AEDL-5xxx & AEDL-981X
High Resolution Kit Encoders (AEDL-5xxx Series) and Module Encoders (AEDL-981X Series)

Data Sheet

Avago
T E C H N O L O G I E S

Description

Avago Technologies' AEDL-5xxx and AEDL-981x series encoders are high performance, low cost, three channel optical incremental encoders which offer line driver outputs. These encoders are designed with an emphasis on high reliability, high resolution, and easy assembly.

Each encoder contains a LED source with lens, an ASIC with integrated photo detector arrays, LED current regulation, interpolator and output driver circuitry, and a code wheel which rotates between the emitter and detector ASIC. The outputs of the AEDL-5xxx and AEDL-981x are two square waves in quadrature. In addition, a third channel offers index signal, which is a 90 electrical degree, true index pulse which is generated once for each full rotation of the code wheel. The AEDL-5xxx series utilizes a film code wheel allowing for resolutions to 5000 CPR.

The line driver output option offers enhanced performance when the encoder is used in electronically noisy environments, or when it is required to drive long distances. Both the AEDL-5xxx and AEDL-981x series utilize an industry standard line driver IC, AM26C31Q, which provides complementary outputs for each encoder channel. Thus, the output of the line driver encoder is A, A/, B, B/, I, I/. Suggested line receivers are 26LS32 and 26LS33.

Standard resolutions between 2000 up to 5000 counts per revolution are presently available. Please consult your local Avago sales representatives for other resolutions.

For additional information, please refer to:

i) AEDT-981x Datasheet (AV02-4924EN)
ii) AM26C31Q datasheet

Features

- Available with both Encoder Modules (AEDL-981X Series) and Encoder Kit Housing (AEDL-5xxx Series)
- High resolution – up to 5000 CPR
- High operating temperature – 115°C (AEDL-981X series)
- User friendly installation process (AEDL-5xxx Series)
- Complementary Outputs with industry standard Line Driver IC
- Single 5 V Supply with ±10% tolerance
- Onboard decoupling capacitor for enhance noise immunity

Note: Avago Technologies encoders are not recommended for use in safety critical applications such as. ABS braking systems, power steering, life support systems and critical care medical equipment. Please contact our sales representative if clarification is needed.

CAUTION: *It is advised that normal static precautions be taken in handling and assembly of this component to prevent damage and/or degradation which may be induced by ESD.*
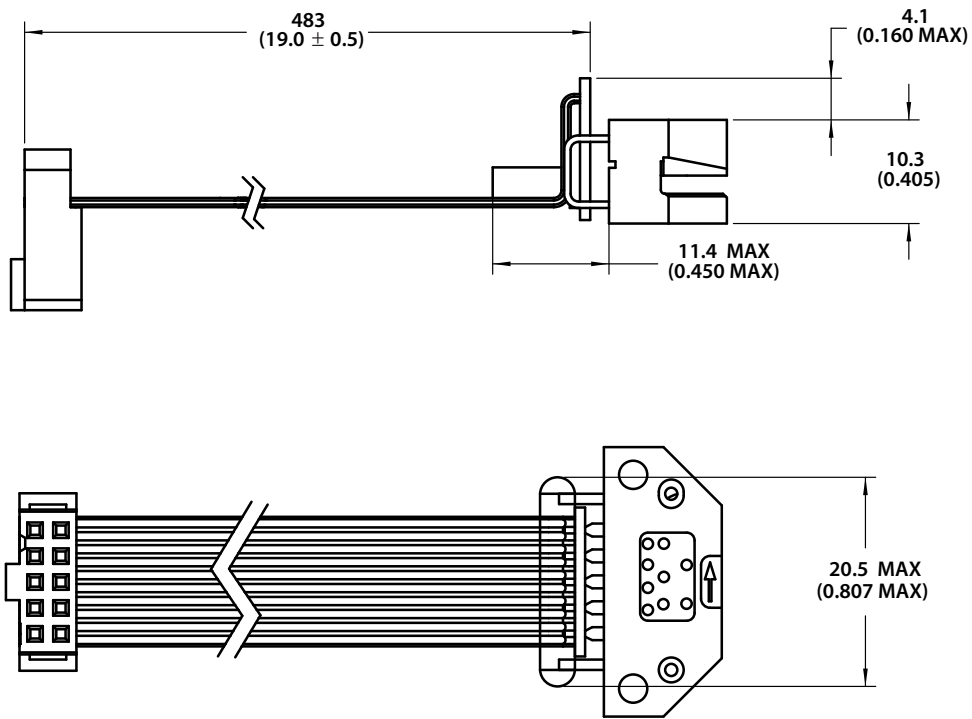
Package Dimensions

For Detailed Dimensions on encoder packages please refer to the respective data sheets.

