

Refer to the table below for motor feedback cable catalog numbers available for specific motor/feedback combinations.

For this Motor Series:	Using this Type of Motor Feedback:	Use this Feedback Cable	
		Premolded:	Flying Lead:
MPL-Axxxx or MPG-Axxx-xxx	High-resolution encoder	2090-UXNFBMP-Sxx	2090-XXNFMP-Sxx <sup>1</sup>
MPL-Axxxx	Incremental encoder		
MPL-Bxxxx or MPG-Bxxx-xxx	High-resolution encoder		
1326AB	M2L/S2L High-resolution encoder		
MPF-Axxxx or MPF-Bxxxx	High-resolution encoder	N/A	2090-XXNFMF-Sxx <sup>1</sup>
F-Series	Incremental encoder	2090-UXNFBHF-Sxx	2090-XXNFHF-Sxx <sup>1</sup>
H-Series			
N-Series		2090-UXNFBN-Sxx	2090-XXNFN-Sxx <sup>1</sup>
Y-Series		2090-UXNFBY-Sxx	2090-XXNFY-Sxx <sup>1</sup>

<sup>1</sup> Requires 2090-UXBB-DM15 drive-mounted breakout board, 2090-UXBK-D15xx breakout board kit, or 2090-UXCK-D15 mating connector kit.

Note: Refer to *Maximum Feedback Cable Lengths* on page A-13 to determine the maximum length of your motor feedback cable.

## Motor Feedback Connector Pin-outs

The following tables provide the signal descriptions and pin-outs for the motor feedback (CN2) 15-pin connector to MP-Series (low inertia and integrated gear), 1326AB, and N-Series motors.

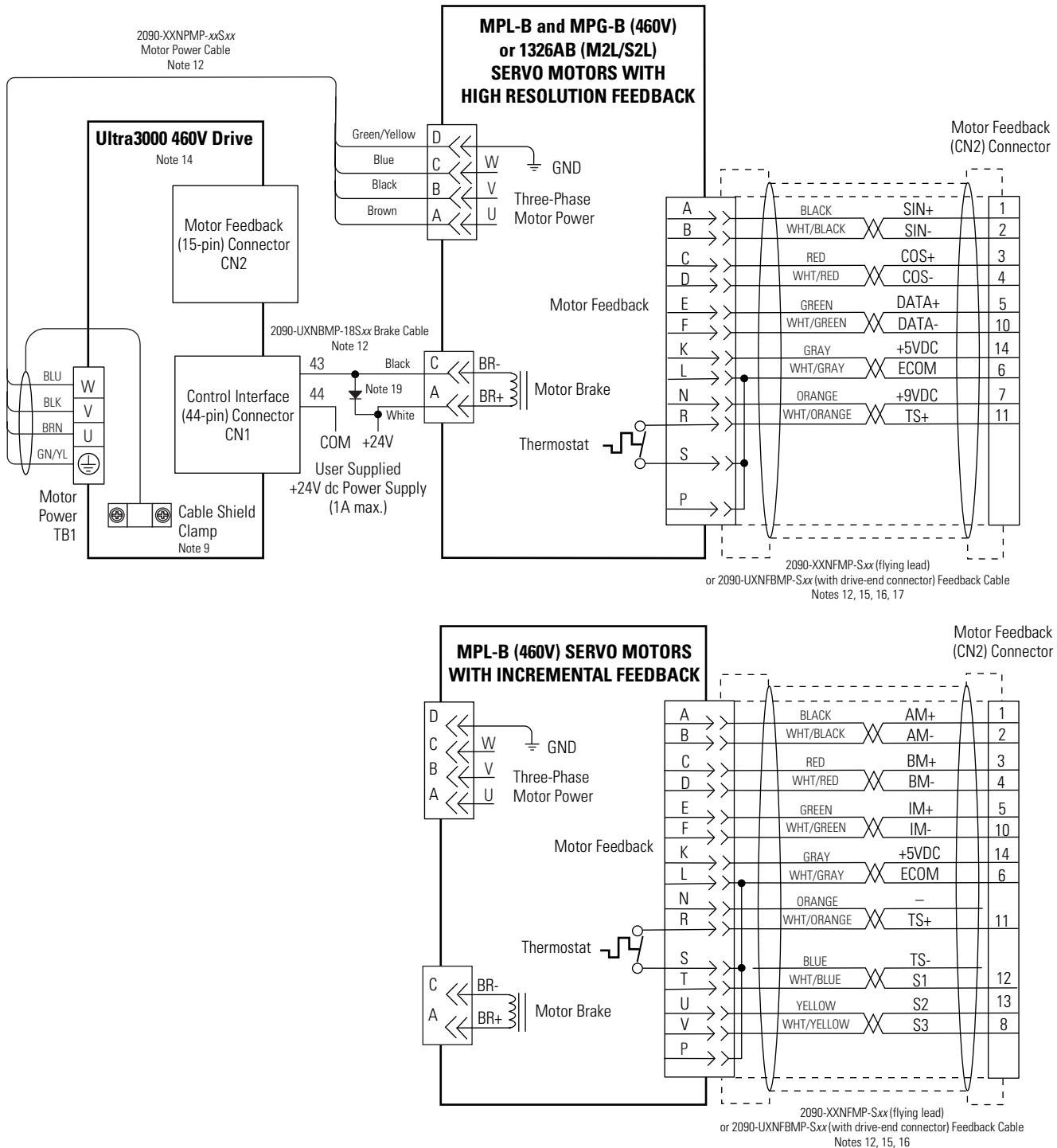
Motor Connector Pin	High Resolution Feedback Signals for:		Incremental Encoder Feedback Signals for:	Drive (CN2) Connector Pin
	MPL-Bxxx-M/-S MPL-A5xx-M/-S and 1326AB-Bxxx-M2L/-S2L Motors	MPL-A3xx-M/-S MPL-A4xx-M/-S MPL-A45xx-M/-S MPG-A/Bxxx-M/-S Motors	MPL-Axxx-H MPL-Bxxx-H and N-Series Motors	
A	Sine+	Sine+	AM+	1
B	Sine-	Sine-	AM-	2
C	Cos+	Cos+	BM+	3
D	Cos-	Cos-	BM-	4
E	Data+	Data+	IM+	5
F	Data-	Data-	IM-	10
K	Reserved	EPWR_5V	EPWR_5V	14
L	Reserved	ECOM	ECOM	6
N	EPWR_9V	Reserved	Reserved	7
P	ECOM	Reserved	Reserved	6
R	TS+	TS+	TS+	11
S	TS-	TS-	TS-	6
T	Reserved	Reserved	S1/Hall A	12
U	Reserved	Reserved	S2/Hall B	13
V	Reserved	Reserved	S3/Hall C	8

