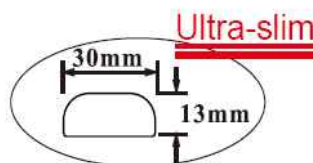


### ◆Characteristic / 特點：

- Ultra slim body, 13mm thickness only.  
/13mm超薄型，寬度僅有30mm。
- Min. Detectable Object Ø60mm.  
/最小檢測物Ø60mm。
- Green and red LED blink in sequence from top to bottom under normal emission. All LED light up under the emitting circuit failure.  
/未感應時，綠色與紅色LED依續閃爍，當有物體遮斷時，LED則全部一起亮。



### ◆Specifications / 規格表：

| Model / 型號                      | NPN D.on   | OAP-4004-NK | OAP-4004S-NK                        | OAP-4008-NK | OAP-4008S-NK |
|---------------------------------|--|-------------|-------------------------------------|-------------|--------------|
|                                 | PNP D.on   | OAP-4004-PK | OAP-4004S-PK                        | OAP-4008-PK | OAP-4008S-PK |
| Sensing type / 檢出方式             | Through beam / 對照式   |             |                                     |             |              |
| Resolution / 分辨率                | 60 mm opaque object 不透明物體  |             |                                     |             |              |
| Sensing distance / 檢出距離         | 0.1 M ~ 5 M  | 0.1 M ~ 2 M | 0.2 M ~ 5 M                         | 0.2 M ~ 2 M |              |
| Sensing Height / 檢測高度           | 120 mm   |             | 280 mm                              |             |              |
| Emitting light / 發光源            | Infrared LED(紅外線發光LED) : 850 nm  |             |                                     |             |              |
| No.of Beams/光軸數                 | 4  |             | 8                                   |             |              |
| Beam pitch / 光軸間距               | 40 mm  |             |                                     |             |              |
| Indicating LED / LED指示燈         | 5 LEDs each on emitter and receiver.   |             | 7LEDs each on emitter and receiver. |             |              |
|                                 | LEDs blink from top to bottom under the normal emission.<br>All LEDs light up under the emitting circuit failure and will become blinking until the normal emission. |             |                                     |             |              |
| Running type / 運轉方式             | More than a beam is covered ON ( Dark On )<br>任意一個光束被遮斷即輸出   |             |                                     |             |              |
| Operating voltage / 工作電壓        | DC12 ~ 24 V±10% (ripple P-P : 10% Max.)  |             |                                     |             |              |
| Current Consumption / 消耗電流      | Transmitter : 30 mA Max.   |             | Transmitter : 60 mA Max.            |             |              |
|                                 | Receiver : 15 mA Max.  |             | Receiver : 30 mA Max.               |             |              |
| Load current / 負載電流             | 100 mA Max at DC 24V   |             |                                     |             |              |
| Protection circuit / 保護電路       | Reversed Supply circuit protection, Short circuit protection output<br>電源反接保護及輸出短路保護   |             |                                     |             |              |
| Response time / 反應時間            | Off to On : 15 ms Max.   |             |                                     |             |              |
|                                 | On to Off : 20 ms Max.   |             |                                     |             |              |
| Insulation resistance / 隔離阻抗    | 20MΩ min. (DC500V)   |             |                                     |             |              |
| Voltage withstandability / 絕緣耐壓 | AC1000V 60Hz for 60 Sec.   |             |                                     |             |              |
| Operating temperature/工作溫度      | - 10 °C ~ + 45 °C ( No freezing allowed不可結霜.結冰 )   |             |                                     |             |              |
| Ambient humidity / 工作溼度         | 35% ~ 85% RH 相對溼度  |             |                                     |             |              |
| Storage temperature / 儲存時溫度     | - 10 °C ~ + 45 °C ( No freezing allowed不可結霜.結冰 )   |             |                                     |             |              |
| Storage humidity / 儲存時溼度        | 35% ~ 95% RH 相對溼度  |             |                                     |             |              |
| Protection degree / 防水等級        | IP62   |             |                                     |             |              |
| Material / 外觀材質                 | ABS  |             |                                     |             |              |
| Wiring method / 出線方式            | Transmitter : M12 pigtailed type(5P) / M12接頭15cm電線式  |             |                                     |             |              |
|                                 | Receiver : M12 pigtailed type(5P) / M12接頭15cm電線式   |             |                                     |             |              |
| Weight / 重量                     | Approx.200g  |             | Approx.253g                         |             |              |

