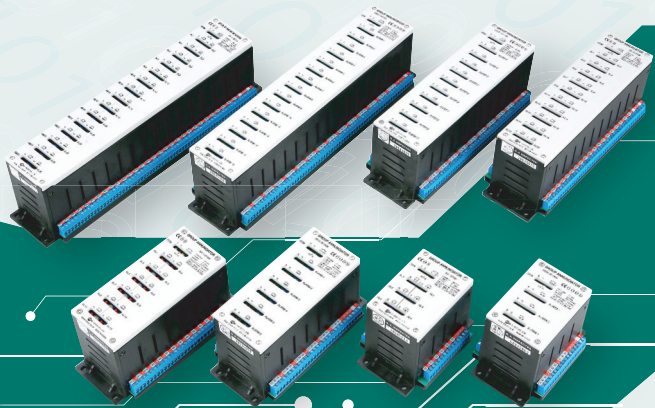




Lloyd's
Register



PATENT No. 0392839
DESIGN REGISTRATION No. 0298492 / 0309601



GROUP ANNUNCIATOR

- SA SERIES (DOUBLE POINT)
- SBGA SERIES (SINGLE POINT)

GROUP ANNUNCIATOR

SA SERIES

GROUP ANNUNCIATOR



SA SERIES
(DOUBLE POINT)



PATENT
Registration of Patent----- (No.0392839)
Registration of Design--- (No.0298492/0309601)

GENERAL INFORMATION

SA series are high quality Annunciators which have visible and audible self-alarm and external 2ndary alarm at sensing abnormal signal, and developed so as to be suitable for an alarm system of marine, power plant, steel, chemical plant and any other industrial facilities. And separate 2 alarm circuits are constructed on an alarm card, so mounting space can be reduced to half. Moreover, alarm system can be consist of maximumly 1000 points by connecting the extension unit (SA-□□PSE). Each alarm is separated from the other, and input signal (NO or NC) and 2ndary alarm of each alarm can be individually controlled through the selection at alarm card.

ORDERING INFORMATION

SA - 20P - SM

SM	Mast unit (with common card)
SE	Extension unit (without common card)

6P	6 Point alarm
12P	12 Point alarm
20P	20 Point alarm
30P	30 Point alarm

ORDERING INFORMATION

FRONT VIEW

SIDE VIEW

MOUNTING

4-Ø5 [for M4 screw]

Wiring cable Size(max.) : AWG22-14(2.5SQ)

Pin terminal Size(max.) : Ø 2.0

Insulation tube

MODEL	DIMENSION (unit : mm)						
	A	B	C	D	E	F	G
6PSM & E	94	130	70	102	98.5	54	116
12PSM & E	94	190	70	162	98.5	54	176
20PSM & E	94	270	70	242	98.5	54	256
30PSM & E	94	370	70	342	98.5	54	356

GROUP ANNUNCIATOR

ELECTRICAL SPECIFICATIONS

POWER RATING		DC 24V
POWER VARIATION		DC 19 ~ 30V
TIMER	ACCURACY	Less than ±1%
	SETTING	Flickering range (V/R) : 1T ~ 3T /sec. Alarm delay range (V/R) : 0 ~ 30 sec.
INPUT SIGNAL	TYPE	"NO" or "NC" Contact (select by dip s.w. on each alarm card)
	LOOP CURRENT	Below 10mA per each point
	CABLE LENGTH	within 1000m (Above 0.75 SQ)
OUTPUT SIGNAL	VISUAL LAMP RATING	2W (max.)
	OUTPUT CONTACT FOR BUZZER	DC 30V 1.0A (resistive) DC 30V 0.4A (inductive p.f=0.4)
	EXTENSION ALARM	SSR OUTPUT : DC 24V 0.2A (max.)
2NDARY ALARM		"NC" dry contact
INSULATION RESISTANCE		Above 200Megger ohms between live part and enclosure.
SURGE TRANSIENT		1KV 50uVs line / line 0.5KV 50uVs line / line (IEC 1000-4-5 / 1995)

