

DCM4826X

Stepper Motor Drive

Manual



Haydon
Motion Solutions



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Revision History

Date	Description
February 2012	Initial version

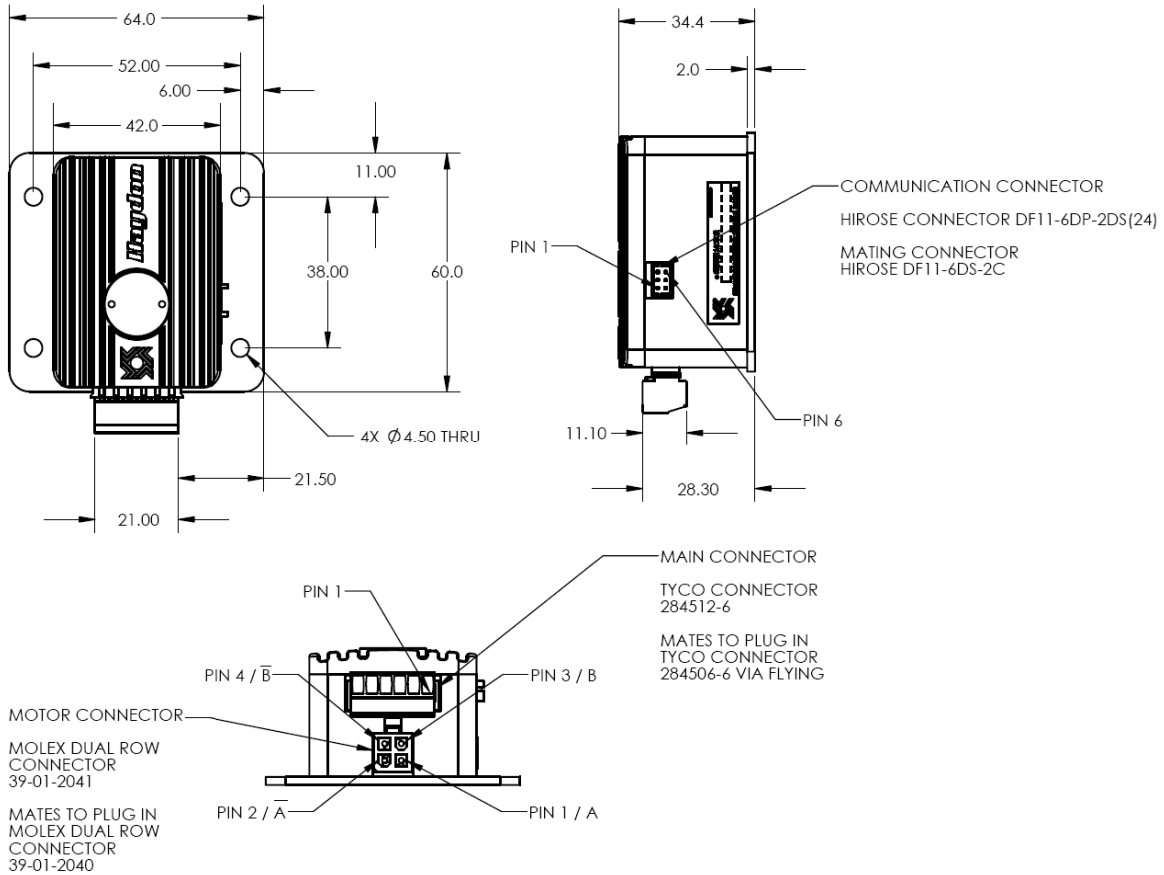
Introduction

This manual is intended to provide basic hardware specifications and usage information for the Haydon Kerk DCM4826X drive. The DCM4826X is designed to accept digital pulse, direction and enable signals from a controller in order to drive a 2 phase stepper motor or linear actuator. The pulse, direction and enable signals are optically isolated from the rest of the drive, providing the ability to reference to a separate electrical ground.