## ◆Dimensions / 尺寸圖：

### OAP-4004-□

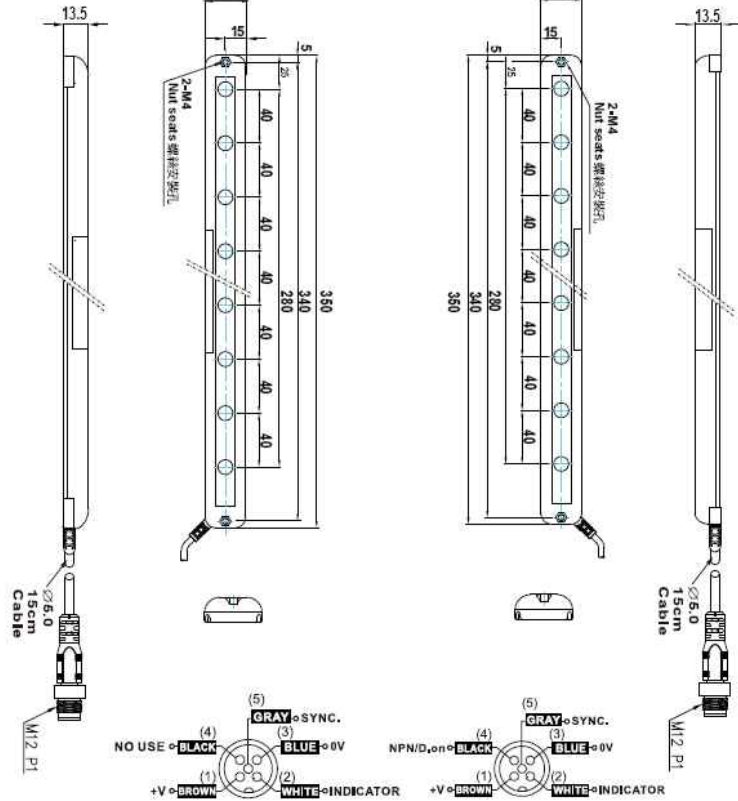
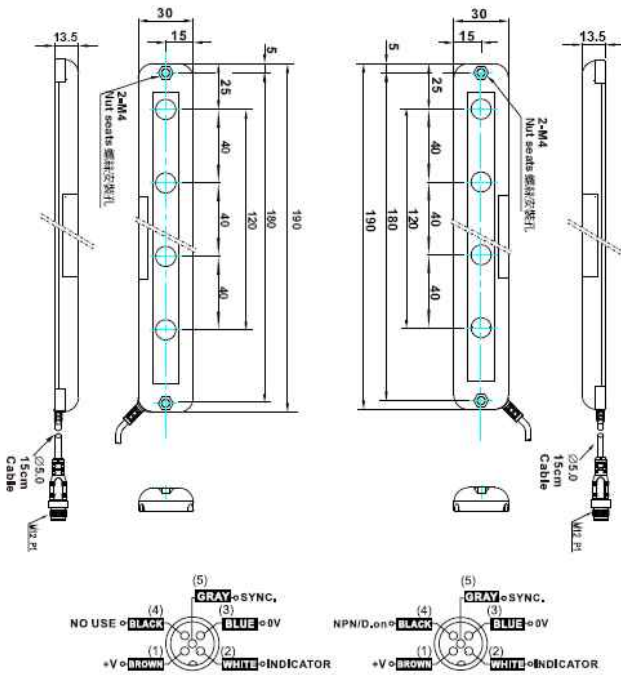
### OAP-4008-□

Emitter/ 發射

Receiver/ 接收

Emitter/ 發射

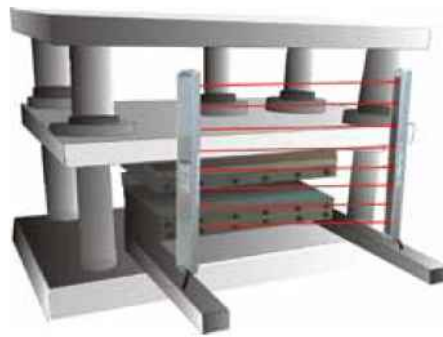
Receiver/ 接收



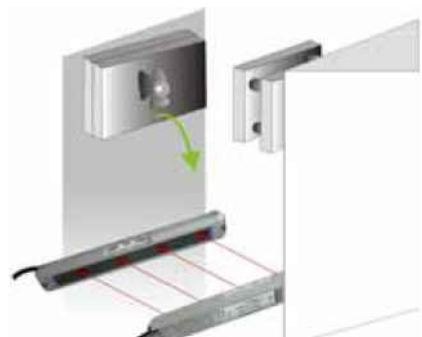
## ◆Applications / 應用例：



To avoid the intrusion of objects from outside of the machine.  
保護電子組件機器，不受外物侵入。



