

EAC50A-EU**ARTICLE PROPERTIES**

TYPE	Miniature absolute single-turn encoder
SIZE	Ø 50

TECHNICAL DATA

SHAFT DIAMETER	Ø 6g6 mm / Ø 8g6 mm	STARTING TORQUE	< 0.01 N·m
SPEED	6000 rpm	BODY MATERIAL	Al-alloy
BEARING LIFE	10 ⁹ revolution	HOUSING MATERIAL	Al-alloy
MOMENT OF INERTIA	1.8 × 10 ⁻⁶ kgm ²	WEIGHT	330 g

ENVIRONMENTAL CONDITIONS

PROTECTION CLASS	IP64	OPERATING TEMPERATURE	-20 ... +80 °C
MAX LOAD CAPACITY OF THE SHAFT	40 N axial, 80 N radial	STORAGE TEMPERATURE	-25 ... +85 °C
SHOCK RESISTANCE (EN 60068-2-27)	50 g, 11 ms	RELATIVE HUMIDITY / CONDENSATION	90%, condensation not permitted
VIBRATION RESISTANCE (EN 60068-2-6)	10 g, 10 ... 2000 Hz		

Resolution: 2, 4, 8, 16, 32, 64, 90, 128, 180, 250, 256, 360, 500, 512, 720, 1024.

STANDARDS AND DIRECTIVES

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR	EN IEC 61000-6-2 EN IEC 61000-6-4
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APPROVALS

EAC50A-EU

ELECTRICAL PARAMETERS

Output circuit	PNP	PNP open collector	NPN	NPN open collector
Resolution	10 Bits	10 Bits	10 Bits	10 Bits
Supply voltage	10 ... 30 V DC / 5 V DC	10 ... 30 V DC / 5 V DC	10 ... 30 V DC / 5 V DC	10 ... 30 V DC / 5 V DC
Power consumption (no load)	≤ 125 mA	≤ 125 mA	≤ 80 mA	≤ 80 mA
Permissible load (channel)	± 80 mA	± 80 mA	± 50 mA	± 50 mA
Pulse frequency	Max. 300 kHz	Max. 300 kHz	Max. 300 kHz	Max. 300 kHz
Signal level high	Min. $U_b - 1.5$ V	Min. $U_b - 1.5$ V	Min. $U_b - 2.5$ V	Min. $U_b * 70\%$
Signal level low	Max. 0.4 V	depends on pull-down resistor	Max. 0.4 V	Max. 0.4 V
Rise time T_r	Max. 1 μ s	Max. 1 μ s	Max. 1 μ s	Max. 1 μ s
Fall time T_f	Max. 1 μ s	Max. 1 μ s	Max. 1 μ s	Max. 1 μ s

*) NPN open collector is depending on the pull-up resistor. 4.7 k Ω is the recommended resistance. 8.2 k Ω is the recommended resistance for PNP open collector.

**) NPN (PNP) open collector is depending on pull-up (down) resistor and cable length

TERMINAL ASSIGNMENT

Signal	0 V	+ U_b	bit 1 (MSB)	bit 2	bit 3	bit 4	bit 5	bit 6	bit 7	bit 8	bit 9	bit 10 (LSB)	V/R *
Color	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY / PK	RD / BU	YE / BN

Attention: Bite definition of parallel interface for an absolute encoder is: bit1 = MSB, bit2 = MSB-1, bit3 = MSB-2,

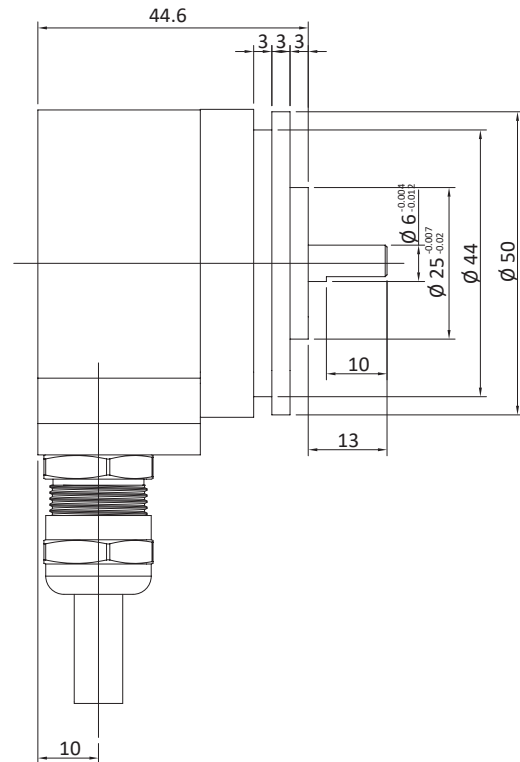
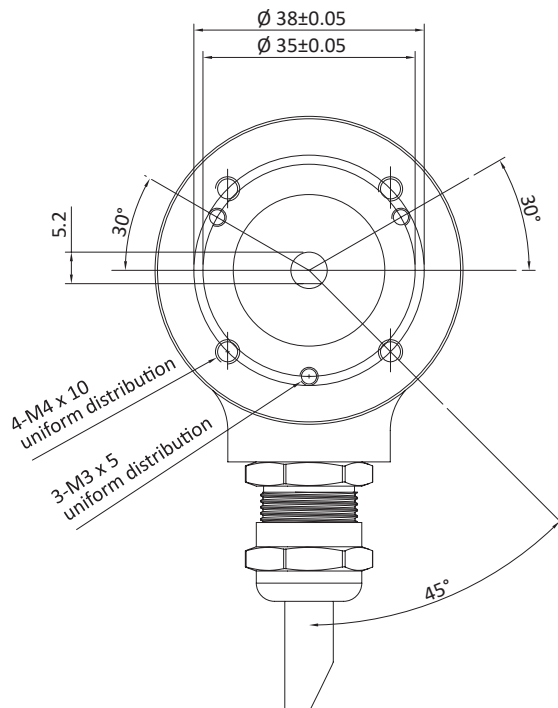
CABLE OUTPUT

Wire color	Signal	Resolution		
		8 bit (256)	9 bit (512)	10 bit (1024)
WH	0 V	0 V	0 V	0 V
BN	+ U_b	+ U_b	+ U_b	+ U_b
GN	bit 1 MSB	B^7 / G^7	B^8 / G^8	B^9 / G^9
YE	bit 2	B^6 / G^6	B^7 / G^7	B^8 / G^8
GY	bit 3	B^5 / G^5	B^6 / G^6	B^7 / G^7
PK	bit 4	B^4 / G^4	B^5 / G^5	B^6 / G^6
BU	bit 5	B^3 / G^3	B^4 / G^4	B^5 / G^5
RD	bit 6	B^2 / G^2	B^3 / G^3	B^4 / G^4
BK	bit 7	B^1 / G^1	B^2 / G^2	B^3 / G^3
VT	bit 8	B^0 / G^0	B^1 / G^1	B^2 / G^2
GY / PK	bit 9	NC	B^0 / G^0	B^1 / G^1
RD / BU	bit 10 LSB	NC	NC	B^0 / G^0
YE / BN	V / R	V / R	V / R	V / R

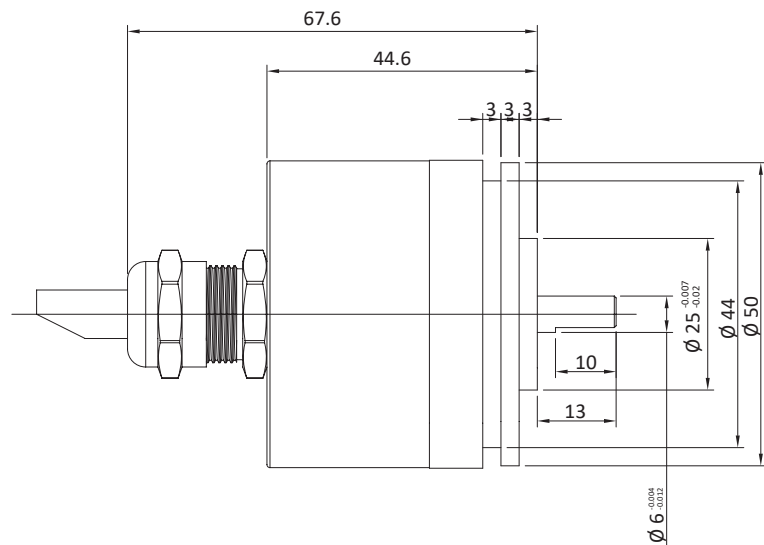
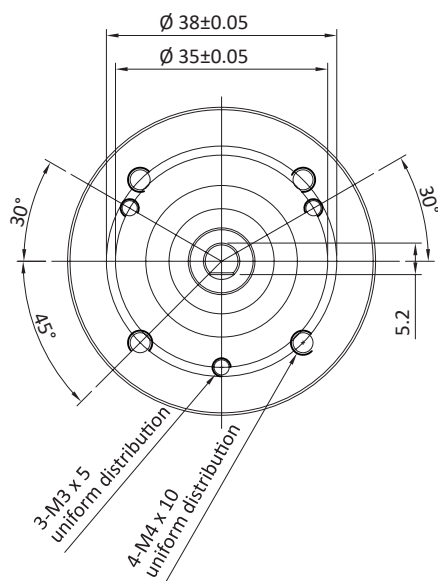
EAC50A-EU

