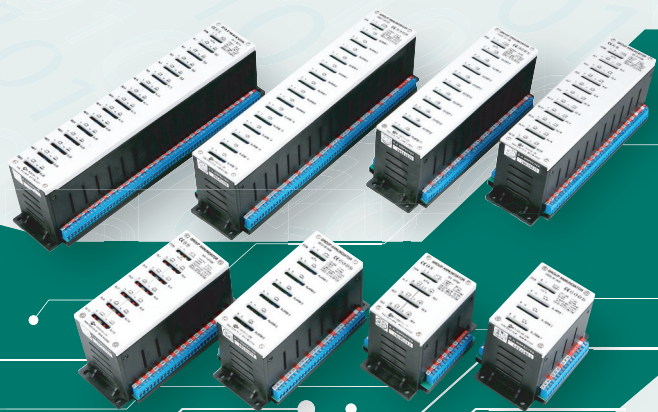




PATENT No. 0392839
DESIGN REGISTRATION No. 0298492 / 0309601



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.

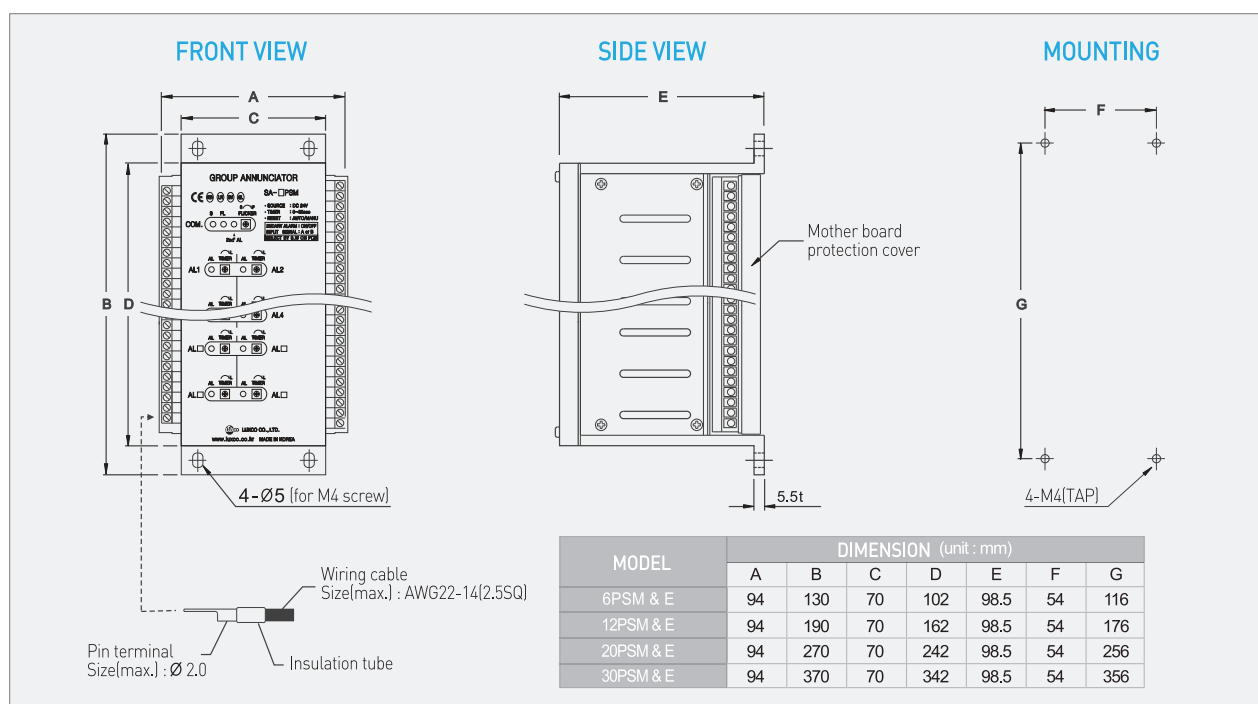
ORDERING INFORMATION

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



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)

