

If the inverter detects a minor abnormal state "light alarm", it can continue the current operation without tripping while displaying the "light alarm" indication $L-FL$ on the LED monitor. In addition to the indication $L-FL$, the inverter blinks the KEYPAD CONTROL LED and outputs the "light alarm" signal $L-ALM$ to a digital output terminal to alert the peripheral equipment to the occurrence of a light alarm. (To use the $L-ALM$, it is necessary to assign the signal to any of the digital output terminals by setting any of function codes E20 through E24 and E27 to "98.")

Select the desired items to be regarded as a light alarm from the following table.

Code	Name	Description
$OH1$	Heat sink overheat	Heat sink temperature increased to the trip level.
$OH2$	External alarm	An error that has occurred in peripheral equipment turned the external alarm signal THR ON.
$OH3$	Inverter internal overheat	The temperature inside the inverter abnormally has increased.
OBH	Braking resistor overheat	Estimated temperature of the coil in the braking resistor exceeded the allowable level.
$OL1$ to $OL4$	Overload of motor 1 through 4	Motor temperature calculated with the inverter output current reached the trip level.
$Er4$	Option communications error	Communications error between the inverter and an option.
$Er5$	Option error	An option judged that an error occurred.
$Er8$ ErP	RS-485 communications error (COM port 1) RS-485 communications error (COM port 2)	RS-485 communications error between the COM ports 1 and 2.
ErE	Speed mismatch or excessive speed deviation	The deviation of the automatic speed regulator (between the reference speed and the detected one) is out of the specified range (d21) for the period specified by d22.
FAL	DC fan locked	Failure of the air circulation DC fan inside the inverter. (200 V class: 45 kW or above. 400 V class: 75 kW or above.)
OL	Motor overload early warning	Early warning before a motor overload
OH	Heat sink overheat early warning	Early warning before a heat sink overheat trip
LIF	Lifetime alarm	It is judged that the service life of any one of the capacitors (DC link bus capacitors and electrolytic capacitors on the printed circuit boards) and cooling fan has expired. Or, failure of the air circulation DC fan inside the inverter. (200 V class: 45 kW or above. 400 V class: 75 kW or above.)
rEF	Reference command loss detected	Analog frequency command was lost.
Pid	PID alarm	Warning related to PID control (absolute-value alarm or deviation alarm)
LTL	Low torque output	Output torque drops below the low torque detection level for the specified period.
PFC	PTC thermistor activated	The PTC thermistor on the motor detected a temperature.
rFE	Inverter life (Cumulative run time)	The motor cumulative run time reached the specified level.
CrF	Inverter life (Number of startups)	Number of startups reached the specified level.

Set data for selecting "light alarms" in hexadecimal. For details on how to select the codes, refer to the next page.

- Data setting range: 0000 to FFFF (Hexadecimal)

■ Selecting light alarm factors

To set and display the light alarm factors in hexadecimal format, each light alarm factor has been assigned to bits 0 to 15 as listed in Tables 5.1 and 5.2. Set the bit that corresponds to the desired light alarm factor to "1." Table 5.3 shows the relationship between each of the light alarm factor assignments and the LED monitor display.

Table 5.4 gives the conversion table from 4-bit binary to hexadecimal.

Table 5.1 Light Alarm Selection 1 (H81), Bit Assignment of Selectable Factors

Bit	Code	Content	Bit	Code	Content
15	—	—	7	<i>OL3</i>	Overload of motor 3
14	—	—	6	<i>OL2</i>	Overload of motor 2
13	<i>ErP</i>	RS-485 communications error (COM port 2)	5	<i>OL1</i>	Overload of motor 1
12	<i>ErB</i>	RS-485 communications error (COM port 1)	4	<i>dbH</i>	Braking resistor overheated
11	<i>ErS</i>	Option error	3	—	—
10	<i>Er4</i>	Option communications error	2	<i>OH3</i>	Inverter internal overheat
9	—	—	1	<i>OH2</i>	External alarm
8	<i>OL4</i>	Overload of motor 4	0	<i>OH1</i>	Heat sink overheat

Table 5.2 Light Alarm Selection 2 (H82), Bit Assignment of Selectable Factors

Bit	Code	Content	Bit	Code	Content
15	—	—	7	<i>LIF</i>	Lifetime alarm
14	—	—	6	<i>OH</i>	Heat sink overheat early warning
13	<i>LrL</i>	Inverter life (Number of startups)	5	<i>OL</i>	Motor overload early warning
12	<i>rFE</i>	Inverter life (Cumulative motor run time)	4	<i>FFL</i>	DC fan locked
11	<i>PTL</i>	PTC thermistor activated	3	—	—
10	<i>LTL</i>	Low torque output	2	—	—
9	<i>Pid</i>	PID alarm	1	—	—
8	<i>rEF</i>	Reference command loss detected	0	<i>ErE</i>	Speed mismatch or excessive speed deviation

Table 5.3 Display of Light Alarm Factor

(Example) Light alarm factors "RS-485 communications error (COM port 2)," "RS-485 communications error (COM port 1)," "Option communications error," "Overload of motor 1" and "Heat sink overheat" are selected by H81.

LED No.	LED4				LED3				LED2				LED1				
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Code	—	—	<i>ErP</i>	<i>ErB</i>	<i>ErS</i>	<i>Er4</i>	—	<i>OL4</i>	<i>OL3</i>	<i>OL2</i>	<i>OL1</i>	<i>dbH</i>	—	<i>OH3</i>	<i>OH2</i>	<i>OH1</i>	
Example	Binary	0	0	1	1	0	1	0	0	0	0	1	0	0	0	1	
	Hexadecimal (See Table 5.4.)	3				4				2				1			
	Hexadecimal on the LED monitor					LED4 LED3 LED2 LED1				3421							

■ Hexadecimal expression

A 4-bit binary number can be expressed in hexadecimal format (1 hexadecimal digit). The table below shows the correspondence between the two notations. The hexadecimals are shown as they appear on the LED monitor.

Table 5.4 Binary and Hexadecimal Conversion

Binary				Hexadecimal	Binary				Hexadecimal
0	0	0	0	0	1	0	0	0	8
0	0	0	1	1	1	0	0	1	9
0	0	1	0	2	1	0	1	0	A
0	0	1	1	3	1	0	1	1	B
0	1	0	0	4	1	1	0	0	C
0	1	0	1	5	1	1	0	1	D
0	1	1	0	6	1	1	1	0	E

Note When the H26 data is set to "1" (PTC (The inverter immediately trips with *OH4* displayed)), if the PTC thermistor is activated, the inverter stops without displaying *L-FL*, blinking the KEYPAD CONTROL LED, or outputting *L-ALM* signal, regardless of the assignment of bit 11 (PTC thermistor activated) by H82 (Light Alarm Selection 2).

■ Light alarm--*L-ALM* (E20 to E24 and E27, data = 98)

This output signal comes ON when a light alarm occurs.