

### Digital Display of threshold and light-receiving amount!



#### ● Possible to set with digital value

\*8 digits monitor is provided. It displays current light-receiving value and setting value.

#### ● Possible to make 6 kinds of teaching

\*Max. sensitivity teaching/One point teaching/Two points teaching/ Auto-teaching/Zone teaching/Transparent object teaching

#### ● 2 channel output are provided

\*Possible to set each Light-ON/ Dark-ON/ Timer and threshold per output



Easy to see the current light-receiving amount and threshold because of high brightness LED

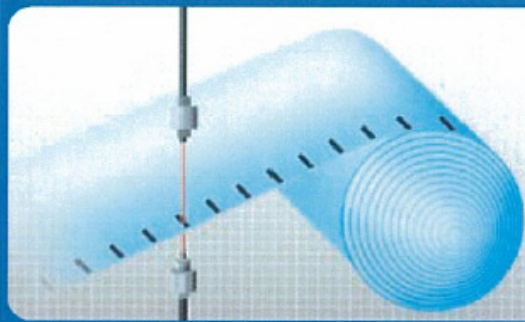
#### ● 3 kinds of detecting mode are provided

\*Fast : Response time is shorter and it can detect the moving object with high-speed.  
\*Standard : Standard mode  
\*Long : It enlarges the detecting power and it can make a stable detection.

#### ● Several functions are provided

\*External teaching input : Remote control input can be made.  
\*Timer setting : Possible to set the timer during 1 to 9000msec per 1msec unit. Possible to choose OFF-delay, ON delay or one-shot.  
\*Counter setting : Possible to set the preset value (0 to 9999999). When counter setting, counting value is displayed.

■ Applications



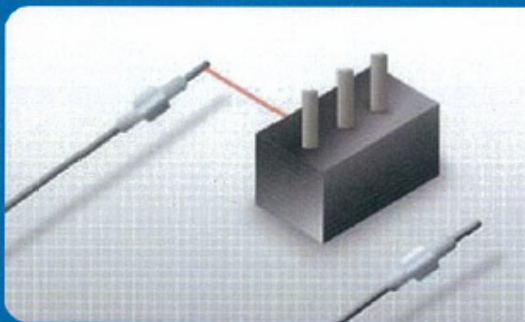
●Registered mark detection  
Through-beam or diffuse-reflection type is applied depending on the kinds of the seats.



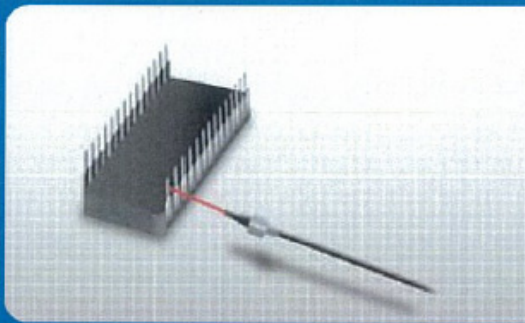
●Bottle detection  
Detection of transparent bottle. It detects with transparent objects teaching and exclusive reflection sheet.



●Liquid surface detection  
This is superior against the chemicals and it can detect the transparent and white liquid medicine



●Pins detection and positioning of the objects



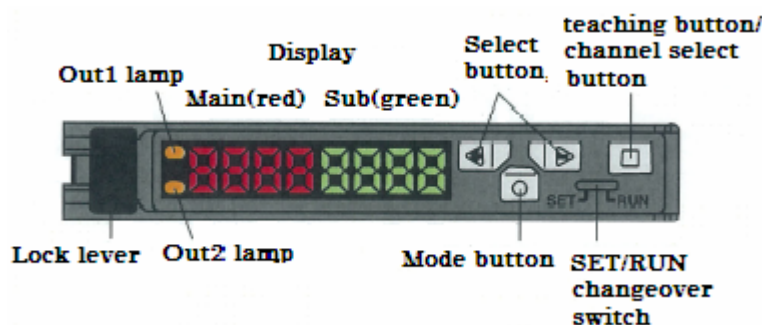
●Very little spot detection(when using lens attachment)  
It can count the numbers of connector pin