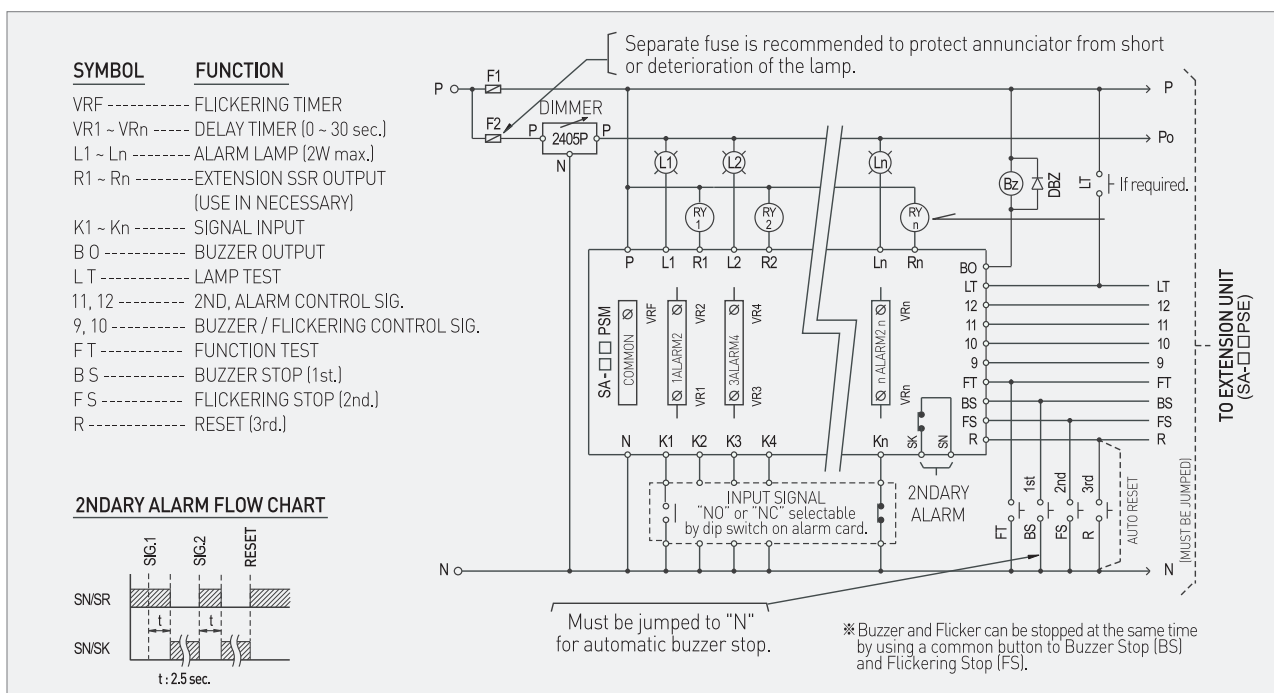
MECHANICAL SPECIFICATIONS

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
VIBRATION TEST	HUMIDITY	45% ~ 85%R.H
		30Hz for 2hours (acceleration : +0.7G)

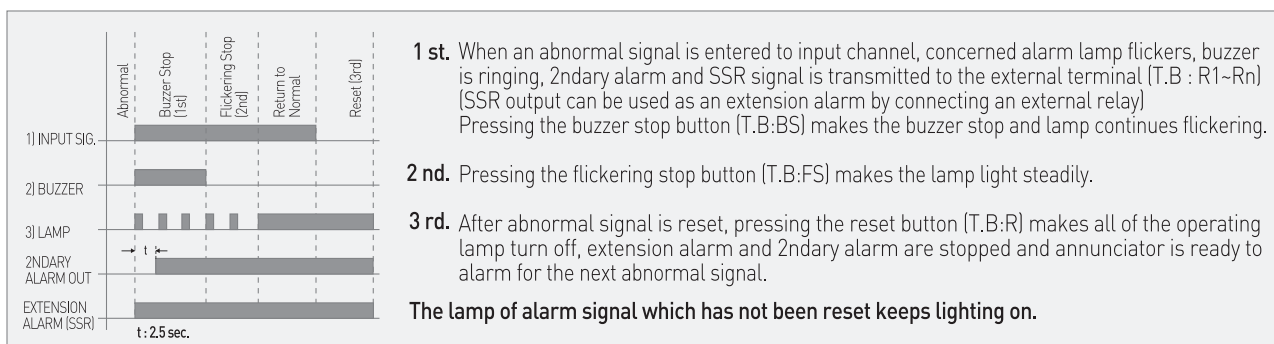
LOAD CONSUMPTION TABLE (POWER SUPPLY: DC 24V)