To protect equipment.  
設備防護



To Detecting a mold.  
檢查模製成品。

|       |              |             |                    |                            |                             |                 |        |             |
|-------|--------------|-------------|--------------------|----------------------------|-----------------------------|-----------------|--------|-------------|
| Fiber | Photo Sensor | Area Sensor | Ultrasonic Sensors | Inductive Proximity Sensor | Capacitive Proximity Sensor | Timer / Counter | Others | Accessories |
|-------|--------------|-------------|--------------------|----------------------------|-----------------------------|-----------------|--------|-------------|

Fiber

Photo Sensor

Area Sensor

Ultrasonic Sensors

Inductive Proximity Sensor

Capacitive Proximity Sensor

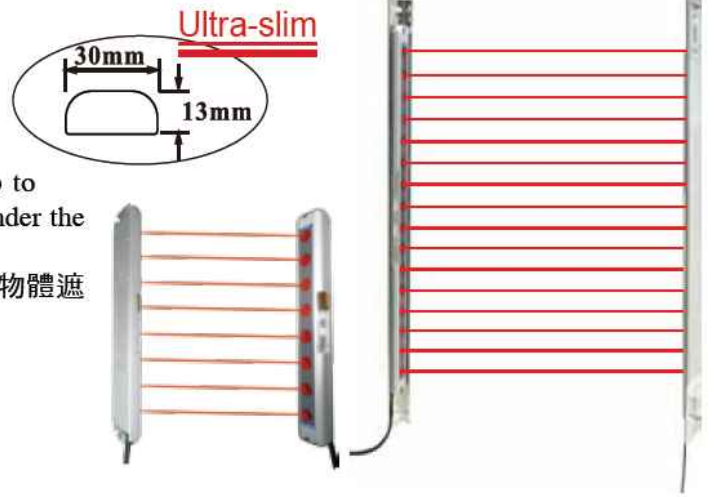
Timer / Counter

Others

Accessories

### ◆Characteristic / 特點：

- Ultra slim body, 13mm thickness only.  
/13mm超薄型，寬度僅有30mm。
- Min. Detectable Object Ø30mm.  
/最小檢測物Ø30mm。
- Green and red LED blink in sequence from top to bottom under normal emission. All LED light up under the emitting circuit failure.  
/未感應時，綠色與紅色LED依序閃爍，當有物體遮斷時，LED則全部一起亮。



