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Did you know?

EPC delivers more products, faster. We have lead the industry in delivery times for over 35 years. When you need a quality encoder fast, no one delivers like EPC!

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Direct Replacement Encoders

Ever had an encoder in your hand that you needed to replace only to find out that the manufacturer quit making them? Or you call the manufacturer to replace your encoder, and need CPR when you hear the price? (Cardio-Pulmonary Resuscitation-- NOT Cycles Per Revolution!) These are a couple of reasons why EPC came up with our new Direct Replacement Encoders.
[FULL STORY]

865T - New Stainless Steel Thru-Bore

Imagine you are on an assembly line, bottling shampoo, hair gel, yogurt, cereal, beer, or any such gooey substance. Guess What?? SPILLS HAPPEN! And no matter where the spill happens during the packaging process, a mess can cause damage to your machinery.
[FULL STORY]

Understanding Gating Options

Encoder Products Company offers several index pulse gating options on most Accu-Coder™ models. Understanding an index pulse is important for selecting and applying encoders.

[FULL STORY]

New Model 225 Flex Mount Solution

As the originator of the flexible mounting systems for thru-bore encoders, Encoder Products Company has added an innovative new flex arm kit for the Model 225. This flex arm is an excellent addition to any

Model 225 and should be considered as the standard mounting option.
[FULL STORY]

Helpful Tips for Selecting An Encoder

There are a number of variables to consider when specifying an encoder. Mounting style, resolution, output type, frequency response, accuracy requirements, the environment the encoder will be performing in, and electrical connection all need to be taken into consideration.
[FULL STORY]

Additions To The Line Up

The following enhancements have been made to EPC Accu-Coders™--

40 mm slotted flex mount for the Model 15 Thru-bore; Now the Model 15 can be ordered with a 29 mm, 32.5 mm, or 40 mm slotted flex mount, making motor mounting installations a breeze!

580 and 315 CPR to the Models 15, Tru-Trac™, 711, and 716

400 CPR to the Models 15, Tru-Trac™, 711, 715, 716, and 260

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Direct Replacement Encoders

Direct Replacement Encoders are specifically designed to fill a void or solve a problem with an existing competitor's encoder. We introduced one to you in our last newsletter, with the announcement of the DR553, EPC's direct replacement for the Rotopulser 60. Now we have a few other offerings. The DR011 is a direct replacement for the BEI EX152. The EX152 is often used on packaging and conveyor systems, sorting equipment, and baggage systems, and is no longer a standard catalog offering for BEI. EPC has configured an exact duplicate of this encoder, ready for immediate delivery, and at a substantial savings to the consumer.

The DR425 is a direct replacement for the encoders that go on Quantum ATL Storage Systems. Since newer model storage systems are replacing the ATL P3000, replacement parts are hard to find. EPC has the exact configuration ready to go into that system.

The DR580 replaces the Dynapar H23 encoder that is commonly used on Magnetek Vector/Invertor Motors. Many of these Direct Replacement Encoders have no configurable options, however, the DR580 has both connector and CPR options.

The idea is for you to be able to purchase these as direct "swap outs" to provide easy installation for the replacement of your existing encoder. Our hope is to save our customers time and money trying to cross-reference and find a replacement encoder. This is just an initial offering, and we will continue to update you on additions to the DR line of encoders. PDF files with the encoders specifications, drawings, and wiring charts, are available at www.encoder.com; under the "Products" menu go to "Direct Replacement Encoders". Remember, if you don't see exactly what you need, EPC has an Expert Cross-reference Service, available to provide you with an encoder solution.

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865T - New Stainless Steel Thru-Bore

That's why you need a motor mount encoder that can handle wash-downs, and that's where the new 865T Stainless Steel Encoder can save your bacon! (It works for packaging bacon too!) The 865T housing is made from 316 Stainless Steel; this is a food and surgical grade of stainless steel with over 10.5% chromium and the addition of molybdenum. This housing makes this encoder more resistant to rust/oxidation and corrosive chemicals, as compared to encoders housed in aluminum or plastic. This is a big advantage in wet or caustic environments. The addition of a Stainless Steel protective cover provides IP66 sealing, making the Model 865T dust proof and protected from strong jets of water often used during machinery wash-downs.

