

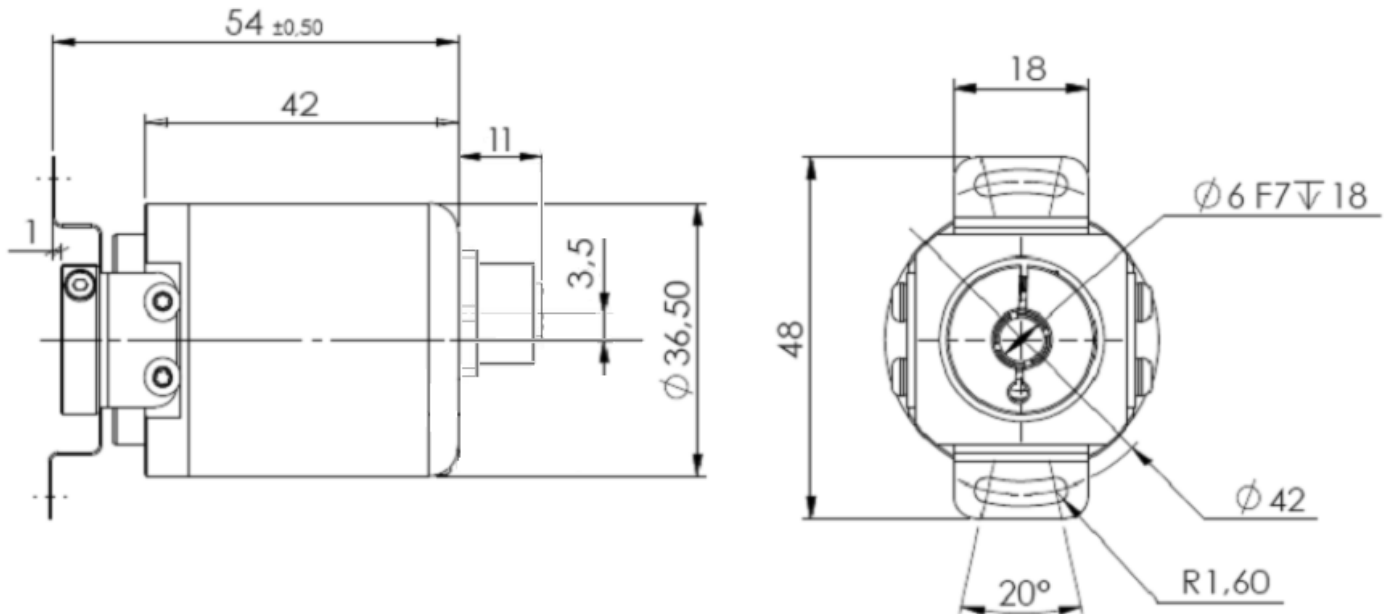
## MAGNETIC ANALOG ABSOLUTE MULTI-TURN ENCODERS - SERIE THK4

THK4, Ø36mm multiturn encoder with analog output:

- Robust and compact conception.
- Ø 6 mm blind shaft version.
- Precision ball bearings with seal.
- High temperature performances -40°C to 85°C.
- Magnetic technology encoder.
- Patented battery backup free counter.
- Analog output 4-20mA, 0-20mA, 0.5-5Vdc, 0-5Vdc or 0-10Vdc.
- Analog output calibration possibility (angle minimum 22.5°).
- Resolution : 12 bits over entire measuring range.
- Polarity inversion and over-voltage-peak protection.
- Highly integrated circuit in SMD-technology.



### DIMENSIONS: THK4\_06 AXIALM12



Minimal hollow shaft depth : 8mm.  
Maximal hollow shaft depth : 18mm.

### MECHANICAL CHARACTERISTICS

|                       |                              |                           |                           |
|-----------------------|------------------------------|---------------------------|---------------------------|
| Material              | Cover : nickel, plated steel | Shocks (EN 60068-2-27)    | ≤ 100 g (half-sine, 6 ms) |
|                       | Body : aluminium             | Shocks (EN 60028-2-29)    | ≤ 10 g (half-sine, 16ms)  |
|                       | Shaft : stainless steel      | Vibrations (EN 60068-2-6) | ≤ 10 g (10Hz... 1 000Hz)  |
| Maximal loads         | Axial : 20 N                 | Weight (approx.)          | 200 g                     |
|                       | Radial : 80 N                | Operating temperature     | - 40 ... + 85°C           |
| Shaft inertia         | ≤ 20 g.cm <sup>2</sup>       | Storage temperature       | - 40 ... + 85°C           |
| Torque                | ≤ 2 N.cm                     | Humidity                  | 98 % without condensation |
| Continuous max. speed | 12 000 min <sup>-1</sup>     | Protection class          | Cover: IP64               |

## MAGNETIC ANALOG ABSOLUTE MULTI-TURN ENCODERS - SERIE THK4



### ELECTRICAL CHARACTERISTICS

|                        |   |                      |                           |
|------------------------|---|----------------------|---------------------------|
| Single turn technology | Magnetic 2 axis Hall sensor             | Cycle period         | < 600 µs                  |
| Resolution of output   | Max 12 bits over entire measuring range | Turn on time         | < 1 s                     |
| Multiturn technology   | Self supplied magnetic pulse counter    | Current consumption  | Typical: 50mA             |
| Max. number of turns   | Programmable                            | Electrical life-time | > 10 <sup>5</sup> h       |
| Single turn accuracy   | +/- 0,35°                               | EMC                  | EN 61000-6-4 EN 61000-6-2 |
| Linearity              | 0.15 %                                  | Load resistance      | Current: <500Ohms         |
| Supply voltage         | 12 – 30Vdc                              |                      | Voltage: >10kOhms         |

### ANALOG CONNECTION

| Reference | Type             | 1             | 2    | 3   | 4     | 5     | Ground            |
|-----------|------------------|---------------|------|-----|-------|-------|-------------------|
| 00        | M12<br>5 pinouts | Analog output | +Vcc | GND | SET 2 | SET 1 | Connector<br>body |

### INPUTS

| Set 2           | Set 1           | Function                              |
|-----------------|-----------------|---------------------------------------|
| 0 (N.C. or GND) | 0 (N.C. or GND) | Normal operation                      |
| 0 (N.C. or GND) | 1 (> 12Vdc)     | Preset zero point (non turning shaft) |
| 1 (> 12Vdc)     | 0 (N.C. or GND) | Preset max point (non turning shaft)  |
| 1 (> 12Vdc)     | 1 (> 12Vdc)     | Pdefault scale (non turning shaft)    |

### ORDERING REFERENCE (Contact the factory for special versions, ex: special flanges, connections...)

| THK4_                       | 06                 | // | 5                            | I3  | 0                       | // | 00B00  | // | 00A                    |
|-----------------------------|--------------------|----|------------------------------|---|-------------------------|----|--|----|------------------------|
| Absolute multi-turn encoder | Blind shaft<br>6mm |    | Power supply:<br>12 to 30Vdc | L3 :<br>4-20mA<br>L4 :<br>0-20mA<br>L1 :<br>0-10Vdc | Programmable<br>encoder |    | Absolute multi-turn<br>encoder<br>Standard<br>configuration:<br>16 turns |    | Axial M12<br>5 pinouts |