DIMENSIONS (mm)

EAC50A6 Radial



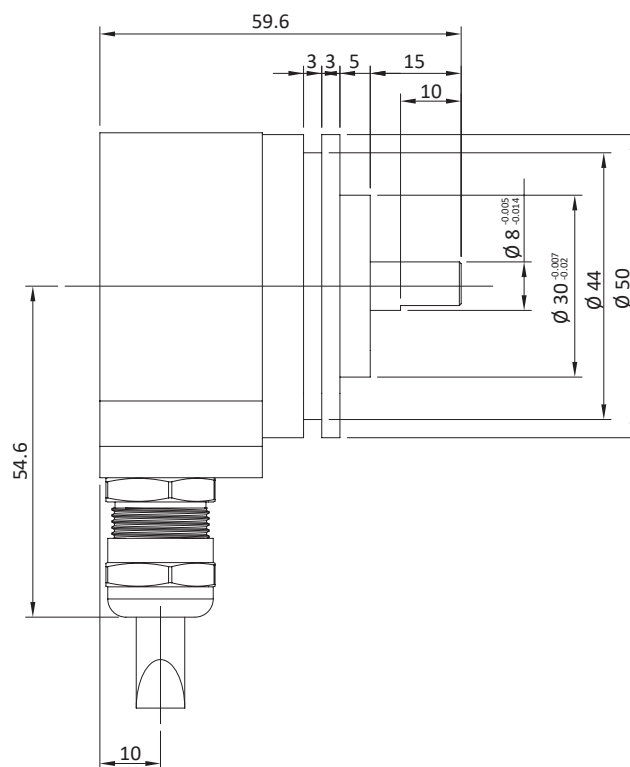
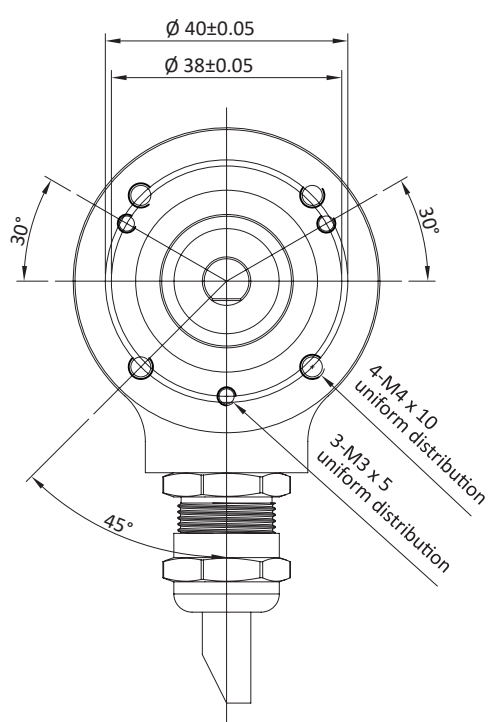
EAC50A6 Axial



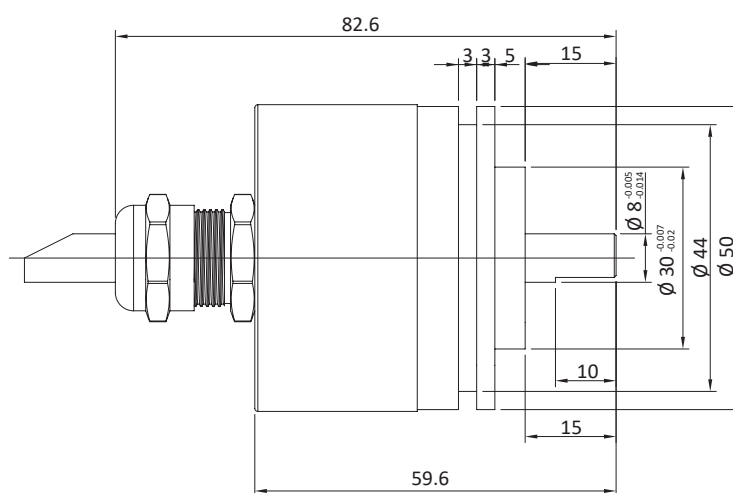
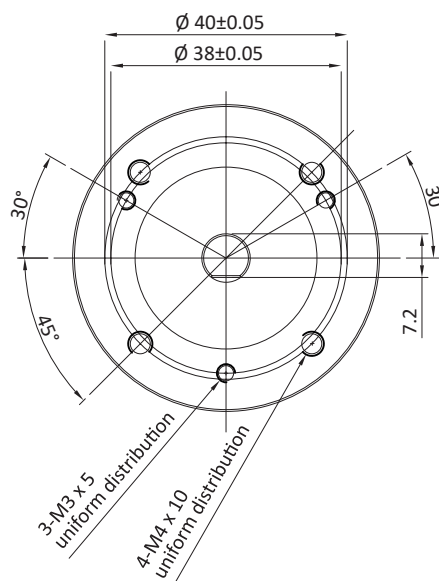
EAC50A-EU

DIMENSIONS (mm)

EAC50B8 Radial

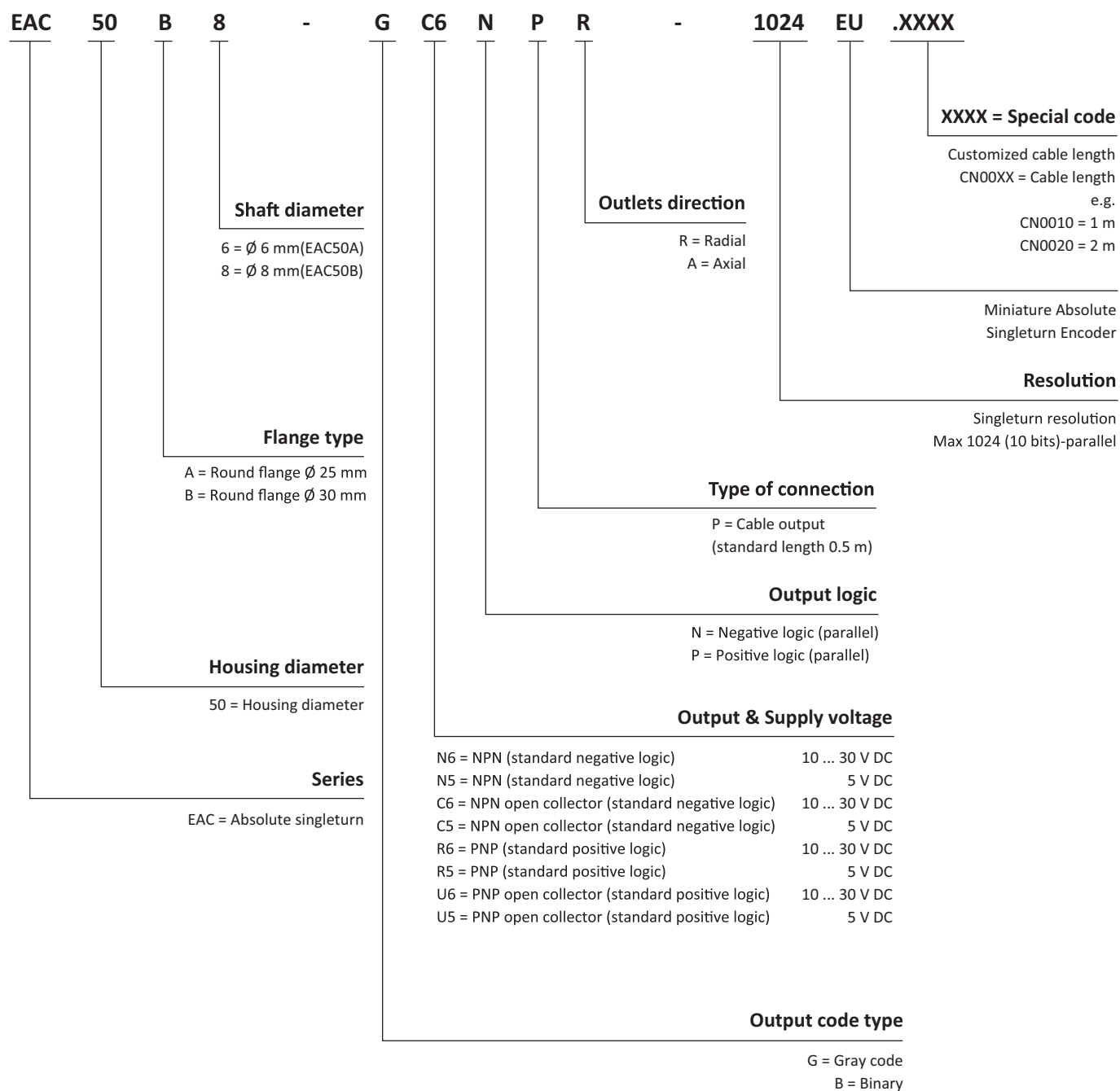


EAC50B8 Axial



EAC50A-EU

ORDER CODE



1) When the voltage supply within the limited range and only one signal channel is connected improperly at certain moment:
if $U_b = 5 \text{ V}$, it's permitted to connect to signal channels, 0 V or U_b ;
if $U_b > 5 \text{ V}$, it's permitted to connect to signal channels or 0 V.

