

MA460 - SERIES



HEAVY DUTY ENCODER Ø 115 MM, WITH THROUGH SHAFT

Encoder with EURO-flange B10 in stainless steel AISI 316

- Offshore and salt water firm
- Ø 115 mm, stainless steel AISI 316
- Ø 11 mm shaft with key, stainless steel 1.4057
- Through shaft for Stromag Geared Cam Limit Switch
- Enlarged sturdy bearings
- Short circuit and reversed polarity proof
- Dust and splash proof IP67
- Standard
 - 5-30 Vdc power supply
 - 300 kHz
 - 2 square wave signals and marker puls



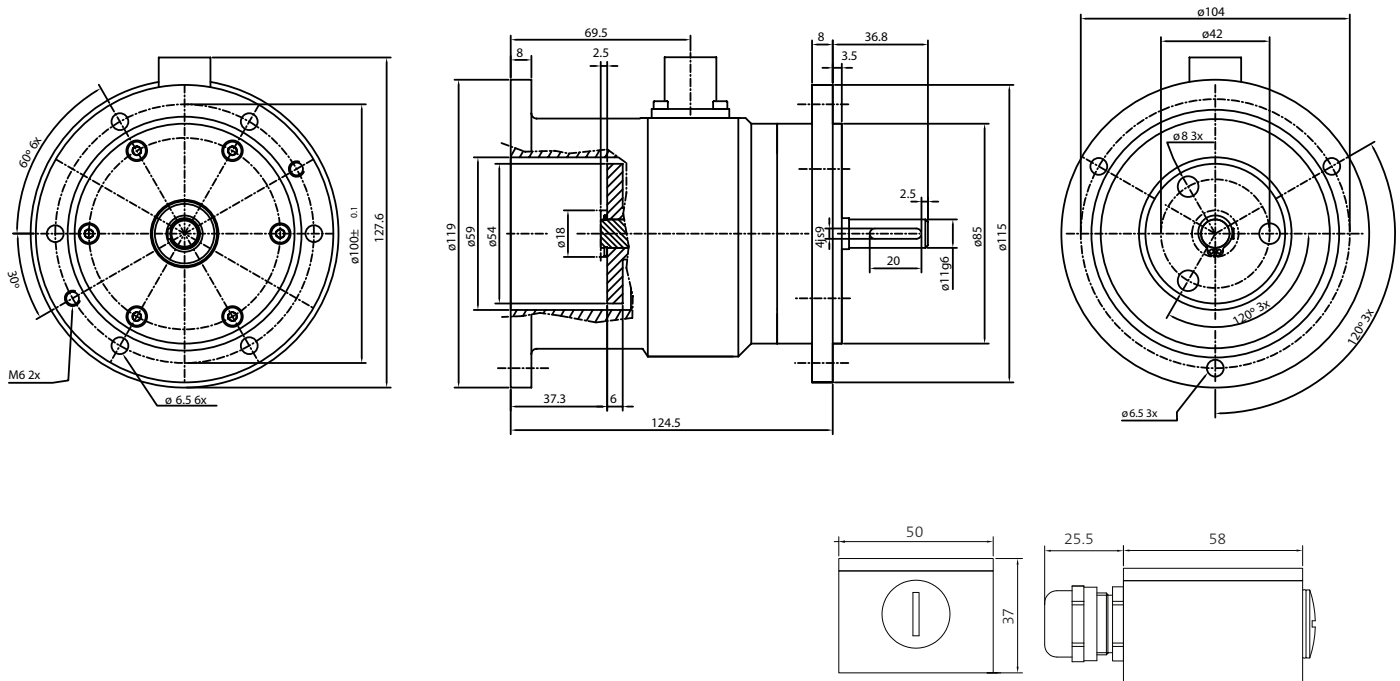
*Flexible and durable
encoder for demanding
applications*



File E342441
Conforms to european EMC directive
89/336/EEC standards:
EN61000-6-4 emission in industrial environments
EN61000-6-2 immunity in industrial environments

INCREMENTAL ENCODER FOR LIMIT SWITCH

MA460



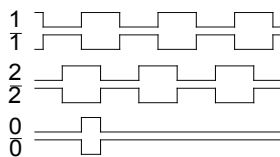
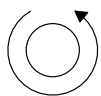
Connection C

