



TechTalks
Online Seminars

**Legacy Bulletin 160, 1305, and 1336 VFD Migration
to PowerFlex VFD**

May 7, 2020

Our presentation will begin at 10:00 am Central



- Important to know the lifecycle status of your Installed Equipment Base
In most industries, less than 20 percent of companies can answer “yes” to more than two of these:

Do you have an accurate plant model that identifies all of the physical assets in your plants?

Do you have an updated complete bill of materials for your critical assets?

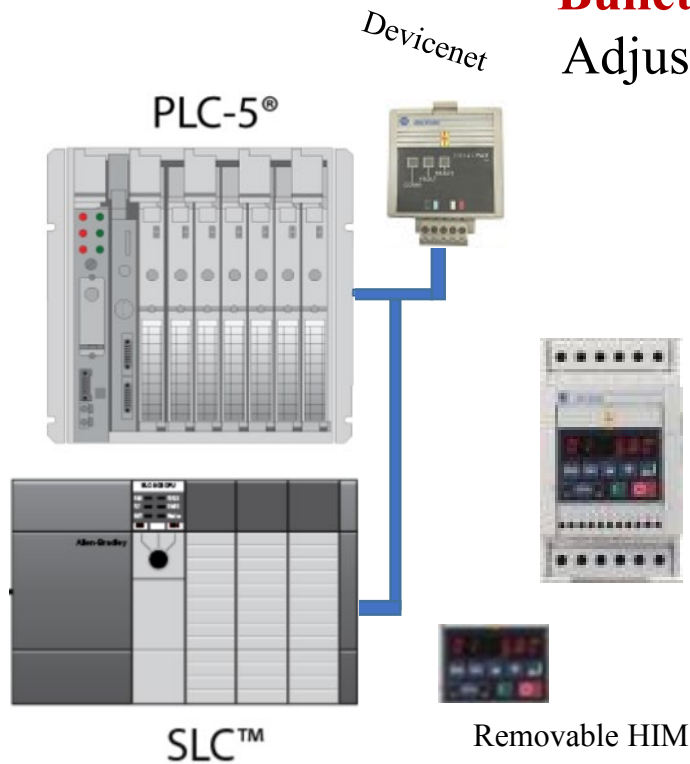
Do you know which parts are still being manufactured?

Do you know which parts have been announced for discontinuation or are already discontinued?

Do you have the right spare parts if a critical machine goes down?

Do you have an efficient and accurate process for maintaining storeroom inventory?

Migration Solutions



Bulletin 160 Adjustable Speed Drive

Ambient 0-50C
0.25 to 3HP
200-240VAC 1Ph & 3Ph
380-460VAC 3Ph



PowerFlex 520 Series Adjustable Speed Drives

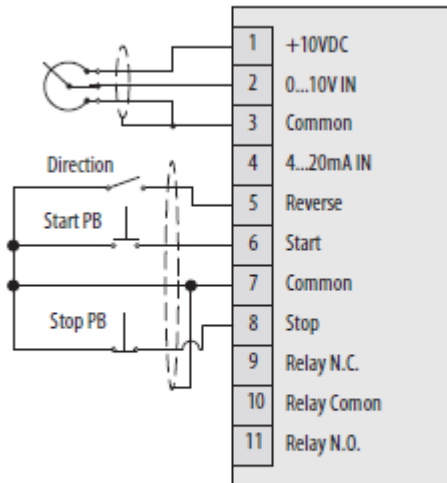
Ambient 0-50C * **Fan Option**
0.25 to 30HP
120VAC 1PH * 3Ph to 1.5Hp
200-240VAC 1Ph & 3Ph * 3Ph OP to 3HP
380-460VAC 3Ph to 30HP
525-600VAC 3Ph to 30HP



Migration Solutions

Bulletin 160 Adjustable Speed Drive

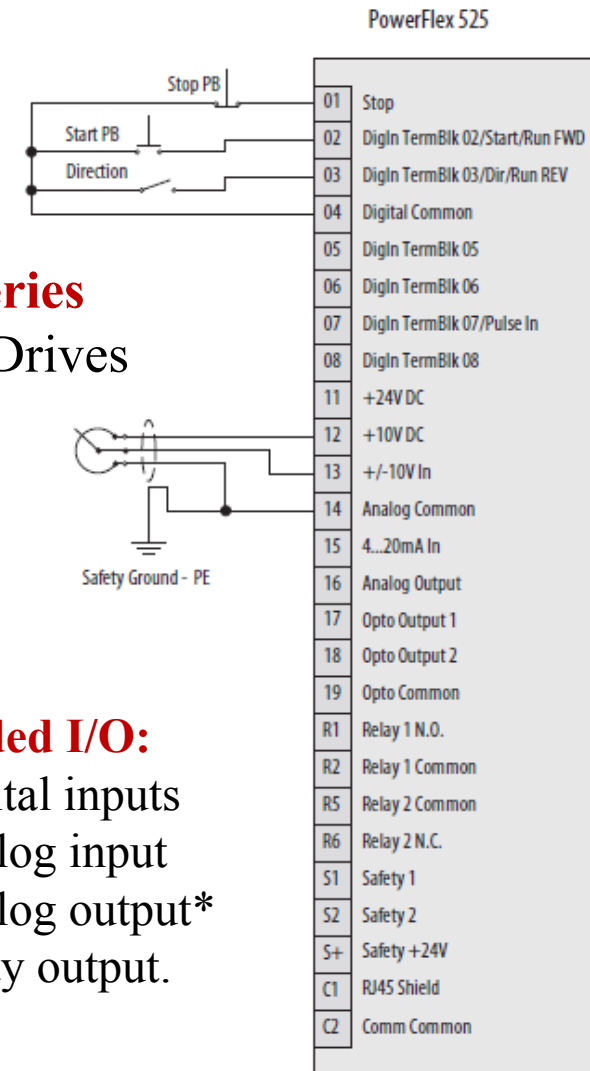
Bulletin 160 (SF1)



Note:
Refer to the Control Wiring section in Chapter 2 of the Bulletin 160 User Manual (160-UM009), for more details.