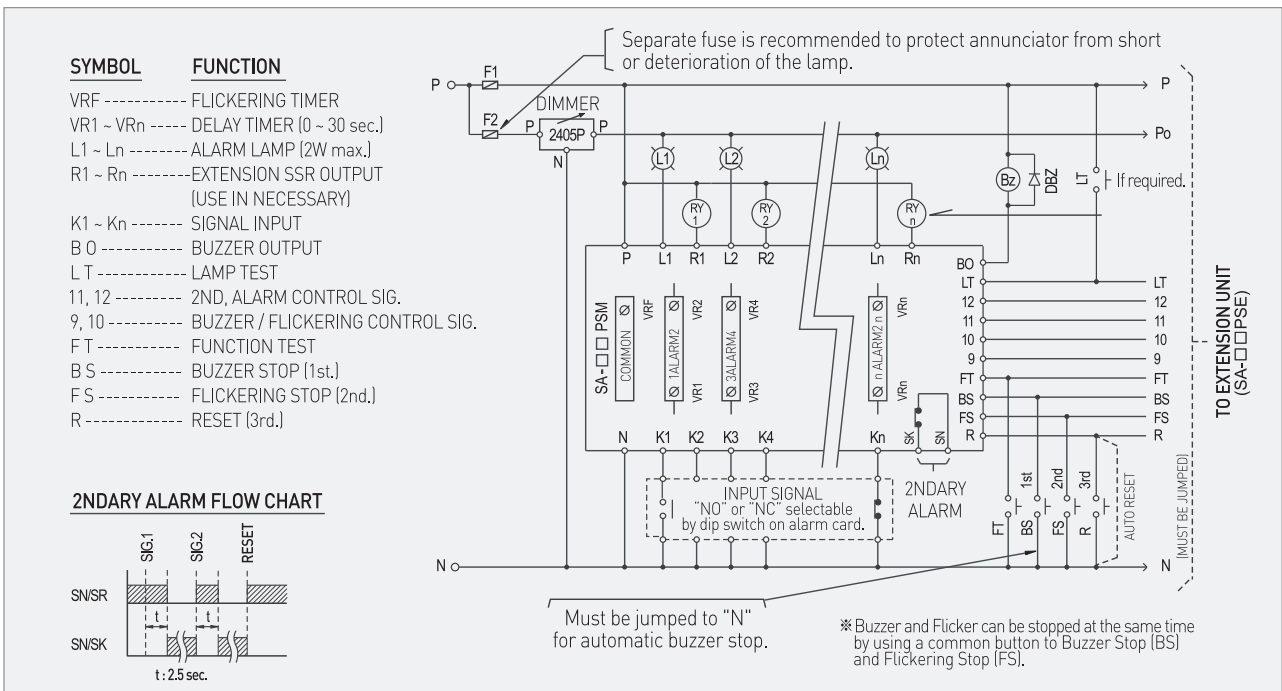
MECHANICAL SPECIFICATIONS

ENCLOSURE (MATERIAL)		PC (Flame retardant) UL94 V-0 / TRIREX3025G10 / G / F reinforced
EXTERNAL CONNECTION TERMINAL BLOCK	MATERIAL	Insulating material : PA / UL94 V-0 Terminal block : CnZn
	RATED VOLTAGE	250V (UL 1059, EN60998)
	WIRE SIZE (max.)	AWG22-14 (2.5 SQ)
	TEST VOLTAGE	2.0KV
	RATED TORQUE / SCREW SIZE	0.5Nm / M3
AMBIENT CONDITIONS	SPACING BETWEEN TERMINALS	5.0mm
	AMBIENT TEMP.	-25°C ~ +55°C
	STORAGE TEMP.	-25°C ~ +85°C
	HUMIDITY	45% ~ 85%RH
VIBRATION TEST		30Hz for 2hours (acceleration : ±0.7G)

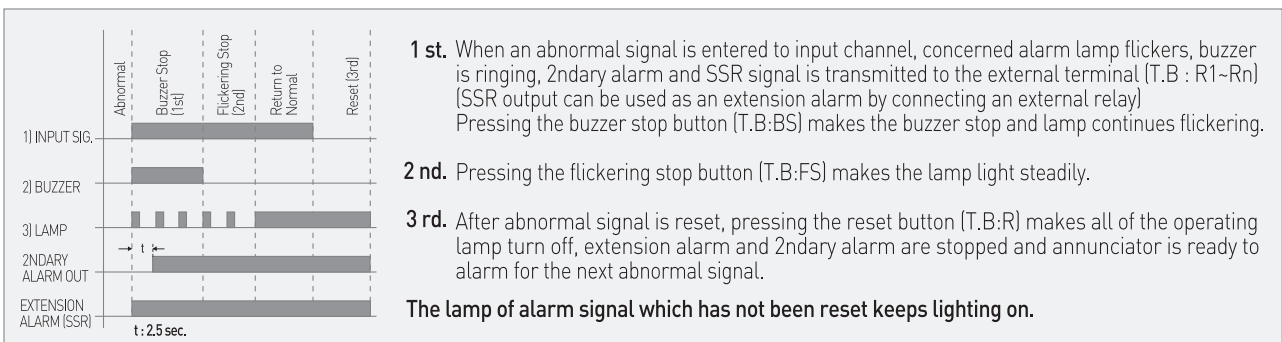
LOAD CONSUMPTION TABLE (POWER SUPPLY : DC 24V)

MODEL	SA-6PSM	SA-12PSM	SA-20PSM	SA-30PSM
TOTAL CURRENT CONSUMPTION	Below 92mA	Below 135mA	Below 190mA	Below 260mA
RECOMMENDED POWER SUPPLY WITH VISUAL LAMP (2W)	Above 1.0A	Above 1.7A	Above 2.7A	Above 4.1A