ELECTRICAL SPECIFICATION

Electronic option	T (TTL)	H (HTL)
Supply voltage	5 Vdc	5–30 Vdc (SELV)
Current consumption	Max 40 mA without load	
Output circuit	Linedriver RS422A compatible	
Low level output volt.	Max <0,5 V at 20 mA load and 20°C	
High level output volt.	Min >Vcc-1V at 20mA load and 20°C	
Short circuit protected	Yes	
Polarity protected	Yes	
Transient protected	Yes	
Max load	70 mA	

OUTPUT SIGNALS

CCW rotation viewed from shaft end



SIGNAL ACCURACY

Dividing error max	$\pm 50 \text{ el}^\circ$
Channel separation	$90 \pm 25 \text{ el}^\circ$
Max frequency	300 kHz
Operating temperature	$-40^\circ \dots +80^\circ \text{C}$

MECHANICAL SPECIFICATION (ALL INTERFACES)

Housing	Stainless steel AISI 316
Shaft	Stainless steel 1.4057
Sealing	IP67 dust and splash proof
Bearings	Permanently greased
Bearing load at	1 000 rpm
Radial	<350 N
Axial	<250 N
Max rpm	3 000 (8 000)
Vibration	20g 20-2000 Hz
Shock	200g at 11 ms
Weight	4,7 kg

CONNECTIONS

A	Radial 12-pin M23 Male Connector, CCW
B	Radial cable, 5m length
C	Terminal box with cable gland for $\phi 6$ - $\phi 12$ mm

FUNCTION

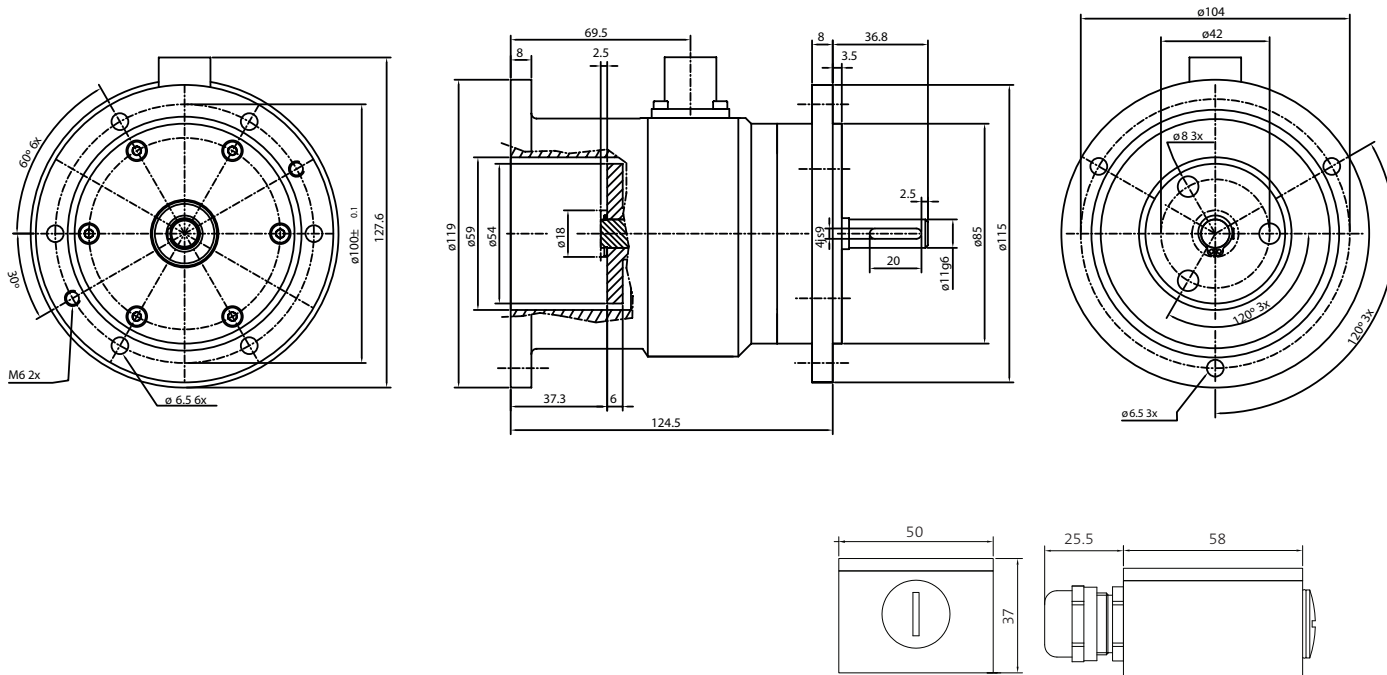
Signal	A (Pin)	B (Color)	C (Terminal)
1	5	Yellow	4
2	8	Green	6
0	3	Brown	8
1 inv	6	Black	5
2 inv	1	White	7
0 inv	4	Violet	9
+V	12	Red	1
0 V	10	Blue	2
+V sense	2	-	-
0V sense	11	-	-
Gnd	Chassis	Screen	Chassis

