

AK58M, AK58B, AK58C, AK58C2,
AK58C3, AK58D

AK58

PHOTOELECTRIC ABSOLUTE ROTARY ENCODER



Absolute singleturn and multiturn (battery buffered) solid shaft rotary encoders are used for generation of coded output signals which provide information about controlled object absolute position.

In singleturn version rotary encoder AK58 has resolution from 9 up to 21 bit per revolution. Output signals interface is BiSS C or SSI. Operating principle is photoelectrical.

In multiturn version AK58 has singleturn resolution from 9 up to 21 bit per revolution with 12/16/20/24 bit resolution

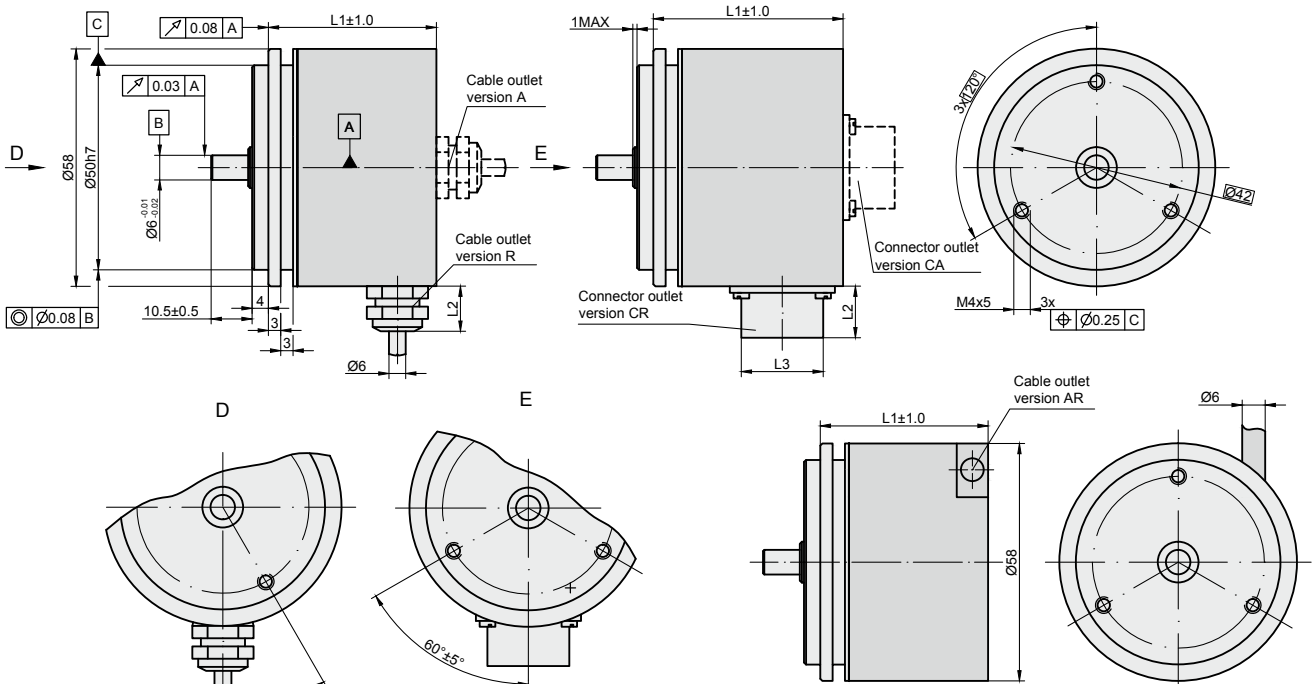
of multiturn counter on BiSS C interface. With SSI interface the encoder AK58 has resolution from 9 up to 21 bit per revolution with 9 up to 40 bit resolution of multiturn counter. Battery is placed inside of encoder. Operating principle is photoelectrical and magnetic.

Absolute encoder is intended to use in robotics industry, automated and automatized lines in industry, control devices of equipment and machines, various control systems, precise machine tools and others.

