

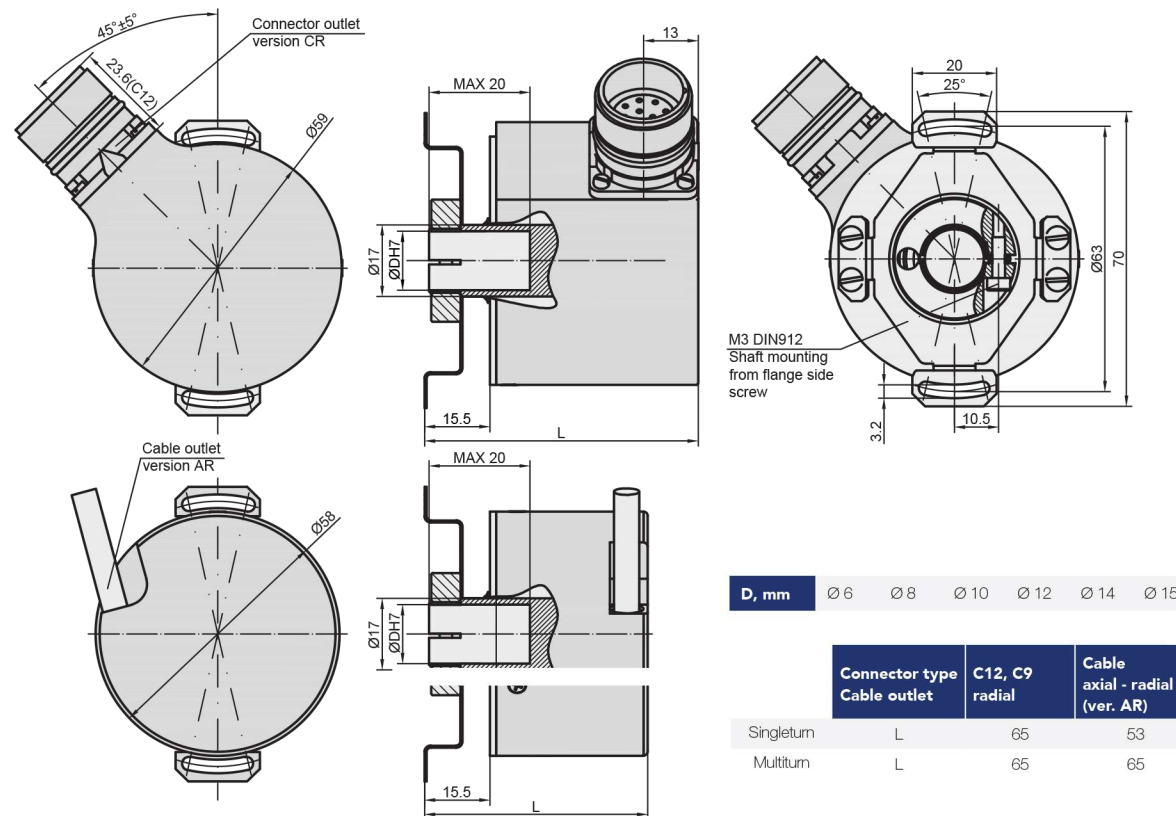
# PHOTOELECTRIC ROTARY ENCODER

# AK58HE1

-  Absolute Encoder
-  SSI protocol
-  High Resolutions
-  Multiturn Encoder
-  BiSS protocol
-  Hollow Shaft



AK58HE1 is an absolute rotary encoder that comes in blind or through hollow shaft mechanical options. It has up to 40 bit multiturn resolution with SSI interface or up to 24 bit resolution using BiSS C output.



## MECHANICAL DATA

Maximum shaft speed	12000 rpm	Operating temperature	-20...+80 °C
Permissible motion of shaft:	- axial	±0.03 mm	- singleturn
	- radial (at shaft end)	±0.05 mm	- multiturn
Starting torque at 20°C	≤ 0.002 Nm	Storage temperature	-30...+90 °C
Rotor moment of inertia	< 2 gcm <sup>2</sup>	- singleturn	-20...+80 °C
Protection (IEC 529)	IP64	- multiturn	-20...+80 °C
Maximum weight without cable	0.35 kg	Maximum humidity (non-condensing)	98 %
		Permissible vibration (55 to 2000 Hz)	≤ 100 m/s <sup>2</sup>
		Permissible shock (5 ms)	≤ 1000 m/s <sup>2</sup>