PowerFlex 520 Series Adjustable Speed Drives



Embedded I/O:

- 5 digital inputs
- 1 analog input
- 1 analog output*
- 1 relay output.

Migration Solutions

1305 Adjustable Frequency AC Drive



Bulletin 1336 Adjustable Frequency AC Drive



PLC-5®



**Allen Bradley®
Remote I/O™**

1203-GD1
1203-GK1



1203-GD1
1203-GK1



1336 Plus II
1336-GM1



1336 Classic
1336-MOD-G2



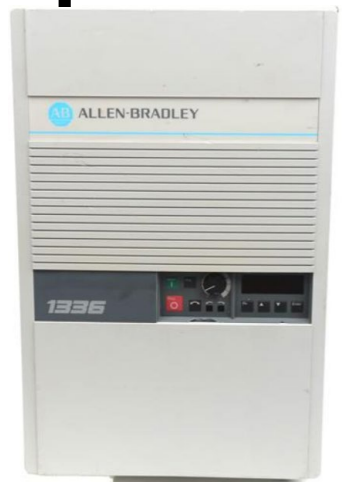
1336 Classic
1336-MOD-G2

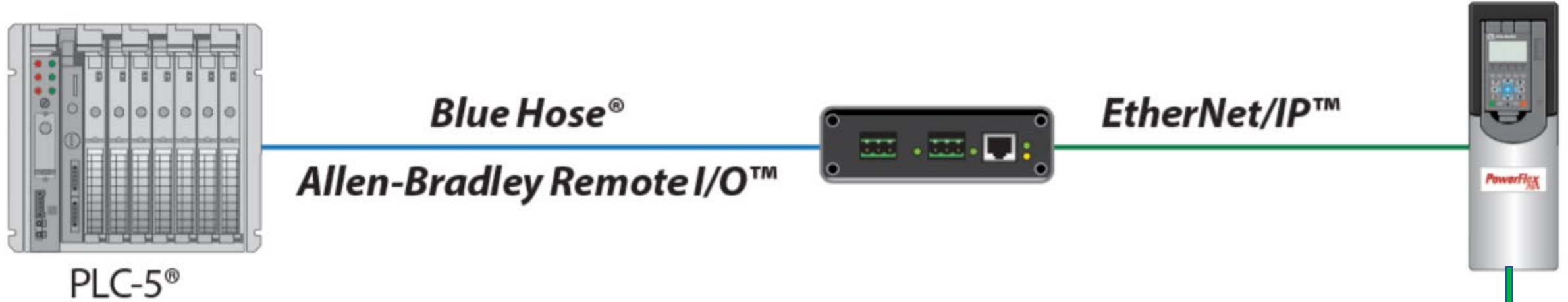
PLC-5®

**Allen Bradley®
Remote I/O™**

1203-GD1 1203-GD1
AN-X2-AB-DHRIO

1336 Plus II
1336-GM1





PowerFlex 25-COMM-E2P Dual-Port EtherNet/IP Adapter





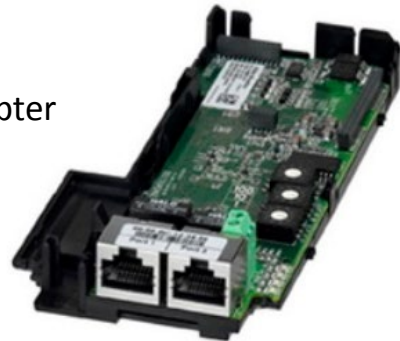
EtherNet/IP™



I/O Wiring Conversion system:

- Typically **saves 10 hours** per rack of ten, 40-point I/O modules
- Lowers engineering and labor costs
- Reduces production downtime

PowerFlex 25-COMM-E2P Dual-Port EtherNet/IP Adapter





This mode supports upgrading legacy Allen Bradley drives on Remote I/O to new EtherNet/IP enabled drives.

- No changes to PLC code required
- Supports up to 4 EtherNet/IP drives
- Configurable with 1/4, 1/2 and full rack addressing
- Supports all PowerFlex drives on EtherNet/IP



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THE REYNOLDS
COMPANY
ELECTRICAL SUPPLY







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30 minute webinars to inform



Product Selection

[Product Configuration Assistant](#)

Catalog Number	Description	Accessories
9303-4DTE01ENE	Drive Software, DriveExecutive	
9303-4DTE2S01ENE	Drive Software, Upgrade to SP Suite	
9303-4DTS01ENE	Drive Software, DriveTools SP ESD Software	
9303-4DTE01ENM	Drive Software, DriveExecutive MED Software	
9303-4DTE2S01ENM	Drive Software, DriveTools SP Unprotect MED Software	
9303-4DTS01ENM	Drive Software, DriveTools SP Suite	



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COMPANY
ELECTRICAL SUPPLY

TechTalks Online Seminars

30 minute webinars to inform



Allen-Bradley | Rockwell Software



Industries Capabilities Products News & Events

Compatibility & Downloads

Compare Downloads Views FAQs

Downloads 0

Compatibility / Download Center ▶ Multi Product Selector ▶ Find Downloads

FIND DOWNLOADS

9303	All Categories <input type="button" value="v"/>	All Families <input type="button" value="v"/>	<input type="button" value="Search"/>
DriveTools SP	(9303-4...) Configuration software suite (DriveExecutive and DriveObserver) for PowerFlex 4-Class, 7-Class and SCANport drives (Software/Software)		
DriveTools32	(9303-3...) A software suite that provides online & offline configuration and trending of SCANport and other legacy drives. (Accessories/Utilities)		

<input type="button" value="minus"/> DriveTools SP 5.06.00 <input type="button" value="Download"/>
--

Published Date 03/03/2020

Summary

DriveTools SP: The serial number you entered was invalid

Question

- What is the serial number we can use for installing DriveTools SP software? I get the following error when qualifying for Drive Tools SP:

Customers with TechConnect contract or the RSRevs DVD/hard drive should load DriveTools SP and use serial number: 1809123456. These customers are not issued serial numbers for stand alone DriveExecutive.

