

## Control and Feedback Options



Control Options - These cards and devices add control functionality to the standard drive. Items are shipped loose, unmounted.

Additional Information	
Network Communications	I/O Adapters
Feedback Encoders	

### I/O Adapters

Option	Purpose	Part Number
Analog Input (provides 3 additional inputs)	Provides 3 high resolution (13-bit signed) analog inputs. These inputs are configurable for 0 - 10 Vdc, -10 Vdc to +10 Vdc, or 4 - 20 mA, and can be combined with the drive's standard analog inputs.	AI-A3
Digital Input (provides 16 additional inputs)	Provides an additional 16 digital inputs which can be programmed individually (multi-function) or used as a binary-coded decimal (BCD) speed reference, configurable as 2, 3, or 4 digit BCD.	DI-A3
120 V Digital Interface (converts existing inputs)	Mounts directly to the control terminal block on the drive and allows the use of 120 Vac control logic circuits to produce multi-function control input signals for the drive. Used for digital inputs S1 to S8.	DI-101
Analog Output (provides 2 additional outputs)	Provides 2 signals for remote metering of any two of the drive's "U1" monitors. Additive to the two standard analog outputs. Signal level: 0 to +/- 10 Vdc (20 kOhm).	AO-A3
Digital Output (provides 8 additional outputs)	Provides 8 additional digital outputs for use in monitoring the status outputs of the drive. Signal levels: 6 channels PHC (48 Vdc, 50 mA maximum) and 2 channels of Form A (250 Vac at 1 A or less, 30 Vdc at 1 A or less). Shared Common.	DO-A3

### Motor Feedback

Option	Purpose	Part Number
Open Collector	This option provides velocity and direction feedback from an encoder. This is primarily used for motor speed feedback in closed loop flux vector control. A 24 DC buffered output (open collector) is also included. 32 kHz maximum input frequency.	PG-B3
Line Driver	Provides velocity and direction feedback from an encoder. Primarily used for motor speed feedback in closed loop flux vector control. A 5 Vdc buffered output is also included. Signal levels: 5 or 12 Vdc differential line driver with compliments, maximum input frequency of 300 kHz, phases A and B (Z required with some custom software).	PG-X3

Option	Purpose	Part Number
Absolute Encoder	This card reads a maximum input frequency from the encoder of 20 kHz. The card allows the user to connect a rotary encoder, either EnDat2.1/01 or EnDat2.2/01 by HEIDENHAIN for motor speed feedback to the drive and take advantage of the Closed Loop Vector for PM Motors control mode.	PG-F3
Resolver	This card reads a maximum input frequency from the encoder of 20 kHz. The card allows the user to connect a rotary encoder, either EnDat2.1/01 or EnDat2.2/01 by HEIDENHAIN for motor speed feedback to the drive and take advantage of the Closed Loop Vector for PM Motors control mode.	PG-RT3

## Network Communication Options

These cards, cables, and devices add control functionality to the standard drive. Items are shipped loose and unmounted.

Option	Purpose	Part Number
EtherNet/IP	ODVA compliant option cards to connect to Ethernet/IP.	SI-EN3
EtherNet/IP Dual Port		SI-EN3D
PROFINET	PI compliant option cards to connect to a PROFINET network.	SI-EP3
Modbus TCP	Simple and effective solution to connect the drive to a Modbus TCP/IP network.	SI-EM3
Modbus TCP Dual Port	Simple and effective solution to connect the drive to a Modbus TCP/IP network.	SI-EM3D
EtherCAT	Option cards to turn the drive into an EtherCAT slave on the network.	SI-ES3
DeviceNet	ODVA compliant option cards to connect to a DeviceNet network.	SI-N3
PROFIBUS-DP	PI compliant option cards to connect to a PROFIBUS-DP network.	SI-P3
CANopen	CANopen is a CAN-based communication system.	SI-C3
CC-Link	CC-Link is an open industrial network protocol that enables devices from different manufacturers to communicate.	SI-C3
BACnet MSTP	BACnet is a data communications protocol for Building Automation and Control Networks.	SI-B3
APOGEE/METASYS	APOGEE/METASYS is a multi-protocol card that provides communications between different systems and devices.	SI-J3
LONWORKS	LONWORKS provides building automation communication capabilities.	SI-W3
MECHATROLINK II	Option cards to turn the drive into a M-II node and connect to a high-speed MECHATROLINK-II network.	SI-T3
MECHATROLINK III	Option cards to turn the drive into a M-III node and connect to a high-speed MECHATROLINK-III network.	SI-ET3

