

## M12 (12 mm) Connector Option

The MS Style connector has been the standard for encoder connector wiring for more than 30 years – since the introduction of the Cube series, EPC's first Accu-Coder™ products. However, since that time, not only has the Accu-Coder™ line broadened into a full line of encoder offerings, but the encoder industry has also matured, and encoders have found their way into an increasingly wide range of applications. Due to the demands of these new applications, EPC's customers began asking for connectors, and associated cordsets, which could provide smaller profiles and improved sealing. After extensive research, EPC selected the M12 (12 mm) style of connector as offering the best combination of performance and price, so that, today, you can specify either the standard MS series or the M12 (12 mm) connector on nearly all of EPC's encoders. The many advantages of the M12 (12 mm) style of connectors more than offset the small additional cost. For



openers, they are physically much smaller in size, and the associated cordsets have a tighter bend radius. As a result, an Accu-Coder™ encoder with a M12 (12 mm) connector installed will have a lower profile than with the traditional MS series, allowing for an easier and more flexible installation of the Accu-Coder™ in many applications.

Uniformity is another key feature of the M12 (12 mm) option. Unlike the MS Series with its variety of pin-outs and casing styles, the M12 (12 mm) option uses one of just two connector types, a 5-pin or an 8-pin. Moreover, each pin on a given connector has the same function no matter which Accu-Coder™ model is chosen. The unused functions are simply not brought out. That way, since the pin-outs for all cordsets are identical, you can standardize on a reduced number of cordsets. In addition, the same cordset will work for all Accu-Coder™ models that have a given connector type. This also means that, if you change to or add another Accu-Coder™ model with the same M12 (12 mm) connector, the same cordsets you already own and stock can be used.

Another important thing to consider is that most motion control applications include sensors or other detectors besides encoders. Quite often these devices - limit switches, proximity switches, and the like – will also have M12 (12 mm) style connectors. Therefore, given that the 3-, 4-, and 5-pin cordsets are all compatible with the 5-pin connector on the Accu-Coder™, the very real possibility

exists that you will be able to stock fewer of cordsets to cover multiple motion control devices, making this option even more cost effective. M12 (12 mm) cordsets are available from an extensive network of distributors worldwide

Two types of cordsets are available for use with Accu-Coder™ encoders. The first type has the shield connected to the coupling nut, which, in turn, connects the cordset shield to the case of the Accu-Coder™. On the other type, the shield is not connected to the coupling nut, isolating the shield from the Accu-Coder™ case. The latter method is both recommended and the most popular, since it means that the cordset shield will be grounded only at the controller end of the cordset, avoiding ground loops.

**Note:** If the Accu-Coder™ case must be grounded, as is common in systems requiring CE certification for the European marketplace, the first type of cordset should always be used. When using this method, special caution must be taken to insure proper machine bonding and grounding methods are employed in order to prevent harmful ground loops.

### Connector Pinout and Functions 8-Pin

Connector	Function	Conductor
Pin 1	Data A	White
Pin 2	+VDC	Brown
Pin 3	Data A'	Green
Pin 4	Data B	Yellow
Pin 5	Data B'	Gray
Pin 6	Data Z	Pink
Pin 7	Common	Blue
Pin 8	Data Z'	Red

### 5-Pin

Connector	Function	Conductor
Pin 1	+VDC	Brown
Pin 2	Data B	White
Pin 3	Common	Blue
Pin 4	Data A	Black
Pin 5	Data Z	Gray

### Selecting Cordsets From Turck

8-pin shield NOT connected to coupling nut = RKC 8T-x/S618  
 8-pin shield connected to coupling nut = RKS 8T-x  
 5-pin shield NOT connected to coupling nut = RK 4.5T-x/S618  
 5-pin shield connected to coupling nut = RKS 4.5T-x  
 (where x is length in meters)

TB-111.doc, Rev F, 02/26/09