Fuji Electric

Innovating Energy Technology

Smile to the Environment

FRENIC-TEXTILE

~ Special Inverters for Textile frames are configured as a series ~

Product Outline and Characteristics of FRENIC-TEXTILE

User-friendly keypad

*Displays the regulator with the large-size liquid-crystal display.

1. Present value (PV)
2. Setting value (SV)
3. Manipulating value (MV)
4. Frequency
5. Output current
6. Output voltage
7. Torque
8. Rotation speed
9. Power consumption
10. Cumulative energy

*Possible to show understandable indications through the unit conversion function.
*Multi-language function: 19 languages + user customized language supported

Capacity

11kW-55kW / 400V

Inverter capacity	EMC filter	DC reactor	Protective structure
0.75kW to 90kW	Built-in	Built-in	IP55

Optimum control by dedicated functions for Textile

- **Arbitrary change of spinning speed**
- **Improvement of productivity through speed increase**
- **Reduction of thread breakage**
- **Elimination of maintenance work needed for mechanical reduction geaer.**

User-friendly, useful functions

- **The following user-friendly, useful functions are installed as standard: real time clock, fire mode (forced operation), user password, customized logic, etc.**

Countermeasures against noise and harmonics

- **Generation of harmonics is suppressed substantially by the EMC filter and built-in DCR.**

Compliant EMC standard:
- Emission C2 supported
- Immunity 2nd Environment supported

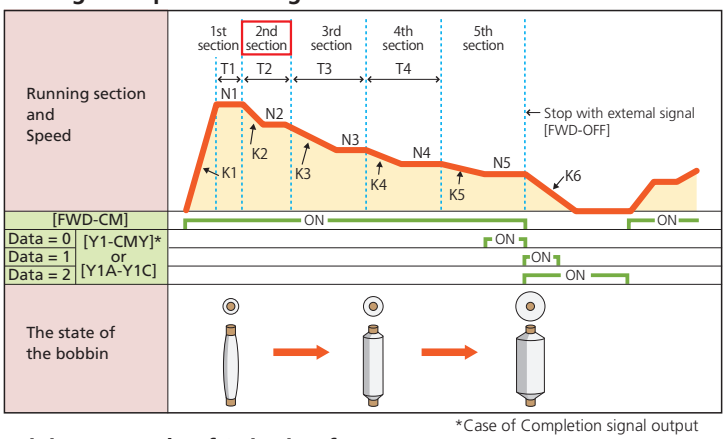
Easy Clean-Up for heatsink (under development)

Optimum Control for TEXTILE Facilities

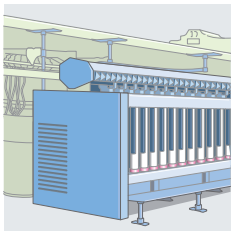
Automatic operation pattern

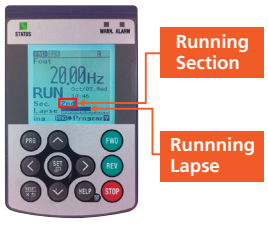
- **Frequency setting available for 5-shift speed change**
- **4-section (1st to 4th) timer settings: 0 s to 48 hours**
- **Acceleration/deceleration setting for each section: 0.01 to 3600 s**
- **Switching between linear and exponential startups for the 1st section**

Driving example of Roving frame

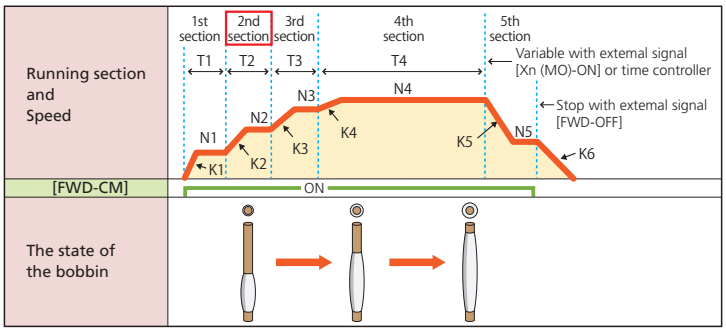


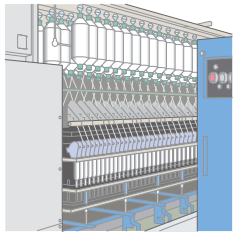
*Case of Completion signal output





Driving example of Spinning frame





Standard specifications

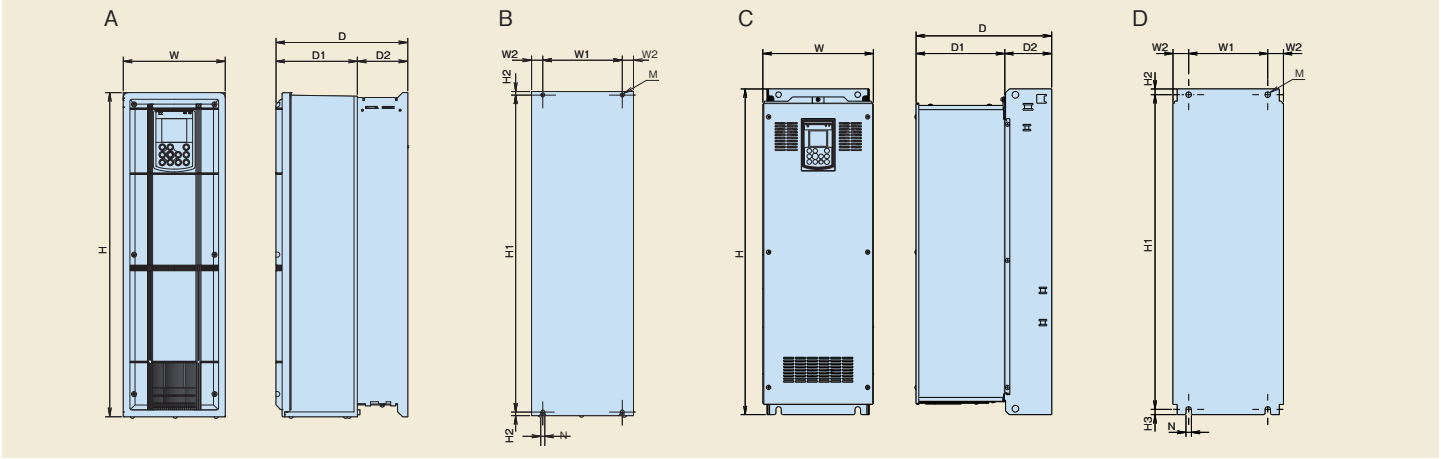
3-phase, 400V series (11 to 55kW)