SCANport Products

- 1305 AC drives, firmware 2.01 or later
- 1336 FORCE™ drives
- 1336 IMPACT™ drives
- 1336 PLUS drives
- 1336 PLUS II drives
- 1336 REGEN Line Regeneration Packages
- 1336 SPIDER drives
- 1394 Motion systems
- 1397 DC drives
- 1557 Medium Voltage drives
- 2364 Regenerative DC Bus Supply Units
- SMC Dialog Plus™ Smart Motor Controllers
- SMP-3 Smart Motor Protectors

Figure 1.1 Connecting the Converter Between a DPI or SCANport Drive and Computer

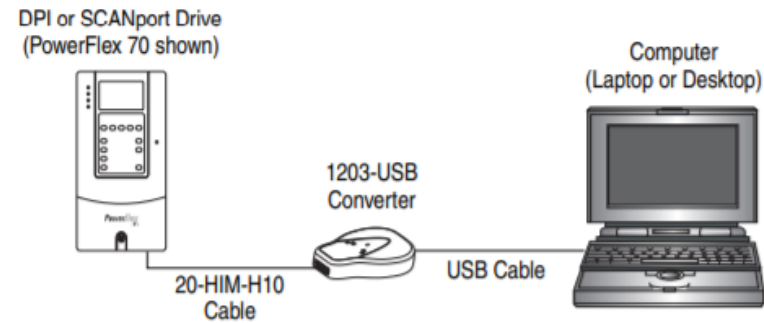
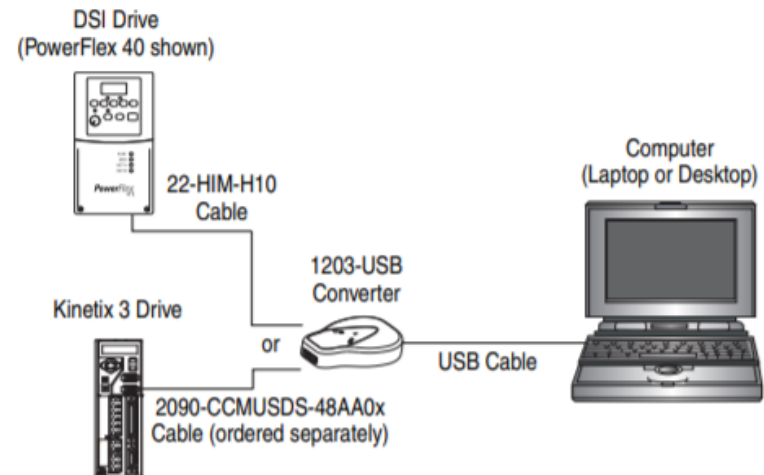


Figure 1.2 Connecting the Converter Between a DSI Drive and Computer





Select Module Type

Catalog Module Discovery Favorites

Enter Search Text for Module Type... Clear Filters Hide Filters^

Module Type Category Filters

- Digital
- DPI to Dual Port EtherNet/IP
- DPI to EtherNet/IP
- Drive

Module Type Vendor Filters

- Advanced Energy Industries, Inc.
- Cognex Corporation
- Dialight
- Endress+Hauser

Catalog Number	Description	Vendor	Category
1305-ACDrive-EN1	AC Drive via 1203-EN1	Rockwell Aut..	Drive
1336E-IMPACTDrive-EN1	AC Drive via 1203-EN1	Rockwell Aut..	Drive
1336F-PLUSIIDrive-EN1	AC Drive via 1203-EN1	Rockwell Aut..	Drive
1336R-REGENBrake-EN1	Brake via 1203-EN1	Rockwell Aut..	Drive
1336S-PLUSDriveLG-EN1	007-600 HP Code AC Drive via 1203-EN1	Rockwell Aut..	Drive
1336S-PLUSDriveSM-EN1	F05-F100 HP Code AC Drive via 1203-EN1	Rockwell Aut..	Drive
1336T-FORCEDriveCNA-EN1	AC Drive, ControlNet Adapter via 1203-EN1	Rockwell Aut..	Drive
1336T-FORCEDrivePLC-EN1	AC Drive, PLC Comm Adapter via 1203-EN1	Rockwell Aut..	Drive
1336T-FORCEDriveStd-EN1	AC Drive, Standard Adapter via 1203-EN1	Rockwell Aut..	Drive
1397DigitalDCDrive-EN1	DC Drive via 1203-EN1	Rockwell Aut..	Drive
150 SMC Flex-E	Smart Motor Controller via 20-COMM-E	Rockwell Aut..	Drive
150 SMC Flex-ER	Smart Motor Controller via 20-COMM-ER	Rockwell Aut..	Drive
150-SMCDialogPlus-EN1	Smart Motor Controller via 1203-EN1	Rockwell Aut..	Drive

