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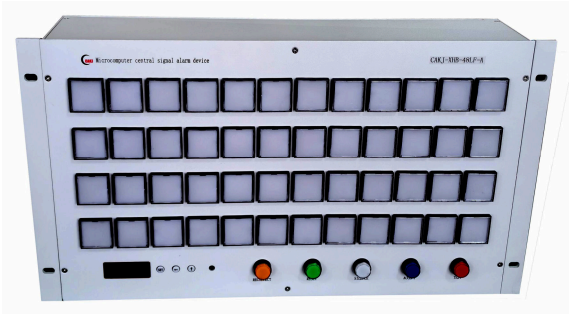
CAKJ-XHB-48LFK

Microcomputer type central signal alarm device



LFSeries 19 inch rack mount

48 Loop

Xuchang Changan Technology Co., Ltd.

1，OVERVIEW

CAKJ-XHB integrated microcomputer central signal alarm device is a centralized management device designed specifically for power station and substation signal systems. This device is widely used in industries such as power, petrochemical, chemical, metallurgical, coal, etc. It is a highly intelligent product with signal alarm function.

2，FUNCTIONAL CHARACTERISTICS

1) The device panel has digital display, setting buttons, and power on self-test.
2) It has the functions of testing (lamp testing), confirmation (acceptance), silencing, resetting, and recalling. And it comes with functional buttons.
3) It has the function of switching between manned and unmanned operation
4) It has manual and automatic confirmation functions, and the automatic confirmation time (0-200s) can be set.
5) Signal alarm types can be distinguished: accident signal S, warning signal Y, and position signal P can be set for differentiation.
6) Light sign color: Red, white, yellow, and green can be selected, and color differentiation is more eye-catching and intuitive according to the alarm type of the signal.
7) Input signal status: switch contact (h), switch holding contact (E), and pulse type holding contact (C). (Note)
8) Input signal normally open and normally closed selection: For each signal, a normally open to normally closed alarm (default) can be set, and a normally closed to normally open alarm can be set.
9) Signal delay alarm: 0-9999ms delay alarm time can be set
10) The device comes with a built-in buzzer, which emits a long sound "beep ---" for accidents, a short sound "beep, beep, beep, beep" for warning signals, and no sound for position signals.
11) For each input signal, corresponding output repetitive action relay contacts (follow-up contacts).
12) The device is equipped with accident and warning signal alarm output contacts, which can activate the electric whistle and bell to enhance the sound alarm effect.
13) Equipped with accident and warning remote signal output contacts, it can be connected to other devices or used as an accident stop clock signal.
14) Equipped with a device power supply disappearing contact output.
15) Equipped with digital communication output, RS485 serial communication interface, and MODBUS communication protocol.

◆Note: Explanation of input signal status and alarm procedures

When“h” is selected as the input signal state (default), the workflow is as follows:

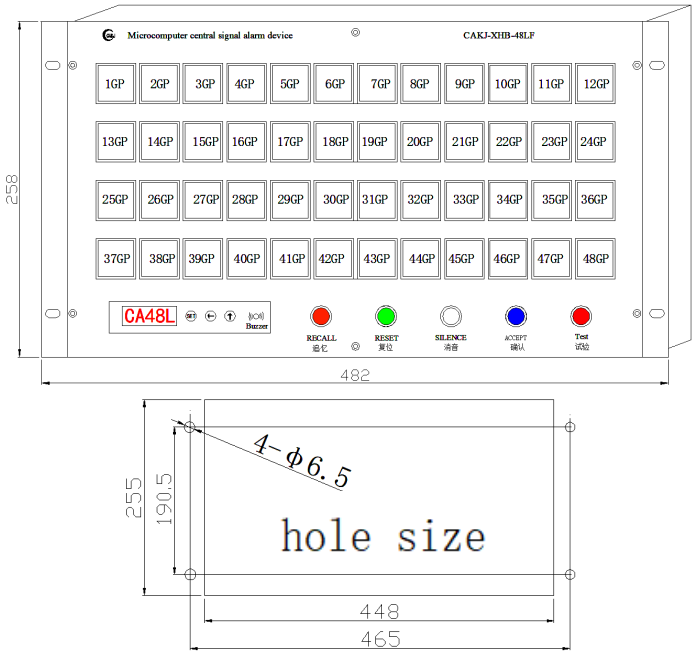
Line	Run	Button	Alarm status	Light plate	Sound status	Remark
1	Normal	-	Normal	Off	Silent	
2A	Abnormal	-	Alarm	Flash	Sound	Alarm
2B	Abnormal	Silence	Alarm	Flash	Silent	Alarm hold
3A	Abnormal	Confirm	Comfirmed	Bright	Silent	Alarm hold
3B	Normal		-	To line 4		Instant alarm
4	Normal	-	Normal	Off	Silent	Automatic reset

