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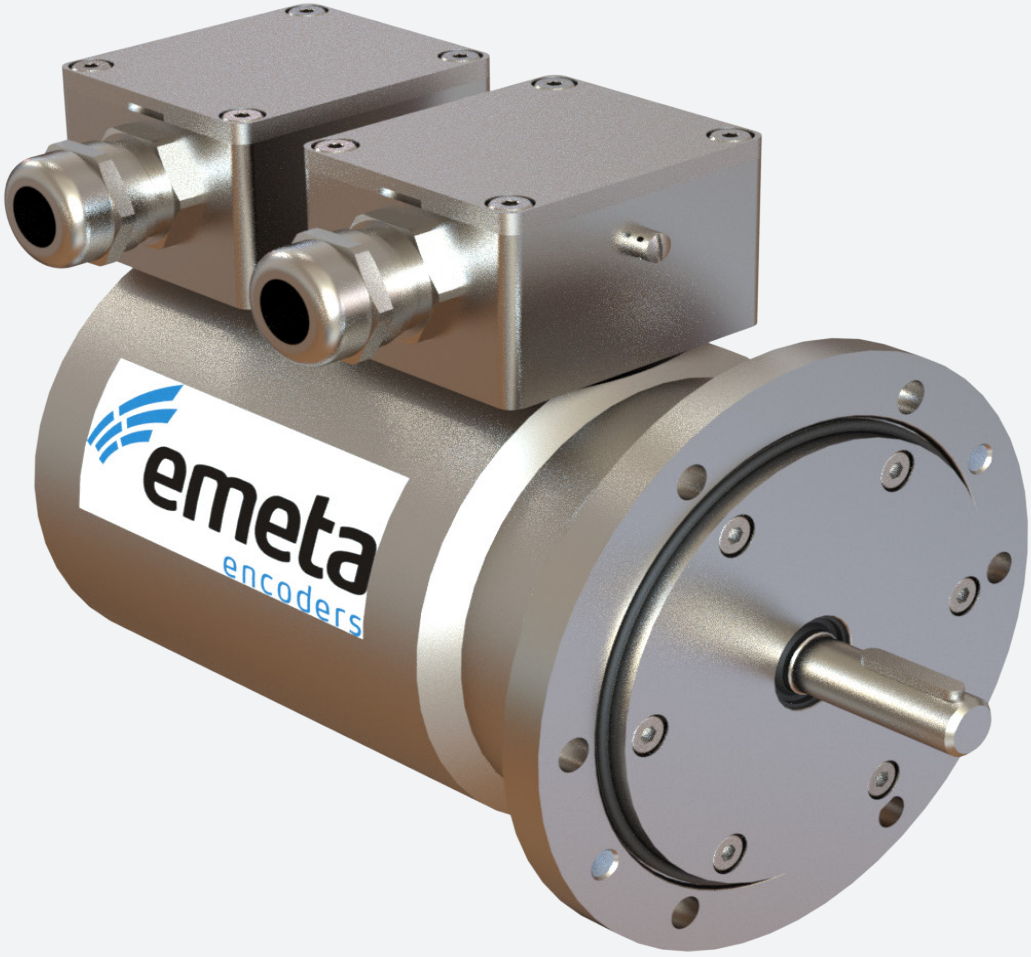
MA4201 - SERIES



HEAVY DUTY REDUNDANT ENCODER Ø 115 MM

Encoder with EURO-flange B10 in stainless steel AISI 316

- Offshore and salt water firm
- Ø 115 mm, anodized aluminium or stainless steel AISI 316
- Ø 11 mm shaft with key, stainless steel 1.4057
- Enlarged sturdy bearings
- Combination of incremental/absolute redundant version
- Short circuit and reversed polarity proof
- Dust and splash proof IP67
- Breathable membrane (double on terminal box)
- Double shaft seal with protective lip

