

## Mitsubishi inverters are factory set for EXTERNAL control.

When a START signal is connected across the STF-PC input terminals the inverter will run to a speed set by a potentiometer on terminals 10, 2, and 5, see below.

When START is pressed the FWD run status LED should flash and the Hz display increase.

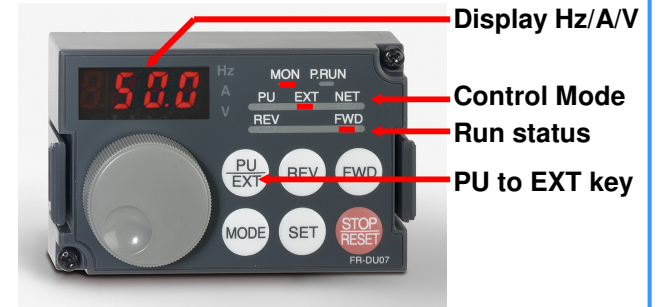
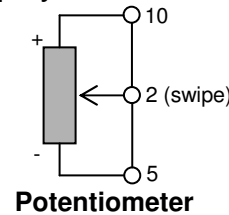
Check list :-

The EXT LED should be ON (PU is Parameter Unit mode for set-up).

Use the correct common for the control signals, PC is the default, not SD.

The inverter will not run if the MRS signal is connected.

Control mode Parameter Pr.79 is set to either 0 or 2 for EXT control.

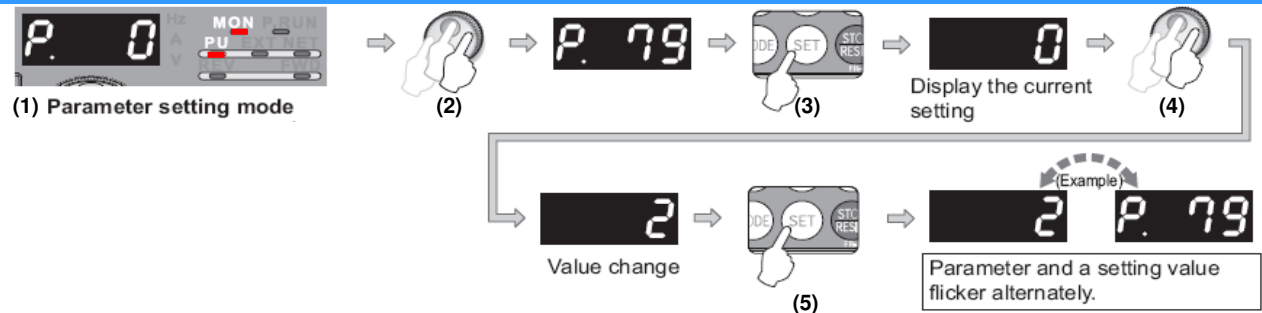


## To change parameters

- 1) Change to PU operation ( )
- 2) Scroll to select the parameter
- 3) Press SET to display the current value
- 4) Scroll to change the value
- 5) Press SET button to write the value

Note - Mode change only possible when motor stopped.

Parameter setting only possible in PU mode.



## Basic Parameters, the A B C

### A - Motor details

Enter the details from the motor nameplate

- Pr.3 Rated frequency (50Hz as default)
- Pr.9 Rated current (Inverter max as default)
- Pr.19 Rated voltage (Same as  $V_{IN}$  as default)

Note : Set Pr. 160 Extended function = 0

Mitsubishi Electric Motor	
SF-JR160 15kW 4Pole	
Frequency	50Hz
Motor Amps	29.2A
Voltage	415V

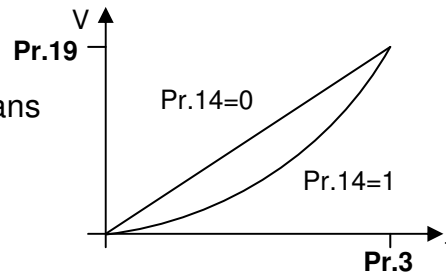
### B - Pump load type

Match the inverter output to the pump duty -

- Pr.14 = 1 for clean water centrifugal pumps & fans
- Pr.14 = 0 for all other pumps.

