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)

IMPORTANT – Drive Port / Option Module: Depending on the Control Techniques drive in use, an option module may be required.

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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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

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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IMPORTANT – Drive Port / Option Module: Depending on the Control Techniques drive in use, an option module may be required.

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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