

AK58

ABSOLUTE ROTARY ENCODERS

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 multitrans version AK58 has singleturn resolution from 9 up to 20 bit per revolution with 12/16/20/24 bit resolution of multitrans counter on BiSS C interface. With SSI interface the encoder AK58 has resolution from 9 up to 18 bit per revolution with 9 up to 40 bit resolution of multitrans counter. Battery is placed inside of encoder. Operating principle is photoelectrical and magnetic.

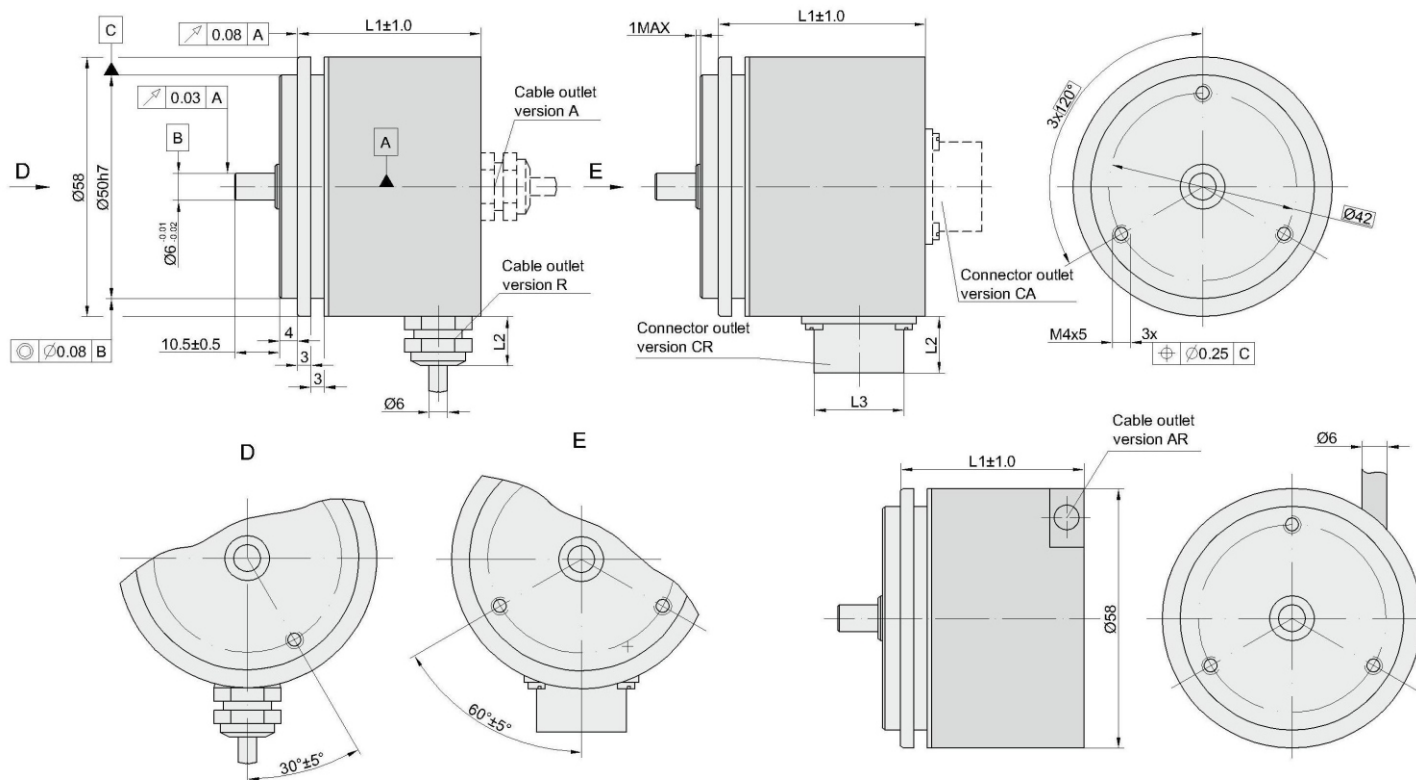
Absolute encoder is intended to use in robotics industry, automated and automatized lines in industry, control devices of equipment and machines, various control systems, precise machine tools and others.