CONNECTION DIAGRAM

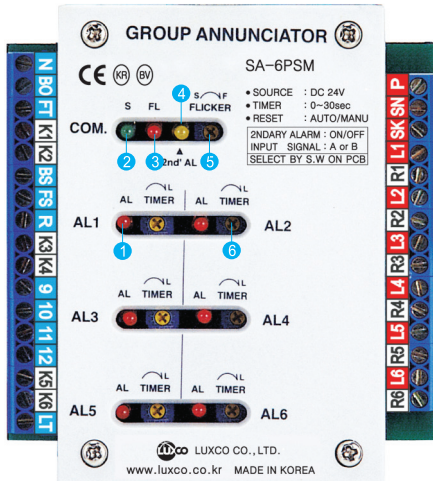


FUNCTION FLOW CHART



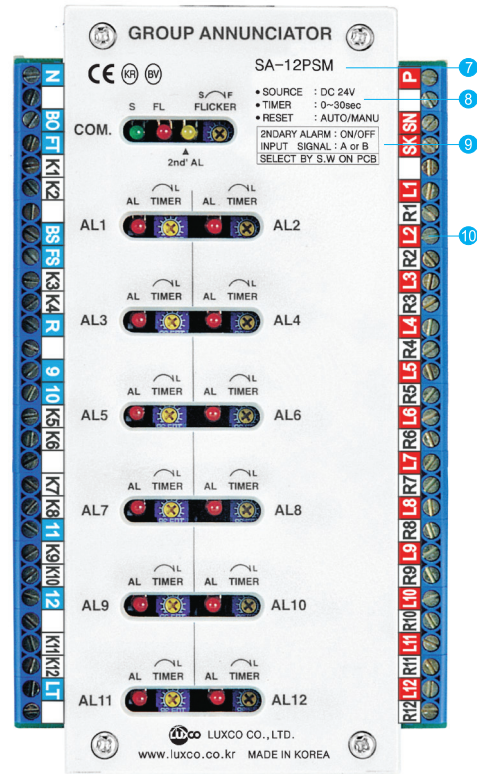
TERMINAL BLOCK LAYOUT & OUTLINE DESCRIPTIONS

SA-6PSM (6 POINT ALARM)

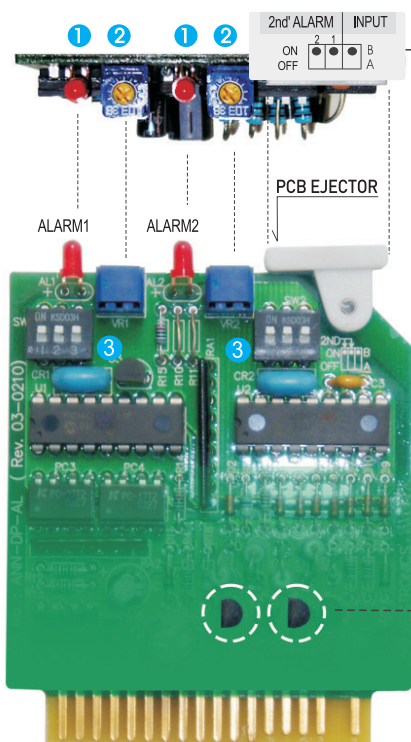


- 1 ALARM INDICATOR ----- 3ø LED (light up in red)
- 2 SOURCE INDICATOR ----- 3ø LED (light up in green)
- 3 FLICKER TIMING INDICATOR ----- 3ø LED (light up in red)
- 4 2NDARY ALARM INDICATOR ----- 3ø LED (light up in yellow)
- 5 FLICKERING TIME ADJUSTER ----- 1T ~ 3T (Set by V/R)
- 6 ALARM DELAY TIME ADJUSTER ----- 0 ~ 30 sec. (Set by V/R)
- 7 MODEL No.
- 8 RATING
- 9 I/O SIGNAL CONTROL METHOD
- 10 EXTERNAL CONNECTION T.B----- (UL-1059, EN60998)

SA-12PSM (12 POINT ALARM)

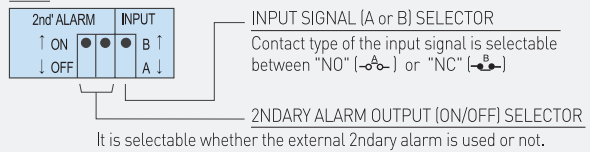


ALARM CARD



I/O SIGNAL (A or B / 2NDARY ALARM) CONTROL METHOD

(FIG.1)

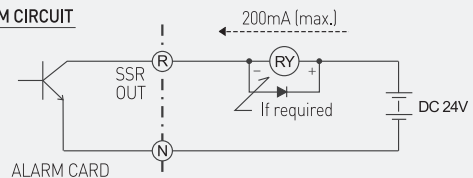


- 1 ALARM 1, 2 INDICATOR
- 2 ALARM 1, 2 DELAY TIME, ADJUSTER (0 ~ 30 sec.)
- 3 I/O SIGNAL (A or B / 2ND' ALARM) CONTROL (See FIG.1)

CAUTION

- Make the Buzzer out T.B(B0), Lamp out T.B (L1 ~ Ln) and SSR out T.B (R1 ~ Rn) blank if Buzzer (BZ), Lamp (L1 ~ Ln) and Extension alarm (SSR OUT) are not used.
- Alarm card may be damaged if the Buzzer out T.B(B0), Lamp out T.B(L1 ~ Ln) or SSR out T.B (R1 ~ Rn) is connected to "P" line directly.