EAC58A-EU**ARTICLE PROPERTIES**

TYPE	Standard absolute single-turn encoder
SIZE	Ø 58

TECHNICAL DATA

HOLLOW SHAFT DIAMETER	Ø 6h8 mm / Ø 8h8 mm / Ø 9.52 mm / Ø 10h8 mm	STARTING TORQUE	< 0.01 N·m
SPEED	6000 rpm	BODY MATERIAL	Aluminum
BEARING LIFE	10 ⁹ revolution	HOUSING MATERIAL	Aluminum
MOMENT OF INERTIA	1.8 x 10 ⁻⁶ kgm ²	WEIGHT	360 g

ENVIRONMENTAL CONDITIONS

PROTECTION CLASS	IP65	OPERATING TEMPERATURE	-20 ... +80 °C
MAX LOAD CAPACITY OF THE SHAFT	60 N axial, 120 N radial	STORAGE TEMPERATURE	-25 ... +85 °C
SHOCK RESISTANCE (EN 60068-2-27)	50 g, 11 ms	RELATIVE HUMIDITY / CONDENSATION	90%, condensation not permitted
VIBRATION RESISTANCE (EN 60068-2-6)	10 g, 10 ... 2000 Hz		

Resolution

SSI: 1024, 2048, 4096, 8192

PARALLEL: 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192

ELECTRICAL PARAMETERS

OUTPUT CIRCUIT	SSI	SSI	Parallel	Parallel
OUTPUT DRIVER	RS422	RS422	Push-pull / NPN OC	Push-pull / NPN OC
RESOLUTION	13 Bits	13 Bits	13 Bits	13 Bits
SUPPLY VOLTAGE	10 ... 30 V DC	5 V DC	10 ... 30 V DC	5 V DC
POWER CONSUMPTION (NO LOAD)	≤200 mA	≤200 mA	≤200 mA	≤200 mA
PERMISSIBLE LOAD (CHANNEL)	±20 mA	±20 mA	±20 mA	±20 mA
PULSE FREQUENCY	Max. 1 MHz	Max. 1 MHz	Max. 40 kHz	Max. 40 kHz
SIGNAL LEVEL HIGH	Typ. 3.8 V	Typ. 3.8 V	Typ. Ub-2.8 V	Typ. 3.4 V
SIGNAL LEVEL LOW	Max. 0.5 V	Max. 0.5 V	Max. 2.0 V	Max. 0.5 V
RISE TIME TR	Max. 100 ns	Max. 100 ns	Max. 0.2 µs	Max. 0.2 µs
FALL TIME TF	Max. 100 ns	Max. 100 ns	Max. 0.2 µs	Max. 0.2 µs

EAC58A-EU

STANDARDS AND DIRECTIVES

LOW-VOLTAGE SWITCHGEAR EN IEC 61000-6-2
AND CONTROLGEAR EN IEC 61000-6-4

APPROVALS



TERMINAL ASSIGNMENT

Terminal	Wire color	Signal	Resolution					
			8 bit (256)	9 bit (512)	10 bit (1024)	11 bit (2048)	12 bit (4096)	13 bit (8192)
1	WH	0 V	0 V	0 V	0 V	0 V	0 V	0 V
2	BN	+Ub	+Ub	+Ub	+Ub	+Ub	+Ub	+Ub
3	GN	bit 1 MSB	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹	B ¹⁰ / G ¹⁰	B ¹¹ / G ¹¹	B ¹² / G ¹²
4	YE	bit 2	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹	B ¹⁰ / G ¹⁰	B ¹¹ / G ¹¹
5	GY	bit 3	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹	B ¹⁰ / G ¹⁰
6	PK	bit 4	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹
7	BU	bit 5	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸
8	RD	bit 6	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷
9	BK	bit 7	B ¹ / G ¹	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶
10	VT	bit 8	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵
11	GY / PK	bit 9	NC	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴
12	RD / BU	bit 10	NC	NC	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²	B ³ / G ³
13	WH / GN	bit 11	NC	NC	NC	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²
14	BN / GN	bit 12	NC	NC	NC	NC	B ⁰ / G ⁰	B ¹ / G ¹
15	WH / YE	bit 13 LSB	NC	NC	NC	NC	NC	B ⁰ / G ⁰
16	YE / BN	V/R	V/R	V/R	V/R	V/R	V/R	V/R
17	WH / GY	ST	ST	ST	ST	ST	ST	ST

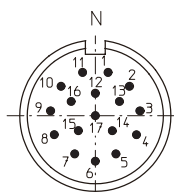
Attention: Bite definition of parallel interface for an absolute encoder is: bit 1 = MSB, bit 2 = MSB-1, bit 3 = MSB-2, ...

ST: SET input, the high level will last 2 s and this position will be stored as new zero position.

V/R: Up / down input, in the normally open state, the encoder's counting function can be switched.

Observe the shaft end, in the normally closed state, the encoder's counting will increase when the shaft turning clockwise, in the normally open state, the encoder's counting will decrease when the shaft turning clockwise.

M23 17-pin



EAC58A-EU

TERMINAL ASSIGNMENT (SSI)

Signal	0 V	+U _B	+C	-C	+D	-D	ST *	V/R*	LH	Shield
Color	WH	BN	GN	YE	GY	PK	BU	RD	BK	$\perp$
M23 12-pin	1	2	3	4	5	6	7	8	9	PH

C: Colck Signal

D: Data Signal

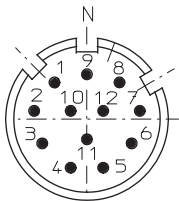
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V/R: Up/down input, in the normally open state, the encoder's counting function can be switched.

Observe the shaft end, in the normally closed state, the encoder's counting will increase when the shaft turning clockwise, in the normally open state, the encoder's counting will decrease when the shaft turning clockwise.

LH: LATCH input, freeze current value.

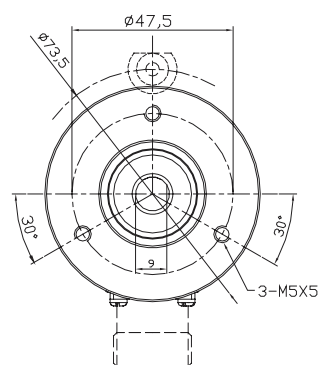
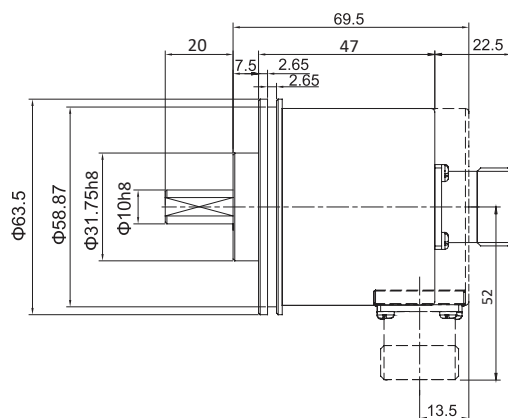
M23 12-pin



EAC58A-EU

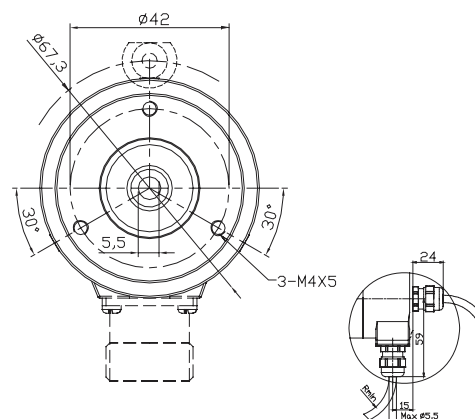
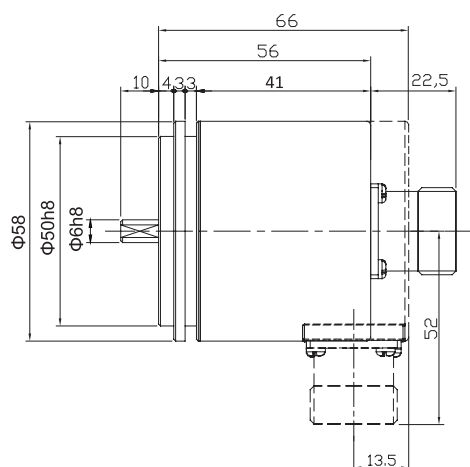
DIMENSIONS (mm)