Bulletin 1305



POWERFLEX AC DRIVES

Motor Control

Application

Ratings 100-115V
1 Phase In/3 Phase 230V Out

Ratings 200-240V

Ratings 400-480V

Ratings 500-600V

Ratings 690V

Ambient Temperature * Limit
for Enclosure Types

PowerFlex 4M AC Drive



- Volts per Hertz

- Open Loop Speed Regulation

- 0.2...1.1 kW • 0.25...1.5 Hp • 1.6...6 A

- 0.2...7.5 kW • 0.25...10 Hp • 1.6...33 A

- 0.4...11 kW • 0.5...15 Hp • 1.5...24 A

- N/A

- N/A

- IP20: -10 to 50 °C (14 to 122 °F)
- IP20 zero stacking: -10 to 40 °C (14 to 104 °F)

PowerFlex 523 AC Drive



- Volts per Hertz
- Sensorless Vector Control

- Open Loop Speed Regulation

- 0.2...1.1 kW • 0.25...1.5 Hp • 1.6...6 A

- 0.2...15 kW • 0.25...20 Hp • 1.6...62.1 A

- 0.4...22 kW • 0.5...30 Hp • 1.4...43 A

- 0.4...22 kW • 0.5...30 Hp • 0.9...32 A

- N/A

- IP20: -20 to 50 °C (-4 to 122 °F)
- IP20 Zero Stacking: -20* to 45 °C (-4 to 113 °F)
- IP20: -20 to 60 °C (140 °F), with current derating
- IP20: -20 to 70 °C: (158 °F) with current derating and optional control module fan kit

PowerFlex 525 AC Drive



- Volts per Hertz • Sensorless Vector Control
- Closed Loop Velocity Vector Control
- Permanent Magnet Motor Control**

- Open Loop Speed Regulation
- Closed Loop Speed Regulation

- 0.4...1.1 kW • 0.5...1.5 Hp • 2.5...6 A

- 0.4...15 kW • 0.5...20 Hp • 2.5...62.1 A

- 0.4...22 kW • 0.5...30 Hp • 1.4...43 A

- 0.4...22 kW • 0.5...30 Hp • 0.9...32 A

- N/A

- IP20: -20 to 50 °C (-4 to 122 °F)
- IP20 Zero Stacking: -20* to 45 °C (-4 to 113 °F)
- IP20: -20 to 60 °C (140 °F), with current derating
- IP20: -20 to 70 °C: (158 °F) with current derating and optional control module fan kit

PowerFlex 527 AC Drive



- Volts per Hertz • Sensorless Vector Control
- Closed Loop Velocity Vector Control

- Open Loop Speed Regulation
- Closed Loop Speed Regulation

- 0.4...1.1 kW • 0.5...1.5 Hp • 2.5...6 A

- 0.4...15 kW • 0.5...20 Hp • 2.5...62.1 A

- 0.4...22 kW • 0.5...30 Hp • 1.4...43 A

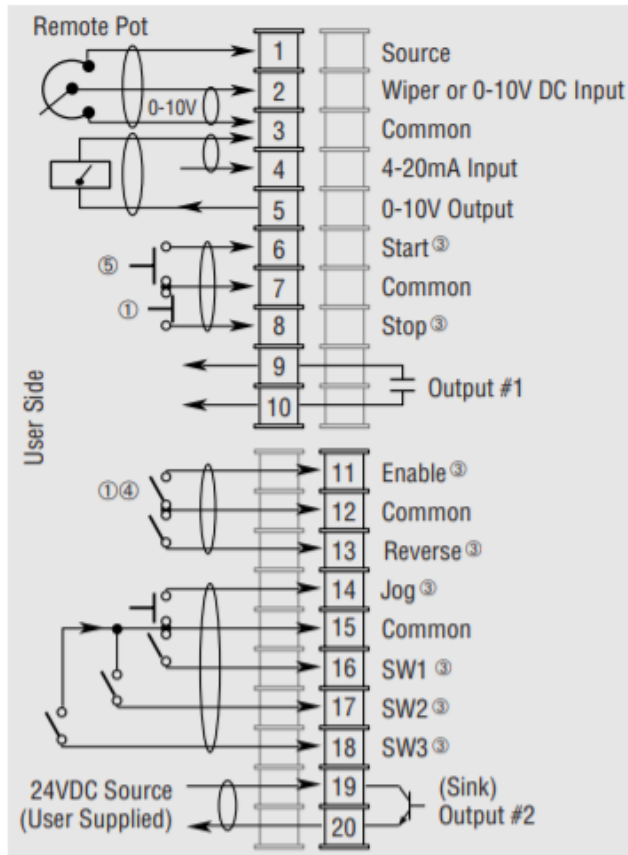
- 0.4...22 kW • 0.5...30 Hp • 0.9...32 A