Specifications

Attribute	Value
Drive Input Voltage Range	12-48Vdc
Maximum Drive Current (per phase)	2.6Arms
Step Modes	Full, Half, ¼, 1/8, 1/16, 1/32, 1/64
Communications	RS-485
Digital Inputs Voltage Range	0-24Vdc
Digital Inputs Low threshold	2V
Digital Inputs High threshold	4V
Digital Input Maximum Current	35mA (each)
Digital Input Minimum Pulse Width	5µs
Maximum pulse input frequency (0-5V square wave)	100Khz
Maximum Temperature	70°C (Measured at heat sink)

Drawing



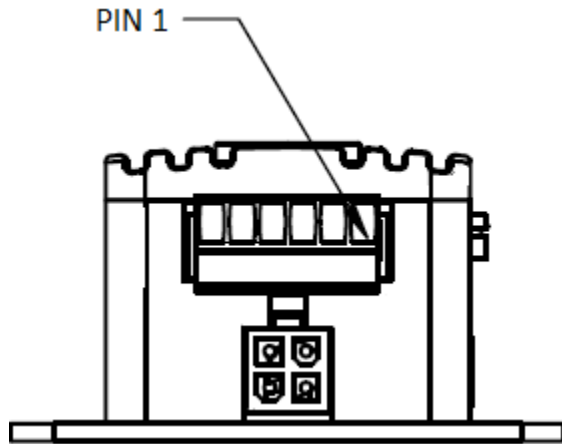
Connections

Motor Connection

The motor should be connected to the drive through the four pin connector below the power and signal connector according to the drawing above. Care should be taken to avoid connecting or disconnecting the motor connector while the drive is powered. This is dangerous for the drive as well as the user.

It is important that the motor leads never be shorted. This will result in damage to the drive.

Power and Input Connector

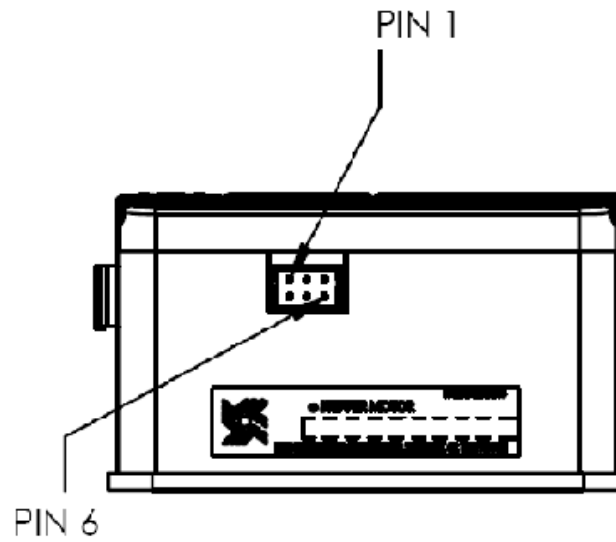


Pin	Description
Pin 1	Opto-ground
Pin 2	Enable
Pin 3	Direction
Pin 4	Pulse
Pin 5	Ground
Pin 6	12-48Vdc

Signal Descriptions:

- **12-48Vdc:** This is the connection to the positive terminal of the power supply.
- **Ground:** This is the connection to the negative terminal of the power supply.
- **Pulse:** This is the connection to the pulse train from the controller. On each transition from low to high, the drive will move the motor.
- **Direction:** The state of this connection determines whether the motor will move forwards or backwards when a pulse is supplied. A high level corresponds to clockwise rotation, as viewed from the output shaft.
- **Enable:** The state of this input determines if current is applied to the windings. If low, the current to the windings is disabled, if high, the current is determined by the parameters and whether or not the motor is moving.
- **Opto-ground:** This is the voltage to which the Pulse, Direction and Enable inputs are referenced. This may be connected to the Ground connection, or to another reference.