- Mechanical data

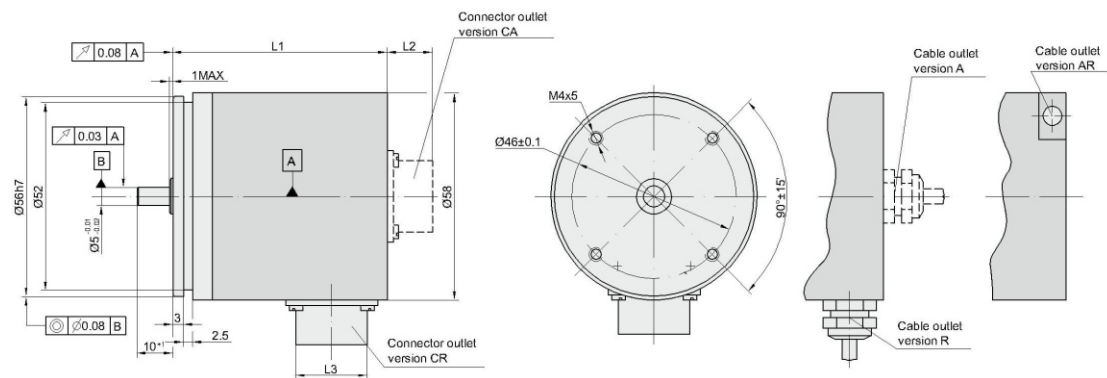
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|---------------------------|----------------------------------|---|-------------------------|
| • Maximum shaft speed | 12000 rpm | • Maximum weight without cable | 0.3 kg |
| • Maximum shaft load: | | • Operating temperature | -10...+70 °C |
| -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

- AK58M



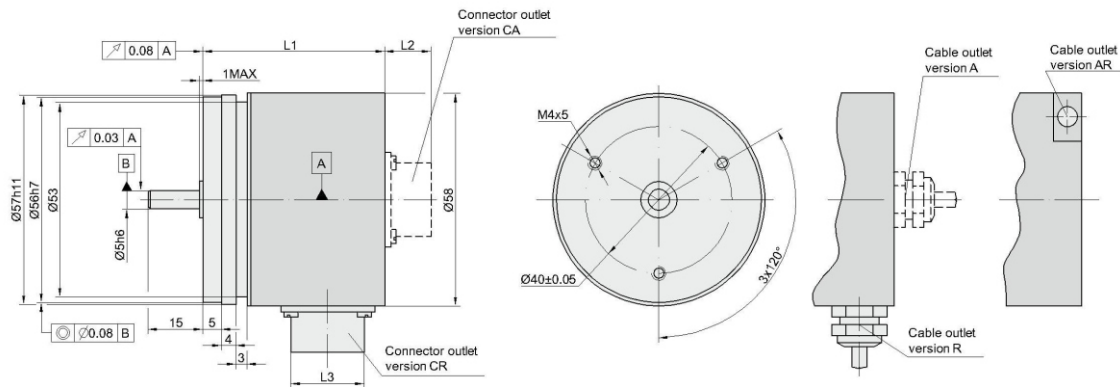
	Connector type / cable outlet	ONC axial	PC10 axial	C12, C9 axial	ONC radial	PC10 radial	C12, C9 radial	Cable axial (ver.A)	Cable radial (ver.R)	Cable axial-radial (ver.AR)
Singleturn	L1	41	41	41	54	53	53	41	41	43
Multiturn	L1	64	64	64	77	76	76	64	64	66
Singleturn/multiturn	L2	16	9	22	16	9	22	12	12	-
Singleturn/multiturn	L3	M24	M14	M23	M24	M14	M23	-	-	-

