

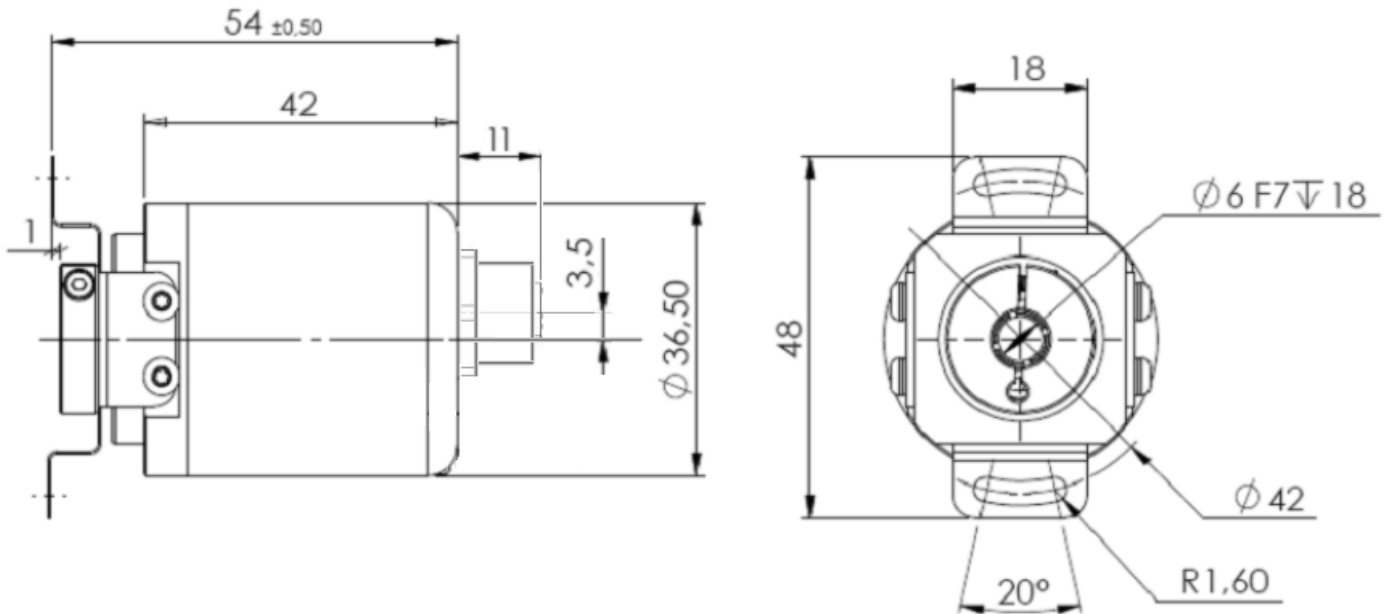
## MAGNETIC ENCODERS - SSIR ABSOLUTE MULTI TURN - THK4 RANGE

THK4 is a Ø36mm multiturn encoder with SSI interface :

- Compact and robust design.
- Blind shaft Ø 6 mm version.
- Precision sealed bearings.
- High temperature performance -30°C to 70°C.
- Hall effect technology.
- Multiturn encoding based on magnetic pulse counter. No batteries used.
- SSI interface, GRAY code.
- 12 bits resolution = 4096 steps / turn (max 14 bits).
- Number of turns : 13 bits = 8192 turns.
- Polarity inversions and surges protections.
- High integration SMD technology.



### THK4 M12 AXIAL DIMENSIONS



Recommended minimum shaft length (inserted in the blind shaft) : 8mm.  
Maximum shaft length (inserted in the blind shaft) : 18mm.

### MECHANICAL CHARACTERISTICS

Material	Cover : nickel-plated steel	Shocks (EN 60068-2-27)	≤ 100 g (demi sinus, 6 ms)
	Body : aluminium	Shocks (EN 60028-2-29)	≤ 10 g (demi-sinus, 16ms)
	Blind shaft: stainless steel	Vibrations (EN 60068-2-6)	≤ 10 g (10Hz... 1 000Hz)
Maximum loads	Axial : 40 N	Weight (approx.)	150 g
	Radial : 110 N	Operating temperature	- 30 ... + 70°C
Shaft inertia	≤ 30 g.cm <sup>2</sup>	Storage temperature	- 30 ... + 70°C
Torque	≤ 3 N.cm	Relative humidity	98 % without condensation
Max. speed (continuous)	12 000 rpm	Protection grade	IP54

