P70530 (DC) High Performance Micro-Stepping Drive

Reference Guide
Revision C
2/2012

EN60034-1
EN60034-5

Keep all product manuals as a product component during the life span of the product.
Pass all product manuals to future users/owners of the product.

KOLLMORGEN™

Part # M-SD-7DC-01

1.3 ACCESSORIES

768-026902-03	26-pin D-Sub connector to terminal block adapter
P7S2-232-9D	RS-232 Serial cable RJ12 to 9 pin D-Sub connector 6 feet

1.4 SPECIFICATIONS

NOTE

Unless otherwise specified, specifications are worse-case limits and apply over the specified operating ambient temperature and over the specified operating line voltage.

1.4.1 DRIVE POWER

Specification	P70530
Max Output Current (0-40° C)	5 A_{RMS}
Max Output Power at 5 A max average	350 W at 72 V 240 W at 48 V 120 W at 24 V
Power Dissipation at 3.5 A	9 W max at 5 A_{RMS}/motor phase 5 W max at 3 A_{RMS}/motor phase 1.8 W typ. at disabled
Motor Inductance Range	2-15 mH nom.
Maximum Motor Cable Length (24 AWG)	20 m
Power Supply 20 - 75 VDC recommended design center isolated unregulated type (or regulated + bus cap)	20 – 75 VDC 5 A average (max)
Cbus cap min scale as ratio of (motor current/5A) scale as ratio of (72 V/supply voltage) for multiple drives on supply scales as (number of drives) locate within 10 ft. of drive (#16 AWG twisted)	6,000 µf at 5 A motor, 72 V
Bus Under Voltage Fault	18 VDC
Bus Over Voltage Fault	91 VDC
Inrush Current & Fusing	
Peak Current	15 A
Inrush Pulse Width	4 ms
Recommended Fusing	10 A Slow Blow
5 VDC Internal Supply	50 mA
Time delay for "reduced idle current" to return to the system's "full current"	< 1 ms (typ)

NOTE

See Appendix A for information on power supply bus capacitance.

1.4.3 ENVIRONMENTAL

Operating Temperature	0 - 45° C unmounted
Pollution Degree	II
Storage Temperature °C	-20 to + 70° C
Humidity (% non-condensing)	90%
Altitude	<1500 m (5000 ft)

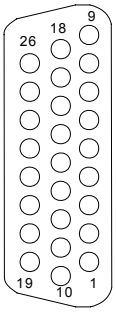
1.5 *DC MOUNTING*

Mount the P70530 to a cold plate using either 8x32 or M4 screws. This drive can be mounted either vertically or horizontally.

1. For convection cooling allow a minimum of 1 in (25.4 mm) of space around all sides.
2. It the heat sink temperature exceeds 70 °C the drive shuts down due to overheating. Fan cooling or a lower ambient temperature may be required to allow the drive to run properly.

2.2 *FUNCTIONS BY CONNECTOR*

2.2.1 J4 CONNECTOR – COMMAND I/O



J4 is a 26-Position High Density D subminiature female connector. (Connector is shown as viewed from the front of the drive.

Pin	Description
J4-1	STEP + Opto
J4-2	STEP - - Pulse
J4-3	DIR + Opto
J4-4	DIR - DIR
J4-5	ENABLE + Opto
J4-6	ENABLE - AWO
J4-7	FAULT +
J4-8	FAULT -
J4-9	Gnd
J4-10	DIN1 (MVSEL 1)*
J4-11	DIN2 (MVSEL 2)*
J4-12	DIN3 (MVSEL 3)*
J4-13	DIN4 (MVSEL 4)*

Pin	Description
J4-14	DIN5 (Jog +)*
J4-15	DIN6 (Jog -)*
J4-16	DIN7 (EOT +)*
J4-17	DIN8 (EOT -)*
J4-18	DIN9 (Fault Reset)*
J4-19	+ 5 V I/O Power Source
J4-20	Pull Up/Dn
J4-21	OUT + (Motion Node Active)*
J4-22	OUT – (Motion Node Active)*
J4-23	NC
J4-24	RS-232 RX
J4-25	5 V Return I/O Power Source
J4-26	RS-232 TX

*Default I/O Assignments

NOTE

MVSEL (Move Select) is available in –PNN (Motion Node) units only. The same is true for MOTION NODE ACTIVE outputs.

2.2.1.1. Step, Direction, and Enable Inputs

Step Input

J4 1, 2 The P70530 increments its internal step counter on the ON-to-OFF transition of the LED in an opto isolator. Minimum ON and minimum OFF times are both 250 ns. This results in a maximum step input frequency of 2 MHz. Pulses that do not meet minimum times may be ignored by the drive's electronics. ***The input circuitry is suitable for use with 5-volt logic (single ended or***