Specifically engineered to mount onto 56C to 184C NEMA C-face motors, the thru-bore design allows for an easy installation. The 865 T has precision ball bearings and an internal flex mount that reduces vibration and practically eliminates motor shaft run-out or axial endplay. With the advanced Opto-ASIC technology, you consistently get a pure clean signal, even with higher resolutions and the harshest of environmental conditions. You simply can't buy a more rugged, durable, dependable motor mount encoder!

If your application requires a C-face encoder that needs to stand up to extreme environmental conditions, the Model 865T is the solution to your problem. Visit www.encoder.com to see our complete line of stainless steel products, or call a Customer Service Representative to discuss your application.

865T Features Include
- **316 Stainless Steel Thru-Bore Housing**
- **Only 1" Thin**
- **IP66 Sealing**
- **Opto-ASIC Technology**
- **Up To 4096 CPR**
- **Variety of Bore Sizes Up to 1" or 24 mm**

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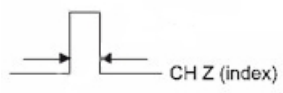

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Understanding Gating Options

The index pulse is also referred to as the reference, marker pulse, or home pulse. This pulse is an individual output channel provided by the encoder that generates a single pulse once per revolution. It simply notes a discrete or fixed position in the mechanical rotation of the unit. Sometimes it is used with a counter to indicate the total number of revolutions the shaft has rotated, counting one pulse per revolution. Often times it is used to reset a counter if the counter needs to be reset to zero at the end of each encoder shaft revolution. Quite often it is used in servo applications where total system synchronism is required. Once every revolution, if everything agrees with the position feedback, the system knows it is still operating correctly. Or a system can return to a known physical position aligned with the index pulse. EPC defines the index as follows: Once per revolution centered over channel “A”. For the HV output option, it normally is gated to channel “A”, and is 180 electrical degrees wide, or known as "half-cycle gating". We also have the ability to gate the index pulse to the "B" channel, or to both "A" and "B" channels if required. If it is gated to both channels, it results in what is called "quarter cycle gating", which is 90 electrical degrees wide. This option allows more precise positioning of the index point. However, keep it in mind that with a narrower index pulse, comes the possibility of the device the encoder is connected to not seeing the narrow pulse because it happens so quickly. Please note that these comments regarding the index pulse ONLY apply to units with the "R" in the part number, which calls out A, B, & Z channels. With the "A" or "Q" in the number of channels spot, there is no index pulse provided. Non-standard gating options must be requested by the customer at the time of ordering.

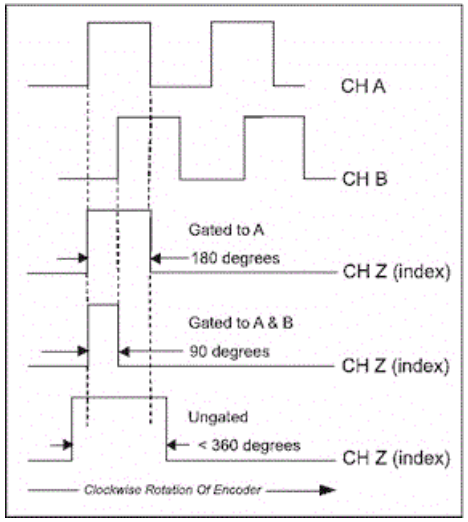

Diagram of index pulses for Accu-Coders™ that have a positive index following a positive Channel A.