EXTENSION ALARM CIRCUIT



TERMINAL BLOCK LAYOUT & OUTLINE DESCRIPTIONS



INPUT SIDE

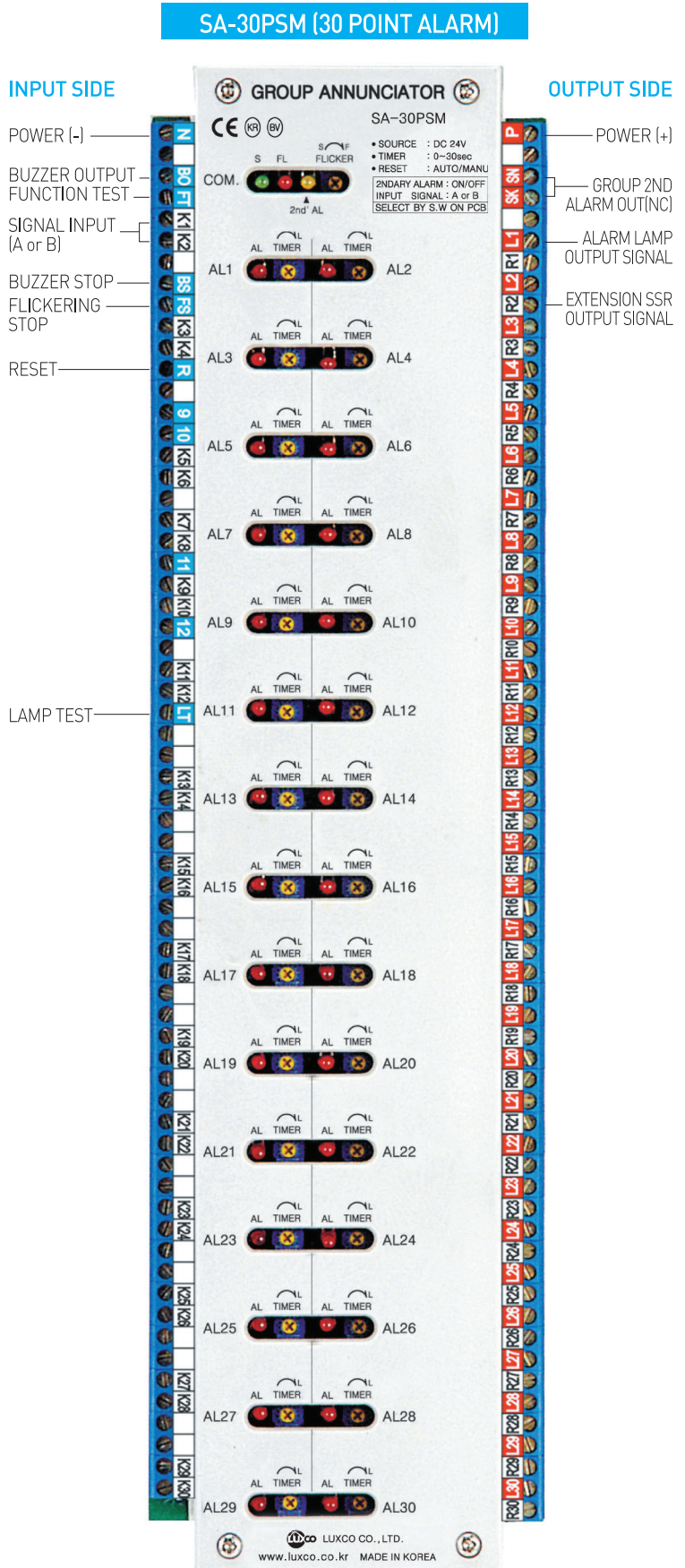
T.B (No. 9, 10, 11, 12) :
EXTENSION SIGNAL IN / OUT

T.B (No. K1 ~ Kn) :
SIGNAL INPUT (A or B)

OUTPUT SIDE

T.B (No. L1 ~ Ln) :
ALARM LAMP OUTPUT SIG.

T.B (No. R1 ~ Rn) :
EXTENSION SSR OUTPUT SIG.



INPUT SIDE

POWER (-)
BUZZER OUTPUT
FUNCTION TEST
SIGNAL INPUT
(A or B)
BUZZER STOP
FLICKERING
STOP
RESET

LAMP TEST

OUTPUT SIDE

POWER (+)
GROUP 2ND
ALARM OUT(NC)
ALARM LAMP
OUTPUT SIGNAL
EXTENSION SSR
OUTPUT SIGNAL



SBGA SERIES (SINGLE POINT)



PATENT

Registration of Patent-----[No.0392839]
Registration of Design---[No.0298492/0309601]

GENERAL INFORMATION

SBGA series are high quality Annunciators which have visible and audible self-alarm and external 2ndary alarm at sensing abnormal signal, and developed so as to be suitable for an alarm system of marine, power plant, steel, chemical plant and any other industrial facilities. And alarm system can be consist of maximumly 600 points by connecting the extension unit (SBGA-□□P1WE). Each alarm is separated from the other, and input signal (NO or NC) and 2ndary alarm of each alarm can be individually controlled through the selection at alarm card.

ORDERING INFORMATION

SBGA - 10P - 1WM

- 1WM Mast unit (with common card)
- 1WE Extension unit (without common card)

3P	3 Point alarm
6P	6 Point alarm
10P	10 Point alarm
15P	15 Point alarm

ORDERING INFORMATION

FRONT VIEW

SIDE VIEW

MOUNTING

Pin terminal Size(max.) : Ø 2.0

Wiring cable Size(max.) : AWG22-14(2.5SQ)

Insulation tube

MODEL	DIMENSION (unit : mm)						
	A	B	C	D	E	F	G
3P 1WM & E	94	130	70	102	98.5	54	116
6P 1WM & E	94	190	70	162	98.5	54	176
10P 1WM & E	94	270	70	242	98.5	54	256
15P 1WM & E	94	370	70	342	98.5	54	356

