The 1336 REGEN Line Regeneration Package is a line regeneration option for 1336 PLUS, 1336 PLUS II, 1336 IMPACT™ and 1336 FORCE™ AC drives. In a regenerative brake configuration (bus supply configuration is also available, see page 4), the 1336 REGEN is used to remove braking energy from the DC bus of a stand-alone AC drive and return it back to the three-phase AC utility, where it is absorbed by other loads. In many regenerative applications, the 1336 REGEN offers an energy-efficient alternative to dynamic brakes and chopper module/resistor combinations.

The 1336 REGEN Line Regeneration Package consists of:

- A converter that transforms a three-phase AC input source into a DC output source.
- A precharge unit that limits the inrush current and provides AC line voltage phase and magnitude information to the converter.

A 3% 1321 Line Reactor is also required to limit current harmonics on the AC line and to provide impedance between the regenerative brake and the attached drive.

Conformity to Standards

The 1336 REGEN conforms to the following:

Standard	Conformity
UL Listed	✔
CSA Certified (C-UL)	✔

Standard Products Program

This program includes standard 1336 REGEN Line Regeneration Packages for use in regenerative brake applications rated from 48 to 180 Amps. Mounting options include IP00 (open) and IP20 (NEMA Type 1). There is a limited offering of factory mounted options, along with a larger offering of option kits for user installation. All products in this program are predefined and not generally subject to modification.

Product Selection

1336 REGEN Catalog Number Explanation

1336R	–	VB	180	–	AA	–	HAB
Bulletin Number		Drive Rating *(must be specified)*	Nominal Current Rating *(must be specified)*		Enclosure Type *(must be specified)*		Human Interface Module, *(must be specified)*

Code	Voltage
VB	380-480VAC, Three-Phase, 50/60 Hz.

Code	kW (Hp)
048	38.4 (48.2)
078	62.3 (78.2)
180	143.7 (180.4)

Code	Enclosure
AA	IP 20 (NEMA Type 1)
AN	IP 00 (Open)

Code	Description
IP 20 (NEMA Type 1)	
HAB	Blank - No Functionality
HAP	Programmer Only

1336 REGEN Package *(Includes Converter and Precharge Module)*

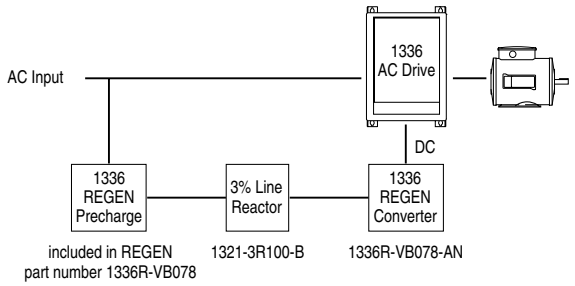
	Nominal Brake Rating		IP00 (Open) No Enclosure	IP20 (NEMA Type 1) General Purpose
Frame	Input Amps	Output kW	Code	Code
B	48.2	38.4	VB048-AN	VB048-AA
C	78.2	62.3	VB078-AN	VB078-AA
D	180.4	143.7	VB180-AN	VB180-AA

Required 3% Line Reactor *(Supplied Loose for Customer Mounting)*

		IP00 (Open), No Enclosure	IP20 (NEMA Type 1), General Purpose
Frame	Brake Rating	Catalog Number	Catalog Number
B	VB048	1321-3R55-B	1321-3RA55-B
C	VB078	1321-3R100-B	1321-3RA100-B
D	VB180	1321-3R200-B	1321-3RA200-B

1336 REGEN Brake Example

The diagram below shows the components needed for a 1336 REGEN brake configuration at 78 Amps. Note that the 1336 REGEN precharge unit is included in the base catalog number of the 1336 REGEN Line Regeneration Package. The 3% reactor is also required to provide proper line impedance.



