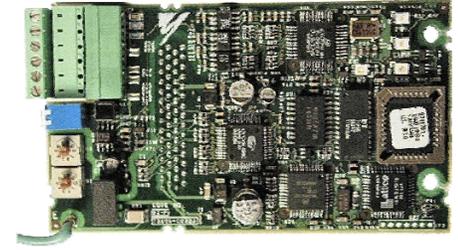


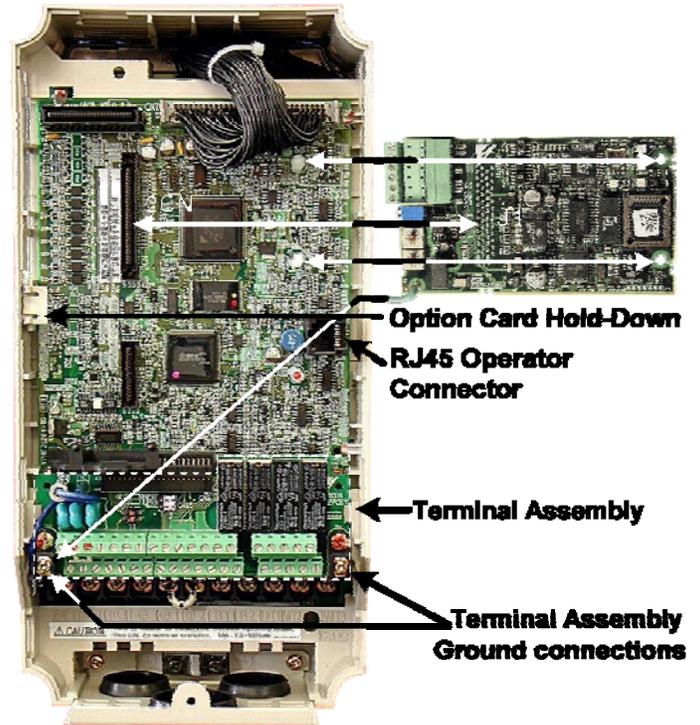
- This document applies to the Yaskawa F7U, G7U, P7U, E7U, G5M(Spec F), and G5M(600V) drives. For G5U(HHP) drives, refer to IG.G5HHP.12.
- Unpack the CM061 *Profibus-DP Option Kit* and verify that all components are present and undamaged.



CM061 Option Kit Parts List		Qty.
Profibus-DP Option Card (SI-P1)		1
Installation Guide (IG.AFD.12)		1

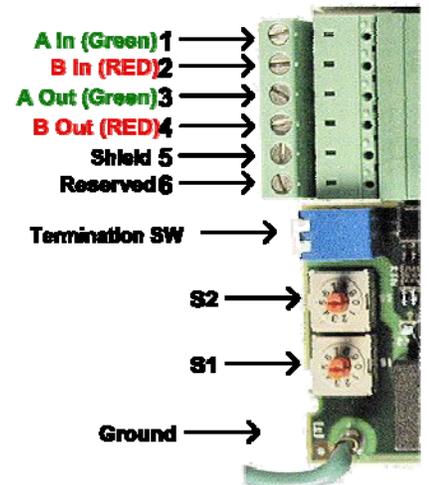
- Connect power to the drive and verify that the drive functions correctly. This includes running the drive from the operator keypad. Refer to the appropriate drive technical manual for information on connecting and operating the drive.
- Remove power from the drive and wait for the charge lamp to be completely extinguished. Wait at least five additional minutes for the drive to be completely discharged. Measure the DC bus voltage and verify that it is at a safe level.

- Remove the operator keypad and drive cover.
 - Remove the operator keypad and loosen any screws on the front of the terminal cover. Simultaneously pushing the locking tabs on the bottom right and left sides of the terminal cover inward, pull the bottom edge of the terminal cover outward.
 - Loosen any screws on the front of the control cover. Simultaneously pushing the locking tabs on the bottom right and left sides of the control cover inward, pull the bottom edge of the control cover outward.
 - Remove the option card hold-down on the left side of the drive case by carefully compressing the top and bottom until it becomes free of its holder. Lift it out.



- Mount the *Profibus-DP Option Card* on the drive.
 - Align the **2CN** connector on the back of the *Profibus-DP Option Card* with its mating **J1** connector on the front of the drive control card.
 - Align the two standoffs on the front of the drive control board with the two holes on the right side of the *Profibus-DP Option Card*.
 - Press the *Profibus-DP Option Card* firmly onto the drive **2CN** connector and standoffs until the **J1** connector is fully seated and the drive standoffs have locked into their appropriate holes.
 - Connect the *Profibus-DP Option Card* ground to a ground terminal on the terminal assembly.

- Connect the drive to the Profibus-DP communication network.
 - Connect the Profibus-DP network cable as shown in the figure to the right.
 - The cable shield must be contiguous between the beginning and end of any network segment. It is recommended that the shield of the **in** cable and the **out** cable be twisted together. Do not connect the shield to the shield connector, rather fold it back and secure it to the cable.
 - Use the pluggable connector that came with the *Profibus-DP Option Card*. The pluggable connector contains a circuit board that remaps the terminal connections. **Do not use an alternate connector.** Damage to the *Profibus-DP Option Card* and/or associated network devices could be damaged if an alternate connector is used.