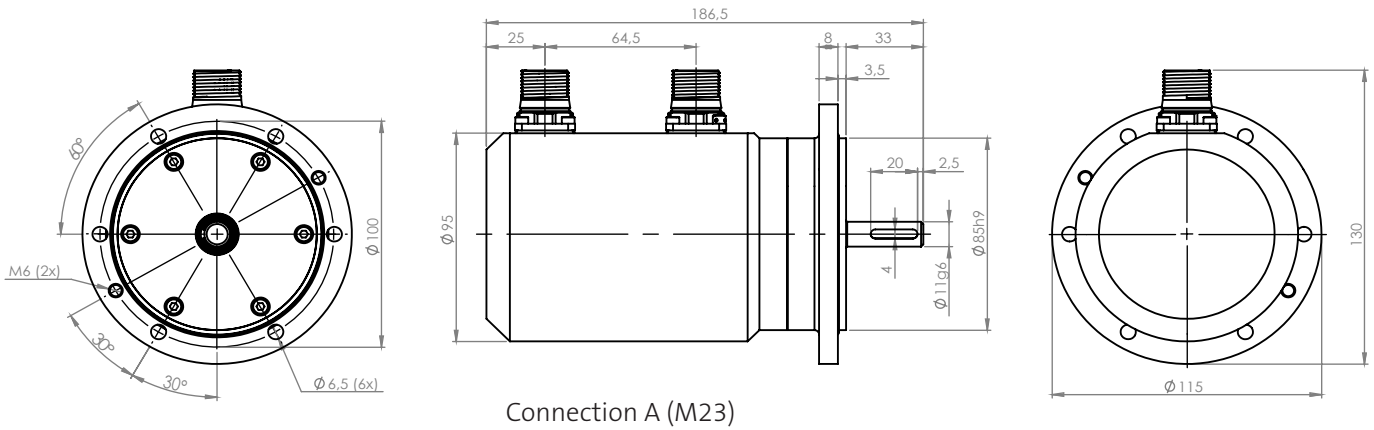
emeta encoders

Flexible and durable encoder for demanding applications

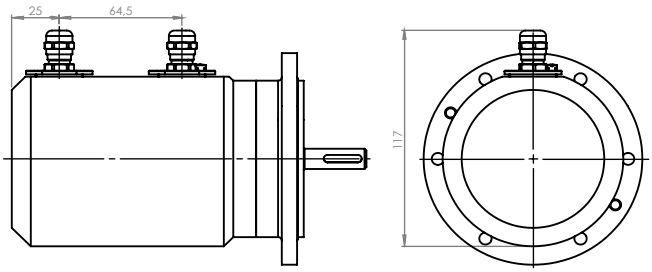
c UL us File E342441

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

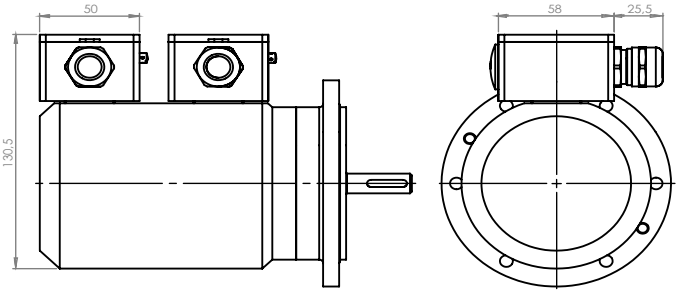
DATA FOR INCREMENTAL OUTPUT MA4201



Connection A (M23)



Connection B (Cable gland)



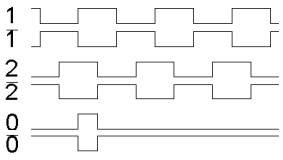
Connection C (Terminal box)

MECHANICAL SPECIFICATION

Housing	Stainless Steel AISI 316
Housing	Aluminium AW6026 anodized
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	12000
Weight	5,5 kg (AISI316), 2,2 kg (Alu)

OUTPUT SIGNALS, STANDARD

CCW rotation view
from shaft end



ELECTRICAL SPECIFICATIONS, INCREMENTAL ENCODER

Electronic option	T (TTL)	H (HTL)
Supply voltage	5Vdc	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	

SIGNAL ACCURACY

Dividing error max	±50 el°
Channel separation	90 ±20 el°
Max frequency	300 kHz
Operating temperature	-40° .. +80°C (Optional +100ºC)

CONNECTION

A	Radial 12-pin M23 Male Connector, CCW
B	Radial cable, 5m length
C	Terminal box for ø6mm-ø12mm cable

FUNCTION

Signal	A (M23)	B(Cable)	C (Terminal)
1	5	Yellow	4
2	8	Green	6
0	3	Brown	8
1 inv.	6	Grey	5
2 inv.	1	White	7
0 inv.	4	Violet	9
+E V	12	Red	1
0 V	10	Blue	2
+E V sense	2	-	-
0 V sense	11	-	-
Gnd	Chassis	Chassis	Chassis

MATING CONNECTOR

12-pin M23 Female Connector, CW

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DATA FOR ABSOLUTE OUTPUT, SSI MA4201