- N/A

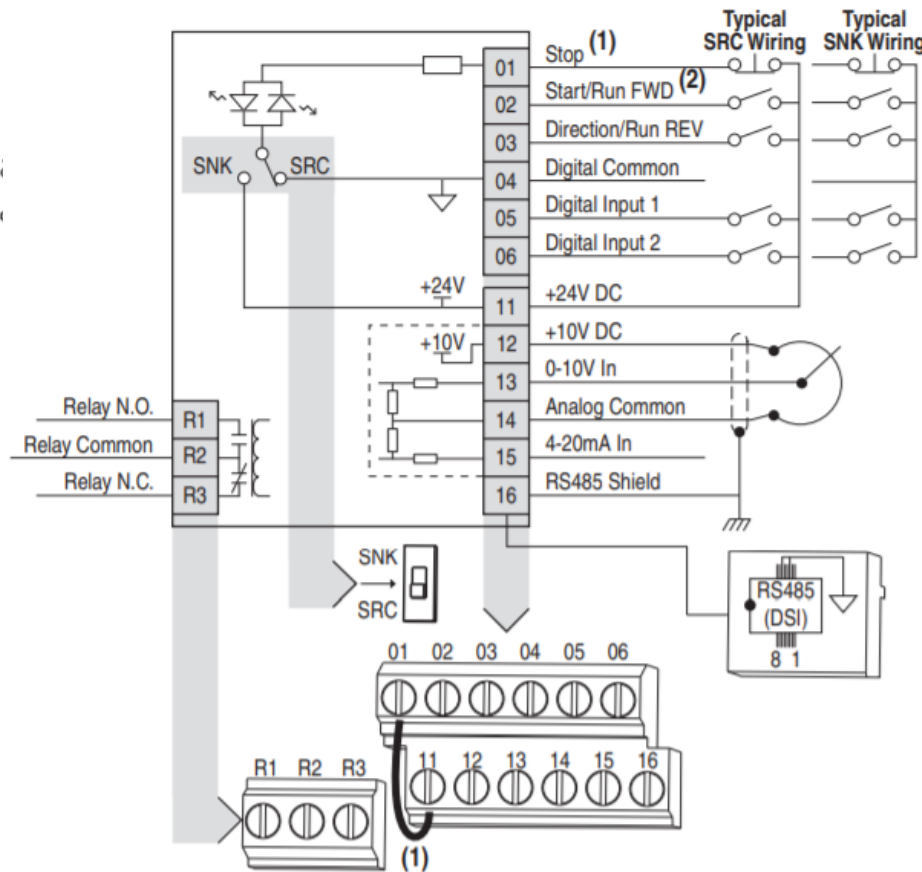
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- IP20: -20 to 70 °C: (158 °F) with current derating and optional control module fan kit

Bulletin 1305

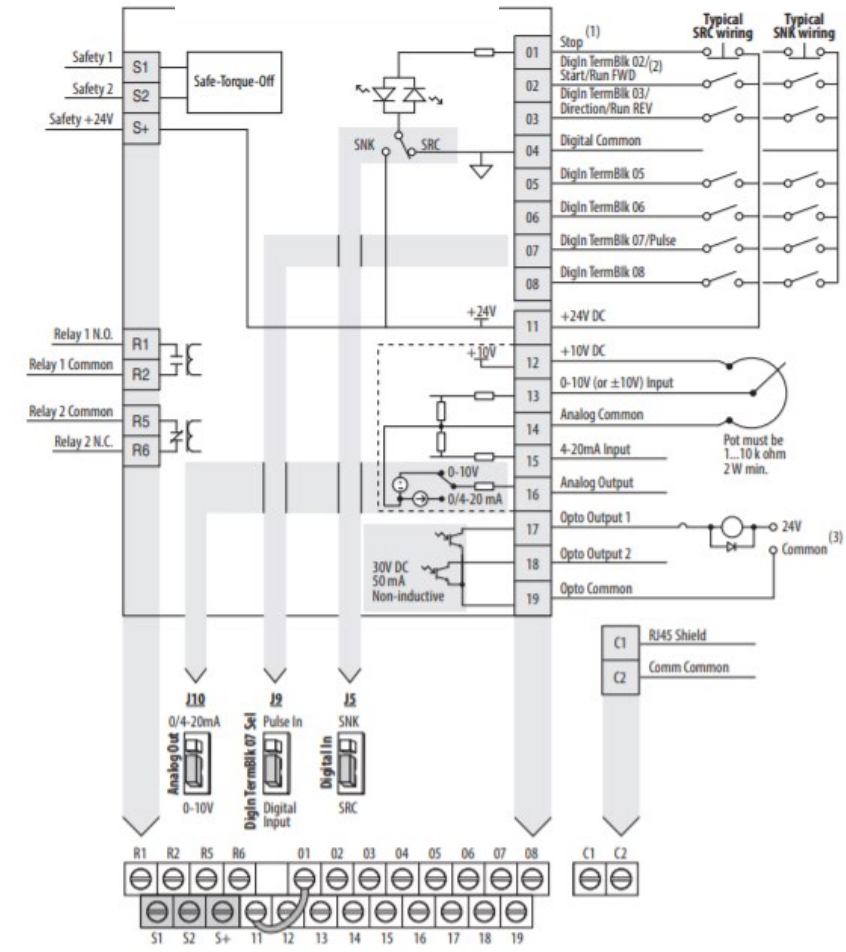
Figure 2.7 TB2 Designations
[Input Mode] = "Three Wire" or [Input Mode]= "3 w/2nd Acc."



PowerFlex 4M



PowerFlex 525



Basic Parameter Comparison			
1305		PowerFlex F525	
No.	Parameter	No.	Parameter
Setup Group			
21	Input Mode	46	Start Source
5	Freq Select	47	Speed Reference 1
7	Accel Time 1	41	Accel Time 1
8	Decel Time 1	42	Decel Time 1
17	Base Frequency	32	Motor NP Hertz
18	Base Voltage	31	Motor NP Volts
20	Maximum Voltage	534	Maximum Voltage
16	Minimum Freq	43	Minimum Frequency
19	Maximum Freq	44	Maximum Frequency
10	Stop Select	45	Stop Mode
36	Current Limit	484	Current Limit 1
37	Overload Mode	493	Motor OL Select
38	Overload Current	33	Motor OL Current
141	Sec Curr Limit		Not available
149	Adaptive I Limit		Not available

