ROTOTECH

INTELLIGENT ENCODER

Metal Flange With In Built Incremental Encoder

Encoder Tracking on Solar Power Collectors

- **MEASURES SPEED & DIRECTION**
- **COMPACT & EASY TO FIT**
- **REDUCES FITTING COSTS**

An Easier Way of Fitting Encoders

Sectioned view of encoder connected between motor and gear reducer.

Encoder can be mounted on rear of motor or can be mounted on a standard foot and flanged motor or even other types of equipment.

No Contact between Sensor and Rotating Disc

ROTOTECH

INTELLIGENT ENCODER

ROTOTECH

Rototech

INTELLIGENT FLANGE ENCODER FOR INTELLIGENT USERS

The intelligent Flange is a pulse generator or incremental encoder that provides a simpler method of monitoring speed, position and direction of rotation and has the capability to be quickly added onto existing installations. Features include:-

- No wearing parts
- Virtually maintenance free
- Housing made of high grade aluminium or steel
- Hall-Effect sensors & surface mount electronics
- Electronics all encapsulated
- Fast and economical to fit
- IP67 Hose & dust protection
- Vibration & shock protection

This unique encoder is in the form of a thin flange that can be sandwiched between a motor and gearbox or even bolted to the free end of either. It mounts to any IEC Metric Frame Flange face of the same size without the need for special tools or expensive machining or shaft modifications.

Part 1. - Constructed from high grade alloy or steel the flange is only 7, 10 or 12 mm thick. It contains the Hall-Effect sensors and associated electronics all encapsulated into it's body for a robust and sealed design.

Part 2. - The precision built magnetic ring is placed directly onto your driving shaft and held in place by a simple tolerance ring without the need for special machining.

The encoder is encapsulated inside the flange providing maximum mechanical protection to the unit and the encoder, fitting between motor & gearbox makes for fast and economical retro-fitting.

Right:
Enlarged cut-away view of encoder connected between a motor and gear reducer.

