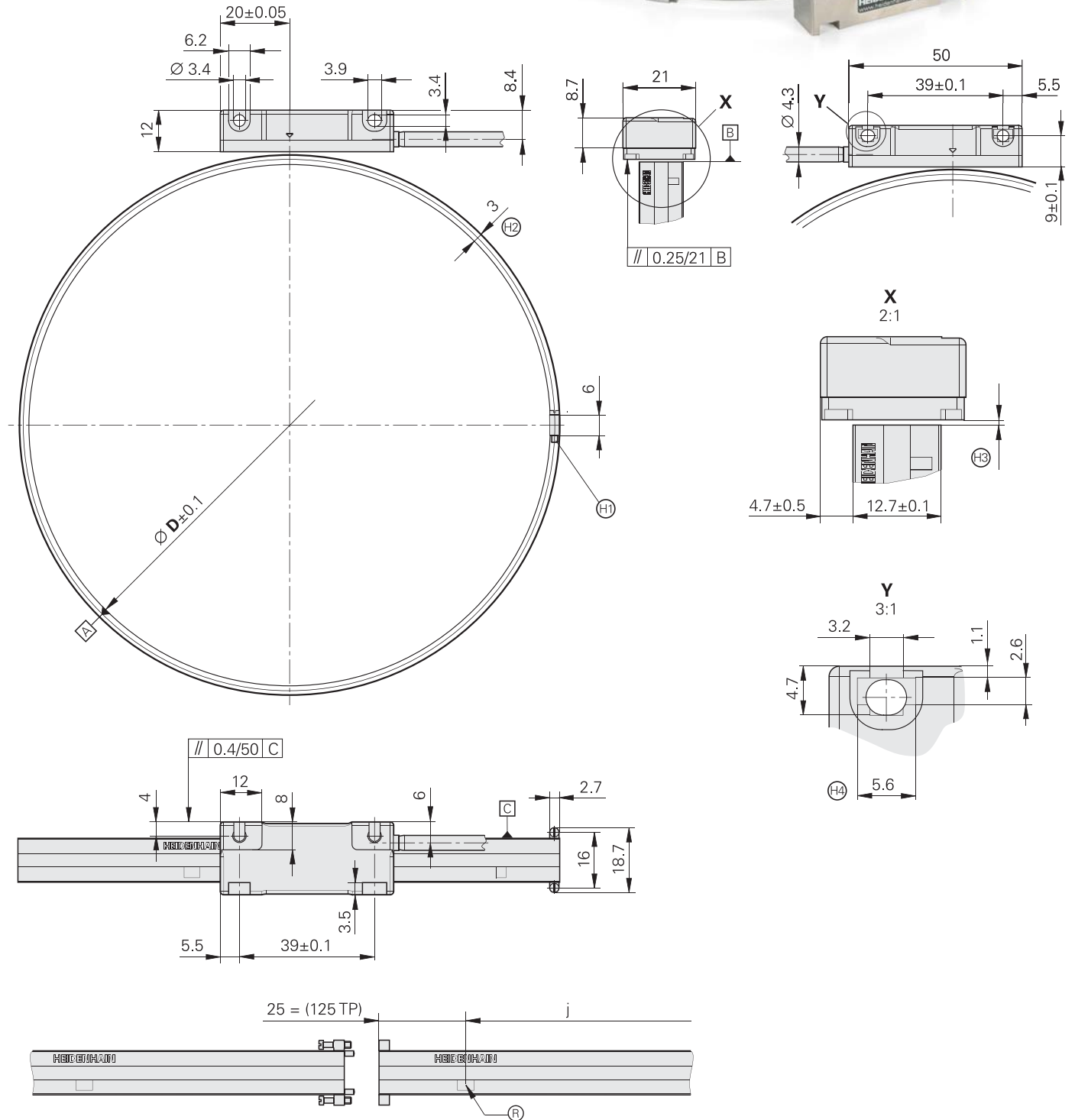



# ERA 6006 Series

## Incremental angle encoder

- Steel scale tape with elastic intermediate layer for external mounting
- Full-circle version with tensioning cleat
- Consists of scanning head and scale tape