16	Minimum Freq	43	Minimum Frequency
19	Maximum Freq	44	Maximum Frequency
17	Base Frequency	32	Motor NP Hertz
18	Base Voltage	31	Motor NP Volts
49	Break Frequency	533	Break Frequency
50	Break Voltage	532	Break Voltage
20	Maximum Voltage	534	Maximum Voltage
9	DC Boost Select	530	Boost Select
48	Start Boost Select	531	Start Boost
83	Run Boost Select		Not available
45	PWM Frequency	440	PWM Frequency
84	Analog Invert	91	Anlg In 0-10V Lo
		92	Analg In 0-10V Hi
		95	Anlg In4-20mA Lo
		96	Anlg In4-20 mA Hi
81	4-20 mA Loss Sel	94	Anlg In V Loss
		97	Anlg In mA Loss
10	Stop Select	45	Stop Mode
12	DC Hold Time	434	DC Brake Time
13	DC Hold Volts	435	DC Brake Level
11	DB Enable	437	DB Resistor Sel
		438	DB Threshold
41	Motor Type	39	Torque Perf Mode
52	Compensation		
52	Compensation	547	Compensation

Analog inversion can be accomplished by setting the Low limits greater than the High Limits for every analog input

If a PM motor is used, Par. 39=4, (for firmware 5 and higher). Many other parameters will need to configure to control a PM. Check the latest manual



Three-Phase Drive Rating ¹			Compatible with Version . . .	Frame Reference
200-240V	380-480V	500-600V		
0.37-0.75 kW 0.5-1 HP	0.37-1.2 kW 0.5-1.5 HP	–	1.0 & Up	A1
1.2-1.5 kW 1.5-2 HP	1.5-2.2 kW 2-3 HP	–	1.0 & Up	A2
2.2-3.7 kW 3-5 HP	3.7 kW 5 HP	–	1.0 & Up	A3
5.5 kW 7.5 HP	5.5-15 kW 7.5-20 HP	0.75-15 kW 1-20 HP	1.0 & Up	A4
5.5-11 kW 7.5-15 HP	11-22 kW 15-30 HP	–	1.0 & Up	B1/B2
15-22 kW 20-30 HP	30-45 kW 40-60 HP	18.5-45 kW 25-60 HP	1.0 & Up	C
30-45 kW 40-60 HP	45-112 kW 60-150 HP	56-93 kW 75-125 HP	1.0 & Up	D
56-93 kW 75-125 HP	112-187 kW 150-250 HP	112-224 kW 150-300 HP	1.0 & Up	E
–	187-336 kW 250-450 HP	261-298 kW 350-400 HP	1.0 & Up	F
–	187-448 kW 250-600 HP	224-448 kW 300-600 HP	1.0 & Up	G

¹ kW and HP are constant torque.



Terminal Block TB3

The Control Interface Option provides a means of interfacing various signals and commands to the 1336 PLUS II by using contact closures. Several different versions of the option are available:

- L4 Contact Closure Interface¹.
- L4E Contact Closure Interface¹ with Encoder Feedback Inputs.
- L7E Contact Closure Interface¹ with Encoder Feedback Inputs for use with encoder loss detection.
- L5 +24VAC/DC Interface.
- L5E +24VAC/DC Interface with Encoder Feedback Inputs.
- L8E +24VAC/DC Interface with Encoder Feedback Inputs for use with encoder loss detection.
- L6 115VAC Interface.
- L6E 115VAC Interface with Encoder Feedback Inputs.
- L9E 115VAC Interface with Encoder Feedback Inputs for use with encoder loss detection.

¹ Uses internal +5V DC supply.