# Keypads, Accessories, and Cables

Additional Information
Keypads and Cables

Table 4: Keypads

Part Number	Description
JVOP-KPLCC04MBB	LCD Keypad with Bluetooth



LCD Keypad with Bluetooth

Table 5: Remote Mount Adapters

Part Number	Description
900-192-933-001	Type 1 Keypad Panel Mount Kit A (brackets have tapped holes for use with screws)
900-192-933-002	Type 1 Keypad Panel Mount Kit B (brackets have untapped holes for use with panel studs)
900-239-230-001	Type 12/3R Keypad Panel Mount (with embedded studs)



-001 Type 1 Screw Mount



-002 Type 1 Stud Mount



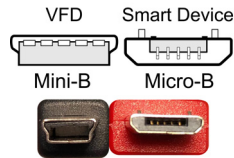
Type 12/3R Mount (with embedded studs)

Table 6: Cables

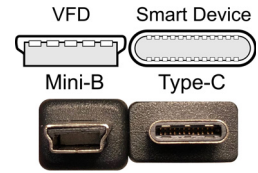
Part Number	Description
UWR0051	Keypad Remote Mount Cable - 1 Meter
UWR0052	Keypad Remote Mount Cable - 3 Meter
UWR01258	USB Cable for PC to Drive Communication - 3 Meter

Table 7: Android Mobile Device Interface Cables (for connecting Android device to USB port on drive)

Part Number	Description
UWR01516-B	USB Mini-B to USB Micro-B. On-The-Go (OTG) compatible, 2-meter length.
UWR01516-C	USB Mini-B to USB Type-C. On-The-Go (OTG) compatible, 2-meter length.



P# UWR01516-B - USB Mini-B to USB Micro-B



P# UWR01516-C - USB Mini-B to USB Type-C

# Enclosure Adapters and Kits

These adapters are for mounting the standard IP20 drives directly to a wall, a machine in a clean environment (Type 1), or inside a Type 1 enclosure with external heatsink. The Type 1 Adapters convert an Open Chassis Drive (IP20) to an enclosed wall-mounted drive (Type 1). The A1000 to GA800 adapters allow a GA800 to mount where an A1000 was previously mounted.



Type 1 Adapter



External Heatsink Adapter



A1000 to GA800 Adapters

### Additional Information

[Type 1 Adapter Manual](#)

Table 8: 240 Volt Drive Mounting Adapters

Catalog Code GA80U . .	Type 1 Adapters	Internal Fuses (Bussman FWH Series) for Type 1 Adapters	External Heatsink Adapter	Drive Adapters (A1000 to GA800)	
	Part Number	Part Number	Part Number	Part Number	
2004ABM	900-192-121-001	Not Available	900-193-209-001	900-195-081-001	
2006ABM					
2008ABM					
2010ABM					
2012ABM					
2018ABM					
2021ABM					
2030ABM					
2042ABM					
2056ABM					900-192-121-002
2070ABM	900-192-121-003	Included as standard (see instructions)	900-193-209-003	Not Available	
2082ABM	900-192-121-004				
2110ABM	900-192-121-005				
2138ABM	900-192-121-006				
2169ABM	900-192-121-007				
2211ABM	900-192-121-008				
2257ABM	900-192-121-009				
2313ABM					
2360ABM	900-192-121-010				
2415ABM					

Table 9: 480 Volt Drive Mounting Adapters

Catalog Code GA80U . .	Type 1 Adapters	Internal Fuses (Bussman FWH Series) for Type 1 Adapters <sup>1 2</sup>	External Heatsink Adapter	Drive Adapters (A1000 to GA800)														
	Part Number	Part Number	Part Number	Part Number														
4002ABM	900-192-121-001	Not Available	900-193-209-001	900-195-081-001														
4004ABM																		
4005ABM																		
4007ABM																		
4009ABM																		
4012ABM																		
4018ABM																		
4023ABM																		
4031ABM	900-192-121-002	Not Available	900-193-209-002	900-195-081-002														
4038ABM	900-192-121-003		Included as standard (see instructions)	900-193-209-003	Not Available													
4044ABM																		
4060ABM	900-192-121-005					Included as standard (see instructions)	900-193-209-003	Not Available										
4075ABM																		
4089ABM																		
4103ABM																		
4140ABM	900-192-121-007								Included as standard (see instructions)	900-193-209-003	Not Available							
4168ABM																		
4208ABM	900-192-121-009											Included as standard (see instructions)	900-193-209-003	Not Available				
4250ABM																		
4302ABM																		
4371ABM	UUX001700														UFU000047	Included as standard (see instructions)	Not Available	
4414ABM															UFU000048			
4477ABM	UUX001701														UFU000049			Included as standard (see instructions)
4568ABM																		
4605ABM																		
4720ABM		UFU000050																

1. Type 1 Adapters for 4371 and larger are input fuse ready. UL requires Bussman FWH series semiconductor fuses to be installed within the Type 1 Adapter on these models.
2. Fuses sold individually. A quantity of three are required per drive.