When the state of the input signal is "C" or "E", the work flow is as follows:

Line	Run	Button	Alarm status	Light plate	Sound status	Remark
1	Normal	-	Normal	Off	Silent	
2A	Abnormal	-	Alarm	Flash	Sound	Alarm
2B	Abnormal	Silence	Alarm	Flash	Silent	Alarm hold
3	Abnormal/Normal	Confirm	Comfirmed	Bright	Silent	Alarm hold
4A	Abnormal	Reset	-	To line 3		Alarm hold
4B	Normal		Normal	灭	无声	Manual reset

Note: The signal is normal if the signal is not alarmed, and the signal abnormal is if it is alarmed

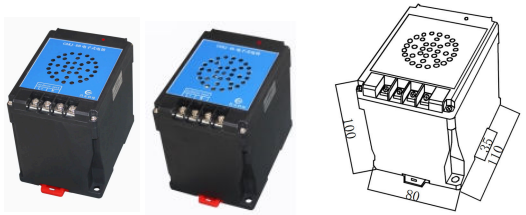
八，Device outline and opening size



◆**Electric bell and whistle (optional)**

CAKJ-DL Electric bell
CAKJ-DD Electric whistle
Installation: 35mm rail type
Terminals

L+	N-
AC/DC80-265V	



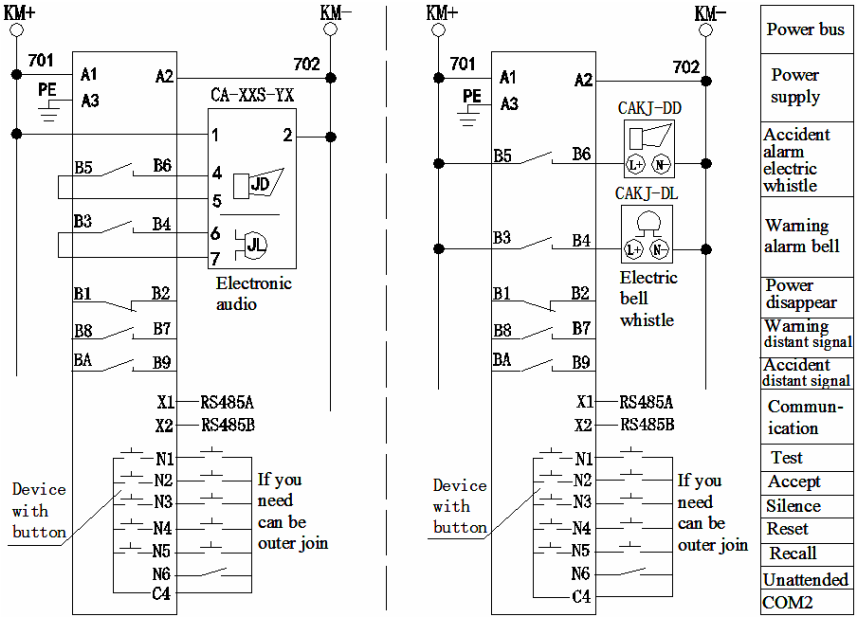
◆**Electronic audio (optional)**

CA-XXS-YX Electronic audio
(Accident fire sound, warning siren sound, volume, tone adjustable)
Terminals