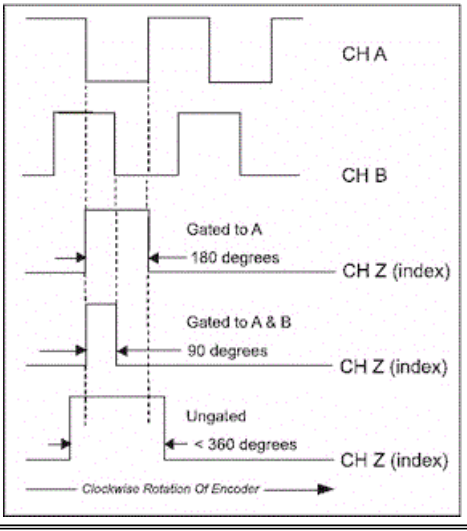

Diagram of index pulses for Accu-Coders™ that have a positive index following a negative Channel A.

Most index pulses are related to electrical degrees, but some are mechanically derived. These are comprised of a disc with the index pulse etched onto this disk in addition to the main count channels. This type of index is usually referenced to a particular count channel such as "A". It is normally not gated, however it can be done on occasion. By making this etched aperture a certain width, the resulting pulse width of the index can be varied. Remember that the actual pulse "width" is a function of time, and the width will vary as an inverse function of rotational shaft speed. Some uses for lengthened mechanical index pulses are for resetting counters that have long reset time periods. Also by gating to the count channel, the encoder output can be inhibited for a period of time while the index pulse is active. This is commonly used in the packaging industry where counts are not desired while the container is filled and is moving to the next processing station. Mechanically derived index pulses are only available on select Cube Series encoders. If your application requires a specific index gating option, don't hesitate to contact a sales engineer to help with your Accu-Coder™ selection.

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New Model 225 Flex Mount Solution

The Model 225 is often used for motor speed control. To provide additional protection against vibration and radial shaft run-out, a unique flexible mounting bracket was designed. This anti-rotational flex arm helps to stabilize and secure the Model 225 in any application, with easy installation into any existing mounting plate holes in either an upward or downward orientation. The bracket can mount on either side of the encoder, and the slotted design allows for the motor/encoder mounting gap to be adjusted from 0.30” to 0.40”. Available as a separate accessory kit (Order part # 140106-01), or with your next Model 225 purchase, the anti-rotational flexible mounting arm is simple to install, and will solve most encoder mounting problems that may exist.

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Helpful Tips for Selecting An Encoder

There are two basic types of mounting options for rotary encoders with bearings: hollow bore or shaft type. A hollow bore encoder is designed to slide over and clamp onto a precision shaft with some form of a flexible mount that attaches to the motor frame. The fit between the bore and shaft and the design of the flex mount are critical for retaining accuracy and encoder bearing life. A shaft encoder is typically mounted to a fixed surface then coupled to a driven shaft. The alignment between the two shafts and the design and quality of the coupling are critical for retaining accuracy and encoder bearing life.

While designing a motion system, it is important to identify an encoder resolution that reflects the true needs of the system. Too high of a resolution can increase costs and result in encoder frequencies that exceed either the encoders or the receiving electronics capabilities. Keep in mind that higher resolution does not necessarily translate into higher system accuracy. On the other hand, too low of a resolution may limit the systems ability to control speed or position accurately.

The output type of the encoder is generally dictated by the receiving device in the motion system. It is important that the person specifying the encoder determines the receiving device's input

requirements and then select the compatible encoder output driver. There are three basic types of encoder driver outputs, drivers that supply current to external devices (sourcing), drivers that provide a current path to circuit common (sink), and drivers that do both (line drivers). Many controllers accept differential line-driver signals, canceling common-mode noise while accommodating long encoder cable runs.

Encoders are available that are sealed to protect the internal optics and electronics from exposure to moisture, dust, and other potential contaminants. Environments that subject the encoder to corrosive or caustic chemicals may require special housing materials such as stainless steel. IP ratings will give you an idea of the sealing level of electronic components. Another consideration is the temperature of the environment the encoder will be functioning in. Encoders are available that can operate in ambient temperatures up to 120^{o}C. Ambient temperature, and also heat generated from other mechanical devices (such as a motor) should be taken into consideration.

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