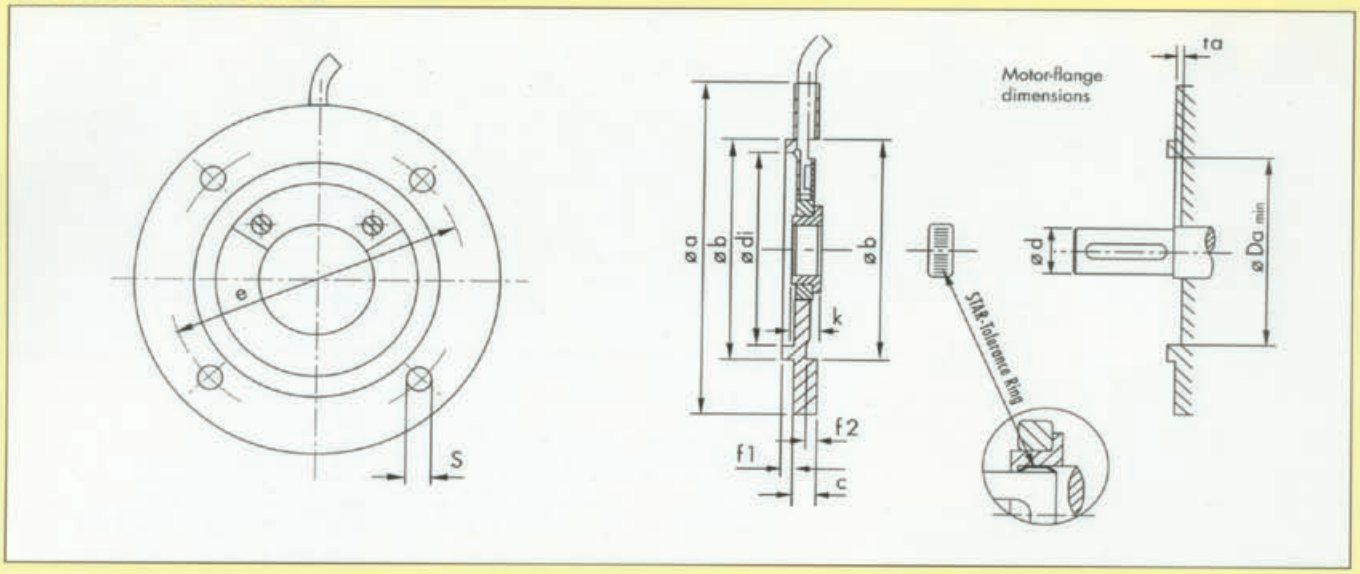
SPECIFICATIONS

- 1-1024 Pulses per rev available.
- Super compact - only 7-12mm thick, depending on flange size
- Cover all IEC Flange sizes from 80 - 450mm diameter in B5/B14 format. (metric motor frame sizes 56-225)
- Also suitable for other flange connections- ie: DC motors, clutch units, hydraulic/air motors, pumps etc.
- No wearing parts - low maintenance, high precision output.
- 10-24V DC Universal HTL or 5V DC TTL designs with quadrature output - suitable for standard monitoring configurations (NPN, PNP, RS422)
- Encapsulated SMD short circuit proof electronics protected against over voltage and inverse polarity.
- Water and dust protected to IP67 when sealed between mating surfaces
- The monitoring equipment can be placed up to 1000m away.
- Shock proof to $1000ms^{-2}$
- -40°C to 100°C.

Extensive 24 Hour Technical Support and Service

DIMENSION & ORDER SHEET

Technical Data



Dimensions

a	b	c	di	e	f1	f2	k	s
80	50	10	42	65	2.5	3	10	6
90	60	7	52	75	2.5	3	7	7
105	70	7	62	85	2.5	3	7	7
120	80	7	70	100	3	3.5	7	7
140	95	7	85	115	3	3.5	7	7
		10					10	
160	110	7	100	130	3.5	4	7	9
		10					10	
200	130	10	120	165	3.5	4	10	11
250	180	12	170	215	4	5	12	13
300	230	12	220	265	4	5	12	13
350	250	12	240	300	5	6	12	17
400	300	15	290	350	5	6	15	17
450	350	15	340	400	5	6	15	17

d x length
ø 9 x 20
ø 11 x 23
ø 9 x 20
ø 14 x 30
ø 9 x 20
ø 11 x 23
ø 19 x 40
ø 11 x 23
ø 14 x 30
ø 24 x 50
ø 14 x 30
ø 19 x 40
ø 24 x 50
ø 28 x 60
ø 19 x 40
ø 24 x 50
ø 28 x 60
ø 28 x 60
ø 38 x 80
ø 42 x 110
ø 55 x 110
ø 60 x 140

da	ta	Da
10	1	
12	2	50
10	2	60
15	2	60
10	2	60
12	2	60
20	20	60
12	2	60
15	2	60
25	3	85
15	2	60
20	2	60
25	3	90
30	3	90
20	2	90
25	3	90
30	3	90
30	3	90
40	3	120
45	3	120
60	3	180
65	3	180

Pulses

Flange ø	Shaft	2	4	10	20	100	200	1024
ø 80	ø 9		X					
ø 90	ø 11		X					
ø 105	ø 9	X	X	X	X			
ø 120	ø 9	X	X	X	X	X	X	X
	ø 11	X	X	X	X	X	X	X
	ø 19	X	X	X	X	X	X	X
ø 140	ø 11	X	X	X	X	X	X	X
	ø 14	X	X	X	X	X	X	X
	ø 24	X	X			X	X	X
ø 160	ø 14	X	X	X	X	X	X	X
	ø 19	X	X	X	X	X	X	X
	ø 24	X	X			X	X	X
	ø 28	X	X			X	X	X
ø 200	ø 19	X	X			X	X	X
	ø 24	X	X			X	X	X
	ø 28	X	X			X	X	X
ø 250	ø 28	X	X			X	X	X
ø 300	ø 38	X	X	X	X	X	X	X
ø 350	ø 42	X	X	X	X	X	X	X
ø 400	ø 55					X		
ø 450	ø 60					X		