●AK58B



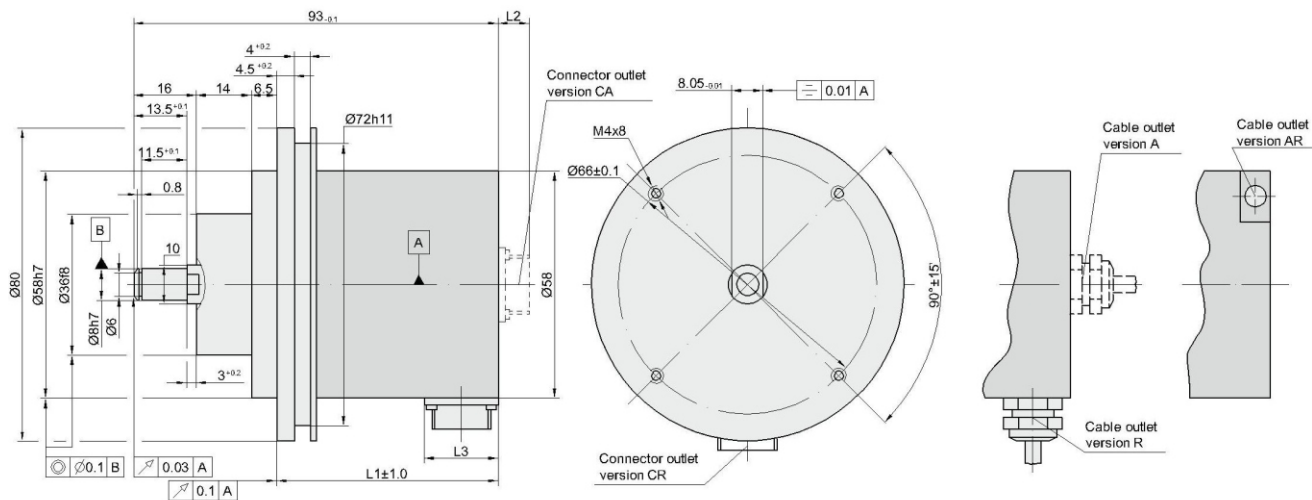
	Connector type /cable outlet	ONC axial	PC10 axial	C12, C9 axial	ONC radial	PC10 radial	C12, C9 radial	Cable axial (ver.A)	Cable radial (ver.R)	Cable axial-radial (ver.AR)
Singleturn	L1	44.5	44.5	44.5	57.5	56.5	56.5	44.5	44.5	46.6
Multiturn	L1	67.5	67.5	67.5	80.5	79.5	79.5	67.5	67.5	69.6
Singleturn/multiturn	L2	16	9	22	16	9	22	12	12	-
Singleturn/multiturn	L3	M24	M14	M23	M24	M14	M23	-	-	-