Package Dimensions - AEDL-5810-01
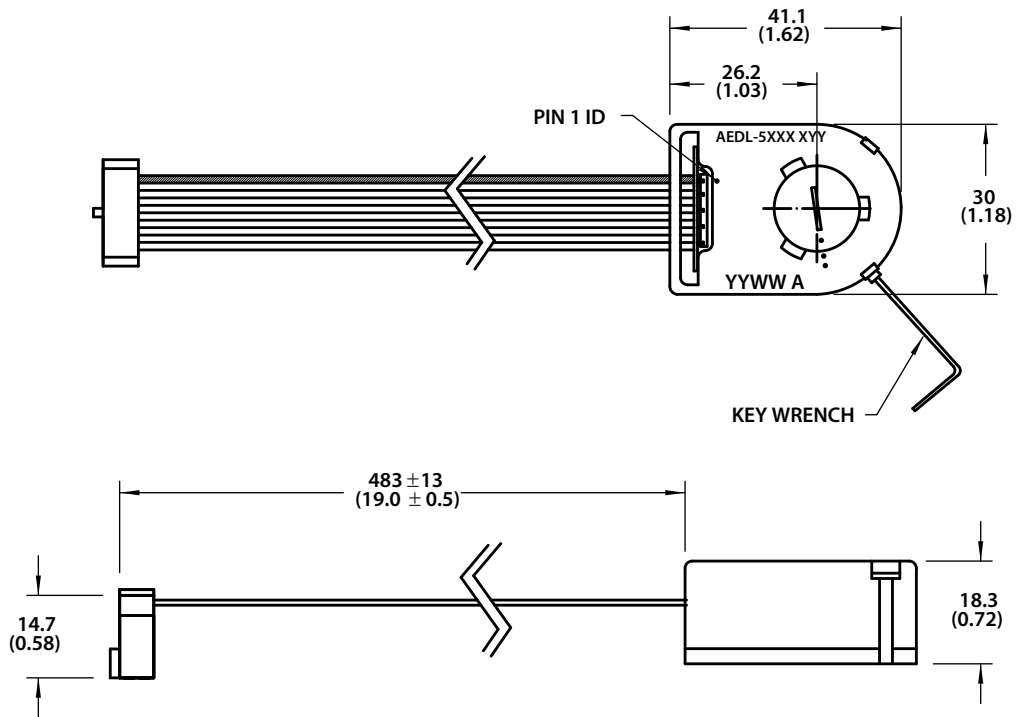

Package Dimensions - AEDL-9810-01

NOTE: DIMENSIONS IN MILLIMETERS (INCHES)

Device Characteristics

Parameter	Characteristic	Notes
Termination	10 conductor ribbon cable with10 position IDC connector	See pinout diagram
Electrical Outputs	Complementary outputs: A, A/, B, B/, I, I/	
Line Driver Components	AM26C31QDR line driver IC, comes with decoupling capacitor on PC board.	
Operating Temperature Range	-40°C to 85° C (AEDL-5xxx series)	
	-40°C to 115° C (AEDL-981x series)	
Storage Temperature	-40°C to 85° C (AEDL-5xxx series)	
	-40°C to 125° C (AEDL-981x series)	

Block Diagram
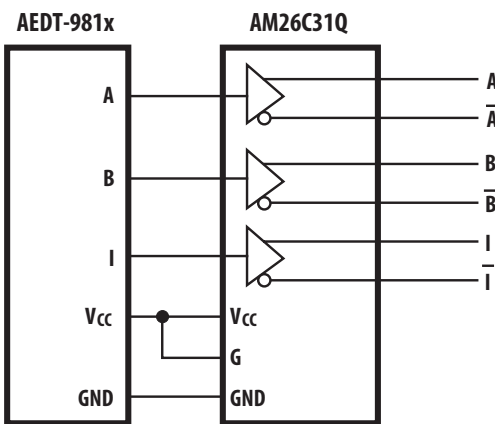
Waveforms

Pinout

10 POSITION IDC CONNECTOR, CENTER POLARIZED.
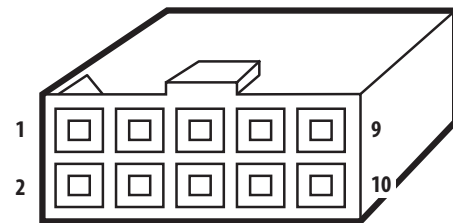
10-PIN CONNECTOR

NO.	COLOR	PARAMETER
1	BROWN	NC
2	RED	V_{CC} (+ 5 V)
3	ORANGE	GND
4	YELLOW	NC
5	GREEN	$\overline{A}$
6	BLUE	A
7	VIOLET	$\overline{B}$
8	GREY	B
9	WHITE	$\overline{I}$ (INDEX)
10	BLACK	I (INDEX)