ORDERING CODE

Model	MA460 - SA - H1024
Material	
Connection	
A = 12 pin M23	
B = Cable 5m	
C = Terminal box	
Electronic option	
T = TTL	
H = HTL	
Pulse rate max 2500	



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Connection C

ELECTRICAL SPECIFICATIONS

Supply Voltage	4,5–30 VDC (SELV)
Clock Input	RS-422 Compatible via Optocoupler
Clock Frequency	100 kHz to 2MHz
Output Circuit	Linedriver RS422A compatible
Resolution Singleturn	12, 13 or 16 bit
Revolutions Multturn	12 or 14 bit
Multiturn Technology	Mechanical Gear
Singleturn Accuracy	±½ LSB (up to 12 bit)
Cycle Time	> 25µs
Power Consumption	Max. 1,5W
Weight	3,5 kg

CONNECTION	A	B	C
Signal	Pin	Color	Pin
Clock +	2	Green	2
Clock -	1	Yellow	1
Data +	3	Gray	3
Data -	4	Pink	4
Direction	8	Red	8
Preset	9	Blue	9
A	5	Black	5
A inv	6	Violet	6
B	7	Gray-Pink	7
B inv	10	Red-Blue	10
Z	13	White-Green	13
Z inv	14	Brown-Green	14
+V	11	Brown	11
0 V	12	White	12
Gnd	Chassis	Shield	Chassis

ORDERING KEY

Model - Material - Connection - Interface - Resolution - Code type - Incremental type - Pulse rate incremental

