4.1   Using the Digital LED Operator

Use the LED operator to enter run and stop commands, display data, edit parameters, as well as display fault and alarm information.
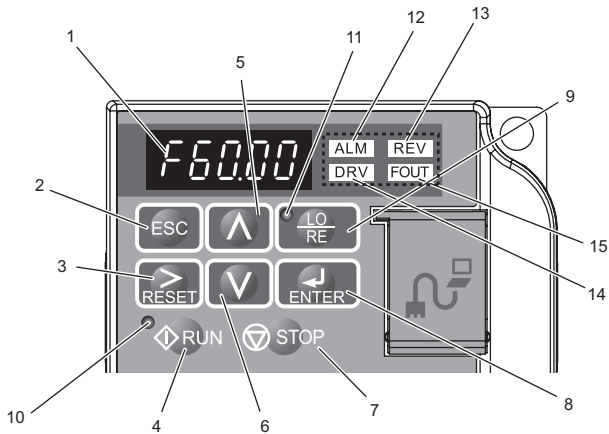
◆ Keys, Displays, and LEDs

Table 4.1 Keys and Displays on the LED Operator

No.	Display	Name	Function
1	F60.00	Data Display Area	Displays the frequency reference, parameter number, etc.
2	ESC	ESC Key	Returns to the previous menu.
3	RESET	RESET Key	Moves the cursor to the right. Resets the drive to clear a fault situation.
4	◇ RUN	RUN Key	Starts the drive.
5	Λ	Up Arrow Key	Scrolls up to select parameter numbers, setting values, etc.
6	V	Down Arrow Key	Scrolls down to select parameter numbers, setting values, etc.
7	⊘ STOP	STOP Key	Stops the drive. **Note:** Stop priority circuit. A fast-stop is available by pressing the STOP key when the drive detects a danger even if the drive is running by a signal from the multi-function contact input terminal (REMOTE is set). To avoid stoppage by using the STOP key, set o2-02 (STOP Key Function Selection) to 0 (Disabled).
8	ENTER	ENTER Key	Selects all modes, parameters, settings, etc. Selects a menu item to move from one display screen to the next.
9	LO/RE	LO/RE Selection Key	Switches drive control between the operator (LOCAL) and the control circuit terminals (REMOTE). **Note:** LOCAL/REMOTE key effective during stop in drive mode. If the digital operator could change from REMOTE to LOCAL by incorrect operation, set o2-01 (LOCAL/REMOTE Key Function Selection) to "0" (disabled) to disable LOCAL/REMOTE key.
10	◇ RUN	RUN Light	Lit while the drive is operating the motor.
11	LO/RE	LO/RE Light	Lit while the operator (LOCAL) is selected to run the drive.

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4.1 Using the Digital LED Operator

No.	Display	Name	Function
12	ALM	ALM LED Light	
13	REV	REV LED Light	*Refer to LED Screen Displays on page 54*.
14	DRV	DRV LED Light	
15	FOUT	FOUT LED Light	

◆ LED Screen Displays

Display	Lit	Flashing	Off
ALM	When the drive detects a alarm or error	• When an alarm occurs • OPE detected • When a fault or error occurs during Auto-Tuning	Normal state (no fault or alarm)
REV	Motor is rotating in reverse	—	Motor is rotating forward
DRV	Drive Mode Auto-Tuning	When DriveWorksEZ is used *<1>*	Programming Mode
FOUT	Displays output frequency (Hz)	—	—
As illustrated in this manual	F 0.00 ALM REV DRV OUT	Er-03 ALM REV DRV FOUT	F 0.00 ALM REV DRV OUT

<1> Refer to the DriveWorksEZ instruction manual for further information.

◆ LO/RE LED and RUN LED Indications

LED	Lit	Flashing	Flashing Quickly	Off
LO RE	When run command is selected from LED operator (LOCAL)	—	—	Run command is selected from device other than LED operator (REMOTE)
RUN	During run	• During deceleration to stop • When a run command is input and frequency reference is 0	• During deceleration at a fast-stop. • During deceleration • During stop by interlock operation.	During stop

LED	Lit	Flashing	Flashing Quickly	Off
As shown	RUN	RUN	RUN	RUN

<1> For the difference between "flashing" and "flashing in short intervals" of the RUN LED, refer to Figure 4.2, RUN LED and Drive Operation.
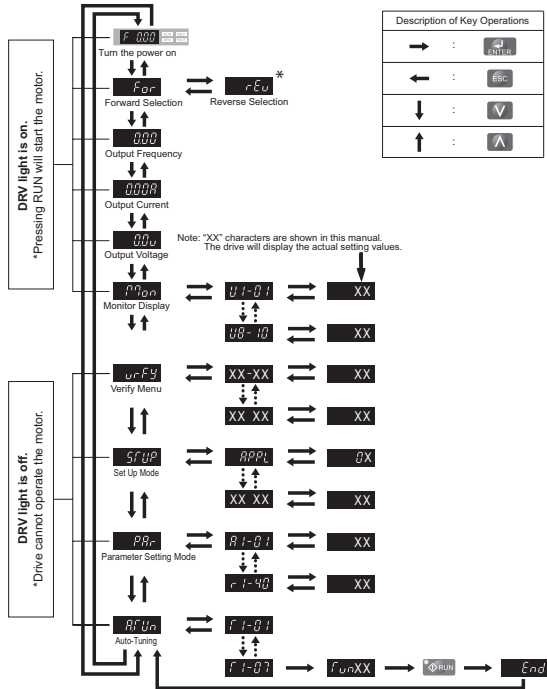
◆ Menu Structure for Digital LED Operator

Figure 4.1 Digital LED Operator Screen Structure

* "rEu" can be selected while LOCAL is set.

