

INVERTER

New Product RELEASE

No.18-2E

Release of Two Plug-in Options: the SinCos Encoder Interface **FR-A8APA** the Encoder Pulse Divider **FR-A8APD**

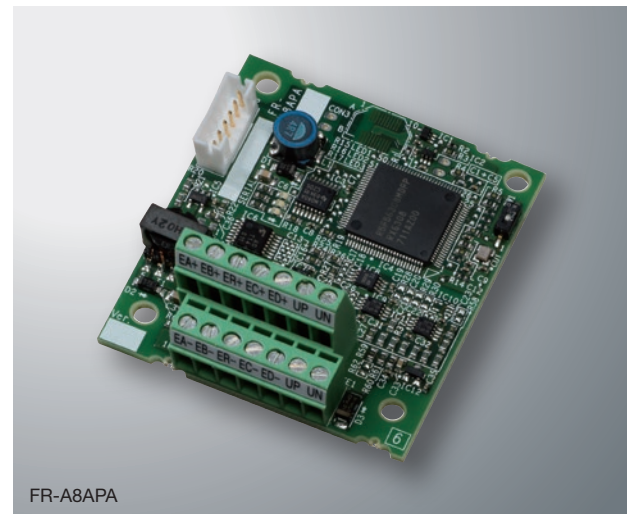
The plug-in options FR-A8APA and FR-A8APD are now available as new additions to the FR-A800 series inverter option lineup.

Features

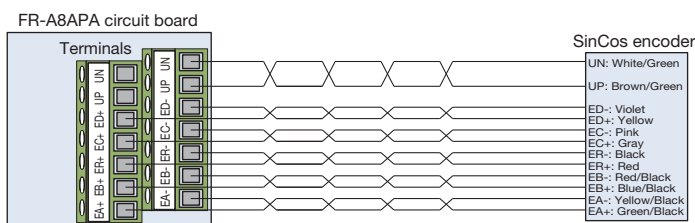
FR-A8APA: SinCos encoder ERN 1387* interface

* Manufactured by HEIDENHAIN

- **Vector control**
Full-scale vector control operation of a motor with an encoder can be performed.
- **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.
- **Orientation control**
The inverter can adjust the stop position (Orientation control) using an encoder attached to a place such as the main shaft of a machine.



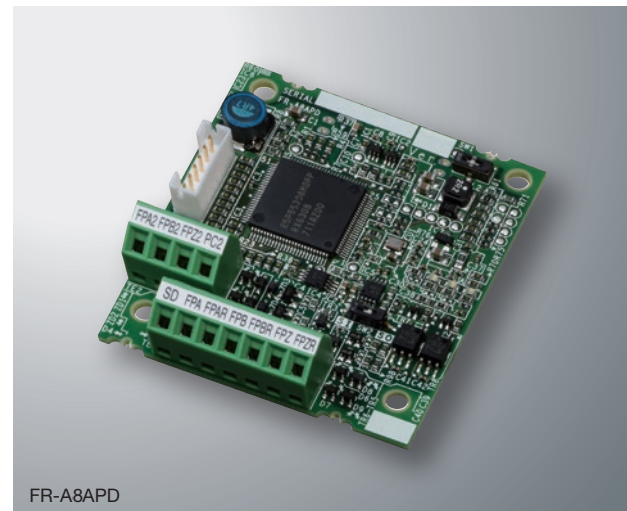
[Terminal connection diagram]



For the details of terminal connection, refer to the Instruction Manual of the FR-A8APA.

FR-A8APD: Encoder pulse divider

The FR-A8APD converts signals input from the encoder (via the FR-A8APA) into encoder pulse signals, and divides them for output.



Plug-in option FR-A8APA

Required encoder specifications

Interface	Sinusoidal voltage signal (1 Vpp)
Signal type	Incremental signal (sine/cosine) Home position signal Magnetic pole position detection signal (sine/cosine signal taken from the Z1 track, one period per revolution)
Signal period	2048
Permissible speed	Rotation speed of the SinCos encoder interface encoder-mounted shaft: 5800 r/min The drive shaft and encoder-mounted shaft must be coupled directly or via a belt (with the speed ratio of 1:1) without any mechanical looseness or slip. Gear changing shafts cannot be applied.

The following table shows the supported encoder and cables.
(as of January 2018. The product may be changed without notice.)

Applicable encoder	ERN 1387
Recommended cable	Cables compatible with the encoder above (manufactured by HEIDENHAIN)
Maximum wiring length	100 m
Manufacturer	HEIDENHAIN

Control method

Control method	Motor	
	Induction	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

Plug-in option FR-A8APD

Terminal specifications

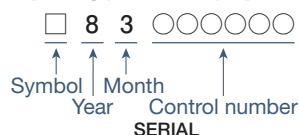
Output circuit method	Open collector and differential line driver
Permissible load	Open collector output: 24 VDC, max 50 mA Differential line driver output: 40 mA

Compatible inverters (FR-A800 series)

These options are compatible with the inverter having the following SERIAL number.
Check the SERIAL number indicated on the inverter rating plate.

Country of origin indication	SERIAL number	Manufactured year and month
MADE in Japan	□ 8 3 ○○○○○○ or later	March 2018 or later
MADE in China	□ 8 4 ○○○○○○ or later	April 2018 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).

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