

**Model 3701 / 3702
LR8100E / LR12000E Recorder
/AK-08, /AK-12**

IM 3701 - 40E

IM 3701 - 40E
4th Edition

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1. GENERAL

1.1 General

The /AK-08, /AK-12 built-in alarm is an optional function for the LR8100 / LR12000 recorder.

High, low, delta high and delta low limit two level per channel alarms are standard functions, making two level alarm detection, for example high and high-high limits, possible.

Up to eight or twelve outputs can be accepted using this optional function.

In addition, FAIL and CHART END outputs are also provided for in this option.

1.2 Specifications

Number of levels: Two levels/channel

Type: High, Low, Delta High and Delta Low

Number of outputs: Eight or twelve built-in points

Contact capacity: 24V AC, 1A

Others: Includes FAIL and CHART END outputs



CAUTION

The maximum input voltage to the external input terminal must not exceed the -24V to 24V range. If voltages which exceed these values are applied, the circuit might be damaged.

Accessories:

Alarm output connector

LR8100 (36 pin) : AMPHENOL 57-30360, part No. A 1005 JD

LR12000 (50 pin) : AMPHENOL 57-30500, part No. A 1006 JD

FAIL and CHART END output connector (50 pins):

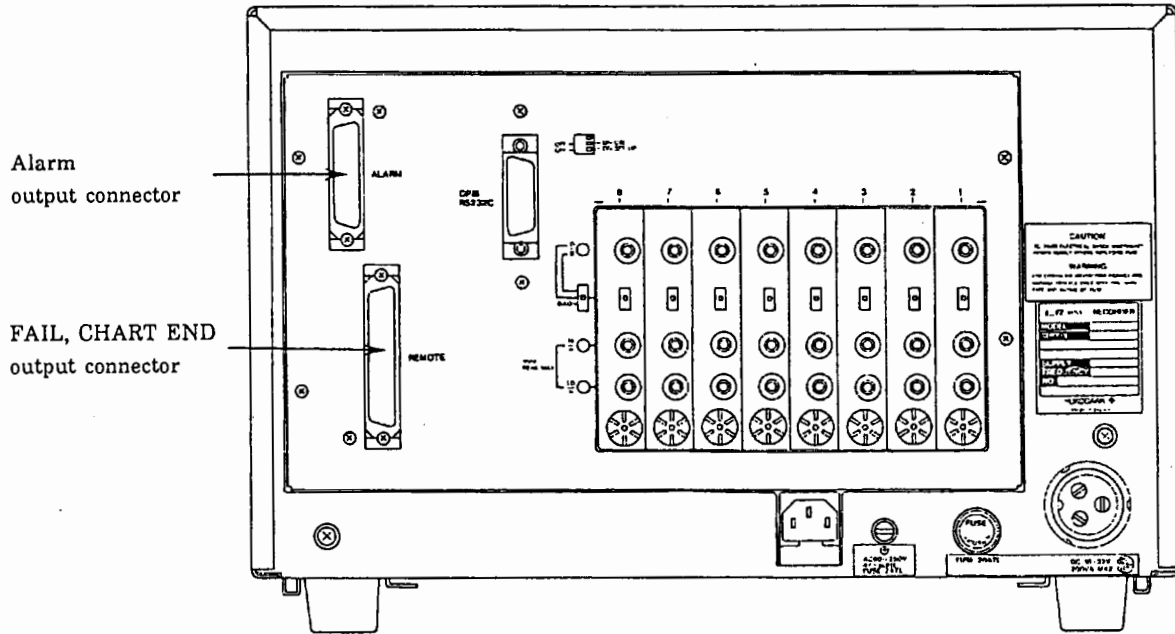
AMPHENOL 57-30500, part number A 1006 JD

2. OPERATION

2.1 Wiring

(1) Figure 2.1 depicts the recorder rear panel.