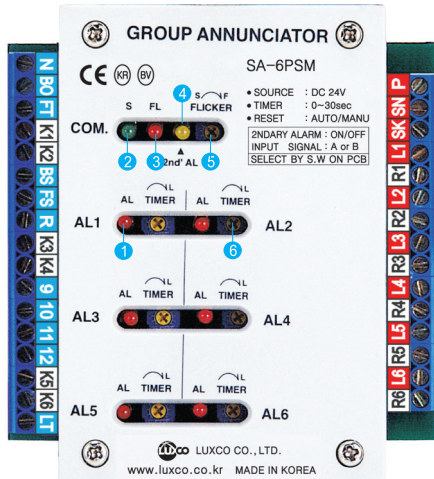
MODEL	SA-6PSM	SA-12PSM	SA-20PSM	SA-30PSM
TOTAL CURRENT CONSUMPTION	Below 92mA	Below 135mA	Below 190mA	Below 260mA
RECOMMENDED POWER SUPPLY WITH VISUAL LAMP (2W)	Above 1.0A	Above 1.7A	Above 2.7A	Above 4.1A

CONNECTION DIAGRAM

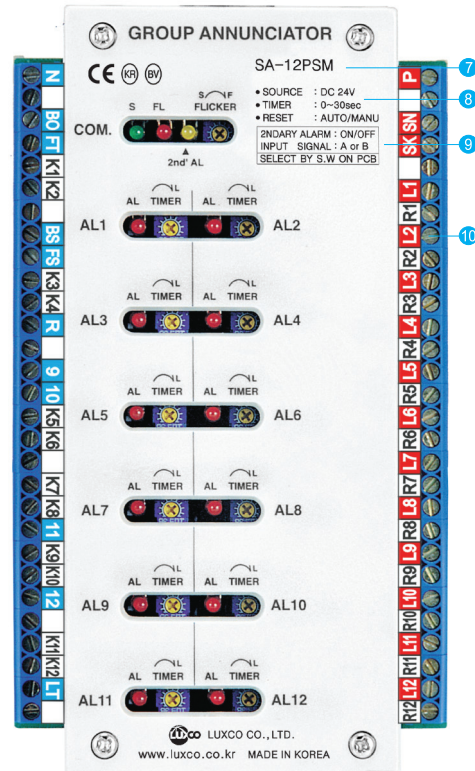
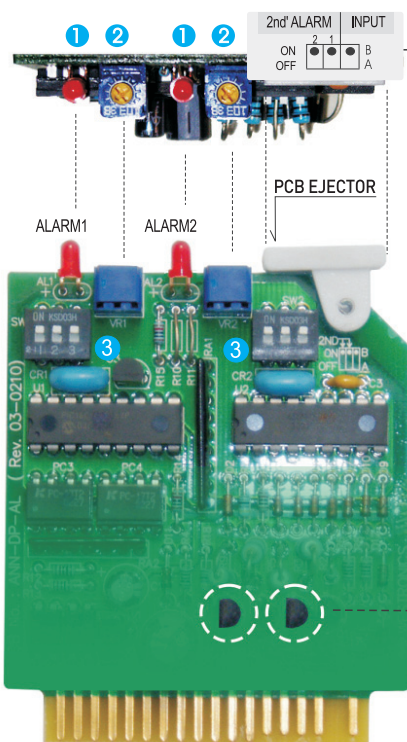


FUNCTION FLOW CHART



TERMINAL BLOCK LAYOUT & OUTLINE DESCRIPTIONS**SA-6PSM (6 POINT ALARM)**

- 1 ALARM INDICATOR ----- 3 ϕ LED (light up in red)
- 2 SOURCE INDICATOR ----- 3 ϕ LED (light up in green)
- 3 FLICKER TIMING INDICATOR ----- 3 ϕ LED (light up in red)
- 4 2NDARY ALARM INDICATOR ----- 3 ϕ 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)



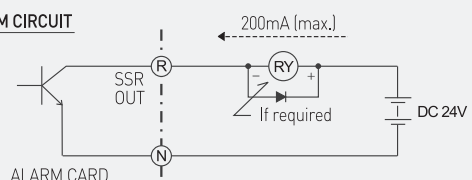
INPUT SIGNAL (A or B) SELECTOR
Contact type of the input signal is selectable between "NO" (—A—) or "NC" (—B—)

2NDARY ALARM OUTPUT (ON/OFF) SELECTOR
It is selectable whether the external 2ndary alarm is used or not.