EAC58A



Servo-restraint ring
58PXL (see installation accessories for reference)

EAC58B

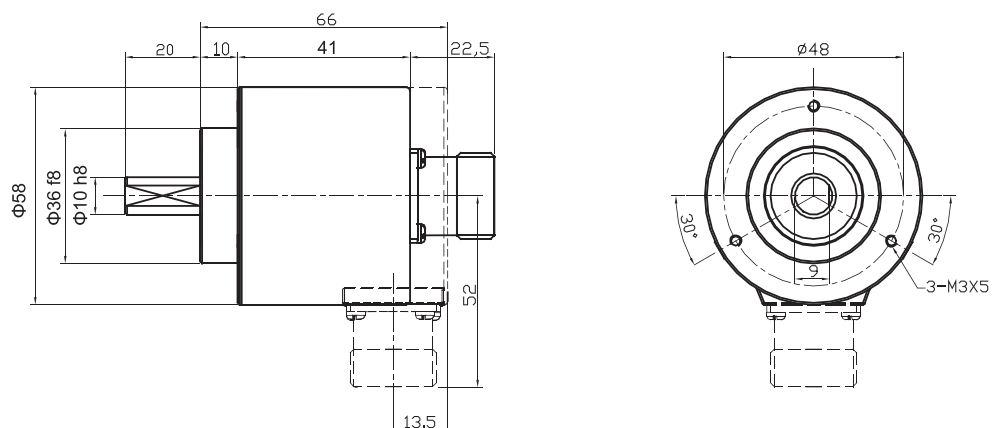


Rmin
Fasten mount: 55 mm
Hauling mount: 70 mm

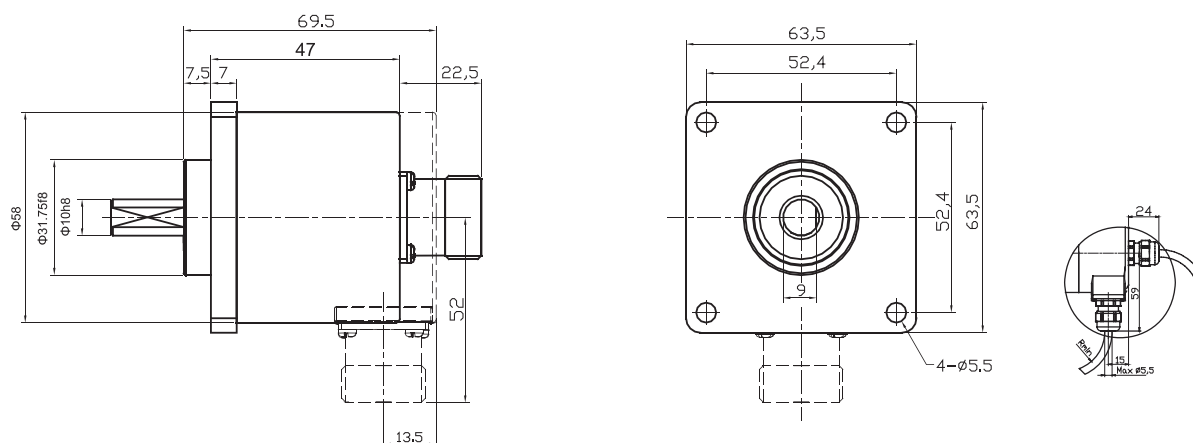
EAC58A-EU

DIMENSIONS (mm)

EAC58C



EAC58D



Attention: Do not use excessive force during hardwiring between drive shaft, flange and encoder to prevent shaft damage from overload.

EAC58A-EU

ORDER CODE

EAC	58	C	10	-	G	S6	X	PC	R	-	8192	EU	.	XXXX
Shaft diameter 6 = Ø 6 mm (EAC58B) 8 = Ø 8 mm 9 = Ø 9.52 mm (3/8") 10 = Ø 10 mm					Outlets direction R = Radial A = Axial					XXXX = Special code Customized cable length CN00XX = Cable length e.g. CN0010 = 1 m CN0020 = 2 m				
Flange type A = Ø 31.75 clamping flange, shaft length 20 mm B = synchronous flange, shaft length 10 mm C = Ø 36 clamping flange, shaft length 20 mm D=63.5 square flange, Ø 31.75,shaft length 20 mm					Type of connection PC = 12-core cable (SSI) standard length 1.5 m T = M23, 12-pin connector (SSI) PD = 18-core cable (parallel) standard length 1.5 m TA = M23, 17-pin connector (parallel)					Resolution Singleturn resolution (see previous pages for reference) Max 8192 (13 bits) - parallel standard 8192 (13 bits) - SSI				
Housing diameter 58 = Housing diameter					Output logic P = Positive logic (parallel) N = Negative logic (parallel) X = No definition (SSI)					Supply voltage P6 = Push-Pull (standard positive logic) 10 ... 30 V DC P5 = Push-Pull (standard positive logic) 5 V DC S6 = SSI (synchronous serial interface) 10 ... 30 V DC S5 = SSI (synchronous serial interface) 5 V DC C6 = NPN open collector (standard negative logic) 10 ... 30 V DC				
Series EAC = Absolute singleturn series					Output Code G = Gray B = Binary									

Connector accessories

Connectors matching with "T" wiring

Ordering code: TMSP1612F

Connectors matching with "TA" wiring

Ordering code: TMSP1617F

EAC58P-EU

ARTICLE PROPERTIES

TYPE	Standard hollow shaft absolute singleturn encoder
SIZE	Ø 58

TECHNICAL DATA

SHAFT DIAMETER	Ø 8H7 mm / Ø 10 H7 mm / Ø 12H7 mm	STARTING TORQUE	< 0.01 N·m
SPEED	6000 rpm	BODY MATERIAL	Aluminum
BEARING LIFE	10 ⁹ revolution	HOUSING MATERIAL	Aluminum
MOMENT OF INERTIA	1.8 x 10 ⁻⁶ kgm ²	WEIGHT	360 g

ENVIRONMENTAL CONDITIONS

PROTECTION CLASS	IP65	OPERATING TEMPERATURE	-20 ... +80 °C
MAX LOAD CAPACITY OF THE SHAFT	60 N axial, 120 N radial	STORAGE TEMPERATURE	-25 ... +85 °C
SHOCK RESISTANCE (EN 60068-2-27)	50 g, 11 ms	RELATIVE HUMIDITY / CON- DENSATION	90%, condensation not permitted
VIBRATION RESISTANCE (EN 60068-2-6)	10 g, 10 ... 2000 Hz		

Resolution:

SSI: 1024, 2048, 4096, 8192

Parallel: 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192

ELECTRICAL PARAMETERS

OUTPUT CIRCUIT	SSI	SSI	PARALLEL	PARALLEL
OUTPUT DRIVER	RS422	RS422	Push-pull / NPN OC	Push-pull / NPN OC
RESOLUTION	13 Bits	13 Bits	13 Bits	13 Bits
SUPPLY VOLTAGE	10 ... 30 VDC	5 V DC	10 ... 30 V DC	5 V DC
POWER CONSUMPTION (NO LOAD)	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
PERMISSIBLE LOAD (CHANNEL)	± 20 mA	± 20 mA	± 20 mA	± 20 mA
PULSE FREQUENCY	Max. 1 MHz	Max. 1 MHz	Max. 40 kHz	Max. 40 kHz
SIGNAL LEVEL HIGH	Typ. 3.8 V	Typ. 3.8 V	Typ. Ub-2.8 V	Typ. 3.4 V
SIGNAL LEVEL LOW	Max. 0.5 V	Max. 0.5 V	Max. 2.0 V	Max. 0.5 V
RISE TIME TR	Max. 100 ns	Max. 100 ns	Max. 0.2 µs	Max. 0.2 µs
FALL TIME TF	Max. 100 ns	Max. 100ns	Max. 0.2 µs	Max. 0.2 µs

EAC58P-EU

STANDARDS AND DIRECTIVES

LOW-VOLTAGE SWITCHGEAR EN IEC 61000-6-2
AND CONTROLGEAR EN IEC 61000-6-4

APPROVALS



TERMINAL ASSIGNMENT

Terminal	Wire color	Signal	Resolution					
			8 bit (256)	9 bit (512)	10 bit (1024)	11 bit (2048)	12 bit (4096)	13 bit (8192)
1	WH	0 V	0 V	0 V	0 V	0 V	0 V	0 V
2	BN	+Ub	+Ub	+Ub	+Ub	+Ub	+Ub	+Ub
3	GN	bit 1 MSB	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹	B ¹⁰ / G ¹⁰	B ¹¹ / G ¹¹	B ¹² / G ¹²
4	YE	bit 2	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹	B ¹⁰ / G ¹⁰	B ¹¹ / G ¹¹
5	GY	bit 3	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹	B ¹⁰ / G ¹⁰
6	PK	bit 4	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸	B ⁹ / G ⁹
7	BU	bit 5	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷	B ⁸ / G ⁸
8	RD	bit 6	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶	B ⁷ / G ⁷
9	BK	bit 7	B ¹ / G ¹	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵	B ⁶ / G ⁶
10	VT	bit 8	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴	B ⁵ / G ⁵
11	GY / PK	bit 9	NC	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²	B ³ / G ³	B ⁴ / G ⁴
12	RD / BU	bit 10	NC	NC	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²	B ³ / G ³
13	WH / GN	bit 11	NC	NC	NC	B ⁰ / G ⁰	B ¹ / G ¹	B ² / G ²
14	BN / GN	bit 12	NC	NC	NC	NC	B ⁰ / G ⁰	B ¹ / G ¹
15	WH / YE	bit 13 LSB	NC	NC	NC	NC	NC	B ⁰ / G ⁰
16	YE / BN	V/R	V/R	V/R	V/R	V/R	V/R	V/R
17	WH / GY	ST	ST	ST	ST	ST	ST	ST

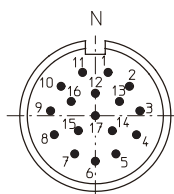
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V/R: Up / down input, in the normally open state, the encoder's counting function can be switched.

