INVERTER
FR-A800 Plus
The optimum functions for roll to roll applications are added.

A800 Plus
for Roll to Roll

FACTORY AUTOMATION
New Product RELEASE No.15-11E
Release of the new roll to roll dedicated inverter, FR-A800-R2R

The FR-A800-R2R inverter has various dedicated functions such as winding diameter calculation, providing stable winding/unwinding control independently.

A variety of roll to roll dedicated functions are supporting various systems.

- Winding diameter calculation
  - The present winding diameter for the winding/unwinding shaft is calculated from the actual line speed or the actual motor speed.
  - The winding diameter calculation function can be selected in order to improve the tension control performance.

- Winding diameter calculation function selection
  - The winding diameter calculation method can be selected to find the overall winding diameter: \( D = \frac{V}{\pi n} \times Z \pm 2d \times N \times Z \)
  - The material thickness is added up to find the overall winding diameter: \( D = \text{Initial diameter} \pm 2d \times N \times Z \)

- Speed control proportional gain compensation
  - By adjusting the speed control proportional gain, response improvement is achievable according to the winding diameter.

- Tension PI gain tuning
  - By automatically adjusting the tension PI gain, time required for adjustment is significantly cut down. Anyone can start the system easily.

- Mechanical loss compensation function
  - The tension applied to the material is maintained constant by raising a commanded torque to compensate mechanical loss caused by friction on the dancer roll or winding/unwinding shaft.

- Inertia compensation function
  - During acceleration/deceleration, the tension applied to the material is maintained constant by adjusting the variable tension on the winding and unwinding sides.

- Taper function
  - The taper function is adjustable according to applications. By automatically adjusting the tension PI gain, response improvement is achievable according to the winding diameter.

- Taper ratio
  - The taper ratio is adjustable according to applications.

- Taper function
  - A new lineup of dedicated inverters for specialized fields are born! The optimum functions for each dedicated field are added to the already high performance and high functionality FR-A800 series inverter.

- Relevant functions
  - Dancer feedback speed control
  - Winding diameter calculation function
  - Tension PI gain tuning
  - Speed control proportional gain compensation

- Application example
  - Wire drawing machine

- Wire drawing section
  - The FR-A800-R2R is useful for winding in the wire drawing machine. High-speed winding is offered for high-inertia loads.

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LINEUP

• Standard model

F R - A 8 2 0 - 0.4K - 1 - R2R

Symbol | Voltage class | Type | Structure/function | Capacity* | Description | Symbol | Type* | Dedicated function | Symbol | Circuit board coating | Plated conductor | Symbol | Dedicated function
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
2 | 200 V class | -1 | FM | 0.4K to 2.2K | Inverter SLD rated current (A) | 0 | 60 | Without | R2R | 100 V class
4 | 400 V class | -2 | CA | 0.4K to 280K | Inverter SLD rated current (A) | 0 | 60 | With | 100 V class

Three-phase 200 V class FR-A820-

Symbol | Voltage class | Type | Structure/function | Capacity* | Description | Symbol | Type | Dedicated function | Symbol | Circuit board coating | Plated conductor | Symbol | Dedicated function
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
2 | 200 V class | -1 | FM | 0.4K to 2.2K | Inverter SLD rated current (A) | 0 | 60 | Without | R2R | 100 V class
4 | 400 V class | -2 | CA | 0.4K to 280K | Inverter SLD rated current (A) | 0 | 60 | With | 100 V class

Three-phase 400 V class FR-A840-

Symbol | Voltage class | Type | Structure/function | Capacity* | Description | Symbol | Type | Dedicated function | Symbol | Circuit board coating | Plated conductor | Symbol | Dedicated function
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
2 | 400 V class | -1 | FM | 0.4K to 2.2K | Inverter SLD rated current (A) | 0 | 60 | Without | R2R | 100 V class
4 | 5.5K or higher | -2 | CA | 0.4K to 280K | Inverter SLD rated current (A) | 0 | 60 | With | 100 V class

*1 Models can be alternatively indicated with the inverter rated current (SLD rating).
*2 Specification differs by the type as follows.
*3 Available for the 5.5K or higher.
*4 For the 75K or higher inverter, or whenever a 75 kW or higher motor is used, always connect a DC reactor (FR-HEL), which is available as an option.

Type | Monitor output | Initial setting | Built-in EMC filter | Control logic | Rated frequency | Pr.19 Base frequency voltage
--- | --- | --- | --- | --- | --- | ---
FM (terminal FM equipped model) | Terminal FM: pulse train output | OFF | Sink logic | 60 Hz | (same as the power supply voltage)
CA (terminal CA equipped model) | Terminal AM: analog voltage output (0 to ±10VDC) | ON | Source logic | 50 Hz | (95% of the power supply voltage)

Release schedule

Now available

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