- D** = Shaft diameter
- TP = Grating period 200 µm
- j** = Additional reference marks spaced every  $n \times 100$  mm
- R** = Bearing
- Ⓜ** = Reference mark
- Ⓜ** = M2 tensioning screw
- Ⓜ** = Scale-tape thickness
- Ⓜ** =  $D < \text{Ø } 500 = 0.75 + 0.2 / -0.1$
- Ⓜ** =  $D \geq \text{Ø } 500 = 0.75 + 0.4 / -0.2$
- Ⓜ** = Hexagonal nut as per ISO 4032-M3 SW5.6

  
 Tolerancing ISO 8015  
 ISO 2768 - m H  
 < 6 mm: ±0.2 mm

| Scanning head   | AK ERA 6080                                      | AK ERA 6070 |            |            |
|---|--|-------------|------------|------------|
| Incremental signals                                     | 1 V <sub>PP</sub>                                | x 10        | x 50       | x 100      |
| Integrated interpolation*                               | –  | 10-fold     | 50-fold    | 100-fold   |
| Cutoff frequency –3 dB                                  | ≥ 90 kHz   | –           | –          | –          |
| Scanning frequency                                      | –  | ≤ 50 kHz    | ≤ 25 kHz   | ≤ 12.5 kHz |
| Edge separation a                                       | –  | ≥ 0.465 μs  | ≥ 0.175 μs | ≥ 0.175 μs |
| Power supply  | DC 5 V ± 5%                                      |             |            |            |
| Current consumption<br>Without load                     | < 110 mA   | < 140 mA    |            |            |
| Electrical connection                                   | Cable 3 m, with D-sub connector (15-pin)         |             |            |            |
| Cable length  | ≤ 30 m (with HEIDENHAIN cable)                   |             |            |            |
| Vibration 55 to 2000 Hz<br>Shock 11 ms                  | ≤ 200 m/s <sup>2</sup><br>≤ 500 m/s <sup>2</sup> |             |            |            |
| Operating temperature                                   | 0 °C to 50 °C                                    |             |            |            |
| Protection EN 60529                                     | IP 00  |             |            |            |
| Weight (approx.)<br>Scanning head<br>Connector<br>Cable | 20 g (without cable)<br>32 g<br>30 g/m           |             |            |            |

| Scale tape   | MSB ERA 6006  |                         |                         |                         |                        |
|--|---|-------------------------|-------------------------|-------------------------|------------------------|
| Measuring standard<br>Grating period<br>Expansion factor | Steel scale tape<br>200 μm<br>$\alpha_{\text{therm}} \approx 10 \cdot 10^{-6} \text{ K}^{-1}$ |                         |                         |                         |                        |
| Scale-slot diameter*                                     | 153.35 mm   | 223.38 mm               | 312.51 mm               | 630.82 mm               | 1 140.12 mm            |
| Line count <sup>1)</sup>                                 | 2500  | 3600                    | 5000                    | 10000                   | 18000                  |
| System accuracy <sup>2)</sup>                            | ± 350"  | ± 250"                  | ± 200"                  | ± 100"                  | ± 50"                  |
| Accuracy of the graduation <sup>3)</sup>                 | ± 30 μm/m of tape length  |                         |                         |                         |                        |
| Reference marks  | Selectable every 100 mm   |                         |                         |                         |                        |
| Mech. permissible speed <sup>4)</sup>                    | ≤ 200 min <sup>-1</sup>   | ≤ 200 min <sup>-1</sup> | ≤ 200 min <sup>-1</sup> | ≤ 150 min <sup>-1</sup> | ≤ 83 min <sup>-1</sup> |
| Permissible axial motion                                 | ≤ 0.5 mm (scale tape relative to scanning head)   |                         |                         |                         |                        |
| Permissible thermal diameter change                      | ≤ ± 0.2 mm (between shaft and scale tape)   |                         |                         |                         |                        |
| Weight   | approx. 2.5 g + 45 g/m  |                         |                         |                         |                        |

\* Please select when ordering

<sup>1)</sup> Other line counts upon request (minimum 2350; maximum 18000)

<sup>2)</sup> Before installation. Additional error caused by mounting inaccuracy and inaccuracy from the bearing of the drive shaft are not included.