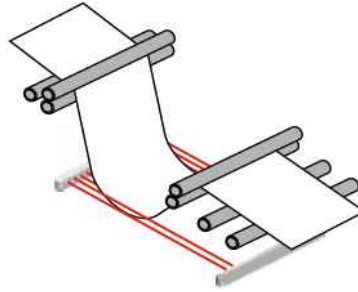
### ◆Specifications / 規格表：

| Model / 型號                      | NPN D.on   | OAP-2008-NK | OAP-2008S-NK | OAP-2016-NK                         | OAP-2016S-NK |
|---------------------------------|--|-------------|--------------|-------------------------------------|--------------|
|                                 | PNP D.on   | OAP-2008-PK | OAP-2008S-PK | OAP-2016-PK                         | OAP-2016S-PK |
| Sensing type / 檢出方式             | Through beam / 對照式   |             |              |                                     |              |
| Resolution / 分辨率                | 30 mm opaque object 不透明物體  |             |              |                                     |              |
| Sensing distance / 檢出距離         | 0.6 M ~ 5 M  |             | 0.3 M ~ 2 M  |                                     | 0.9 M ~ 5 M  |
| Sensing Height / 檢測高度           | 140 mm   |             |              | 300 mm                              |              |
| Emitting light / 發光源            | Infrared LED(紅外線發光LED) : 850 nm  |             |              |                                     |              |
| No.of Beams/光軸數                 | 8  |             |              | 16                                  |              |
| Beam pitch / 光軸間距               | 20 mm  |             |              |                                     |              |
| Indicating LED / LED指示燈         | 5 LEDs each on emitter and receiver.   |             |              | 7LEDs each on emitter and receiver. |              |
|                                 | LEDs blink from top to bottom under the normal emission.<br>All LEDs light up under the emitting circuit failure and will become blinking until the normal emission. |             |              |                                     |              |
| Running type / 運轉方式             | More than a beam is covered ON ( Dark On )<br>任意一個光束被遮斷即輸出   |             |              |                                     |              |
| Operating voltage / 工作電壓        | DC12 ~ 24 V±10% (ripple P-P : 10% Max.)  |             |              |                                     |              |
| Current Consumption / 消耗電流      | Transmitter : 90 mA Max.   |             |              | Transmitter : 135 mA Max.           |              |
|                                 | Receiver : 35 mA Max.  |             |              | Receiver : 70 mA Max.               |              |
| Load current / 負載電流             | 100 mA Max at DC 24V   |             |              |                                     |              |
| Protection circuit / 保護電路       | Reversed Supply circuit protection, Short circuit protection output<br>電源反接保護及輸出短路保護   |             |              |                                     |              |
| Response time / 反應時間            | Off to On : 15 ms Max.   |             |              |                                     |              |
|                                 | On to Off : 20 ms Max.   |             |              |                                     |              |
| Insulation resistance / 隔離阻抗    | 20MΩ min. (DC500V)   |             |              |                                     |              |
| Voltage withstandability / 絕緣耐壓 | AC1000V 60Hz for 60 Sec.   |             |              |                                     |              |
| Operating temperature/工作溫度      | - 10 °C ~ + 45°C ( No freezing allowed不可結霜,結冰 )  |             |              |                                     |              |
| Ambient humidity / 工作溼度         | 35% ~ 85% RH 相對溼度  |             |              |                                     |              |
| Storage temperature / 儲存時溫度     | - 10 °C ~ + 45°C ( No freezing allowed不可結霜,結冰 )  |             |              |                                     |              |
| Storage humidity / 儲存時溼度        | 35% ~ 95% RH 相對溼度  |             |              |                                     |              |
| Protection degree / 防水等級        | IP62   |             |              |                                     |              |
| Material / 外觀材質                 | ABS  |             |              |                                     |              |
| Wiring method / 出線方式            | Transmitter : M12 pigtailed type(5P) / M12接頭15cm電線式  |             |              |                                     |              |
|                                 | Receiver : M12 pigtailed type(5P) / M12接頭15cm電線式   |             |              |                                     |              |
| Weight / 重量                     | Approx.200g  |             |              | Approx.253g                         |              |

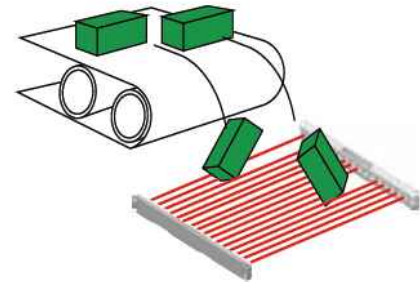
## ◆ Applications / 應用例 :