Plug		
Pin	Description	Definition
1	A In (Green)	Negative
2	B In (Red)	Positive
3	A Out (Green)	Negative
4	B Out (Red)	Positive
5	Shield	Shield
6	Reserved	No Connection

Socket		
Pin	Description	Definition
1	Reserved	No Connection
2	Reserved	No Connection
3	A In/Out (Green)	Negative
4	B In/Out (Red)	Positive
5	Shield	Shield
6	Reserved	No Connection

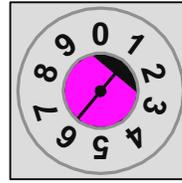
- Set the node address.
 - Set the node address for the drive by setting the 10's digit with S2 and the 1's digit with S1.
 - All devices on the network must have unique node addresses. Check the network layout to verify that the node address selected is unique and is within 3 – 99.
 - Node addresses 0 and 1 are typically reserved for master controllers.
 - Node address 2 is typically reserved for diagnostic equipment.

$$\text{Address} = \text{S2} (\times 10) + \text{S1}$$

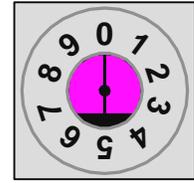
Example: Set node address to 15

Set address switch 2 to "1"

Set address switch 1 to "5"



S2

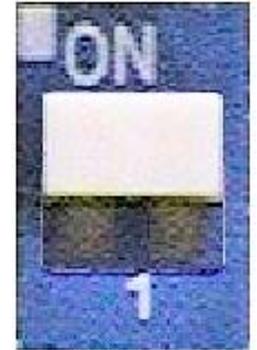


S1

- Set network termination.
 - If this drive is either the first or the last device on the network, including any PLC and/or Profibus-DP Master, and active termination is not used, set the termination resistor switch to ON.
 - If this device is not the first or last device on the network or active termination is used, set the termination resistor switch to OFF.
 - Active termination is the recommended termination method and is required for networks operating above 1.5Mbps. Active termination will eliminate the possibility of network failure due to the removal of a terminated device.
 - The Siemens Profibus Terminator part number is 6ES7 972-0DA00-0AA0.



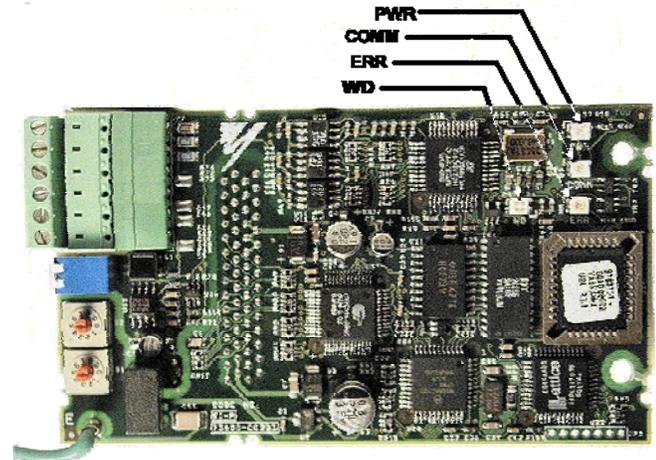
OFF



ON

- Configure the Profibus-DP network for the drive. Refer to the documentation included with the Profibus configuration utility supplied with the Profibus-DP Master controller.
- Apply power to the drive and verify that the diagnostic LEDs on the front of the *Profibus-DP Option Card* are in their correct state.

LED Display				Content	Cause
PWR	COM	ERR	WD		
Solid Green	Solid Green	OFF	Flashing Green	Normal	Normal communication



- Remove power from the drive and wait for the charge lamp to be completely extinguished. Wait at least five additional minutes for the drive to be completely discharged. Measure the DC bus voltage and verify that it is at a safe level.
- Reinstall the operator keypad and all drive covers. Apply power to the drive.
- Set parameters b1-01 and b1-02 to their appropriate values. Refer to the table below for available b1-01 and b1-02 values.