- 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

POWER (-)

BUZZER OUTPUT
FUNCTION TEST

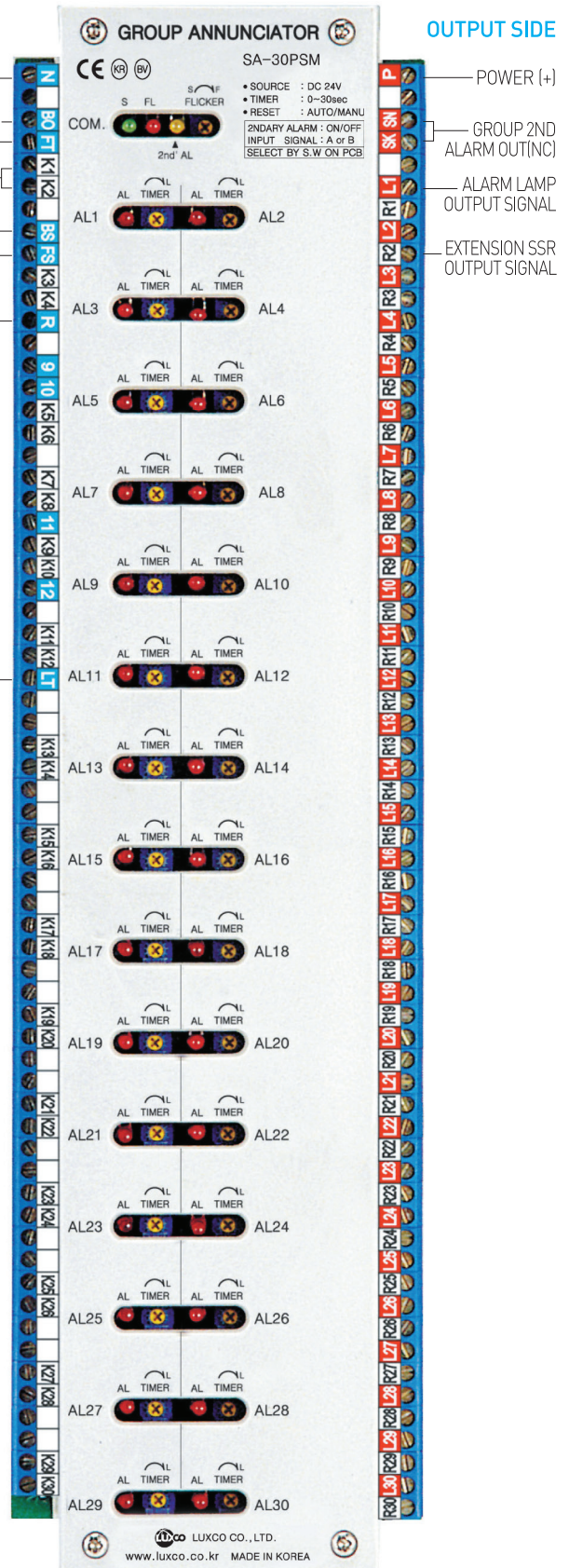
SIGNAL INPUT
(A or B)

BUZZER STOP
FLICKERING
STOP

RESET

LAMP TEST

SA-30PSM (30 POINT ALARM)



OUTPUT SIDE

POWER (+)

GROUP 2ND
ALARM OUT(NC)

ALARM LAMP
OUTPUT SIGNAL

EXTENSION SSR
OUTPUT SIGNAL

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.



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.