ELECTRICAL SPECIFICATIONS, SSI ENCODER

Supply Voltage	4,5–30 Vdc (SELV)
Clock Input	RS-422 Compatible via Optocoupler
Output Circuit	Linedriver RS422A compatible
Resolution Single Turn	12, 13 or 16 bit
Resolution Multi Turn	12, 13 or 16 bit
Multi Turn Technology	Mechanical gear
Clock Frequency	100 kHz to 2MHz
Single-Turn Accuracy	±½LSB (up to 12 bit)
Cycle Time	<25us
Power Consumption	Max. 1,5W
EMC	Emission According to EN61000-6-4:2007-09 According to EN610000-6-2:2005

CONNECTION

A	Radial 16-pin M23 Male, CCW
B	Radial cable, 5m length
C	Terminal box for ø6mm-ø12mm cable

FUNCTION

Signal	A (M23)	B (Cable)	C (Terminal)
Clock +	2	Green	2
Clock -	1	Yellow	3
Data +	3	Gray	4
Data -	4	Pink	5
Direction	8	Red	6
Preset	9	Blue	7
A	5	Black	9
A inv.	6	Violet	10
B	7	Gray-Pink	11
B inv.	10	Red-Blue	12
Z	13	White-Green	13
Z inv.	14	Brown-Green	14
+E V	11	Brown	1
0 V	12	White	16
Gnd	Chassis	Shield	Chassis

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TYPE DEFINITIONS AND ORDERING KEY MA4201

TYPE DEFINITION (INCREMENTAL)

Electronics	T	TTL
	H	HTL
Resolution	1..2500	

TYPE DEFINITION (ABSOLUTE)

Interface	S	SSI
Resolution		
Multi Turn	YY	YY bit *(00 indicates single turn)*
Single Turn	ZZ	ZZ bit
Code type	B	Binary
	G	Gray
Incremental type	0	No incremental signals
	5	TTL
	6	HTL
Pulse rate incr.	0	No incremental signals
	A	1024 ppr
	B	2048 ppr

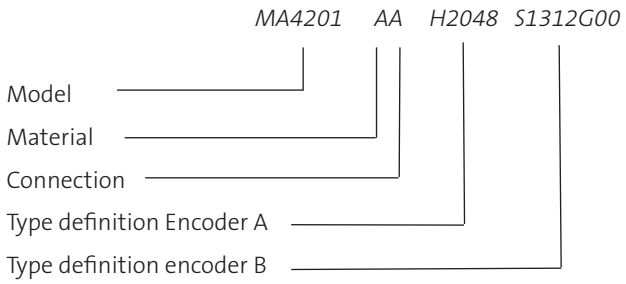
ORDERING KEY

Model - Material - Connection - Encoder A - Encoder B

Model	MA4201	
Material	S	Stainless Steel
	A	Aluminium
Connection	A	M23 Male Connector
	B	Radial, Cable 5m
	C	Terminal box (ø6mm-ø12mm cable)
Encoder A	xxxxx	Type definition, as below
Encoder B	YYYYY	Type definition, as below

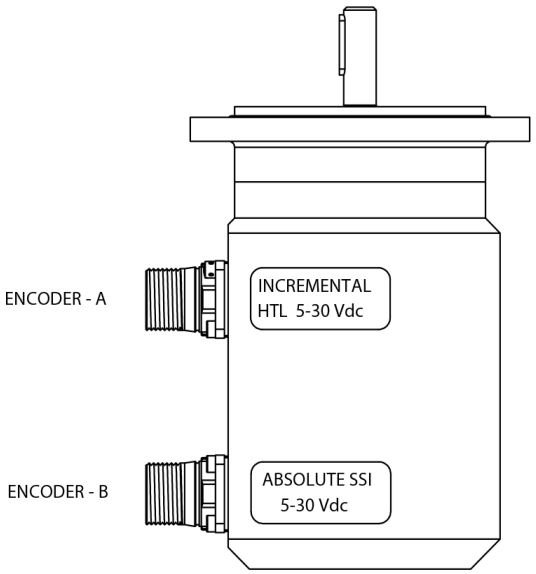
SAMPLE ORDERING KEY

MA4201-SA- T1024-H2048 (2 x incremental)
*MA4201-AA- H2048-S1312G00 (1x incremental, 1x absolute)**



DEPICTION OF LABELING AND ENCODER PLACEMENT

First encoder in ordering key (ENCODER -A) always placed nearest the shaft. Labeling showing type and supply voltage. As depicted below from sample ordering key.*



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