Observe the shaft end, in the normally closed state, the encoder's counting will increase when the shaft turning clockwise, in the normally open state, the encoder's counting will decrease when the shaft turning clockwise.

M23 17-pin



EAC58P-EU

TERMINAL ASSIGNMENT (SSI)

Signal	0 V	+U _B	+C	-C	+D	-D	ST *	V/R*	LH	Shield
Color	WH	BN	GN	YE	GY	PK	BU	RD	BK	$\perp$
M23 12-pin	1	2	3	4	5	6	7	8	9	PH

C: Colck Signal

D: Data Signal

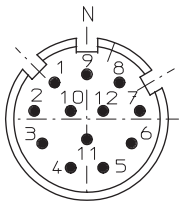
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V/R: Up/down input, in the normally open state, the encoder's counting function can be switched.

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LH: LATCH input, freeze current value.

M23 12-pin

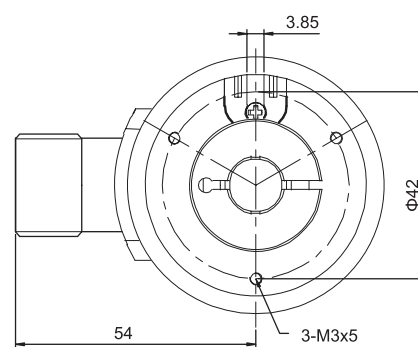
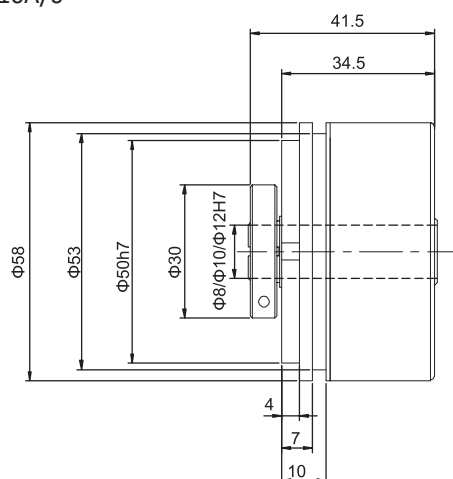


EAC58P-EU**DIMENSIONS (mm)****EAC58P(Q)**

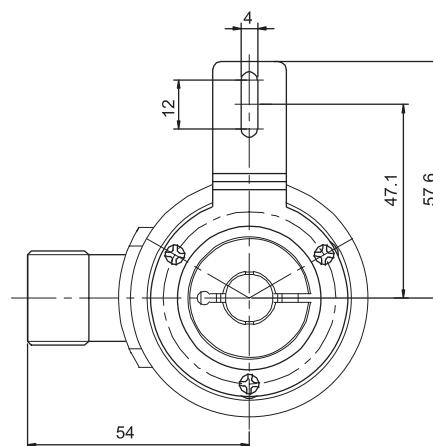
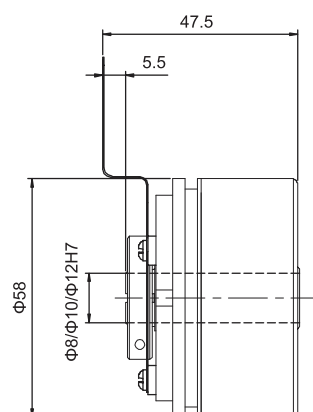
P: without installation accessories

Q: short torque support slot

Accessories: E23230010A/0

**EAC58H**

Accessories: E41350050A/0

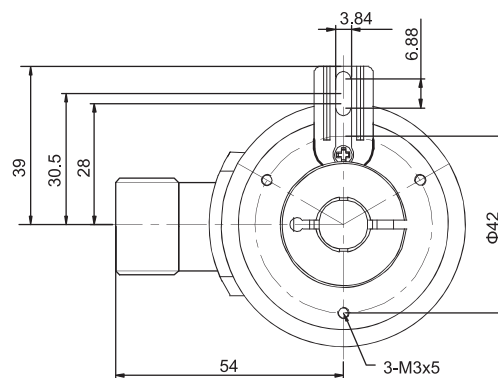
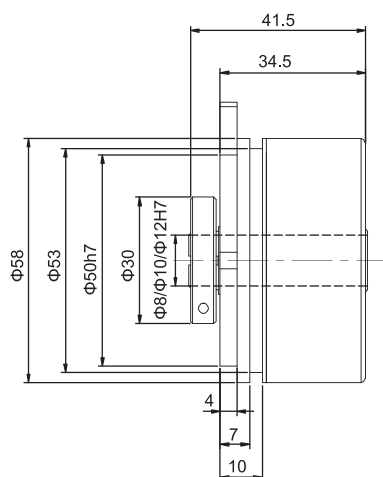


EAC58P-EU

DIMENSIONS (mm)

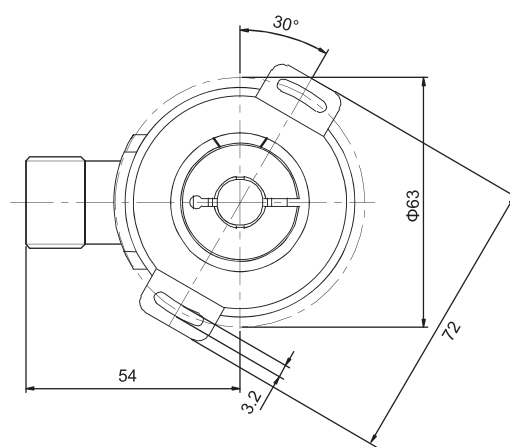
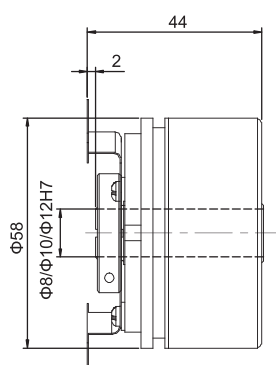
EAC58K

Accessories:
E41220001A/0
E4700 0000



EAC58W

Accessories: E41350042A/1



EAC58P-EU

ORDER CODE

EAC	58	W	10	-	G	S6	X	PC	R	-	8192	EU	.	XXXX
Shaft diameter 8 = Ø 8 mm 9 = Ø 9.52 mm 10 = Ø 10 mm 12 = Ø 12 mm				Outlets direction R = Radial A = Axial				XXXX = Special code Customized cable length CN00XX = Cable length e.g. CN0010 = 1 m CN0020 = 2 m						
Flange type P = Without installation accessories H = Tether arm Q = Short torque support slot K = Long torque support slot W = Double-winged stator coupling				Type of connection PC = 12-core cable (SSI) standard length 1.5 m T = M23, 12-pin connector (SSI) PD = 18-core cable (parallel) standard length 1.5 m TA = M23, 17-pin connector (parallel)				Resolution Singleturn resolution (see previous pages for reference) Max 8192 (13 bits) - parallel standard 8192 (13 bits) - SSI						
Housing diameter 58 = Housing diameter				Output logic P = Positive logic (parallel) N = Negative logic (parallel) X = No definition (SSI)				Supply voltage P6 = Push-Pull (standard positive logic) 10 ... 30 V DC P5 = Push-Pull (standard positive logic) 5 V DC S6 = SSI (synchronous serial interface) 10 ... 30 V DC S5 = SSI (synchronous serial interface) 5 V DC C6 = NPN open collector (standard negative logic) 10 ... 30 V DC						
Series EAC = Standard absolute singleturn				Output Code G = Gray B = Binary										