3
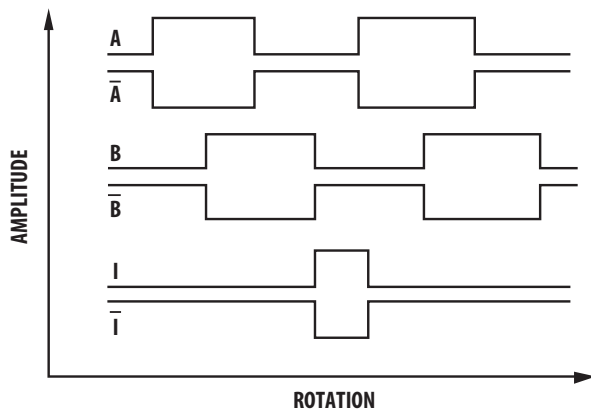
Ordering Information:

Module Encoder
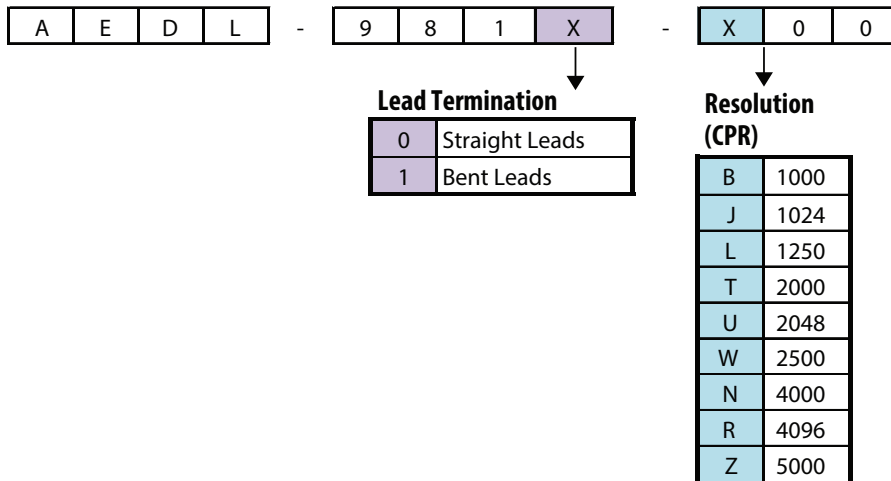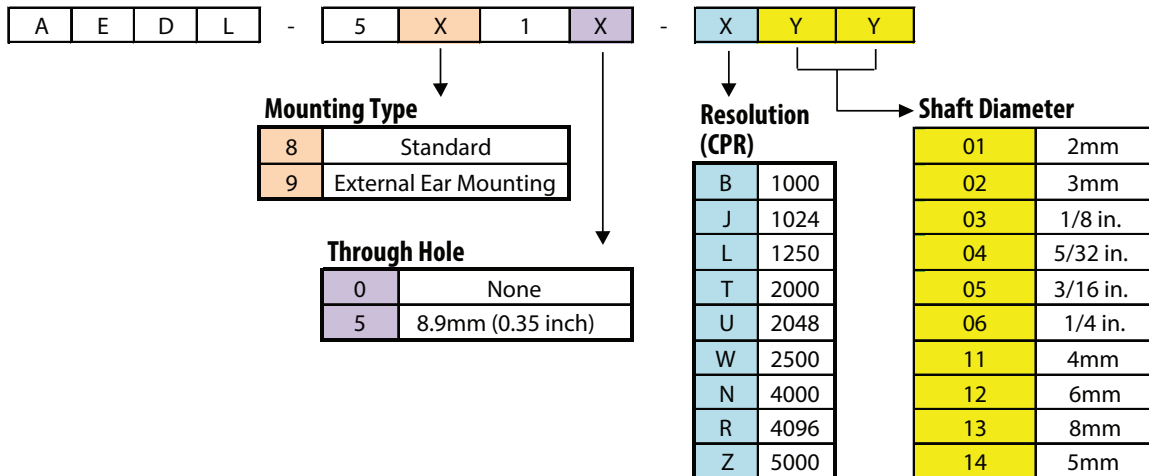
A	E	D	L	-	9	8	1	X	-	X	0	0

Lead Termination

0	Straight Leads
1	Bent Leads

Resolution (CPR)

B	1000
J	1024
L	1250
T	2000
U	2048
W	2500
N	4000
R	4096
Z	5000

Kit Encoder

A	E	D	L	-	5	X	1	X	-	X	Y	Y

Mounting Type

8	Standard
9	External Ear Mounting

Through Hole

0	None
5	8.9mm (0.35 inch)

Resolution (CPR)

B	1000
J	1024
L	1250
T	2000
U	2048
W	2500
N	4000
R	4096
Z	5000

Shaft Diameter

01	2mm
02	3mm
03	1/8 in.
04	5/32 in.
05	3/16 in.
06	1/4 in.
11	4mm
12	6mm
13	8mm
14	5mm

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

Avago
T E C H N O L O G I E S

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

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   [AEDL-5810-Z12](#)