

AK58

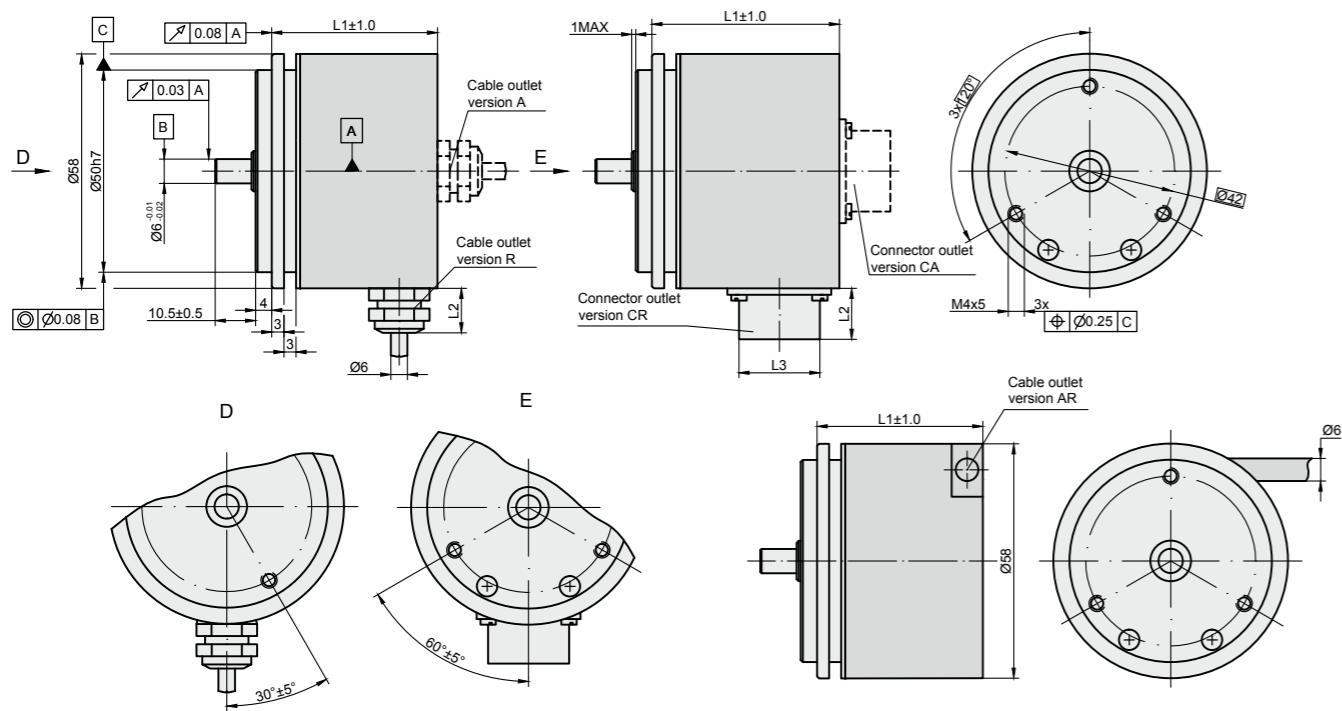
PHOTOELECTRIC ROTARY ENCODER



Photoelectric absolute singleturn and multiturn rotary encoder series AK58 is constituted of 7 different models - AK58M, AK58B, AK58C, AK58C2, AK58C3, AK58D and AK58 EtherCAT. Encoders use SSI,

BiSS or EtherCAT output signal interfaces and output up to 24 bit singleturn and 40 bit multiturn resolutions through binary or Gray codes.

AK58M



Other mounting versions on pages 32-34

	Connector type / cable outlet	ONC axial	PC10 axial	C12, C9 axial	ONC radial	PC10 radial	C12, C9 radial	Cable axial (ver. A)	Cable radial (ver. R)	Cable axial-radial (ver. AR)
Singleturn	L1	41 mm	41 mm	41 mm	63 mm	55 mm	58 mm	41 mm	41 mm	43 mm
Multiturn	L1	62 mm	62 mm	62 mm	63 mm	55 mm	58 mm	62 mm	53 mm	55
Singleturn/multiturn	L2	16 mm	9 mm	22 mm	16 mm	9 mm	22 mm	12 mm	12 mm	-
Singleturn/multiturn	L3	M24	M14	M23	M24	M14	M23	-	-	-