LR8100



LR12000

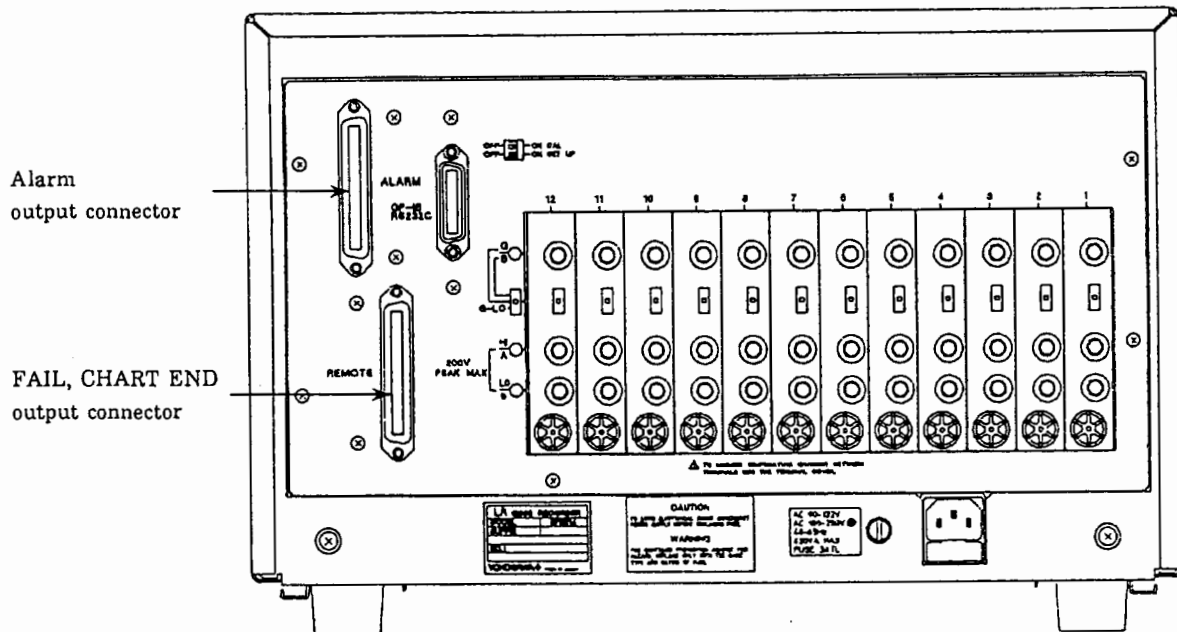


Figure 2.1 Rear Panel

(2) Channel alarm output connector pin numbers are shown in Table 2.1 and 2.2.

(3) FAIL and CHART END output connector pin numbers are shown in Table 2.3.

Table 2.1 Alarm Output Connector (LR8100)

Pin No.	Contents	Pin No.	Contents
1		19	
2	NO } Relay number 1	20	NO } Relay number 5
3	C } Relay number 1	21	C } Relay number 5
4	NC } Relay number 1	22	NC } Relay number 5
5		23	
6	NO } Relay number 2	24	NO } Relay number 6
7	C } Relay number 2	25	C } Relay number 6
8	NC } Relay number 2	26	NC } Relay number 6
9		27	
10	NO } Relay number 3	28	NO } Relay number 7
11	C } Relay number 3	29	C } Relay number 7
12	NC } Relay number 3	30	NC } Relay number 7
13		31	
14	NO } Relay number 4	32	NO } Relay number 8
15	C } Relay number 4	33	C } Relay number 8
16	NC } Relay number 4	34	NC } Relay number 8
17		35	
18		36	

Table 2.2 Alarm Output Connector (LR12000)