●AK58C



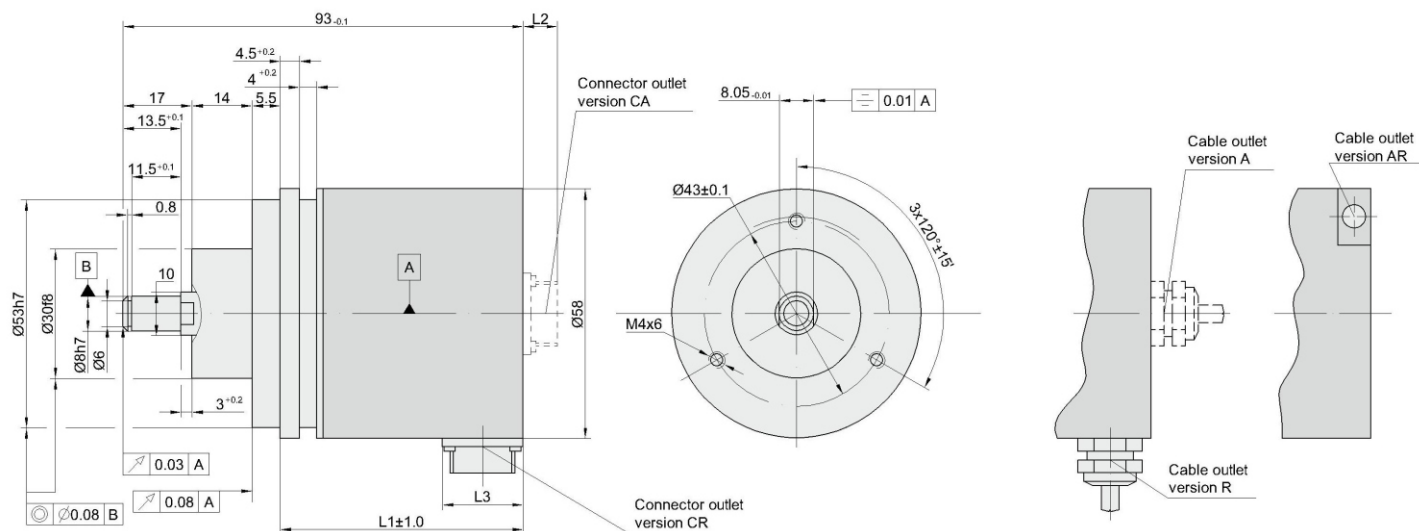
	Connector type /cable outlet	ONC axial	PC10 axial	C12, C9 axial	ONC radial	PC10 radial	C12, C9 radial	Cable axial (ver.A)	Cable radial (ver.R)	Cable axial-radial (ver.AR)
Singleturn	L1	47	47	47	60	59	59	47	47	49
Multiturn	L1	70	70	70	83	82	82	70	70	72
Singleturn/multiturn	L2	16	9	22	16	9	22	12	12	-
Singleturn/multiturn	L3	M24	M14	M23	M24	M14	M23	-	-	-

●AK58C2



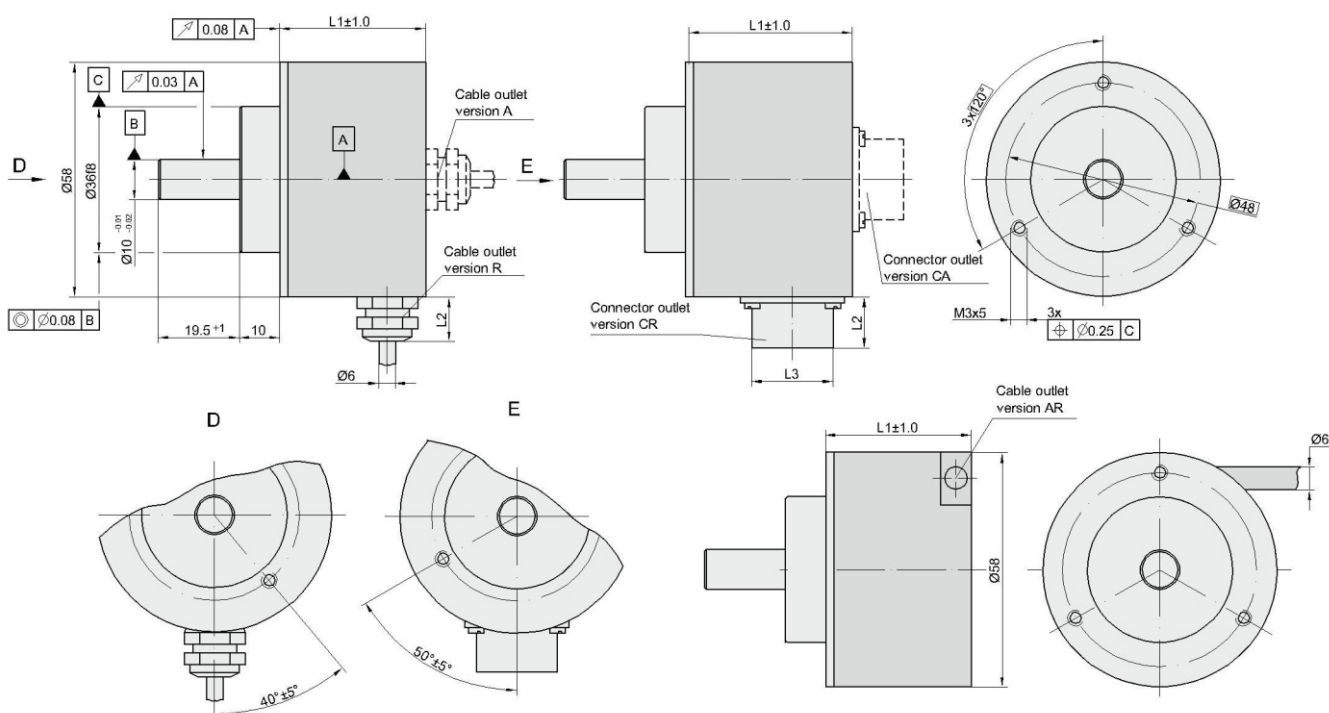
	Connector type /cable outlet	ONC axial	PC10 axial	C12, C9 axial	ONC radial	PC10 radial	C12, C9 radial	Cable axial (ver.A)	Cable radial (ver.R)	Cable axial-radial (ver.AR)
Singleturn	L1	44.5	44.5	44.5	no	56.5	56.5	44.5	44.5	46.5
Multiturn	L1	67.5	67.5	67.5	no	79.5	79.5	67.5	67.5	69.5
Singleturn/multiturn	L2	16	9	22	16	9	22	12	12	-
Singleturn/multiturn	L3	M24	M14	M23	M24	M14	M23	-	-	-