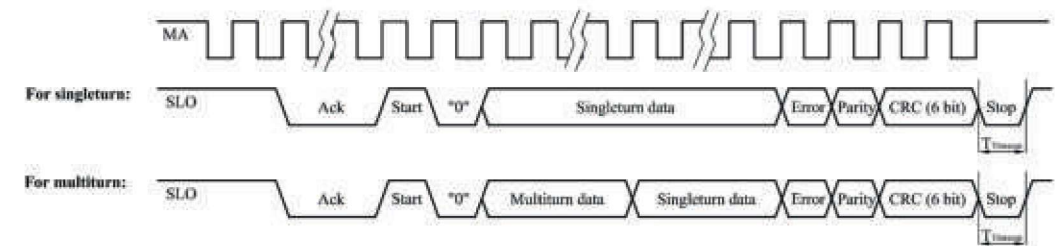
## ACCESSORIES

CONNECTORS FOR CABLE	B12	C9	C12	D9	RS10	ONC
	12-pin round connector	9-pin round connector	12-pin round connector	9-pin flat connector	10-pin round connector	10-pin round connector
DIGITAL READOUT DEVICES	CS3000		CS5500			
EXTERNAL INTERPOLATOR	NK					

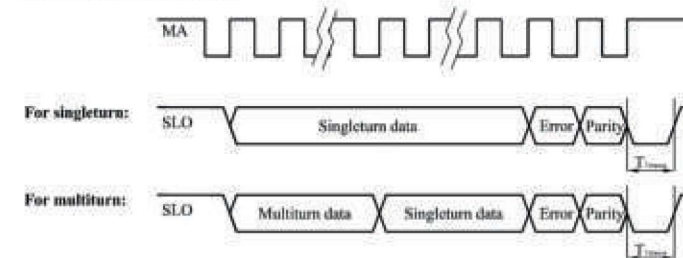
## ELECTRICAL DATA

Resolution:		Supply voltage	+5V ± 5%; +(10...30)V
Singleturn version:		Light source	LED
- with interface BiSS C	9... 21 bit	Maximum operating frequency:	
- with interface SSI	9... 21 bit	- with interface BiSS C	10 MHz
Multiturn version:		- with interface SSI	4 MHz
- single turn resolution with BiSS C	9... 21 bit	Cable length (standard)	1 m
- multiturn resolution with BiSS C	12/16/20/24 bit	Standard cable length	1 m, without connector
- single turn resolution with SSI	9... 21 bit	Maximum cable length	25 m
- multiturn resolution with SSI	9... 40 bit		
Output code	Gray, binary		
Data interface	SSI, BiSS C		
Accuracy	± 30 arc sec		

### BiSS C serial interface



### SSI serial interface



Interface	BiSS C
T <sub>rise</sub>	1.2 µs - 26 µs
Clock frequency	62.5 kHz - 10 MHz

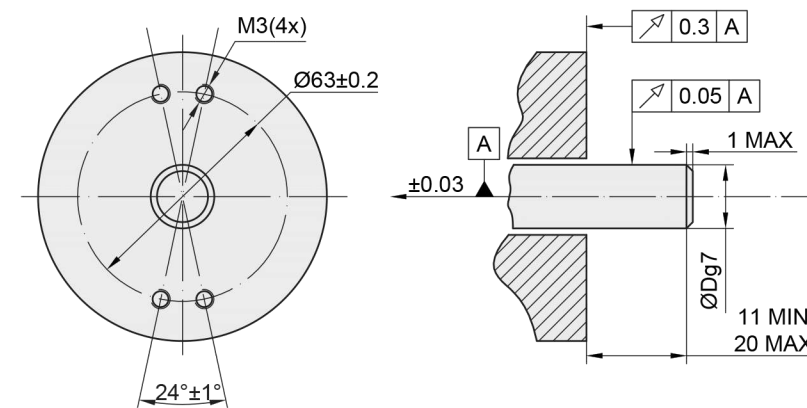
  

Interface	SSI
T <sub>rise</sub>	1.2 µs - 26 µs
Clock frequency	62.5 kHz - 4 MHz

Note:

- Error and parity bits should be determined during order

## MOUNTING REQUIREMENTS



## ORDER FORM

AK58HE1 - X1 - X2 - X3 - X4/X5 - X6 - X7/X8

Mechanical Option (X1):	Version (X2):	Output signal Interface (serial) (X3):	Singleturn bit number* (X4):	Multiturn bit number* (X5):	Code (X6):	Cable outlet and length or connector outlet (X7):	Connector (X8):
1 - through hollow shaft 2 - blind hollow shaft	ST - singleturn MT - multiturn	S - SSI B - BiSS C	B9 - 9 B10 - 10 B11 - 11 B12 - 12 ... B21 - 21	M0 - 0 (for single turn version) M9 - 9 M10 - 10 M11 - 11 ... M40 - 40	B - Binary G - Grey	AR 01 - 1m (AR-universal cable outlet) AR 02 - 2m (AR-universal cable outlet) ... CR - connector radial	W - without connector D9 - flat, 9 pins C9 - round, 9 pins C12 - round, 12 pins RS10 - round, 10 pins ONC - round, 10 pins

ORDER EXAMPLES: 1) AK58HE1-1-MT-B-B20/M12-G-AR01/C12  
2) AK58HE1-2-ST-S-B12/M0-B-AR03/W