

## INVERTER

**New Product RELEASE**

No.16-4E

# Release of the FR-A8APS plug-in option for the EnDat interface

For the FR-A800 series inverter, the plug-in option FR-A8APS is now available.

### Features

Compatible with the EnDat 2.1/2.2 interface of the HEIDENHAIN encoder

- Absolute position data of the motor shaft can be obtained from the encoder, enabling operations such as position control operation based on the absolute positions:

#### Position control

Simple position control operation can be performed by using point tables based on the absolute position.

#### Vector control

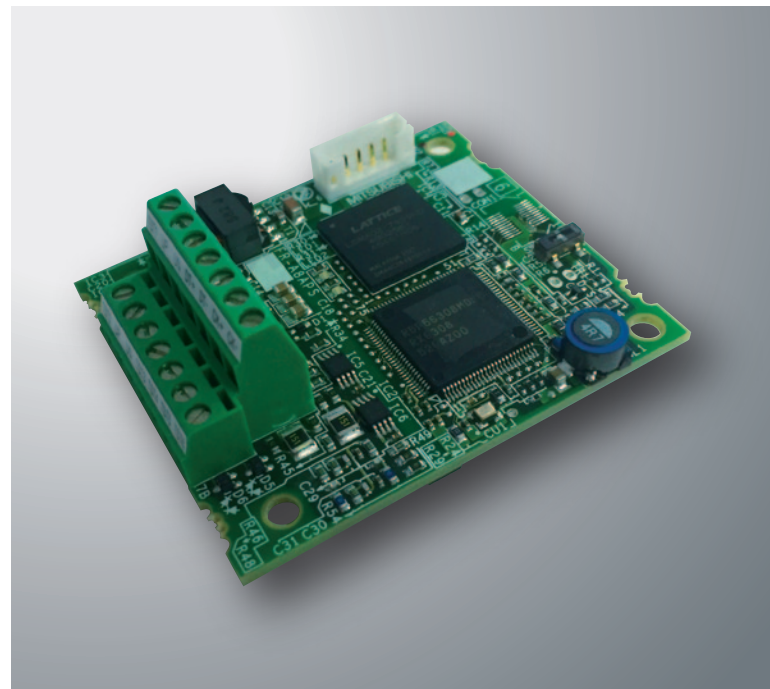
Full-scale vector control operation of a motor with an encoder can be performed.

#### Orientation control

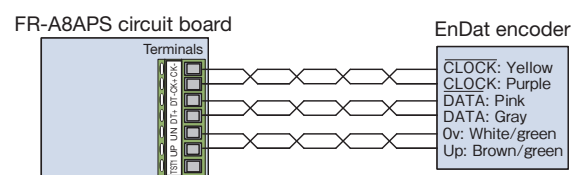
The inverter can adjust the stop position (Orientation control) using an encoder attached to a place such as the main shaft of the machine.

#### Encoder feedback control

The inverter output frequency is controlled so that the motor speed is constant to the load variation by detecting the motor speed with the encoder to perform feedback to the inverter.



#### [Terminal connection diagram]



Terminals other than the above are used for manufacturer setting.  
For the details of terminal connection, refer to the Instruction Manual of the FR-A8APS.

## Encoder

### Specifications

Type	EnDat 01/EnDat 21/EnDat 02/EnDat 22
Command set	EnDat 2.1/2.2
Bit length	8192 (13 bits)/33554432 (25 bits)
Measurement method	Absolute measurement method only (Incremental signals are not supported.)
Input power	4.5 to 5.5 V 300 mA

The following table shows recommended encoders and cables.  
(As of April 2016. The product may be changed without notice.)

Recommended encoder	ECN1313, ECN1325, EQN1325 or equivalent Select a high resolution encoder for a multiple-pole motor.
Recommended cable	Cables (manufactured by HEIDENHAIN) compatible with the encoders above
Manufacturer	HEIDENHAIN

- EnDat is a registered trademark of DR.JOHANNES HEIDENHAIN GmbH.
- The wiring length differs according to combination of the encoder and the cable.  
For details of the selection, contact HEIDENHAIN.

### Control method

Control method	IM	PM
V/F control (orientation control, encoder feedback control)	○	×
Advanced magnetic flux vector control (orientation control, encoder feedback control)	○	×
Vector control (speed control)	○	○
Vector control (torque control)	○	×
Vector control (position control)	○	○

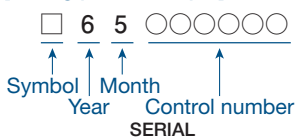
○: Supported, ×: Not supported

### Compatible inverters (FR-A800 series)

This option is supported by the inverter manufactured in the following year and month or later. Check the SERIAL number indicated on the inverter rating plate for the manufactured year and month.

Country of origin indication	SERIAL number	Manufactured year and month
MADE in Japan	□ 6 5 ○○○○○○ or later	May 2016 or later
MADE in China	□ 6 6 ○○○○○○ or later	June 2016 or later

#### [Rating plate example]



The SERIAL consists of one symbol, two characters indicating the production year and month, and six characters indicating the control number.

The last digit of the production year is indicated as the Year, and the Month is indicated by 1 to 9, X (October), Y (November), or Z (December).

### Release schedule

May 2016

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