

EK

ENCODER KIT

SERIES EK624

Rugged, large-bore two-channel magnetic encoders are custom-configured for high performance in harsh environments.

Admotec's Series EK624 magnetic kit encoders provide high performance in applications where optical encoders don't work or don't last. Each kit consists of a custom-configured magnetic encoder wheel and a matched magnetoresistive sensor with line-driver outputs for two incremental channels in quadrature. Three-channel versions (with marker) are available as Series EK634.

With wheel diameters from 50 to 100mm and an ID sized to fit your application, EK624 encoders are perfect for high-resolution feedback on hollow-shaft motors, high-speed spindles, or any rotating shaft up to 92mm in diameter. These rugged quadrature encoders provide up to 10 times the resolution of comparable gear-tooth sensors in the same applications and are an ideal solution for velocity control of AC motors, engine testing, general purpose speed and velocity feedback, etc.

Series EK624 encoders are individually configured for your application and install quickly and easily without the delicate alignment associated with optical encoders. Choose from over 25 combinations of resolution, wheel OD, and operating airgap—just specify the wheel ID required in your application. And if a standard EK624 encoder doesn't meet your needs, completely customized units can be quickly designed to your requirements.

Admotec—motion and position sensing for original equipment manufacturers.

FEATURES & BENEFITS

| | |
|---|--|
| Large through-hole capability | Economical position sensing of large diameter and hollow shafts. |
| Rugged construction | Reliable operation in harsh environments: high shock and vibration, dust, oil, moisture, and salt spray. |
| All-digital electronics | No mechanical adjustments. |
| Line driver outputs | High noise immunity. |
| Tangential sensing | Tolerates ± 1 mm axial end-play without loss of signal. |
| Resolution to 2,048 CPR (cycles per revolution) | Performance not previously available with magnetic technology. |

GENERAL SPECIFICATIONS

| | | |
|------------------------|---------------|---------------|
| Operating Temperature | -40 to +115 | °C |
| Maximum Speed | 9,000 | RPM |
| Radial Air Gap | 0.11 – 0.53 | mm nominal |
| Wheel OD | 50 – 100 | mm |
| Resolution | 240 – 2,048 | Cycles/Rev. |
| Channel Frequency | 500 | kHz max. |
| Quadrature | 90 \pm 30 | ° electrical |
| Supply Voltage | 5.0 \pm 10% | V dc |
| Supply Current | 50/200 | mA typ./max. |
| Output Load Resistance | 100 | Ω min. |

ORDERING INFORMATION

EK624- □ □ □ □ - □ □ □ □

Configuration

Factory-assigned number for each application

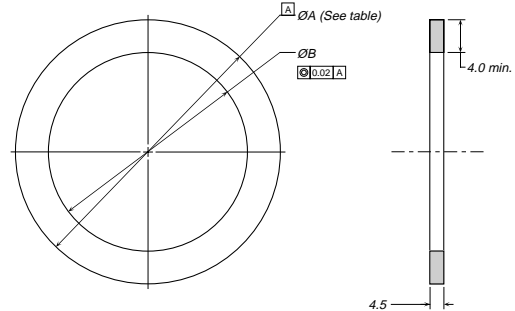
Resolution (CPR)

240, 250, 256, 300, 360, 400, 450, 480, 500, 512, 600, 720, 750, 800, 900, 1000, 1024, 1200, 1440, 1500, 1800, 2000, 2048