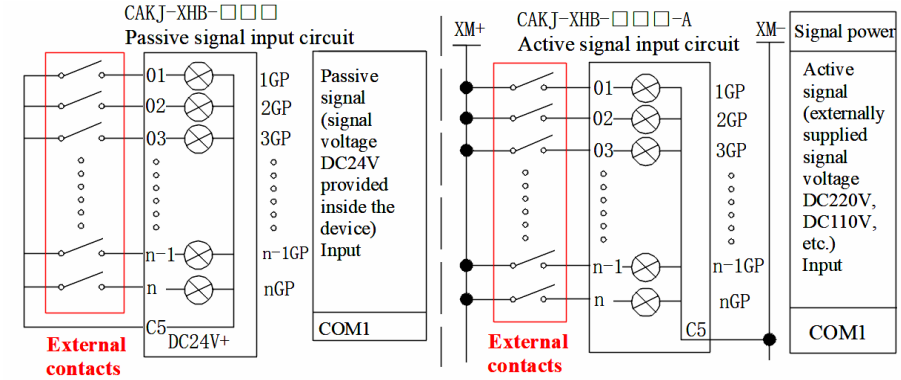
1	2	3	4	5	6	7
L+	N-					
AC/DC80-265V	Space	Accident			Preview	

Fixed with brackets or hung with accessories
at the back of the disc for hole insertion
External dimensions: 210X135X92
Opening size: 202X127

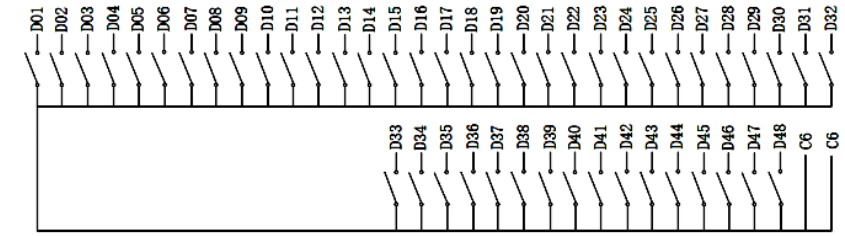
◆Basic control operation circuit



◆Signal input circuit wiring diagram



◆Wiring diagram of repetitive action relay output principle



3，CONMENT TECHNIQUE REQUIREMENT

1) Working power supply: DC220V, DC110V, DC125V, AC220V, AC240V,Optional
2) Signal capacity: 48 loop,
3) Input signal method: Normally open active dry contact, or active contact.
4) Alarm window: Flash window measures are 30×30, colors: red, green, yellow, white to choose.
5) Alarm output: Alarm window flash, buzzer or sound equipment sounds.
6) Alarm sound: Buzzer beeps 60DB; we provide intensive sound equipment CAKJ-DL electric bell, CAKJ-DD electric whistle，Or CA-XXS-YX2 Electronic audio.
7) Repetitive action relay output: Corresponding to the input signal, output the repetitive action relay contacts (follow-up contacts) separately.
8) Basic contact output: 5 relay contact outputs, corresponding to power loss, warning alarm, accident alarm, warning remote signaling, and accident remote signaling.
9) Contact capacity: AC250V, 3A pure resistance load, DC220V, 0.125A inductive load.
10) Function setup: touch button setting, 5 digits display.
11) Power consume: The whole device consumed no greater than 30W.
12) Communication interface: RS485 serial communication interface, MODBUS protocol
13) Insulation resistance: no less than 100 MΩ in-between input-output-power supply-cage.
14) Power frequency voltage: in-between input- output-power supply-cage, able to bear the tests of 2kV, 1min, 5mA, 50/60HZ, no signs of flashover and breakdown.
15) Capacity of resisting disturbance: able to bear 1 MHz and 100 kHz high frequency interference of attenuated shock wave. First half wave voltage amplitude common mode is 2.5 kV, different mode voltage is 1.0 kV, the product shouldn't appear unwanted operation or failure of operate.
16) Environment condition: surrounding temperature -10°C~60°C; surrounding humidity no greater than 90%.
17) Weight: 2.5 kg.

4，DEVICE ALARM AND TESTING

1）POST (power on self test), when device power on, digital display window on device panel shows in sequence 【0.0.0.0.0】【1.1.1.1.1】…【7.7.7.7.7】【8.8.8.8.8】alarm window all light 【9.9.9.9.9】alarm window all light scroll display 【CA n L】(for power indicate). POST finish. "n" is the total number of circuits of the alarm device.