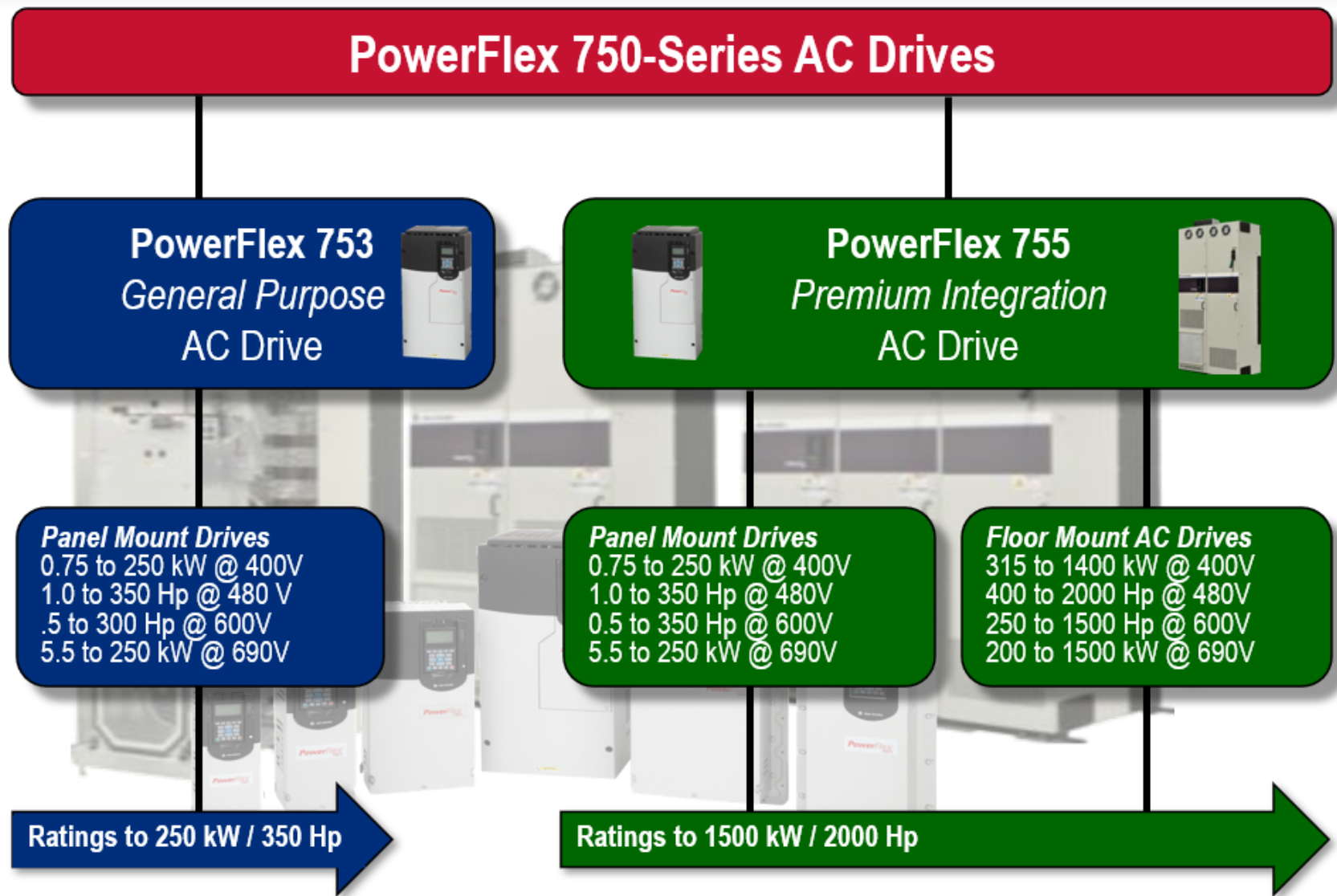
Digital I/O Default Settings – TB3

		Input Mode (Start/Stop Functions Only)		
		Status ² (Factory Default)	2-Wire Control Single-Source Control	3-Wire Control Single-Source Reversing
Input 1	19	Status	Run Forward	Start
Input 2	20	Stop/Fault Reset ³	Stop/Fault Reset ³	Stop/Fault Reset ³
		Factory Default Inputs		
		Common		
		Rev/For ⁴ (Programmable)		
		Jog (Programmable)		
		Auxiliary ³ (Programmable)		
		Common		
		Speed Select 3 ¹ (Programmable)		
		Speed Select 2 ¹ (Programmable)		
		Speed Select 1 ¹ (Programmable)		
		Common		
		Enable ³ (Not Programmable)		
		Status Only		
		Default Mode shown at right is not active when [Input Mode] is set to "Status"		
		Included on L4E through L9E Only		
Common	21			
Input 3	22			
Input 4	23			
Input 5	24			
Common	25			
Input 6	26			
Input 7	27			
Input 8	28			
Common	29			
Input 9	30			
Encoder B	31			
Encoder NOT A	32			
Encoder NOT B	33			
Encoder A	34			
+12V (200mA max.)	35			
Encoder Common	36			

¹ See Speed Select Table.
² If this mode is selected, the status of all inputs can be read at the [Input Status] parameter. However, only "Stop/Fault Reset" and "Enable" will have control function.
³ These inputs must be present (reprogram if necessary) before drive will start.
⁴ Bit 0 of [Direction Mask] must = 1 to allow TB3 direction change/bipolar operation.
⁵ Requires "2 Wire" control selection for [Input Mode].
⁶ [TB3 Term 22] must be programmed to "Run Reverse."

2-Wire Control Example

3-Wire Control Example



Migration Guide



1336-Series Drives to PowerFlex 750-Series Drives



Publication PFLEX-AP007C-EN-P - February 2014

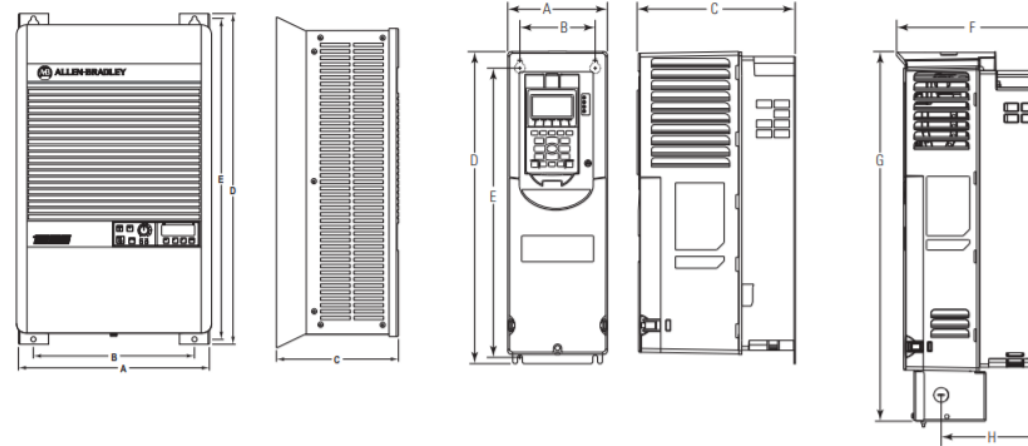
Supersedes Publication PFLEX-AP007B-EN-P - November 2012

Figure 7 - 1336-Series Drives to PowerFlex 750-Series Frame 3

1336-Series Drives
(CLASSIC shown)
(Dimension callouts represent all 1336-Series drives.)