# Ultra3000/Motor Interconnect Diagrams

This section contains the motor power, brake, and feedback signal interconnect diagrams between the Ultra3000 and MP-Series, 1326AB- (M2L/S2L), F-, H-, N-, and Y-Series motors.

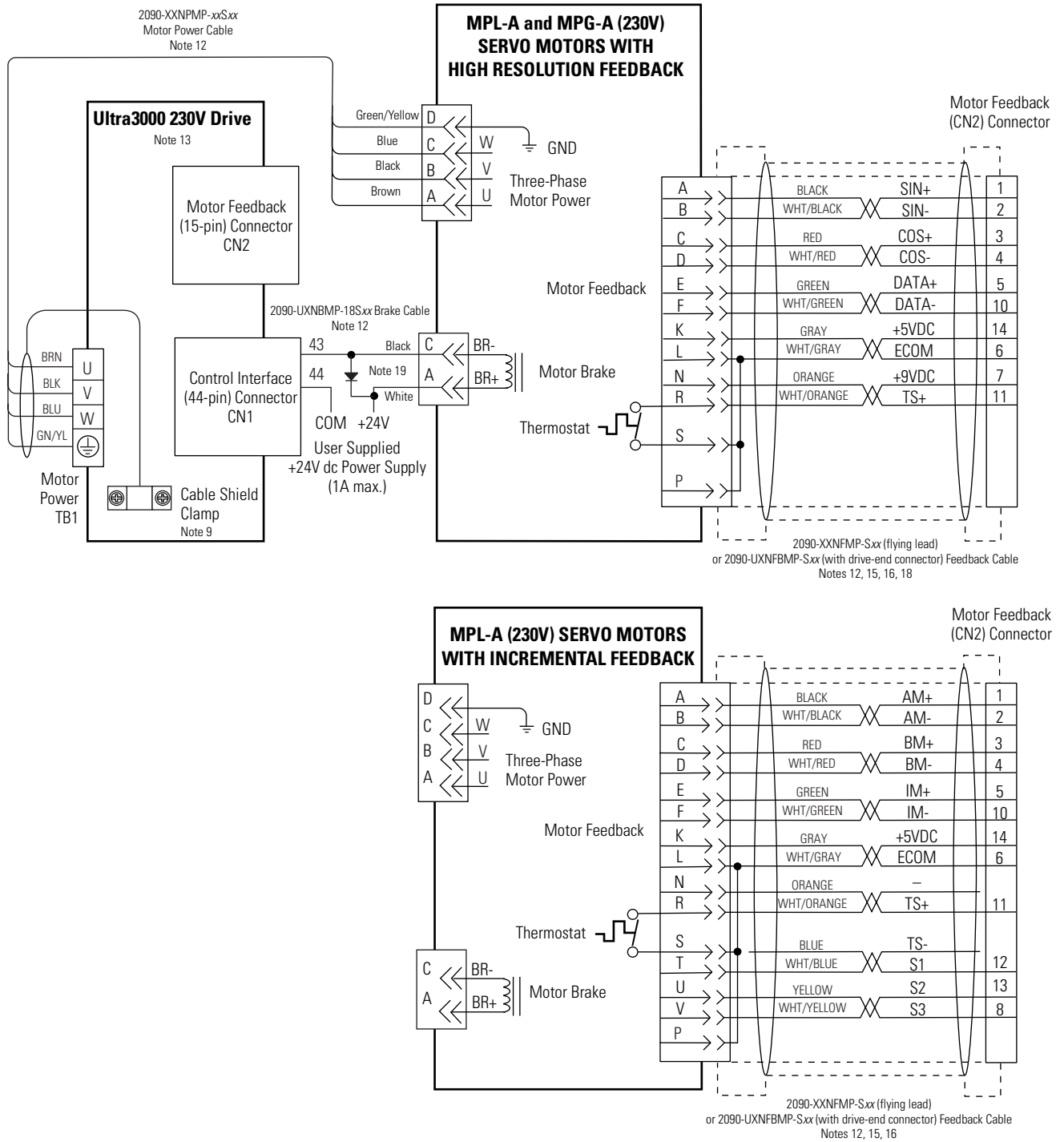
In the figure below, the Ultra3000 (460V) is shown connected to MP-Series or 1326AB (M2L/S2L) servo motors.