MECHANICAL DATA

Maximum shaft speed	12000 rpm	Protection (IEC 529):	IP65
Maximum shaft load:		Maximum weight without cable	0.3 kg
- axial	10 N (40 N for AK58C2, AK58C3, AK58D)	Operating temperature	-10...+70 °C
- radial (at shaft end)	20 N (60 N for AK58C2, AK58C3, AK58D)	Storage temperature	-30...+80 °C
Starting torque at 20°C	≤ 0.01 Nm	Maximum humidity (non-condensing)	98 %
Rotor moment of inertia	<15 gcm ²	Permissible vibration (55 to 2000 Hz)	≤ 100 m/s ²
		Permissible shock (11 ms)	≤ 1000 m/s ²

AK58M



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	54 mm	53 mm	53 mm	41 mm	41 mm	43 mm
Multiturn L3	64 mm	64 mm	64 mm	77 mm	76 mm	76 mm	64 mm	64 mm	66
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	-	-	-

ELECTRICAL DATA

Resolution:

Singleturn version:

- with interface BiSS C 9 ... 21 bit
- with interface SSI 12/16/20/24 bit

Multiturn version:

- single turn resolution with BiSS C 9 ... 21 bit
- multiturn resolution with BiSS C 9 ... 21 bit
- single turn resolution with SSI 9 ... 21 bit
- multiturn resolution with SSI 9 ... 40 bit

Output code Gray, binary

Data interface SSI, BiSS C

Accuracy ± 30 arc sec

Supply voltage 5V ± 5%

Light source LED

Maximum operating frequency

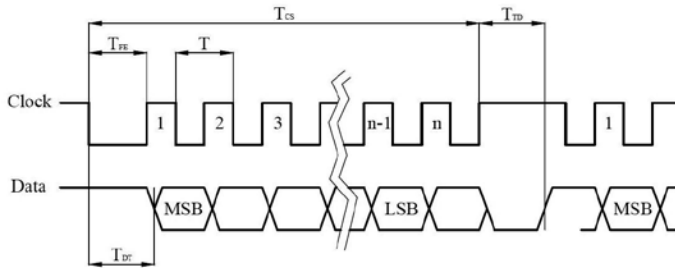
- with interface BiSS C 10 MHz

- with interface SSI 4 MHz

Cable length (standard) 1 m, without connector

Maximum cable length 25 m

SSI timing diagram



Interface SSI Binary - Gray

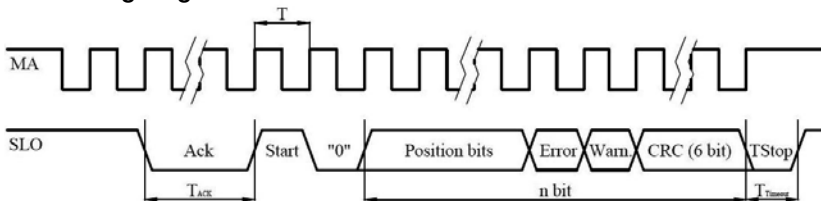
Signals level EIA RS 485

Clock frequency 62,5 kHz ÷ 4 MHz

n Position bit

T_{TD} 3,28 ms ÷ 1,2 ns

BiSS timing diagram



Interface BiSS C unidirectional

Signals level EIA RS 485

Clock frequency 62,5 kHz ÷ 10 MHz

n bit (9÷20)+2+6

T_{TD} 3,28 ms ÷ 100 ns

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

ORDER FORM

AK58 X - X - XX - XXX/XXX - X - XXX/XXX - X

TYPE:

M - AK58M
B - AK58B
C - AK58C
C2 - AK58C2
C3 - AK58C3
D - AK58D

VERSIONS:

ST - singleturn
MT - multiturn

OUTPUT SIGNALS INTERFACE (SERIAL):

S - SSI
B - BiSS C

SINGLETURN BIT NUMBER*:

B9 - 9
B10 - 10
B11 - 11
B12 - 12
.....
B20 - 20
B21 - 21

MULTITURN BIT NUMBER*:

M0 - 0 (for
singleturn
version)
M9 - 9
M10 - 10
M11 - 11
M12 - 12
.....
M40 - 40

OUTPUT CODE:

B - Binary
G - Gray

CABLE LENGTH AND OUTLET OR FLANGE SOCKET ON CASE OUTLET:

A01 - 1m (A -
axial cable)
A02 - 2m
.....
AR01 - 1m
(AR - universal
cable outlet)
.....
CA - flange socket axial
CR - flange socket radial

CONNECTOR TYPE:

W - without connector
C9 - round, 9 pins
C12 - round, 12 pins
D9 - flat, 9 pins
RS10 - round, 10 pins

COUPLING:

0 - without coupling
1 - with coupling

* See electrical data for possible bit selection with specific interface

ORDER EXAMPLES:

- 1) AK58M-ST-S-B9/M0-B-AR02/W-0
- 2) AK58D-MT-B-B20/M12-G-AR01/C12-1

Please confirm configuration options before ordering or contact Customer Service for assistance.