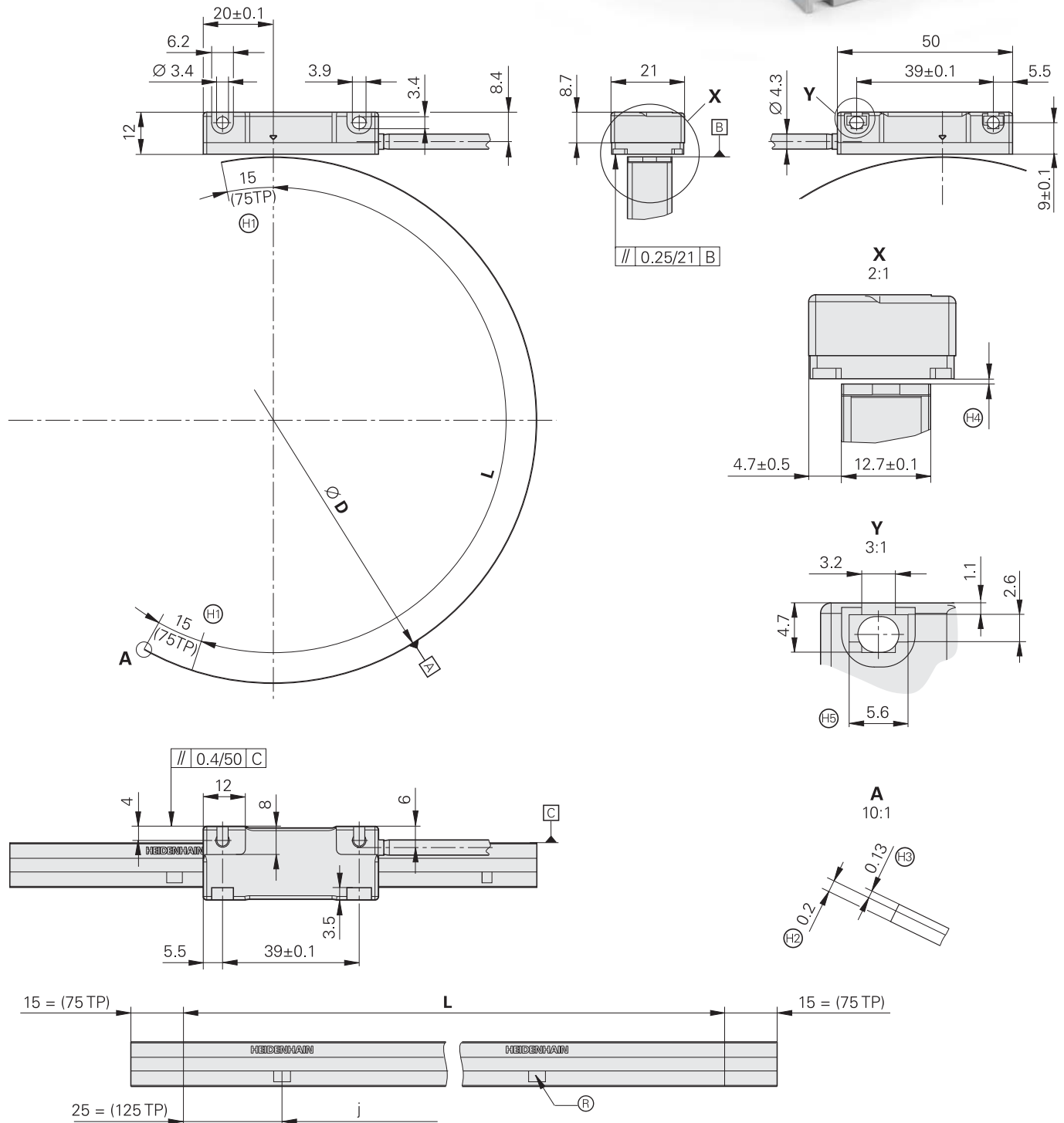
<sup>3)</sup> For other errors, see *Measuring Accuracy*