Pin No.	Contents	Pin No.	Contents
1		26	
2	NO } Relay number 1	27	NO } Relay number 7
3	C } Relay number 1	28	C } Relay number 7
4	NC } Relay number 1	29	NC } Relay number 7
5		30	
6	NO } Relay number 2	31	NO } Relay number 8
7	C } Relay number 2	32	C } Relay number 8
8	NC } Relay number 2	33	NC } Relay number 8
9		34	
10	NO } Relay number 3	35	NO } Relay number 9
11	C } Relay number 3	36	C } Relay number 9
12	NC } Relay number 3	37	NC } Relay number 9
13		38	
14	NO } Relay number 4	39	NO } Relay number 10
15	C } Relay number 4	40	C } Relay number 10
16	NC } Relay number 4	41	NC } Relay number 10
17		42	
18	NO } Relay number 5	43	NO } Relay number 11
19	C } Relay number 5	44	C } Relay number 11
20	NC } Relay number 5	45	NC } Relay number 11
21		46	
22	NO } Relay number 6	47	NO } Relay number 12
23	C } Relay number 6	48	C } Relay number 12
24	NC } Relay number 6	49	NC } Relay number 12
25		50	

Table 2.3 FAIL/CHART END Output Connector

Pin No.	Contents	Pin No.	Contents
1	NO } C } CHART END NC }	26	NO } C } FAIL NC }
2		27	
3		28	
4		29	
5		30	
.		.	
.		.	
.		.	
24		49	
25		50	

2.2 Setting

Setting Item

- (1) CH: Channel number
- (2) L1 or L2: level 1 or level 2
- (3) MODE: H (high limit) or L (low limit)
- (4) VAL: alarm set value
- (5) RLY: relay number (1 to 9, X, Y, Z)

Restrictions

The alarm setting is automatically switched OFF when the corresponding channel RANGE is altered . Therefore, set the alarm after setting the RANGE.

Setting Example

- (1) CH: 4
- (2) L1 or L2: L1
- (3) MODE: H
- (4) VAL: 1.000 V
- (5) RLY: 1

(Key operation)

(Setting panel)

(Description)

AUX
F1

```
AUX
↓ ALM TAG RCD MSG
↓ CLK
```

When AUX key is pressed, AUX mode is set and the menu is displayed at the bottom of the panel. Press F1 key to obtain the alarm (ALM) setting panel.

F4

```
4CH (-5.500~5.500)
L1 MODE: OFF
L2 MODE: OFF
↓ 1CH 2CH 3CH 4CH
↓ 5CH 6CH 7CH 8CH
↓ 9CH XCH YCH ZCH
```

Press F4 key to select 4CH. Range where alarm can be set is displayed within () after the CH number. Press the Next key to switch between the displayed channels.

```
4CH (-5.500~5.500)
L1 MODE: OFF
L2 MODE: OFF

H L OFF
```

Press F1 key to set alarm mode of L1 (level 1) to H.

1Y
0.
N0#
N0#
N0#
▽

```
CH (-5.500~5.500)
L1 MODE: H
VAL: 0.000V
RLY: OFF
L2 MODE: OFF

← → del
```

Set alarm high limit value to 1.000 V with the ALPHANUMERIC key. Upon completion, press the cursor key.

(Key operation)

(Setting panel)

(Description)



F2

```

4CH (-5.500~5.500)
L1 MODE : H
      VAL : 1.000V
      RLY : OFF
L2  MODE : OFF
↓ OFF      1      2      3

```

Press F2 key to select output relay number (1).

```

↓ 4      5      6      7
↓ 8      9      X      Y
↓ Z

```




```

4CH (-5.500~5.500)
L1 MODE : H
      VAL : 1.000V
      RLY : 1
L2  MODE : OFF

```

L2 (level 2) should remain OFF. When ENTRY key is pressed once the alarm setting is set. When setting is completed, press ENTRY key.

Notes :

1. Alarm detection is executed every second (125 ms for the LR12000). Therefore, the maximum alarm delay period is one second.
2. Alarm ON/OFF may occur when the measured value fluctuates beyond and below the alarm set point value. Alarm hysteresis must be set to avoid this from occurring. For details, refer to section 6.4.14 SET UP mode.