•AK58C3



	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	50	50	50	no	62	62	50	50	52
Multiturn	L1	73	73	73	no	85	85	73	73	75
Singleturn/multiturn	L2	16	9	22	16	9	22	12	12	-
Singleturn/multiturn	L3	M24	M14	M23	M24	M14	M23	-	-	-

•AK58D

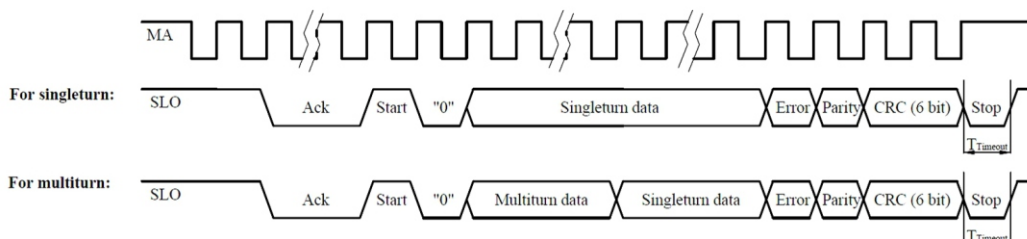


	Connector type /cable outlet	ONC axial	PC10 axial	C12, C9 axial	ONC radial	PC10 radial	C12, C9 radial	Cable axial (ver.A)	Cable radial (ver.R)	Cable axial-radial (ver.AR)
Singleturn	L1	37.5	37.5	37.5	no	49.5	49.5	37.5	37.5	39.5
Multiturn	L1	60.5	60.5	60.5	no	72.5	72.5	60.5	60.5	62.5
Singleturn/multiturn	L2	16	9	22	16	9	22	12	12	-
Singleturn/multiturn	L3	M24	M14	M23	M24	M14	M23	-	-	-