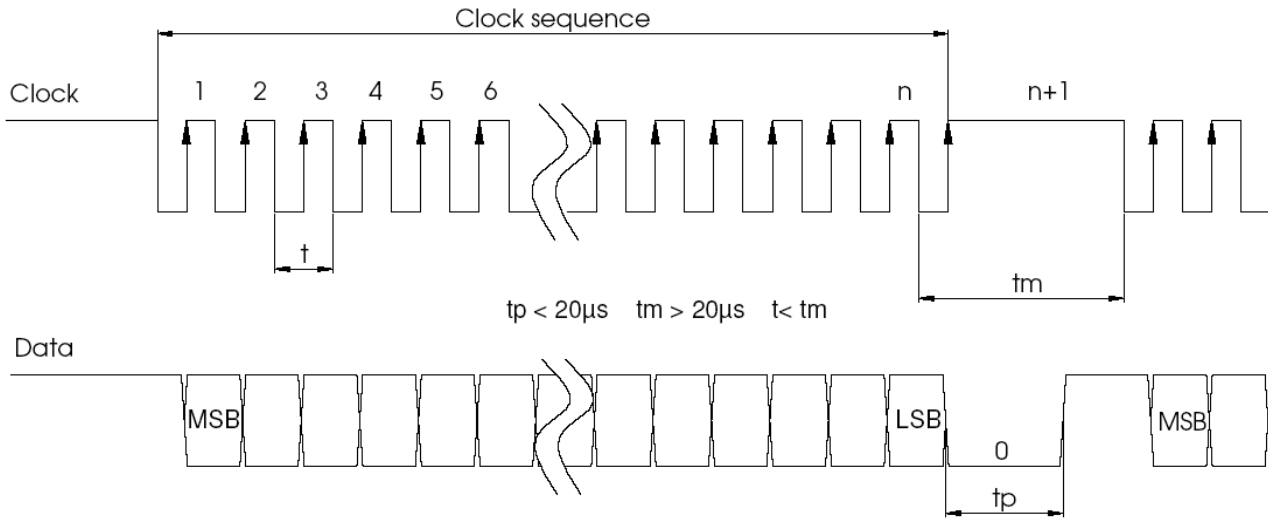
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### ELECTRICAL CHARACTERISTICS

Single turn technology	Effet Hall, 2 axis	Accuracy	+/- 1,5°
Single turn resolution	Up to 14 bits	Supply	10 – 30Vdc
Multi turn technology	Auto-supplied, magnetic count	Cycle time	< 600 µs
Multi turn resolution	Up to 200 millions of turns	Introduction	< 1 s
Input signal clock CLK	Per optocoupler	Consumption	Max : 2W
Output signal DATA	line - driver RS422	Electrical life-time	> 10 <sup>5</sup> h
Clock frequency CLK	100kHz – 2MHz	EMC	EN 61000-6-4 EN 61000-6-2

### SSI COMMUNICATION



Driver	Data according to RS422 standard ; transmission up to 10 Mbits/s
Transmission	Up to 1 200m
Safety	Signals transmission
Cable	High security of transmission by using shielded cable and twisted pairs

### SSI CONNECTION

Reference	Type	+ Vcc	0 V	Clk+	Data+	RAZ	Data-	Clk-	Direction	Ground
SC	M12 8 pinouts	2	1	3	5	7	6	4	8	Connector body

### INPUTS

Count when encoder's shaft rotates clockwise, view from body (flange) side (input resistance 10kOhms)		Sent data reset (input resistance 10kOhms)	
0 (input = NC or GND)	Increasing count	0 (input = NC or GND)	Position
1 (input = +Ub or ≥ 10V)	Decreasing count	1 (input = +Ub or ≥ 10V)	Reset after 1 second

### ORDERING REFERENCE (specific manufacture on demand. ex: flange / specific connection...)

Ex : THK4_	06	//	5	SS	G	//	12B13D5	//	SCA
Absolute multi turn encoder	Blind shaft 6mm	Supply : 11 to 30Vdc	SSI without parity	Gray code	12B13D5 : 12 bits : resolution 13 bits : number of turns D5 25 bits SSI data	M12 8 pinouts axial output			