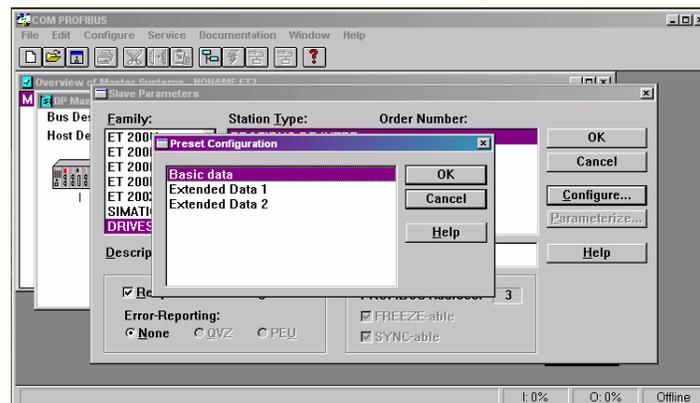
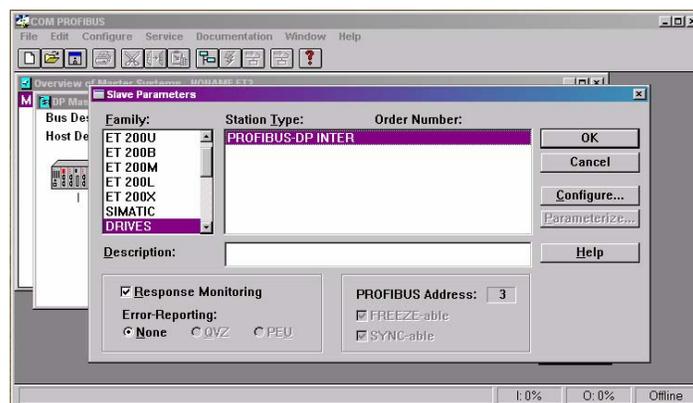
Parameter	Function	Data	Description	Default
b1-01	Frequency Reference Source Selection	0	Digital Operator	1
		1	Terminal Strip	
		2	Built-in Modbus RTU	
		3	Option Card (Profibus-DP Option Card)	
b1-02	Run Command Source Selection	0	Digital Operator	1
		1	Terminal Strip	
		2	Built-in Modbus RTU	
		3	Option Card (Profibus-DP Option Card)	

☐ LED Status Indicators and Diagnostics

LED Display				Content	Cause	Solution
PWR	COM	ERR	WD			
OFF	OFF	OFF	OFF	Power OFF	Option is not powered	<ul style="list-style-type: none"> Check the main circuit wiring on the drive. Cycle drive power.
					Poor connection to drive	<ul style="list-style-type: none"> Turn of the drive power. Check the Profibus-DP Option connection to the drive 2CN connector, Cycle drive power.
Solid Green	OFF	Solid Red	Solid Red	CPU Error	Option unit CPU error	<ul style="list-style-type: none"> Cycle drive power. Replace Profibus-DP Option if fault persists.
Solid Green	OFF	Solid Red	Flashing Red	Drive Error	Error in Drive unit	<ul style="list-style-type: none"> Cycle drive power. Replace Profibus-DP Option if fault persists. Replace drive if fault persists.
Solid Green	OFF	Flashing Red	Solid Green	Com Error	Communication Failure	<ul style="list-style-type: none"> Check whether the address set in the Profibus-DP Master differs from the address of the option unit. Check that the master is functioning properly. Check that the termination resistor is correctly connected to the communication line. Check whether the communication line is correctly connected (disconnected or poor connection). Check that the communication line is separated from the main power line.
Solid Green	Solid Green	Flashing Red	Solid Green	Com Error	Communication Fault	<ul style="list-style-type: none"> Check whether the address is duplicated with any other devices on the Profibus-DP network.
Solid Green	Solid Green	OFF	Solid Green	CPU Init	Initialization	<ul style="list-style-type: none"> Wait until WD LED is flashing
Solid Green	Solid Green	OFF	Flashing Green	Normal	Normal	

☐ Profibus-DP Configuration

- To simplify the drive configuration, the GSD file can be obtained at www.yaskawa.com. Select **Downloads, By Inverter Drives, By Product, and Network Comms-Profibus**. Then select the file named **YASK00CA.GSD**.
- Load the GSD file, **YASK00CA.GSD**, into the proper directory for the configuration tool used. Retrieve the GSD file form either www.yaskawa.com or www.profibus.org to make sure that the latest GSD file is loaded.
- Select the Profibus-DP INTER device when adding Yaskawa drives to the Profibus configuration. See the figure to the right.
- The *Profibus-DP Option Card* supports three configuration options: Extended Data 1 (32 words of input and output), Extended Data 2 (12 words of input and output) and Basic Data (3 words of I/O). Refer to the *Profibus-DP Option Technical Manual (TM.AFD.12)* for further information on each configuration. See the figure to the right.



Copies of this Installation Guide along with all technical manuals in “.pdf” format and support files may be obtained from either the CD supplied with the drive or from www.drives.com . Printed copies of any Yaskawa manual may be obtained by contacting the nearest Yaskawa office. Information on Profibus-DP may be obtained from www.profibus.org.

Reference documents:

Profibus-DP Option Kit Installation Guide – IG.AFD.12
Profibus-DP Option Kit Installation Guide for G5HHP – IG.G5HHP.12
Profibus-DP Technical Manual – TM.AFD.12
G5M Technical Manual – TM.4515
G5M Modbus Technical Manual – TM.4025
F7U Drive User Manual – TM.F7.01
F7U Drive Programming Manual – TM.F7.02
F7U Drive Parameter Access Technical Manual – TM.F7.11
G7U Drive Technical Manual – TM.G7.01
G7U Drive Parameter Access Technical Manual – TM.G7.11
P7U Drive User Manual – TM.P7.01
P7U Drive Programming Manual – TM.P7.02
P7U Drive Parameter Access Technical Manual – TM.P7.11

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