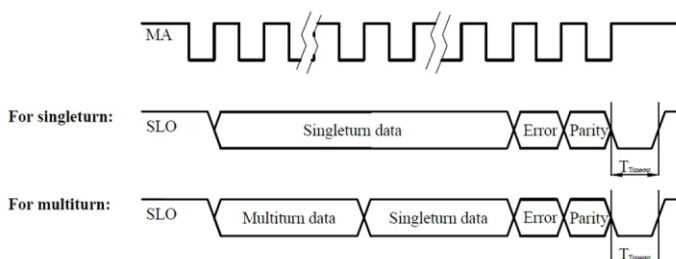
Electrical Data

- Resolution:
 - Singleturn version:
 - with interface BiSS C 9... 21 bit
 - with interface SSI 9... 21 bit
 - Multiturn version:
 - single turn resolution with BiSS C 9 ... 20 bit
 - multiturn resolution with BiSS C 12/16/20/24 bit
 - single turn resolution with SSI 9 ... 18 bit
 - multiturn resolution with SSI 9 ... 40 bit
- Output code Gray, binary
- Data interface SSI, BiSS C
- Accuracy ± 30 arc sec
- Supply voltage $+5V \pm 5\%$
- Light source LED
- Maximum operating frequency
 - with interface BiSS C 10 MHz
 - with interface SSI 4 MHz
- Cable length (standard) 1 m
- Maximum cable length 25 m

BiSS C serial interface



SSI serial interface



Interface	BiSS C
T _{timeout}	1.2 μ s - 26 μ s
Clock frequency	62.5 kHz - 10 MHz

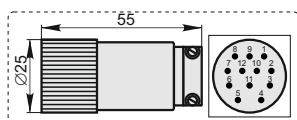
Interface	SSI
T _{timeout}	Typ. 25 μ s
Clock frequency	62.5 kHz - 4 MHz

Accessories

Connectors

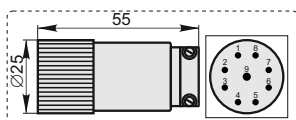
C12

12-pin round connector



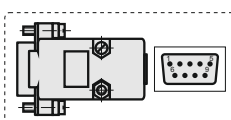
C9

9-pin round connector



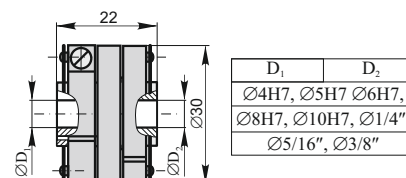
D9

9-pin flat connector



Coupling

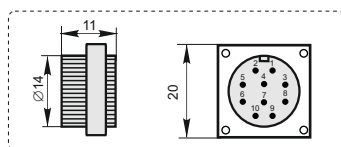
SC30



Flange sockets

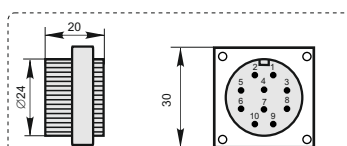
RS10

Round 10-pins flange socket



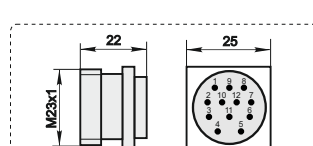
ONC

Round 10-pins flange socket



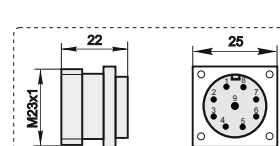
C12

Round 12-pins flange socket



C9

Round 9-pins flange socket



Order form

AK58X - X - XX - XXX/XXX - XXX/XXX - X

Type:	Version:	Output signals interface (serial):	Singleturn bit number*:	Multiturn bit number*:	Cable length and outlet or flange socket on case outlet:	Connector type:	Coupling:
M - AK 58M	ST - singleturn	S - SSI	B9 - 9	M0 - 0 (for singleturn version)	A01 - 1m (A-axil cable)	W - without connector	0 - without coupling
B - AK 58B	MT - multiturn	B - BiSS C	B10 - 10	M10 - 10	R01 - 1m (R-radial cable)	D9 - flat, 9 pins	1 - with coupling
C - AK 58C			B11 - 11	M9 - 9	AR 01 - 1m (AR-universal cable outlet)	C9 - round, 9 pins	
C2 - AK 58C2			B12 - 12	M10 - 10		C12 - round, 12 pins	
C3 - AK 58C3			...-...	M11 - 11		RS 10 - round, 10 pins	
D - AK 58D			B20 - 20	M12 - 12			
			B21 - 21	M40 - 40			

* See electrical data for possible bit selection with specific interface

Order example: AK58M-ST--S-B9/M0-AR02/W-0
AK58D-MT-B-B20/M12-AR01/C12-1