MECHANICAL DATA

Maximum shaft speed	12000 rpm	Maximum weight without cable	0.35 kg
Maximum shaft load:		Operating temperature	
- axial	10 N (40 N for AK58C2, AK58C3, AK58D)	- singleturn version	-20...+80 °C
- radial (at shaft end)	20 N (60 N for AK58C2, AK58C3, AK58D)	- multiturn version	-10...+70 °C
Starting torque at 20°C	≤ 0.01 Nm	Storage temperature	
Rotor moment of inertia	<15 gcm ²	- singleturn version	-30...+90 °C
Protection (IEC 529):	IP65 (IP 67 EtherCAT)	- multiturn version	-20...+80 °C
		Maximum humidity (non-condensing)	98 %
		Permissible vibration (55 to 2000 Hz)	≤ 100 m/s ²
		Permissible shock (11 ms)	≤ 1000 m/s ²

ACCESSORIES

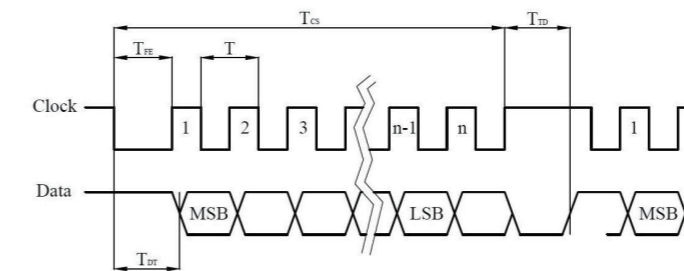
CONNECTORS FOR CABLE	B12 12-pin round connector	C9 9-pin round connector	C12 12-pin round connector	D9 9-pin flat connector	D15 15-pin flat connector	RS10 10-pin round connector	ONC 10-pin round connector
CONNECTORS ON HOUSING	C9 9-pin round connector		C12 12-pin round connector	RS10 10-pin round connector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

ELECTRICAL DATA

Resolution:		Incremental signals	sine wave (sin, cos) 1 Vpp (optional)
Singleturn version:		Periods number of signals 1Vpp	4096
- with interface BiSS C	9 ... 20 bit	Accuracy	± 30 arc sec
- with interface SSI	9 ... 20 bit	Supply voltage	+5V ± 5%
Multiturn version:		Light source	LED
- single turn resolution with BiSS C	9 ... 20 bit	Maximum operating frequency	
- multiturn resolution with BiSS C	12/16/20/24 bit	- with interface BiSS C	up to 10 MHz
- single turn resolution with SSI	9 ... 20 bit	- with interface SSI	up to 4 MHz
- multiturn resolution with SSI	9 ... 40 bit	Cable length (standard)	1 m
Output code	Gray, binary		
Data interface	SSI, BiSS C		

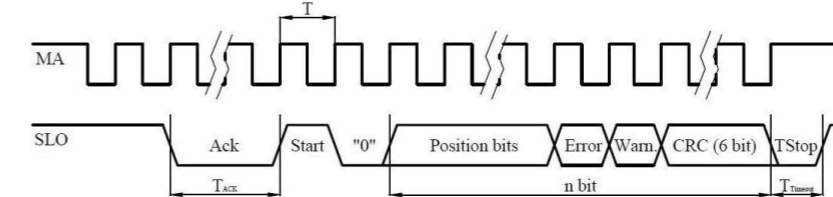
ELECTRICAL SIGNALS

SSI TIMING DIAGRAM



Interface	SSI
T _{TD}	1,2 μs - 26 μs
Clock frequency	62,5 kHz ÷ 4 MHz

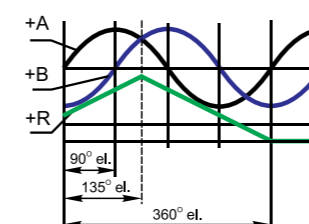
BISS TIMING DIAGRAM



Interface	BISS C
T _{TD}	1,2 μs - 26 μs
Clock frequency	62,5 kHz ÷ 4 MHz

Note: Error and/or parity bits should be determined during order

Sine wave 1 Vpp signals



Complementary signals are not shown