To prevent wrong access of parts-taking.  
防止誤取發動機部件

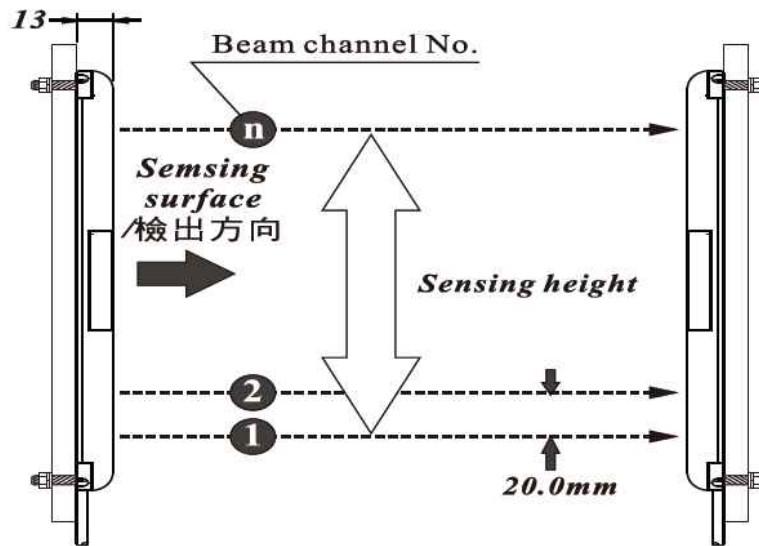


Detecting a reel.  
檢查卷筒

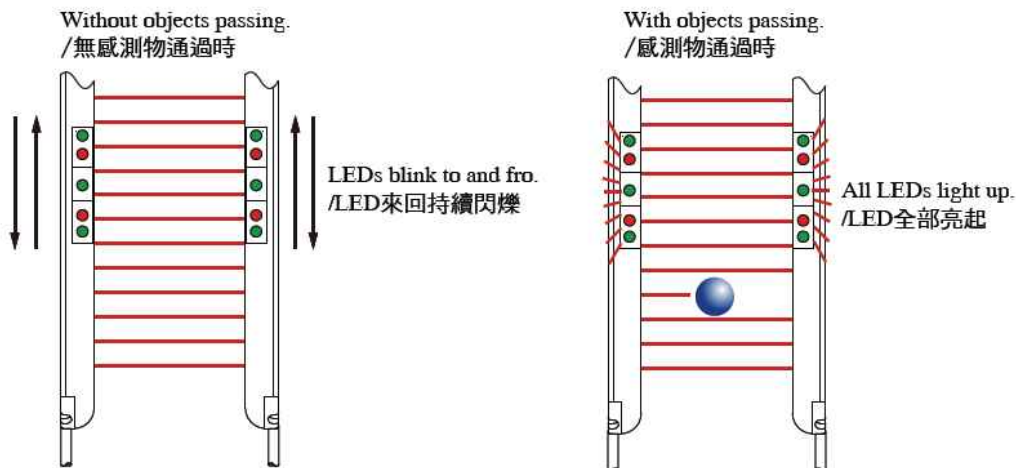


Detecting the falling objects in uncertain route.  
檢查路徑不確定的下落物體

## ◆ Dimensions / 外型尺寸 :



## ◆ Indicator / 指示燈 :



| Model    | Without objects passing.   | With objects passing.   |
|----------|--|---|
| OAP-2008 | 5 LEDs blink to and fro (from top to bottom).<br>(Green,Red,Green,Red,Green)           | All 5 LEDs light up.<br>(Green,Red,Green,Red,Green)           |
| OAP-2016 | 7 LEDs blink to and fro (from top to bottom).<br>(Green,Red,Green,Red,Green,Red,Green) | All 7 LEDs light up.<br>(Green,Red,Green,Red,Green,Red,Green) |

