



**AHE 7** Hollow Shaft  
**AFE 7** Flange Mount  
Incremental Encoder



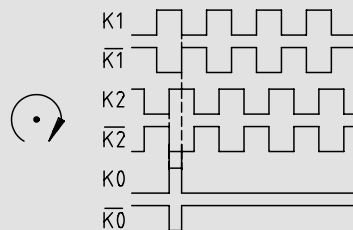
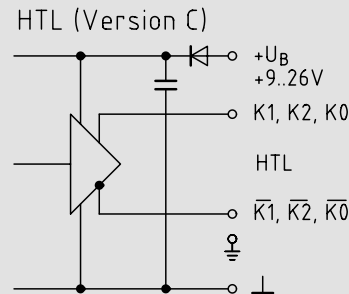
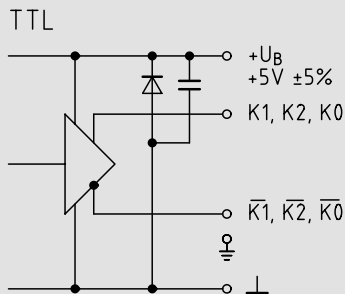
# AHE 7 • AFE 7

**Compact Incremental Encoders (Digital-Tachos) in die-cast aluminium housing with hollow shaft or flange mount for monitoring speed or position in drive systems, especially for AC motors**

- **HÜBNER / SIEI America Incremental Encoders** (Digital-Tachos) have over the years become standard in many areas of industry due to their rugged construction adapted to the application (**HeavyDuty Technology**):
- Sensing by **opto-ASIC**, compensated for **temperature** and **aging**
- **EMC** in compliance with CE regulations
- High **vibration** and **shock resistance in accordance with** IEC 60068-2-6 and IEC 60068-2-27
- **2 years warranty** within the conditions of the German Electrical Manufacturer's Association (ZVEI)
- **ISO 9001** certified

### Special features:

- Compact **aluminium housing**
- *Rugged incremental metal disk*
- **Servo flange** and shaft 0.375": **AFE 7**
- **Hollow shaft max. 0.55"** (0,5" stock): **AHE 7**
- Internal **terminal strip**
- **Logic level TTL** (RS-422) or **logic level HTL** (version C with line driver IC)
- Protection **IP 56**
- Award for good **Industrial Design iF 1995**, registered design no. M 93 05.067.4 • M 94 04.528.3



### Ordering key

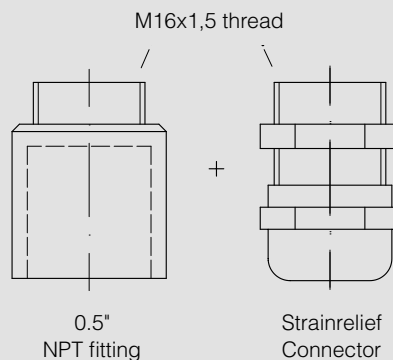
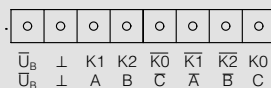
<b>AHE 7 / AFE 7 DN ... TI</b>	strain relief connector 0.5" NPT fitting	two inverted TTL signals, displaced by 90°, with marker pulse
<b>AHE 7 / AFE 7 DN ... CI</b>	strain relief connector 0.5" NPT fitting	two inverted HTL signals, displaced by 90°, with marker pulse