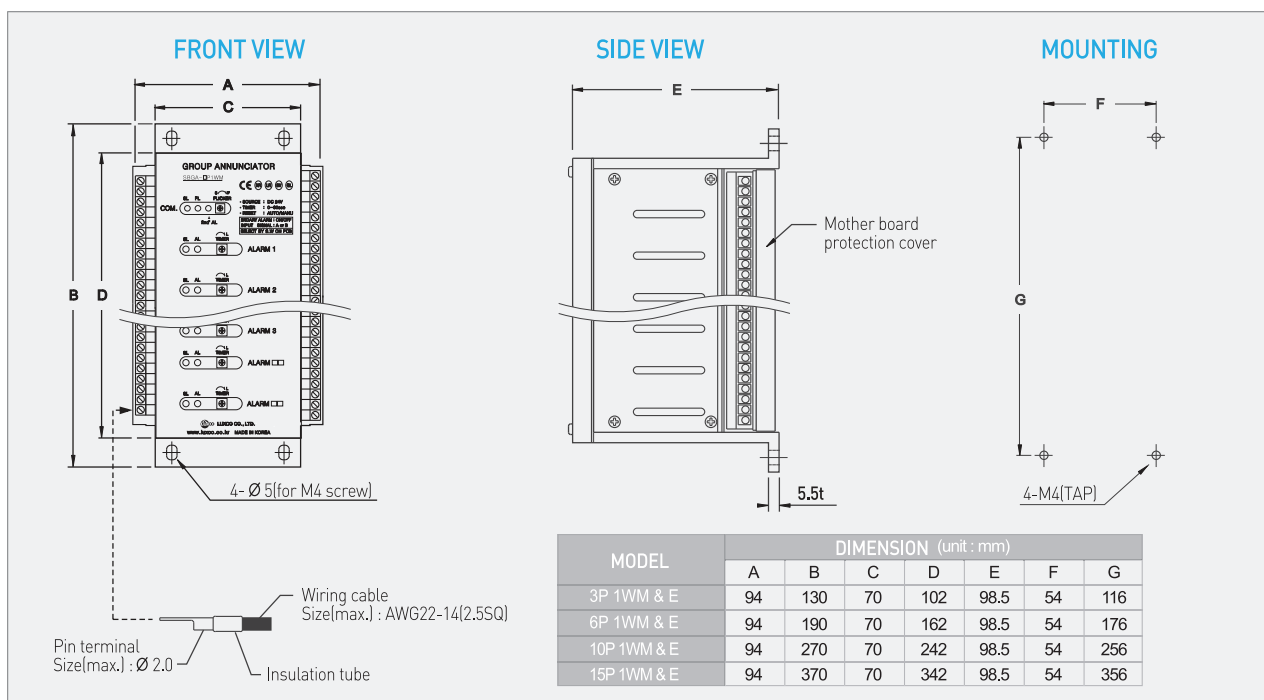
ORDERING INFORMATION

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



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 x10 ⁴ cycles	MECHANICAL 10,000 x10 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 JIEC 1000-4-5 / 1995)		

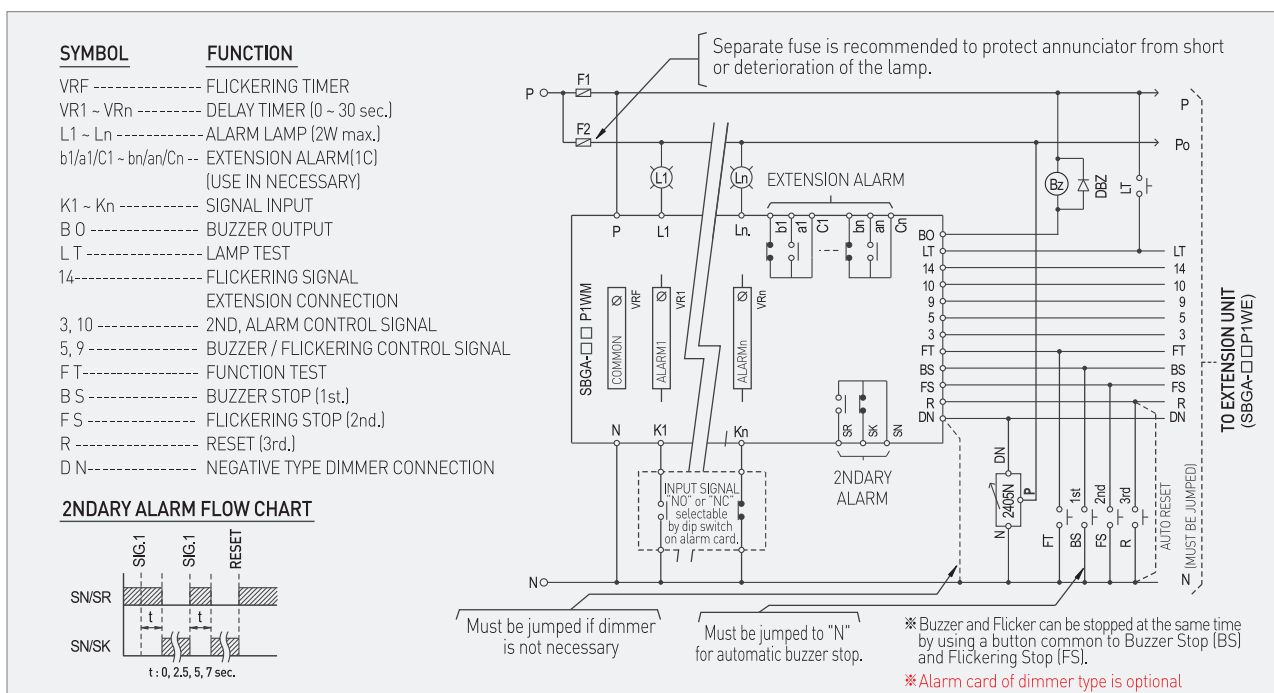
MECHANICAL SPECIFICATIONS

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
VIBRATION TEST	HUMIDITY	45% ~ 85%R.H
		30Hz for 2hours (acceleration : ±0.7G)