PowerFlex 750-Series Frame 3

PowerFlex 750-Series Frame 3 w/NFMA
Type 1 Kit



Publication PFLEX-AP007C-EN-P - February 2014
Supersedes Publication PFLEX-AP007B-EN-P - November 2012

Drive	Frame	Dimensions mm (in.)							
		A	B	C	D	E	F	G	H
CLASSIC	B015... B020 C015	283 (11.13)	213 (8.38)	223 (8.76)	576 (22.66)	560 (22.06)			
PLUS	A4	260.0 (10.24)	230.0 (9.06)	212.0 (8.35)	350.0 (13.78)	320.0 (12.60)			
	B2	276.4 (10.88)	212.6 (8.37)	225.0 (8.86)	476.3 (18.75)	461.0 (18.15)			
PLUS II IMPACT	A4	260.0 (10.24)	230.0 (9.06)	212.0 (8.35)	350.0 (13.78)	320.0 (12.60)			
	B1/B2	276.4 (10.88)	212.6 (8.37)	225.0 (8.86)	476.3 (18.75)	461.0 (18.15)			
FORCE	B1/B2	276.4 (10.88)	212.6 (8.37)	225.0 (8.86)	476.3 (18.75)	461.0 (18.15)			
750-Series	3	190.0 (7.48)	158.0 (6.22)	212.0 (8.35)	454.0 (17.87)	435.0 (17.13)	223.1 (8.78)	530.1 (20.87)	38.0 (1.50)

Chapter 3

Network Communications

Overview

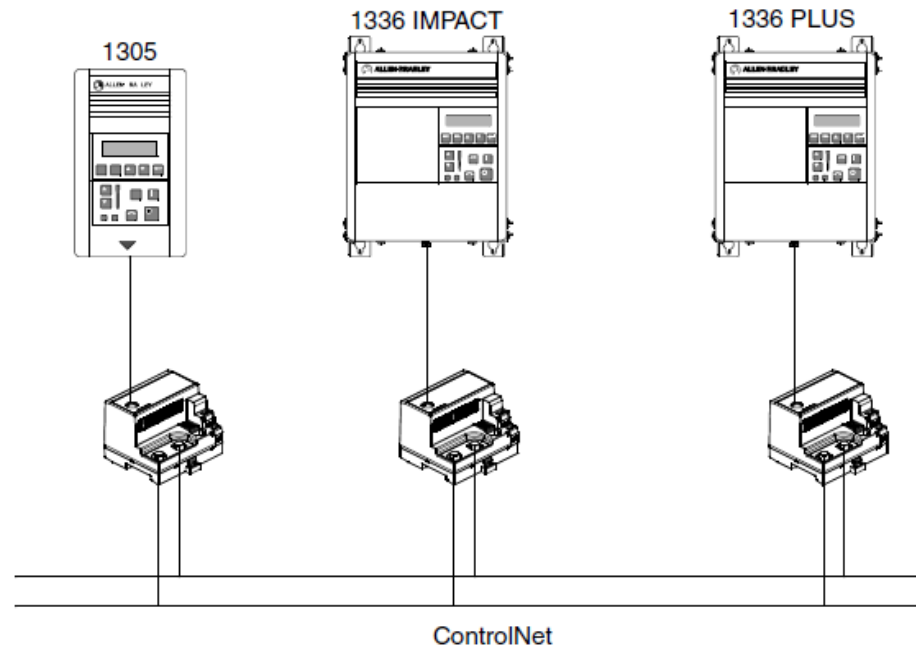
A 1336-Series drive with a communication option card can be replaced with a PowerFlex 750-Series drive. The process to migrate can vary significantly depending upon the communication option in the 1336-Series drive, the controller type communicating to the drive, and which PowerFlex 750-Series drive model is selected.

This section shows which 20-COMM network options can be used with the PowerFlex 750-Series drives, and introduces the dedicated communications that are in the PowerFlex 750-Series drives. Because of the wide variety of networks, processors, and drive options to consider, only migration guidelines are covered instead of step-by-step procedures.

The 1203-CN1 talks Scanport directly to the 1336 drive then hangs on the Control Net link.

Thus no new module was made to replace.

Example of 1203-CN1 Modules Connecting SCANport Products to ControlNet



The recommendation is to migrate from the 1336 to the Powerflex 750 using [1336-Series Drives to PowerFlex 750-Series Drives](#) publication PFLEX-AP007.

Then in the Powerflex 750, use of the 20-750-CNETC and this user manual, would be an appropriate migration. [PowerFlex 20-750-CNETC Coaxial ControlNet Option Module](#) Publication 750COM-UM003.

Going forward, new installations should utilize EtherNet/IP rather than ControlNet. **While ControlNet has been a reliable network solution for 25 years, all ControlNet products are moving to a Product Lifecycle Status of Active Mature.** As End of Life announcements are made for individual ControlNet products, the goal will be to provide the standard 18-24 months' notice prior to discontinuation, pending component availability. This letter does not change the lifecycle status of DeviceNet products.

PowerFlex 40 and 40P Drives to PowerFlex 525 Drives Migration Guide	PFLEX-AP011B-EN-P
Bulletin 1305 Drives to PowerFlex 40 Drives Migration Guide	PFLEX-AP006A-EN-P
Bulletin 160 SSC Variable Speed Drive to PowerFlex 525 AC Drive Migration Guide	PFLEX-AP010B-EN-P
1395, 1397, and FlexPak 3000 DC Drives to PowerFlex DC Drive Migration Guide	PFLEX-AP009A-EN-P
PowerFlex 700H Drives to PowerFlex 755 Drives Migration Guide	PFLEX-AP008A-EN-P
PowerFlex 700 Drives to PowerFlex 750-Series Drives Migration Guide	PFLEX-AP005A-EN-P
1336-Series Drives to PowerFlex 750-Series Drives Migration Guide	PFLEX-AP007C-EN-P
ProSoft Technologies AN-X2-AB-DHRIO Support Page	AN-X2 AB/Ethernet