Motor Frame Size

ORDERING DETAILS FOR MOTOR FLANGE/FRAME

PART NO	B14 Flange	B5 Flange
MIG 080	50/56	-
MIG 090	63	-
MIG 105	71	-
MIG 120	80	56
MIG 140	90	63
MIG 160	100/112	71
MIG 200	132	80/90
MIG 250	160	100/112
MIG 300	-	132
MIG 350	-	160/180
MIG 400	-	200
MIG 450	-	225

Order Example:

MIG - 200 - 24 - 20 - 2 0 0 - 2 4 - 2 0

Flange Diameter | Shaft Diameter | Pulse Number

Technical Data

Mechanical Data	
max. speed	6.000 RPM
Temperature Range: Electronics	-40 °C to 100 °C at loads ≤ 20mA (120 °C at loads ≤ 15mA)
Cable	-40 °C to 80 °C
Flange/Hub materials	Aluminium/Steel
Connection Cable	4 x 0.25 (6 x 0.14 for TTL), ø 5mm, PUR sheath
Cable Length/Plug	standard 2 m or other lengths on request
Design with plug-in connection	4 pin plug / length of cable 5 m or 10 m (NOT for TTL design)
Protection	depending on the sealing between motor and machine flange (max. IP 67 eg where sealed with silicon)
Permissible Vibration	100 m/s2
Permissible Shock	100 m/s2

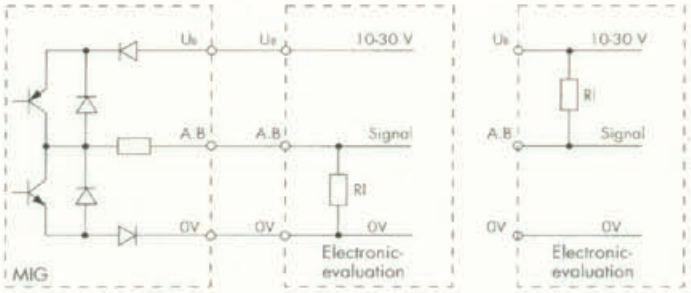
Electrical Data	Standard	TTL-Design
Voltage supply UB	10 to 24 VDC / + 20%	5 VDC / ± 5%
max. pulse frequency	20kHz	20kHz
Output Signals	Square-wave pulses (two channel) A + B	Square-wave pulses (two channel) A + B and A + B inv.
Pulse Sequence	A 90° B tolerance ± 40° el	A 90° B tolerance ± 40° el A 90° B inv. tolerance ± 40° el
Mark-to-space ratio	180° : 180° tolerance ± 20° el	180° : 180° tolerance ± 20° el
Signal Level	Uhigh ≥ UB - 4 V at loads ≤ 10 mA ULow ≤ 1 V	Uhigh ≥ 3,5 V ULow ≤ 0.3 V
Output Loading Capacity	≤ 30 mA at UB = 10 V ≤ 20 mA at UB = 24 V	max. 30 mA
Insulation resistance	100 MΩ	100 MΩ
Insulation testing	4 kV	4 kV
Short-circuit-proof	yes	no
Polarised	yes	no

Tests	
EMC-Tests	in accordance with EN 5008-1 (emission) and EN 50082-2 (immunity)

Output Signals

For determining the direction of rotation, the two rectangular pulse signals A and B are offset by 90°. Mark-to-space ratio 1:1

Signal evaluations Circuit: PNP NPN
Cable length: ≤ 100 m ≤ 100 m



Signal evaluations Circuit: RS 422
Cable length: ≤ 1000 m