**Figure B.10**  
**Ultra3000 to MP-Series or 1326AB (M2L/S2L) Motor Configuration**



In the figure below, the Ultra3000 (230V) is shown connected to MP-Series (low inertia and integrated gear) 230V servo motors.

**Figure B.11**  
**Ultra3000 to MP-Series (230V) Motor Configuration**



**IMPORTANT**

MPL-A5xxx motors are not compatible with Ultra3000 (2098-DSD-005, -010, -020) drives.

## Motor Feedback Cables

Description	Catalog Number
H-Series, non-flex, connector at both ends, right angle	2090-UXNFBH-Rxx
H-Series, non-flex, motor connector to flying leads, right angle	2090-UXNFDH-Rxx
H and F-Series, non-flex, connector at both ends, straight	2090-UXNFBHF-Sxx
H and F-Series, non-flex, motor connector to flying leads, straight	2090-XXNFHF-Sxx
H and F-Series, non-flex, connector at both ends, right angle	2090-UXNFBHF-Rxx
H and F-Series, non-flex, connector at both ends, right angle, skewed	2090-UXNFBHF-Kxx
MP-Series (MPL/MPG), non-flex, connector at both ends, straight	2090-UXNFBMP-Sxx
1326AB-Series (M2L/S2L), non-flex, connector at both ends, straight	
MP-Series (MPL/MPG), non-flex, motor connector to flying leads, straight	2090-XXNFMP-Sxx
1326AB-Series (M2L/S2L), non-flex, motor connector to flying leads, straight	
MP-Series (MPF), non-flex, motor connector to flying leads, straight	2090-XXNFMF-Sxx
N-Series, non-flex, connector at both ends, straight	2090-UXNFBN-Sxx
N-Series, non-flex, motor feedback connector to flying leads, straight	2090-XXNFN-Sxx
N-Series, non-flex, connector at both ends, right angle	2090-UXNFBN-Rxx
N-Series, non-flex, connector at both ends, right angle, skewed	2090-UXNFBN-Kxx
N-Series, non-flex, connector at both ends, right angle, skewed	2090-UXNFBN23-Kxx
N-Series, non-flex, motor connector to flying leads, right angle, skewed	2090-UXNFDN23-Kxx
N-Series, non-flex, motor connector to flying leads, right angle	2090-UXNFDN-Rxx
Y-Series, non-flex, connector at both ends, straight	2090-UXNFBY-Sxx
Y-Series, non-flex, motor feedback connector to flying leads, straight	2090-XXNFY-Sxx
Drive Feedback Cable, non-flex, CN2 connector to flying leads	2090-UXNFM-Sxx

## MP-Series Motor Brake Cable

Description	Catalog Number
MP-Series motor brake cable, 0.75 mm <sup>2</sup> (18 AWG)	2090-UXNBMP-18Sxx

## Ultra3000 Interface Cables

Description	Catalog Number
Serial Interface Cable, 9-pin D-shell, CN3 to personal computer.	2090-UXPC-D09xx
Controller Interface Cable, 44-pin D-shell, CN1 to 1756-M02AE motion module (two-axis to premolded connector).	2090-U3AE-D44xx
Controller Interface Cable, 44-pin D-shell, CN1 to 1756-M02AE motion module (single-axis to no connector).	2090-U3CC-D44xx