Factory Installed Options

Interface Options

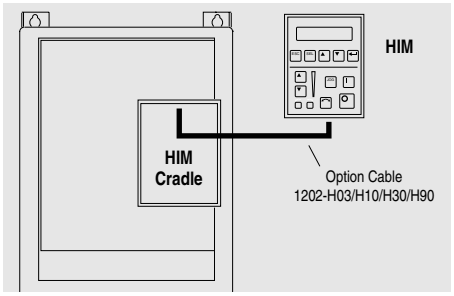
Description	Used with	Option Code
Human Interface Module, IP 20 (NEMA Type 1)	IP 00 (Open) and IP 20 (NEMA Type 1) Drives	
Blank - No Functionality		-HAB
Programmer Only		-HAP

User Installed Options

Gasket and Enclosure Kits

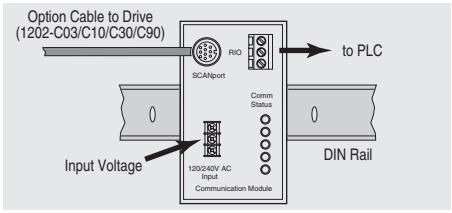
Description	Used with	Catalog Number
Gasket Kits for mounting 1336 REGEN Converter Units in User Supplied IP 54 or 65 (NEMA Type 12 or 4) Encl.	Frame B	1336-RF4
	Frame C	1336-RF5
	Frame D	1336-RF6
Enclosure Kits for 1336 REGEN Converter IP 20 (NEMA Type 1)	Frame B	1336R-AA4
	Frame C	1336R-AA5
	Frame D	1336R-AA6

Human Interface Module (HIM) Kits - User Installed

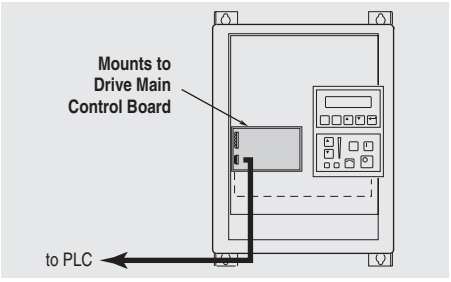


Description	Used with . . .	Catalog Number (Loose Kit)
IP 20 (NEMA Type 1) HIM	All Open Chassis and IP 20 (NEMA Type 1) converter ratings	
Blank - No Functionality		1201-HAB
Programmer Only		1201-HAP
Option Cable Kit - Connect to HIM Cradle Port	All HIMs not mounted on the converter chassis	
0.33 Meters (1.1 Feet)		1202-H03
1 Meter (3.3 Feet)		1202-H10
3 Meter (9.8 Feet)		1202-H30
9 Meter (29.5 Feet)		1202-H90
Refer to the 1336 PLUS II Price List (publication number 1336F-PL001) for other options.		