GROUP ANNUNCIATOR

ELECTRICAL SPECIFICATIONS

POWER RATING		DC 24V	
POWER VARIATION		DC 19 ~ 30V	
TIMER	ACCURACY	Less than ±1%	
	SETTING	Flickering range (V/R) : 1T ~ 3T /sec. Alarm delay range (V/R) : 0 ~ 30 sec.	
INPUT SIGNAL	TYPE	"NO" or "NC" Contact (select by dip s.w on each alarm card)	
	LOOP CURRENT	Below 10mA per each point	
	CABLE LENGTH	Within 1000m (Above 0.75 SQ)	
OUTPUT SIGNAL	VISUAL LAMP RATING	2W (max.)	
	OUTPUT CONTACT FOR BUZZER	DC 30V 1.0A (resistive) DC 30V 0.4A (inductive p.f=0.4)	
	EXTENSION ALARM	SWITCHING CAPACITY	24V DC 2A (resistive) 0.8 (inductive p.f=0.4) 120V AC 1A (resistive) 0.4 (inductive p.f=0.4)
		LIFE EXPECTANCY	ELECTRICAL 10 x 10 ⁴ cycles MECHANICAL 10,000 x 10 ⁴ cycles
2NDARY ALARM		"NC" dry contact	
INSULATION RESISTANCE		Above 200Megger ohms between live part and enclosure.	
SURGE TRANSIENT		1KV 50uVs line / line 0.5KV 50uVs line / line (IEC 1000-4-5 / 1995)	

MECHANICAL SPECIFICATIONS

ENCLOSURE (MATERIAL)		PC (Flame retardant) UL94 V-0 / TRIREX3025G10 / G / F reinforced
EXTERNAL CONNECTION TERMINAL BLOCK	MATERIAL	Insulating material : PA / UL94 V-0 Terminal block : CnZn
	RATED VOLTAGE	250V (UL 1059, EN60998)
	WIRE SIZE (max.)	AWG22-14 (2.5 SQ)
	TEST VOLTAGE	2.0KV
	RATED TORQUE / SCREW SIZE	0.5Nm / M3
AMBIENT CONDITIONS	SPACING BETWEEN TERMINALS	5.0mm
	AMBIENT TEMP.	-25°C ~ +55°C
	STORAGE TEMP.	-25°C ~ +85°C
HUMIDITY		45% ~ 85%RH
VIBRATION TEST		30Hz for 2hours (acceleration : ±0.7G)

LOAD CONSUMPTION TABLE (POWER SUPPLY : DC 24V)

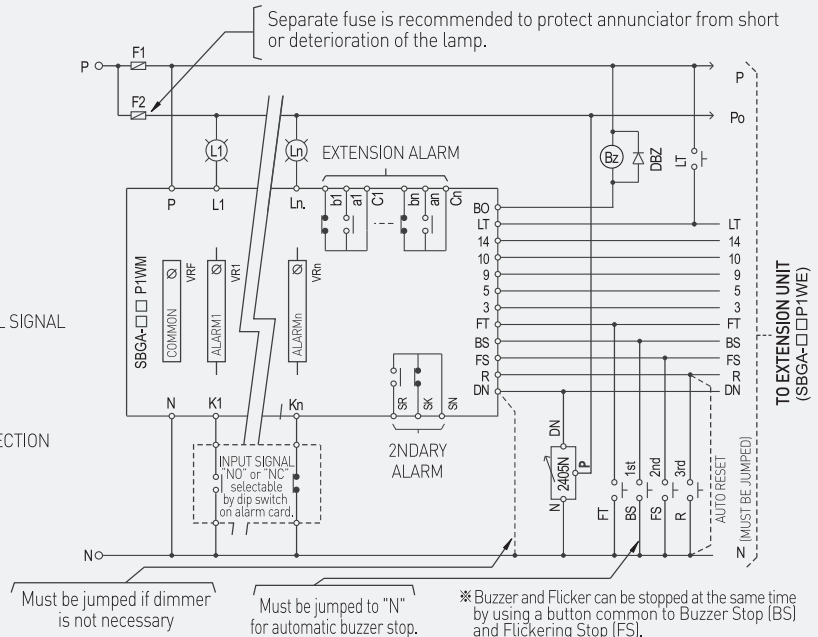
MODEL	SBGA-3P1WM	SBGA-6P1WM	SBGA-10P1WM	SBGA-15P1WM
TOTAL CURRENT CONSUMPTION	Below 95mA	Below 140mA	Below 200mA	Below 275mA
RECOMMENDED POWER SUPPLY WITH VISUAL LAMP (2W)	Above 0.5A	Above 1.0A	Above 1.5A	Above 2.0A

CONNECTION DIAGRAM

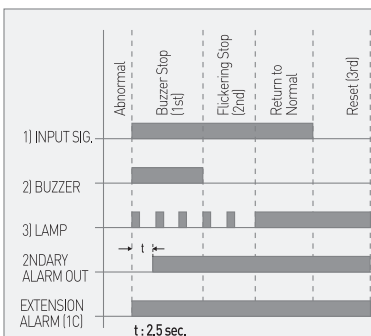
SYMBOL FUNCTION

VRF	FLICKERING TIMER
VR1 ~ VRn	DELAY TIMER (0 ~ 30 sec.)
L1 ~ Ln	ALARM LAMP (2W max.)
b1/a1/C1 ~ bn/an/Cn	EXTENSION ALARM(1C) (USE IN NECESSARY)
K1 ~ Kn	SIGNAL INPUT
B 0	BUZZER OUTPUT
L T	LAMP TEST
14	FLICKERING SIGNAL
3, 10	EXTENSION CONNECTION
5, 9	2ND, ALARM CONTROL SIGNAL
F T	BUZZER / FLICKERING CONTROL SIGNAL
B S	FUNCTION TEST
F S	BUZZER STOP (1st.)
R	FLICKERING STOP (2nd.)
D N	RESET (3rd.)
	NEGATIVE TYPE DIMMER CONNECTION

