

Inverter SF-520 Option Potentiometer

Technical Manual

Type AI-V3/J-H

NOTICE

1. Make sure that this installation manual is delivered to the end user of inverter unit.
2. Read this manual before installing or operating the inverter unit, and store it in a safe place for reference.



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1 Preface and Safety

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◆ Applicable Documentation

The following manuals are available for the Potentiometer Option:

Option Unit	
	Inverter SF-520 Option Potentiometer Technical Manual
	Read this manual first. The Technical Manual is packaged with the Potentiometer Option and contains a basic overview of wiring, settings, functions, and fault diagnoses.

1 Preface and Safety

◆ Registered Trademarks

Company names and product names listed in this manual are registered trademarks of those companies.

◆ Supplemental Safety Information

Read and understand this manual before installing, operating, or servicing this option unit. The option unit must be installed according to this manual and local codes.

The following conventions are used to indicate safety messages in this manual. Failure to heed these messages could result in serious or possibly even fatal injury or damage to the products or to related equipment and systems.

DANGER

Indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

1 Preface and Safety



CAUTION

Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates an equipment damage message.

2 Receiving

2 Receiving

◆ Receiving

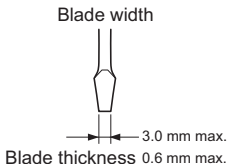
Confirm the packaging after receiving the Potentiometer Option. If the wrong model is received or the Potentiometer Option does not function properly, contact your supplier.

Components packaged with the option:

- The Potentiometer Option (AI-V3/J-H)
- Technical Manual

◆ Tool Requirements

Use a flat-blade screwdriver with the dimensions below for installation or removal of the option cover and Potentiometer Option.



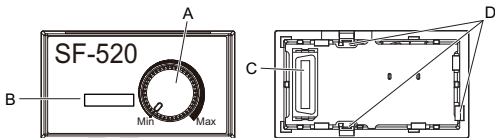
3 Product Overview

◆ About Product

The Potentiometer Option allows the user to adjust the frequency reference by rotating a potentiometer dial. Turning the potentiometer changes the frequency reference making it easier to adjust the motor speed.

4 Option Components

4 Option Components



**A – Potentiometer
Dial**

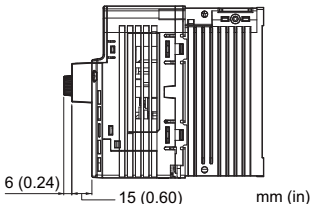
**B – Option Model
Number**

**C – Drive
Connector**

**D – Connection
Tabs**

◆ Dimensions

The installed option adds 21 mm (0.83 in) to the total depth of the drive.



5 Installation Procedure

◆ Section Safety

DANGER

Electrical Shock Hazard

Disconnect all power to the drive, before servicing.

Failure to comply will result in death or serious injury.

Wait at least one minute after all indicators are off. The drive has internal capacitors that remain charged even after the option is disconnected. The drive charge LED will extinguish when the DC bus voltage is below 50Vdc. Measure drive DC bus voltage to confirm safe level.

NOTICE

Damage to Equipment

Properly connect the connectors.

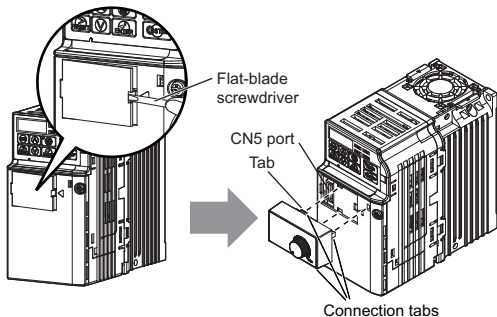
Failure to comply may prevent proper operation and possibly damage equipment.

5 Installation Procedure

◆ Attaching the Option

1. Insert a flat-blade screwdriver into the opening as shown in the diagram below to remove the option cover from the drive.
2. Insert the connector on the back of the option into the CN5 port on the drive, and click it into place.

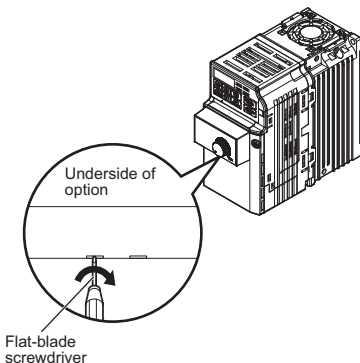
NOTICE: *Damage to equipment. Make necessary parameter adjustments after installing the Potentiometer Option. Failing to follow these installation instructions may damage the drive.*



5 Installation Procedure

◆ Removing the option interface

1. Insert a flat-blade screwdriver into the small opening between the drive and the option. Gently apply pressure to the connection tabs to disconnect the option as shown.