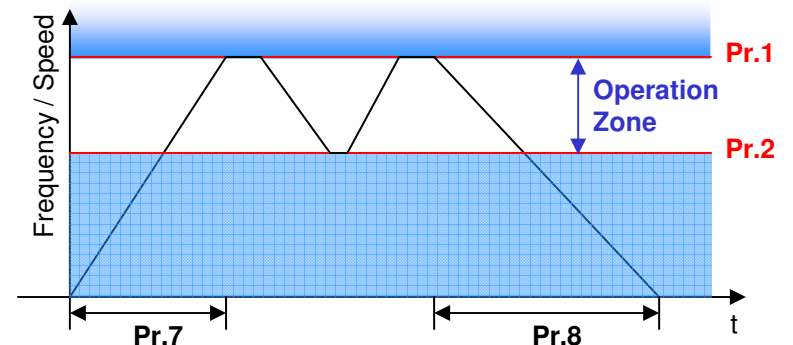
For better motor and system efficiency -

Pr.60 = 9 for Energy saving control selection



## C - Basic operational settings

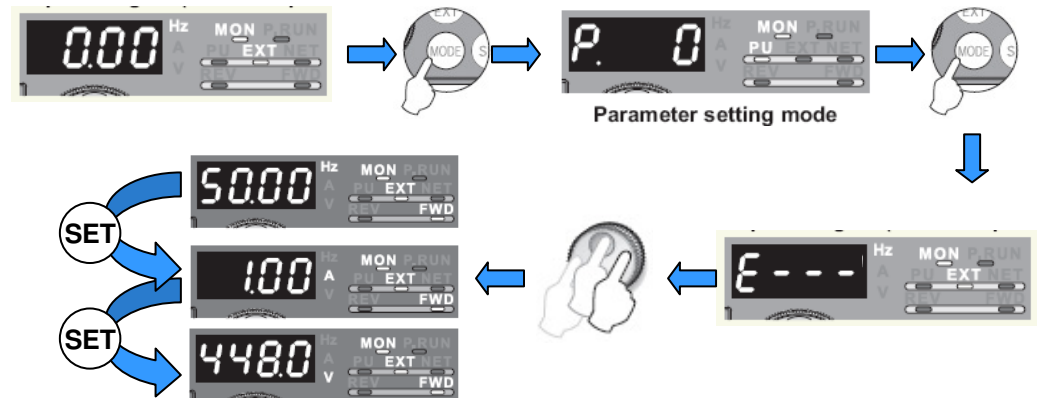
- Pr.1&2 Maximum & Minimum speeds (Hz)
- Pr.7&8 Acceleration & Deceleration time(sec)



Note : These parameters have been and are the same for all Mitsubishi inverters.

## Alarm History

The previous FOUR alarms are retrievable using the FR-DU07  
 To access the Alarm menu  
 Press the mode button twice - [E---] is displayed  
 Scroll through the alarm codes.  
 Press SET to read the Hz, Amps and Volts for each alarm.



Note - Alarm code and Hz, V and A information is important for diagnosis.  
 E.0 indicates there are no alarms.

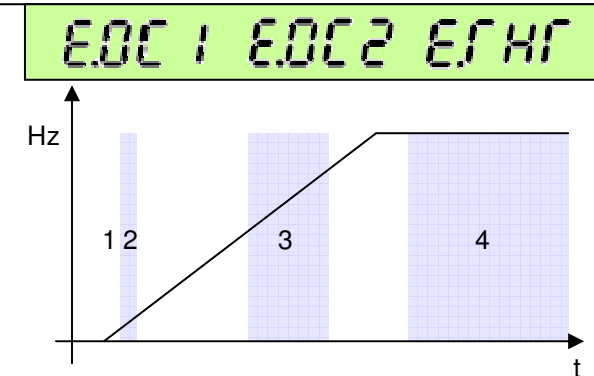
## General causes of alarms

### Current Overload

Over current (E.OC1, E.OC2), and transistor thermal alarms (E.THT) are caused by too much current flowing in the inverter transistor circuits.

CHECK - Monitor the current during start-up and running.

- 1) Immediate over-current - output short-circuit or already rotating motor.
- 2) Over-current after 1 second - stalled motor, jammed pump, high friction, Pr.14 may be set to 1, torque boost (Pr.0) set too high, constant pressure pump.
- 3) Overload after half speed - high inertia, acceleration too fast, Pr.14 may be set to 1.
- 4) Overload at steady speed - high motor current, sudden load increase (valve opening), incorrect pump rotation, single-phasing of the output.



### Motor thermal overload

Pr.9 is set to the motor rated current. The inverter calculates the level of current at reduced speeds that will cause a temperature build-up in the motor. If the E.THM alarm occurs but the motor is NOT hot, then the value can be increased to avoid nuisance tripping.

CHECK - Pr.0 - should be as low as possible to allow the motor to start

Pr.14 - can be set to 1 for clean water pumps

Speed range - for high load + low speed operation extra ventilation on the motor and Pr.71=1 can be used.



NOTE - This guide is designed as a simple guide and is not designed to replace the technical information in the product manuals.

For further help - Mitsubishi Help Desk ☎ 01707 288790 🌐 [www.mitsubishi-automation.co.uk](http://www.mitsubishi-automation.co.uk) ✉ [automation.support@meuk.mee.com](mailto:automation.support@meuk.mee.com)