Square-wave cycles per turn

## General data

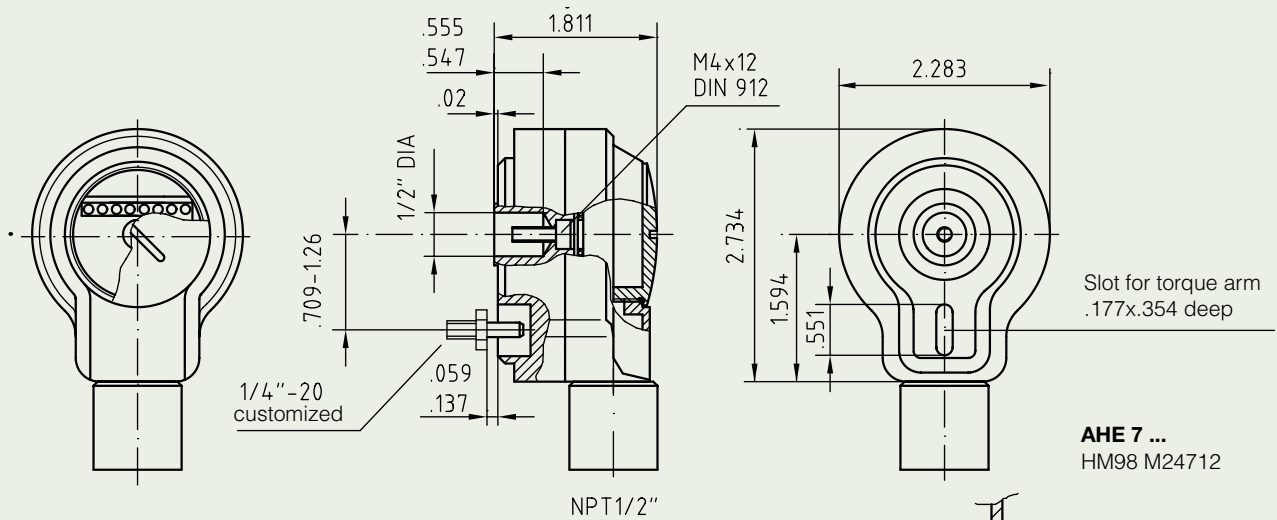
<b>Square-wave cycles/turn</b>	z	<b>1024 stock</b> 60, 64, 100, 128, 180, 192, 200, 256, 360, 400, 500, 512, 600, 720, 1000, 2048, 2500, 5000 other versions on request
<b>Switching frequency</b>	f <sub>max</sub>	120 kHz
<b>Maximum speed</b>	rpm	electronic: $\frac{7,2 \cdot 10^6}{z}$ mechanical: 10000
<b>Logic level</b>		<b>HTL</b> (Version C) <b>TTL</b> (RS-422)
<b>Supply voltage</b>	U <sub>B</sub>	+9 ... +26 V      +5 V ± 5 %
<b>Current consumption at no-load</b>		≈ 100 mA      ≈ 100 mA
<b>Maximum load current per channel</b>	I <sub>source</sub> = I <sub>sink</sub>	60 mA average 150 mA peak      25 mA average 75 mA peak
<b>Output amplitude</b>		U <sub>Low</sub> ≤ 3 V; U <sub>High</sub> ≥ U <sub>B</sub> - 3,5 V      U <sub>Low</sub> ≤ 0,5 V; U <sub>High</sub> ≥ 2,5 V
<b>Mark space ratio</b>		1 : 1 ± 20 %
<b>Square wave displacement</b>		90° ± 20°
<b>Rise time</b>		≥ 10 V/μs
<b>Moment of inertia</b>		≈ 55 gcm <sup>2</sup>
<b>Driving torque</b>		≈ 1 Ncm
<b>Maximum shaft load</b>		AHE 7    axial 40 N    radial 30 N AFE 7    axial 50 N    radial 60 N
<b>Vibration resistance (10 Hz ... 2 kHz)</b>		≤ 100 m/s <sup>2</sup> ≈ 10 g      IEC 60068-2-6
<b>Shock resistance (6 ms)</b>		≤ 1000 m/s <sup>2</sup> ≈ 100 g      IEC 60068-2-27
<b>Permissible encoder temperature</b>		-30 °C ... +70 °C
<b>Protection class</b>		IP 56      IEC 60529
<b>Weight</b>		AHE 7 ≈ 0.33 lbs. (240 g) AFE 7 ≈ 0.44 lbs. (380 g)