6 Operating Instructions

6 Operating Instructions

◆ Using the Option

1. Assign the frequency reference source for the drive to the potentiometer. Set drive parameter (b1-01=03).
2. Adjust the frequency reference by turning the potentiometer dial.

NOTICE: *Damage to equipment. Use caution when setting the frequency reference by adjusting the potentiometer dial slowly. Sudden changes to the frequency reference can damage the drive and connected machinery.*

7 Related Drive Parameters

7 Related Drive Parameters



No.	Name	Description	Default
b1-01	Frequency Reference Selection 1	Selects the frequency reference input source. 00 : Operator - Digital preset speed d1-01 to d1-17. 01 : Terminals - Analog input terminal A1. 02 : MEMOBUS/Modbus communications 03 : Option Potentiometer	01
H3-13	Analog Input Filter Time Constant	Sets the primary delay filter time constant for terminal A1. Used for noise filtering.	0.03 s

8 Troubleshooting

8 Troubleshooting

Problems with the option interface may trigger an operator error. Refer to the SF-520 Technical Manual for errors not listed in this manual.

◆ Fault

LED Operator Display		Fault Name
 oFA01		Option Unit Fault
Cause		Possible solution
The option unit is not properly connected to the drive		Turn the power off and reconnect the option unit
LED Operator Display		Fault Name
 oPE05		Frequency Reference Selection Error
Cause		Possible solutions
Frequency reference is assigned to an option (b1-01 = 03) that is not connected to the drive		<ul style="list-style-type: none">• Make sure that parameter b1-01 is set properly• Reconnect the option unit to the drive

9 Option Specifications

◆ Drive Specification

Item	Specification
Model Number	AI-V3/J-H
Storage/ Installation Area	Indoors (an area free from oil mist and dust)
Ambient Temperature	-10 to +50°C
Humidity	95% RH or less with no condensation
Storage Temperature	-20 to +60°C allowed for short-term transport of the product
Altitude	1000 m or less

10 Warranty

10Warranty

◆ Warranty policy on inverter

Warranty period	The warranty period is 18 months from date of shipment or 12 months after initial operation, whichever comes first.
Warranty condition	<p>In the event that any problem or damage to the Product arises during the "Warranty Period" from defects in the Product whenever the Product is properly installed and combined with the Buyer's equipment or machines maintained as specified in the maintenance manual, and properly operated under the conditions described in the catalog or as otherwise agreed upon in writing between the Seller and Buyer or its customers; the Seller will provide, at its sole discretion, appropriate repair or replacement of the Product without charge at a designated facility, except as stipulated in the "Warranty Exclusions" as described below.</p> <p>However, if the Product is installed or integrated into the Buyer's equipment or machines, the Seller shall not reimburse the cost of: removal or re-installation of the Product or other incidental costs related thereto, any lost opportunity, any profit loss or other incidental or consequential losses or damages incurred by the Buyer or its customers.</p>

Warranty exclusion	<p>Notwithstanding the above warranty, the warranty as set forth herein shall not apply to any problem or damage to the Product that is caused by:</p> <ol style="list-style-type: none">1. Installation, connection, combination or integration of the Product in or to the other equipment or machine that rendered by any person or entity other than the Seller.2. Insufficient maintenance or improper operation by the Buyer or its customers such that the Product is not maintained in accordance with the maintenance manual provided or designated by the Seller;3. Improper use or operation of the Product by the Buyer or its customers that is not in-formed to the Seller, including, without limitation, the Buyer's or its customers' operation of the Product not in conformity with the specifications;4. Any problem or damage on any equipment or machine to which the Product is installed, connected or combined or any specifications particular to the buyer or its customers;5. Any changes, modifications, improvements or alterations to the Product or those functions that are rendered on the Product by any person or entity other than the Seller;6. Any parts in the Product that are supplied or designated by the Buyer or its customers;
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10 Warranty

Warranty exclusion	<ol style="list-style-type: none">7. Earthquake, fire, flood, salt air, gas, lightning, acts of God or any other reasons beyond the control of the Seller;8. Normal wear and tear, or deterioration of the Product's parts, such as the cooling fan bearings;9. Any other troubles, problems or damage to the Product that are not attributable to the Seller.
Others	The Seller will not be responsibility for the installation and removal of the inverter. Any inverter transportation cost shall be born by both Seller and Buyer.



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Specifications, dimensions, and other items are subject to
change without prior notice.

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