2） Press "test" button, all alarm window flash, buzzer sounds, output audio equipment act. Release test button, return to monitoring status.

3）When the signal alarm is triggered, the corresponding light sign flashes, the buzzer sounds, the output audio contact acts, the electric bell and whistle sound, the remote signaling contact acts, and the relay contact closes with repeated actions. The digital display window shows the corresponding number of circuits.

4) Press the "mute" button, the light sign will keep flashing, the buzzer will be silent, the audio contacts will return, and the electric bell and whistle will be silent.

5) Press the "Confirm" button (or automatically confirm within 0-200s), the light sign will change from flashing to flat light, the buzzer will be silent, the output audio contact will return, and the electric bell and whistle will be silent.

6) When the signal is reset, the signal input from the switch type contact "h" will turn off the light sign, the remote signaling contact will return, and the repetitive action relay contact will return. The signal light plate of the holding type contact "E or C" input keeps an alarm, and it needs to be manually reset (press the "reset" button). After that, the light plate will turn off, the remote signaling contact will return, and the relay contact will return after repeated actions.

7) Long press the "Recall" button, and the alarm signals will flash one by one on the light plate according to their alarm sequence, following the principle of last in, first out. At the same time, the LED will synchronously display the alarm circuit. Up to 200 signals can be recalled, and alarms will be given priority during the recall process.

8) Switching between manned/unmanned mode, connect self-locking switches or buttons at N6 and C4 terminals, and switch to unmanned mode when N6 and C4 are connected. When unmanned, the digital display shows "----", and the signal alarm light sign, sound system, etc. do not work. The communication interface and remote signaling contact output are working normally.

5，DEVICE SETUP

Press “SET” set button, press “←” to move, “↑” to add 1, insert PIN (8080) into setup mode. Recording to menu indication press “SET” to turn pages for function setting. (Edition no. v1.1)

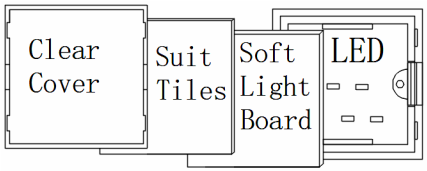
Symbol	Setting content	Operate	Setting	Instruction
C 0	Insert PIN	“←”“↑”	PIN	8080
n. n	total loops no.	“SET”	n loop	n this is factory setting
⊢. 30	Setting auto confirm time	“←”“↑”	0~200s	30s (“0” not confirm automatically)
d. 20	Setting signal delay alarm time	“←”“↑”	0-9999ms	20，20ms，
y--A	Alarm audio setting	“↑”selected	A，F，d，n	A(A audio all on, F buzzer only, d external audio only, n audio all off)
S. 1	comm. adds.	“←”“↑”	0~255	1(communication add. is the only one)
b.9600	Communication Baud rate	“↑”selected	9600/4800	9600
J. 0	Memory signal clear	“←”“↑”	Clear PIN	1001(correct pin clear record)
L01-y	Setting 01 type	“↑”selected，“←”turn pages，setting signal type one by one	y，S，P	y(the device default all signals are “y” warning signals, recording every single signal type, press “↑” to choose “S” failure signal, press “↑”to choose “P” location signal, while finish, press “←” to turn pages, setting signal types one by one.
L02-y	Setting 02 type			
- - - -	- - - - - -			
Ln-y	Setting n type			
E01-h	Setting 01 status	“↑”selected，“←”turn pages，setting signal input type one by one	h, C,E	h（h device default switch contact）, press “↑”to choose “C” pulse type retaining contact, press“↑” to choose “E” switch retaining contact, while finish, press “←” to turn pages，setting signal type one by one)
E02-h	Setting 02 status			
- - - -	- - - - - - -			
En-h	Setting n status			
F01-o	Setting 01 op/co	“↑”selected，“←”turn pages，setting signal open/closed one by on	o , c	o (Device by default, Normally open contacts closed alarm)，press the "↑" choose "c" Normally closed contacts open alarm. press ← to flip pages, set normally open/closed alarm them one by one.
F02-o	Setting 02 op/co			
- - - -	- - - - - - -			
Fn-o	Setting n op/co			
while setting finish or no setting press “SET” button to save and exit, restore to normal alarm condition.				

