# AMCI ADVANCED MICRO CONTROLS INC.

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# *Analog DuraCoder with Integral Cable*

## Overview

AMCI now offers analog DuraCoders with an integral fifteen foot cable.  The letters at the end of the part number that denote this configuration are 'FL' in place of the 'S' or 'E' for side or end connectors. The wiring diagram below shows how to hookup the DuraCoder and extend the cable if necessary.  All of the necessary signals are brought out on three shielded, twisted pairs.  The Red/Black pair is power supply, Green/Black pair is Direction Control, and White/Black pair is Analog Output.  In all cases, the colored wire is the actual signal, and the black wire of the pair is the signals associated return.

## Wiring Diagram
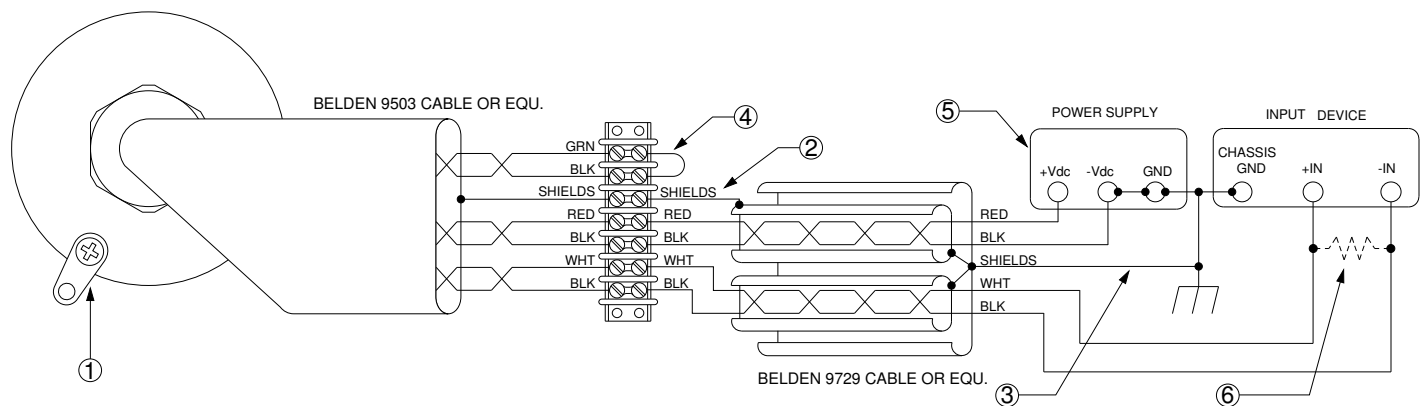


1)  The DuraCoder case must be connected to earth ground. This is usually accomplished through its mounting.  If not properly grounded through its mounting, a wire from the grounding lug must be connected to an earth ground point as close as possible to the DuraCoder.  *Do Not* connect the shields to the ground lug.  This can form a ground loop that may affect the operation of the DuraCoder.

2)  If your extension cable has individually shielded twisted pairs, connect the DuraCoder cable's overall shield to the shields of the power supply twisted pair at your cable junction.  If your cable has only an overall shield, simply connect the shields together.  In either case, treat the cable shield as a signal carrying conductor.  *Do Not* ground the shields at the junction box.

3)  Ground the shield of the cable at the power supply earth ground only.  Grounding the shields at multiple points along its run may cause ground loops that may affect operation.

4)  DuraCoders ship with CCW increasing output.  (looking at shaft.)  For CW increasing output, short the Direction pair, (Green/Black), together at the cable junction.  *Do Not* extend the Direction pair.

5)  Use a regulated power supply with a voltage output in the range of 7 to 24Vdc.  If the total cable length is less than thirty feet, a power supply of 5 to 24Vdc can be used.

6)  For voltage output DuraCoders, the input device impedance must be greater than 2 k$\Omega$.  If the input device impedance exceeds 10 k$\Omega$, consider installing a 10 k$\Omega$ resistor in parallel with the input terminals.  This will increase the noise immunity of the voltage signal.

# *LEADERS IN ADVANCED CONTROL PRODUCTS*