Connector accessories

Connectors matching with "T" wiring. Ordering code: TMSP1612F

Connectors matching with "TA" wiring. Ordering code: TMSP1617F

EAC58-DP

ARTICLE PROPERTIES

TYPE	Profibus-DP interface absolute singleturn encoder
SIZE	Ø 58

TECHNICAL DATA

SHAFT DIAMETER	Ø 6g6 (58B) mm Ø 8g6 (58A/B) mm Ø 9.52 (3/8")g6 (58A) mm Ø 10g6 (58C) mm	STARTING TORQUE	< 0.05 N·m
HOLLOW SHAFT DIAMETER	Ø 8H7 / Ø 9.52H7 / Ø 10H7 mm (58W) Ø 12H7 / Ø 14H7 / Ø 15H7 mm (58W)	BODY MATERIAL	Aluminum
SPEED	6000 rpm, continuous	HOUSING MATERIAL	Aluminum
BEARING LIFE	10 ⁹ revolution	FLANGE MATERIAL	Aluminum
MOMENT OF INERTIA	1.8 x 10 ⁻⁶ kgm ²	WEIGHT	800 g

ENVIRONMENTAL CONDITIONS

PROTECTION CLASS	IP65	OPERATING TEMPERATURE	-40 ... +80 °C
MAX LOAD CAPACITY OF THE SHAFT	80 N axial, 160 N radial	STORAGE TEMPERATURE	-45 ... +85 °C
SHOCK RESISTANCE (EN 60068-2-27)	50 g, 11 ms	RELATIVE HUMIDITY / CONDENSATION	90%, condensation not permitted
VIBRATION RESISTANCE (EN 60068-2-6)	10 g, 10 ... 2000 Hz		

Resolution 8192 4096

ELECTRICAL PARAMETERS

RESOLUTION / REVOLUTION	8192 (13 bits)	BAUD RATE	12 Mbaud
SUPPLY VOLTAGE	10 ... 30 V DC	LINEARITY	±1/2 LSB
POWER CONSUMPTION (NO LOAD)	300 mA	OUTPUT FREQUENCY	Max. 100 KHz

STANDARDS AND DIRECTIVES

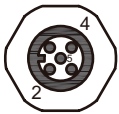
LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR	EN IEC 61000-6-2 EN IEC 61000-6-4
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EAC58-DP

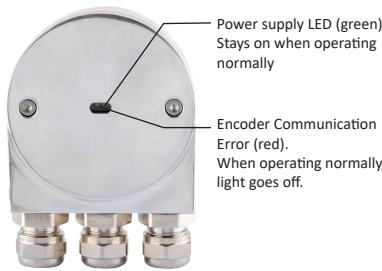
APPROVALS



TERMINAL ASSIGNMENT

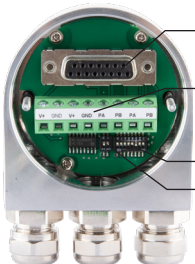
Signal				Terminal configuration of M12 plug		
+V	Supply voltage	24 V DC	1			
0 V	Ground		3			
A	Profibus-DP output	GN	2			
B	Profibus-DP output	RD	4			
A	Profibus-DP input	GN	2			
B	Profibus-DP input	RD	4			
				Bus input	Power	Bus output

INTRODUCTION

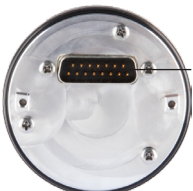
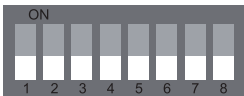
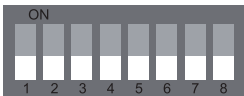
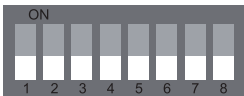
	The Profibus-DP Bus multiturn absolute encoder (identification code 0 x 0CCA) conforms to the Profibus-DP standards as described in the European Standard EN 50170 volume 2. It also complies with the existing encoder regulation document: "Profibus Profile for Encoders, Order No. 3062". The Profibus-DP interface maintains the same maximum resolution and characteristics (8192 position / revolution, 4096 revolution) of the stand-alone version, and it also adds on the extra feature of the Profibus-DP network.
 Back of the encoder wiring box	Through the Profibus-DP network, it is possible to: • Obtain the angular position information from the encoder during the periodic data exchange. • Program the resolution and the revolution (refer to corresponding chapters for parameter setting). • Change the default increment counting direction (switch between CW/CCW when configuring the parameters). • Perform the Preset operation (Set the encoder to read a specific position). • Read the diagnosis status. • Obtain info about the code supplied by the device.

EAC58-DP

INTRODUCTION

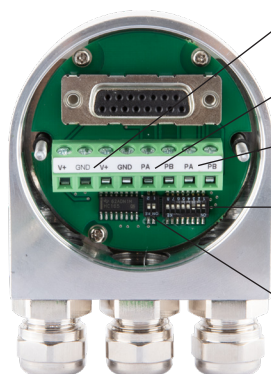
 Internal interface Terminal block Address DIP switch Terminal resistor DIP switch Inside of the encoder wiring box	When using the device, it is possible to: • Display the ON / OFF status. • Display the device activity on the bus. • Activate the Reset function. • Set up the device address. • If required, inserting the terminal resistor into the bus. • Change the counting direction. Obtain info about the code supplied by the device. Installing the Profibus-DP encoder in a network requires the execution of the standard procedures necessary for configuring any Profibus-DP slave. The procedures are as follows. 1- Add the slave onto the master (please see corresponding chapter). 2- Wire the encoder into the Profibus network. Whether wiring it in the middle or at the terminal are depending on the physical position of the device in the bus. 3- Directly set up the address (which must be unique in the network and as same as the device) for the slave. 4- Prepare the applications at the master side and set up the Profibus network. On the back cover of the encoder there are two LED indicators. The device's operating status can be observed by the two LED. The green LED shows the power status and must be on constantly. The red LED only switches off only during the periodic data exchange between the Profibus master and the encoder.
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DIP-SWITCHES SETUP (CONFIGURING SLAVE ADDRESS)

 Inner port	Besides the address and the standard position of a terminal DIP switch, a configuration example of Profibus and the devices is illustrated below. In this example, device's address is set up as 1011001, with the corresponding decimal address as 77. Bit 7 is the most significant bit, and bit 1 is the least significant bit. Bit 8 is used for changing the counter direction. Bit 1 to bit 7 are used to configure encoder's address.				
Back cover of the encoder	<table><tr><td> Address setting </td><td> Line close </td><td> Example </td><td> Line close </td></tr></table>	 Address setting	 Line close	 Example	 Line close
 Address setting	 Line close	 Example	 Line close		

EAC58-DP

NETWORK PARAMETERS



Power supply 24 V DC

Bus in

Bus out

Address DIP switch Bit 8 is used for changing counter direction. Bit 1 to Bit 8 is used to set up the encoder address. A Profibus network can accept up to 126 addresses.

The Bus line is closed when setting the two switches are switched ON

Usually, an A type cable is used to wire a DP / FMS network. This cable has to have the following characteristics:

Parameter	A type cable
Characteristic resistance (Ω)	135 ... 165 at a certain frequency (3 ... 20 Mhz)
Rated capacity (PF/m)	< 30
Loop resistance (Ω /Km)	≤ 110
Core diameter (mm)	> 0.64 ^{*)}
Core cross-section (mm ²)	> 0.34 ^{*)}

This cable allows the optimal network utilization. In fact, it is possible to reach the maximum communication speed allowed (12 Mbaud). However, there are some limitations due to the maximum physical dimensions of a bus segment as follows:

kbaud	9.6	19.2	93.75	187.5	500	1500	12000
Range / Segment	1200 m	1200 m	1200 m	1000 m	400 m	200 m	100 m

Finally, the physical characteristics of a Profibus network are now known.

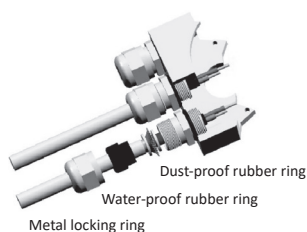
Max. number of station participating	DP: 126 (Address 0 ... 125)
In the exchange of user data	FMS: 127 (Address 0 ... 26)
Max. number of stations per segment	32
Available data transfer rates (kbit/s)	9.6, 19.2, 45.45, 93.75, 187.5, 500, 1500, 3000
Max. segments	6000, 12000

According to EN50170, a maximum of 4 repeaters are allowed between any two stations.

Dependent on the repeater type and manufacturer, more than 4 repeaters may be allowed in some cases. Refer to the manufacturer's technical specification for details.

WIRING BOX

Wiring Guide

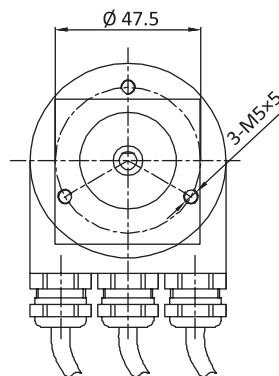
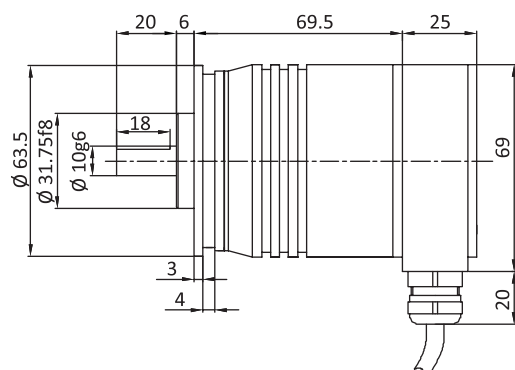


Unscrew the back cover and wire the cables (power cable, input and output bus) according to the instructions on the cover wiring. The cable will pass through the metal locking ring, water-proof rubber ring, and dust-proof rubber ring into the metal notch. Lock the metal ring to fasten the cables.