RS-485 Pin Descriptions

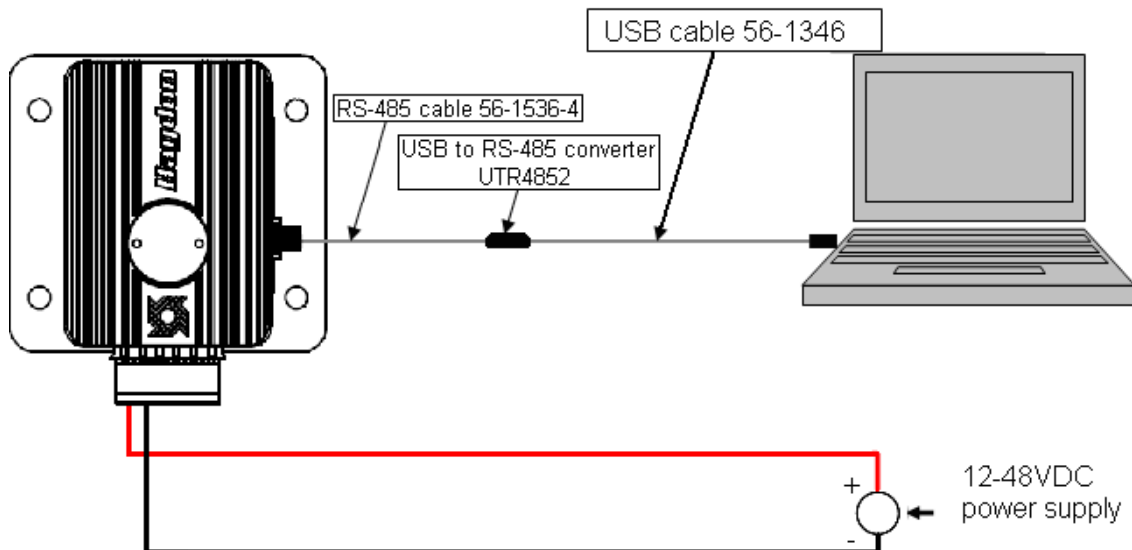


PIN #	DESCRIPTION
1	Y / NON-INVERTING DRIVER OUTPUT
2	Z / INVERTING DRIVER OUTPUT
3	GROUND
4	GROUND
5	A / NON-INVERTING RECEIVER INPUT
6	B / INVERTING RECEIVER INPUT

Setting Parameters: To connect power to the drive and set the parameters using the PDE Drive User Interface you will need the following:

- A power supply, 12-48VDC.
- Wire to connect from the power supply to the drive
- A PC running Windows XP, Vista or 7.
- USB to Mini B USB cable (available from Haydon Kerk p/n 56-1346)
- RS-485 cable (available from Haydon Kerk p/n 56-1536-4)
- USB to RS-485 converter (available from Haydon Kerk p/n UTR4852)

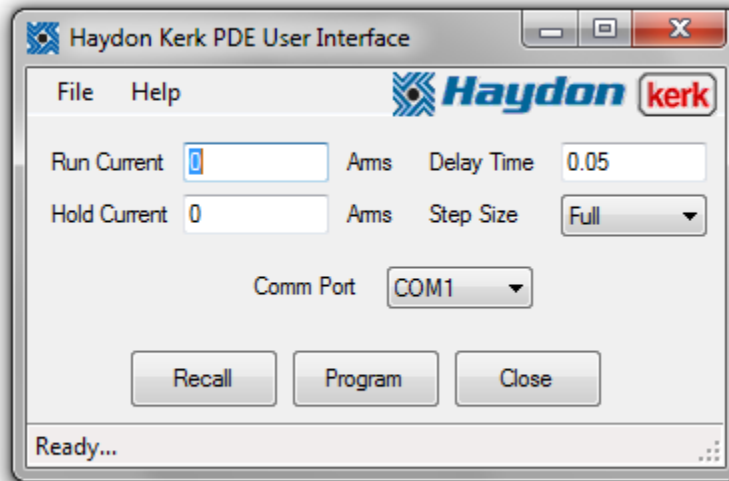
Setting Parameters Wiring Diagram



After wiring as shown, turn on power supply.

Using the PDE User Interface:

Configuration of the DCM4826X is handled through the Haydon Kerk PDE User Interface. This software is available free of charge from www.HaydonKerk.com.



Setting Parameters: In order to set the parameters you must:

- Enter the desired values for Run Current, Hold Current, Delay Time and Step Size.
- Select the comm. port the drive is connected to.
- Press the program button and wait for the operation to complete.
- Once the parameters are set, power must be removed from the drive before the drive is ready to be used.

Reading Parameters: In order to read the parameters that the drive is currently set to use you must:

- Select the comm. port the drive is connected to.
- Press the Recall button and wait for the operation to complete.
- The parameter fields will be populated with the retrieved values.

Explanation of parameters:

- **Run Current:** The rms current per phase to be used to move the motor.
- **Hold Current:** The rms current per phase to be used to hold the motor in place when not moving.
- **Delay Time:** The amount of time the drive waits after a pulse input before switching from the run current to the hold current.
- **Step Size:** The fraction of a step the drive should move the motor per pulse input.