Fiber

Photo Sensor

Area Sensor

Ultrasonic Sensors

Inductive Proximity Sensor

Capacitive Proximity Sensor

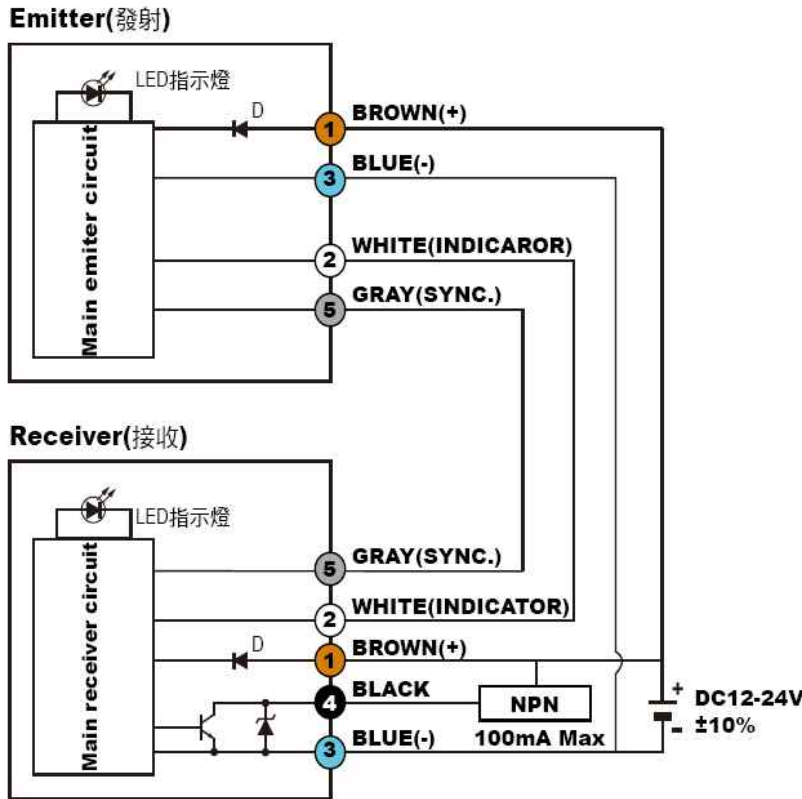
Timer / Counter

Others

Accessories

- Fiber
- Photo Sensor
- Area Sensor
- Ultrasonic Sensors
- Inductive Proximity Sensor
- Capacitive Proximity Sensor
- Timer / Counter
- Others
- Accessories

### ◆ I/O Circuit Diagram / 接線圖 :

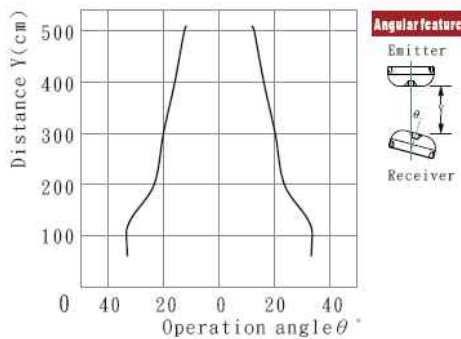


LOAD/ 負載  
NPN open collector output.  
Max current 100mA.  
supplying voltage DC12~24V.