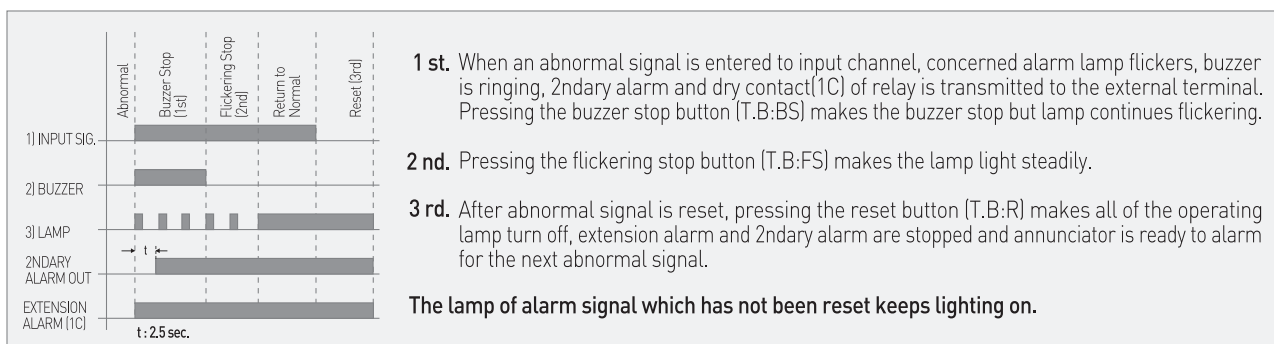
LOAD CONSUMPTION TABLE (POWER SUPPLY: DC 24V)

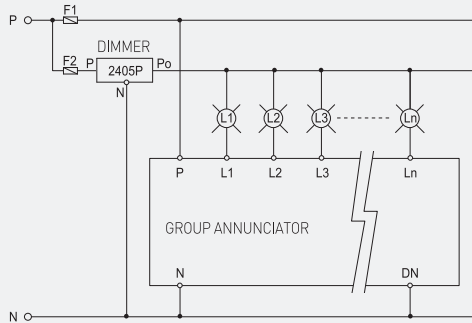
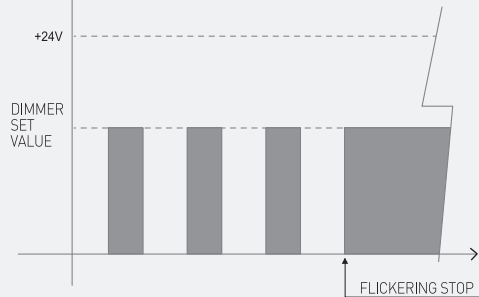
MODEL	SBGA-3P1WM	SBGA-6P1WM	SBGA-10P1WM	SBGA-15P1WM
TOTAL CURRENT CONSUMPTION	Below 95mA	Below 140mA	Below 200mA	Below 275mA
RECOMMENDED POWER SUPPLY WITH VISUAL LAMP (2W)	Above 0.5A	Above 1.0A	Above 1.5A	Above 2.0A

CONNECTION DIAGRAM



FUNCTION FLOW CHART

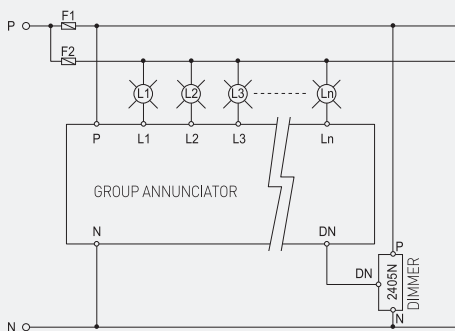
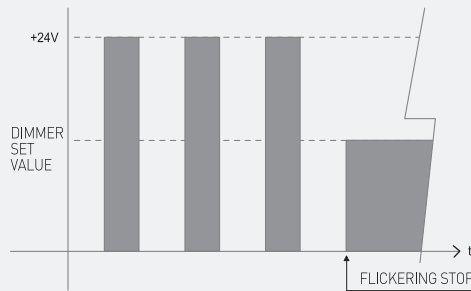