■ Specifications

Model No.	PDF-CR	PDF-CRA
Power source	12 to 24VDC(including ripple)	
Current consumption	45mA or less(24VDC)	
Light source	4-element red LED	
Operating mode	Light-ON/Dark-ON changeover	
Output	2 outputs NPN open-collector output 30VDC/100mA or less, residual voltage 1.8V or less	2 outputs PNP open-collector output 30VDC/100mA or less, residual voltage 1.8V or less
Response time	Fast : 60 μ sec, Standard : 250 μ sec, Long : 2msec	
Sensitivity adjuster	Teaching or manual adjustment	
Teaching	Max. sensitivity teaching/One point teaching/Two points teaching/ Auto-teaching/Zone teaching/Transparent object teaching	
Protective circuit	Short-circuit protection, reverse-connection protection, over-current protection(output)	
LED	Output1/2 : orange LED	
Indications	Numerical indication : 4 digits(red) + 4 digits(green), 7-segment LED Other indication : standard, bar, %, counting numbers, OFF(only run mode)	
Detecting mode	Normal detection, rising edge detection, trailing edge detection	
Sensing mode	Fast, Standard, Long	
Counter mode	0 to 9999999 Increment/decrement changeover	
Timer mode	ON-delay, OFF-delay, One-shot, Without timer(Timer time : 1 to 9,000msec)	
Automatic gain/power control	APC/ASC provide(automatic sensitivity adjustment system)	
External input	Choice from external teaching and counter reset	
Connecting method	Cable type(length 2m, φ 3.8mm, 4 cores 0.2mm <sup>2</sup> )	
Ambient illuminance	Sun light : 10,000lx or less, incandescent lamp : 3,000lx or less	
Ambient temperature	-25 to +55°C(-40 to +70°C when stored), not icing	
Ambient humidity	35 to 85%(35 to 95% when stored), not condensing	
Insulation resistance	20MΩ or more(500VDC megger)	
Withstand voltage	1,000VAC/min.	
Vibration resistance	Double amplitude 1.5mm, 10 to 55Hz, each 2 hour in X, Y and Z directions	
Impact resistance	1,000m/s <sup>2</sup> , each 3 time in X, Y and Z directions	
Protective structure	IP66(IEC standard), (IP50 when not connecting the fiber unit)	
Case material	Case : PPE resin, cover : polycarbonate	
Weight	Approx. 65g(including cable)	
Accessory	Fitting metal	
Mounting	DIN-rail or fitting metal	

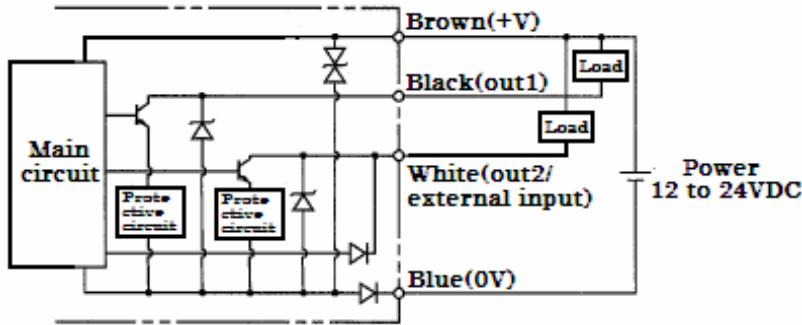
\* Reflection sheet(DGS 100×100)(RRRP016) is available as option.

■ Amplifier unit

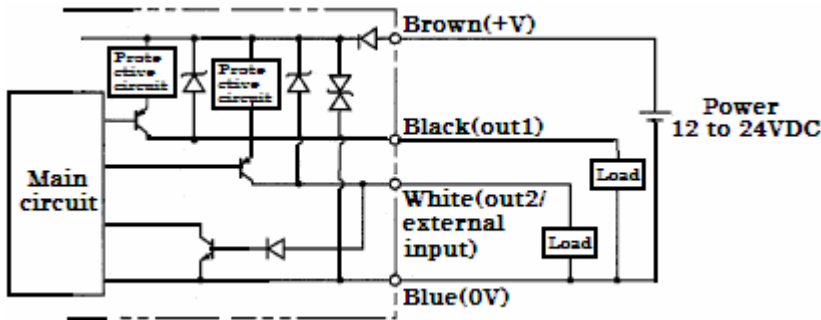


■ Output circuit

\*NPN output



\*PNP output



● Caution

- (1) Don't make a parallel wiring with high voltage line or power line. Also, it may cause a malfunction by induction.
- (2) Be sure to make FG(frame ground terminal) and G(ground terminal)
- (3) Don't operate it during approx. 100msec after putting power source in.

■ External dimension