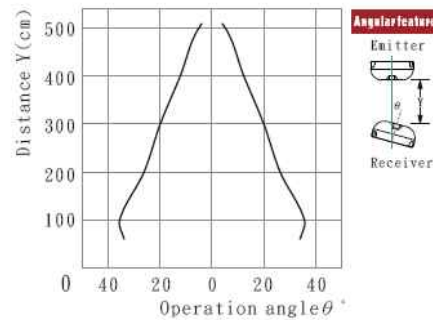
NPN最開放集極電路  
最大輸出電流100mA  
供應電壓DC12~24V

### ◆ Engineering data / 工程數據 :

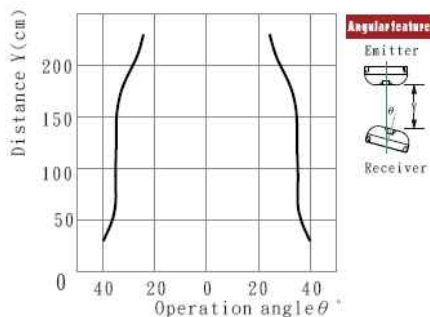
OAP-2008-□ Angular deviation



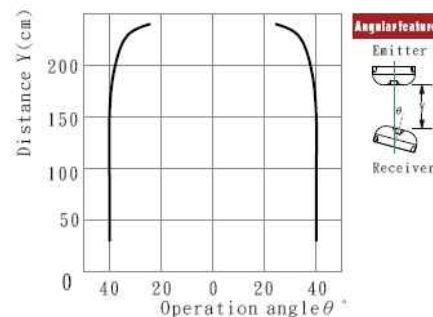
OAP-2016-□ Angular deviation



OAP-2008S-□ Angular deviation



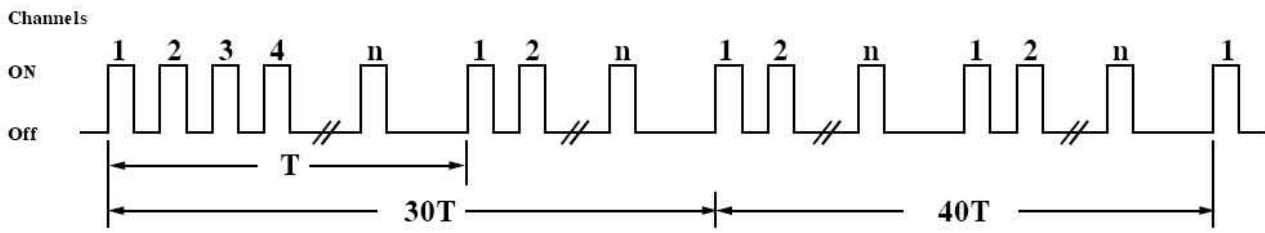
OAP-2016S-□ Angular deviation



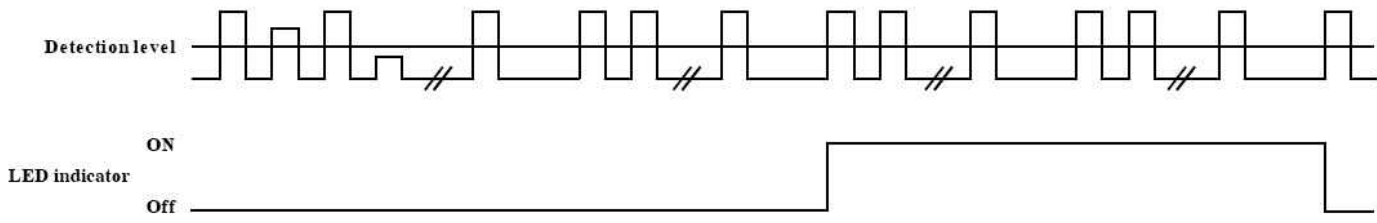
◆Timer chart / 時序圖：

• OAP-2008-□

**Emitter**

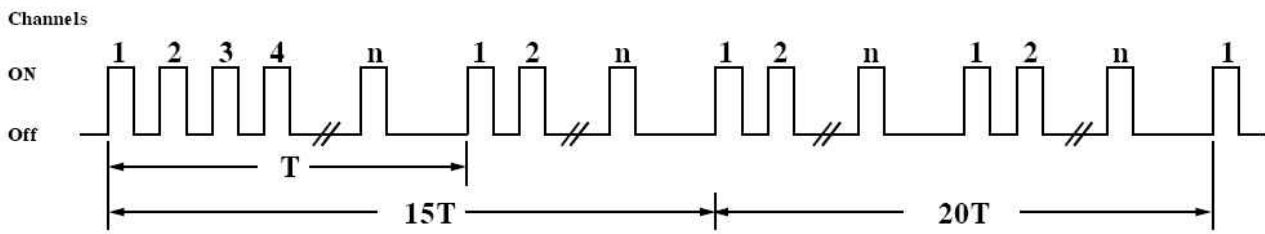


**Receiver**

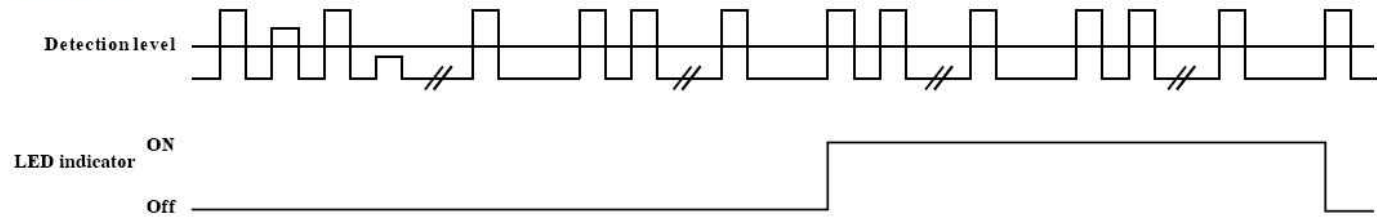


• OAP-2016-□

**Emitter**



**Receiver**



|                             |
|-----------------------------|
| Fiber                       |
| Photo Sensor                |
| Area Sensor                 |
| Ultrasonic Sensors          |
| Inductive Proximity Sensor  |
| Capacitive Proximity Sensor |
| Timer / Counter             |
| Others                      |
| Accessories                 |

◆Dimensions / 尺寸圖 :