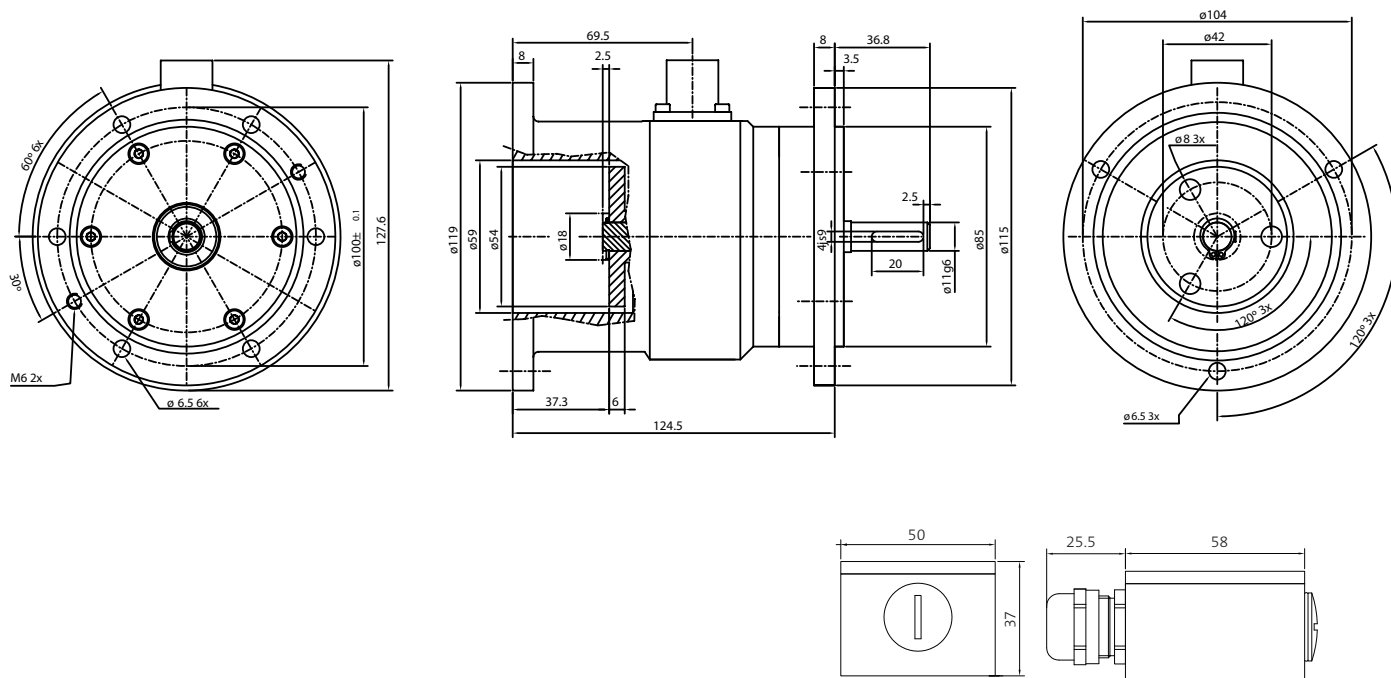
Model	MA460	
Material	S	Stainless Steel
Connection	A	16-pin M23 Male Connector CW
	B	Radial Cable 5 meter length
	C	Terminal box, for ø6-ø12mm cable
Interface	S	SSI
Resolution		
<i>Multi Turn</i>	YY	YY bit (<i>00 indicates single turn</i>)
<i>Single Turn</i>	ZZ	ZZ bit
Code type	B	Binary
	G	Gray
Incremental type	0	No incremental signals
	T	TTL
	H	HTL
Pulse rate incr.	0	No incremental signals
	A	1024 ppr
	B	2048 ppr

Sample ordering key
 MA460-SA-S0012G00
 MA460-SB-S1213G00
 MA460-SA-S1213G00
 MA460-SA-S1213GHA

SSI, Single turn
 SSI, Multi turn, Radial cable 5m
 SSI, Multi turn, 16 pin M23
 SSI & Incremental HTL with 1024ppr



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Connection C

ELECTRICAL SPECIFICATIONS

Supply Voltage	10–30 Vdc (EN50178)
Interface	CANopen (DS-406)
Resolution Singleturn	16 bit
Revolutions Multiturn	14 bit
Multiturn Technology	Mechanical Gear
Singleturn Accuracy	±½ LSB (up to 12 bit)
Interface Cycle Time	> 1 ms
Power Consumption	Max. 2,5 W
Start up Time	< 250 ms

PROGRAMMABLE FUNCTIONS

Resolution, Preset, 2 limit switches, 8 CAMS, Baud rate, CAN-Identifier, Bootloader, Transmission modes: polled, cyclic, sync

ORDERING KEY

Model - Material - Connection - Interface - Resolution

Model	MA460	
Material	S	Stainless Steel
Connection	A	16-pin M23 Male Connector CW
	B	Radial Cable 5 meter length
	C	Terminal box, for ø6-ø12mm cable
Interface	C	CANopen
Resolution		
<i>Multiturn</i>	YY	YY bit (<i>00 indicates singleturn</i>)
<i>Singleturn</i>	ZZ	ZZ bit

Sample ordering key

MA460-SA-C0012
MA460-SB-C1213

CANopen, Singleturn
CANopen, Multiturn, Radial cable 5m

CONNECTION	A	B	C
Signal	Pin	Color	Pin
CAN Ground	3	Green	2
CAN High	7	Yellow	3
CAN Low	2	Pink	4
CAN Ground	NA	NA	9
CAN High	NA	NA	8
CAN Low	NA	NA	7
+ V	12	White	1
0 V	10	Brown	10
Gnd	Chassis	Shield	Chassis