2NDARY ALARM FLOW CHART



FUNCTION FLOW CHART



- 1 st.** When an abnormal signal is entered to input channel, concerned alarm lamp flickers, buzzer is ringing, 2ndary alarm and dry contact(1C) of relay is transmitted to the external terminal. Pressing the buzzer stop button (T.B:BS) makes the buzzer stop but lamp continues flickering.
- 2 nd.** Pressing the flickering stop button (T.B:FS) makes the lamp light steadily.
- 3 rd.** After abnormal signal is reset, pressing the reset button (T.B:R) makes all of the operating lamp turn off, extension alarm and 2ndary alarm are stopped and annunciator is ready to alarm for the next abnormal signal.

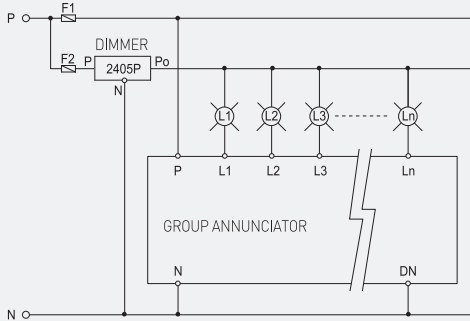
The lamp of alarm signal which has not been reset keeps lighting on.

* Buzzer and Flicker can be stopped at the same time by using a button common to Buzzer Stop (BS) and Flickering Stop (FS).
* Alarm card of dimmer type is optional

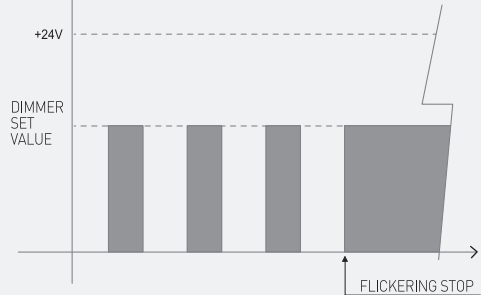
GENERAL TYPE CONNECTION (DIMMER POSITIVE)

MODEL : 2405P

CONNECTION DIAGRAM



VISUAL ALARM LAMP (LAMP VOLTAGE)



General type of dimmer connection is a dimmer connected to "P" line, and brightness of the lamp is set in advance.

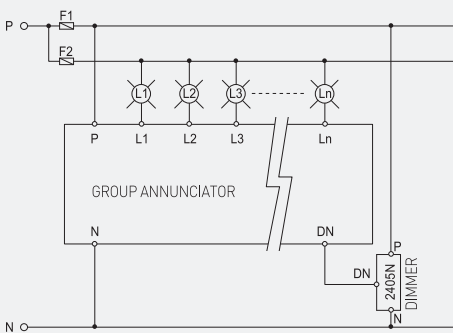
CAUTION

Brightness of the lamp should be not to dark when the dimmer is setting, otherwise alarm may not be recognized for the long distance and bright surrounding environment.

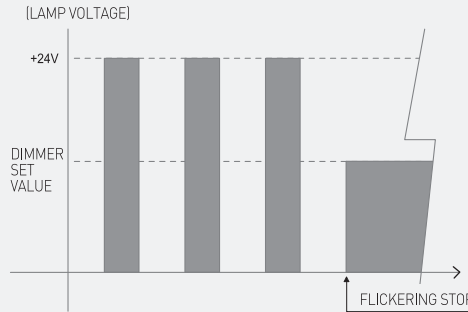
DN TYPE CONNECTION (DIMMER NEGATIVE)

MODEL : 2405N

CONNECTION DIAGRAM



VISUAL ALARM LAMP (LAMP VOLTAGE)



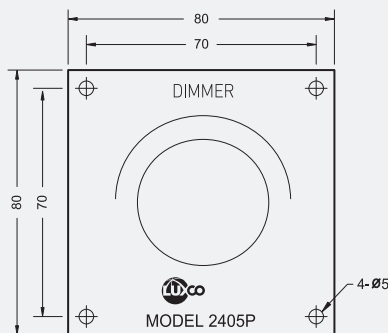
DN type of dimmer connection is a dimmer connected to "N" line. With standard type, When the dimmer is set to dark brightness, alarm lamp flickering is not easy to be recognized. But, with DN type, lamp flickering is bright enough to be recognized in spite of long distance and bright surrounding environment. And after flickering stop and in steady state, brightness of lamp can be changed to the level set by dimmer.

- INPUT : 19 ~ 30V
- OUTPUT : 3 ~ 27V
- CAPACITY : 5A (max.)