Die elektrischen Daten gelten im gesamten zulässigen Temperaturbereich.  
*The electrical data apply over the entire permissible temperature range.*



### Accessories:

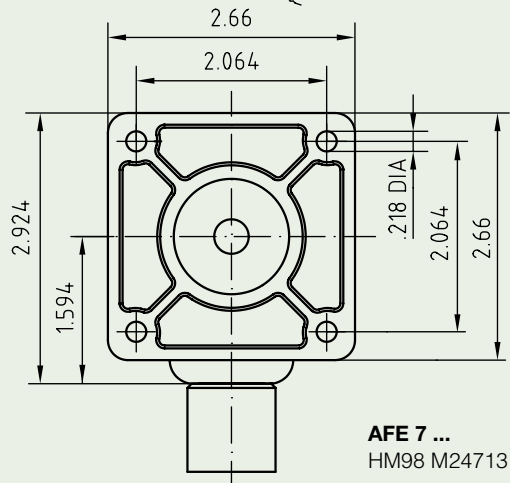
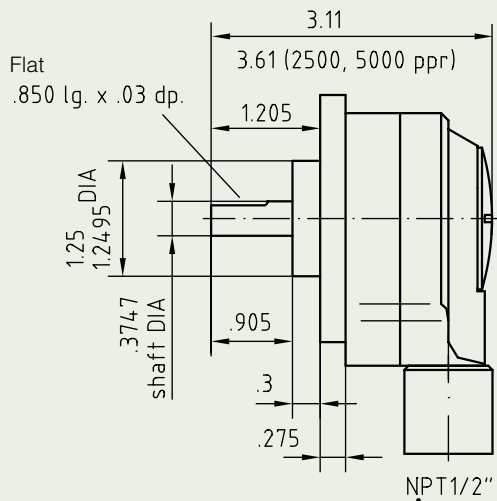
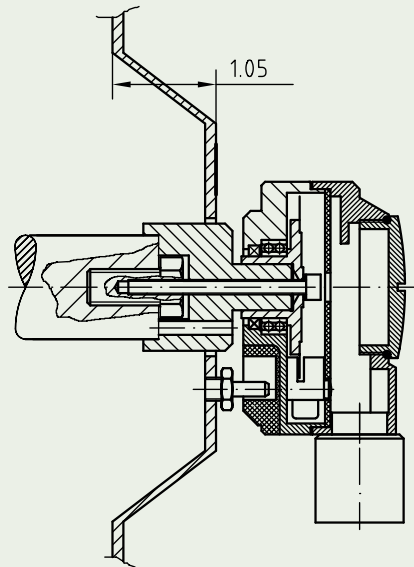
- Torque arm
- Cable and plug HEK 8
- Spring disk coupling
- Frequency-analogue converter HEAG 121 P
- Opto coupler / logic converters HEAG 151 → HEAG 154
- Fiber optic links HEAG 171 → HEAG 176



**AHE 7 ...**  
HM98 M24712

The following mounting kits are available for the AHE 7 hollow-shaft encoders:

- # AHE 7-320-MK    GE DC Motors, Frames 180 - 320 (shown)  
                          GE Type KAF AC Motors, Frames 180 - 320  
                          Baldor and USEM DC Motors, Frames 180 - 500
- # AHE 7-360-MK    GE DC Motors, Frames 360
- # AHE 7-400-MK    GE DC Motors, Frames 400  
                          GE Type KAF AC Motors, Frames 360 - 500
- # AHE 7-500-MK    GE DC Motors, Frames 500  
                          GE Type KAF AC Motors, Frames 580 - 8511
- # AHE 7-MAR-MK    Marathon Black Max AC Motors, Frames 56 - 280, TENV only  
                          Marathon Blue Max AC Motors, Frames 140 - 250, TENV only



**AFE 7 ...**  
HM98 M24713