GENERAL TYPE CONNECTION (DIMMER POSITIVE)**MODEL : 2405P****CONNECTION DIAGRAM****VISUAL ALARM LAMP**
(LAMP VOLTAGE)

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)

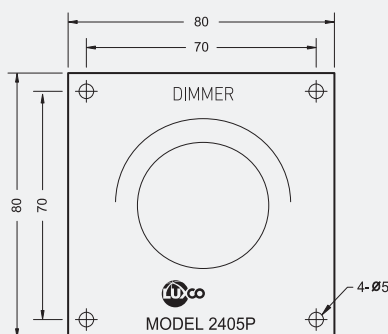
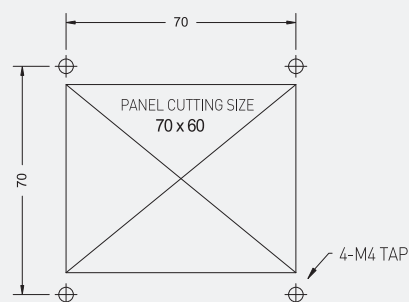
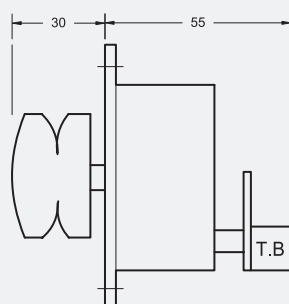
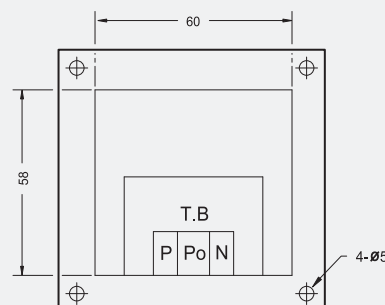
DN type of dimmer connection is a dimmer connected to "N" line. With standard type, When the dimmer is set to dark brightness, alarm lamp flickering is not easy to be recognized.

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)

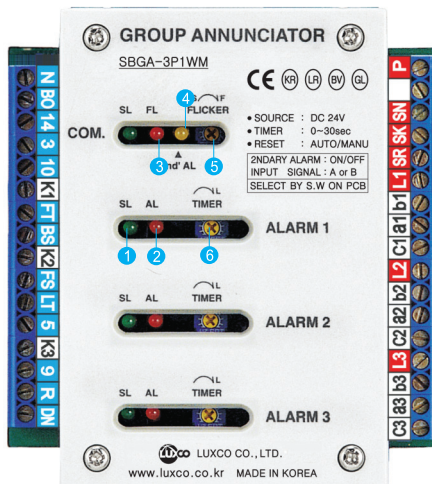
(Unit : mm)

FRONT VIEW**MOUNTING VIEW****SIDE VIEW****REAR VIEW**

GROUP ANNUNCIATOR

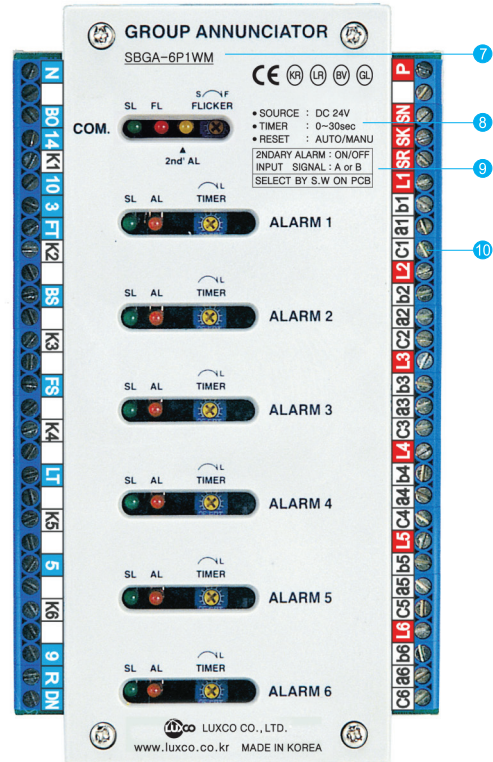
TERMINAL BLOCK LAYOUT & OUTLINE DESCRIPTIONS

SBGA-3P1WM (3 POINT ALARM)