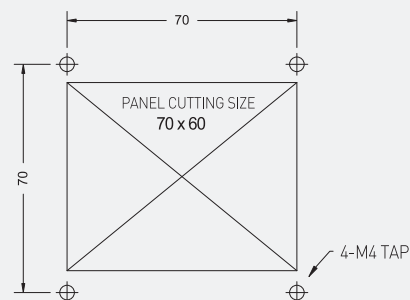
GENERAL TYPE CONNECTION (DIMMER POSITIVE)

(Unit : mm)

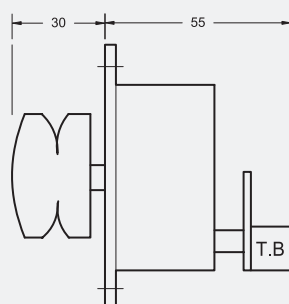
FRONT VIEW



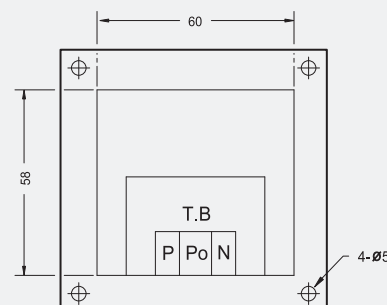
MOUNTING VIEW



SIDE VIEW



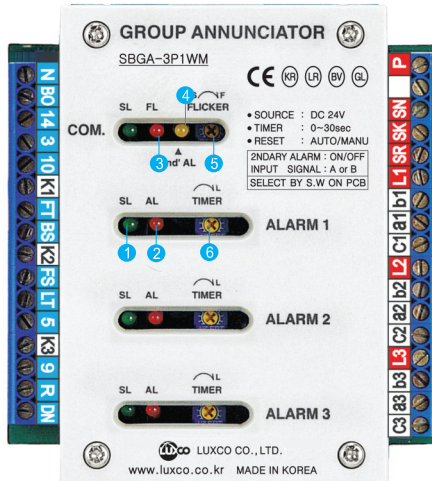
REAR VIEW



GROUP ANNUNCIATOR

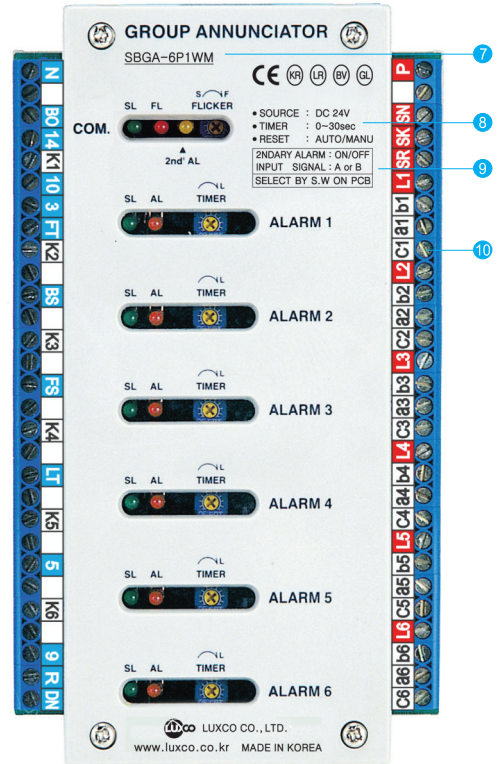
TERMINAL BLOCK LAYOUT & OUTLINE DESCRIPTIONS

SBGA-3P1WM (3 POINT ALARM)

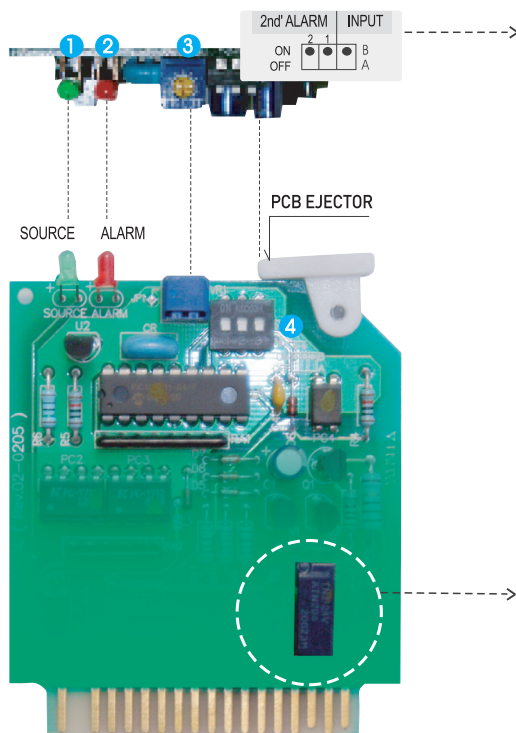


- 1 SOURCE INDICATOR----- 3 \varnothing LED (light up in green)
- 2 ALARM INDICATOR----- 3 \varnothing LED (light up in red)
- 3 FLICKER TIMING INDICATOR----- 3 \varnothing LED (light up in red)
- 4 2NDARY ALARM INDICATOR----- 3 \varnothing LED (light up in yellow)
- 5 FLICKERING TIME ADJUSTER----- 1T ~ 3T (Set by V/R)
- 6 ALARM DELAY TIME ADJUSTER----- 0 ~ 30 sec. (Set by V/R)
- 7 MODEL No.
- 8 RATING
- 9 I/O SIGNAL CONTROL METHOD
- 10 EXTERNAL CONNECTION T.B----- (UL-1059, EN60998)

SBGA-6P1WM (6 POINT ALARM)

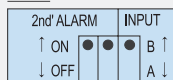


ALARM CARD



I/O SIGNAL (A or B / 2NDARY ALARM) CONTROL METHOD

(FIG.3)



INPUT SIGNAL (A or B) SELECTOR

Contact type of the input signal is selectable between "NO" (—o—) or "NC" (—o—)

2NDARY ALARM OUTPUT (ON/OFF) SELECTOR

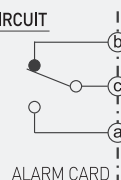
It is selectable whether the external 2ndary alarm is used or not.

