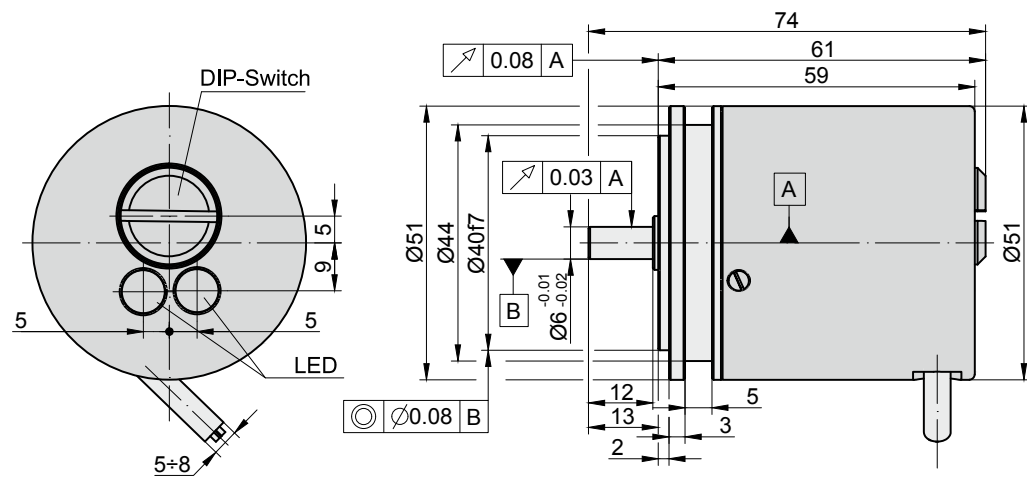
# AK50

## PHOTOELECTRIC ROTARY ENCODER



Photoelectric absolute rotary encoder AK50 is manufactured containing up to 8 bit resolution via Gray, binary or other custom code output. It uses photoelectric technology and provides the user with an ability

to set arbitrary reference position accessible via switch of up to 256 indexed positions.



### MECHANICAL DATA

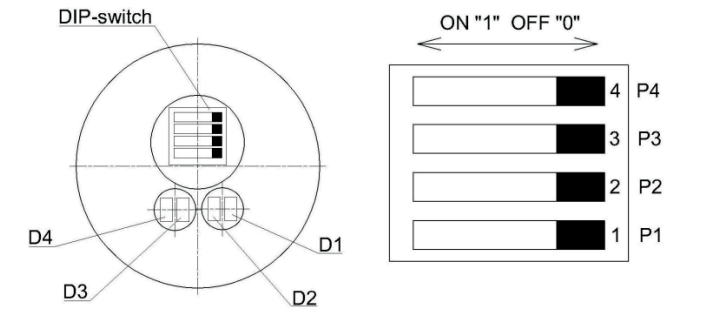
Maximum shaft speed without counting loss for 8 bit	3000 rpm	Maximum weight without cable	0.3 kg
Maximum shaft load:		Operating temperature	-20...+80 °C
- axial	10 N (40 N for A58C2, A58C3, A58D)	Storage temperature	-30...+90 °C
- radial (at shaft end)	20 N (60 N or A58C2, A58C3, A58D)	Maximum humidity (non-condensing)	98 %
Starting torque at 20 °C	3 Ncm	Permissible vibration (55 to 2000 Hz)	≤ 100 m/s <sup>2</sup>
Rotor moment of inertia	20 gcm <sup>2</sup>	Permissible shock (11 ms)	≤ 1000 m/s <sup>2</sup>
Protection (IEC 529):			
- housing	IP66		
- shaft	IP65		

### ACCESSORIES

CONNECTORS FOR CABLE	B12	C9	C12	D9	D15	RS10	ONC
	12-pin round connector	9-pin round connector	12-pin round connector	9-pin flat connector	15-pin flat connector	10-pin round connector	10-pin round connector
COUPLING	SC30						

### ELECTRICAL DATA

Accuracy	±120 arc. sec
Resolution	2 <sup>8</sup> (256)
Code:	Gray, Binary
Output signals interface	Parallel
Light source	LED
Supply voltage:	
- standard	+24 (8...25) V± 5%
- optional	+5 V± 5%
Maximum supply current	50 mA
Output signal levels	TTL/HTL
Maximum cable length	25 m



P1, P2, P3, P4 - operating mode and first setting switches;  
 D1 - green LED for indication of counting origin on code disc;  
 D2 - yellow LED for indication of specified counting origin;  
 D3 - red LED for indication of encoder failure:  
 - incorrect supply voltage,  
 - counting error,  
 - LED failure;  
 D4 - green LED for indication of proper encoder operating

Function	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Strobe	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1 Bit	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
2 Bit	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0
3 Bit	0	0	0	1	1	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	1	0
4 Bit	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1
5 Bit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Parity-Check	1	1	0	1	0	0	1	1	0	0	1	0	1	1	0	1	0	0	1	0	1	1	0	0

Switches position depending on tool number in tool changer

Tool number in tool changer	Switch P1 position	Switch P2 position
8	0	0
12	0	1
16	1	0
24	1	1

Encoder code full truth table (24 positions)

Function	Indexing position of turret																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Strobe	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1 Bit	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
2 Bit	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0
3 Bit	0	0	0	1	1	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	1	0
4 Bit	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1
5 Bit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Parity-check	1	1	0	1	0	0	1	1	0	0	1	0	1	1	0	1	0	0	1	0	1	1	0	0

### ORDER FORM

AK50 - X - XXXXX - X - XXXX - X

CONFIGURATION TYPE:	NUMBER OF POSITIONS:	(OR) NUMBER OF BITS:	OUTPUT CODE:	SUPPLY VOLTAGE:	CABLE LENGTH:	CONNECTOR TYPE:	COUPLING:
P - POSITION NUMBER B - BIT NUMBER	2 256	1 2 ... 8	G - gray B - binary	05V - +5V 24V - +(8...25)V	AR01 - 1m AR02 - 2m AR03 - 3m ...	W - without connector B12 - round, 12 pins C9 - round, 9 pins C12 - round, 12 pins D9 - flat, 9 pins D15 - flat, 15 pins RS10 - round, 10 pins ONC - round, 10 pi	0 - without 1 - with coupling

ORDER EXAMPLES:  
 1) AK50-P-8/12/16/24-G-24V-AR01/W-1  
 2) AK50-B-8-G-05V-AR02/W-0  
 3) AK50-P-16/32-B-05V-AR12/C12-0  
 4) AK50-B-5/6/8-G-24V-AR06/W-1