<sup>4)</sup> Higher speeds upon request

# ERA 6002 Series





## Incremental angle encoder

- Steel scale tape for external mounting
- Segment version
- Simple mounting of the scale tape by adhesive
- Consists of scanning head and scale tape



- D** = Shaft diameter
- L** = Measuring range
- TP = Grating period 200 µm
- j** = Additional reference marks spaced every  $n \times 100$  mm
- A** = Bearing
- (H)** = Reference mark
- (H)** = Allowance
- (H)** = Steel scale tape
- (H)** = Adhesive tape
- (H)** =  $D < \varnothing 500 = 0.75+0.2/-0.1$
- (H)** =  $D \geq \varnothing 500 = 0.75+0.4/-0.2$
- (H)** = Hexagonal nut as per ISO 4032-M3 SW5.6

Tolerancing ISO 8015
   
 ISO 2768 - m H
   
 < 6 mm: ±0.2 mm

| Scanning head   | AK ERA 6080   |  | AK ERA 6070  |   |
|---|---|--|--|---|
| Incremental signals                                     |  1 V <sub>PP</sub> |  TTL x 10 |  TTL x 50 |  TTL x 100 |
| Integrated interpolation*                               | –   | 10-fold  | 50-fold  | 100-fold  |
| Cutoff frequency –3 dB                                  | ≥ 90 kHz  | –  | –  | –   |
| Scanning frequency                                      | –   | ≤ 50 kHz   | ≤ 25 kHz   | ≤ 12.5 kHz  |
| Edge separation a                                       | –   | ≥ 0.465 μs   | ≥ 0.175 μs   | ≥ 0.175 μs  |
| Power supply  | DC 5 V ± 5%   |  |  |   |
| Current consumption<br>Without load                     | < 110 mA  | < 140 mA   |  |   |
| Electrical connection                                   | Cable 3 m, with D-sub connector (15-pin)  |  |  |   |
| Cable length  | ≤ 30 m (with HEIDENHAIN cable)  |  |  |   |
| Vibration 55 to 2000 Hz<br>Shock 11 ms                  | ≤ 200 m/s <sup>2</sup><br>≤ 500 m/s <sup>2</sup>  |  |  |   |
| Operating temperature                                   | 0 °C to 50 °C   |  |  |   |
| Protection EN 60529                                     | IP 00   |  |  |   |
| Weight (approx.)<br>Scanning head<br>Connector<br>Cable | 20 g (without cable)<br>32 g<br>30 g/m  |  |  |   |

| Scale tape   | MSB ERA 6002  |
|--|---|
| Measuring standard<br>Grating period<br>Expansion factor | Steel scale tape<br>200 μm<br>$\alpha_{\text{therm}} \approx 10 \cdot 10^{-6} \text{ K}^{-1}$ |
| Scale-slot diameter*                                     | ≥ 150 mm <sup>1)</sup>  |
| Line count*  | Min. 300, max. 50 000 (5 lines/mm)  |
| Accuracy of the graduation <sup>2)</sup>                 | ± 30 μm/m of tape length  |
| Reference marks  | Selectable every 100 mm   |
| Permissible axial motion                                 | ≤ 0.5 mm (scale tape relative to scanning head)   |
| Weight   | approx. 20 g/m  |

\* Please select when ordering

<sup>1)</sup> For mating diameters < 400 mm the scale tape is pre-bent

<sup>2)</sup> For other errors, see *Measuring Accuracy*

Representante oficial de:



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