- 1 SOURCE INDICATOR
- 2 ALARM INDICATOR
- 3 ALARM DELAY TIME ADJUSTER (0 ~ 30 sec.)
- 4 I/O SIGNAL (A or B / 2ND' ALARM) CONTROL (See FIG.3)

CAUTION

- Make the Buzzer out T.B(B0), Lamp out T.B (L1 ~ Ln) blank if Buzzer (BZ), and Lamp (L1 ~ Ln) are not used.
- Alarm card may be damaged if the Buzzer out T.B(B0) and Lamp out T.B (L1 ~ Ln) are connected to "P" line directly.

EXTENSION ALARM CIRCUIT



CONTACT CAPACITY

24V DC 2A (resistive) 0.8A (inductive p.f=0.4)

120V AC 1A (resistive) 0.4A (inductive p.f=0.4)

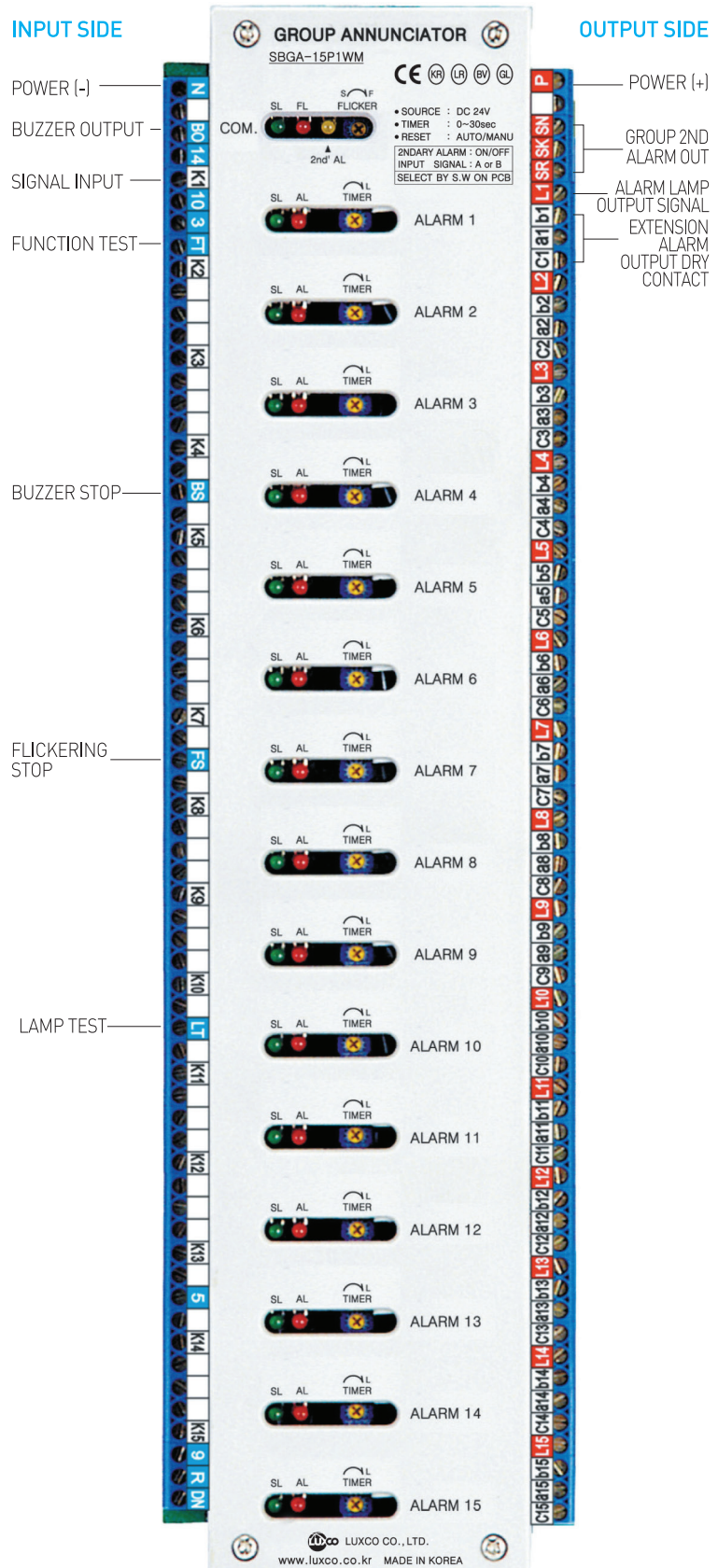
ALARM CARD

TERMINAL BLOCK LAYOUT & OUTLINE DESCRIPTIONS

SBAG-10P1WM (10 POINT ALARM)



SBAG-15P1WM (15 POINT ALARM)



INPUT SIDE

- T.B (No. 3, 5, 9, 10, 14) : EXTENSION SIGNAL IN / OUT
- T.B (No. K1 ~ Kn) : SIGNAL INPUT
- T.B (No. R) : RESET
- T.B (No. DN) : NEGATIVE TYPE DIMMER CONNECTION

OUTPUT SIDE

- T.B (No. L1 ~ Ln) : ALARM LAMP OUTPUT SIGNAL
- T.B (No. c1/a1/b1/ ~ cn/an/bn) : EXTENSION ALARM OUTPUT DRY CONTACT