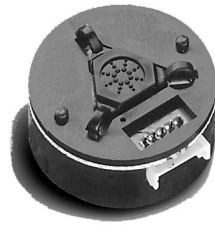


HEDR-542x Miniature Reflective Optical Encoder

Product Brief



Introduction

Avago's optical encoders are used in a variety of motion control applications to provide position, velocity and direction sensing.

About the Products

The HEDR-542x is an easy-to-mount, high-performance, reliable, two-channel encoder.

The HEDR-542x offers a resolution of 200 counts per revolution, featuring typically less than 15 electrical degrees pulse width error (PWE) and less than 30 electrical degrees for combined phase and state width error.

The HEDR-542x is ideal for equipment using small and miniaturized motors, operating within the 0°C to +85°C temperature range, and operating from a 5-volt supply.

Product Mechanism

HEDR-542x encoders translate the rotary motion of a shaft into a two-channel digital quadrature output. The light emitted from a LED is focused onto a reflective codewheel. As the shaft moves, the codewheel rotates, reflecting light from an alternating bright and dark pattern. The transitions are detected by a photodetector IC.

Features and Benefits

- PWE <15 degrees
SWE <30 degrees
 - Accurate system control
- Small footprint
 - Saves space on PCB; can be used in small motor system where space is a constraint
- Cost effective solution
 - Value added at low cost
- Several mounting options are available
 - Press fit, set screw and mounting ears to suit design and size of motors
- Easy assembly
 - Shortens assembly time

Typical Applications

- Vending machines
- Volumetric dispenser
- Card readers (automated teller machines)
- Robotics
- Security camera controls
- Paper feed control (office automation)

Avago Miniaturized Reflective Optical Kit Encoder Product Selection

| Part Number | Resolution | Shaft Size | Connector | Hub |
|-----------------|------------|-----------------|-------------|---------------------------------|
| HEDR-5420-ES201 | 200 CPR | 0.08" (2 mm) | Axial | Set screw with mounting ears |
| HEDR-5420-ES202 | 200 CPR | 0.12" (3 mm) | Axial | Set screw with mounting ears |
| HEDR-5420-ES203 | 200 CPR | 0.13" (3.30 mm) | Axial | Set screw with mounting ears |
| HEDR-5420-ES211 | 200 CPR | 0.16" (4 mm) | Axial | Set screw with mounting ears |
| HEDR-5420-ES214 | 200 CPR | 0.20" (5 mm) | Axial | Set screw with mounting ears |
| HEDR-5421-EP111 | 200 CPR | 0.16" (4 mm) | Right Angle | Press fit without mounting ears |

Schematics of Typical Applications of HEDR-542x

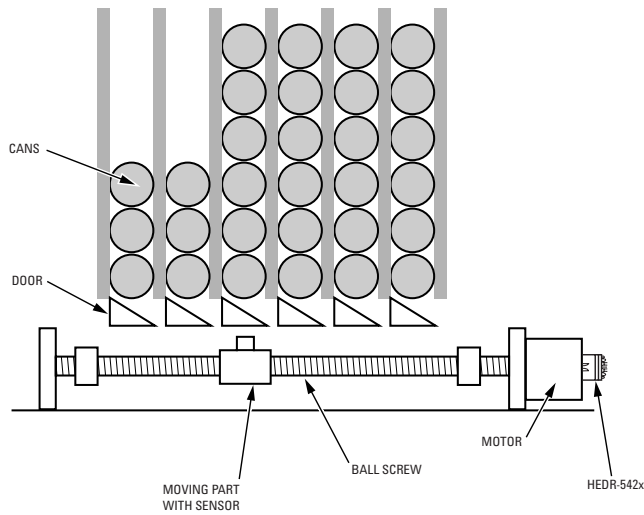


Figure 1. Encoder Used in a Vending Machine.
(drawing not to scale)

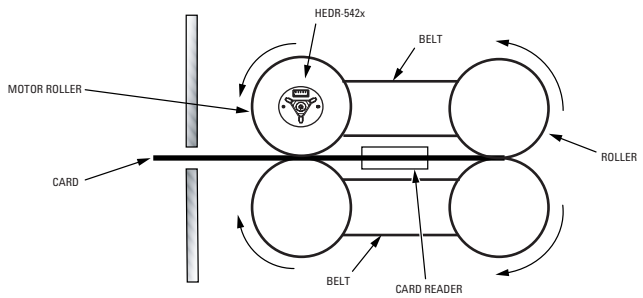


Figure 2. Encoder Used in a Banking Autoteller Machine.
(drawing not to scale)

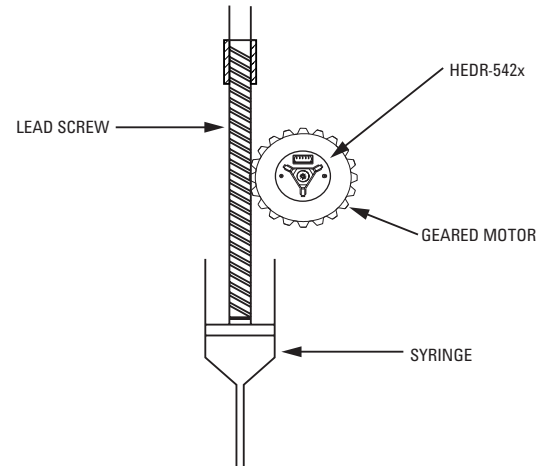


Figure 3. Encoder Used in a Volumetric Dispenser Machine.
(drawing not to scale)

For product information and a complete list of distributors, please go to our web site:
www.avagotech.com

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