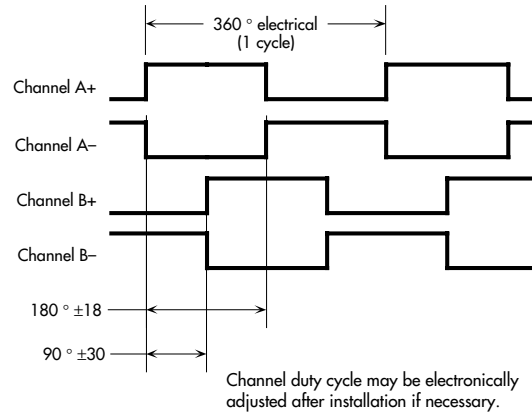
AVAILABLE RESOLUTIONS, WHEEL DIAMETERS, & AIRGAPS*

| CPR | Airgap 0.53±0.23 | Airgap 0.32±0.14 | Airgap 0.18±0.08 | Airgap 0.11±0.05 | Minimum ØB (% of ØA) |
|-------|---------------------|---------------------|---------------------|---------------------|----------------------------|
| | ØA | ØA | ØA | ØA | |
| 240 | 56.4 | — | — | — | 0.0 |
| 250 | 58.8 | — | — | — | 0.0 |
| 256 | 60.2 | — | — | — | 0.0 |
| 300 | 70.8 | — | — | — | 0.0 |
| 360 | 85.1 | 51.6 | — | — | 0.0 |
| 400 | 94.7 | 57.4 | — | — | 9.4 |
| 450 | — | 64.7 | — | — | 19.4 |
| 480 | — | 69.0 | — | — | 24.5 |
| 500 | — | 71.9 | — | — | 27.5 |
| 512 | — | 73.7 | — | — | 29.2 |
| 600 | — | 86.5 | — | — | 39.6 |
| 720 | — | — | 57.1 | — | 49.7 |
| 750 | — | — | 59.5 | — | 51.7 |
| 800 | — | — | 63.5 | — | 54.7 |
| 900 | — | — | 71.5 | — | 59.7 |
| 1,000 | — | — | 79.4 | — | 63.8 |
| 1,024 | — | — | 81.4 | — | 64.6 |
| 1,200 | — | — | 95.4 | 57.8 | 69.8 |
| 1,440 | — | — | — | 69.5 | 74.8 |
| 1,500 | — | — | — | 72.4 | 75.8 |
| 1,800 | — | — | — | 86.9 | 79.9 |
| 2,000 | — | — | — | 96.6 | 81.9 |
| 2,048 | — | — | — | 98.9 | 82.3 |

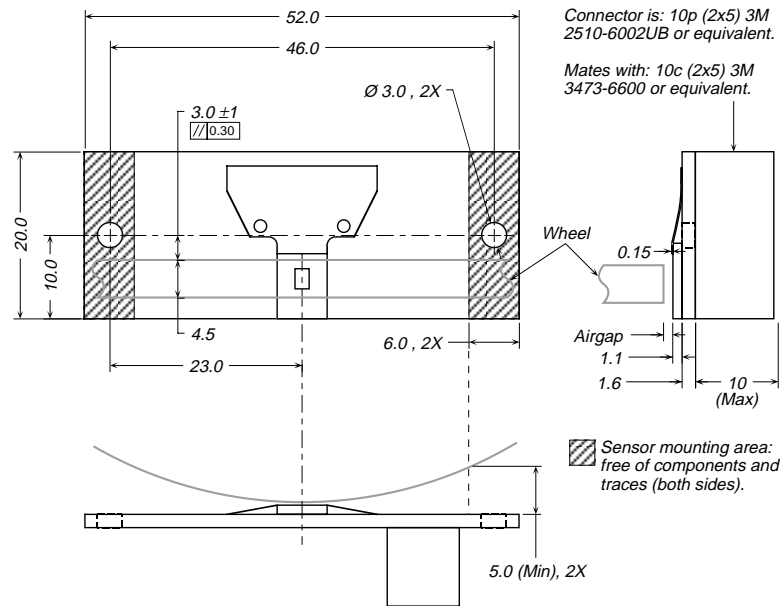
WHEEL DIMENSIONS*



OUTPUT SIGNAL FORMAT



OUTLINE AND MOUNTING DIMENSIONS*



ELECTRICAL PINOUT†

| Pin | Signal Description |
|-----|--------------------|
| 1 | +5V (Power input) |
| 2 | +5V (Power input) |
| 3 | 0V (Common) |
| 4 | 0V (Common) |
| 5 | Channel A- |
| 6 | Channel A+ |
| 7 | Channel B- |
| 8 | Channel B+ |
| 9 | Not Used |
| 10 | Not Used |

†Compatible with HP HEDL-xxxx series encoders.