

# Application to Washing Machines for Commercial-use

## Advantages of using Fuji inverters

### (1) Substantially reduced motor instability

Thanks to our unique motor control technology, unstable motor rotation in a low speed range has been reduced to about a half (compared with our previous model).

### (2) Slip compensation control function for constant rotating speed

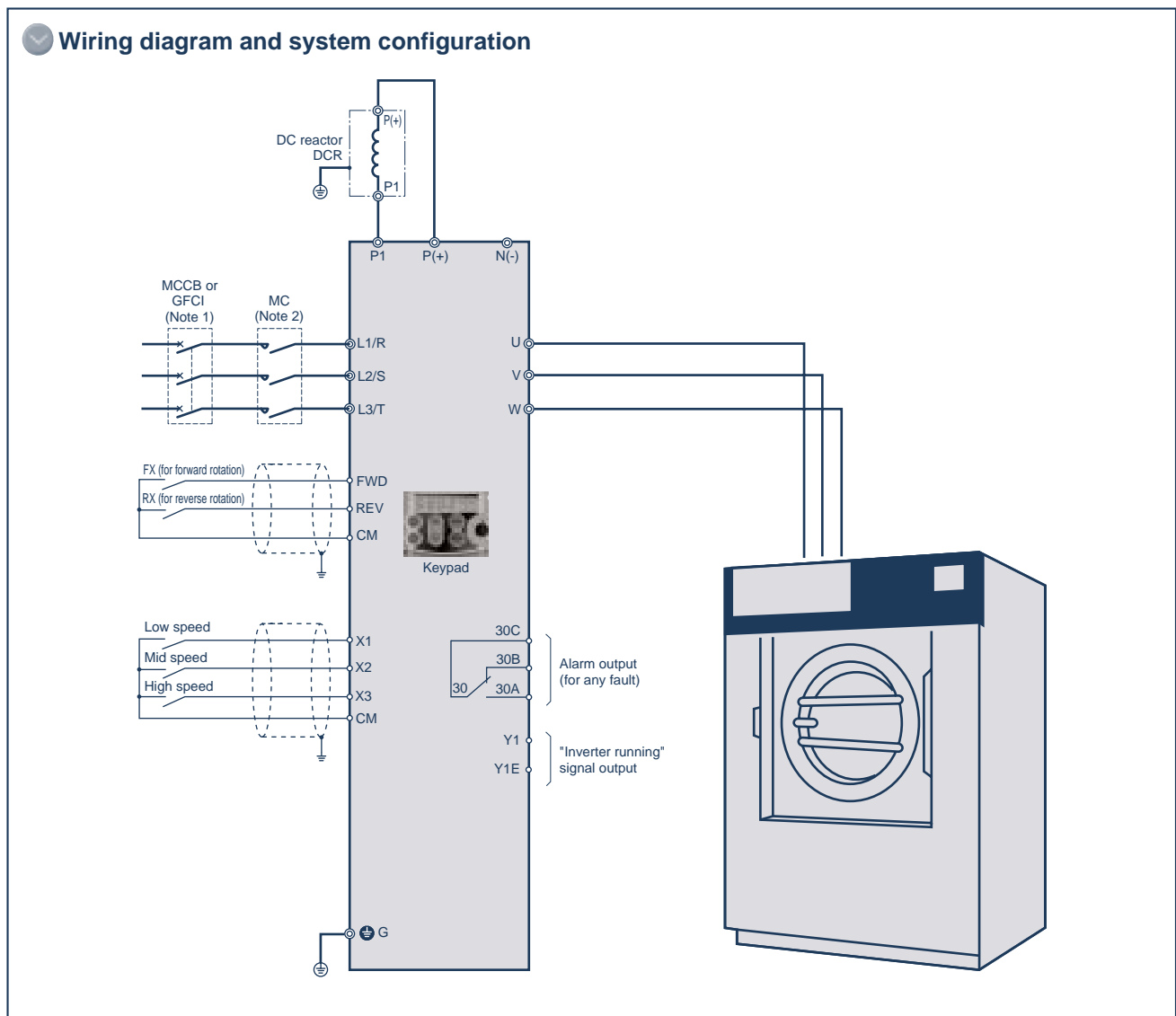
By setting a slip compensation amount, the inverter controls the washing machine so that the machine maintains the constant rotating speed, at which the cloth items always drop when they comes to the top of the tub regardless of the amount of washing load.

### (3) Smooth start with a high starting torque of 150% or more

Our original simplified torque-vector control makes it possible to generate a high starting torque of 150% or more (with automatic torque boost and slip compensation control ON at 0.5Hz).

### (4) Low noise eliminating the need to take special measures for noise reduction

Unpleasant noise from the inverter-driven motor has been nearly zeroed like the case where the motor gets its drive directly from the commercial power source. The inverter thus meets the strict requirement for noise reduction.



Note 1 : Install a recommended molded-case circuit-breaker or a ground-fault circuit interrupter (except one used only for protection against ground fault) in the primary circuit of the inverter to protect wiring. At this time, ensure that the circuit breaker capacity is equivalent to or lower than the recommended capacity.

Note 2 : If there is a magnetic contactor or a solenoid close to the inverter, connect a surge suppressor to its coil. Keep the wiring length to a minimum.

## Function code settings (recommended)

Func. code	Name	Factory setting	Recommended setting value	Remarks
E01	X1 terminal function (Select)	0: (1000) Multistep freq. selection (0 to 1 step) [SS1]	0: (1000) Multistep freq. selection (0 to 1 step) [SS1]	Input signal for reversing logic can be selected by setting a number in the order of 1000 shown in ( ).
E02	X2 terminal function	7: (1007) Coast-to-stop command [BX]	1: (1001) Multistep freq. selection (0 to 3 step) [SS2]	
E03	X3 terminal function	8: (1008) Alarm reset [RST]	2: (1002) Multistep freq. selection (0 to 7 step) [SS4]	
F37	Load select/Auto torque boost/Energy-saving operation	1: Constant torque load	2: Auto torque boost	
H06	Fan stop operation	0: Inactive	1: Active (2HP or more)	
F14	Restart mode after momentary power failure (Select)	1: Inactive (Trips without restart when power recovers.)	4: Active (Restarts at frequency output at power failure, for general load.)	
F26	Motor sound (Carrier freq.)	2: 2kHz	15: 15kHz	
E20	Y1 terminal function (Select)	0: (1000) Inverter running [RUN]	0: (1000) Inverter running [RUN]	
C01	Jump frequency 1 2 3 (Hysteresis)	0.0: 0Hz	0.0 to 400.0: 0.0 to 400.0Hz	Set the value if this function is needed for the machine to be combined.
C02		0.0: 0Hz		
C03		0.0: 0Hz		
C04		3.0: 3Hz		

In addition to the above codes, check if the parameter values set at the function codes F03 to F05, F07, F08, P02, P03, and P09 match the motor rated values and the machine design specifications.

### Tips

#### (1) Reducing the radio noise

In an area where radio waves are weak, the radio may receive noise from the inverter. To prevent this, we recommend you install a ferrite ring (ACL-40B or ACL-74B).

#### (2) Suppressing harmonics with a DC reactor

The inverter is standard-equipped with the exclusive terminals P1 and P(+) to which a DC REACTOR can be connected. For suppressing harmonics, install the optional DC REACTOR (DCR□-□□).

#### (3) Suppressing power-on inrush current

FRENIC-Mini series inverters incorporate the circuit for suppressing inrush current flowing when the power is turned on.

#### (4) Easy to copy the function code data with keypad

By using the copy function of the optional remote keypad, the preset function codes can be easily copied to several inverters.