



**Versatile linear magnetic encoder systems for precise performance in harsh or difficult environments.**

Admotec’s E Series linear magnetic encoders provide high performance in measurement and feedback applications where optical scales don’t work or don’t last. Consisting of a self-adhesive stainless-steel-backed magnetic tape and a magnetoresistive sensor with built-in resolution-enhancing interpolator, E Series linear encoders are easy to integrate into your linear motion application. With two different pole-pitch tapes and over ten interpolation choices, resolutions between 0.5 and 200  $\mu\text{m}/\text{edge}$  can be chosen to match any control requirement.

Differential incremental and marker signals on three meters of oil-resistand cable terminated in a pre-wired D-connector ensure fast and error-free connection to any motion controller, readout, PLC, drive, etc.

In addition to the standard configurations shown here, several options are available on special order. These include magnetic tape pre-installed in an extruded aluminum channel, custom marker positioning relative to tape ends, and analog sine and cosine output signals at  $\pm 1\text{Vpp}$  levels. Please contact Admotec for more information on these optional configurations.

**Admotec—motion and position sensing for original equipment manufacturers.**

**E SERIES LINEAR**

**LINEAR ENCODERS**

**TYPICAL APPLICATIONS**

- Presses
- Textile Machines
- Woodworking Machinery
- Machine Tools
- Sheet Metal Machines
- Packaging Machines
- Paper and Converting Machines
- Marking Machines
- Medical Systems
- Plastics Machinery
- Stages and XY Tables
- Industrial Automation

**FEATURES & BENEFITS**

Non-contact design	No wear.
Enclosed (IP67 rated) magnetoresistive sensor	Immune to dust, dirt, oil, water, condensation, etc.
Integrated interpolator	Increased resolution
Large airgap between sensor and tape	Easy installation and alignment.
Rugged construction	Tolerates high vibration and shock.

**GENERAL SPECIFICATIONS**

Resolution	Up to 0.5 $\mu\text{m}/\text{edge}$
Accuracy	$\pm 10\mu\text{m}$
Maximum Speed	10 meter/second
Channel Frequency	5 MHz maximum
Operating Temperature	0 to 50°C
Airgap	0.3mm or 0.8mm nominal
Tape Length	Up to 10 meters/segment
Supply Voltage	5.0 $\pm$ 0.25 Vdc
Supply Current	150/250 mA typ./max.



# ES

## E SERIES SENSOR

### LINEAR ENCODERS

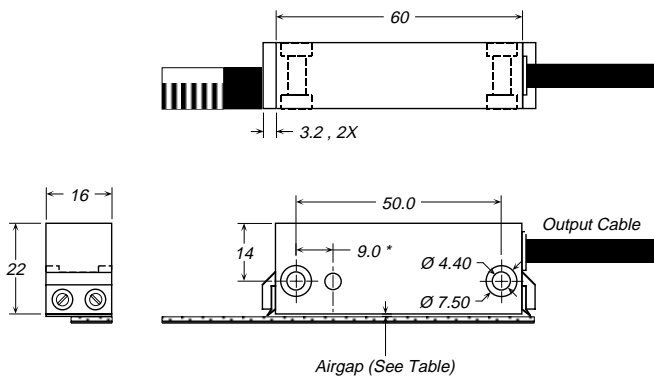
E Series sensors are supplied in a CE approved IP67-rated aluminum housing with a stainless steel bottom. Two adjustable wipers, one on each end of the sensor, provide light cleaning action as the sensor moves.

Electrical connections are via a 3 meter oil-resistant cable terminated in a 9-pin male D-connector (with jack screws) which may be removed for direct connection. Available in two models, the ES1000 sensor is used with ET1000 (1mm) pole tape and the ES2000 sensor is used with ET2000 (2mm) pole tape. Different interpolation factors are available to provide the desired final resolution.

#### INTERPOLATION FACTORS AND RESOLUTIONS

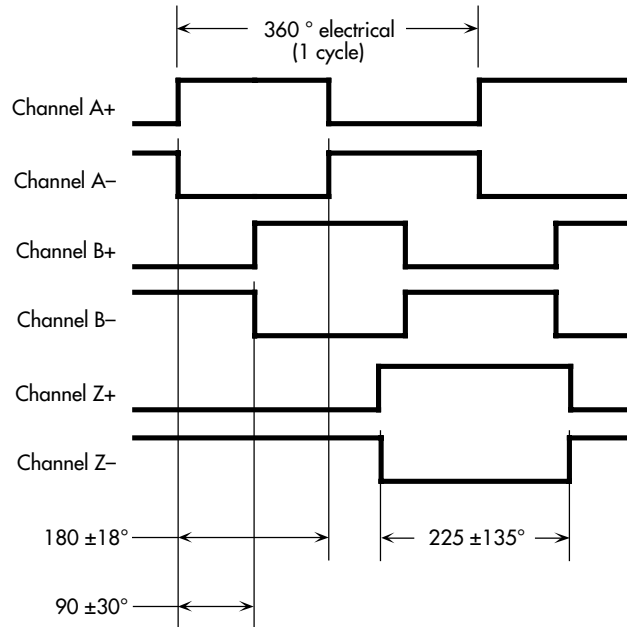
Interpolation Factor (Cycles/Pole)	ES1000 Resolution ( $\mu\text{m}/\text{edge}$ )	ES2000 Resolution ( $\mu\text{m}/\text{edge}$ )
500	0.5	1.0
250	1.0	2.0
200	—	2.5
125	2.0	4.0
100	2.5	5.0
50	5.0	10.0
25	10.0	20.0
20	—	25.0
10	25.0	50.0
5	50.0	100.0
2.5	100.0	200.0