Item		Specifications							
Power supply voltage		Three-phase 400V							
Type		FRN11 AR1L-4ZTX	FRN15 AR1L-4ZTX	FRN18.5 AR1L-4ZTX	FRN22 AR1L-4ZTX	FRN30 AR1L-4ZTX	FRN37 AR1L-4ZTX	FRN45 AR1L-4ZTX	FRN55 AR1L-4ZTX
Nominal applied motor [kW] *1		11	15	18.5	22	30	37	45	55
Output ratings	Rated capacity [kVA] *2	18	24	29	34	45	57	69	85
	Rated voltage [V] *3	Three-phase 380 to 480 V (with AVR function)							
	Rated current [A] *4	24.5	32	39	45	60	75	91	112
	Overload capability	150%-1 min (Overload tolerated interval: compliant with IEC/EN 61800-2)							
	Rated frequency [Hz]	50, 60 Hz							
Input power	Main power supply (No.of phases,voltage, frequency)	Three-phase 380 to 480 V, 50/60 Hz					Three-phase 380 to 440 V, 50 Hz Three-phase 380 to 480 V, 60 Hz		
	Control power supply auxiliary input (No. of phases, voltage, frequency)	Single-phase 380 to 480 V, 50/60 Hz							
	Auxiliary main circuit power supply (No. of phases, voltage, frequency) *5	—					Single -phase 380 to 440 V, 50 Hz Single -phase 380 to 480 V, 60 Hz		
	Allowable voltage/frequency	Voltage: +10 to -15% (Interphase voltage unbalance 2% or less *6) , Frequency: +5 to -5%							
	Rated input current [A] *7	22.0	29.8	36.9	43.9	59.5	74.3	88.9	109
	Required capacity [kVA]	16	21	26	31	42	52	62	76
Braking	Braking torque [%] *8	20			10 to 15				
	DC braking	Braking starting frequency: 0.0 to 60.0 Hz, Braking time: 0.0 to 30.0 s Braking level: 0 to 60%							
EMC filter		Compliant with EMC standard: Emission Category C2, Immunity 2nd Env. (IEC/EN61800-3 : 2004)							
Time controller		Built in							
DC reactor (DCR)		Built in							
Zero phase reactor (ACL)		Built in							
Applicable safety standards		IEC/EN 61800-5-1: 2007							
Enclosure (IEC60529)		IP55							
Cooling method		fan cooling							
External drawing	Inverter body	SA496329	SA496330	SA496331	SA496332	SA496333	SA496334	SA496335	SA496336
Mass [kg]		18	18	18	23	23	50	50	70

*1 Fuji 4-pole standard motor
*2 Rated capacity is calculated assuming the rated output voltage as 440 V.
*3 Output voltage cannot exceed the power supply voltage.
*4 To run the inverter at the carrier frequency of 4 kHz or above, current derating is required.
*5 This feeds AC power to the internal circuit when the inverter is powered with DC power, e.g., high power factor PWM converter with power regenerative function. (Usually, this is not used.)
*6 Voltage unbalance (%) $= \frac{\text{Max voltage (V) - Min Max voltage (V)}}{\text{Three-phase average voltage (V)}} \times 67$ (IEC/EN 61800-3)
If this value is 2 to 3%, use an optional AC reactor (ACR).
*7 Rated input current to apply when the inverter is connected to the power supply of 400 V, 50 Hz, Rsce = 120.
*8 Average braking torque for the motor running alone. (It varies with the efficiency of the motor.)

Outline drawing

Inverter model	Drawing	W	H	D	D1	D2	Drawing	W1	W2	H1	H2	H3
FRN11AR1L-4ZTX	A	203	585	262	162	100	B	158	22.5	571	7	–
FRN15AR1L-4ZTX												
FRN18.5AR1L-4ZTX												
FRN22AR1L-4ZTX		203	645	262	162	100		158	22.5	571	7	
FRN30AR1L-4ZTX												
FRN37AR1L-4ZTX	C	265	736	284	184.5	99.5	D	180	42.5	716	12	–
FRN45AR1L-4ZTX												
FRN55AR1L-4ZTX		300	885	367.9	240.8	127.1		215	42.5	855	15.5	14.5



Fuji Electric Co., Ltd.

Gate City Ohsaki, East Tower, 11-2,
Osaki 1-chone, Shinagawa-ku,
Tokyo 141-0032, Japan
Phone: +81-3-5435-7057 Fax: +81-3-5435-7420
URL: http://www.fujielectric.com/

PT. Fuji Electric Indonesia

Wisma Keiai, 17th Floor (Formerly Kyoei Prince)
Jl. Jend. Sudirman Kav. 3
Jakarta 10220 - INDONESIA
Phone: +62-21-572-4281 Fax: +62-21-572-4283

2012-10 (J11/J11) CM01FOLS 24A9-E-0026