Elwood High Performance Motors

SX-Series Motors to Nidec|Control Techniques (formerly Emerson) Unidrive (SP,

Prepared By: John Hoeppner

June 3, 2019

CAUTION (READ FIRST): To prevent accidental damage to the motor, set _all_ drive parameters for continuous and peak current(s) below the motor's continuous current rating and disconnect the motor's output shaft from mechanical linkages _prior to_ enabling power to the motor. Then, after proper servo control is established between the drive and motor, set drive current parameters to levels appropriate for the motor, drive, and application.

IMPORTANT – Drive Port / Option Module: Depending on the Control Techniques drive in use, an option module may be required. Please verify the proper port or option module is selected in the drive parameters.

Motor Power		
Drive Terminal	Motor Lead Color	Extension Cable Conductor Color (142-DSLPxxx-05)
P.E.	Green	Green
U	Black	Black
V	Red	Red
W	White	White

Motor Control (pairs)		
Therm (18AWG BLUE, pair)	See Below (14, 15)	Blue, Blue
BRAKE RELEASE +24VDC, Brown (18AWG)	24VDC OUTPUT (1ADC MIN.)	Brown
BRAKE 0VDC, Orange (18AWG)	0VDC	Orange

Incremental Encoder with Complemented Commutation Signals		
Feedback Connector Contact Number	Signal Name	Motor Cable Conductor Color
1	OUTPUT A	WHITE W/ GREEN
2	OUTPUT A'	GREEN W/ WHITE
3	OUTPUT B	WHITE W/ BLUE
4	OUTPUT B'	BLUE W/ WHITE
5	OUTPUT Z	WHITE W/ ORANGE
6	OUTPUT Z'	ORANGE W/ WHITE
7	OUTPUT U	WHITE W/ GRAY
8	OUTPUT U'	GRAY W/ WHITE
9	OUTPUT V	WHITE W/ BROWN
10	OUTPUT V'	BROWN W/ WHITE
11	OUTPUT W	RED W/ ORANGE
12	OUTPUT W'	ORANGE W/ RED
13	+ VDC	RED W/ BLUE
14	COMMON	Blue w/ Red & Blue Thermistor
15	Th	Blue Thermistor
Connector Case	SHIELD	CABLE DRAIN WIRE

* Be sure to connect the secondary ground at the rear cover of the motor to the machine's single-point earth ground (P.E.).

** Encoder Phase Angle (for PowerTools Pro): 150deg (nominal)

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P.E.	Green	Green
U	Black	Black
V	Red	Red
W	White	White

Motor Control (pairs)		
Therm (18AWG BLUE, pair)	See Below (14, 15)	Blue, Blue
BRAKE RELEASE +24VDC, Brown (18AWG)	24VDC OUTPUT (1ADC MIN.)	Brown
BRAKE 0VDC, Orange (18AWG)	0VDC	Orange

HIPERFACE (Sick/Stemann) Absolute Encoder			
Feedback Connector Contact Number	Signal Name	Motor Flying Lead Conductor Color	Extension Cable Conductor Color, 141-WSFxxx-57, 140-012-0052
1	+ COS	WHITE W/ GREEN	Green
2	REFCOS	GREEN W/ WHITE	Yellow
3	+ SIN	WHITE W/ ORANGE	Grey
4	REFSIN	ORANGE W/ WHITE	Pink
5	DATA +	WHITE W/ BROWN	Blue
6	DATA -	BROWN W/ WHITE	Red
7	N/A	N/C	N/C
8	N/A	N/C	N/C
9	N/A	N/C	N/C
10	N/A	N/C	N/C
11	N/A	N/C	N/C
12	N/A	N/C	N/C
13	+ VDC	WHITE W/ BLUE	White
14	COMMON	Blue w/ White & Blue Thermistor	Brown & Blue Thermistor
15	Th	Blue Thermistor	Blue Thermistor
Connector Case	SHIELD	CABLE DRAIN WIRE	Cable Shield/Drain

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Motor Power		
Drive Terminal	Motor Lead Color	Extension Cable Conductor Color (142-DSLPxxx-05)
P.E.	Green	Green
U	Black	Black
V	Red	Red
W	White	White

Motor Control (pairs)		
Therm (18AWG BLUE, pair)	See Below (14, 15)	Blue, Blue
BRAKE RELEASE +24VDC, Brown (18AWG)	24VDC OUTPUT (1ADC MIN.)	Brown
BRAKE 0VDC, Orange (18AWG)	0VDC	Orange

EnDat 2.2/01 (Heidenhain) Absolute Encoder			
Feedback Connector Contact Number	Signal Name	Motor Cable Conductor Color	Extension (Bulk) Cable, 141-WSFxxx-56, 140-012-0051
1	OUTPUT A+	WHITE W/ BLUE	BROWN (0.14MM^2)
2	OUTPUT A-	BLUE W/ WHITE	GREEN (0.14MM^2)
3	OUTPUT B+	WHITE W/ ORANGE	RED (0.14MM^2)
4	OUTPUT B-	ORANGE W/ WHITE	BLACK (0.14MM^2)
5	DATA	GRAY W/ WHITE	PINK (0.14MM^2)
6	DATA-	WHIITE W/ GRAY	GRAY (0.14MM^2)
7	N/A	N/C	N/C
8	N/A	N/C	N/C
9	N/A	N/C	N/C
10	N/A	N/C	N/C
11	CLOCK	WHITE W/ BROWN	YELLOW (0.14MM^2)
12	CLOCK-	BROWN W/ WHITE	VIOLET (0.14MM^2)
13	Up	Green w/ White	BLUE (0.5MM^2)
14	0V	White w/ Green & Blue (Therm from Power Cable)	WHITE (0.5MM^2) & Blue (Therm from Power Cable)
15	Th	Blue (Therm from Power Cable)	Blue (Therm from Power Cable)
Connector Case	SHIELD	CABLE DRAIN WIRE	

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