OAP-2008-□

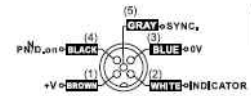
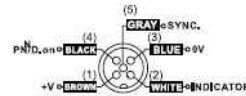
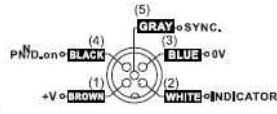
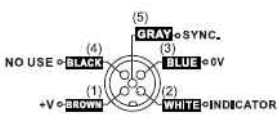
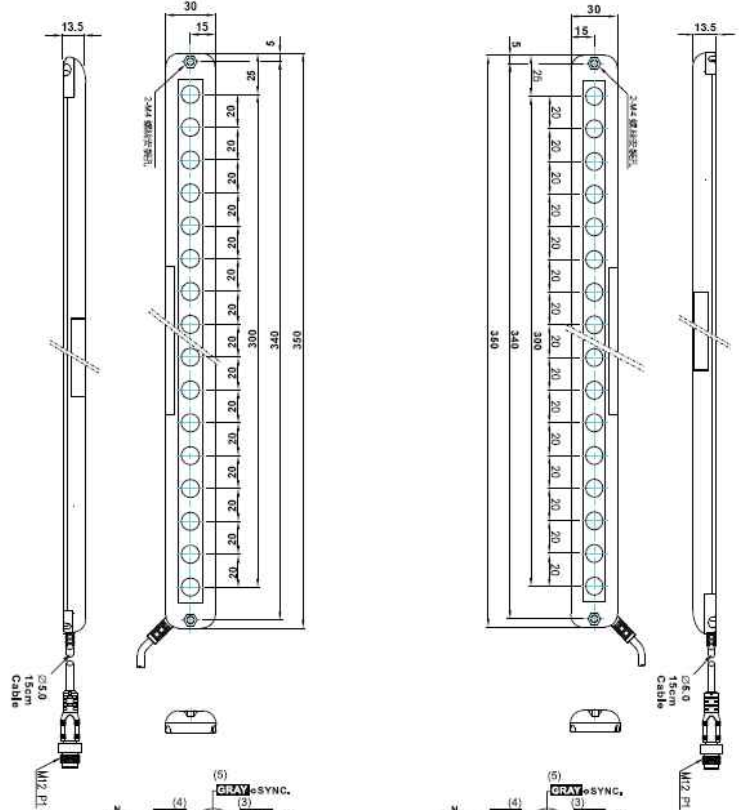
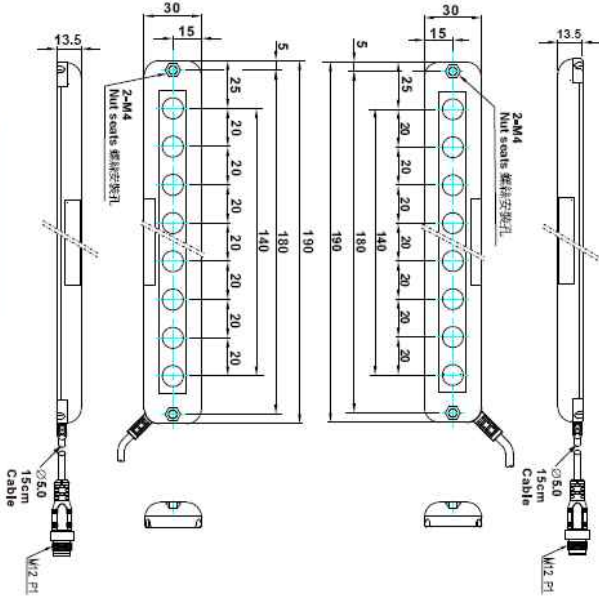
OAP-2016-□

Emitter/ 發射

Receiver/ 接收

Emitter/ 發射

Receiver/ 接收



Fiber

Photo Sensor

Area Sensor

Ultrasonic Sensors

Inductive Proximity Sensor

Capacitive Proximity Sensor

Timer / Counter

Others

Accessories

## ◆ Accessories / 選購配件：

- Connectors / 線材：

| Dimensions / 尺寸圖                           | Material   | Available Model/適用機種   |
|--|--|--|
| <p>2M:M125R-PUR-2M<br/>5M:M125R-PUR-5M</p> | <p>1-BROWN<br/>2-WHITE<br/>3-BLUE<br/>4-BLACK<br/>5-GRAY</p> | <p><b>OAP-□K Series</b><br/><b>/OAP-□K系列機種</b></p> <p>Sensor side / 光電側<br/>Machine side / 機台側</p> |

Fiber

Photo Sensor

Area Sensor

Ultrasonic Sensors

Inductive Proximity Sensor

Capacitive Proximity Sensor

Timer / Counter

Others

Accessories

- OAP-Bracket / OAP固定架：

| Dimensions / 尺寸圖       | Material  | Available Model/適用機種                                     |
|------------------------|-----------|--|
| <p><b>OAP-M008</b></p> | Iron / 鐵板 | <p><b>OAP-2008□ Series</b><br/><b>/OAP-2008□系列機種</b></p> |
| <p><b>OAP-M016</b></p> |           | <p><b>OAP-2016□ Series</b><br/><b>/OAP-2016□系列機種</b></p> |

- Mounting / 固定方式：