◆Signal unified setting table; press "SET" to enter the setting, press "←" to shift, press "↑" to add 1, after entering the code, press "SET" to complete the setting and return

Enter code	Set 1-n signal alarm type	Enter code	Set 1-n signal input status
C1101	Unified settings for accident signals S	C1104	Uniformly set as switch contacts h
C1102	Uniformly set as a warning signal y	C1105	Uniformly set as pulse contacts C
C1103	Uniformly set as position signal P	C1106	Uniformly set to keep contacts E

Note: This setting is convenient for the user to set all signals to one type or state on site, do not operate easily.

★Light word plate alarm name printing transparent paper or light board replacement diagram ☞



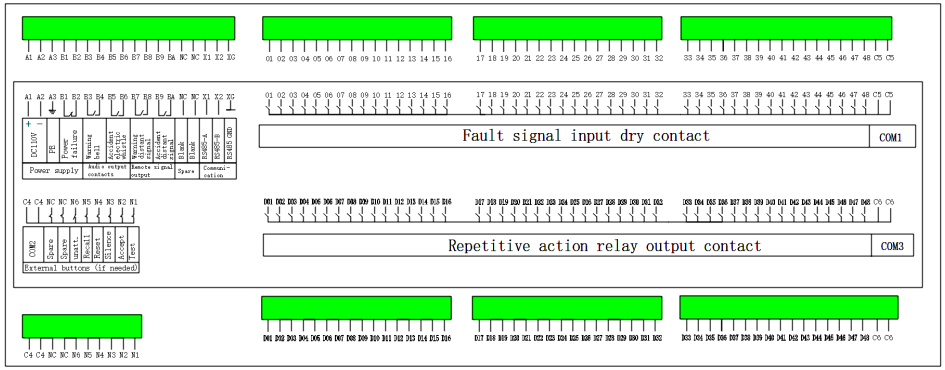
6，Model specifications

Model	Alarm loop	Series code	signal type	Detailed description
CAKJ-XHB				Changan integrated signal alarm device
	-48			48 Loop alarm signals (48 alarm light plates)
		LFK		19 inch size with repetitive action relay output
			空	Alarm signal is passive dry contact signal input
			-A	Alarm signal is active voltage signal input (DC220V, DC110V, etc., specified when ordering)

Example：CAKJ-XHB-48LFK Alarm device (48 passive signal inputs with repetitive relay outputs)
CAKJ-XHB-48LFK-A Alarm device (48 active signal DC220V input with repetitive relay output)

7，System wiring diagram

◆Meaning of terminal



Basic control circuit terminals		Input signal terminal				Output relay terminal			External function button
No	meaning	No	No	No	explain	No	No	No	
A1	Power supply L/+	01	17	33	Passive dry contact signal input terminal or Active voltage signal DC+ Terminal	D01	D17	D33	N1 test button
A2	Power supply N/-	02	18	34		D02	D18	D34	N2 confirmation button
A3	Power supply PE	03	19	35		D03	D19	D35	N3 silencing button
B1	Power failure normally closed	04	20	36		D04	D20	D36	N4 reset button
B2	Power failure normally closed	05	21	37		D05	D21	D37	N5 recall button
B3	Preview audio contact	06	22	38		D06	D22	D38	N6 Unattended
B4	Preview audio contact	07	23	39		D07	D23	D39	C4 button common terminal
B5	Accident audio contact	08	24	40		D08	D24	D40	
B6	Accident audio contact	09	25	41		D09	D25	D41	
B7	Preview remote signaling	10	26	42		D10	D26	D42	
B8	Preview remote signaling	11	27	43		D11	D27	D43	Note: The device comes with a function button, which can be connected if necessary.
B9	Accident remote signaling	12	28	44		D12	D28	D44	
BA	Accident remote signaling	13	29	45		D13	D29	D45	
NC	spare	14	30	46	C5 common terminal,Passive dry contact	D14	D30	D46	
NC	spare	15	31	47		D15	D31	D47	
X1	RS485A	16	32	48		D16	D32	D48	
X2	RS485B			C5		C6 Output common terminal			
XD	Communication location	DC- terminal for C5 active signal input							