#### OUTLINE & MOUNTING DIMENSIONS\*



\* All dimensions in mm.

#### OUTPUT SIGNAL FORMAT



#### CONNECTOR PINOUT (DB9M)

Pin	Signal Description	Wire Color
1	Channel Z+	Brown
2	Channel Z-	Black
3	+5V (Power input)	White
4	Shield Drain	—
5	0V (Common)	Blue
6	Channel A+	Red
7	Channel A-	Orange
8	Channel B-	Green
9	Channel B+	Yellow

#### ORDERING INFORMATION

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**Pole Pitch**  
1000 = 1mm poles  
2000 = 2mm poles

**Interpolation Factor**  
500, 250, 200, 125, 100,  
50, 25, 20, 10, 5, 2.5



# ET

## E SERIES TAPE

### LINEAR ENCODERS

E Series linear magnetic tape is laminated to a flexible stainless steel strip with an adhesive backing for direct mounting to any clean flat surface. ETxxxxP tape provides a thin plastic protective covering on the top surface for light to medium-duty applications. For more robust requirements, ETxxxxS tape provides a thicker stainless steel top covering for increased protection. Lengths up to 10 meters are available as a single segment; longer lengths require multiple segments. Plastic caps to protect tape ends are provided.

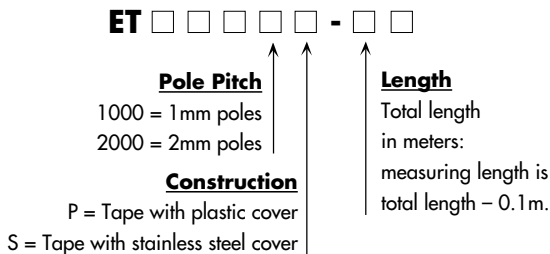
E Series linear magnetic tape is available with two different magnetic pole spacings to match the selected sensor. ET1000 tape has 1000µm (1mm) poles for use with ES1000 sensors; ET2000 tape has 2000µm (2mm) poles for use with ES2000 sensors. A second track on the tape provides a marker (Z) signal every 100mm.

The required airgap between sensor and tape is shown in the table below.

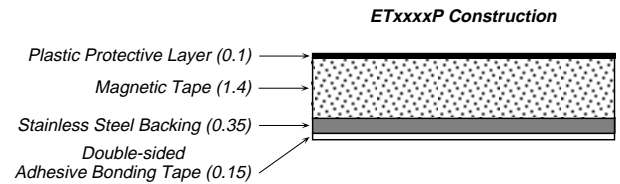
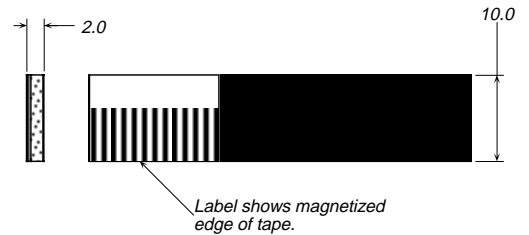
#### TAPE-TO-SENSOR AIRGAP

Tape	Sensor	Nominal Airgap (mm)
ET1000P	ES1000	0.30
ET1000S	ES1000	0.20
ET2000P	ES2000	0.80
ET2000S	ES2000	0.70

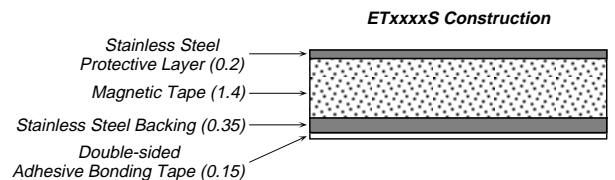
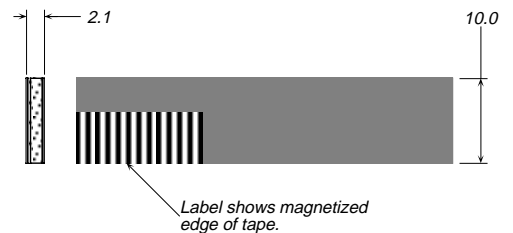
#### ORDERING INFORMATION



#### ETxxxxP DIMENSIONS\* & CONSTRUCTION



#### ETxxxxS DIMENSIONS\* & CONSTRUCTION



\* All dimensions in mm.



**E S E R I E S L I N E A R**

**L I N E A R E N C O D E R S**

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