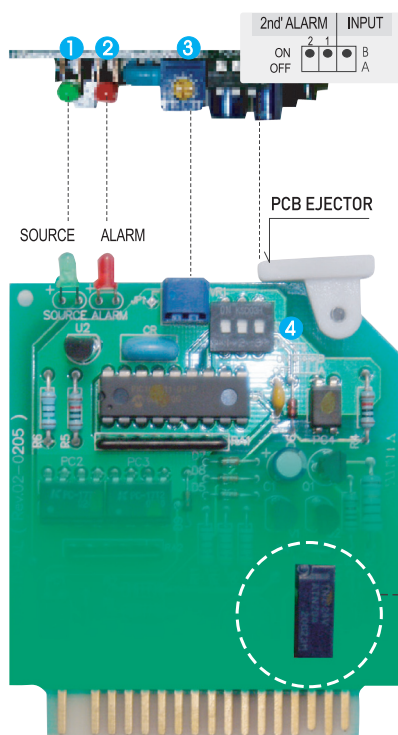


- 1 SOURCE INDICATOR----- 3 Ø LED (light up in green)
- 2 ALARM INDICATOR----- 3 Ø LED (light up in red)
- 3 FLICKER TIMING INDICATOR----- 3 Ø LED (light up in red)
- 4 2NDARY ALARM INDICATOR----- 3 Ø LED (light up in yellow)
- 5 FLICKERING TIME ADJUSTER----- 1T ~ 3T (Set by V/R)
- 6 ALARM DELAY TIME 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)

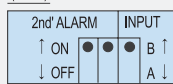


ALARM CARD



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" () or "NC" ().

2NDARY ALARM OUTPUT (ON/OFF) SELECTOR

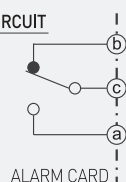
It is selectable whether the external 2ndary alarm is used or not.

- 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**

POWER (-) —

BUZZER OUTPUT —

SIGNAL INPUT —

FUNCTION TEST —

BUZZER STOP —

FLICKERING STOP —

LAMP TEST —

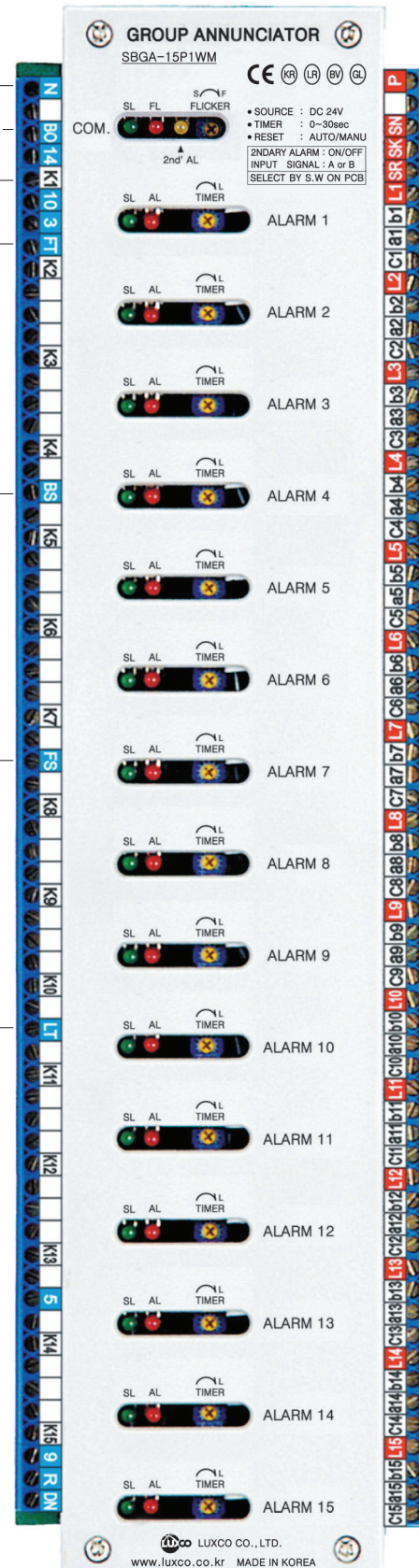
OUTPUT SIDE

POWER (+)

GROUP 2ND ALARM OUT

ALARM LAMP OUTPUT SIGNAL

EXTENSION ALARM OUTPUT DRY CONTACT

**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