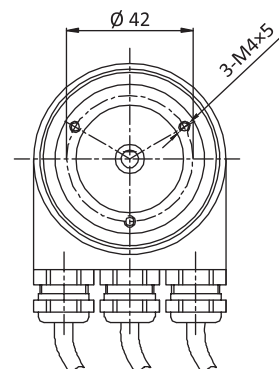
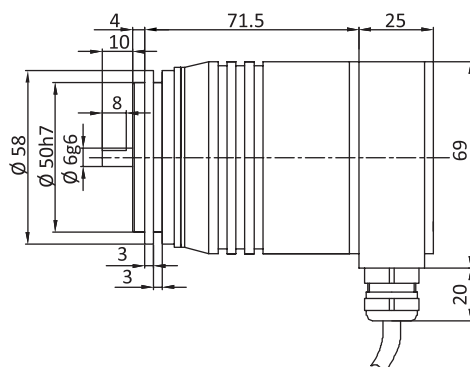
EAC58-DP

DIMENSIONS (mm)

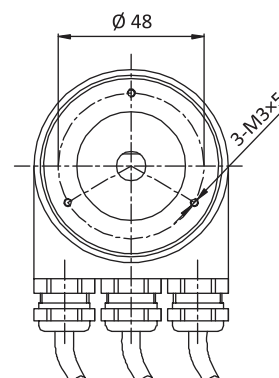
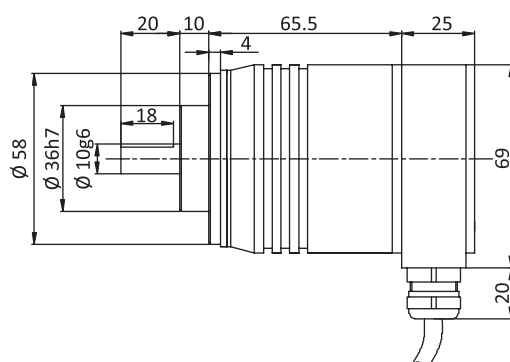
EAC58A



EAC58B



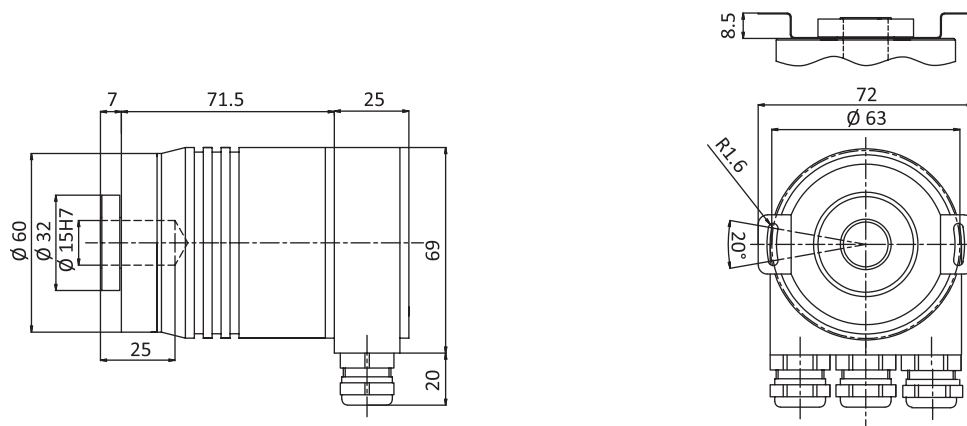
EAC58C



EAC58-DP

DIMENSIONS (mm)

EAC58W



EAC58-DP

ORDER CODE

EAC	58	C	10	-	B	F6	X	X	R	-	8192	DP
				Shaft diameter								Profibus-DP interface absolute encode
				6 = Ø 6g6 mm 58B 8 = Ø 8g6 mm 58A/B 9 = Ø 9.52g6 mm 58A 10 = Ø 10g6 mm 58C Only for flange type 58W 8 = Ø 8H7 mm 9 = Ø 9.52H7 mm 10 = Ø 10H7 mm 12 = Ø 12H7 mm 14 = Ø 14H7 mm 15 = Ø 15H7 mm								Resolution Resolution (see previous pages for reference) Standard 8192 (13 bits)
				Flange type								Outlets direction R = Radial
				A = Round flange B = Synchro flange, shaft length 10 mm C = Ø 36 clamping flange, shaft length 20 mm W = Blind hollow shaft flange, double-winged spring leaf installation								Type of connection X = Integrated coupler terminal box with 3 PG7 threaded connectors T = Integrated coupler terminal box with 3 M12 plugs
												Output logic X = No definition
				Housing diameter 58 = Ø 58 flange								Output & Supply voltage F6 = Profibus-DP interface 10 ... 30 V DC
				Series EAC = Profibus-DP interface absolute singleturn								Code type B=Binary

EAC58-EAND

ARTICLE PROPERTIES

TYPE	4 ... 20 mA analog output absolute singleturn encoder
SIZE	Ø 58

TECHNICAL DATA

SHAFT DIAMETER	Ø 6 / Ø 10g6 mm	STARTING TORQUE	< 0.01 N·m
SPEED	6000 rpm	BODY MATERIAL	Aluminum
BEARING LIFE	10 ⁹ revolution	HOUSING MATERIAL	Aluminum
MOMENT OF INERTIA	1.8 x 10 ⁻⁶ kgm ²	WEIGHT	360 g

Resolution: 8192. For other resolution requests please contact us for further information.

ENVIRONMENTAL CONDITIONS

PROTECTION CLASS	IP65	OPERATING TEMPERATURE	-20 ... +80 °C
MAX LOAD CAPACITY OF THE SHAFT	60 N axial, 120 N radial	STORAGE TEMPERATURE	-25 ... +85 °C
SHOCK RESISTANCE (EN 60068-2-27)	50 g, 11 ms	RELATIVE HUMIDITY / CONDENSATION	90%, condensation not permitted
VIBRATION RESISTANCE (EN 60068-2-6)	10 g, 10 ... 2000 Hz		

ELECTRICAL PARAMETERS

TYPE OF INTERFACE	4 ... 20 mA	MAX. INPUT RESISTANCE	200 Ω
SUPPLY VOLTAGE (UB)	10 ... 30 V DC, 5 V DC	MEASURING RANGE	0 ... 360°
CURRENT CONSUMPTION	70 mA	MAX. SENSITIVITY (25 °C)	0.2°
MAX. LOADING CURRENT	84 mA	RESOLUTION	13 Bit
WORD-UPDATING FREQUENCY	Max. 15.000/s	SETUP TIME	Max. 2 ms
CURRENT LOOP	10 ... 30 V DC	TEMPERATURE EFFECT	0.1°/10 K
ANALOG SIGNAL	4 ... 20 mA	NO-LOAD CURRENT	≤ 3.5 mA

Sensor should be electrically isolated from current loop

STANDARDS AND DIRECTIVES

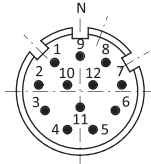
LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR	EN IEC 61000-6-2 EN IEC 61000-6-4
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APPROVALS



EAC58-EAND

TERMINAL ASSIGNMENT



M23 12pin layout (Male)

Current signal	0V	+Ub	-	-	I+	I-	STZ	VR	STT	-	-	-	⏏
Color	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY/PK	RD/BU	
12Pin	1	2	3	4	5	6	7	8	9	10	11	12	PH