4.2   The Drive and Programming Modes

The drive functions are divided into two main groups accessible via the Digital LED Operator:

Drive Mode: The Drive mode allows motor operation and parameter monitoring. Parameter settings cannot be changed when accessing functions in the Drive Mode .

Programming Mode: The Programming Mode allows access to setup/adjust, verify parameters and Auto-Tuning. The drive prohibits changes in motor operation such as start/ stop when the Digital LED Operator is accessing a function in the Programming Mode. illustrates the different functions visible as the "Up arrow" is scrolled immediately after powering up the drive.

◆   Changing Parameter Settings or Values

This example explains changing C1-01 (Acceleration Time 1) from 10.0 seconds (default) to 20.0 seconds.

Step		Display/Result
1. Turn on the power to the drive. The initial display appears.	⇒	F 0.00 DRV
2. Press the ∧ key until the Setup Mode Screen appears.	⇒	5гUP
3. Press the ENTER key to view the parameter setting display.	⇒	A1-02
4. Scroll through parameters by pressing the ∧ key until C1-01 appears.	⇒	C1-01
5. Press ENTER to view the current setting value (10.0 seconds). (Number farthest to the left flashes)	⇒	0010.0
6. Press RESET until the desired number is selected. ("1" flashes)	⇒	0010.0
7. Press the ∧ key and enter 0020.0.	⇒	0020.0
8. Press ENTER and the drive will confirm the change.	⇒	End

Step		Display/Result
9. The display automatically returns to the screen shown in Step 4.	⇒	⌝⌝⌝⌝⌝ `C 1-01`
10. Press the `ESC` key until back at the initial display.	⇒	`F 0.00` ALM REV DRV OUT

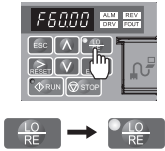## ◆ Switching Between LOCAL and REMOTE

Entering the run command using the LED operator is referred to as LOCAL, while entering the run command from an external device via the control circuit terminals or network option card is referred to as Remote.

WARNING! *Sudden Movement Hazard. The drive may start unexpectedly if the Run command is already applied when switching from LOCAL mode to REMOTE mode when b1-07 = 1, resulting in death or serious injury. Be sure all personnel are clear of rotating machinery and electrical connections prior to switching between LOCAL mode and REMOTE mode.*

There are three ways to switch between LOCAL and REMOTE.

> **Note:** 1. After selecting LOCAL, LO/RE will remain lit.
> 2. The drive will not allow the user to switch between LOCAL and REMOTE during run.

■ Using the LO/RE Key on the LED Operator

Step		Display/Result
1. Turn on the power to the drive. The initial display appears.	⇒	`F 0.00` ALM REV DRV OUT
2. Press `LO/RE`. LO/RE will light up. The drive is now in Local. To set the drive for REMOTE operation, press the `LO/RE` key again.	⇒	`F6000` ALM REV DRV FOUT ESC ∧ ⏚ RESET > ∨ ⏚ RUN STOP `LO/RE` ➜ `LO/RE`

■ Using Input Terminals S1 through S7 to Switch between LO/RE

Switch between LOCAL and REMOTE using one of the digital input terminals S1 through S7 (set the corresponding parameter H1-01 through H1-07 to "1").

Follow the example below to set the digital input terminals.

> **Note:** 1. For a list of digital input selections, **.
> 2. Setting a multi-function input terminal to a value of 1 disables the LO/RE key on the LED operator.

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◆ Parameters Available in the Setup Group

■ Setup Mode (StUP)

`STUP`

Parameters used for this drive are classified into A to U. To simplify the drive setup, frequently used parameters are selected and input into Setup Mode.

`STUP`

1. To set a parameter, the Setup Mode must be displayed first.
2. If the parameter setting is insufficient, set the parameters in the Parameter Setting Mode.

Note: When parameter A1-02 (Control Method Selection) is changed, some parameter set values are also changed automatically. Execute the A1-02 setting before Auto-tuning.

Table 4.2 lists parameters available in the Setup Group.

Note: This manual also explains other parameters not visible in the Setup Group (A1-06 = 0). Use the "Par" menu in the Programming mode to access parameters not listed in the Setup Group. The Setup Group parameters are shown in *Table 4.2*

Note: Display parameters depend on A1-06. *Refer to Application Presets on page 64*.

Table 4.2 Setup Group Parameters

Parameter	Name	Parameter	Name
A1-02	Control Method Selection	E1-01	Input Voltage Reference
b1-01	Frequency Reference Selection 1	E1-03	V/f Pattern Selection
b1-02	Run Command Selection 1	E1-04	Maximum Output Frequency (FMAX)
b1-03	Stop Method Selection	E1-05	Maximum Voltage (VMAX)
C1-01	Acceleration Time 1	E1-06	Base Frequency (FA)
C1-02	Deceleration Time 1	E1-09	Minimum Output Frequency (FMIN)
C6-01	Duty Selection	E1-13	Base Voltage (VBASE)
C6-02	Carrier Frequency Selection	E2-01	Motor Rated Current
d1-01	Frequency Reference 1	E2-04	Number of Motor Poles
d1-02	Frequency Reference 2	E2-11	Motor Rate Capacity
d1-03	Frequency Reference 3	H4-02	Terminal FM Gain Setting
d1-04	Frequency Reference 4	L1-01	Motor Protection Function Selection
d1-17	Jog Frequency Reference	L3-04	Stall Prevention Selection during Deceleration