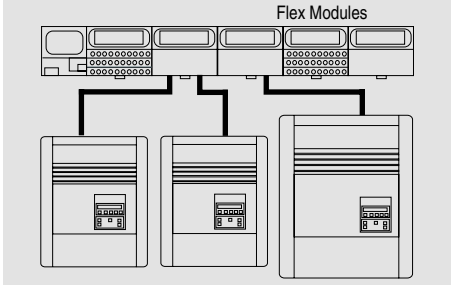
Communication Option Kits



GD1/GD2 – Typical Configuration



GM1/GM2, GM5/GM6 – Typical Configuration



FB1 and FM1 – Typical Configuration

Description	Used with . . .	Catalog Number (Loose Kit)
Remote Mounted (DIN Rail) – 115VAC	All Converter Ratings	
Requires 115VAC power supply		
Single Point RIO		1203-GD1 ❶
RS232/422/485, DF1 and DH485 Protocol		1203-GD2 ❶
Remote Mounted (DIN Rail) – 24V DC	All Converter Ratings	
Requires 24V DC power supply		
Single Point RIO		1203-GK1 ❶
RS232/422/485, DF1 and DH485 Protocol		1203-GK2 ❶
DeviceNet™		1203-GK5 ❶
Enhanced DeviceNet™		1203-GU6 ❶❸
ControlNet™ to SCANport Adapter Remote Mounted (DIN Rail) – 24V DC Requires 24V DC power supply	All Converter Ratings	1203-CN1 ❶❸
Flex™ I/O SCANport Module	All Converter Ratings	
Flex I/O Terminal Base		1203-FB1 ❷
Flex I/O Module		1203-FM1 ❶❷
Each FM1/FB1 combination provides a connection for up to 2 drive products.		
Serial Flash Cable Connects CN1, GU6 and SSS to a computer RS-232 port for adapter programming and for DriveTools32™ & DriveExplorer™ serial interface.	All Converter Ratings	1203-SFC
SLC™ Communication Module (SLC 500 to SCANport Module) Provides a connection for up to 3 drive products.	All Converter Ratings	1203-SM1 ❶
Smart Serial to SCANport Adapter Includes 1203-SFC and 1202-C10 Cables	All Converter Ratings	1203-SSS
Serial Null Modem Adapter		1203-SNM
Universal Serial Bus™ (USB) Converter Includes 2m USB, 20-HIM-H10 & 22-HIM-H10 Cables	All Drives	1203-USB

❶ Requires a Communication Option Cable (1202-C03/C10/C30/C90) to be functional. These units are not acceptable for NEMA Type 4 door mounting or UL Type 4X outdoor duty.

❷ Each Flex I/O SCANport Module requires (1) 1203-FB1 and (1) 1203-FM1.

❸ Adapter is programmed/configured with Windows® HyperTerminal via RS-232 using the 1203-SFC cable, (purchased separately) or using a compatible network specific software tool.

Communication Option Kits (continued)

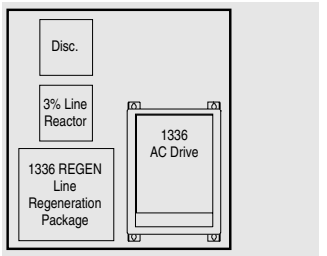
Description	Used with . . .	Catalog Number *(Loose Kit)*
Communication Option Cable Kit	All External	
0.33 Meters (1.1 Feet)	Communication	1202-C03
1 Meter (3.3 Feet)	Options Listed	1202-C10
3 Meter (9.8 Feet)	Above	1202-C30
9 Meter (29.5 Feet)		1202-C90
SCANport™ Expander Option	All Drive Ratings	
One to Two Port Expander Module		1203-SG2
One to Four Port Expander Module		1203-SG4
One to Two Port Splitter Cable		1203-S03

Drive Software

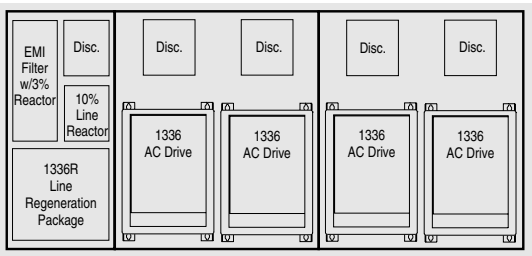
Description	
DriveTools32™ Software	See publication 9303-PL002... for Ordering/Pricing Information
DriveExecutive™ Software	
DrvieExplorer™ Software	

Packaged Program

Factory configured and assembled Regenerative Brake or DC Bus Supply Packages are available. Consult A-B for details.



1336 REGEN Regeneration Brake Configuration



1336 REGEN Regeneration DC Bus Supply Configuration

1336 REGEN Bus Supply

The 1336 REGEN Bus Supply is available as a packaged product. The bus supply is used to provide a DC bus for several common-bus input AC drives. This configuration requires a 10% reactor and an EMI filter/3% reactor combination for high frequency noise attenuation. Contact your local Sales Office for details.