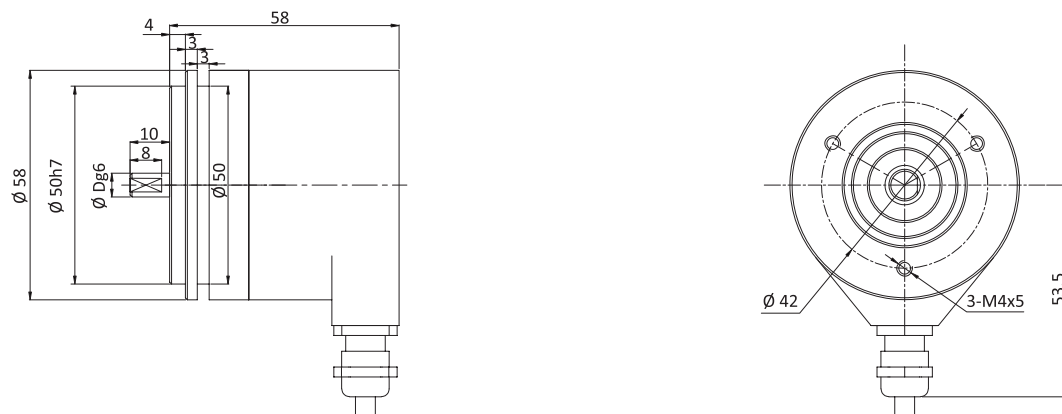
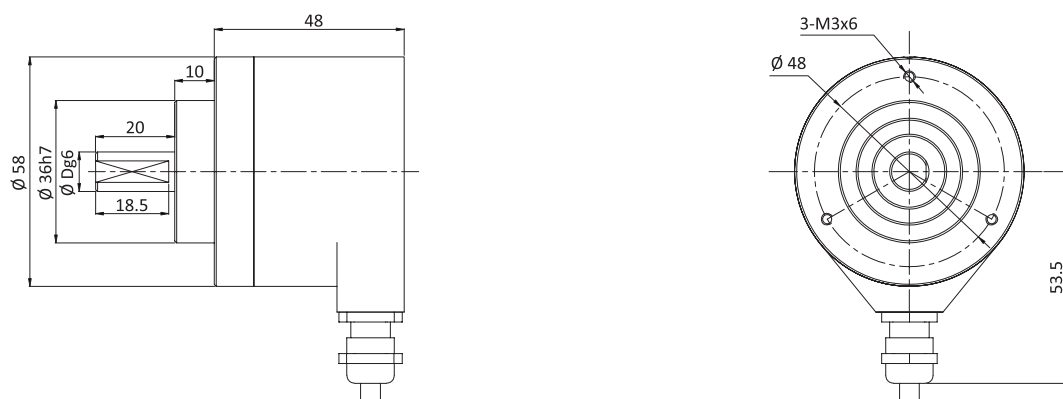
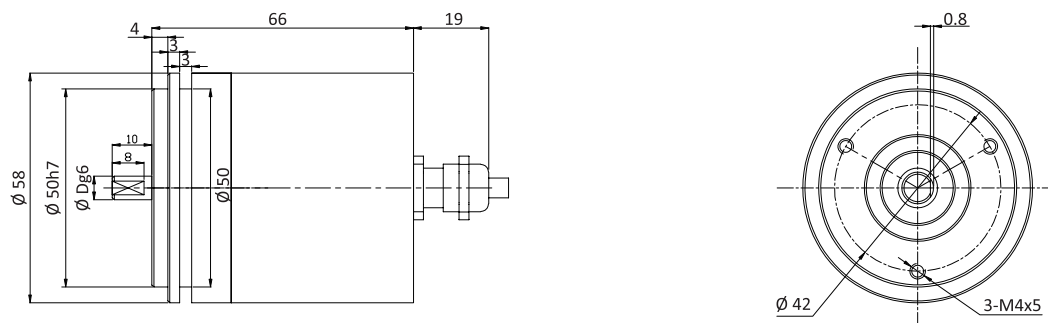
0V / +UB	Can be powered together or seperately
I+	Input of current loop
I-	Output of current loop
STZ	SET input (signal level remains high for 2 sec), the output current is set to 4 mA
VR	Up/down input, as the input is activated, decreasing current values are transmitted when shaft turning clockwise
STT INPUT	SET input (signal level remains high for 2 sec), the output current is set to 20 mA
PH	Plug housing

Attention:

- 1, Before initial start-up, unused outputs must be insulated.
- 2, Shaft remains static, and at the same time set STZ & STT signal at high level; singleturn resumes to 4-20mA, and the present position output is at 4 mA.

WIRING PRINCIPLE

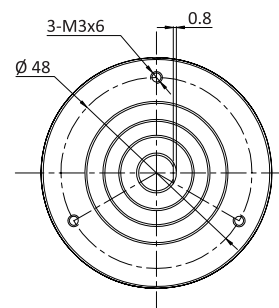
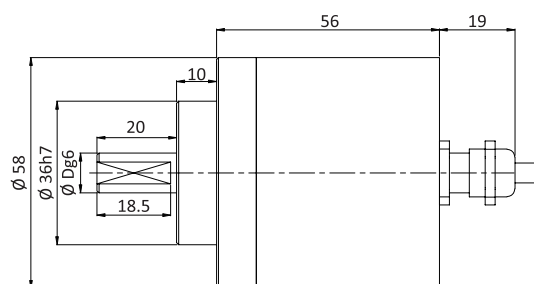
1. The encoder operates using a 2-wire system. The power supply (DC) and signal output (4 ... 20 mA current) share the same wiring.
2. Connect the power terminals according to their functional definitions. Additionally, the positive power terminal (+V) can be connected in parallel to the encoder's "I+" terminal.
3. Connect the encoder's "I-" terminal to the "I+" terminal of the receiving device (e.g., PLC analog input module, display instrument, etc.).
4. The "I-" terminal of the receiving device is connected to the 0V (COM / GND) of the power supply, forming a circuit.

EAC58-EAND**DIMENSIONS (mm)****EAC58B Radial****EAC58C Radial****EAC58B Axial**

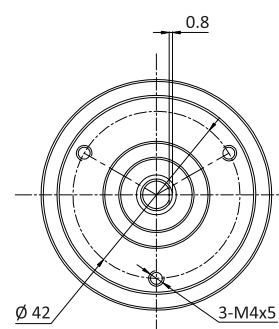
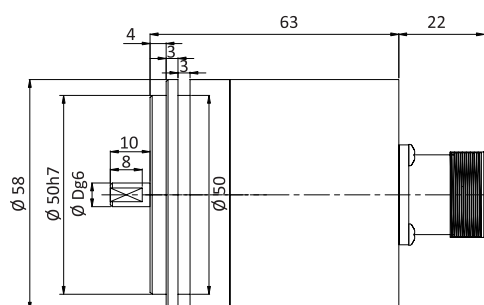
EAC58-EAND

DIMENSIONS (mm)

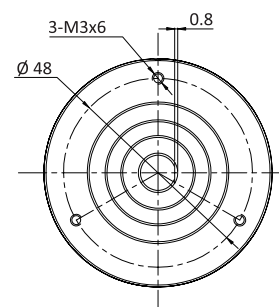
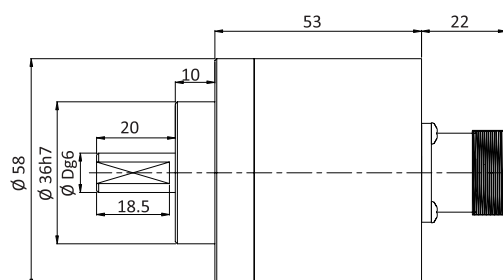
EAC58C Axial



EAC58B M23 Axial



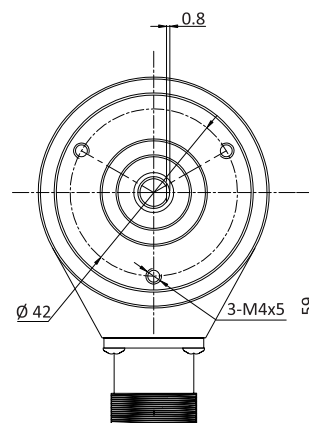
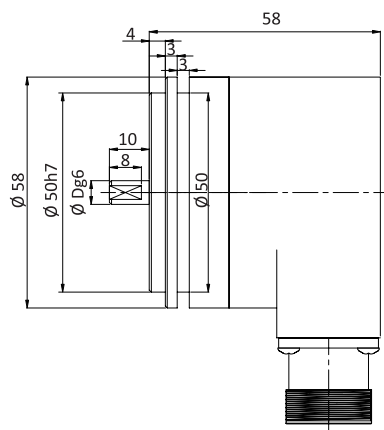
EAC58C M23 Axial



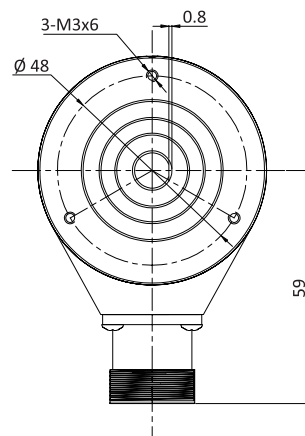
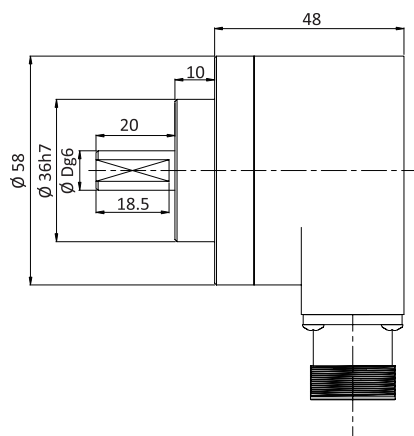
EAC58-EAND

DIMENSIONS (mm)

EAC58B M23 Radial



EAC58C M23 Radial



EAC58-EAND

ORDER CODE

EAC	58	C	10	-	G	S6	X	PC	R	-	8192	EAND	.	XXXX

EAC58-EAND

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